REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

POLICY BRIEF

Developing an Inclusive Artificial Intelligence Research Workforce in Kenya



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1. INTRODUCTION

Using an AI tool at work and doing research with AI are different skills. A plant breeder who classifies crop images with a trained model has to judge whether the model suits her data, check it for bias and document her methods so that others can repeat the work. A team building a Kiswahili language model needs people who can prepare data, train models on a cluster and keep the software running. Kenya is investing heavily in the first kind of skill. This brief is about the second.

The demand is global. The World Economic Forum's Future of Jobs Report 2025 ranks AI and big data as the fastest-growing skill set and expects 39 per cent of workers' core skills to change by 2030 (World Economic Forum, 2025). Women remain under-represented on every measure available, though the measures differ: women make up 28.2 per cent of the global STEM workforce (World Economic Forum, 2024), held 29.4 per cent of AI engineering skills recorded on LinkedIn in 2025 (World Economic Forum and LinkedIn, 2025), and accounted for 31.8 per cent of researchers in sub-Saharan Africa in 2016 (UNESCO Institute for Statistics, 2019).

Kenya has several foundations to build on. The Kenya National AI Strategy 2025–2030 makes talent one of its pillars, with goals on AI in school curricula, specialised tertiary training, training of trainers, talent mapping and talent placement (Ministry of ICT and Digital Economy, 2025). Universities have started AI degrees: the University of Nairobi signed an agreement with CentraleSupélec in May 2026 on its Master of Science in AI (CentraleSupélec, 2026), and the Open University of Kenya and Kabarak University offer AI master's programmes. Research-oriented training also exists, for example at the Centre for Data Science and Artificial Intelligence (DSAIL) at Dedan Kimathi University of Technology and through Data Science Africa's research fellowships.

The policy brief on the Use of Artificial Intelligence in Research, Science and Technology recommended a national AI research skills programme reaching 150 to 300 researchers a year by year three (NACOSTI, 2026). This brief turns that recommendation into a plan for an AI-capable research workforce in the Science, Technology and Innovation (STI) sector, with inclusion of women, youth and researchers outside major urban centres built in from the start.

2. RATIONALE

The National AI Strategy records a shortage of advanced AI experts able to design and train contextually relevant models, notes that only 25 per cent of university graduates complete a STEM course, and finds a mismatch between academic training and practical needs (Ministry of ICT and Digital Economy, 2025). Without researchers who can apply AI methods soundly, Kenya will depend on foreign collaborators to analyse Kenyan data, and the responsible-use standards proposed in the companion brief will be hard to apply.

NACOSTI's 2024 report on the state of the STI system gives a national baseline. The 2019 National Research and Development Survey counted 14,170 researchers, or 284 per million people, of whom 34 per cent were women. At doctoral level the ratio of men to women was 70 to 30 (NACOSTI, 2024). Women made up 34.7 per cent of university STEM enrolment in 2017/18. The same report names poor research infrastructure as one of the causes of brain drain and records the long-standing target of training 1,000 PhDs a year.

The school pipeline is a long-term factor. Under competency-based education, 51 per cent of the first Grade 10 cohort were placed in the STEM pathway for 2026 (Ministry of Education, 2025b), while 32.44 per cent of the 1,130,459 learners who sat the 2025 Kenya Junior School Education Assessment met or exceeded expectations in mathematics (Ministry of Education, 2025a). The two figures measure different things, placement and attainment, but together they show that growing interest in STEM will not by itself produce AI-capable researchers within the next decade.

The STI Act, Cap. 511, gives the sector grounds to act. It tasks the Commission with advising on science education, and it directs the National Research Fund (NRF) to support "the development of appropriate human resources and research capacity" and postgraduate study in priority areas, with priority to marginalised communities (sections 6, 33 and 36).

3. SITUATIONAL ANALYSIS

Higher education is moving. A June 2024 workshop convened by the Commission for University Education (CUE) recommended integrating AI across curricula, naming AI champions in departments and giving all academic staff training in ethical AI use (Chuka University, 2024). Coverage is still uneven. A 2022 University of Nairobi study found that only 21 of 63 accredited universities, a third, offered any postgraduate programme in emerging technologies (University of Nairobi, 2022).

Most large programmes target general digital and AI literacy. Microsoft announced in 2024 a programme to train one million people in Kenya in AI and cybersecurity (Microsoft, 2025a). The Kenya AI Skilling Alliance (KAISA), launched by the Kenya Private Sector Alliance and Microsoft in October 2025, brings government, industry, academia and development partners together around national skilling programmes (Microsoft, 2025b). By February 2026 the Jitume programme had 148 digital hubs and had trained more than 450,000 young people, with plans for hubs in every ward (Kenya News Agency, 2026).

The research workforce that AI depends on is thin. NACOSTI's own experience is telling: when the Commission brought its donated HPC system into pilot use in 2024, it relied on external expertise to set up and administer the system (NACOSTI records). An early report on KENET's GPU service counted 14 users, most of them postgraduate students (Otuya-Oyim, n.d.). TVET institutions train the technicians that laboratories rely on, but this review found few qualifications for AI-related research support roles.

Retention is shaped by pay and promotion rules. Pay in public universities and research institutes follows Salaries and Remuneration Commission guidelines, and academic promotion rests mainly on journal publications. Neither rewards the software, datasets and research pipelines that AI research support staff produce, and the National AI Strategy names brain drain as a risk.

4. METHODOLOGY

This policy brief is based on desktop research covering sources published up to 30 June 2026. It reviewed the National AI Strategy 2025–2030, the STI Act, NACOSTI's 2024 report on the state of the STI system, education sector reports, global labour market studies and NACOSTI's records on its HPC pilot, and it builds on the companion brief on the Use of Artificial Intelligence in Research, Science and Technology. The national figures on researchers date from the 2019 National Research and Development Survey; no newer national survey of AI skills among researchers exists, and no new survey was carried out for this brief. Programme sizes proposed here are therefore provisional and should be confirmed by the baseline survey in recommendation 6.

5. FINDINGS

5.1 A Pipeline Built for Users More Than Researchers

Most current AI training produces users who can apply existing tools at work. Research needs more. Researchers must judge whether a model suits their data, test for bias and data leakage, verify generated outputs and references, and document model versions so that results can be reproduced; some must build their own models. Research technicians, data stewards and research software engineers must run pipelines, manage data and keep computing systems working. These needs fall into three tiers: foundational responsible use for all researchers, applied AI methods for many, and advanced research and support skills for a smaller group. This review did not identify a coordinated national programme covering all three.

5.2 Uneven Access and Under-representation

Specialised AI programmes are concentrated in Nairobi and a few large universities. Women make up about a third of Kenyan researchers and fewer at doctoral level (NACOSTI, 2024), and the National AI Strategy records significant under-representation of women in AI. Researchers at county-based institutions face weaker connectivity and less access to computing. Training designed without these groups in mind will widen the existing gaps.

5.3 Fragmented Effort

University programmes, industry academies, development partner projects and government skilling schemes run largely in parallel. There is no shared standard for research competencies, no common record of who has been trained, and little link between training, research funding and access to computing. The existing research-oriented initiatives provide a base to build on; the gap is coordination, predictable funding and tracking of outcomes.

5.4 Careers and Retention

Training more AI-skilled researchers without careers for them risks training people for employers abroad or in industry. Movement into industry is not always a loss to Kenya, since many researchers keep contributing through joint projects and supervision. The policy question is whether publicly funded skills continue to serve Kenyan research.

6. CHALLENGES

Five clusters of challenges limit the growth of an AI-capable research workforce.

- **Weak foundations.** Mathematics attainment at junior school level and the small share of STEM graduates limit progression to advanced AI study (Ministry of Education, 2025a; Ministry of ICT and Digital Economy, 2025).
- **Shortage of trainers and supervisors.** Few university and TVET staff have the advanced AI training needed to teach and supervise AI research, and full programme re-accreditation takes years.
- **Career and pay rules.** Public pay scales and publication-based promotion make it hard to keep AI researchers and to recognise research support work.
- **Unequal access.** Women, young researchers and those in institutions outside major urban centres face barriers of cost, connectivity, computing access and mentorship.
- **No national baseline.** Without current data on AI skills, trainers and demand, programme sizes and inclusion targets cannot be set with confidence.

Table 1: AI Research Skills Gaps, Proposed Interventions and Lead Agencies

Gap	Proposed Intervention	Delivery Mechanism	Proposed Lead (Support)
Category A: Competencies and Qualifications			
No research AI competency standard	Three-tier AI research competency standard	National standard with recognition of prior learning	NACOSTI (CUE, universities)
Slow curriculum change	Shared modular credit-bearing course	Online modules plugged into existing research methods units	CUE (universities, KENET)
No qualifications for research support roles	Registered qualifications and micro-credentials	National qualifications framework and TVET curricula	KNQA (TVET CDACC, TVETA)
Category B: Researcher Pipeline			
No national programme for researchers	AI research skills programme and AI for Science fellowships	Training for 150–300 researchers a year by year three; fellowships sized after baseline	NRF (NACOSTI, universities, development partners)
Shortage of trainers and supervisors	Training of trainers and supervisors	Partnerships with universities and international programmes	Universities (CUE, KENET)
No current data on AI research skills	Rapid baseline survey and periodic mapping	Survey of research institutions; aggregate reporting only	NACOSTI (KNBS, CUE)
Category C: Inclusion and Careers			
Under-representation of women and county institutions	Targets set against baseline; outcome tracking	Conditions in training, fellowship and compute calls	NRF (NACOSTI, universities)

Gap	Proposed Intervention	Delivery Mechanism	Proposed Lead (Support)
No career path for research support staff	Job families and promotion credit for software and datasets	Revised schemes of service and appointment criteria	Public Service Commission (CUE, universities, research institutes)
Loss of AI-skilled researchers	Research chairs, joint appointments and diaspora fellowships	Co-funded chairs within Salaries and Remuneration Commission guidelines	NRF (SRC, industry, development partners)

7. POLICY RECOMMENDATIONS

Twelve recommendations are grouped under four themes. They build on the talent pillar of the National AI Strategy and the companion brief on AI in research, and they are designed to work alongside the National Research Computing Service proposed in the brief on research computing infrastructure. The first year should establish the baseline and the competency standard and pilot the training; larger commitments should follow from the results.

Theme A: Competencies and Qualifications

- **Adopt a three-tier AI research competency standard.** The standard should set out foundational competencies for all researchers, covering responsible use, disclosure, bias, data protection, verification of outputs and the decision not to use AI; applied competencies in data preparation, model evaluation and reproducibility; and advanced competencies in model development, GPU computing, research software engineering and data stewardship. Researchers should be able to show competence through prior learning rather than compulsory attendance.
- **Offer a shared, modular course now.** CUE, universities and KENET should develop a credit-bearing online course that universities can plug into existing postgraduate research methods units immediately, while slower programme reviews proceed.
- **Create qualifications for research support roles.** Qualification and TVET curriculum bodies should register competency-based qualifications and micro-credentials for research technicians, data stewards, data annotators, HPC technicians and research software engineers.

Theme B: Researcher Pipeline

- **Train 150 to 300 researchers a year and launch AI for Science fellowships.** The skills programme recommended in the companion brief should reach 150 to 300 researchers a year by year three through the foundational and applied tiers. A smaller fellowship stream should support master's, doctoral and postdoctoral researchers applying AI to national priorities such as health, agriculture, climate and Kenyan languages. Fellowship numbers should be set after the baseline survey, and each fellowship should come with a named supervisor and a compute allocation through the National Research Computing Service.
- **Train trainers and supervisors.** Universities and TVET institutions should train faculty and supervisors in AI methods and in supervising AI-assisted research, in line with flagship 4.2.3 of the National AI Strategy.
- **Carry out a rapid baseline survey.** A short survey of research institutions should establish AI research activity, missing skills, supervisory capacity, access to computing and data, and the staff in support roles. Repeat it periodically, in line with flagship 4.2.7 of the National AI Strategy, and publish only aggregate indicators, with purpose limitation and data minimisation as the Data Protection Act requires.
- **Build on existing research-oriented programmes.** Funding should flow through programmes that already train researchers, such as university centres and research networks, under the common competency standard, rather than creating parallel courses.

Theme C: Inclusion and Access

- **Set targets against the baseline and track outcomes.** Training, fellowship and compute calls should set participation targets for women, youth and institutions outside major urban centres, using the baseline survey and the 2019 figures as starting points. Progress should be measured at application, completion and career progression, with support for disability access, connectivity and travel.
- **Reach counties through research institutions.** Regional university campuses, national polytechnics and TVET institutions connected through KENET should deliver blended AI research training with remote access to national computing. Jitume hubs are better suited to undergraduate data work, data annotation and community field research than to postgraduate training.
- **Support girls and women into AI research.** Scholarships, mentorship and bridging courses should help girls in the senior school STEM pathway and women researchers progress into AI study and research careers.

Theme D: Careers and Retention

- **Recognise research support careers.** The Public Service Commission, CUE, universities and research institutes should create job families for research software engineers, data stewards and HPC staff, and count open-source code, curated Kenyan datasets and working research pipelines toward appointment and promotion alongside publications.
- **Retain AI-skilled researchers and their contribution.** Research funders should co-fund AI research chairs with industry and development partners, modelled on South Africa's Research Chairs Initiative and within Salaries and Remuneration Commission guidelines; allow joint appointments with industry; and offer diaspora fellowships that bring Kenyan AI researchers abroad into local supervision. Partnerships with KAISA, development partners and the Presidential Digital Talent Programme should place AI graduates in research institutions, in line with objective 4.3 of the National AI Strategy.

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