# MEMORANDUM TO SENATE OF KENYA ON THE FOREST CONSERVATION AND MANAGEMENT (AMENDMENT) BILL, 2025 (NATIONAL ASSEMBLY BILL NO. 38 OF 2025

**SUBMITTED TO: PARLIAMENT OF KENYA | THE SENATE**

**SUBMITTED BY: VIFFA CONSULT LIMITED AND AFRICAN INSTITUTE OF MSME POLICY AND RESEARCH**

**MAY 8TH 2026**

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# ABOUT VIFFA

VIFFAs mission is to support evidence based enabling policies and programs for MSMEs and Startups in collaboration with enterprise support organisations (ESOs), Business Member organisations (BMOs), Development partners, national government ministries, departments, agencies and county governments.

VIFFA is a founding member of both Association of Startup and SMEs Enablers of Kenya (ASSEK) and Association of countrywide innovation hubs (ACIH) key networks that bring together enterprise support organisations supporting startups and SMEs across Kenya.
VIFFA is part of other innovation networks such as: Virtual Assets Association of Kenya, Blockchain community in Kenya, Data and Infrastructure community of practice under the Kenya Space Agency and Sub-Saharan Africa Skills and Apprenticeship Stakeholders Network Kenya chapter among others

VIFFAs practice areas are: MSMEs, Startups, Innovation, Agriculture, Space, Creative Economy, Digital Economy, Financial Inclusion, Manufacturing, Wholesale and Retail

## Executive Summary

This policy brief provides targeted recommendations for strengthening the Forest Conservation and Management (Amendment) Bill, 2025 (Bill No. 38 of 2025) across four thematic alignment areas. The Bill, passed by the National Assembly on 29 April 2026 and currently before the Senate, introduces significant institutional reforms including the Kenya Forestry Research Institute (KFRI) and the Directorate of Forest Regulation. While the Bill represents a commendable step forward, it presents a timely opportunity to align with Kenya's rapidly evolving national frameworks in data governance, innovation ecosystems, artificial intelligence, and research commercialisation.

The four areas addressed are: (1) alignment with the Kenya Earth Observation Data Sharing Framework 2026 and the National Earth Observation Data Council (NEODC); (2) strengthening incubation provisions under Section 29H(2) through formal multi-stakeholder collaboration grounded in the Triple Helix model; (3) alignment with the Kenya National AI Strategy 2025–2030 and the emerging AI and Emerging Technologies Policy; and (4) adding a structured route-to-market and research commercialisation mechanism under Section 29I.

# Part 1: Alignment with the Kenya Earth Observation Data Sharing Framework 2026 and the National Earth Observation Data Council (NEODC)

### 1.1 Context and Rationale

On 23 March 2026, the Kenya Space Agency (KSA) formally launched the Kenya Earth Observation Data Sharing Framework 2026 and established the National Earth Observation Data Council (NEODC) through the adoption of the Malindi Declaration.

The NEODC serves as the central body responsible for coordination, oversight, and strategic direction of Earth Observation (EO) data management in Kenya. Its executive members include the Kenya National Bureau of Statistics, the Survey of Kenya, the National Land Commission, and the Directorate of Resource Surveys and Remote Sensing. Operationally, the Council's subcommittee members include the Council of Governors, ICT Authority, Kenya Meteorological Department, Konza Technopolis Development Authority, and the Office of the Data Protection Commissioner.

The Framework adopts FAIR data principles ensuring information is Findable, Accessible, Interoperable, and Reusable and explicitly links satellite intelligence to agriculture, urban planning, climate resilience, and natural resource management. Forestry is a primary beneficiary domain for EO data, encompassing forest cover monitoring, deforestation tracking, carbon stock assessment, invasive species mapping, and drought and fire risk modelling.

Yet the Forest Conservation and Management (Amendment) Bill, 2025 makes no reference to the NEODC, the EO Data Sharing Framework, or mechanisms for accessing and utilising satellite-derived data within the KFRI or the Directorate of Forest Regulation. This represents a critical gap given that many of the Institute's functions under proposed Section 29I — including forest carbon estimation (29I(2)(i)), invasive species assessment and mapping (29I(2)(g)), monitoring forest health and biodiversity status (29I(2)(h)), and the National Safeguards Information System (29C(1)(n)) — are inherently dependent on satellite-derived EO data.

### 1.2 Specific Recommendations

**Recommendation 1.1: Amend Section 29I(1) to include NEODC collaboration**

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| **REC 1.1** | **KFRI–NEODC Formal Collaboration**<br>**Provision:** Section 29I(1) – Functions of the Institute<br>**Rationale:** The NEODC framework explicitly includes forestry-relevant agencies and county governments in its subcommittee structure. Formalising this linkage avoids data duplication, unlocks centralised access to EO and geospatial data from KSA, DRSRS among other agencies and aligns KFRI with the national EO governance architecture. |

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| | Proposed insertion after Section 29I(1)(d): '(e) collaborate with the National Earth Observation Data Council and the Kenya Space Agency in accessing, utilising, and contributing forestry-relevant Earth Observation data for research, forest monitoring, and national reporting purposes, in accordance with the Kenya Earth Observation Data Sharing Framework.' |

**Recommendation 1.2: Amend Section 29C(1)(n) to anchor the National Safeguards Information System within the EO data ecosystem**

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| **REC 1.2** | **National Safeguards Information System – EO Integration**<br>**Provision:** Section 29C(1)(n) – Functions of the Secretary of Forest Regulation<br>**Rationale:** The National Safeguards Information System (NSIS) is designed to monitor and report on environmental and social standards. Integrating EO data through the NEODC governance layer ensures the NSIS is underpinned by standardised, interoperable, and credible geospatial data streams, consistent with FAIR principles and Kenya's open data commitments under the Open Government Partnership.<br>Proposed amendment: After 'establish and maintain the National Safeguards Information System', add: '; and shall ensure that the System is interoperable with Earth Observation data systems governed under the Kenya Earth Observation Data Sharing Framework, in coordination with the National Earth Observation Data Council. |

**Recommendation 1.3: Add a new provision under Section 29I(2) for EO-based forest monitoring**

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| **REC 1.3** | **EO-Based Forest Monitoring and Carbon Quantification**<br>**Provision:** Section 29I(2) – Specific Functions of the Institute<br>**Rationale:** The Framework links satellite intelligence directly to climate resilience and land management. Forest carbon quantification (Section 29I(2)(i)) and forest health monitoring (Section 29I(2)(h)) substantially dependent on satellite remote sensing data, combined with ground-based inventories, consistent with FAO and UNFCCC MRV guidance. Integrating EO mandates directly under these functions aligns the Institute with global best practice, including methodologies supported by the FAO, REDD+ Nesting requirements, and the Space Climate Observatory network (which Kenya joined in June 2025).<br>Proposed new sub-paragraph: '(w) utilise Earth Observation data, including satellite imagery from national and international sources, for forest cover mapping, deforestation monitoring, carbon stock assessment, and forest health surveillance, in partnership with the Kenya Space Agency and the National Earth Observation Data Council. |

# Part 2: Multi-Stakeholder Collaboration In Development of Incubation Hubs

## 2.1 Context and Rationale

Section 29H(2) of the Bill provides that the Kenya Forestry Research Institute 'may establish research centres, innovation and incubation hubs within the counties and agro-ecological zones in Kenya. While this is a positive provision, it frames hub establishment as a unilateral KFRI action, missing a significant opportunity to leverage existing county-level innovation infrastructure, private sector actors, and academic institutions.

The Triple Helix Model of innovation, first theorised by Etzkowitz and Leydesdorff (1995), posits that sustainable innovation ecosystems emerge from the recursive interaction of three institutional spheres: government (policy and public investment), academia (knowledge generation), and industry (commercialisation and market translation).

Kenya has a growing ecosystem of county-level innovation hubs affiliated with the Association of Countrywide Innovation Hubs (ACIH), Association of Startup and SMEs Enablers of Kenya (ASSEK) and other intermediary agencies such as Kenya National Innovation Agency, National Research Fund (NRF), Konza Technopolis among others and various county government-supported hubs represent key nodes in this ecosystem. These actors already possess incubation infrastructure, mentorship networks, and private sector linkages that KFRI's forestry-focused research mandate lacks. Excluding them from the Bill's framework would result in duplicated infrastructure investment and missed commercialisation pathways.

Internationally, the Quintuple Helix extension of the Triple Helix model which adds civil society and the natural environment as additional dimensions is particularly relevant to forestry, given the centrality of community forest associations and ecosystem stewardship in the Bill's own framework.

## 2.2 Specific Recommendations

### Recommendation 2.1: Amend Section 29H (2) to mandate collaborative hub establishment

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| **REC 2.1** | **Multi-Stakeholder Incubation Hub Framework**<br>**Provision:** Section 29H (2) – Headquarters and Operational Offices of the Institute<br>**Rationale: Global best** practice in incubation shows that hub success depends on government policy frameworks, university knowledge generation, and industry market access working in recursive interaction. Mandating collaboration prevents duplicated infrastructure and anchors KFRI hubs within existing county innovation ecosystems.<br>Proposed amendment to Section 29H(2): Replace 'The Institute may establish research centres, innovation and incubation hubs within the counties and agro-ecological zones in Kenya' with: 'The Institute shall, in consultation with county governments, relevant public sector agencies, universities and technical training institutions, private sector entities, and existing innovation hub networks including members of the Association of Countrywide Innovation Hubs, establish and co-manage research centres, innovation and incubation hubs within counties and agro-ecological zones in Kenya, guided by a multi-stakeholder collaboration framework developed by the Board of the Institute.' |

### Recommendation 2.2: Insert a new Section 29H(2A) establishing the Multi-Stakeholder Innovation Framework

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| **REC 2.2** | **Formal Multi-Stakeholder Innovation Governance**<br>**Provision:** New Section 29H(2A)<br>**Rationale:** The Kenya National AI Strategy 2025–2030 was itself developed through a multi-stakeholder working group and validated through public consultations held in county innovation hubs, demonstrating the national policy consensus around participatory innovation governance. The same approach should be institutionalised for forestry innovation.<br>Proposed new subsection: '(2A) The multi-stakeholder collaboration framework referred to in subsection (2) shall — (a) identify and map existing incubation infrastructure in each county; (b) define roles and responsibilities of government agencies, counties, universities, private sector partners, and civil society organisations; (c) establish clear intellectual property sharing and revenue allocation arrangements for co-developed forestry innovations; (d) incorporate community forest associations and forest-adjacent communities as active innovation partners consistent with the participatory forest management principles in this Act; and (e) be reviewed every three years and submitted to the Cabinet Secretary.' |

# Part 3: Alignment with the Kenya National AI Strategy 2025–2030 and the AI and Emerging Technologies Policy

## 3.1 Context and Rationale

Kenya launched its National Artificial Intelligence Strategy 2025–2030, followed by the initiation of a National AI and Emerging Technologies Policy process in late 2025, with finalisation targeted for June 2026. The AI Strategy is organised around three core pillars AI digital infrastructure, data, and AI research and innovation supported by four cross-cutting enablers: governance, talent development, investment, and ethics, equity, and inclusion. The strategy together with draft AI and Emerging technologies policies both identifies agriculture and natural resources as priority sectors for AI application.

The Bill's provisions for the KFRI establish wide-ranging research mandates including forest carbon quantification (Section 29I(2)(i)), invasive species control (Section 29I(2)(g)), forest health monitoring (Section 29I(2)(h)), forest forensic research (Section 29I(2)(o)), and germplasm and biotechnology development (Section 29I(2)(b)).

Each of these functions is now substantially enhanced and, in some cases, primarily conducted through AI and machine learning applications. Forest carbon estimation, for example, is increasingly reliant on AI-driven remote sensing analysis. Invasive species detection employs computer vision. Forest health surveillance uses anomaly detection algorithms over satellite time-series data.

However, the Bill contains no reference to AI, machine learning, data science, or digital technology in any of its provisions. This omission risks KFRI being legislatively underequipped to engage with and deploy AI tools, left outside the governance structures emerging from the AI Strategy, and unable to attract AI talent or funding streams targeting the priority sectors identified in the Strategy.

Furthermore, the draft AI and Emerging Technologies Policy is expected to serve as an overarching framework above sector-specific strategies. The Forest Conservation and Management Act, as amended, should be positioned as a sectoral instrument beneath this overarching policy architecture.

## 3.2 Specific Recommendations

### Recommendation 3.1: Amend Section 29I(2) to include AI and digital technology as research instruments

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| **REC 3.1** | **AI and Machine Learning as Explicit Research Instruments**<br>**Provision:** Section 29I(2) – Specific Functions of the Institute<br>**Rationale:** The Kenya AI Strategy and draft AI and Emerging technologies policy identify agriculture and natural resource management as priority AI application sectors. |

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| | KFRI's statutory mandate should reflect this by explicitly authorising and directing the Institute to deploy AI tools for its research functions, consistent with the Strategy's data research and innovation pillar.<br>Proposed new sub-paragraph after 29I(2)(v): '(x) develop and deploy artificial intelligence, machine learning, and data science applications to enhance forest monitoring, carbon estimation, biodiversity assessment, invasive species detection, and other forestry research functions, in alignment with the Kenya AI and Emerging Technologies Policy and Kenya National AI Strategy |

**Recommendation 3.2: Amend Section 29I(2)(e) to align the forestry database with AI data ecosystem requirements**

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| **REC 3.2** | **KFRI Database as a National AI Data Asset**<br>**Provision:** Section 29I(2)(e) – Maintenance of Scientific and Forestry Research Database<br>**Rationale:** A key challenge identified in Kenya's draft AI and Emerging Technologies policy and AI Strategy is that 'sectoral data is often fragmented, incomplete, and inconsistent, hindering interoperability and the development of robust AI models.' The KFRI database should be legislatively designated as an open, interoperable, machine-readable data asset to directly address this challenge and support the development of AI models for forestry and climate.<br>Proposed amendment: After 'maintain a database for scientific and forestry research information', add: '; ensuring that such database is machine-readable, open by default where not commercially sensitive, and interoperable with national data infrastructure in accordance with FAIR data principles and any applicable national data governance framework.' |

**Recommendation 3.3: Amend Section 14 Director qualifications to include data science competencies**

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| **REC 3.3** | **Digital and AI Literacy in Leadership Qualifications**<br>**Provision:** Section 14 – Qualifications for Director-General; Section 29T – Director-General of the Institute<br>**Rationale:** The Kenya's draft AI and Emerging Technologies policy and Kenya AI Strategy both identify talent development as a core cross-cutting enabler and calls for AI literacy at senior leadership levels across government agencies. KFRI's Director-General should be equipped to lead an AI-enabled research institution.<br>Proposed amendment to Section 29T(2)(a): Expand the list of qualifying Doctorate degree fields to include: '(ix) data science; or (x) geospatial information science.' Additionally, insert a new sub-clause under 29T(2)(b): 'demonstrable familiarity with the application of digital technologies, including remote sensing and data science, in natural resource management.' |

# Part 4: Route to Market and Research Commercialisation Mechanism under Section 29I

## 4.1 Context and Rationale

Section 29I of the Bill establishes an impressively broad mandate for the Kenya Forestry Research Institute, covering research, training, technology development, policy research, advisory services, and forensic research. However, the Bill does not include a structured mechanism for translating research outputs into market-ready products, services, or scalable solutions. The existing provisions in Section 29Z (award to inventor or innovator) and Section 75A (intellectual property vesting) address IP ownership but do not constitute a commercialisation pipeline.

The global evidence on research commercialisation is unambiguous: left without structured translation mechanisms, even high-quality research fails to achieve market adoption. Global best practice indicates that success in technology transfer depends on dedicated institutional roles (technology transfer officers), structured pipelines from proof-of-concept to market, and partnership agreements with private sector actors. Kenya's own AI Strategy explicitly identifies a route-to-market gap, calling for 'innovation and commercialisation' as central pillars. The Kenya National Innovation Agency (KeNIA), established under the Science, Technology and Innovation Act, has a mandate to support the commercialisation of innovations. KFRI should be legislatively anchored to this ecosystem.

## 4.2 Specific Recommendations

### Recommendation 4.1: Insert a new Section 29I(3) establishing a Research Commercialisation Framework

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| **REC 4.1** | **KFRI Research Commercialisation Framework**<br>**Provision:** New Section 29I(3)<br>**Rationale:** Research institutions that lack structured commercialisation pathways consistently underperform in technology transfer relative to those with dedicated translation mechanisms. Legislating a commercialisation framework creates institutional accountability and budget authority for this function, which is currently absent from the Bill.<br>Proposed new subsection: '(3) The Institute shall develop and maintain a Research Commercialisation Framework which shall — (a) identify research outputs with market or public benefit potential; (b) establish a Technology Transfer and Commercialisation Office responsible for managing intellectual property, licensing, spinout facilitation, and industry partnerships; (c) provide pathways for co-investment with private sector partners, development finance institutions, and venture capital to bridge research and market deployment; (d) facilitate the formation of spinout companies and joint ventures where commercially viable; and (e) report annually to the Board on commercialisation |

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| | outcomes including licensing income, technology deployments, and spinout activity.' |

**Recommendation 4.2: Amend Section 29I(2)(n) to strengthen the advisory services commercialisation link**

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| **REC 4.2** | **Commercial Forestry Advisory Services – Market Facilitation**<br>**Provision:** Section 29I(2)(n) – Advisory Services on Commercial Forestry and Agroforestry<br>**Rationale:** The current provision limits advisory services to 'adoption and upscaling,' but does not mandate connection to market linkages, buyer networks, or finance mechanisms.<br>Proposed amendment: After 'provide advisory services on commercial forestry and agroforestry investment to enhance adoption and upscaling', add: '; including by facilitating access to market linkages, supply chain partnerships, green finance mechanisms, payment for ecosystem services schemes, and carbon markets for smallholder farmers, community forest associations, and commercial forestry operators.' |

**Recommendation 4.3: Amend Section 29I(2)(s) to link carbon trading models to recognised carbon market mechanisms**

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| **REC 4.3** | **Forest Carbon Trading – Market and Regulatory Integration**<br>**Provision:** Section 29I(2)(s) – Forest Carbon Trading Models<br>**Rationale:** Kenya launched its National Carbon Registry in 2025 to enhance transparency and prevent double counting of carbon credits. KFRI's carbon trading model development mandate should be explicitly linked to this Registry and to Kenya's REDD+ Nesting framework (referenced in Section 21 of the Bill) to ensure that models developed by the Institute are directly deployable within Kenya's formal carbon market infrastructure.<br>Proposed amendment: After 'develop forest carbon trading models under agroforestry and commercial forestry systems', add: '; ensuring that such models are compatible with the Kenya National Carbon Registry, the REDD+ Nesting framework under the Climate Change Act, and applicable voluntary and compliance carbon market standards.' |

**Recommendation 4.4: Insert a new Section 29I(2)(y) on a Forestry Innovation Fund**

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| **REC 4.4** | **Forestry Innovation and Commercialisation Fund**<br>**Provision:** New Section 29I(2)(y)<br>**Rationale:** Dedicated innovation funding is a consistent predictor of successful research commercialisation. Kenya's own KeNIA mandate demonstrate the importance of institutional risk capital for early-stage technology translation. A ring-fenced fund under KFRI or NRF would signal investor confidence and attract co-financing from development partners, consistent with the Institute's powers to receive gifts, grants, and donations under Section 29W.<br>Proposed new sub-paragraph: '(y) establish and administer, with the approval of the Board and the Cabinet Secretary, a Forestry Innovation and Commercialisation Fund to provide seed and proof-of-concept funding for forestry-related innovations developed by the Institute, co-financed by the private sector, development partners, and climate finance mechanisms, for the purpose of accelerating the commercialisation and deployment of forestry technologies in Kenya.' |

## Cross-Cutting Recommendation: Amend Section 29J (Board Composition) to Include Technology and Data Expertise

The current Board composition under Section 29J does not include expertise in data science, AI, Earth observation, or technology commercialisation. Given the Institute's expanded mandate across these domains, it is recommended that Section 29J(g) be amended to add: '(iv) one person with expertise in digital technologies, artificial intelligence, or Earth observation data applied to natural resource management, nominated by a recognised technology or data science professional body.'

This aligns with the governance pillar of the Kenya AI Strategy, which calls for AI-literate institutional leadership, and with the NEODC's own multi-sector governance model.

## Summary of Recommendations

| S.No | Theme | Provision | Proposed Action | Key Reference |
|---|---|---|---|---|
| **1.1** | EO Data | S.29I(1) | KFRI–NEODC collaboration clause | Kenya EO Data Sharing Framework 2026 |
| **1.2** | EO Data | S.29C(1)(n) | NSIS–EO interoperability | NEODC / Malindi Declaration 2026 |
| **1.3** | EO Data | S.29I(2)(w) | EO-based forest monitoring sub-paragraph | KSA–SCO Charter 2025 |
| **2.1** | Innovation Hubs | S.29H(2) | Multi-stakeholder hub establishment mandate | Triple Helix Model; ACIH |
| **2.2** | Innovation Hubs | S.29H(2A) | Multi-stakeholder innovation governance framework | Etzkowitz & Leydesdorff; ITATU project |
| **3.1** | AI Strategy | S.29I(2)(x) | AI/ML as explicit research instruments | Kenya AI Strategy 2025–2030 |
| **3.2** | AI Strategy | S.29I(2)(e) | KFRI database as interoperable AI data asset | Kenya AI Strategy; FAIR principles |
| **3.3** | AI Strategy | S.29T(2) | Data science in Director-General qualifications | Kenya AI Strategy – Talent pillar |
| **4.1** | Commercialisation | S.29I(3) new | Research Commercialisation Framework | South Africa TIA; AUTM model |
| **4.2** | Commercialisation | S.29I(2)(n) | Market linkages in advisory services | CIFOR-ICRAF Resilient Landscapes |
| **4.3** | Commercialisation | S.29I(2)(s) | Carbon trading–Registry integration | Kenya National Carbon Registry 2025 |
| **4.4** | Commercialisation | S.29I(2)(y) new | Forestry Innovation and Commercialisation Fund | KeNIA; Kenya AI Strategy |
| **5.0** | Governance | S.29J(g)(iv) | Technology/AI expertise on KFRI Board | AI Strategy – Governance pillar |