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DAY 2, SESSION -1

Assessing the Environmental Footprint of ICTs and AI in Africa

May 20th, 2026.

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Introduction

Digital Accelerators

Africa's digital transformation is accelerating through:

1. Expansion of broadband networks,
2. Growth of data centres,
3. Increased mobile connectivity,
4. AI deployment,
5. Cloud and edge computing infrastructure.

Consequences

1. Rising energy consumption,
2. Increasing greenhouse gas emissions,
3. E-waste generation,
4. Pressure on national energy systems,
5. Sustainability and accountability concerns.

From a regulatory perspective,

- Environmental sustainability can no longer remain voluntary. It must progressively become part of sector governance, compliance monitoring, and operational accountability.

The key message:

“What cannot be measured cannot be regulated, and what cannot be regulated cannot be sustainably managed.”

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Integrating Environmental Footprint Reporting into Regulatory Compliance Frameworks;

Key consideration;

- Environmental reporting should not operate as a standalone environmental exercise.
- It should be integrated into existing telecom compliance and reporting obligations.

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Proposed Regulatory Integration Areas

Regulators can incorporate sustainability metrics into:

1. Licensing conditions,
2. Annual compliance returns,
3. Quality of service obligations,
4. Infrastructure sharing frameworks,
5. Data centre authorization requirements,
6. ESG and sustainability disclosures.

Possible Reporting Indicators

Operators may be required to submit:

1. Total electricity consumption,
2. Renewable energy utilization,
3. Fuel consumption for backup power,
4. Carbon emissions estimates,
5. Network energy efficiency metrics,
6. E-waste management records,
7. Equipment lifecycle information.

Regulatory Principle

Use a **phased approach**:

1. Voluntary reporting,
2. Standardized templates,
3. Mandatory disclosures,
4. Independent verification and audits.

African Context Consideration

The framework must consider:

a) Different operator sizes,

b) Uneven technical capacity,

c) Energy access disparities,

d) Limited environmental measurement infrastructure.

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Practical Lessons from Kenya's Regulatory Experience

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Existing Compliance Experience

There already exist mature regulatory practices involving:

1. Technical audits,
2. Monitoring Spectrum utilization and compliance,
3. QoS reporting,
4. Infrastructure reporting,
5. Consumer protection obligations,
6. Cybersecurity compliance assessments.

These experiences provide a strong institutional foundation for environmental reporting frameworks.

Practical Lessons

a) Standardized Reporting Templates Matter

❖ Data inconsistency becomes a major challenge without standardized methodologies.

b) Digital Compliance Portals Improve Accountability

❖ Automated submissions:

1. Improve traceability,
2. Reduce manipulation,
3. Enhance data analytics capabilities.

Practical Lessons/2

1. ….

c) Multi-Agency Collaboration is Essential

Environmental footprint governance requires coordination between:

1. ICT regulators,
2. Environmental authorities,
3. Energy regulators,
4. Standards bodies,
5. National statistics agencies.

d) Capacity Building is Critical

Many operators may lack:

1. Carbon accounting expertise,
2. ESG reporting systems,

Practical Lessons/3

1. ….

d) Capacity Building is Critical

Many operators may lack:

1. Carbon accounting expertise,
2. ESG reporting systems,
3. Environmental data analytics capabilities.

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Verifying Accuracy and Reliability of Environmental Data;

Major Challenge

Self-reported data may suffer from:

- Inconsistency,
- Under-reporting,
- Lack of standard methodologies,
- Weak measurement tools

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Recommended Approaches

a) Independent Audits

❖ Periodic third-party verification should be encouraged.

b) Cross-Validation of Energy Data

Compare:

1. Utility energy records,
2. Generator fuel logs,
3. Data centre energy usage,
4. Network operational statistics.

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Recommended Approaches

c) Adoption of International Standards

Regulators should encourage alignment with:

1. ITU environmental assessment methodologies,
2. ISO 14064 (Greenhouse Gas Accounting),
3. GHG Protocol standards,
4. Science Based Targets Initiative (SBTi).

Recommended Approaches

d) Digital Monitoring Tools

AI and automation can support:

1. Real-time monitoring,
2. Anomaly detection,
3. Carbon accounting,
4. Predictive sustainability analytics.

Role of Compliance Tools, Audits and Enforcement Mechanisms

Compliance Mechanisms Should Encourage Improvement and Not Only Punishment

A balanced framework should include:

1. Incentives,
2. Transparency,
3. Accountability,
4. Corrective measures.

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Key Regulatory Tools

a) Environmental Compliance Audits

1. Periodic sustainability audits for:
2. Data centres,
3. Telecom operators,
4. Large digital infrastructure providers.

b) Mandatory Sustainability Reporting

❖ Annual environmental disclosures aligned to national reporting standards.

c) Benchmarking and Transparency

❖ Publishing sector-wide sustainability indicators can encourage competition toward greener operations.

Key Regulatory Tools

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d) Incentive-Based Regulation

1. Possible incentives include:
2. Reduced licensing fees for green infrastructure,
3. Recognition programs,
4. Fast-track approvals for energy-efficient systems.

e) Enforcement Measures

For persistent non-compliance:

1. Corrective action notices,
2. Administrative penalties,
3. Conditional license renewals.

6. Strategic Recommendations for Africa

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Africa Needs:

1. Harmonized Regional Frameworks

Develop continent-wide sustainability reporting guidelines through:

1. International Telecommunication Union,
2. African Telecommunications Union,
3. Regional economic communities.

2. Standardized Metrics

Common methodologies for:

1. ICT energy measurement,
2. AI carbon footprint assessment,
3. Data centre efficiency.

Africa Needs (2)

3. Capacity Building

Support regulators and operators in:

1. Carbon accounting,
2. ESG reporting,
3. Sustainability governance.

4. Green Digital Transformation Policies

Ensure Africa's digital expansion supports:

1. Climate resilience,
2. Circular economy principles,
3. Sustainable infrastructure investment.

Conclusion

Africa has an opportunity to build a digitally connected future that is also environmentally sustainable.

Regulators must evolve from traditional telecom oversight toward:

Sustainability governance, Environmental accountability and Data-driven compliance systems.

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In Conclusion

The future of digital transformation in Africa should not only be:

1. Connected,
2. Intelligent,
3. Inclusive,

but also:

1. Sustainable,
2. Transparent,
3. Climate responsible.

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