Emerging Telecommunications /ICT Technologies and Policies

for Climate Action and E-Waste Management Botswana Perspective

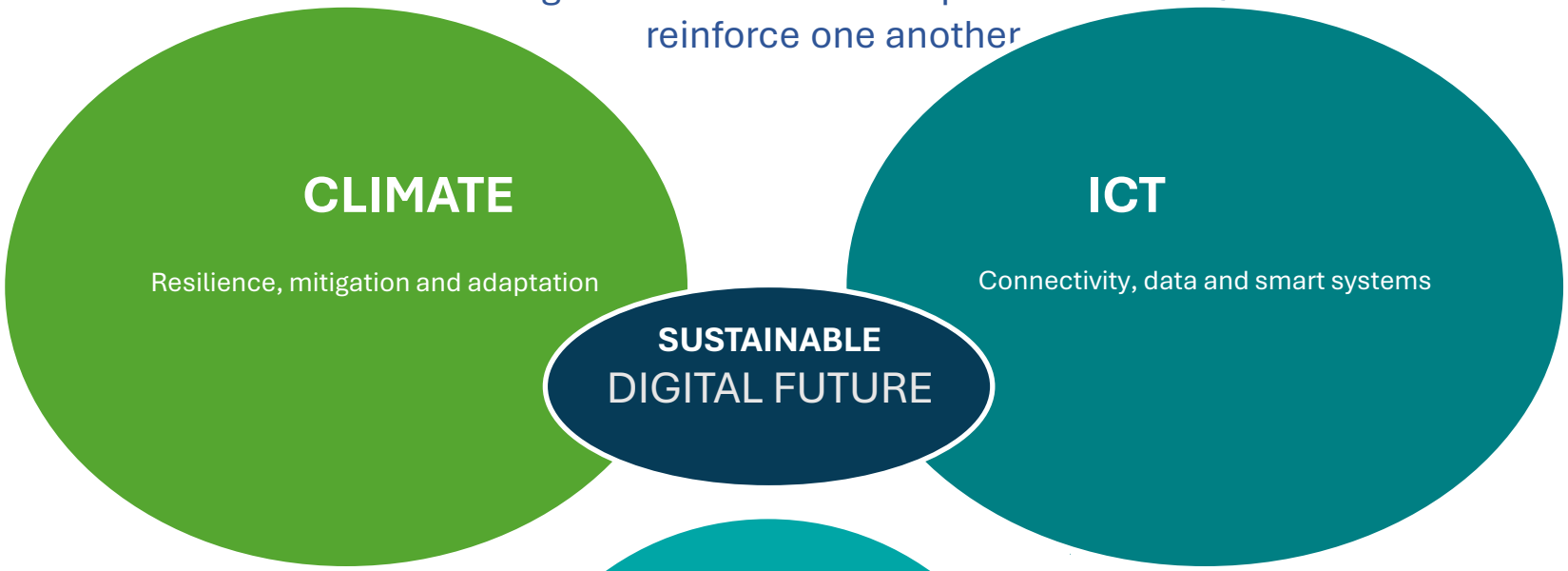
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12October 2026

BOCRA

THE ROLE OF TELECOMMUNICATIONS/ ICTs IN DVELOPING POLICIES AND REGULATORY APPROACHED FOR GREEN ICT AND EWASTE CIRCULARITY

Sustainable digital transformation requires all three systems to reinforce one another



ICT enables climate intelligence and efficient services

Circularity reduces ICT's material, energy and e-waste footprint

Climate goals shape how digital infrastructure is powered and measured

The opportunity and the responsibility

Digitalisation and climate resilience must be planned together.

1

CLIMATE PRESSURES

Drought, water stress, heat and rainfall variability affect agriculture, ecosystems and livelihoods.

2

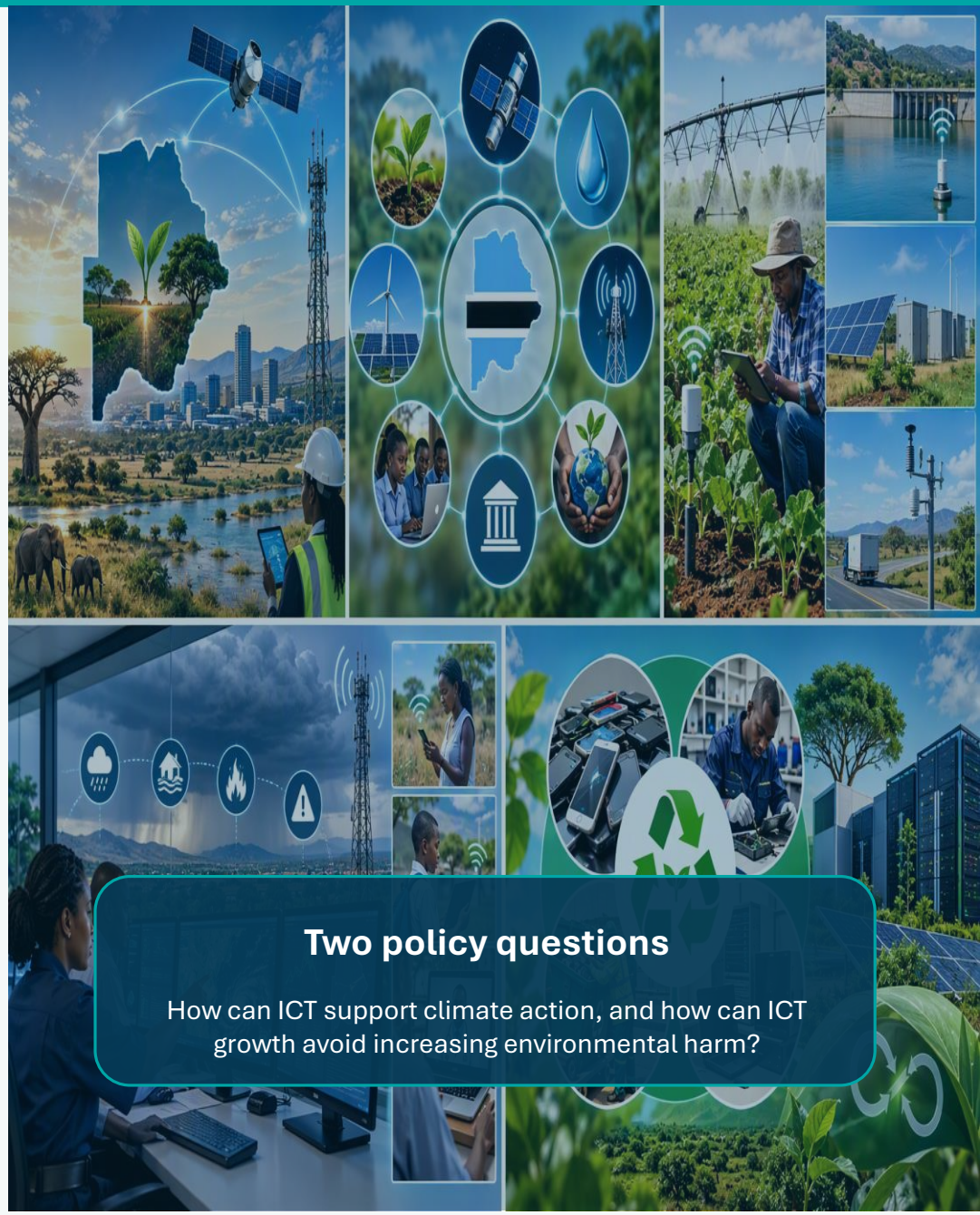
DIGITAL OPPORTUNITY

Connectivity, platforms, smart systems and analytics can improve monitoring, forecasting and service delivery.

3

ENVIRONMENTAL PRESSURE

Networks, devices and data infrastructure consume energy and materials and create end-of-life risks.



Two policy questions

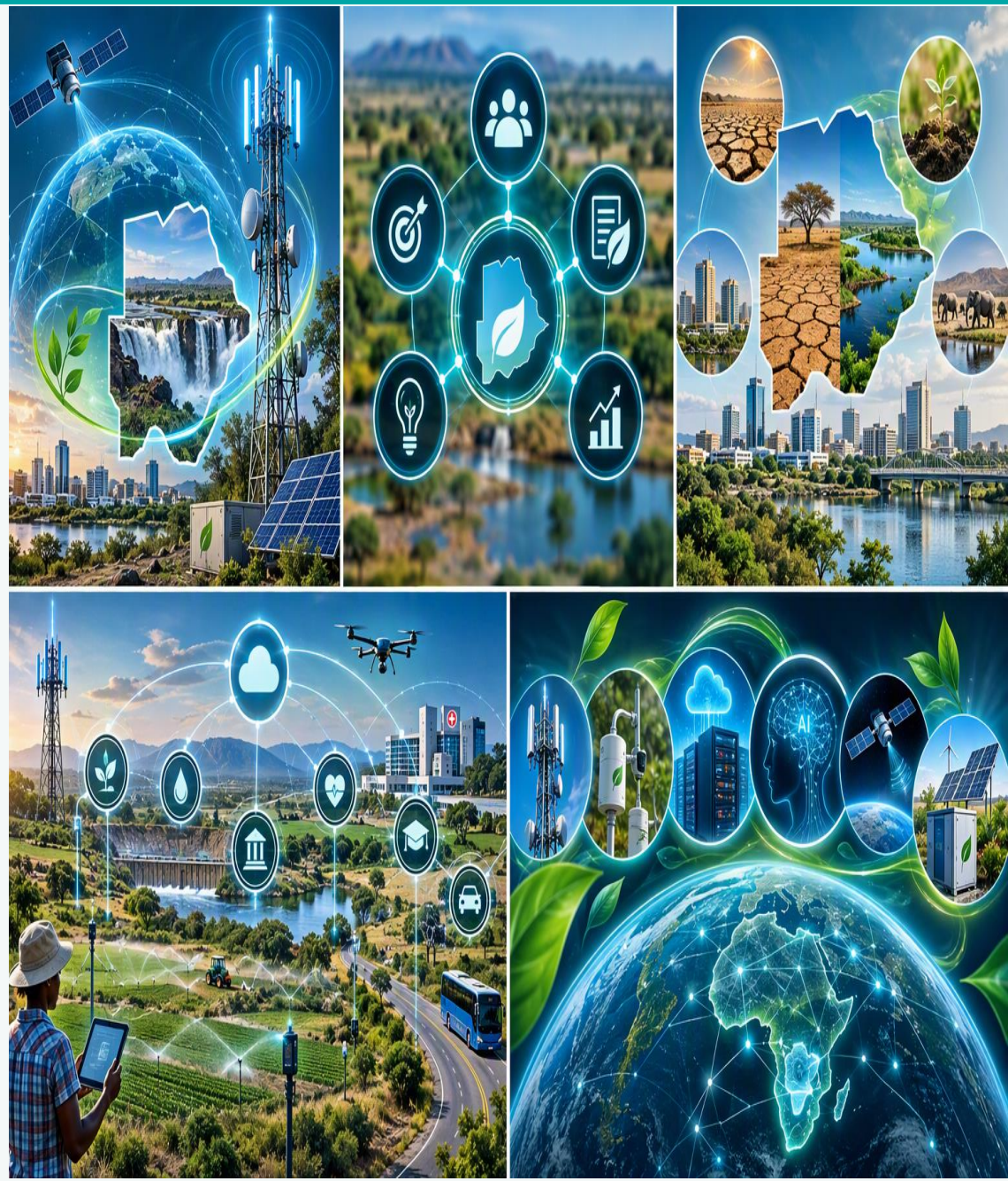
How can ICT support climate action, and how can ICT growth avoid increasing environmental harm?

Technology portfolio for climate action

Combine technologies according to geography, service need, affordability and risk.

5G & advanced networks	Low-latency connectivity for sensors, industry and public services.
IoT & sensor networks	Real-time monitoring of water, energy, agriculture, weather and infrastructure.
Cloud, edge & AI	Shared processing, forecasting, optimisation and decision support.
Satellite connectivity	Remote-area coverage and continuity during emergencies.
Renewable-powered telecoms	Reduced reliance on diesel or carbon-intensive electricity.

Design condition: environment + cybersecurity + data protection + e-waste from day one



From e-waste risk to circular ICT: Policy considerations

Circularity starts before recycling, with procurement and asset management.

1. **BUY BETTER**

   Durable, repairable, efficient and supported equipment

2. **EXTEND LIFE**

   Maintain, repair, upgrade, reuse and refurbish

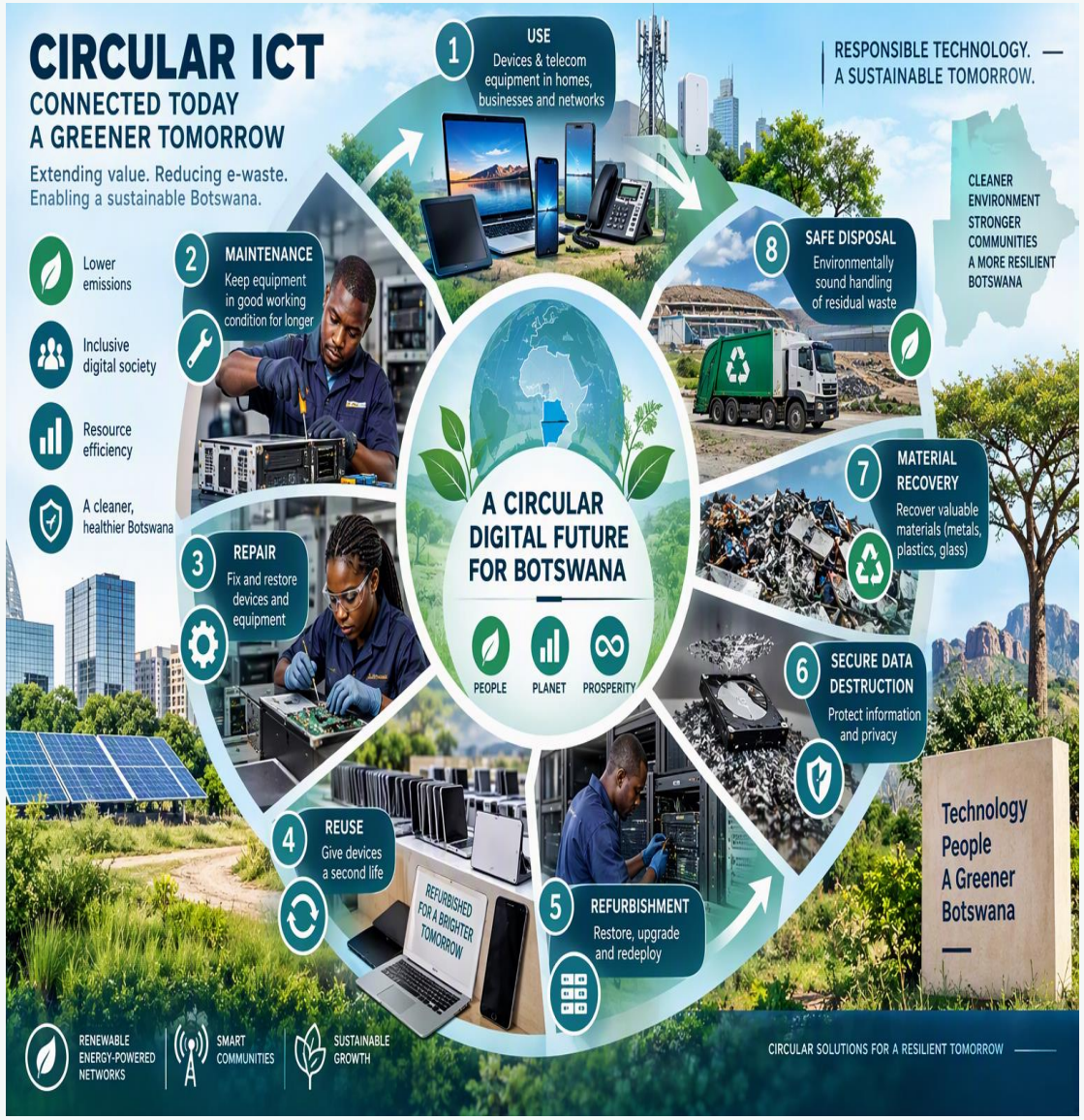
3. **HANDLE SECURELY**

   Track assets and destroy data before transfer

4. **RECOVER VALUE**

   Use authorised handlers for recovery and safe disposal

Governance safeguards: affordability, accessibility, worker safety, privacy, cybersecurity and responsible AI.



BOCRA mandate and the National E-waste Management Strategy

Connecting statutory communications regulation with national circular-economy implementation.

CRA ACT, 2012

BOCRA regulates Botswana's communications sector

1	**Regulate**	Telecommunications, Internet and ICTs, radio communications, broadcasting and postal services
2	**Enable**	Efficient, effective and affordable services, universal access and sector performance
3	**Protect**	Consumer interests through quality, choice, value, compliance monitoring and fair regulation
4	**Authorise**	Process licences, permits and other approvals, including telecommunications equipment type approval

E-WASTE STRATEGY 2026

BOCRA's contribution to implementation

1	**Sector bridge**	Link communications-sector oversight with environmental authorities and the national coordination framework
2	**Standards and compliance**	Support responsible ICT equipment, lifecycle practices and compliance by regulated entities
3	**Data and awareness**	Promote e-waste information, stakeholder education, asset tracking and evidence-based interventions
4	**Circular digital economy**	Facilitate repair, reuse, refurbishment, collection and environmentally sound treatment partnerships

BOCRA's role is collaborative: applying its communications mandate while supporting the environmental lead authority and multi-stakeholder delivery.

A phased implementation roadmap

Move from validated foundations to scaled systems and embedded accountability.

0–2 YEARS

FOUNDATION

- Validate the policy and legal map
- Establish ICT, energy and e-waste baselines
- Pilot circular procurement and climate-ICT use cases

2–5 YEARS

SCALE

- Expand monitoring and early-warning platforms
- Build collection, refurbishment and recovery pathways
- Introduce measurable project requirements and skills

5+ YEARS

INTEGRATE

- Embed lifecycle criteria in infrastructure planning
- Strengthen circular markets and regional collaboration
- Report climate, service and waste outcomes transparently

PLAN TOGETHER • BUY AND USE RESPONSIBLY • MEASURE AND ACCOUNT

Q &A

Joyce W Isa-Molwane

2 October 2026