



Africa-BB-Maps National Event

National broadband mapping systems in Botswana

12—14 August 2025
Gaborone, Botswana

africabbmaps.itu.int/bw-kickoff/



EXECUTIVE SUMMARY/ EVENT OUTCOME REPORT AUGUST 2025

ACKNOWLEDGMENT

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The event benefited from the rich perspectives of representatives from mobile network operators, internet service providers, public sector agencies, utilities, and development partners, including Ministry of Communication and Innovation representatives from the Department of Digital Communications, Infrastructure and Business (DCIB), Smart Botswana through the Department of Educational Technology, MTN Business, Orange Botswana, Mascom Wireless, Statistics Botswana, Paratus Botswana, Botswana Power Corporation, Liquid Intelligent Technologies, Botswana Fibre Networks (BoFiNet), Botswana Post, Department of Mapping and Surveys, Nashua, Botswana Telecommunications Corporation Limited (BTCL), UNICEF, and Botswana Railways. Their insights, together with the leadership of BOCRA and the support of the ITU, created a platform for meaningful dialogue and co-creation. Special recognition is also given to the dedication of the Slovenian experts whose experiences and technical knowledge provided valuable guidance to Botswana's journey towards building a sustainable broadband mapping system. BOCRA will also like to recognise the support of the ITU/EU partnership in sponsoring the Africa BB Maps project.

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EXECUTIVE SUMMARY

The Botswana National Africa-BB-Maps event, held from 12 to 14 August 2025 in Gaborone, marked a significant step in the country's digital transformation agenda. Convened under the joint leadership of BOCRA, ITU, and the European Union, the event brought together government representatives, regulators, mobile network operators, internet service providers, utilities, international experts, and development partners.

The event underscored broadband mapping as a human-centred initiative, not only a technical task, with the purpose of bridging connectivity gaps, empowering end users, and enabling evidence-based policies for socio-economic development. High-level interventions set the tone, stressing collaboration and stakeholder commitment, while technical and policy sessions explored architecture, governance, and lessons from international case studies such as Slovenia.

Consensus was reached on institutional roles: BOCRA was confirmed as the custodian and operational lead, responsible for hosting and maintaining the geoportal, while infrastructure owners including operators and utilities were identified as the principal data providers. Data stewardship was defined as a collective responsibility to ensure accuracy and timely updates.

Technically, participants recommended the adoption of enterprise ArcGIS as the preferred mapping system for Botswana, complemented by open-source tools where feasible. Standardised templates and priority datasets (fibre routes, tower locations, wireless broadband, connected public facilities, QoS and population coverage) were agreed, alongside validation mechanisms such as field testing, crowdsourcing, and quarterly data publication through a public portal.

On governance, it was proposed that a Project Steering Committee be established at Permanent Secretary level, supported by a technical working group. A national data-sharing framework and data classification policy were recommended, with interim use of Memorandum of Understanding (MoUs) to formalise cooperation. Policy discussions further called for recognising broadband as a utility, defining critical

infrastructure in national law, and leveraging the Digital Services Bill to strengthen data sharing.

The roadmap adopted spans 2025 to 2028: foundation and readiness (2025), system development and capacity building (2026), operationalisation and policy alignment (2027), and sustainability with regional leadership (2028).

The event concluded with strong ownership expressed by all stakeholders, a clear set of recommendations, and a reaffirmation of ITU and EU support. Botswana is now positioned to deliver a robust, transparent, and sustainable broadband mapping system that will guide investment, close connectivity gaps, and advance national digital inclusion.

1.0 INTRODUCTION AND BACKGROUND

The Africa-BB-Maps project is a joint EU–ITU initiative designed to help eleven African countries, including Botswana, establish or strengthen broadband mapping systems. These systems are expected to provide validated, publicly accessible data that can guide infrastructure investments, support evidence-based regulation, and promote transparency across the ICT ecosystem.

Botswana’s national event was convened at a time when the country was reviewing its digital policies and strategies, making the discussions particularly relevant. The programme built on lessons from the regional workshop held in Abidjan, Cote d’Ivoire in March 2025.

The event spanned three days from 12 to 14 August 2025, beginning with high-level interventions and keynote addresses that set the vision for broadband mapping as a human-centred tool for digital transformation. This was followed by technical and policy deep-dives covering system architecture, data standards, governance frameworks, and lessons from international case studies, notably Slovenia. The agenda also included co-creation working groups and stakeholder mapping exercises, which helped to define national roles, responsibilities, and implementation priorities.

This report captures the main proceedings, outcomes, and recommendations from the three days. It highlights the important messages shared by stakeholders, summarises the key technical and policy discussions, and presents the agreed national roadmap and timelines for the development of Botswana’s broadband mapping system.

2.0 OPENING CEREMONY

TITLE	OPENING CEREMONY
OBJECTIVE	To officially open the Africa-BB-Maps National Event in Gaborone, Botswana, set the tone with high-level remarks, and emphasize the collaborative spirit and significance of broadband mapping for Botswana’s digital transformation.
KEY PARTICIPANTS	Master of Ceremonies: Mr Aaron Nyelesi Speakers:

	• Mr Martin Mokgware (BOCRA Chief Executive) • Dr Cosmas Zavazava, Director, ITU Telecommunication Development • Ms Laura Virgili, Program Officer EU Delegation Botswana, European Union
TITLE	Keynote: The Role of Broadband Mapping in National Digital Development Plans
KEY PARTICIPANTS	Master of Ceremonies: Mr Aaron Nyelesi Speaker: • Ms Halima Letamo, ITU Area Representative for Southern Africa, ITU

The opening session was marked by strong messages of commitment from BOCRA, ITU, and the European Union.

Mr Martin Mokgware, Chief Executive of BOCRA, formally opened the proceedings by underlining the critical role of broadband mapping in moving from broad national statistics to detailed, interoperable, and transparent systems. He emphasised the need for collaboration across government, private sector, and international partners to close connectivity gaps and accelerate digital inclusion.

Dr Cosmas Zavazava, Director of ITU's Telecommunication Development Bureau, addressed participants via video message. He thanked BOCRA for co-organising the event and the European Union for its continued support. He stressed that while mapping might sound technical, the intended outcomes were ultimately human-centric. The goal, he explained, was to identify where infrastructure gaps existed and how best to address them, using accurate data to make informed decisions.

The keynote address was delivered by Ms Halima Letamo, ITU's Area Representative for Southern Africa. She introduced the ITU as the United Nations' oldest specialised agency and acknowledged the leadership of the project team. She stressed the importance of validated data in guiding policy and government interventions and noted that Botswana had been selected among the first four SADC countries for implementation, with Slovenia matched as its technical partner. Her remarks highlighted that the success of the initiative would depend heavily on stakeholder commitment and collaboration.

3.0 PROCEEDINGS OF THE EVENT

3.1 SESSION 1a: Context and Current State – Intervention by BOCRA

TITLE	Context and Current State – Intervention by BOCRA
OBJECTIVE	To establish a shared understanding of the national broadband mapping landscape, institutional maturity, and stakeholders' role and responsibilities, contribution, and expectations
KEY PARTICIPANTS	Moderator: Ms Maitseo Ratladi, Botswana Communication Regulatory Authority Panellists: • Mr Bathopi Luke, Botswana Communication Regulatory Authority • Mr Tebogo Ketshabile, Botswana Communication Regulatory Authority

This session, moderated by Ms Maitseo Ratladi, examined Botswana's current telecommunications landscape and the regulatory priorities for broadband mapping. Mr Bathopi Luke (Director, Technical Services) reported that Botswana had achieved broad deployment of 2G, 3G and 4G, with 5G being implemented. He added that mobile broadband performance was strong overall, notwithstanding persistent gaps. The country also relied on fixed wireless access, fibre-to-the-home, extensive backbone fibre for backhaul, and satellite solutions, which together placed Botswana on a solid infrastructural footing.

Mr Tebogo Ketshabile (Deputy Director, Networks and QoS) noted continuing expansion of fibre in metropolitan areas to homes and offices, indicating sustained growth in the ICT ecosystem. He argued that a national broadband map would create a single source of truth, consolidate currently fragmented datasets, and reduce reliance on resource-intensive field assessments. Both speakers stressed that data must be provided in GIS-readable formats rather than static PDFs, and that transparency would allow consumers to verify advertised coverage (e.g., 5G availability) and hold providers to account.

On sustainability, the panellists underscored an inclusive, stakeholder-driven approach that defines the minimum datasets required by users,

with potential to incorporate related layers (e.g., roads, broadcasting, satellite). In the discussion, Mr Alfred Kenosi (Orange Botswana) proposed integrating enabling infrastructure such as roads and power to turn the map into a one-stop shop for investors. Questions on legal authority were addressed with reference to the CRA Act 2012, which empowers BOCRA to collect and publish information. The Ministry representative Mr. Botsoma Botsoma indicated their support, and BOCRA reported that Operators were already sharing elements of data which was presented through BOCRA annual reports and the QoS portal. Closing remarks called for sector-wide participation, with emphasis on using the map to guide targeted investments that close identified gaps for end users.

3.2 SESSION 1b: Context and Current State – Intervention by Governmental & Public sector

TITLE	Context and Current State – Intervention by Governmental & Public sector
OBJECTIVE	To understand their relationship with BOCRA and how they contribute to the broadband mapping work. The kind of data they collect and how.
KEY PARTICIPANTS	Moderator: Mr Edward Mmusi, Botswana Communication Regulatory Authority Panellists: • Mr Botsoma Botsoma, Department of Digital Communications, Infrastructure and Business (DCIB) • Mr David Moatswi, UNICEF • Ms Mpho Mosimaneotsile, Department of Educational Technology (Smart Botswana) • Mr Douglas Motsumi, Department of Mapping and Surveys • Mr Sapelo Khoza, Statistics Botswana

Moderated by Mr Edward Mmusi, this session gathered inputs from the Department of Educational Technology, the Department of Communication, Infrastructure and Business (DCIB), Statistics Botswana, UNICEF, and the Department of Mapping and Surveys and Statistics Botswana. Ms Mpho Mosimaneotsile (Department of Educational Technology) confirmed that all government schools had been mapped under the GIGA–UNICEF initiative, with approximately 700 connected to

broadband. She highlighted real-time quality monitoring using GIGA meters to track speed, latency and overall performance.

Mr Botsoma Botsoma (DCIB) described the project as long overdue and aligned with the national broadband strategy, noting that the map would enable evidence-based investment decisions. Mr David Moatswi (UNICEF) explained that, under the “Reimagine Education” initiative, an MoU with Government and the Ministry responsible had been signed; globally, GIGA targeted universal school connectivity by 2030, beginning with mapping to expose gaps and mobilise financing to close them. The panel expressed willingness to participate and emphasised accuracy through on-site verification and automated testing.

A second panel segment featured Mr Douglas Motsumi (Department of Mapping and Surveys), who offered base geospatial data, standards and advisory support, and Mr Sapelo Phoza (Statistics Botswana), who reported that the 2022 census geo-coded ICT assets and measured internet access. Both institutions viewed the broadband map as a reference layer that would guide where to deploy infrastructure. In audience exchanges, questions focused on forward-looking updates and enforcement mechanisms; UNICEF pointed to automated metering and a quarterly steering committee process for accountability.

3.3 SESSION 1c: Context and Current State – Intervention by the Private Sector

TITLE	Context and Current State – Intervention by the Private sector
OBJECTIVE	To understand their relationship with BOCRA and how they contribute to the broadband mapping work. The kind of data they collect and how.
KEY PARTICIPANTS	Moderator: Mr. Dana Jon Kamason, Project Manager, Africa-BB-Maps, ITU Panellists: • Mr Kealeboga Mpete, Mascom Wireless • Botswana Telecommunications Corporation Limited (BTCL) • Mr Alfred Kenosi, Orange Botswana • Botswana Fibre Network (BofiNet) • Botswana Power Corporation (BPC)

	• Botswana Railways (BR) • Paratus
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Chaired by Mr Dana Jon Kamason (ITU), the private-sector session explored how Operators and utilities could accelerate data sharing and coordinated deployment. Mr Kealeboga Mpete (Mascom) reported approximately 1,300 km of fibre deployed for backhaul and customer services by Mascom, with active collaboration with BOCRA on Universal Access and Service Fund projects along selected highways where they provided voice and mobile broadband network to close the connectivity gaps and in the southern district, including broadband to villages, schools, clinics and dikgotla. Mascom indicated that they provide BOCRA with regular performance updates on their network. Mr Alfred Kenosi (Orange) emphasised the value of layered mapping combining broadband information with supporting infrastructure to improve planning and called for integration across datasets. Mr Kelentse (BTCL) highlighted interference challenges with other utilities during deployment and argued that a shared map would minimise conflicts, strengthen business cases, improve Return of Investment (ROI) analysis, and give visibility into passive assets such as fibre; terrain context would further inform planning.

On a collaborative framework, Mascom referenced an open-door policy; Orange proposed API-based data exchange and inclusion of weather services to support QoS operations and field dispatch; BTCL stressed standardisation of formats, clarity on minimum data requirements, and continuous updates to preserve integrity. In audience dialogue, Mr Tebogo Ketshabile asked about priorities for the system; Orange pointed to utilities (water, power, telecom) and town/regional planning layers for long-term budgeting. MTN participant urged caution on sensitive infrastructure disclosure.

Additional inputs came from infrastructure owners and utilities. Mr Gordon Akanyang (BoFiNet) introduced a government-owned wholesale network with about 13,500 km of fibre and a GIS platform shared with ISPs. Botswana Railways described its microwave-based private network and infrastructure sharing arrangements; BPC outlined contract clauses ensuring data submission by contractors. Regarding data governance, BoFiNet required as-built submissions in standard formats before payment and uploaded them immediately, with supervisors and project managers validating accuracy. Botswana Railways stored GPS

coordinates in an excel file and welcomed help to enhance data validation; BPC used templates and dictionaries to standardise contributions. A discussion followed on leadership: while BOCRA was affirmed as the authority to collect licence-holder data, the project was characterised as a national initiative leveraging expertise across institutions. Final inputs from Paratus, MTN and Liquid emphasised trust, co-created data formats, and early definition of API interfaces to ensure meaningful, machine-readable exchange.

3.4 SESSION 2: Africa-BB-Maps in Botswana: Objectives, Technical Framework, Timeline

TITLE	Africa-BB-Maps in Botswana: Objectives, Technical Framework, Timeline
OBJECTIVE	To elaborate the Africa-BB-Maps project (outcome report and maturity matrix and deployment strategy for Botswana)
KEY PARTICIPANTS	Moderator & presentation: Mr. Dana Jon Kamason, Project Manager, Africa-BB-Maps, ITU Speaker: • Mr. Elind Sulmina, Project Officer, Africa-BB-Maps, ITU Paratus

This session was introduced by Mr Dana Jon Kamason, Project Manager for Africa-BB-Maps at ITU, who outlined the project’s purpose and approach for Botswana. He said the initiative aimed to establish and operationalise a sustainable broadband mapping system capable of producing validated and publicly accessible data. The system will enable evidence-based policymaking, guide targeted infrastructure deployment, and improve transparency across the ICT sector.

Mr Kamason said the project framework was structured around three strategic pillars: policy and regulation, technology, and capacity building. Emphasis was placed on integrating people, processes, and technology to ensure long-term sustainability. A phased roadmap was presented: 2025 for foundation and readiness, 2026 for system development and capacity building under a “learning by doing” approach, 2027 for operationalisation and policy alignment, and 2028 for consolidation, sustainability, and regional leadership.

It was further noted that a baseline assessment and needs analysis had already been carried out for Botswana, informed by a national questionnaire completed by BOCRA and insights gained from the regional event in Abidjan. Expected outcomes included stronger alignment with regional best practice, embedding mapping into national ICT strategies, and reinforcing the role of broadband mapping in digital transformation.

3.5 Strategic Technical Priorities for Broadband Infrastructure Mapping

TITLE	Opening remarks: Strategic Technical Priorities for Broadband Infrastructure Mapping
OBJECTIVE	To elaborate on what the system entails and requirements.
KEY PARTICIPANTS	• Mr Tebogo Ketshabile, Botswana Communication Regulatory Authority

In his remarks, Mr Tebogo Ketshabile of BOCRA spoke to the strategic priorities underpinning broadband infrastructure mapping, structuring his intervention around the who, what, how, and why of the project. He explained that the system would serve three key user groups: the private sector, the public, and government institutions.

He outlined that the map should capture information on transmission networks (fibre and radio), access coverage, connected public facilities such as schools and dikgotla, quality of service data, and covered population figures. He stressed the importance of making this information public, to empower innovators and ensure consumers are better informed.

On delivery, he highlighted that success would depend on strong public–private collaboration, standardisation of mapping protocols, an enabling regulatory and legal framework, and focused capacity building. He concluded by reminding participants that the project’s ultimate aim was to identify and close connectivity gaps, empower end users as mandated under BOCRA’s regulatory responsibilities, and generate wider socio-economic impact.

3.6 SESSION 3: Case Studies from ITU: What Lessons Apply?

TITLE	Case Studies from ITU: What Lessons Apply?
OBJECTIVE	To elaborate get general opinion of ITU experts on BOCRA and their needs. To hear Policy and GIS experience from Slovenia and lessons that can be drawn from Slovenia.
KEY PARTICIPANTS	Moderator: Mr. Elind Sulmina, Project Officer, ITU Africa-BB-Maps Speakers: • Mr Marko Simoncic, ITU Speaker, Slovenia • Mr Primoz Ursic, ITU Speaker, Slovenia • Mr Gregor Baliz, ITU Speaker, Slovenia

This session was led by Mr Elind Sulmina, Project Officer for Africa-BB-Maps at ITU, who introduced the Slovenian team presenting their national experience. Mr Primoz Ursic, Mr Gregor Baliz and Mr Marko Simoncic explained that Slovenia's success had been driven by strong state involvement, a clear legal mandate, and robust regulatory oversight. Slovenian operators were obliged to provide data, refreshed every three months, and the regulator carried out validation and supervision to ensure accuracy and timeliness. Significant penalties were in place for non-compliance, proportionate to the size of the operator.

The Slovenian team acknowledged mixed reactions from Operators at the outset. While new entrants saw transparency as a competitive advantage, larger incumbents were more reluctant, citing business sensitivity. Over time, however, all operators recognised the benefits of visibility and participation. Sensitive data on critical infrastructure was handled under a separate, secure policy framework.

On the technical side, Slovenia had adopted open-source tools where feasible, noting their cost efficiency and quality, though maintenance requirements were acknowledged. Mr Baliz demonstrated the national geoportal AKOS, which ran primarily on Linux servers and provided functionalities such as daily data refresh, municipal-level analysis, filtering by technology or operator, and coverage mapping using ATDI software. The system also supported cross-sector utility mapping.

The Slovenian case underscored key lessons: the importance of legal clarity, mandatory reporting with validation, effective use of open-source tools, and the principle that quality data underpins quality decisions.

3.7 SESSION 4: Technical Deep-Dive: Architecture, Standards, Tools & Data Ecosystem

TITLE	SESSION 4: Technical Deep-Dive: Architecture, Standards, Tools & Data Ecosystem
OBJECTIVE	To provide a practical exploration of the technical underpinnings required to build a credible and scalable broadband mapping system. It brings perspectives from regulators, international organizations, and private sector innovators to examine how standards, data validation methodologies, and interoperability frameworks can drive evidence-based broadband planning and investment decisions. -
KEY PARTICIPANTS	Setting the stage & Moderator: Mr. Dana Jon Kamason, Project Manager, Africa-BB-Maps, ITU Panellist: • Mr. Thapelo Sethebeth, BOCRA • Mr Gordon Akanyang, BoFiNet

This session was opened by Mr Dana Jon Kamason, who provided an overview of geospatial software options. He highlighted ArcGIS as the preferred choice for Botswana, citing its strengths in automation, security, integration, reliability, performance, scalability, and observability. The system was presented as capable of handling data management, location services, self-service mapping and analysis, mobile operations, real-time streaming, and big data analytics.

Mr Thapelo Sethebeth of BOCRA confirmed that the Authority had the capacity to host the system but would need to expand its storage and memory capacity and secure additional equipment such as monitoring screens for the Network Operations Centre. Questions were raised about whether BOCRA should host the platform instead of a neutral data centre. The rationale offered was that the regulator was best placed to act as a

neutral custodian, avoiding conflicts of interest. Reference was made to Slovenia, where the regulator AKOS hosts their national mapping platform. BOCRA also reassured participants that it had a recovery site to safeguard continuity and that migration to a data centre could be considered once operations scaled.

Group discussions revealed that most systems in Botswana run on Microsoft, and ArcGIS was already widely used with strong local familiarity. While open-source tools had advantages in flexibility and cost, participants acknowledged that skills and experience were strongest in Esri, making ArcGIS a practical immediate choice. The recommendation was therefore for enterprise deployment of ArcGIS.

The group also addressed data governance, stressing the importance of policies and standards covering data handling, ownership, stewardship, validation, access controls, compliance with international regulations, and lifecycle management.

3.8 SESSION 5: Policy Deep dive: Presentation of Upcoming Policy Analysis Work

TITLE	SESSION 5: Policy Deep dive: Presentation of Upcoming Policy Analysis Work
OBJECTIVE	To discuss Botswana's policy landscape for broadband mapping: policy needs, rules, legislative challenges and get a high-level overview of the upcoming policy analysis work following the ITU methodology and EU experience. -
KEY PARTICIPANTS	Setting the stage & Moderator: Mr. Elind Sulmina, Project Officer, ITU Africa-BB-Maps Panellists: • Ms Maitseo Ratladi, BOCRA • Mr Marko Simoncic, ITU Speaker, Slovenia • Mr Primož Ursic, ITU Speaker, Slovenia

This session was introduced by Mr Elind Sulmina, Project Officer for Africa-BB-Maps at ITU, who guided the discussion towards the policy and regulatory aspects of establishing a national broadband mapping system. The exchanges underlined that while Botswana already had a strong

regulatory foundation through the CRA Act of 2012, additional frameworks and coordination mechanisms were necessary to ensure effective data sharing, governance, and cross-sector collaboration.

Participants drew lessons from Slovenia, where policy instruments such as public consultations, stakeholder meetings, and Memorandum of Understanding (MoUs) were employed to initiate structured data exchange. It was agreed that similar approaches could be useful in Botswana to encourage participation, build trust, and overcome resistance. The discussion emphasised that the success of broadband mapping would depend not only on technical solutions but also on a policy environment that formalises collaboration across government, operators, utilities, and regulators.

Several key issues were highlighted. On policy barriers, it was noted that none were immediately prohibitive for Botswana, but MoUs would be important in clarifying responsibilities and ensuring accountability. Coordination was identified as a challenge, requiring effective engagement of senior leadership and regular communication to ensure readiness. On the legal framework, while BOCRA held the mandate to collect and publish data, the lack of a national definition of “critical infrastructure” was seen as a gap. Reference was made to the pending Cyber Bill, which could provide further reinforcement in data protection and security.

The conversation also addressed data ownership and confidentiality, with consensus that access levels should be tiered within the system so that sensitive information was only accessible to authorised users. Under institutional limitations, participants stressed the need for a national data-sharing agreement and the development of a data classification policy to standardise what can or cannot be shared. Finally, on national and regional harmonisation, participants recommended closer alignment with CRASA to ensure Botswana’s mapping efforts were consistent with regional practices.

From these discussions, several recommendations emerged. Stakeholders proposed the development of a national data-sharing framework and a data classification policy, alongside the formalisation of working arrangements through MoUs. It was further recommended that a dedicated committee be established to coordinate legal, policy, and institutional aspects of the project. Some participants also called for the

creation of a Project Steering Committee at Permanent Secretary level, supported by a technical working group to oversee implementation.

The session closed with agreement that policy frameworks would form the backbone of the national broadband mapping system. Clear timelines, strict responsibilities, and ongoing government support were identified as essential for success. BOCRA reaffirmed that the project had the full backing of the country's leadership, while ITU encouraged participants to adopt a "learning by doing" approach as implementation moved forward.

3.9 SESSION 6: Co-Creation Dialogue on Architecture, Data Sources & Technical Constraints and Discussions on the Policy and Regulatory Framework

TITLE	SESSION 6: Co-Creation Dialogue on Architecture, Data Sources & Technical Constraints and Discussions on the Policy and Regulatory Work
OBJECTIVE	To discuss and inform documentation that will be outcome document on the technical part, what data can be collected and how to collect data. This session also covered the policy aspect where working groups proposed broadband policy analysis and practical recommendations for addressing regulatory and policy bottlenecks.
KEY PARTICIPANTS	Moderator: Mr. Dana Jon Kamason, Project Manager, Africa-BB-Maps, ITU and Mr. Elind Sulmina, Project Officer, ITU Africa-BB-Maps Co-Charing: • Mr Marko Simoncic, ITU Speaker, Slovenia • Mr Primož Ursic, ITU Speaker, Slovenia Groups • Technical team 1 • Technical team 2 • Policy team

The afternoon sessions were conducted in parallel. Mr Dana Jon Kamason, Project Manager for Africa-BB-Maps at ITU, facilitated the technical discussions, while Mr Elind Sulmina, Project Officer for Africa-

BB-Maps at ITU, guided the policy and regulatory group, supported by BOCRA and international experts from Slovenia. Together, the two streams generated practical recommendations for both the technical architecture and the governance framework of Botswana's broadband mapping system.

In the technical dialogue, participants reviewed different software options and hosting models. After considering the pros and cons, the group agreed that Botswana should adopt enterprise ArcGIS as the preferred platform for broadband mapping, noting its strong local familiarity, integration with Microsoft SQL databases, and the presence of well-established global support structures. While open-source tools were recognised for their flexibility and transparency, it was concluded that they should complement rather than replace the ArcGIS enterprise deployment. The group also proposed that BOCRA develop standardised templates for operator data submission, covering priority datasets such as fibre routes, tower locations, wireless broadband coverage, connected public facilities, etc. Data collection methods were recommended to include APIs, GIS tools, field surveys, and crowdsourcing, with accuracy ensured through operator reporting verified by field testing. To promote transparency, it was further agreed that validated data should be published on a quarterly or annual basis through a public portal and mobile application.

In the policy dialogue, participants examined governance and regulatory issues. They acknowledged that BOCRA already had a mandate to collect and publish infrastructure data but noted the lack of a national definition of "critical infrastructure" as a limitation. The pending Cyber Bill was highlighted as an opportunity to strengthen legal provisions for data protection. The group proposed the use of Memorandum of Understanding (MoUs) as an interim measure to formalise cooperation and build trust among stakeholders. However, it was agreed that a permanent national data-sharing framework and a data classification policy would be essential for long-term sustainability. The importance of senior leadership engagement was repeatedly stressed, as political and executive buy-in was seen as crucial to ensuring operator participation.

Both groups converged on the need for robust governance. They recommended the establishment of a Project Steering Committee at Permanent Secretary level, supported by a technical working group to

oversee day-to-day implementation, and ensure coordination between technical and policy priorities.

3.10 SESSION 7: Effective Coordination for Broadband – Cross-Sector Synergies, Data Sharing & Protection

TITLE	SESSION 7: Effective Coordination for Broadband – Cross-Sector Synergies, Data Sharing & Protection
OBJECTIVE	To discuss Botswana’s policy landscape for broadband mapping: policy needs, rules, legislative challenges and get a high-level overview of the upcoming policy analysis work following the ITU methodology and EU experience.
KEY PARTICIPANTS	Setting the stage & Moderator: Mr. Tebogo Ketshabile, BOCRA Panellists: • Ms. Maitseo Ratladi, BOCRA • Mr. Alfred Kenosi, Orange Botswana • Mr Edmond Keikanetswe, BPC

This session was chaired by Mr Tebogo Ketshabile, who steered the discussion towards the importance of effective coordination across sectors to reduce costs, improve efficiency, and strengthen national broadband development. He observed that a lack of synergy often led to duplication and higher implementation costs and emphasised that such challenges could be avoided through stronger planning and collaboration.

The panel reflected on what effective cross-sector coordination should entail. Ms Maitseo Ratladi stressed that collaboration could not be overemphasised, as it would make infrastructure deployment more affordable, accelerate rollouts, and deliver greater coverage than has been possible in the past. Echoing this, Mr Alfred Kenosi of Orange highlighted that critical stakeholder included mobile network operators and the Department of Town and Regional Planning, given their custodianship of town and village development layers. He also underlined the role of security agencies, particularly in providing advisory support for protecting sensitive information that would be shared globally and pointed to the need for executive-level buy-in across sectors.

From the utility side, Mr Keikanetswe of the Botswana Power Corporation discussed the challenges of collaboration between telecom companies and utilities. He explained that delays often arose from servitude planning during road construction and emphasised the need to integrate servitude provisions into infrastructure planning at the outset. On the matter of sharing infrastructure, he noted that BPC's reluctance to allow pole-sharing was largely due to safety concerns, as many fatalities had occurred during maintenance activities.

The session also examined the role of Memorandum of Understanding (MoUs) in facilitating cooperation. It was agreed that MoUs could be effective tools if leadership buy-in was secured, as they provided stable frameworks for collaboration and helped projects to be delivered on time. However, participants noted that MoUs should be seen as transitional arrangements and eventually give way to national frameworks.

On the subject of incentives for collaboration, Mr Kenosi suggested that local authorities could take ownership of certain infrastructure to foster integration, while Ms Ratladi reflected on how BOCRA's infrastructure-sharing guidelines had improved negotiations among operators. She explained that these guidelines provided a reference point for businesses, helping them avoid prolonged discussions and making it easier to check existing infrastructure before deploying new systems. This had led to more efficient rollouts and improved mobile coverage across the country.

The discussion further returned to the limitations of MoUs, with some participants arguing that a more comprehensive national framework for coordination was required to ensure sustainability and consistency in collaboration.

The session concluded with reflections on the policies and actions that could strengthen cooperation within the next six months. Three points were highlighted: the recent approval of the Digital Services Bill, which would assist with inter-agency data sharing; a request for BOCRA to support the recognition of broadband infrastructure as a utility within national planning frameworks; and the inclusion of critical infrastructure definitions within the new digital policy.

During the open floor, Mr Diploma Mokgwathi of Liquid Intelligent Technologies endorsed infrastructure sharing but cautioned that political

buy-in and the approach to public–private partnerships would be decisive. He urged leveraging private sector expertise and improving servitude management. Mr Botsoma Botsoma proposed the establishment of a governance structure, potentially a national broadband commission, to ensure coordinated oversight. He further recommended that regulatory approval be required before infrastructure rollouts to avoid duplication by government agencies. From the operator perspective, Mr Bogosi of MTN suggested that tax rebates could serve as incentives for infrastructure sharing, provided that inter-operator charges remained fair and non-prohibitive.

The session closed with consensus on the need to establish a national coordinating team to drive implementation. Participants agreed that coordinated action, underpinned by effective governance and leadership commitment, would be essential to ensure that broadband infrastructure mapping delivers its intended benefits for Botswana.

3.11 SESSION 8: Finalization of the Stakeholder Mapping – Roles & Responsibilities and National Roadmap – Final Timeline, Training Program & Next Steps

TITLE	SESSION 8: Finalization of the Stakeholder Mapping – Roles & Responsibilities and National Roadmap – Final Timeline, Training Program & Next Steps
OBJECTIVE	To agree endorse and establish roles and responsibilities
KEY PARTICIPANTS	• Mr. Dana Jon Kamason, Project Manager, Africa-BB-Maps, ITU and Mr. Elind Sulmina, Project Officer, ITU Africa-BB-Maps • Mr. Tebogo Ketshabile (BOCRA)

The session was facilitated jointly by Mr Tebogo Ketshabile of BOCRA and Mr Dana Jon Kamason of ITU, who guided participants through the process of clarifying stakeholder roles and agreeing on the national roadmap for broadband mapping in Botswana.

A live survey was conducted to capture the views of participants on institutional responsibilities. On the question of who should serve as the primary custodian and operational lead, most delegates agreed that BOCRA was best positioned to host and maintain the broadband mapping platform, enforce data reporting obligations, and coordinate with national

stakeholders. Although some voices suggested that institutions such as Statistics Botswana or the Department of Surveys and Mapping could also take on this role, consensus ultimately formed around BOCRA as the neutral regulator.

On the matter of data providers, it was agreed that ownership and responsibility lay with infrastructure operators, namely mobile network operators, internet service providers, and other utilities that owned physical assets. BOCRA was again confirmed as the data custodian, responsible for hosting and securing the data, operating and maintaining the enterprise GIS system or geoportal. Data stewardship, defined as the ongoing responsibility to maintain data quality and ensure datasets were regularly updated, was considered a shared responsibility. All stakeholders, from operators to government agencies, were expected to contribute actively to this function.

Participants then turned their attention to the national roadmap and timeline. It was agreed that training and capacity-building activities for BOCRA and other stakeholders would be phased over the period 2026 to 2028. This would follow a “learning by doing” approach, ensuring that sustainable expertise was built while the system was being developed and rolled out. The roadmap reaffirmed earlier timelines, with 2025 dedicated to readiness and preparation, 2026 focusing on system development and training, 2027 on operationalisation and policy alignment, and 2028 on sustainability and positioning Botswana as a regional leader in broadband mapping.

In concluding the discussion, the facilitators emphasised that the national roadmap could only succeed if every stakeholder fulfilled their defined role. The commitments expressed during the stakeholder mapping exercise were described as a foundation for collaborative ownership of the project. Delegates agreed that Botswana’s mapping system must be anchored in both technical competence and institutional accountability, ensuring that the country could not only implement the project successfully but also sustain it well into the future.

4.0 CLOSING CEREMONY

TITLE	Closing Ceremony
OBJECTIVE	To conclude the event, reinforcing commitments and gratitude.
KEY PARTICIPANTS	Vote of Thanks: Mr. Botsoma Botsoma Remarks: Dr Emmanuel Manasseh, ITU Regional Director for Africa, ITU Remarks: Ms. Tebogo Mmoshe, BOCRA

The closing ceremony brought together reflections from participants, partners, and hosts, reaffirming the collective commitment to the Africa-BB-Maps initiative in Botswana.

Speaking on behalf of the participants, Mr Botsoma expressed gratitude to BOCRA, ITU, and the EU for convening the event and emphasised the willingness of all stakeholders to commit fully to the project. He noted that the discussions over the three days had clarified roles, identified opportunities, and laid a strong foundation for collaborative implementation.

On behalf of the ITU Regional Office for Africa, Ms Halima Letamo delivered remarks on behalf of Dr Emmanuel Manasseh, ITU Regional Director. She responded to participants' earlier question of what ITU does by highlighting ITU's role in allocating global radio spectrum, setting international standards, facilitating digital access in underserved areas, etc. She explained that the Africa-BB-Maps project forms part of ITU's broader commitment to universal and meaningful connectivity, which ensures that connectivity is inclusive, affordable, and transformative for communities. She reiterated ITU's commitment to supporting Botswana through technical expertise, provision of hardware and software, and assistance with policy review and capacity building. She commended the high level of engagement demonstrated throughout the event and thanked BOCRA for its leadership and coordination.

In the final statement of the event, Ms Tebogo Mmoshe of BOCRA thanked all participants, partners, and international experts for their contributions. She acknowledged that many had arrived with limited knowledge of what the project entailed but were leaving with a deeper understanding and stronger sense of ownership. She described the event as an eye-opener that had highlighted the scale of work ahead while also confirming Botswana's readiness to lead. Ms Mmoshe expressed

appreciation to the EU and ITU for choosing Botswana as one of the first eleven countries to benefit from the initiative and thanked the Slovenian experts for sharing valuable lessons. She also thanked the rapporteur for his thorough job. She called on participants to engage their supervisors and executives to ensure buy-in at the highest levels and stressed that the foundation had now been laid for successful implementation. She reaffirmed BOCRA's openness to share information and support stakeholders, declaring the event formally closed.

The closing session concluded with a sense of shared responsibility and optimism. All stakeholders recognised that the journey from engagement to implementation would require sustained collaboration, but the event had established a common vision, clear commitments, and the momentum to carry the project forward.

5.0 RECOMMENDATIONS

The meeting concluded with a set of clear and actionable recommendations across three domains:

5.1 Technical Recommendations

- i. Adopt enterprise ArcGIS as the preferred mapping platform for Botswana, complemented by open-source tools where appropriate.
- ii. Develop standardised templates for operator data submissions to ensure consistency and comparability.
- iii. Prioritise datasets such as fibre routes, tower locations, wireless broadband coverage, and connected public facilities.
- iv. Combine data collection methods including operator reporting, GIS techniques, APIs.

5.2 Governance Recommendations

- i. Establish a Project Steering Committee at Permanent Secretary level, supported by a technical working group for daily coordination.
- ii. Develop a national data-sharing framework and a data classification policy to guide responsibilities and access rights.
- iii. Use MoUs as interim measures to formalise cooperation until permanent frameworks are in place.
- iv. Engage senior political and executive leadership to ensure compliance and sustained cooperation.

5.3 Policy Recommendations

- i. Support the recognition of broadband infrastructure as a utility in national planning frameworks.
- ii. Consider tax rebates and fair pricing mechanisms to incentivise infrastructure sharing.
- iii. Promote public–private partnerships that leverage private sector expertise while aligning with national priorities.

6.0 CONCLUSION

In conclusion, the event achieved its purpose of moving Botswana from dialogue to action on broadband mapping. Stakeholders expressed clear

ownership, aligned on technical and policy directions, and committed to a phased roadmap that will position Botswana as a leader in the region. With BOCRA confirmed as custodian, a robust governance model proposed, and international partners pledging continued support, the country is well placed to implement a sustainable broadband mapping system that will close connectivity gaps and deliver socio-economic benefits.

End.