



Policy and Strategy for the Development of National Telecommunications Access and Universal Service for Guinea-Bissau: Building Resilient Digital Infrastructures for Economic Growth

Final report

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Deliverable Name:	Commencement Report:
Short Description:	The National Access/Universal Service Development Policy and Strategy for Guinea-Bissau aims to ensure equitable access to basic voice and broadband services for all, with an emphasis on connectivity in remote areas and the promotion of socio-economic development. It includes a strategic vision, policy framework, and programming to achieve universal access and service.
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Abbreviations and Acronyms

Abbreviations	Description
ACE	Africa Coast to Europe
ASF	Universal Access and Service Fund
ASU	Universal Access and Service Strategy
BTS	Base Transceiver Station
ECOWAS	Economic Community of West African States
FASU	Universal Access and Service Fund
FAU	Universal Access Fund
FCFA	West African CFA Franc
FTP	File Transfer Protocol
GDP	Gross Domestic Product
GIS	Geographic Information System
GSMA	Global Mobile System Association
ICD	Interface Control Document,
ICGB	Institute of Communications of Guinea-Bissau
ICT	Information and communication technology
IT	Information Technology
ITU	International Telecommunication Union
KPI	Key Performance Indicators
LEO	Low Earth Orbit
LTE	Long-Term Evolution
MORAN	Multi-Operator Radio Access Networks
MTTED	Ministry of Transport, Telecommunications and Digital Economy
NRA	National Regulatory Authority (for Information and Telecommunication Technologies)
OMVG	Gambia River Development Organization
OPGW	Ground Protection Optical Wire
PPP	Purchasing Power Parity
SCGB	Cape Society of Guinea-Bissau
SIM	Subscriber Identity Module
SME	Small and Medium-sized Enterprises
SWOT	Strengths, Weaknesses, Opportunities, and Threats

TLD	Top-Level Domain
TV	Television
UAF	Universal Access Fund
UAS	Universal Access Service
UNDP	United Nations Development Programme
US	United States
USD	United States Dollar
USF	Universal Service Fund
VPE	Special Purpose Vehicle
WARDIP	West Africa Regional Digital Integration Program

1. Introduction

1.1. Nature and structure of the document

This Universal Access and Service Policy and Strategy document outlines a framework for expanding access to public telecommunications and achieving universal access and service goals in Guinea-Bissau. Recognizing the critical role of ICT in socio-economic development, the Policy emphasizes harmonization with national objectives, the expansion of infrastructure to all areas of the country, accessibility, digital inclusion, access to information, and the strong role of private sector participation in the strategy to bridge the digital divide and improve economic growth and opportunities. The Strategy stems from the Strategic Pillars of the Policy, moving on to the Implementation Plan, including the Universal Access Fund Strategic Plan and the Monitoring and Evaluation Framework.

The Policy and Strategy are fully in harmony with the Government's National Strategy for Digital Transformation (ENTD.GW) adopted in January 2025 as a set of pivotal, multi-faceted initiatives for integrating the country into the global digital economy. In particular, the installation of a national high-speed fibre backbone is a priority of both strategies, enabling the expansion of connectivity and support for digital services in urban and rural areas. By addressing infrastructure gaps, accessibility and digital literacy needs, as well as the development and expansion of the Universal Access and Service Fund, this document lays out the establishment of a five-year strategic plan for successful implementation of universal access to information and communications technology (ICT) services.

The expected result is to unlock the potential of ICT to boost economic growth and transformation, social inclusion and improved governance. Collaborative implementation and close monitoring will ensure that these goals are achieved.

Chapter 1 presents the context of the development of the Policy and Strategy for Universal Access and Service and identifies the vision and mission of the Policy.

Chapter 2 provides a review of the market scenario. Chapters 3 and 4 set out, respectively, the proposed universal access and service policy and a strategy for achieving this policy. Chapter 5 provides a blueprint for implementing the strategy. Chapter 6 describes a monitoring and evaluation regime for the strategy.

1.2. Geographical and Socio-economic Context

At 36,125 square kilometers, Guinea-Bissau is a small country, geographically dominated by its waterways and coastal topography (classified by UNDP along with Small Island Developing States). Its terrain is mainly composed of low-lying coastal plains with Guinean mangrove swamps, which rise to the Guinean savannah forest in the east. The highest point is Mount Torin in the region of Gabú, with an elevation of 262 metres (860 ft). The Bijagós Archipelago, composed of 88 islands, is located off the mainland.

The country has eight regions, six of which are coastal, and 39 administrative sectors including the Bissau Autonomous Sector. The population is approximately 2.1 million inhabitants, 45% of which are urbanized. The capital, Bissau, has 500,000 inhabitants and only three other cities have more than 30,000 inhabitants, with four others above 10,000.

The population is ethnically diverse by region and has many distinct languages, customs, and social structures. Three ethnic groups make up two-thirds of the population, while ten or more minority groups, all with well under 10%, make up the remainder.

The country's GDP per capita (USD 1,000 nominal and 3,000 PPP) and Human Development Index (at 0.483) are among the lowest in the world and below their regional peers, Cabo Verde, Senegal, Guinea-Conari and Togo. The economy depends mainly on agriculture; Fish, cashews, and peanuts are its main exports, while gold also accounts for 28% of exports.

Policy challenges have resulted in depressed economic activity, deteriorating social conditions, and macroeconomic imbalances. However, while the economy has grown at a rate of 5-6% over the past 2-3 years, there are still risks to the economy centered on political instability, weak public financial management systems, shocks to the international cashew market, and climate change.

1.3. Infrastructural Context

1.3.1. Market Structure and Share

The telecommunications market is currently dominated by the two mobile operators, Orange Bissau SA (Orange) and Spacetel Guinea-Bissau SA (MTN/Telecel), the latter of which was sold to the Telecel Group in August 2024 and renamed as such this month. In the first quarter of 2024, the number of mobile subscriptions was 1,967,329, of which Orange Bissau had 1,368,055 subscribers (70%) and MTN 599,274 (30%). Orange Bissau's total increased by 8% compared to the previous quarter, while MTN's total decreased by 3%. The total growth was 4%. Market share has been moving in the direction of Orange Bissau in recent years, with the last comparison recorded in the most recent NRA market report (first quarter of 2024), as indicated below.

Figure 1: Market share by operator (%)



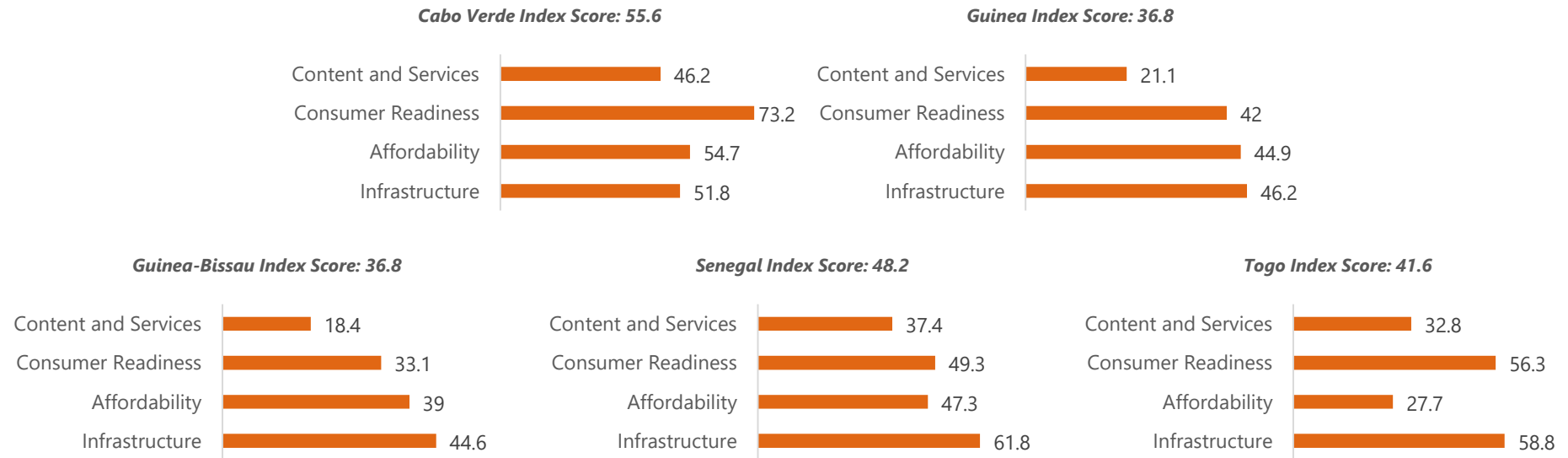
Source: Salience research, ARN (2025). Observatório de mercado DO 1º trimestre do ano 2024. Retrieved from <https://arn.gw/site24/wp-content/uploads/2025/01/Observatorio-de-mercado-1o-trimestre-ano-de-2024.pdf>

1.3.2. Penetration

Considering the fact that most subscribers tend to have two SIM cards, mobile service penetration is much lower than the nominal level of 89% indicates, based on total subscriptions. Actual penetration is less than 50% of unique subscribers, but this translates into very high penetration in households, over 90%.

It is estimated that in 2023, 83% of existing customers had access to broadband connections (3G or 4G), with 17% owning devices capable of only accessing 2G. However, according to the 2023 GSMA Mobile Connectivity Index, the country's mobile sector is much less developed than its peers in the region. The index is based on infrastructure, accessibility, consumer readiness and content/services, and Guinea-Bissau is underperforming in all sub-indices. Therefore, the current initiative to accelerate digital development, considering the challenges faced by the ICT sector, has multiple hurdles to overcome. But these challenges also open up significant opportunities for development.

Figure 2: Mobile Connectivity Index 2023



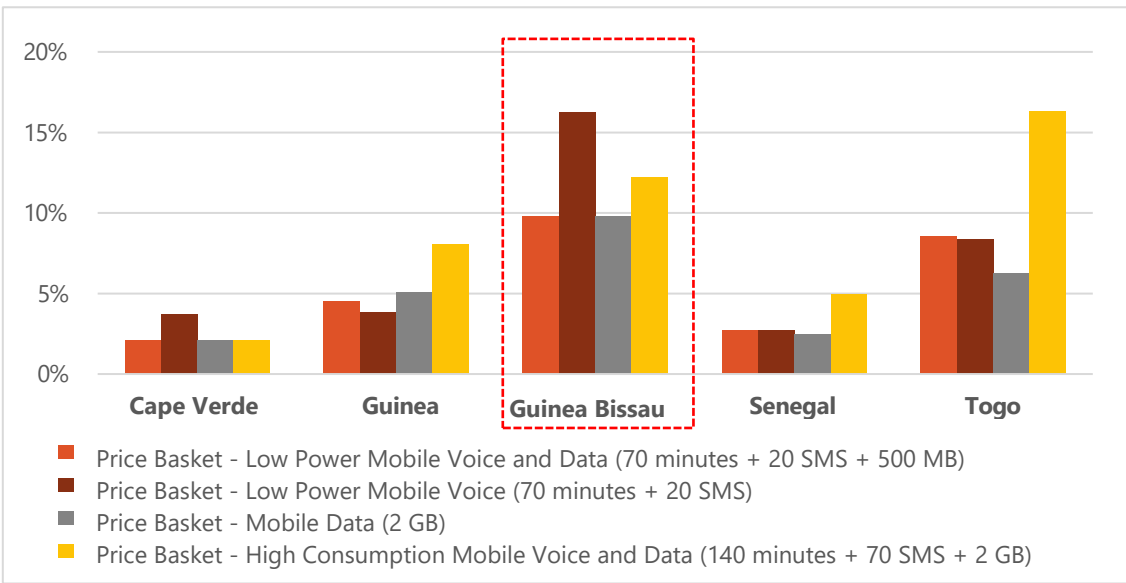
Source: Salience research, GSMA (2025), Mobile Connectivity Index. Retrieved from <https://www.mobileconnectivityindex.com/index.html#year=2023>

Examples of accessibility, consumer readiness, and content, illustrating the country's comparative status among its regional peers, are shown in subsequent subsections.

1.3.3. Accessibility

According to the most recent ITU study on the affordability of telecommunications services, the prices of mobile voice and data services in 2023 were high (more than 10% of gross national product per capita), compared to regional peer countries such as Cabo Verde, Senegal and Guinea, whose prices are less than 5% of the same indicator, as shown in Figure 3.

Figure 3: ITU ICT Price Basket (2023) - Mobile Services



Source: Salience research, ITU, Basket prices and additional details for 2023. International Telecommunication Union. Retrieved from <https://www.itu.int/en/ITU-D/Statistics/Pages/ICTprices/default.aspx>

1.3.4. Digital Adoption and Content

The level of use of digital services among the population of Guinea-Bissau appears to be lower than in other countries in the region, as shown by the percentage of the population using major social networks in Table 4 below.

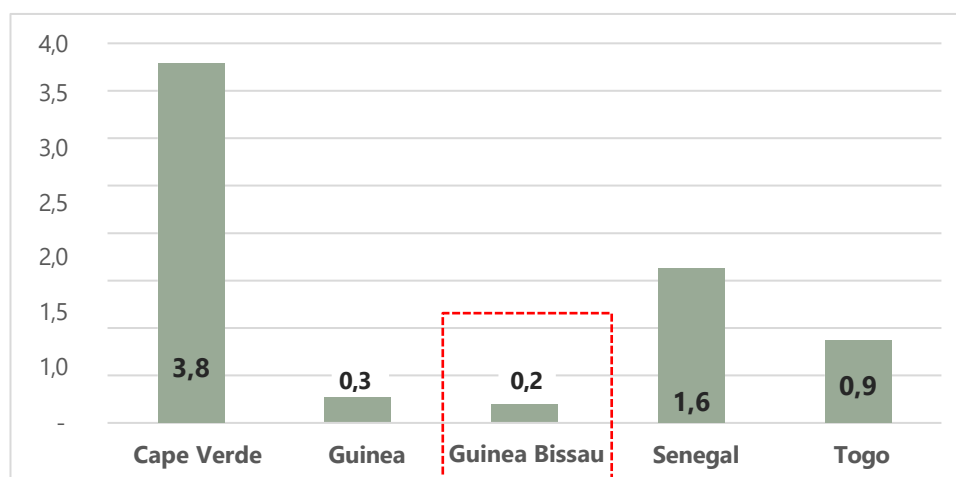
Figure 4: Social media penetration in 2023

	Cape Verde	Guinea	Guinea -Bissau	Senegal	Togo
<i>Facebook</i>	53,4%	21,9%	10,6%	25,9%	12,8%
<i>Instagram</i>	21,8%	1,2%	1,4%	7,4%	2,1%
<i>Messenger</i>	32,0%	21,1%	4,4%	20,5%	10,4%
<i>X (Twitter - Orange)</i>	13,7%	1,8%	0,8%	6,5%	3,7%
<i>X (Twitter - MTN)</i>	3,5%	0,5%	0,2%	1,7%	0,8%

Source: Salience research, Data from operators; Data adapted from Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respectivos Regulamentos*¹

The population also lacks a lot of local content online. In 2024, there were only 423 websites with the top-level domain."**gw**" (TLD or *Top-Level Domain* for Guinea-Bissau), compared to 2,277 in Cape Verde.

Figure 5: Number of local sites per 100,000 inhabitants

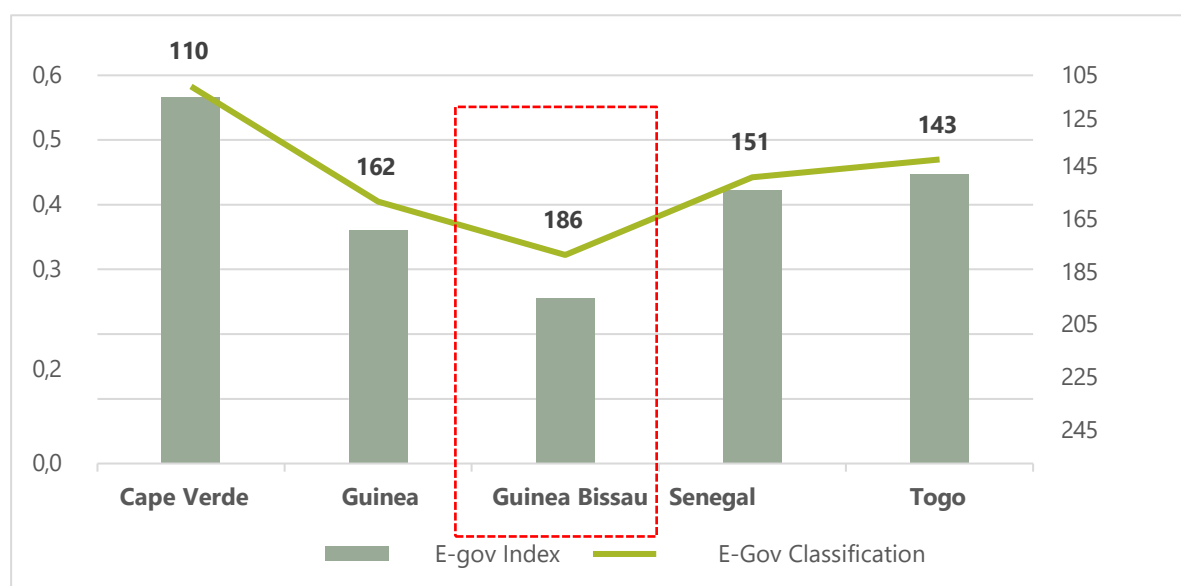


Source: Salience research, DomainNameStat. (2025). *Country Statistics*, Retrieved from <https://domainnamestat.com/statistics/country/others>

Similarly, Guinea-Bissau is ranked 186th out of 193 countries in the e-government index, which measures the degree of preparedness and digitalization of public administration. This index is a composite measure of three important dimensions of e-governance: the provision of online services, telecommunications connectivity and human skills.

¹ Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respectivos Regulamentos*, Figure 3

Figure 6: E-Government Index (2022)



Source: Saliency research, United Nations, Department of Economic and Social Affairs, Division for Public Institutions and Digital Government. (2024). E-Government Development Index (EGDI) 2024. Retrieved from <https://publicadministration.un.org/egovkb/Data-Center>

The evidence from these examples shows that Guinea-Bissau's digital sector has significant growth potential, requiring the development of a higher quality infrastructure, including the construction of a national fibre backbone, as described in Section 2.

Building on this potential, the very recent joint UNU-EGOV/UNDP initiative “National Strategy for Digital Transformation” (ENTD.GW) adopted by Government and launched only in January 2025², is the pivotal effort to modernize Guinea-Bissau’s governance, tackle e-governance challenges, and integrate the country into the global digital economy, including the promotion of infrastructural development. The project will foster a strong and reliable state to drive economic growth and social inclusion. Built upon ten strategic pillars - infrastructure, data, economy, people, literacy, governance, innovation, trust, sustainability, and public services - the strategy outlines six strategic objectives and fifty-five interventions to enable a structured transition to digital governance.

1.4. Vision and Mission

The vision of the universal access and service policy is to harness and direct elements of the expected growth of ICT development and the digital transformation agenda of the country to promote investments that will close the country's connectivity gap; promote digital inclusion and universal access; empower underserved communities in ICT connectivity; and foster inclusive and widespread socio-economic growth and development.

² <https://unu.edu/egov/news/digital-transformation-project-guinea-bissau-egov-undp>

The policy's mission is therefore to establish a resilient universal access and service framework and strategy to achieve affordable, equitable and inclusive connectivity for 100% of the population, with a focus on rural and underserved areas.

2. Current Industry Structure

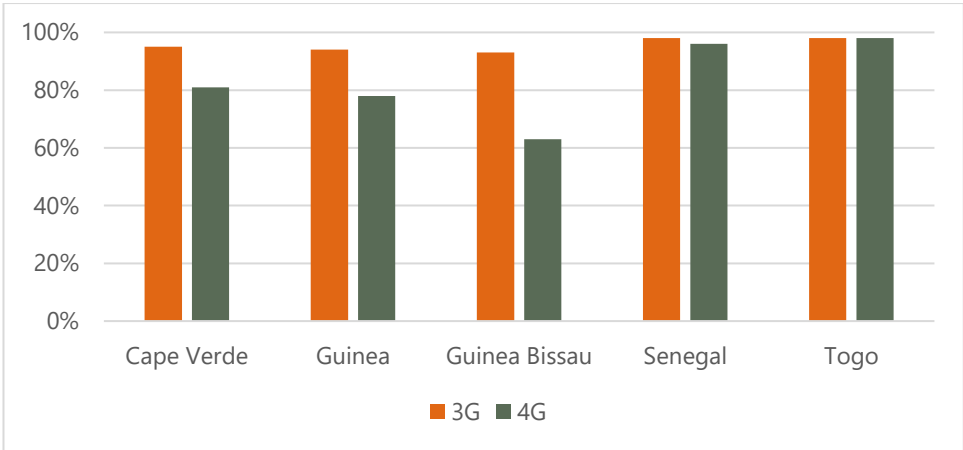
2.1. The ICT Infrastructure and National Outreach

2.1.1. The Basic Networks

The two private mobile operators, Orange Bissau and MTN, have similar coverage from the coast to the interior, consisting mainly of microwave connections. Each of them also has a limited metropolitan fiber optic network within the city of Bissau, totaling 55 km of cable, including two fiber rings. The two national backhaul networks are microwave systems that link the country's 513 base station sites (Orange's 360 and MTN's 173), of which only 16 are shared, so infrastructure sharing is minimal.

According to the GSMA, 3G and 4G networks cover 93% and 63% of the population, respectively, at the end of 2023. Figure 7 shows that Guinea-Bissau is thus below other peer countries in the region.

Figure 7: Mobile coverage as percentage of population (2023)



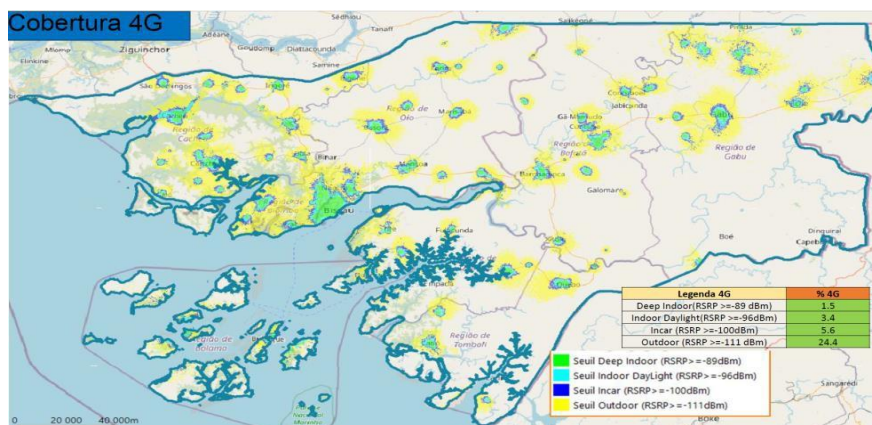
Source: GSMA; Salience research, Data adapted from Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respectivos Regulamentos*³

The Orange network was reported to cover 85.4% of the country's population in 2G, 82.8% in 3G, and 55% in 4G. However, the latest report from TeleGeography indicates that Orange reached 98% of the population with its 2G network in November 2024, while by the same date 3G services had reached 92% of the population. 4G coverage to date appears to be at least 60%, while the company has embarked on a complete modernization of its existing 3G+/4G network. It was also reported that Orange intended to extend its rural 2G/3G coverage to more than 1,000 rural villages, with the launch of 150 new sites in 2021, although the status of this should be confirmed directly with the operator.

Orange's 4G geographic coverage is shown in the latest available map (2023) below:

³ Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respectivos Regulamentos*, Figure 16

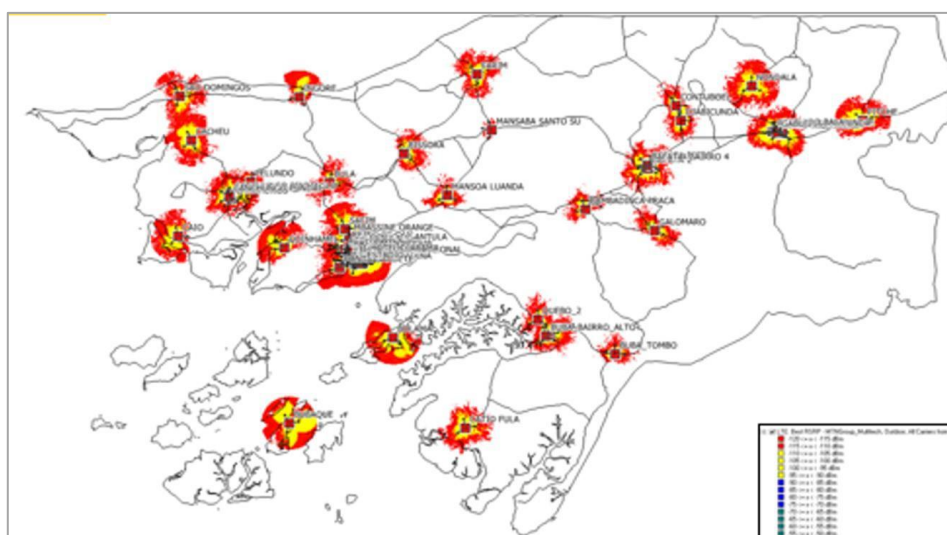
Map 1: Orange's 4G Broadband Coverage Map (2023)



Source: Data from operators; Map adapted from Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respective Regulamentos*⁴

MTN's 4G coverage appears to have a similar geographic balance, albeit with fewer locations due to Orange's more aggressive growth in recent years.

Map 2: MTN's 4G Broadband Coverage Map (2023)



Source: Data from operators; Map adapted from Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respective Regulamentos*⁵

MTN Guinea-Bissau's 2G/3G networks were reported by TeleGeography to span more than 80 cities and towns across the country as of November 2024, which equates to approximately 85% of the population (largely unchanged since 2013). MTN's 4G LTE coverage is reported to be over 50%.

The company fell from a leading position to second place in terms of market share in the first quarter of 2021, since then Orange's user base has increased, while MTN's share currently stands at around 30% of the market.

⁴ Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respective Regulamentos*, Figure 17

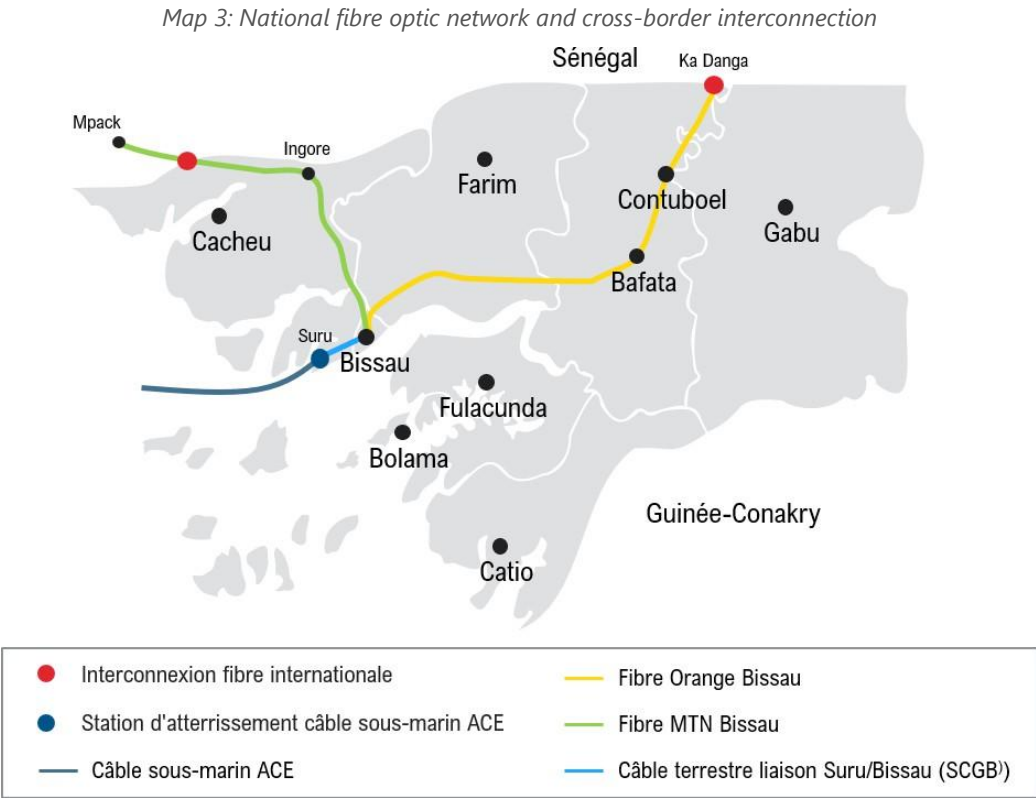
⁵ Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respective Regulamentos*, Figure 18

In October 2023, the MTN Group received a binding offer from the Telecel Group for the sale of its subsidiary in Guinea-Bissau, which was completed in August 2024, after receiving all regulatory approvals.

2.1.2. Improvements in international access

As a result of the dependence, until most recently, on expensive terrestrial links through Sonatel in Senegal and satellite service for international capacity, international bandwidth in Guinea-Bissau was well below most of its peers. For example, the country's quality of service performance was low at average download speeds, with speeds of around 10 Mbps on the Orange and MTN networks. These speeds are far behind other countries, such as Togo and Senegal, which have results in the 20-30 Mbps range.

The Government of Guinea-Bissau had previously established a Special Purpose Vehicle (VPE), under the World Bank-funded West African Regional Programme for the Development of Communications Infrastructure (WARCIP) and entered into a Public-Private Partnership through the creation of the Sociedade de Cabos de Guiné-Bissau (SCGB), in charge of the management and operation of the landing station of the ACE submarine cable. The ACE connection is currently on the point of becoming operational, and the latest international connectivity is shown in Map 3.⁶



Source: Data from operators; Map adapted from Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respectivos Regulamentos*⁷

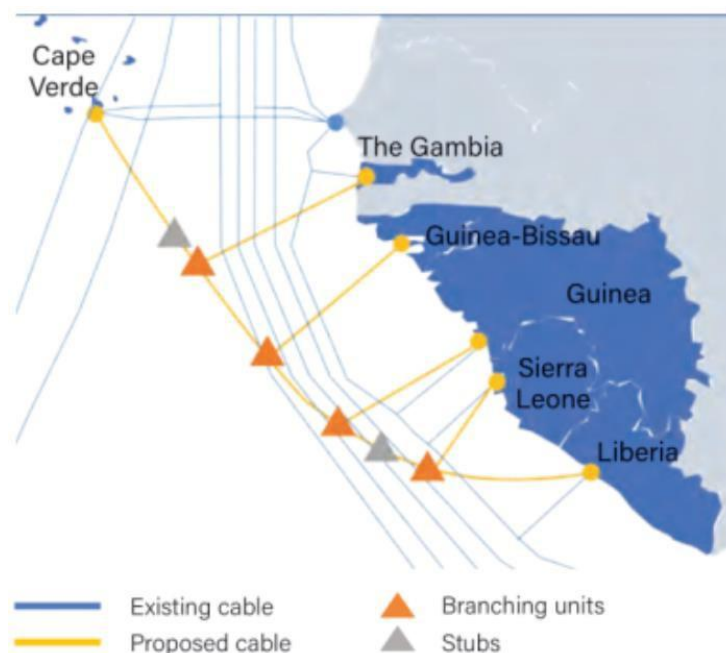
⁶ SCGB was established in 2018, but only connected to the ACE submarine cable in April 2023 (via a 464 km festoon cable connected to the landing station in Senegal). The financing of the connection followed a similar model to that of The Gambia and Guinea, with the connection financed by the Government with USD 31.5 million with funds provided by the World Bank and private operators Orange and, at the time, MTN committing to acquire its interests in the VPE for USD 8 million each, payable over five years.

⁷ Duhamel, K. B. (2024). *Revisão da Lei de Base sobre as Comunicações Electrónicas e Elaboração dos Respectivos Regulamentos*, Figure 20

The ownership of the VPE ACE is 49% state-owned, 25.5% by Orange, 25.5% by Telecel. The latter ended up with only 8% at the moment, with the rest being returned to the State, which now has 66.5%. The Suro landing station will also soon be connected to OMVG's commercialized OPGW fiber optic network. This will enable redundant fiber optic routing and will eventually be connected to submarine cable stations in The Gambia, Guinea and Senegal. This strategic interconnection will eventually put Guinea-Bissau in a better position at the regional level, allowing for greater capacity and exchange of digital services with neighboring countries. When completed, the combined key infrastructure is expected to significantly reduce the cost of international connectivity, in addition to the most recent enhancements experienced with connecting to ACE.

Additional future international connectivity is also planned. Six West African countries have united around a new submarine cable project called Amílcar Cabral. This cable, to be deployed with the support of ECOWAS, will connect Cabo Verde, Gambia, Guinea, Guinea-Bissau, Liberia and Sierra Leone, thus ensuring these countries' access to international connectivity.

Map 4: Map of the Amílcar Cabral submarine cable project



Source: African Union Development Agency (AUDA-NEPAD) (2023), *Construction of Amílcar Cabral Submarine Cable System*.

2.1.3. Potential improvements in the backbone network

The Government has also recently conducted feasibility studies for a national fiber optic network to reach the country's major cities and offer the *necessary backhaul* capabilities for mobile operators to improve the quality and reach of broadband internet services. It is understood that the network, which will be financed by the World Bank through WARDIP, is expected to reach all administrative districts in four phases of construction. The first phase will reach the districts in which 60% of the population lives, the second will raise this percentage to 80%, the third phase to 99%, and the fourth phase will deal with the extension to a strategic archipelago.

2.2. ICT Institutional and Infrastructure Organization

The ICT regulatory framework in Guinea-Bissau has so far been shaped by Law 5/2010 - the Basic Law on Telecommunications and Information and Communication Technologies. The digital sector is under the leadership of the Ministry of Transport, Telecommunications and Digital Economy (MTTED), which is responsible for setting and implementing strategic directions and sectoral policies. The Telecommunications and ICT sector has operated under the guidance of two strategic documents: the Terra Ranka strategic and operational plan (2015-2025), developed in 2014, and which has as one of its five pillars the improvement of digital infrastructure and digital services with the aim of making the sector Electronic Communications a lever for digital transformation and economic growth. This vision is now coming more sharply into focus with the adoption by Government of the "National Strategy for Digital Transformation" (ENTD.GW), launched only in January 2025 as referenced in Section 1.3.4⁸

Several decrees have been adopted to regulate the various aspects of the sector, but the operationalization of these legal texts remains partial, with their application yet to be translated into roadmaps and operational procedures. The Framework Law is currently in the process of being updated and replaced with a more modern and comprehensive version, as described in Section 3.1.

2.3. Current Legal and Regulatory Environment for Universal Service

The regulation of the sector is delegated to the National Regulatory Authority for information and Communications Technologies (NRA-ICT), which was established by Law No. 5/2010 of 27 May. The NRA also hosts the technical functions of the Universal Access Fund (UAF), which will be renamed the Universal Access and Service Fund (ASF) under the new Act and the updated Universal Access and Service Regulations.

The initial universal service regime in Guinea-Bissau was also established by Law No. 5/2010, with the aim of ensuring the existence and availability of access to communication services, particularly in rural and remote areas with more than 500 inhabitants. The Act also created, through Section 86, the Universal Access Fund (FAU).

Subsequently, Decree No. 17/2011, of 25 February defined the governance, operational and safeguarding aspects of the FAU, particularly:

- (i) the structure and responsibilities of its governing body, the Management Committee,
- (ii) the financial obligation of all entities licensed to operate in the telecommunications market to contribute to the fund by paying 1% of their gross revenue; and
- (iii) the safeguard mechanisms to ensure the effective and transparent use of the FAU.

The technical planning and projects financed by the FAU are prepared by the Directorate of Markets and Operators' Monitoring (DMAO) of the NRA, under the responsibility of the Department of Universal Access. For the preparation of projects, the DMAO requests the technical support of other directorates, namely, legal for the preparation of contracts, Directorate of Radiocommunication and Engineering for projects related to the installation of masts, Directorate of Informatics for the creation of telecenters and computerization of services. The financial management functions of the UAF are ensured by the Executive Secretariat of the UAF

⁸ ibid

(Executive Secretary and the two assistants (financial and administrative, NRA officials delegated to the UAF). The Management Committee of the UAF reviews and approves the projects prepared by the NRA.

FAU funded a total of eight (8) project streams throughout the years 2018-2023, in which it allocated a total of 2,191 million FCFA. The largest projects, each representing approximately 25-30% of the Fund's resources, were: a) implementation of several multifunctional cyber centers in nine public schools located in different regions of the country, b) the computerization project of the Simão Mendes National Hospital, c) award of scholarships in the area of ICT, d) feasibility study of ACE submarine cable, and establishment of mobile infrastructure sites in four rural locations for the extension of the network.

3. Policy Structure

3.1. Alignment with national objectives

A new Legal Framework (2025) for Electronic Communications and the new Decree on Universal Access and Service have been prepared with the intention of updating Law No. 5/2010 - the Fundamental Law on Information and Communication, including Section 86 of the Universal Access Fund - and the Decree No. 17/2011.

The new Legal Framework establishes general objectives for the Communications Sector, which include:

- Provide better coverage of the national territory with quality broadband and ultra-broadband infrastructure,
- Develop a competitive market with fewer barriers to entry for new players or discrimination between operators,
- To develop the information and knowledge society with the protection of the interests of users,
- Contribute to the fight against poverty through accessible access to low-income groups, rural dwellers, people with disabilities, and
- Create jobs in information and communication technologies (ICTs) to accelerate economic, social and cultural development through ICT.

This universal access and service policy aligns the development of telecommunications with these national objectives, as well as with the Government's universal access goals, focusing on social and economic dissemination and empowerment, through:

- a) Promote the expansion of telecommunications infrastructure to achieve universal coverage of fixed and mobile telephony, data and broadband internet services throughout the country,
- b) Improve accessibility to ensure that low-income, marginalized and rural inhabitants have access to services,
- c) Enable broadband internet access to be provided to the education, health, social infrastructure, agriculture and other sectors,
- d) Provide training and skills development in ICTs to improve participation in the digital economy,
- e) Promote inclusive digital literacy, including youth, women, people with disabilities, and
- f) Foster private sector participation and public-private partnership, new entries, innovation and investment in the development of ICT infrastructure and services.

3.2. Regional Trends in Effective Universal Access and Service Operations

The new law and decree take into account the need to establish a sound legal and regulatory framework conducive to universal access, as set out, for example, in the ECOWAS Additional Act A/SA.6/01/07 on Universal Access/Service.

With respect to Universal Access and Service Funds, despite being theoretically 100% present in all African countries as legal entities, most have operated well below their potential as enablers of private sector investments in rural areas or facilitating inclusive universal access. These facts have been well documented over the years by various publications of international organizations, including the ITU. The most recent and useful documents are from the Alliance for Affordable Internet (A4AI) and the GSMA. A4AI's reports see the Universal

Access and Service Funds (FASUs) as strategically important vehicles to promote rural inclusion and coverage. The GSMA's focus is more on the resources accumulated by the Funds and how they can be reformed to be effective channels for investment in universal access projects. Recently, the GSMA surveyed 40 countries and outlined reforms and strategic policy changes that must take place to make them effective channels for significant investment.

The following recommendations are prevalent for a more effective operation of universal access funds:

- a) Evidence-based contribution rate - A reasonable projection of the Fund's income and expenditure, in consultation with Electronic Communications service providers, should be used to decide an appropriate contribution rate.
- b) Regulatory control of the collection of funds to ensure the effective and timely disbursement of all funds.
- c) Mechanisms to encourage the disbursement of funds – including clear targets and incentives for private participation.
- d) Consultation with stakeholders – not as a one-off or occasional call for submissions; rather, an ongoing process of engagement, soliciting input and *feedback* from Electronic Communications service providers.
- e) Data-Driven Approach to Selecting Universal Access Fund (FASUs) Projects – Data collection and efforts to apply relevant insights to project selection and prioritization should be part of FASU operational reform.
- f) Transparency, regular performance monitoring and annual reporting – key to providing visibility and accountability.
- g) Project costing system that takes into account indirect and operational costs from the outset, with sustainable solutions that ensure the long-term viability of FASU projects.
- h) Alternative financing mechanisms – The "*pay or play*" model adopted in Morocco and proposed in Ethiopia has the potential to encourage stakeholder participation in coverage expansion projects and address traditional FASU challenges to engage the industry in a constructive manner.
- i) Capacity and skill development within the FASUs themselves – Focus on reskilling and upskilling existing staff, recruiting new people, and retaining qualified staff in FASU authorities.

In summary, a FASU that includes the reforms which are listed above is commonly referred to as a FASU 2.0 and can be expected to be more successful in achieving its objectives.

None of the above improvements are in conflict with the new Legal Framework for Electronic Communications or the new Universal Access and Service Ordinance, and all have been incorporated into the development of this universal access policy and strategy and recommendations for the FASU Administration.

3.3. General definitions, objectives and roles of the private sector

3.3.1. Universal access and service terminology

Universal Access is the availability of fixed or mobile communication services of a quality specified by the regulatory authority (NRA) for all consumers, regardless of their geographical location; accessible regardless of physical or mental ability, race, gender, religion or any other social factor; and affordable, regardless of income level.

The type of services made available must include, as a minimum, voice, text and data, including broadband internet access at a speed and facility that is universal for consumers located in urban or rural areas, and accessible for people with disabilities, which should be progressively facilitated for better access in the universal access strategy.

Public access refers to facilities such as Internet cafes, telecenters and hotspots, which will be used to provide access in locations where wireless signals are too weak for widespread reception, or to allow consumers without personal devices or unable to pay for fee-based plans to access the network in person, make calls and access the internet occasionally at an affordable cost.

Universal Service is the ultimate goal of this policy, representing the condition in which 100% of the population, in all communities in the country, has been achieved and everyone also has the reasonable ability to acquire a device and subscribe to network services privately, whether individually, family, or institutionally.

3.3.2. Universal access goals

This policy sets out the following goals to be achieved before 2030, to be detailed in FASU's Five-Year Strategic Plan:

- Call and text message quality voice service coverage in accordance with the NRA's Quality of Service (QoS) requirements should be extended beyond the current range, up to a minimum of 99% of the total population for 2G, 98% for 3G, and 96% for 4G, as per the FASU Strategic Plan.
- Within this general national goal, even communities located in the most deprived and remote rural areas, but with populations above 100 people, should have their coverage extended by the most appropriate technological means, including satellite.
- The speed of Internet access services must meet the download/upload (FTP) speeds required nationally and published by the NRA, using the most appropriate technology, in accordance with the population target.
- The target quality of service will be increased in progressive increments in accordance with the revised requirements established from time to time by the NRA.

3.3.3. Responsibilities and opportunities of operators

Service Provider Obligations in Covered Areas: This policy framework is based on the extensive voice and broadband presence achieved by existing operators and the potential for competitive expansion of new licensees, which can naturally increase service quality and customer choice. Where service coverage exists, operators are required to provide service to all customers seeking service at published tariff prices.

Role of the private sector in achieving new coverage areas: In areas and locations where service does not currently exist, the private sector, through FASU-subsidized expansion opportunity or market entry opportunities, will have an important role to play in meeting access and service goals, primarily by enabling

and promoting both increased access as a result of more investment, and through increased customer adoption and penetration through lower, competitively induced, and market-based pricing.

3.4. Universal Access and Service Fund Programs

The role of the Universal Access and Service Fund will be to complement the provision of commercial services by offering financial incentives, where necessary, to ensure that voice and broadband services reach all target populations with the specified quality in a commercially sustainable manner. The Fund will not provide financial assistance for any infrastructure-based services in areas where services already exist or that would be commercially viable without subsidy.

The Fund will promote and support demand-side activities in sectors that will benefit from telecommunications and ICT development, as well as digital literacy and training programmes.

The Fund will pursue the following general programs or streams of activity to achieve these objectives:

- a) Stream 1 - Rural Connectivity - Extend electronic communications infrastructure and services, step by step, to achieve the goals of Universal Access at all administrative levels of the human population in Guinea-Bissau, in particular for rural, remote and deprived sectors, sections or localities,
- b) Stream 2 - Facilitate the integration of networks and services throughout Guinea-Bissau by supporting implementation of the national high-speed fibre backbone, enabling a more ubiquitous and higher quality of service universally throughout the country,
- c) Stream 3 – Support and promote the development of the country's digital skills and use of electronic communications with capacity building and training programs,
- d) Stream 4 – Support sectoral adoption of Electronic Communications services and e-services – e.g. for schools and higher education, health facilities, e-government programmes and other agencies that meet public needs,
- e) Stream 5 – Facilitate content creation, technological innovation and application development that provide improved and beneficial access for underrepresented people and socio-economic activities; and
- f) Stream 6 - Create or support special projects, which are expected to be initiatives originating from non-governmental or civil society sources, including community network organizations. These initiatives must be aligned with the priority objectives of the Universal Access and Service Fund, general development of the electronic communications market and meeting the demand and need for Electronic Communications services by the population.

The practical balance between these various program streams, in the context of the financial resources that the Fund will receive, and the cost of each stream and how to develop each stream, are set forth in the following Section and will be detailed in the Strategic Plan proposed by FASU, to be prepared in a separate document.

In addition, the principles and procedures to be followed in the execution of the plan and in the management of operations and decision-making within the Fund's Administration will be in accordance with the Manual of Operational and Management Procedures.

4. Strategic Pillars of the Policy

This universal access policy and strategy will be pursued and supported through the following strategic actions.

4.1. Gap Analysis and Infrastructure Development

A gap analysis using the latest coverage data from licensed operators in the industry, including GIS-based digital mapping of the country's population distribution, localities, and administrative boundaries at all levels, will be conducted. This will accurately identify population coverage by 2G, 3G, 4G, and 5G technologies, and identify populations and communities that are not covered by existing basic and broadband communication networks, i.e., service and quality of service gaps for basic and broadband services by Region, Sector, Section, and Locality/Community.

The Universal Service and Access Fund (FASU) will use this data to plan and prioritize phased expansion projects to address gaps in rural and remote areas over time, in accordance with the project selection and development principles described in Section 4.7.

4.2. Benchmark Market Research

FASU needs to commission a baseline survey of the demands, accessibility, needs and preferences of users and institutions for ICT services at the national level, including rural areas. This is necessary to inform the financial and economic cost-benefit analysis and the subsidy estimate for network expansion and digital literacy programming. Alternatively, the Fund may adopt the results of an existing study already underway or a recently completed survey that provides the necessary data.

4.3. Competitive, smart subsidies and alternative means of distribution

The mechanism for selecting an operator or service provider to receive a FASU grant in a core network expansion program (Stream 1) will be through an open competition offering one-time smart grants through a reverse action (lower grant).

As provided for in the new Universal Access and Service Act, FASU can also involve operators in the Stream 1 network expansion program through a voluntary "*pay-or-play*" mechanism, which would be credited against the operator's annual universal access payment according to the considered net value of its investment.

All FASU programs, including literacy development, training, and support of ICT applications, will utilize competitive means for grant or grant distribution, except possibly in cases of government-to-government partnership, public-private partnership, or support of community networks, where their financial involvement will in all cases be transparent, open to consultation, and scrutiny through the Fund's reporting obligations.

4.4. Technology-neutral and sustainable solutions

FASU should leverage all *last mile* and last mile transmission technologies – fiber, terrestrial and satellite (including *LEO* and *Direct-to-device*), mobile, Wi-Fi and TV white space – for connectivity in underserved areas in the most feasible and cost-effective manner, based on cost-revenue and cost-benefit analysis.

FASU should also focus on maximizing sustainable solutions in its program – encouraging and specifying the use of solar energy and encouraging the implementation of rural mini-grid energy solutions, where appropriate.

4.5. Digital Inclusion and Training

FASU shall promote and fund ICT literacy programs targeting all segments of society, including women, youth, persons with disabilities, and other marginalized groups.

FASU is also expected to investigate potential modalities for subsidizing devices targeting low-income households, as well as various means, such as special public access to broadband services.

The FASU capacity building program is expected to extend to various sectors of the economy to maximize the impact on demand creation, especially in rural areas, as well as to amplify the impact of Electronic Communications on the economy. FASU support should normally be initiated after an initial study or dialogue to determine the extent of the need for FASU involvement and the potential to proceed in partnership, with clear memorandums of understanding outlining the responsibilities of the Fund, as well as those of the Ministry or the leading agencies of the recipient communities of interest. FASU support areas may include the following:

- a) Education - Internet for Schools, Colleges, Universities,
- b) Health - Hospitals, health centers and clinics, telemedicine,
- c) Agriculture – e.g., marketing cooperatives, community targeting, IoT network applications,
- d) Industry and business - e.g. SMEs, micro-enterprises and micro-finance,
- e) Governance/e-Governance - access to broadband for all levels of government and administration and promotion/support of e-Governance programmes,
- f) Community Networks – promoting local ownership and operation supported by FAU,
- g) Entrepreneurship and innovation - Programmes to identify and support,
- h) Agencies that support youth and women with programs to improve inclusion and enable FASU to achieve gender leadership and youth training goals.

4.6. Public-Private Partnerships and Fiscal Policy

FASU will be open to engage and participate in public-private partnerships that can leverage the limited resources of the Fund with the largest resources available for investment by private, governmental, and international agencies that have an interest in the development of ICT infrastructure in Guinea-Bissau.

- a) Private operators will be engaged by FASU to expand their coverage and/or co-invest in rural connectivity through the "*pay-or-play*" mechanism and/or bidding for network expansions and subsidized services.
- b) FASU will foster partnerships with international development organizations, such as the World Bank and bilateral development agencies, to finance any universal access initiative that is within its investment program or projects supporting national universal access.

- c) FASU may also foster international partnerships and/or guarantee mechanisms to mitigate risks of larger infrastructure investments.

4.7. Project selection and program creation

The FASU organization will acquire and use a database tool integrated with GIS, based on an online portal, for analysis and selection of projects, calculation of return on investment and estimation of subsidies.

In addition to the financial analysis of projects, the fund will also apply clear, transparent, and objective methods and criteria to prioritize geographic zones where FASU infrastructure projects will be implemented. Priority will be given to the "gap areas" identified by the process described in Section 4.1, which are generally rural, remote areas, small towns and villages that are not served or underserved by ICT services and where the licensed entity does not intend to provide services without financial incentive. All "gap areas" are initially defined by the GIS mapping methodology described in Section 4.1. All gaps identified and having their financial costs/grants calculated will ultimately be selected for inclusion in the FASU program according to several other considerations, which include but are not limited to the following criteria:

- a) Impact efficiency, i.e., greater number of people, lower subsidy (e.g., comparing the cost of the subsidy per person or user institution impacted);
- b) Projected sustainability on a revenue/cost basis after fulfilling the FASU grant agreement; and
- c) Regional representation and program balance.

A complete methodology for identifying, selecting, and prioritizing projects will be executed in the FASU strategic plan and will be in accordance with the "FASU Management and Operational Procedures Manual".

4.8. Stakeholder and industry consultation

FASU will regularly consult with stakeholders on the *design*, project balance, and budget commitments of the Universal Access and Service Investment Program. Consultations with the Electronic Communications industry may occur more frequently during the *design* phase of infrastructure expansion projects, to ensure that the industry's technical expertise and suggestions are fully taken into account and that industry buy-in and support for the overall programme is ensured.

At least one full stakeholder consultation will be conducted annually to allow FASU to share and receive comments and *feedback* on its annual report.

4.9. Complementary Regulatory Support Measures

Although not directly included in the universal access and service policy, the following regulatory issues have an impact on the achievement of universal access and therefore should be undertaken by the NRA in consultation/collaboration with FASU Management as supporting activities.

4.9.1. Frequency Spectrum

The NRA will promote rural network expansion and universal access through effective spectrum regulation that promotes transparency, affordability, and adaptability, with fair and efficient use of spectrum that increases investment, innovation, and connectivity in alignment with universal access objectives. This policy includes:

- a) public disclosure of the spectrum framework,
- b) establishing a comprehensive spectrum strategy, and
- c) sublease enablement, negotiation and spectrum sharing.

The Broadband Commission argues that transparency in spectrum allocation will reduce costs and uncertainty, providing a more attractive environment for new investors. The World Bank emphasizes the flexible use of spectrum, including *refarming* and sharing, as well as the use of unlicensed frequencies, to adapt to evolving technological and market needs. This ensures fair allocation processes at reasonable costs, with simplified procedures, fostering an environment that encourages innovation, competition, and expanded connectivity. This approach helps maximize the potential of spectrum resources, aligning with the broader objectives of Access and Universal Service in the telecommunications and ICT industry.

4.9.2. Infrastructure Sharing, Roaming and Open Access

Other key regulatory measures that support the goal of universal access, including cost-effectiveness in network expansion, have been enacted or are expected to be reviewed and deepened. These include:

- a) Passive infrastructure sharing and colocation – including blacked fibre, ducts, rights-of-way, towers, building space, on a non-discriminatory basis, in accordance with the existing Infrastructure and Colocation Regulation, or subject to further regulatory development.
- b) Promoting the simplification of approvals for rights of way – including active collaboration between the NRA and civil authorities to promote a "dig once" policy at the civil authority level, with provision for telecommunications pipeline needs.
- c) National Roaming, in rural areas specified as minimum – roaming should be encouraged or mandated by the universal access programme, as appropriate, to ensure that a fair and judicious balance of competitive and collaborative forces is harnessed and incentivized to achieve universal access, especially in rural areas, and should be in broad compliance with the NRA's national roaming regulation.
- d) Active infrastructure network sharing – the NRA should also consider the potential to strategically encourage the commercial deployment of Multi-Operator Radio Access Networks (MORANs) – radio access network sharing – as a way for operators to share radio access network infrastructure, especially in specified rural areas. e) Open access, in the most appropriate and cost-effective form (i.e., passive, active, or roaming) will be a mandatory condition for receiving grants from the Fund.

4.9.3. Additional Areas of Interest

To support its objectives and to develop and maintain the strongest possible links between the universal access program and beneficiaries in the national economy and to disseminate understanding of the universal access program, FASU, supported by the NRA, should actively carry out the following activities:

- a) Monitor research on the development and use of new electronic communication techniques and technologies, especially those that improve the viability of rural communications and those that promote accessibility to communication services for persons with disabilities and other disadvantaged or marginalized members of society.
- b) Develop links and collaborate with educational institutions and relevant government sector agencies to promote both connectivity and technical education in the field of Electronic Communications. This should focus on the objective of contributing to the development of the telecommunications and ICT capacity of students and graduates at all levels of education, to develop consumer skills and economic opportunities, in ICT-related or ICT-enhanced economic activities.
- c) Promote, dialogue and encourage investment in national data centres and other support and content institutions. Monitor and promote, with financial incentive as necessary and appropriate, the development of usable content and applications (e.g., business mobile applications, regional, sectoral, or community websites) that increase demand and enrich the experience of consumers of Electronic Communications services.
- d) Develop links and collaborate with Incubation Hubs, *Start-ups* and Private IT Training and Development Companies in the capacity building and promotion of content and application development.
- e) Engage in intergovernmental conversations aimed at optimizing the Electronic Communications tax regime to promote the sector's maximum contribution to broad economic growth and government tax revenue, as opposed to the restricted taxation potential of the Electronic Communications sector.
- f) Engage in conversations also aimed at securing strategic tax incentives for investments in telecommunications, critical devices and rural infrastructure.

As the Fund's programs are developed, these interests should be incorporated into the Fund's objectives, planning, and approved activities as deemed necessary to support the realization and benefits of universal access and service throughout the country.

5. Implementation Plan

5.1. Legal and Institutional Framework

The necessary legal framework under which this policy and strategy will be pursued is broadly aligned with the new Framework Bill that has been prepared for enactment in 2025. However, some developments are needed, as described in the following subsections, namely Section 5.1.4.

The role of the key institutional pillars supporting the universal access and service policy framework are as follows.

5.1.1. Ministry of Transport, Telecommunications and Digital Economy (MTTED)

MTTED is established and will remain the primary policymaking and coordination institution. Specifically, the MTTED (i.e. the "Member of the Government responsible for the electronic communications sector"), in coordination with the National Regulatory Authority for Information and Communication Technologies (NRA-ICT), will define the general development policy and general guidelines for the electronic communications sector and monitor their implementation, in accordance with the priorities of the State and the principles of fair competition, equal treatment, transparency and neutrality.

The Minister is therefore responsible for defining the universal access and service policy and proposing the universal access and service strategy for adoption by the Council of Ministers, which must be updated every five years.

5.1.2. National Regulatory Authority for Information and Communication Technologies (NRA-ICT)

The NRA-ICT is the Authority that performs the functions of regulation, supervision, supervision and application of relevant sanctions in the context of the authorisation of electronic communications networks and services, as well as related installations and services.

The NRA-ICT is responsible for "implementing the national universal service policy" in electronic communications services and mobilizing resources for the Universal Access and Universal Service Fund, in accordance with the regulations in force.

5.1.3. Universal Access and Service Fund (FASU)

In accordance with previous practice and according to the new Framework Law, the NRA would have a major role in organising the Administration of FASU, which has the following functions:

- i. The technical functions required to develop FASU's program and projects are undertaken by NRA's Universal Access and Service Department. It is understood directly from the NRA that this department currently contains only two persons dedicated to FASU, but is supported as needed by other technical staff within other Directorates of the NRA organization.
- ii. The Fund's Management Committee, which is currently composed of the following five (5) members: Chairman of the Board of Directors of the NRA (who is the Committee President); MTTED Representative; three (3) operator representatives, one from each of the three licensed operators -

Orange Bissau, MTN/Telecel, and Guiné Telecom. The committee commissions strategic planning tasks for the NRA to execute and approves projects for inclusion in the FASU Program.

- iii. The Executive Secretary of the Management Committee is hired, through public tendering for a contractual period of 3 years, for the purpose of managing the collection and disbursement of universal access fees from operators, administering and recording all activities and projects of the Fund, preparing project approval reports and progress meetings and the Annual Report of the Fund. The Executive Secretary is assisted in his work by two seconded staff of the NRA-ICT.

5.1.4. Updating FASU's governance and management structure

The current structure of FASU Management has the advantage that, although the Fund is, in principle, an autonomous unit, it is also dependent on the NRA, which can strengthen any of the three elements in the organisation as needed to cover the technical skills and effort required to expand the Fund's responsibilities and the administrative capacity to fulfil the expanded vision and functions of this new policy and strategy. It also has the advantage that the Management Committee has an inherent facility for regular consultation with industry during the design and approval phase of programmes and projects.

However, it is understood that the current structure is not performing to its full potential. As a first step, it is recommended that the UAS department within the NRA needs to expand and re-skill by adding at least three or four additional dedicated staff to cover the activities in this policy and strategy. To meet the minimum staffing and skill benchmark from comparable UASFs in sub-Saharan Africa, the consultant advises the following adjustments to be required:

- i. A strong leader (a senior manager of department) to provide a technical focal point separate from the Management Committee whose role is one of oversight and approval. Ideally the department should transform into a Directorate, affording the universal access function greater prominence and status, managed by someone with inter-government experience, relevant technology qualifications and good communications skills;
- ii. A solid Technical Planning division with at least two engineers / ICT professionals capable of project planning and design and technical monitoring; and
- iii. In-house statistical, database, market, and digital mapping expertise to provide the analysis and updating of universal access status, for project support, report preparation, graphics and display.

Administrative, financial and documentation related support functions should be provided by the Executive Secretary and his support staff, working closely with the department on an everyday basis, in a slight expansion of their current role.

There is also a strategic institutional issue which has been considered: the most successful universal access and service funds – notably at least Tanzania, Ghana, Nigeria and Pakistan – have more autonomy from the regulator and thus dedicated staff. They typically have stronger independent and senior leadership; create a greater sense of identity and unique purpose and are directly accountable to the Ministry of ICT, the Council of Ministers or Parliament.

However, the analysis of whether the FASU can be strengthened within its current structure (tied directly to the NRA to effectively fulfil the vision and mission of this policy), or established as an independent organisation should be considered for Guinea-Bissau, can be analysed by a comparative SWOT analysis as follows:

Figure 8: FASU remains under the NRA

Strengths Flexibility to operate efficiently considering the small budget of the Fund. Albeit, staff augmentation is required as described, even if fulfilled as a mix of dedicated and part-time seconded staff. The current Management Committee has an inherent structure for consultation and participation of industry in the FASU planning process. The specific role and obligations of the Executive Secretary enable the Fund to have good accountability, administrative regularity and good record keeping.	Weaknesses Maintaining flexibility can also be a weakness in that the UAS Department in NRA may change only marginally and remain without a senior leader with real responsibility. It also risks staying with a limited range of skills dedicated to the Fund's needs or meeting the Fund's goals. There is a danger that continuation of the existing structure will mean no change. Reports are that the decision-making is not fully collaborative, with little influence by the industry representatives and the operations of the Fund are generally ineffective.
Opportunities With a new vision, adopted mission, expanded budget and with commitment by the NRA leadership, the current structure could be strengthened with the hiring or internal placement of a suitably qualified Department leader and additional staff that meet the skills requirement for the Fund To confirm this option, the UAS Department could be elevated to a FASU Directorate, with all recommended staff, while the Executive Secretary and his staff provide a strong supporting role on all documentary and administrative functions.	Threats The Fund could remain ineffective and uninfluential if a fundamental restructuring and elevation of FASU's status within the NRA is not undertaken and unless the core group is augmented with a) strong and senior qualified leader, b) more status and independence, and c) more skills and incentive to effect change and impact in development of the sector.

Figure 9: Reconstitute FASU as an independent organisation

Strengths A fit-for-purpose organisation will have dedicated staff and skills who can focus solely on the targeted universal access outcomes without conflict or distraction by non-UAS regulatory duties. With a new vision and adopted mission, policy and strategy, the organisation will retain its link with the NRA for collaboration on regulatory policy. As well, collaboration on advocacy for fiscal policy change could present a stronger front with Government. Consultation and stronger collaboration with stakeholders, especially with the industry, can be a focus.	Weaknesses The FASU budget is relatively small on an international scale and therefore the creation of an independent fit-for-purpose organisation, without the flexible staffing feature and physical support of the current NRA structure, may be difficult to justify economically or sustain. Collaboration with NRA will also still be required for intermittent outsourcing of a technical team to undertake tasks such as project acceptance testing, which would not be economic for FASU to retain on a permanent basis.
Opportunities Establish a strong national presence with an advocacy and promotional role to consult with stakeholders, Government agencies. Create an inclusive universal access development program and achieve buy-in and participation by both public and private sector stakeholders Execute an innovative UAS program, including pay-or-play and other partnership approaches in compliance with the policy and strategy.	Threats Unless the leadership of FASU is strong and its role strongly supported through its chain of authority from a high level, (i.e., Ministry, Council of Ministers, or Parliament), the young and small organisation could face inability to establish recognition for its role, and to sustain the necessary collaboration with the NRA. Mitigation of this must be through strong safeguards in the revised UAS Decree as well as strong leadership.

Alternatives and solutions for FASU Management's expanded "FASU 2.0" functions and structure have been a matter of feedback and discussion among stakeholders. After consideration of the SWOT analysis, it was clear that, whether the FASU Administration would remain under the NRA's tutelage or become more independent as a separate organisation, there should be an ongoing relationship with the NRA. This is required for dialogue on promoting broader regulatory reform (e.g., spectrum and infrastructure sharing); on some aspects of the intergovernmental agenda, such as advocacy on ICT taxation and other fiscal measures, and the promotion of more streamlined rights-of-way and "dig once" initiatives; as well as to fulfil intermittent staffing needs such as field technicians for system acceptance testing.

For these reasons and considering the relatively small scale of the FASU operation, the conclusion was to recommend continuation of the current structure, retaining and strengthening the technical function under ARN, by incorporating the necessary provisions to strengthen the staff complement within ARN's universal access department or Directorate,

The detailed recommendations on governance, management and staffing are provided in the Management and Operational Procedures Manual.

5.2. FASU Strategic Plan and Timeline

The Policy and Strategic Program on Universal Access and Service will be prepared, defining goals with deadlines for the period of five years from 2025/26 to 2029/30, in a Strategic Plan, to be prepared by the NRA and approved in public consultation with stakeholders.

The Strategic Plan must contain, among other elements:

- i. Vision, Mission and Objectives of FASU in the short, medium and long term, term,
- ii. Alignment with the objectives of the National Policy on Economy and ICT,
- iii. Summary of the basic situation,
- iv. Roadmap for initiatives, projects, and activities to be implemented by FASU,
- v. Objective goals to be achieved for coverage, penetration, participation in the program,
- vi. Financial analysis – demand, cost/revenue, and program/project grant modelling,
- vii. Structuring of personnel and identification of resources for execution,
- viii. The Program Streams:
 - o 5-year program streams,
 - o Short-term (1-2 years): Pilot projects - e.g., incl. coverage, increased community access, literacy, education/teaching, sector outreach, health and agriculture pilots, potential innovations (e.g., *pay-or-play*)
 - o Medium-term (2-4 years): Nationwide broadband expansion projects to meet medium-term universal access and service goals, usage goals, and sectoral outreach goals

- Long-term (4-5+ years): Complete the fiber optic backbone, achieve full universal service, and ICT integration in all sectors.
- ix. Departmental Program Responsibilities, Target Outcomes, KPIs and Risk Analysis.
- x. Monitoring and Evaluation Structure, Review and Update of the Plan.

The Strategic Plan will include, for each of the phases, a feasible operational plan with well-described actions and time frame.

5.3. Mobilization of Financial Resources and Financing Mechanisms for Implementation

5.3.1. Market and Existing Investment

Total operators' market revenues in 2023 were 48.4 billion FCFA (US\$77.7 million), of which 78.5% were generated by one operator, Orange Bissau. In the same year, the two operators reported that they invested 11.8 billion FCFA (US\$18.6 million), or 24% of revenues in network growth and development. It should be assumed that between 20-25% of the revenue will also be invested going forward.

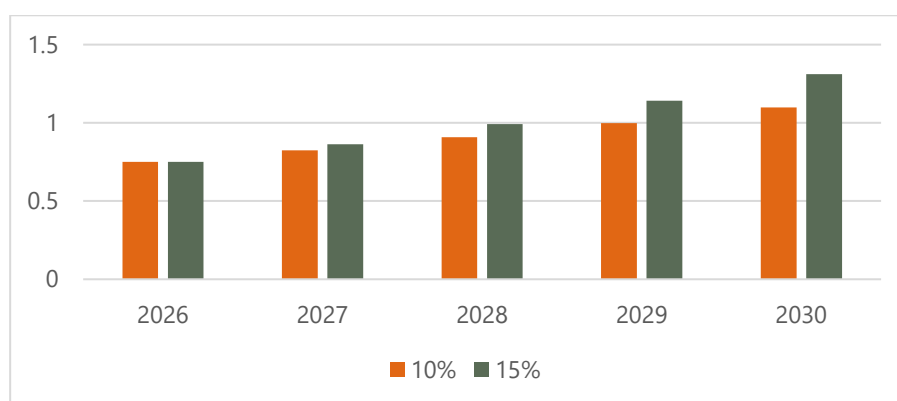
5.3.2. Universal Access and Service Financing

The Draft Framework Law on Electronic Communications provides that the cost of spending on universal access and service (ASU) will be borne in whole or in part by the renamed Universal Access and Service Fund (FASU), whose resources will continue to be substantially guaranteed by the annual contributions of licensed operators. In addition to continued commercial investment by operators, FASU, with 1% of gross turnover, raised 0.49 billion FCFA (0.78 million US dollars) in 2023, representing an additional potential of 4% sectoral investment beyond that reported by operators.

5.3.3. FASU Development Accumulation in Five Years

Based on the increase in the Universal Access and Service rate to 1.5%, net of interconnection payments, as proposed in the new Framework Law, the fund's potential revenue will increase to at least 0.75 billion FCFA (US\$1.25 million) from 2025/26 and will increase between 10 and 15 percent annually with market growth, reaching 1.15 – 1.3 billion FCFA (1.8 – 2.0 million US dollars) and accumulating 7.6 – 8.4 million US dollars over the 5 years to 2029/2030.

Figure 10: FASU Annual Universal Access Collections (Billion FCFA)



Source: Salience Consulting, based on FASU provided figures

With private sector participation in the ASU program, the contribution from FASU grants will create at least the same amount of additional investment from government and the private operators, thereby facilitating a total additional investment of USD 2.5 million (3% of revenue), which will accrue a minimum of USD 15 million in the development of infrastructure and services targeted by FASU over the next five years.

5.3.4. Other sources of investment financing

While most of the funds to meet the expenditures foreseen in the FASU Strategic Plan come from the Universal contributions of licensed operators, collected in cash or in-kind (e.g., *pay-or-play*), other resources may come from donations and bequests or from contributions from international organizations, such as bilateral aid agencies of individual countries or multilateral agencies, such as the World Bank.

As mentioned in Sections 4.6 and 5.3.3, the total amount of investment obtained through FASU's network development projects could greatly increase total funding from public and private sources. In addition, capital investments in the construction of the fiber backbone project are expected to be substantially contributed by the World Bank through WARDIP, while the Fund's human resources could be used for project tendering and project management, depending on the final design of the projects.

6. Monitoring and Evaluation

6.1. Overview of the Monitoring and Evaluation Framework

6.1.1. General

An effective monitoring and evaluation system to maintain an active evaluation, *feedback* and control of the Universal Access and Service Strategy is especially important in the context of the Guinea-Bissau market, for the following purposes:

- a. Assess whether the market context against which the objectives of the Universal Access and Service Strategy (ASU) were formulated has remained and grown as expected, or whether significant changes have occurred
- b. Assess whether ASU's goals and interventions (e.g., FASU Program Flow Programs 1 and 2) are being implemented as expected
- c. Assess whether there is evidence that the expected development and outcomes of all flows are being realized in terms of the results, costs, and administrative efforts required
- d. Be able to modify or implement corrective measures for any program that is experiencing problems or underperforming.

Based on the general knowledge gathered about accessibility and user penetration, determine how the evolution of the ASU Strategy, including the non-infrastructure aspects of the program, needs to be reviewed or reformulated in the coming years.

In summary, monitoring is initially required to maintain a vigilance on the underlying assumptions, risks, and accomplishments regarding the ASU Strategy and the FASU Strategic Plan and to update and make adjustments as appropriate.

6.1.2. Overall Industry Development and Achievements

The NRA will monitor and maintain a record of the current and emerging presence of operators and key Performance Key Indicators (KPIs), while FASU will use this data, in addition to monitoring the achievements of network and service projects supported by FASU grant agreements and outreach flows.

Of particular interest to FASU are the following contextual parameters for the Fund's Strategy:

- i. Is the market (and therefore FASU's income) developing and growing as projected or differently, requiring adjustment in the Fund's expected revenue?
- ii. Are the Licensed Entities providing the contracted services in accordance with the License's schedule, coverage, and Quality of Service (QoS) specifications?
- iii. Are there any predominant external factors (e.g. economic or security concerns) that are preventing implementation?
- iv. Are populations taking advantage of the new services provided and consumer penetration increasing, or are there unexpected impediments or obstacles?

6.1.3. The FASU Program and Adjustments

FASU Management should, in turn, implement a robust Monitoring and Evaluation framework to oversee all FASU-funded projects. This will include regular on-site and remote monitoring of all projects to ensure that funds are being used in accordance with contracts.

In addition, the Administration of the NRA or FASU will conduct or sponsor impact assessment studies to assess the performance of the projects and whether the overall programme flows are achieving their objectives. Evaluations will be used to assess the effectiveness and impact of FASU programs in achieving universal access and service goals.

6.1.4. Monitoring

Monitoring is a short-term activity. It needs to be designed into each Flow and project, as an ongoing activity, starting with contract acceptance testing, where construction standards and performance KPIs must be measured.

It is intended to ensure that the implementation goes as planned and allows the monitor to recommend acceptance of the system or detect if it does not meet specifications and recommend corrective action.

In particular, monitoring the following items is important:

- a. Acceptance of QoS installation standards and technical ICDs – e.g., phone call setup, success rates and dropped calls; data transfer rate (Mbps), packet loss and delay; physical standards and electronic testing of towers, mobile BTS and microwaves; testing of fiber optic coils, installation and end-to-end transmission.
- b. Delivery - Are the service providers able to deliver the contracted service according to the schedule and *QoS specifications*?
- c. Acceptability of the beneficiaries - Are the beneficiaries of the programs really able to accept the services provided or are there any impediments? Research instruments shall be developed, which the FASU Administration will use to conduct research or outsource research to evaluate these factors.

6.1.5. Evaluation

Evaluations are usually conducted after a few years. In this case, the first evaluation should take place after 3 years due to the initial phase of the FASU reformed development program and the potential adjustments that may be required.

Is the purpose of an evaluation focused on assessing the intended impact, i.e., have the intended applications and benefits of the program been realized? The assessment is based on the basic information collected during regular monitoring.

It is generally important to establish baseline data: that is, what the exact situation is at the outset in relation to the key parameters that the FASU program plans to improve or impact.

It is recommended that FASU determine for each program flow what is the initial/optimal time to make a meaningful assessment. This may use a shorter period of time, as long as expectations regarding the possible impact achieved are reasonable.

For each strategic program stream, FASU should develop an evaluation plan, which covers:

- a) What are the main objectives and intended benefits of the program and how will its progress be measured?
- b) Is a baseline data study needed to determine the current situation on which to assess the benefits later?
- c) In what timeframes will the specific impact be measured?
- d) In what timeframes will the specific impact be measured?
- e) What methods are used to assess the impact later?

This will ensure that the FASU Administration has a solid foundation of data and analysis that supports, in a reasoned manner, its implementation and socio-economic impact.

6.1.6. Sustainability

A key aspect of monitoring and evaluation activities is to ensure the sustainability of the various streams of individual programmes and projects, assuming that they have, in fact, proven their beneficial impact. This is particularly true for Flow Program 1, as many rural areas may have very dubious sustainability.

Key issues related to the sustainability of the projects include the following:

- i. Can the service provider sustain the provision of services based on the smart subsidy received for the contracted period?
- ii. What happens after FASU support ends? Will the project be able to sustain itself?

FASU should monitor the issue of sustainability especially carefully and include key measures needed in the next cycle of a 3- or 5-year ASU Strategy to ensure continued sustainability.

6.2. Key Performance Indicators

The following KPIs should be considered as a critical minimum set of indicators for the FASU economist/statistician to collect for the purpose of maintaining a careful watch on the country's status and progress in universal access and service the FASU program flows and eventually feeding into the evaluation cycle:

- a) Periodic recording of percentage targets of administrative units (i.e., regions, sectors, sections, and communities, as practical and feasible)
- b) Collaboration with NRA could include outsourcing of intermittent requirement for a technical team to undertake project acceptance testing. of the population with access to basic and broadband electronic communications services (based on GIS mapping analysis)
- c) Percentage and time growth in operators' broadband subscriptions and data usage
- d) Quality of Service (QoS) and Quality of Experience (QoE) goals and means of ensuring
- e) Percentage of ownership of basic devices and smart phones
- f) Cost of services provided and cost of devices, measured against income % targets
- g) Number of telecommunications and ICT literacy/training centers and participants in FASU-supported literacy programs
- h) Regional and international references (e.g. neighbouring countries and peers).

6.3. Reporting and Review

The following characteristics should be considered as the standard for maintaining a credible FASU Monitoring and Evaluation framework:

- a) Annual progress reports on the Fund's plans, activities, collection/disbursement (isn't it better to change the terminology) and results revenues/costs?
- b) Regular consultations with stakeholders to refine strategies – a minimum of once a year, but should be considered in the planning and *design* phase of each programme stream
- c) Interim (2-3 years) and final (4-5 years) evaluations to assess impact and sustainability
- d) FASU Strategic Plan Review Preparation Cycle, including stakeholder consultation.

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