

Assessing Rwanda's mobile tax regime:

Impact of proposed tax increases on sector and economy

November 2024



GSMA

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Executive summary



Over the past decade, Rwanda's mobile market has seen significant growth, driven by major investments from mobile operators to improve broadband networks. However, the government's recent proposal to increase mobile taxes, including raising the excise duty from 10% to 12.5% and reintroducing an 18% VAT on imported handsets, risks undermining this progress.

This report reviews the tax regime applied to the mobile sector in Rwanda and evaluates the negative impacts of proposed tax increases on the mobile sector and the broader economy.

The mobile market in Rwanda has grown significantly over the past decade. As a result, the coverage gap has shrunk from 15% in 2014 to just 1% by 2023. Unique mobile subscriber penetration has increased, rising from 34% to 39% over the last five years, with a forecast to reach 47% by 2028. The uptake of 3G and 4G services has also increased, with 3G penetration climbing from 5% in 2014 to 61% in 2023, and 4G from 0.1% to 15% during the same period. Additionally, smartphone connections have grown from 4% in 2014 to 22% in 2023, highlighting a clear shift towards more advanced mobile technologies within the population.

Mobile services are playing an increasingly crucial role in driving economic growth and promoting social inclusion in Rwanda. In 2023, the mobile sector contributed 8% to the country's GDP, adding \$1.1 billion in economic value. The majority of this impact came from productivity gains, which amounted to \$756 million (5% of GDP).

Despite the significant progress outlined above, Rwanda's government needs to take further action to catch up with regional peers and expand the mobile sector to fully harness mobile technology for economic growth, improved service delivery, and enhanced citizen well-being. Key challenges include a high usage gap (percentage of the population covered by mobile broadband networks but not using mobile internet) which stands at 80% as of 2023, higher than the Sub-Saharan Africa (SSA) average of 61%. Additionally, the smartphone penetration rate in Rwanda is just 22% as of 2023, lower than in several

other countries in the region and significantly below the SSA average of 49%. These factors underscore the need for continued efforts to boost smartphone adoption and connectivity in the country, ensuring that the population can fully benefit from the opportunities provided by mobile technology.

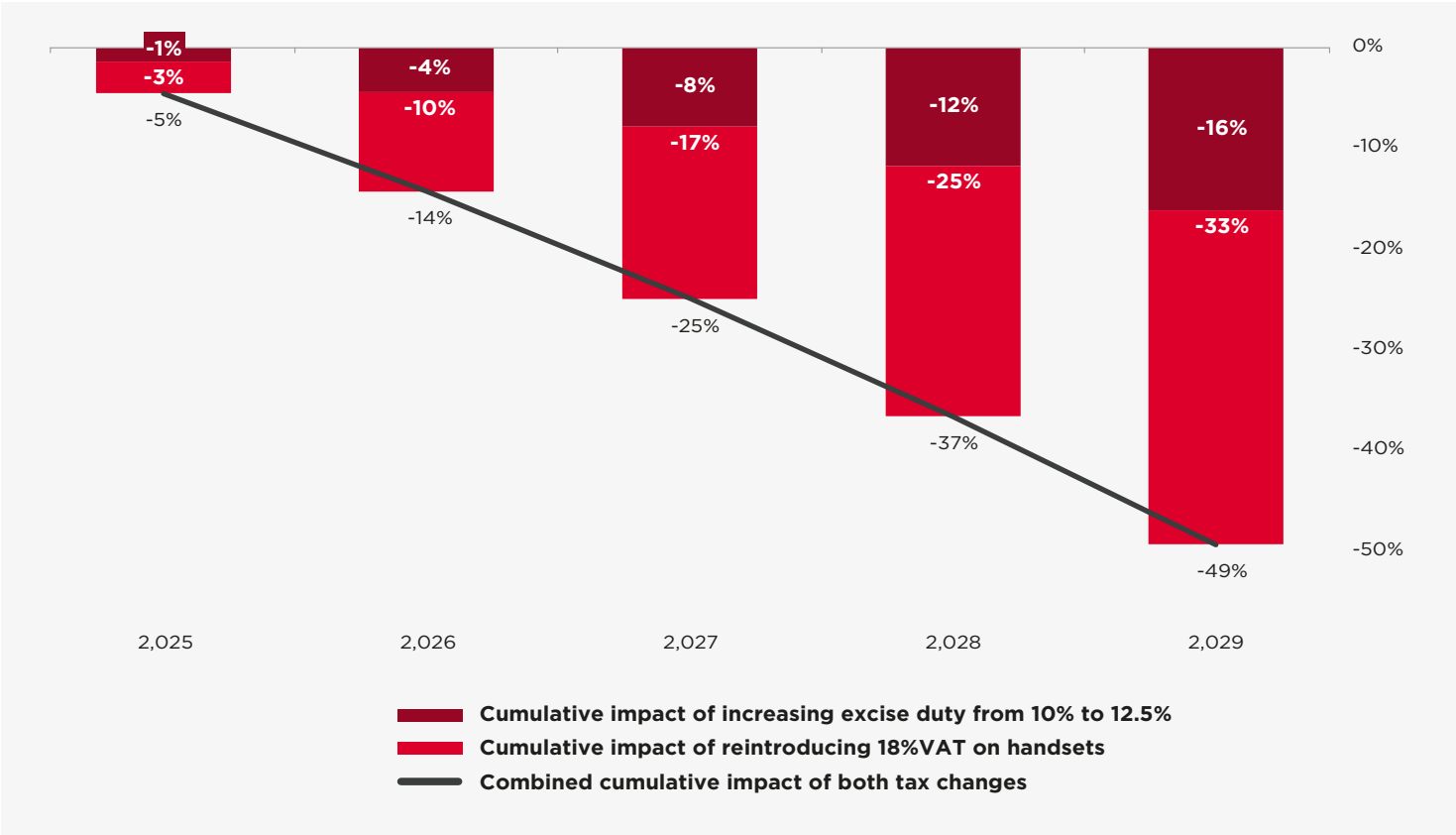
The affordability of mobile phones continues to be a major obstacle to mobile service adoption in SSA, including Rwanda, as highlighted by various GSMA surveys. In Rwanda, the combined cost of a basic internet-enabled handset and 1 GB of data amounts to 60% of the monthly income for those in the bottom 40% of the income bracket. This underscores the need for initiatives to make mobile devices and services more affordable to reduce the significant usage gap. However, the government's recent proposal to increase mobile taxes, including raising the excise duty from 10% to 12.5% and reintroducing an 18% VAT on imported handsets, undermines these efforts. The proposed VAT would increase the price of mobile devices, further restricting affordability, particularly for rural population, where 93% of the country's population living under poverty line reside. The increase in taxes will also contradict the country's digital vision set out in the National Broadband Policy and Strategy: "to accelerate Rwanda into the competitive and innovative global digital economy through accessible and quality broadband services". The increase in taxes is also misaligned with ConnectRwanda 2.0's objective of increasing smartphone ownership and promoting digital inclusion, particularly for low-income households.

This report assesses Rwanda’s mobile sector taxation regime, focusing on its alignment with international best practices and the country’s digital vision. It includes analysis of the potential negative impacts that proposed tax increases could have on the affordability of mobile handsets and services.

Moreover, using an economic model, the report provides a quantitative assessment of the broader adverse effects these tax increases could have on the sector and the wider economy. A summary of these impacts is outlined below:

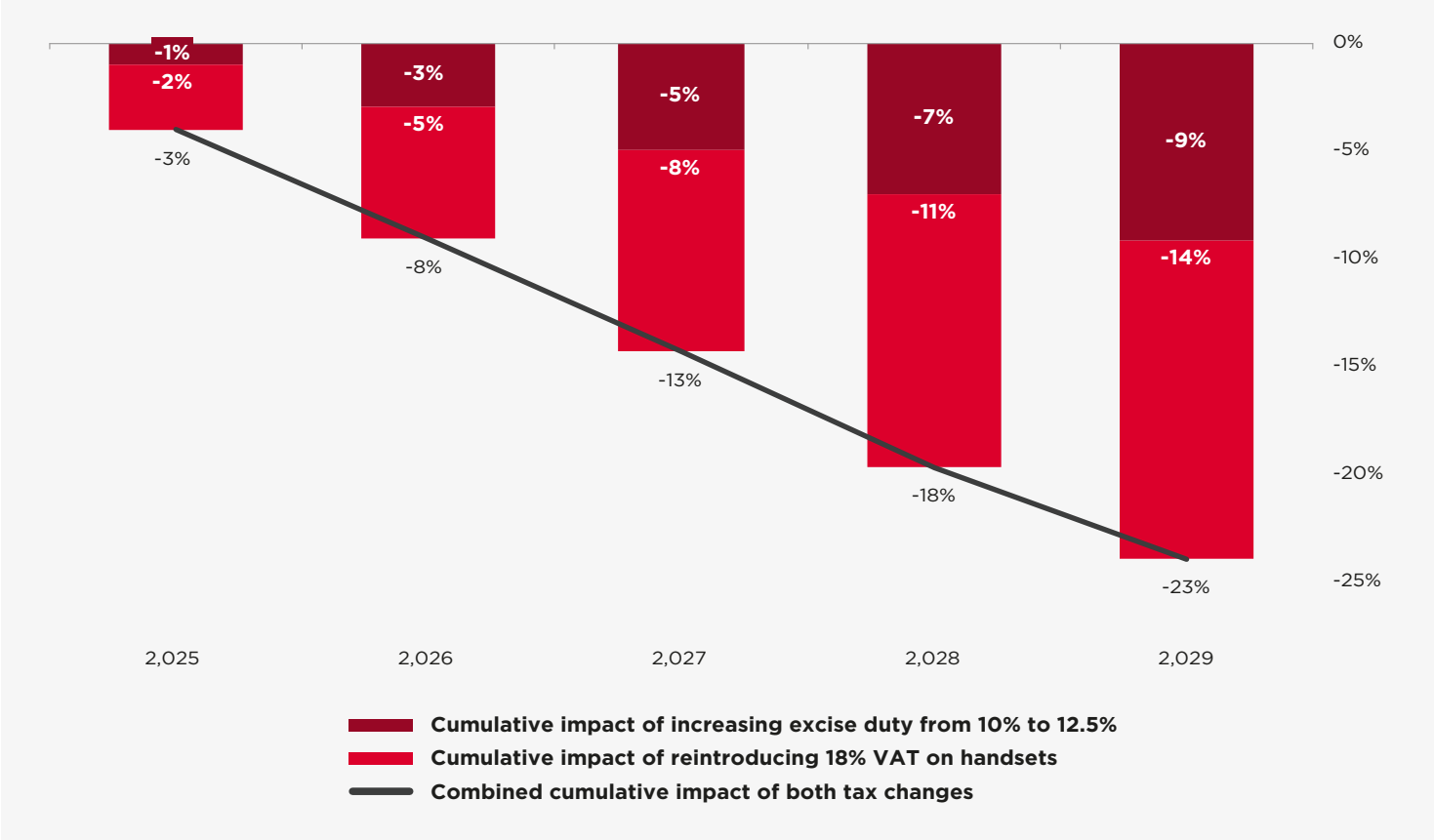
► **Impact on mobile internet penetration:** Compared to the baseline of no tax changes, increasing excise duty to 12.5% and reintroducing the 18% VAT on handsets will cumulatively reduce internet penetration by 16% and 33%, respectively, by 2029. Overall, these tax changes will result in a 49% cumulative drop in mobile internet penetration over five years.

Cumulative impact of tax increases on mobile internet penetration (2025-2029)



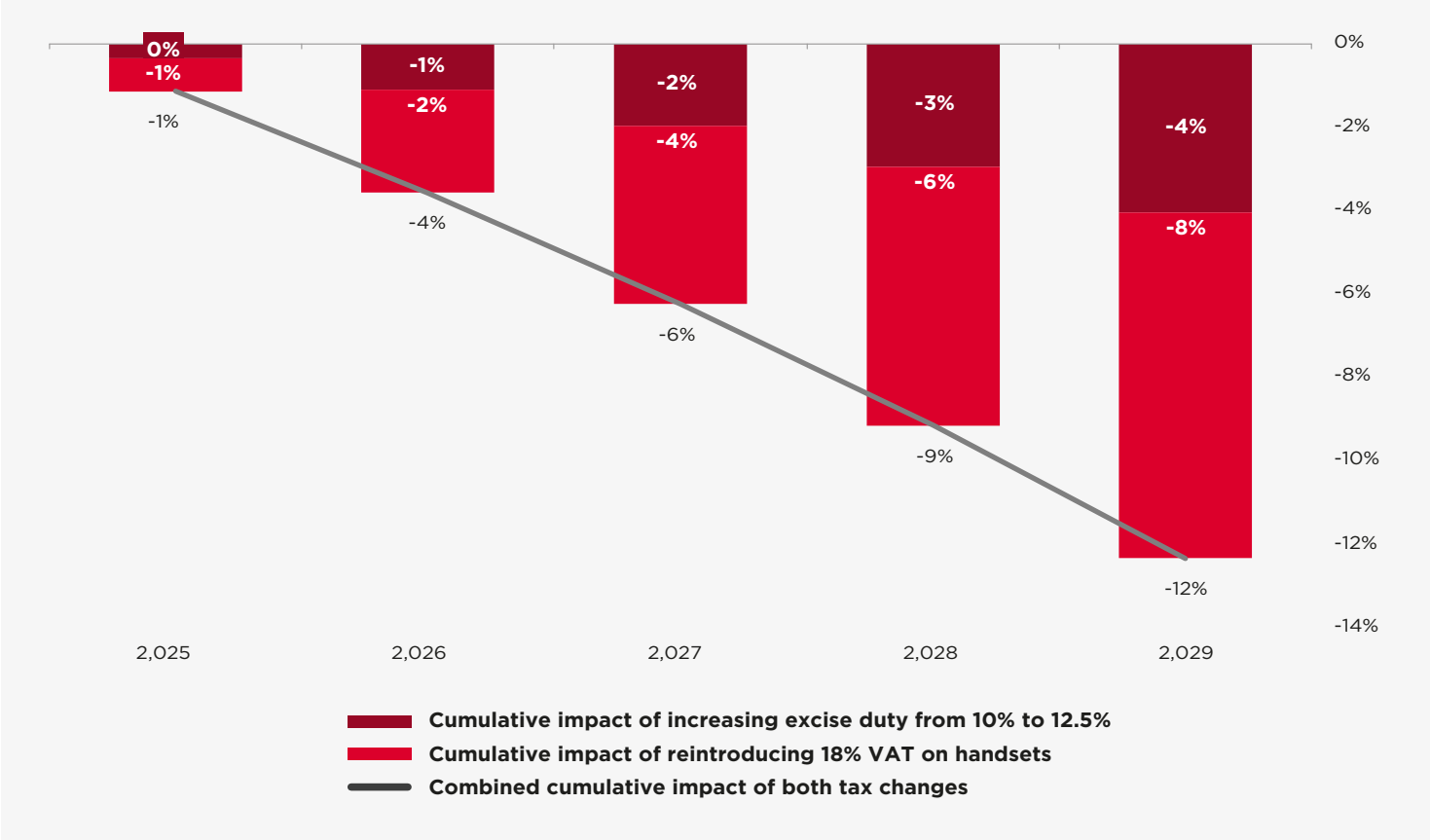
► **Impact on unique mobile subscribers:** Increasing excise duty and reintroducing VAT on handsets, will cumulatively result in 24% less unique mobile subscribers, compared to the baseline, by 2029.

Cumulative impact of tax increases on unique mobile subscribers (2025-2029)



► **Impact on GDP:** Mobile phone services are vital for economic growth. Proposed tax increases on mobile services and handsets will lower mobile internet penetration, reducing productivity and ultimately shrinking output, incomes, and spending. As shown in the figure below, these changes are projected to lead to a cumulative 12% GDP loss by 2029 compared to the baseline.

Cumulative impact of proposed tax increases on GDP growth (2025-2029)



► **Impact on employment:** Furthermore, as a result of proposed tax increases, the reduced economic activity from the productivity impact of lower mobile penetration will lead to a loss of approximately 100,000 jobs by 2029.



Based on the results of the quantitative analysis regarding the potential negative impacts of the proposed tax increases on the mobile sector and the broader economy, the report offers the following

recommendations aimed at fostering investment in the sector and promoting the adoption of mobile services in Rwanda:

Recommendation 1:

Refrain from raising the excise duty on mobile services from 10% to 12.5% to prevent increasing the cost for consumers, which could negatively affect mobile service adoption.

Recommendation 2:

Avoid reintroducing the 18% VAT on imported handsets, as this could exacerbate the already significant affordability challenges for mobile devices in the country.

Recommendation 3:

Gradually reduce mobile sector-specific taxes to promote equal treatment with other industries, thereby encouraging further investment from operators and boosting the uptake of mobile services.

1.

Rwanda's economy and the role of the mobile sector in the economic growth



1.1 Overview of Rwanda's economy

With a population of just over 13 million people, Rwanda is one of Africa's fastest-growing economies. However with a largely rural population (82%), the country continues to face challenges, particularly in tackling income inequality and rural poverty. Below is an overview of Rwanda's key socio-economic and demographic indicators:

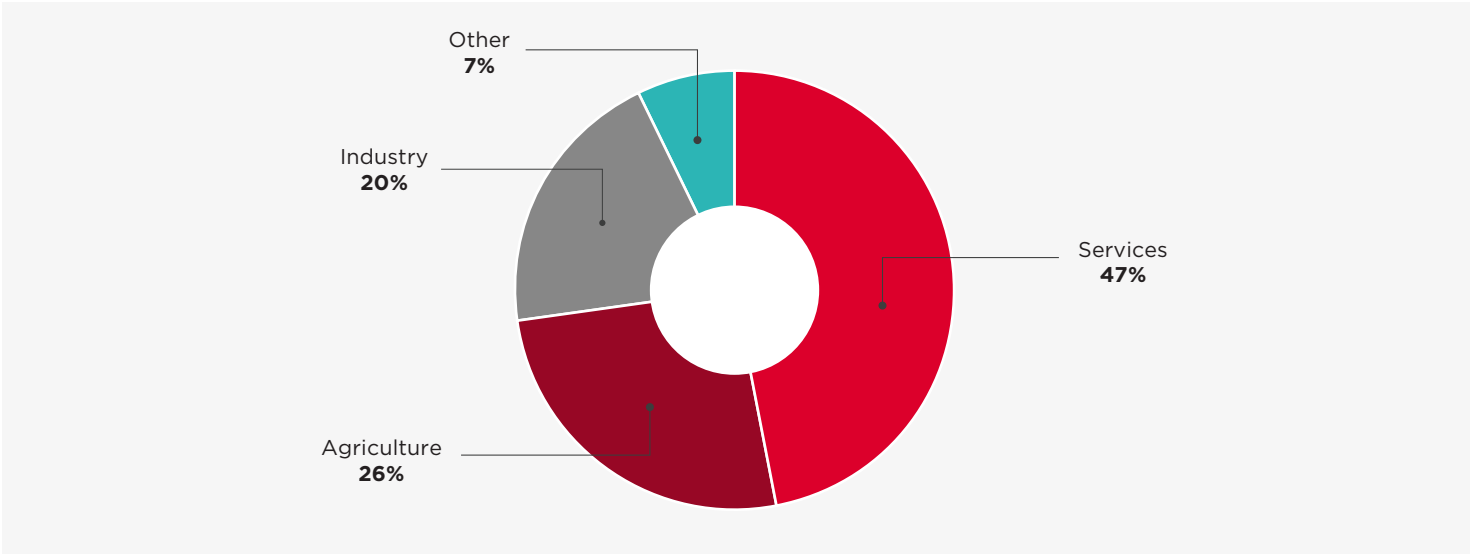
Table 1:
Key socio-economic and dempographic indicators¹

Gross Domestic Product (GDP, RWF billion)	16,265.58
Gross Domestic Product (GDP, US\$ billion)	14.02
GDP growth (annual %)	8.2
GDP per capita (US\$)	1,000
Population	13.4 million
Rural population as % of total population	82
Percentage of population living under poverty line % ²	38.2
Percentage of population living under extreme poverty line % ³	16
Percentage of poor people living in rural areas % ⁴	93

Source: World Bank World Development Indicators and data from National institute of Statistics of Rwanda

Rwanda's total GDP in 2023 was \$14.02 billion which showed an 8.2% growth compared to the previous year. The services sector at 47% made the largest contribution to the GDP followed by agriculture and industry at 26% and 20% respectively. The other sectors together contributed the remaining 7% of the GDP. The GDP growth of 8.2% in 2023 significantly surpassed the average GDP growth for the SSA region which was 3% in the same year.

Figure 1:
Composition of GDP by sector in Rwanda (2023)



Source: National institute of Statistics of Rwanda

1 The data is from 2023 for all indicators, except for poverty figures, which are from Rwanda's 2017 Fifth Integrated Household Living Conditions Survey.
2 The main poverty line is set at RWF 159,375 per adult equivalent per year in the prices of January 2014
3 The extreme poverty line is set at RWF 105,064 per adult equivalent per year in the prices of January 2014
4 Rwanda's 2017 Fifth Integrated Household Living Conditions Survey

Over the past two decades, Rwanda’s real GDP has increased almost fivefold from RWF 2.3 trillion to RWF 11.3 trillion in 2023, far outpacing the growth of the population which has nearly doubled from 7 million in 2000 to 13.4 million in 2023 over the same period. This is reflected in the significant growth in GDP per capita which was \$255 in 2000 compared to \$1000 in 2023.⁵

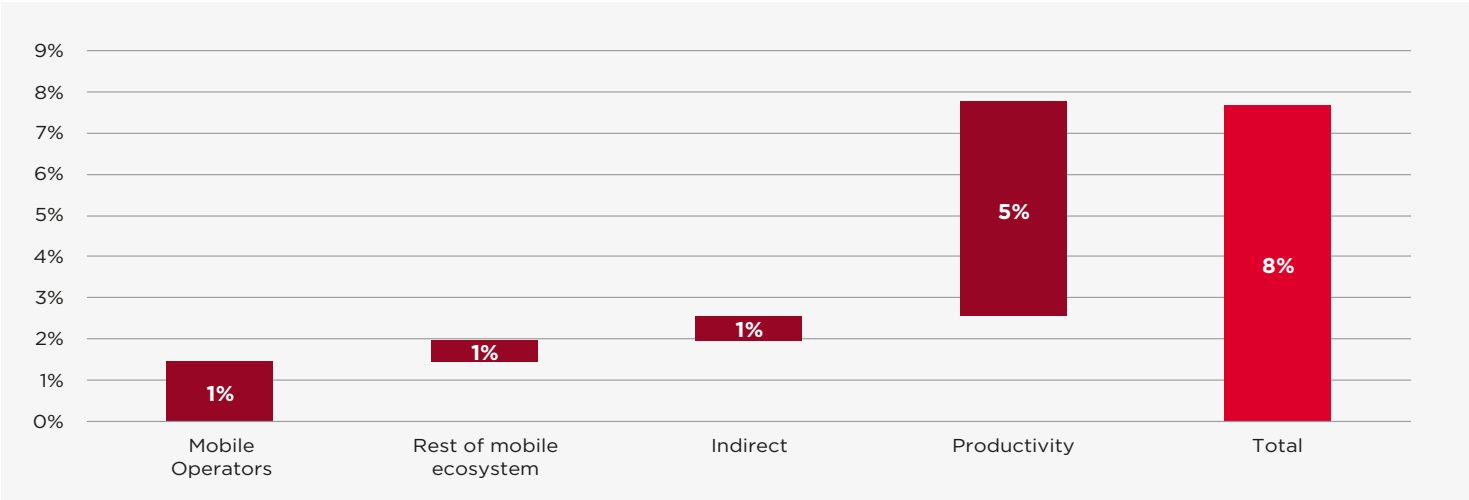
Despite the significant economic growth, the income inequality and the rural poverty has persisted. According to the the Rwanda’s Fifth Integrated Household Living Conditions Survey conducted in 2017, the percentage of population living under the poverty line was 38.2% while those living under extreme poverty line stood at 16%. The majority of this group (93%) lives in rural areas.

1.2 The contribution of the mobile sector to the economy

Mobile services are increasingly vital for supporting economic growth and social inclusion in Rwanda. In 2023, mobile technologies and services contributed approximately 8% to the country’s GDP, amounting

to \$1.1 billion in economic value added. The largest benefits came from productivity gains, which reached \$756 million equivalent to 5% of GDP.

Figure 2:
Total economic contribution of the mobile sector (2023)



Source: GSMA 2023 Mobile Economy Report for Sub-Saharan Africa

5 International Monetary Fund, World Economic Outlook Database, April 2024



2.

Rwanda's mobile sector: evolution, challenges and potential for growth

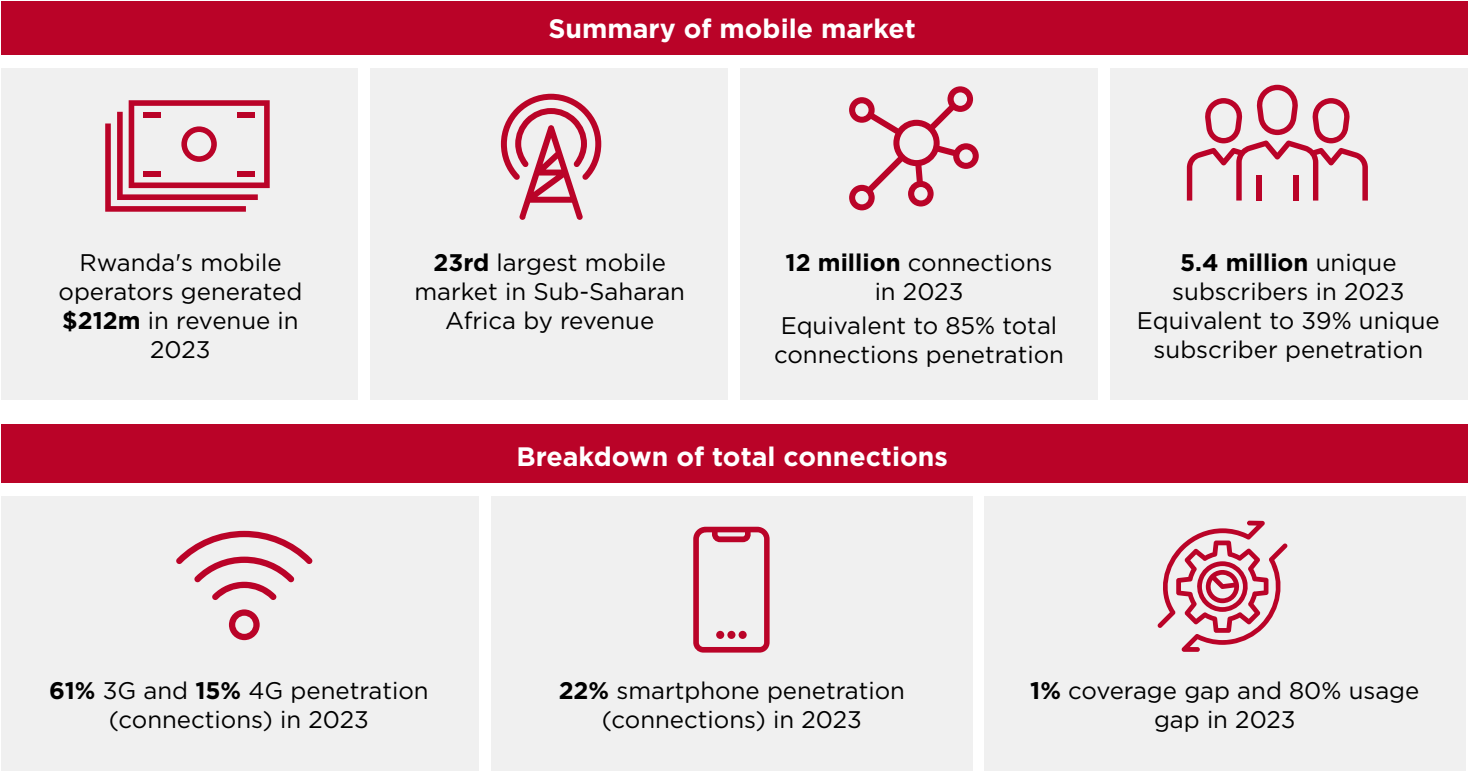


2.1 Overview of the mobile sector

The mobile market in Rwanda has experienced rapid growth over the past decade, driven by significant investments from mobile operators to expand broadband networks. This has greatly reduced the coverage gap and led to increased unique subscriber penetration. The adoption of 3G and 4G services has

also risen sharply, along with a significant increase in smartphone usage, indicating a clear shift towards more advanced mobile technologies across the population. Figure 3 provides an overview of the Rwanda’s mobile market.⁶

Figure 3:
Rwanda’s mobile market in figures



Source: National Institute of Statistics of Rwanda

6 Chapter two provides a more detailed overview of the mobile market evolution in Rwanda

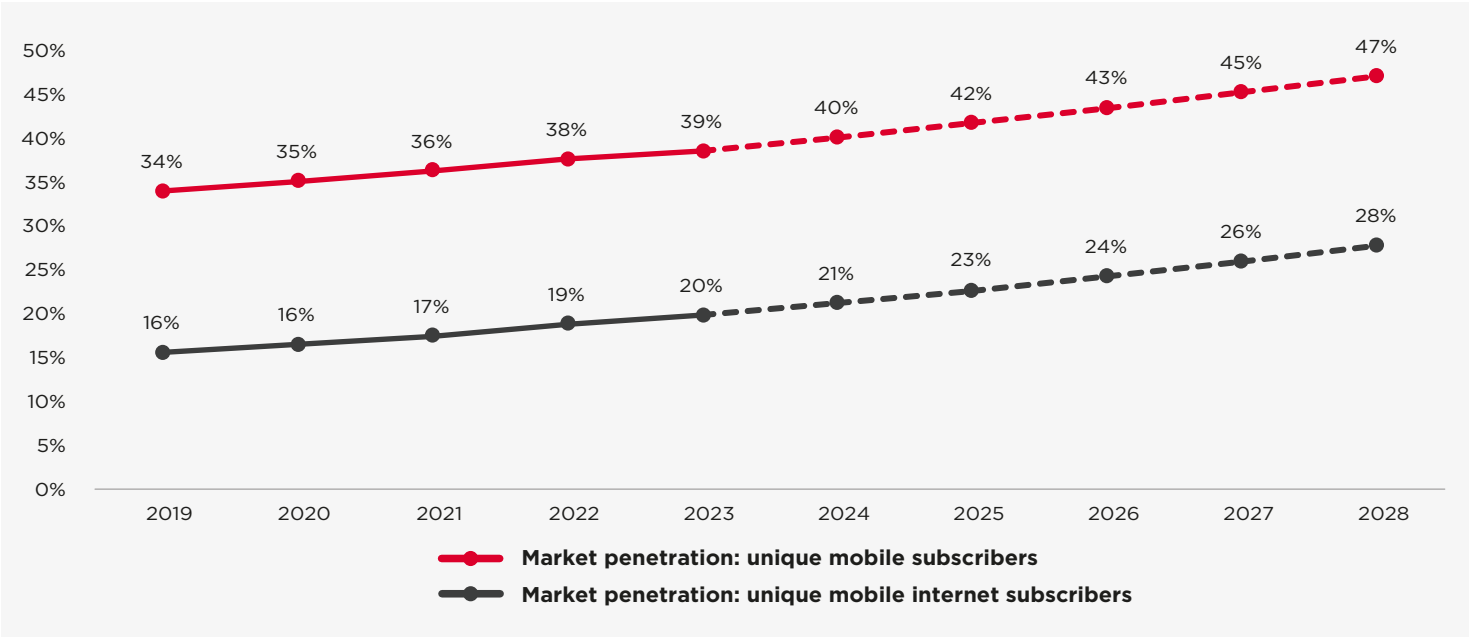
2.2 Evolution of Rwanda's mobile sector and regional comparison

This section provides an overview of the mobile sector's evolution over the past decade and compares it with other countries in the region, highlighting potential for further growth.

2.2.1 Mobile market expansion

Rwanda's unique subscriber penetration rose from 34% in 2019 to 39% in 2023, with projections suggesting it will reach 47% by 2028. Similarly, mobile internet subscriber penetration grew from 16% to 20% over the same period and is expected to reach 28% by 2028.

Figure 4:
Unique subscriber penetration (2014- 2023)



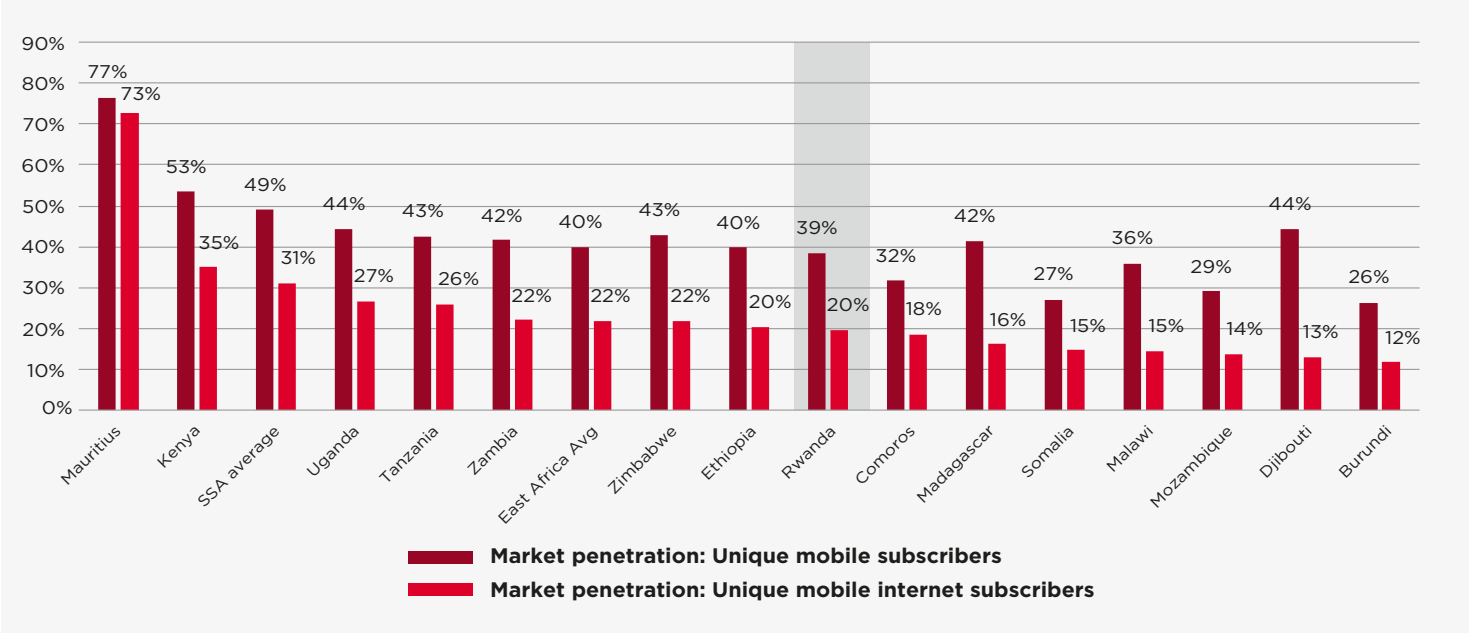
Source: GSMA Intelligence and GSMA analysis



Despite these gains, there remains significant room for growth in expanding unique subscribers and mobile broadband access. As depicted in Figure 5, Rwanda’s unique subscriber penetration (both total and internet) rate is relatively low compared to many

peers in the region, as well as the Eastern Africa and SSA averages. Rwanda ranks 15th out of 22 in East Africa for unique mobile subscriber penetration and 11th in unique mobile internet subscriber penetration.

Figure 5:
Mobile penetration (unique subscribers – all and with mobile internet) in comparator countries in East Africa



Source: GSMA Intelligence and GSMA analysis

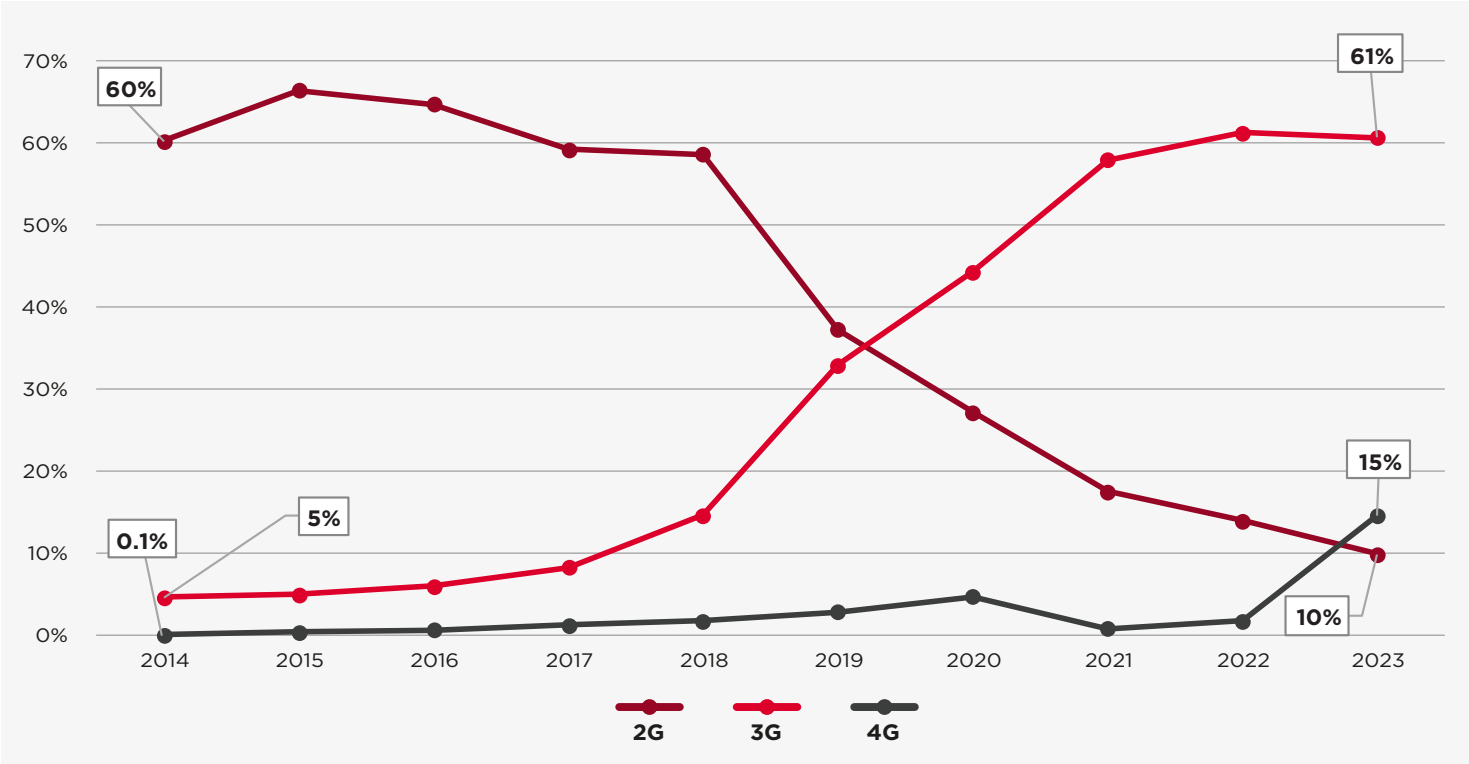


2.2.2 Mobile technology evolution

The Rwandan government's decision to liberalise 4G services opened the market to operators, allowing them to rapidly expand their 4G networks and improve coverage country-wide. This expansion provided more Rwandans, including those in rural areas, with access to faster internet services,

advancing the country's goals of digital inclusion and economic growth. As shown in Figure 6, 4G adoption rose, with penetration increasing from 0.1% in 2014 to 15% in 2023. During the same period, 3G penetration grew from 5% to 60%, while 2G penetration, though declining from 61% in 2014, still accounts for 10% of connections in 2023.

Figure 6:
Market penetration rate (total connections), by technology



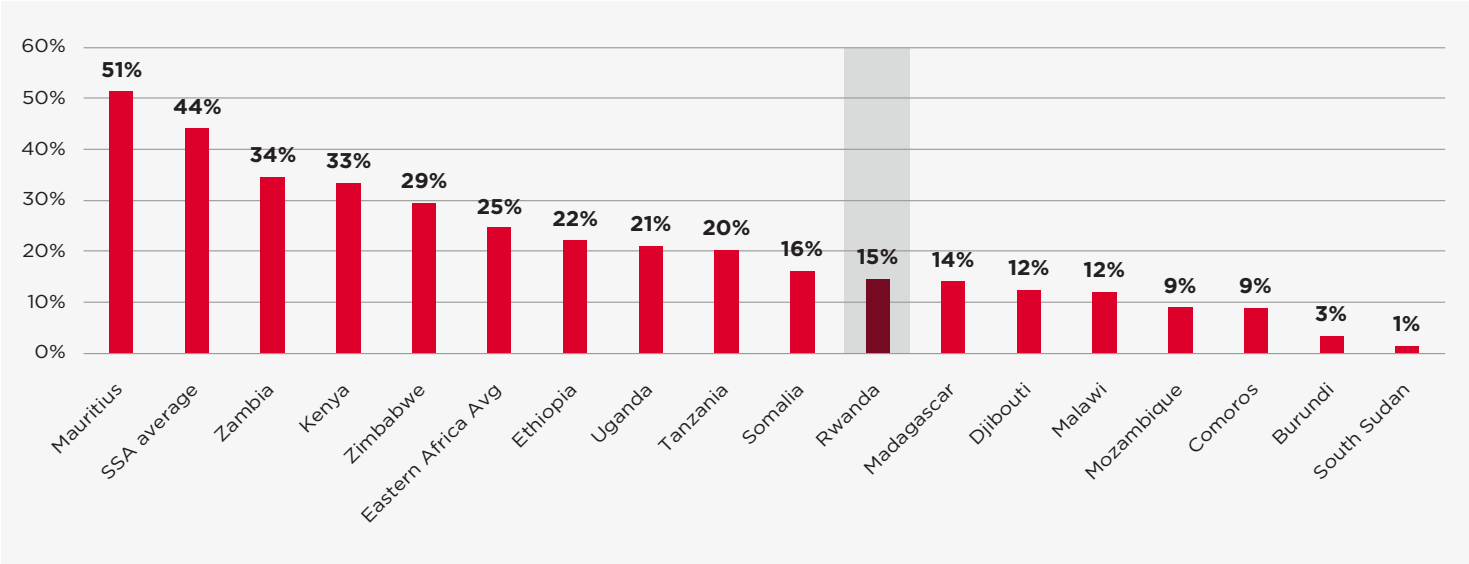
Source: GSMA Intelligence and GSMA analysis



Expanding access to mobile broadband technologies like 4G and 5G will be essential for improving access to online services and fostering the growth of the digital economy in Rwanda. As illustrated in Figure 7,

Rwanda’s 4G market penetration at 15% lags behind that of several other countries, as well as the averages for SSA and Eastern Africa.

Figure 7:
4G penetration in comparator countries (2023)



Source: GSMA Intelligence and GSMA analysis

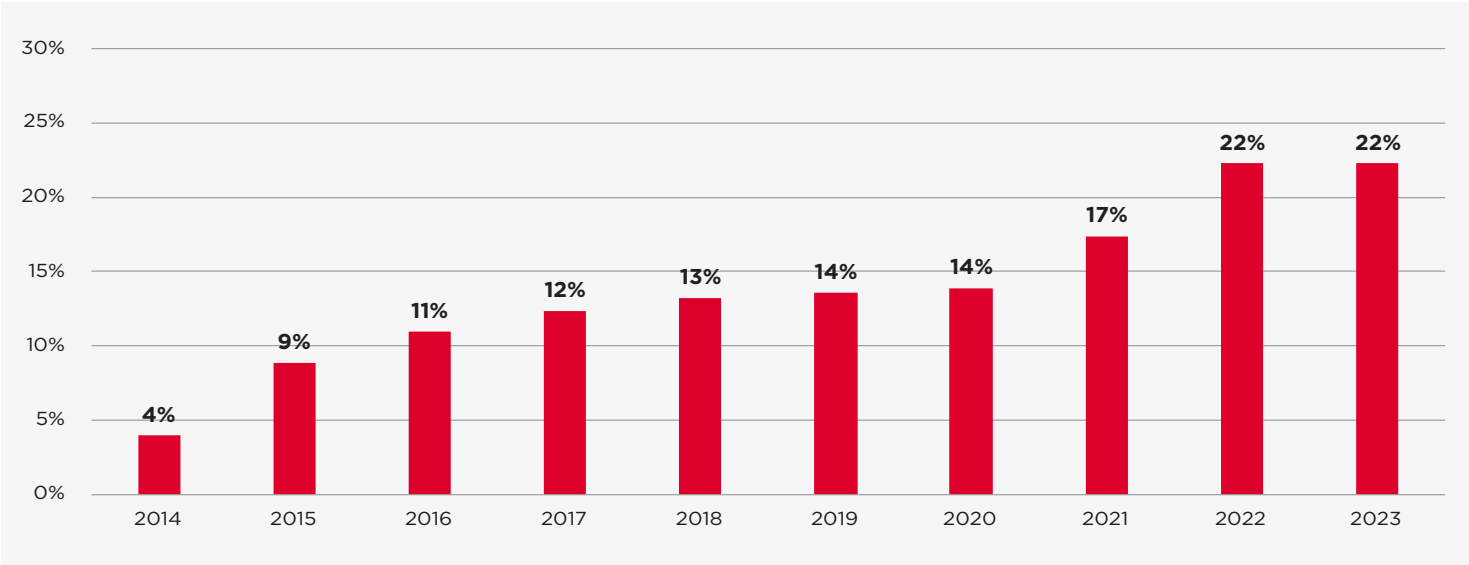


2.2.3 Adoption of smartphones

Smartphone penetration in Rwanda has increased considerably over the past ten years. As shown in Figure 8, in 2014, the smartphone market penetration, calculated by dividing the total smartphone connections

by the country’s population, has seen significant growth, expanding from 4% in 2014 to 22% in 2023. This notable growth highlights the increasing adoption of smartphones among the population, indicating a shift toward more advanced mobile technologies.

Figure 8:
Smartphones penetration in Rwanda (2014 - 2023)

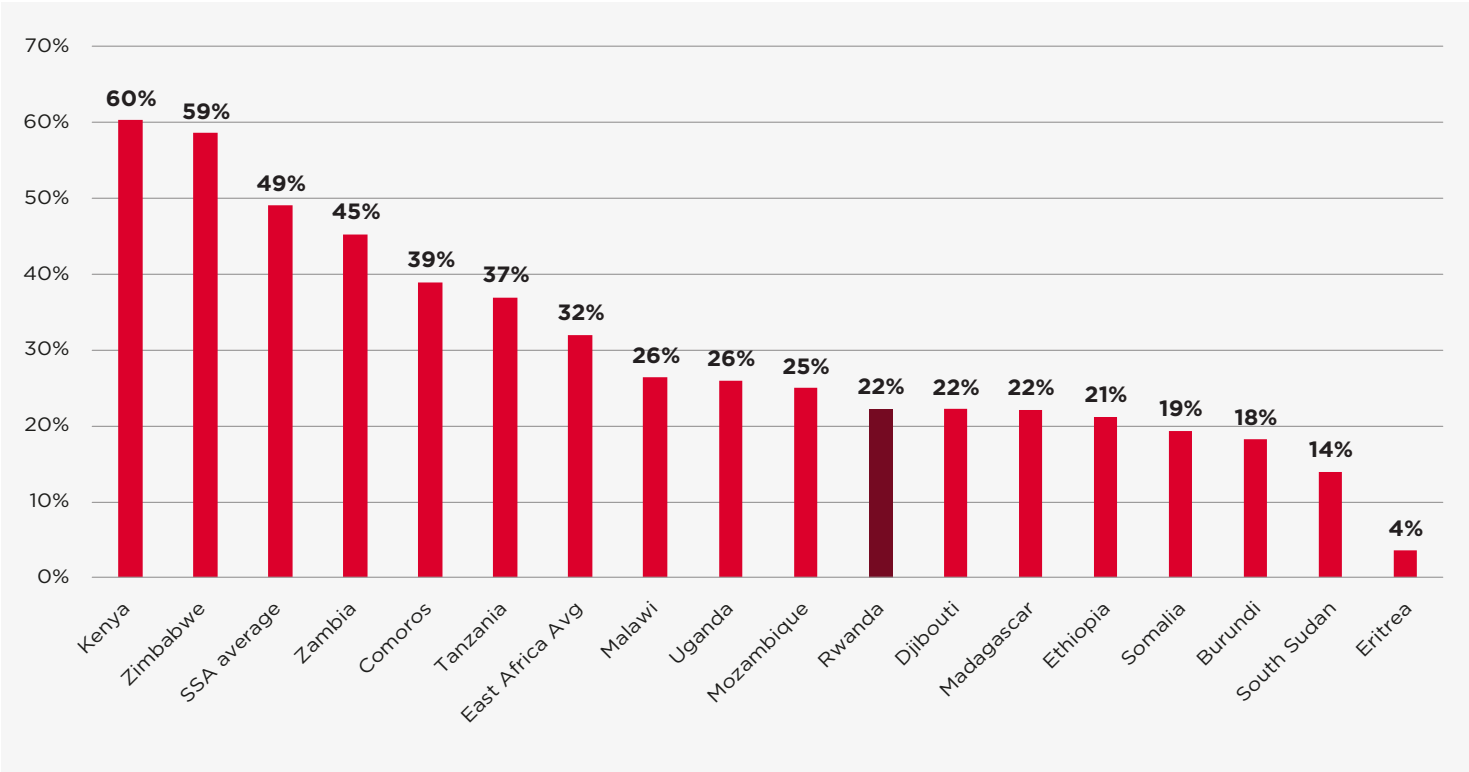


Source: GSMA Intelligence and GSMA analysis

Although Rwanda has made notable progress in smartphone connectivity, its smartphone penetration still falls behind other nations in the region. As shown in Figure 9, Rwanda’s smartphone penetration rate is below the East African average of 32% and the SSA average of 49%. This underscores the need for ongoing initiatives to increase smartphone adoption and connectivity in Rwanda to ensure

widespread access to mobile technology. However, the government’s decision to reinstate the 18% VAT on imported handsets could hinder the affordability of smartphones, directly contradicting ConnectRwanda 2.0’s objective of increasing smartphone ownership and promoting digital inclusion, particularly for low-income households.

Figure 9:
Comparison of smartphone penetration in comparator countries (2023)



Source: GSMA Intelligence and GSMA analysis

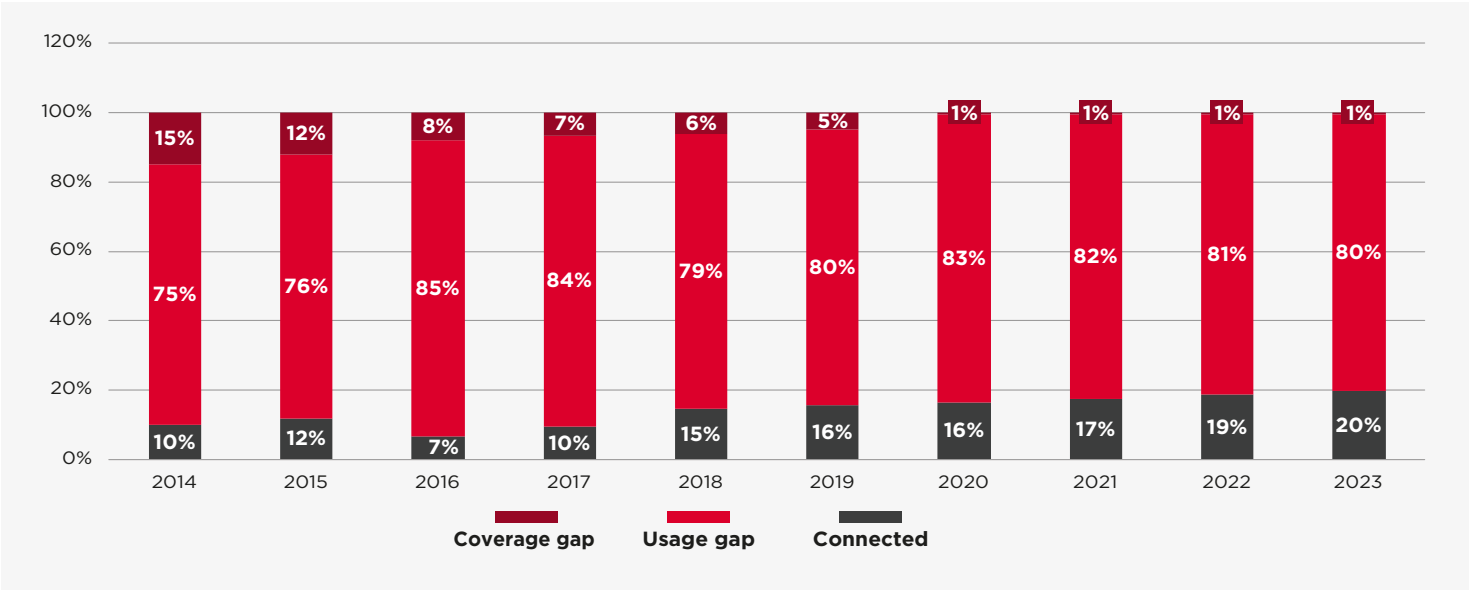


2.2.4 Usage and coverage gap

Mobile operators in Rwanda have greatly extended their mobile broadband networks through substantial investments, reducing the coverage gap to just 1% in 2023. However, the usage gap has not seen similar

progress. In 2023 the percentage of the population covered by mobile broadband networks but not using mobile internet (usage gap) stood at 80%, a figure significantly higher than the SSA average of 61%.

Figure 10:
Usage and coverage gap, Rwanda (2014-2023)

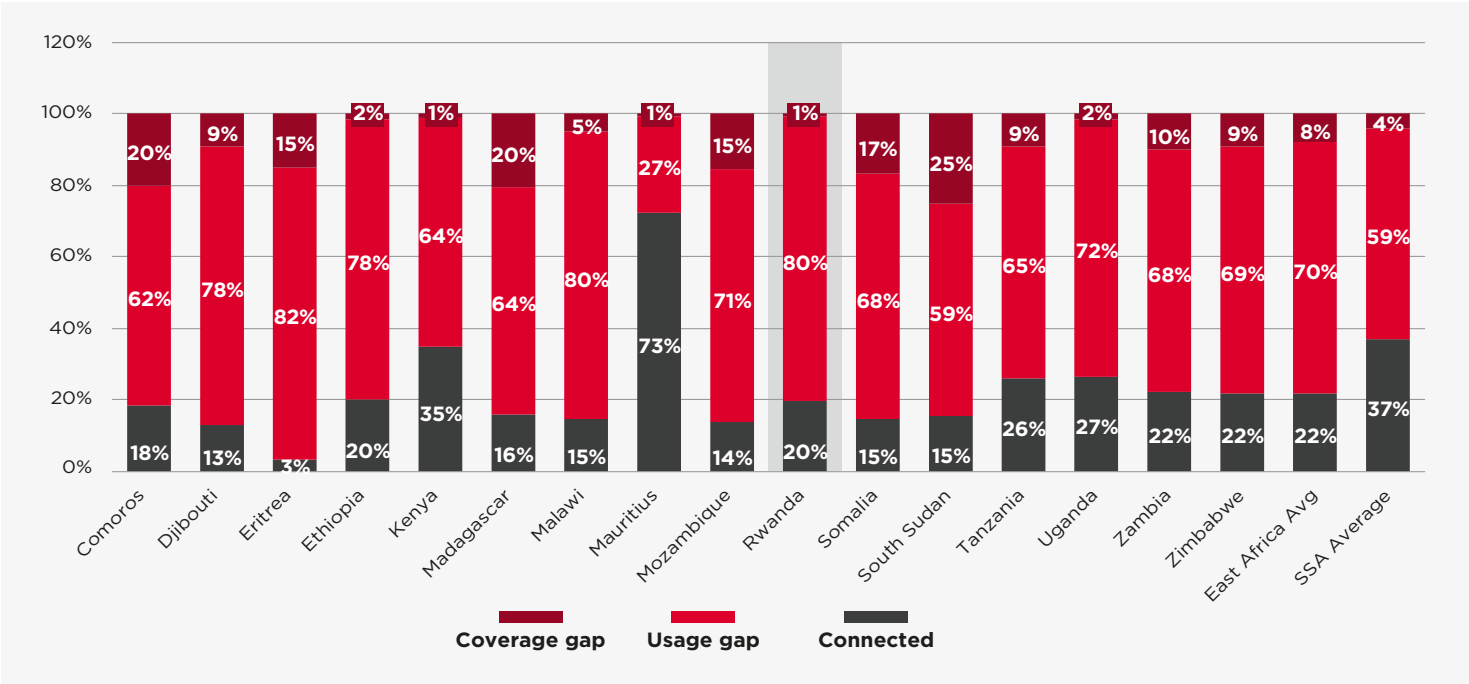


Source: GSMA Intelligence and GSMA analysis



Rwanda’s usage gap surpasses that of many countries in the region, as well as the averages for both SSA and Eastern Africa.

Figure 11:
Comparison of usage and coverage gaps in Rwanda with other countries in the region (2023)

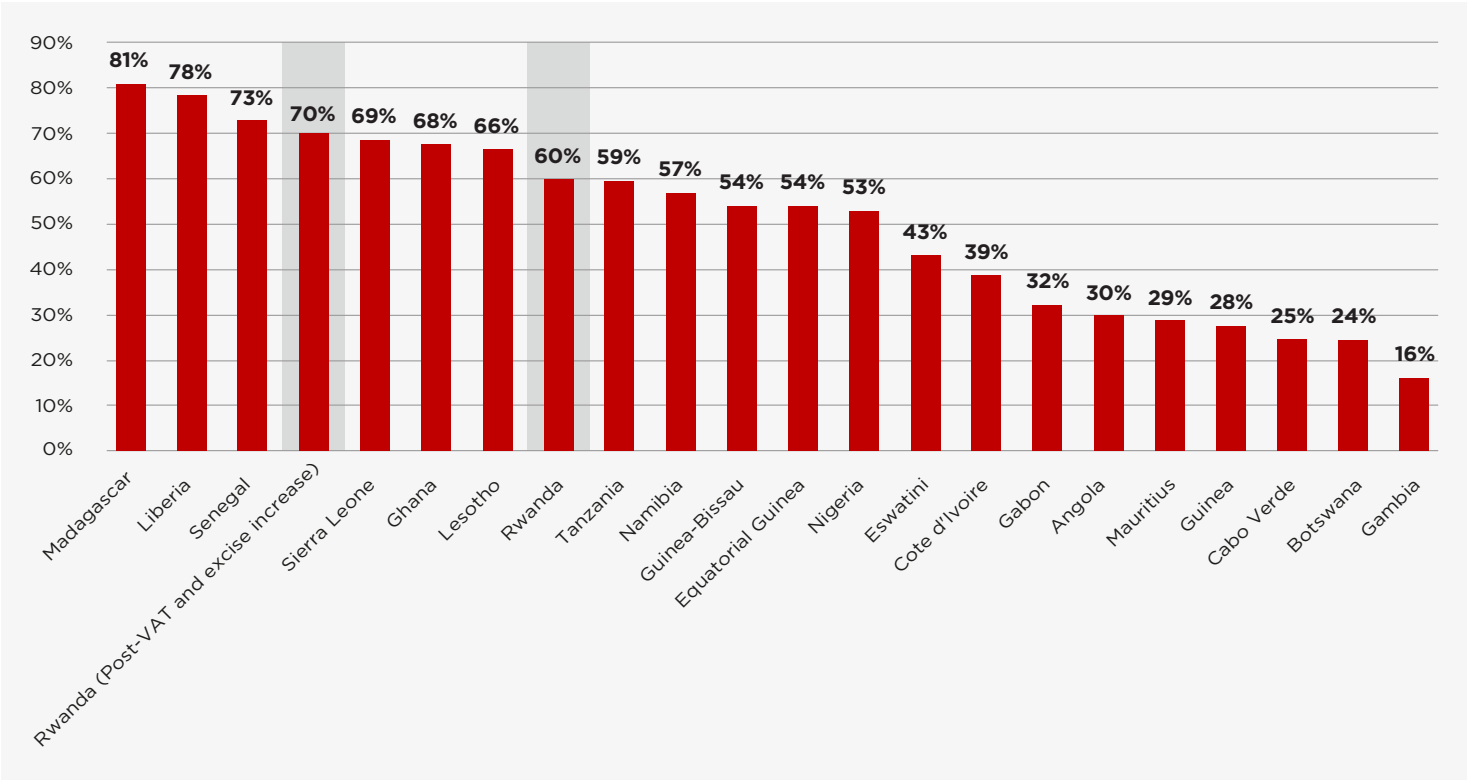


Source: GSMA Intelligence and GSMA analysis

Affordability of mobile phones remains a persistent barrier to mobile service adoption in SSA, including Rwanda, as highlighted in numerous GSMA surveys.⁷ As shown in Figure 12 below, the combined cost of a basic internet-enabled handset and 1 GB data makes up 60% of the monthly income for population in the

bottom 40% of the income quintile in Rwanda. This cost could rise to 70% if the 18% VAT on handsets is reinstated and excise duty on mobile services is increased, making handsets even less affordable, particularly for rural populations, where 93% of those living below the poverty line reside.

Figure 12:
Total cost of a basic internet-enabled handset + 1 GB data as % of monthly GDP per capita for the poorest 40% of the population (2023)



Source: GSMA analysis and Tarifica data

7 GSMA reference of surveys should be provided



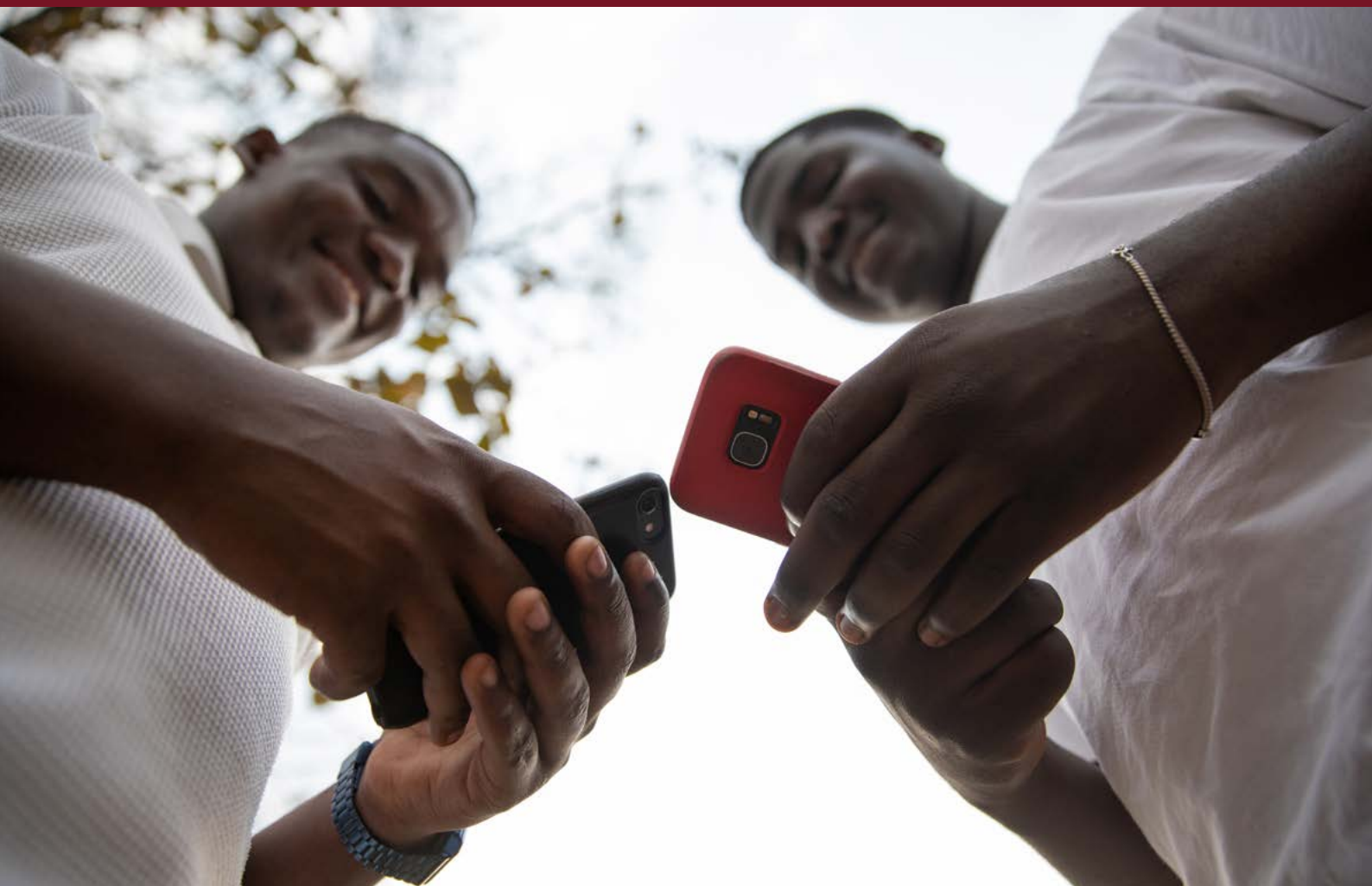
2.3 Challenges and potentials for growth

Although notable progress has been made, Rwanda still has work to do to fully leverage mobile technology for fostering inclusive growth, enhancing service delivery, and improving the well-being of its citizens. The primary challenges ahead include, but are not limited to, the following:

- The **usage gap** (the percentage of the population covered by mobile broadband networks but not using mobile internet) is very high which stands at 80% as of 2023 which is higher than the SSA average of 61%.
- While **4G market penetration** has grown over the years, it remains relatively low compared to other countries. At 15%, Rwanda's 4G penetration falls short of several other countries and is below the averages for SSA (44%) and Eastern Africa (22%). Expanding mobile broadband technologies, including 4G and 5G, will be crucial for enhancing access to online services and fostering the growth of the digital economy.
- Despite progress in **smartphone connectivity**, Rwanda lags behind other regional countries, with a 22% penetration rate as of 2023, below the Eastern Africa and SSA averages of 32% and 49% respectively. This highlights the need for ongoing efforts to enhance smartphone adoption and connectivity.

3.

Mobile tax regime in Rwanda: assessing alignment with best practices and the country's digital vision



Rwanda enforces sector-specific taxes on the mobile sector, alongside the general taxes borne by mobile consumers and operators. These taxes place a high tax burden on mobile operators and consumers creating challenges for investment and exacerbating obstacles to affordability of mobile services. This section provides an analysis of Rwanda’s mobile sector tax regime, assessing how increasing these taxes further could reduce the competitiveness of the regime relative to other countries in the region and potentially create more barriers to the adoption of mobile services and investment in the expansion of the mobile networks.

3.1 Taxes on consumers

In Rwanda, mobile services are subject to both VAT and sector-specific charges. These taxes collectively increase the cost of mobile services, placing a heavier burden on lower-income individuals. Table 2 outlines the various mobile consumer taxes in Rwanda.

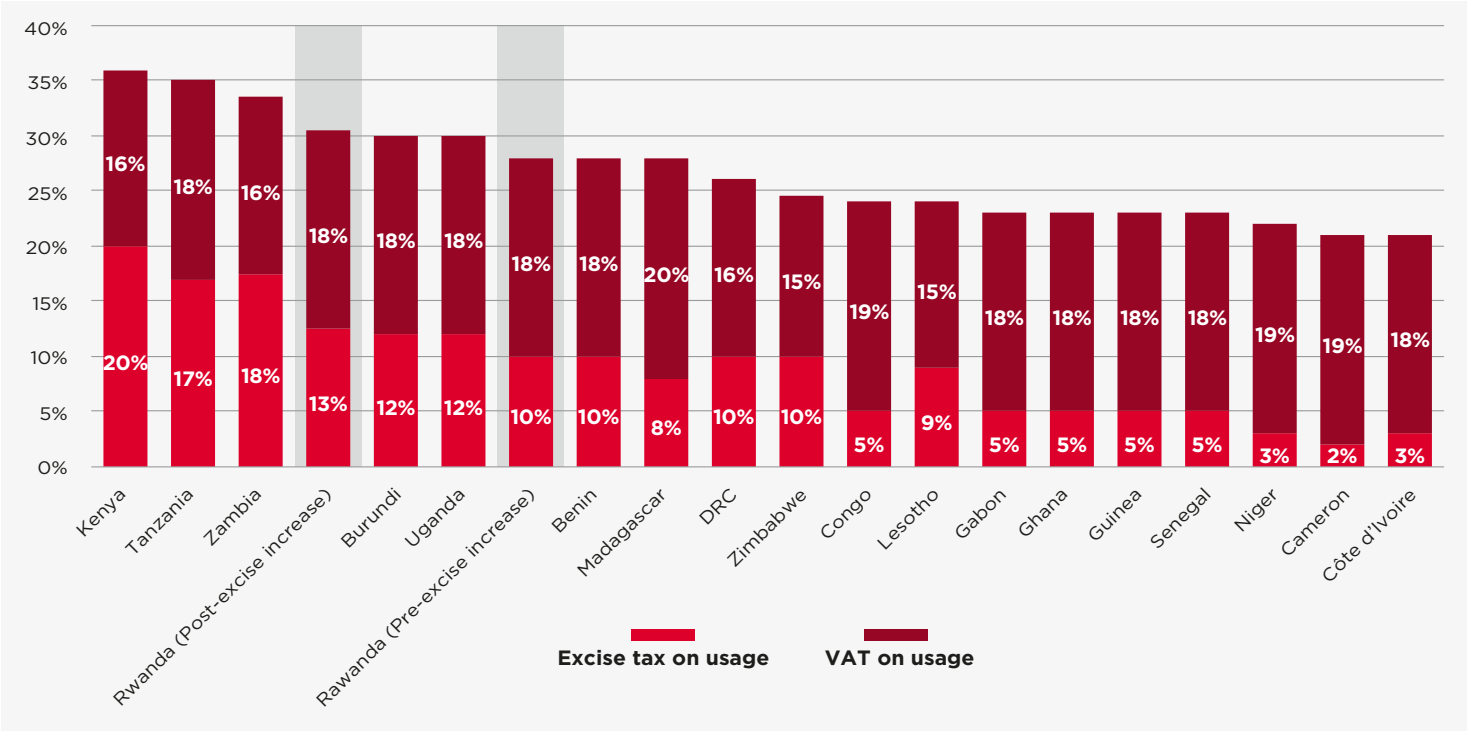
Table 2:
Consumer taxes in Rwanda

Tax	Rate
Value Added Tax (VAT)	Mobile services are subject to 18% VAT
Excise duty	A sector-specific tax of 10% is applied to all mobile services (data, voice, and SMS)
Surcharge tax on international calls	A sector-specific tax of \$0.10 per minute of incoming international calls
Numbering tax	A fixed tax of RWF 90 (\$0.07) per number

As shown in Figure 13, with 18% VAT and an excise duty of 10%, mobile consumers in Rwanda already face a high combined tax rate of 28% on mobile services. Increasing the excise duty from 10% to 12.5%

would further raise the tax burden on consumers, placing Rwanda among the top four countries in the sample with the highest combined tax rates on mobile services.

Figure 13:
Combined tax rate on mobile services (2024)



3.2 Taxes and regulatory fees on mobile operators

In addition to general taxes such corporate tax, mobile operators are subject to a number of sector-specific fees. Table 3 below outlines the sector-specific fees paid by operators in addition to corporate tax.

Table 3:
Sector-specific fees paid by operators

Tax	Rate
Annual license fees	1% of operating revenue
Annual spectrum fees	3% of operating revenue
Universal service fund	2% of gross revenue

Mobile operators invest significantly in expanding and upgrading networks. Sustainable cash flow is crucial for financing these investments. However, sector-specific fees on revenue, regardless of profitability, increase

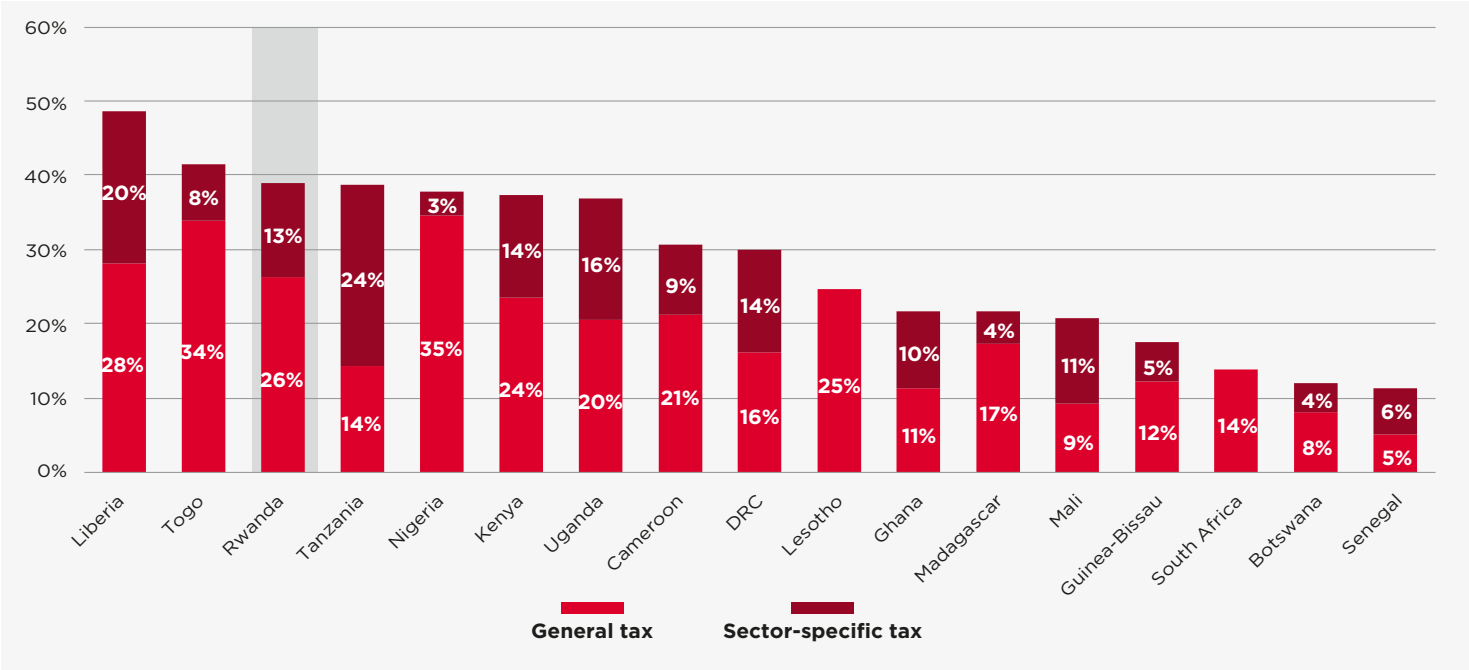
tax payments and reduce cash flow, limiting further investment in infrastructure. Therefore, maintaining a broad-based tax system is essential for Rwanda to support substantial investments in digital infrastructure.

3.3 Tax contribution of the mobile sector

In Rwanda, tax payments by the mobile sector constitute 39% of total sector revenues, with 13% coming from sector-specific taxes. As shown in Figure 14, the total tax burden on the mobile sector is already the third highest among the countries studied in this

report. Further increasing the excise duty to 12.5% and reintroducing the 18% VAT on mobile handsets will further increase this tax burden, creating more obstacles to mobile internet uptake and investment in network upgrades and expansion.

Figure 14:
Tax payments as % of mobile sector revenues (2022)

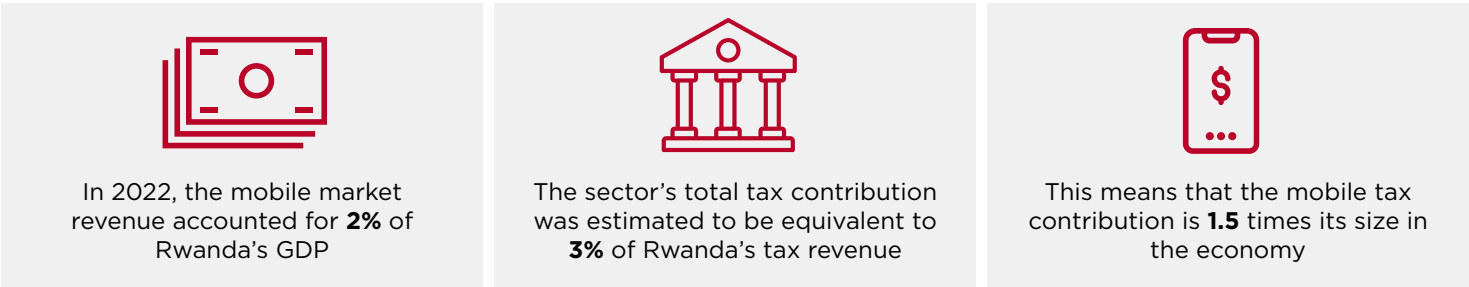


Source: Operators' data and GSMA analysis

As a result of the sector-specific taxes, the mobile sector makes a larger contribution in taxes and fees relative to its economic footprint. While the mobile

market revenue accounted for 2% of Rwanda's GDP, the sector's tax and fee payments accounted for around 3% of government total tax revenue.

Figure 15:
Tax and economic contribution of the mobile sector in Rwanda in 2022

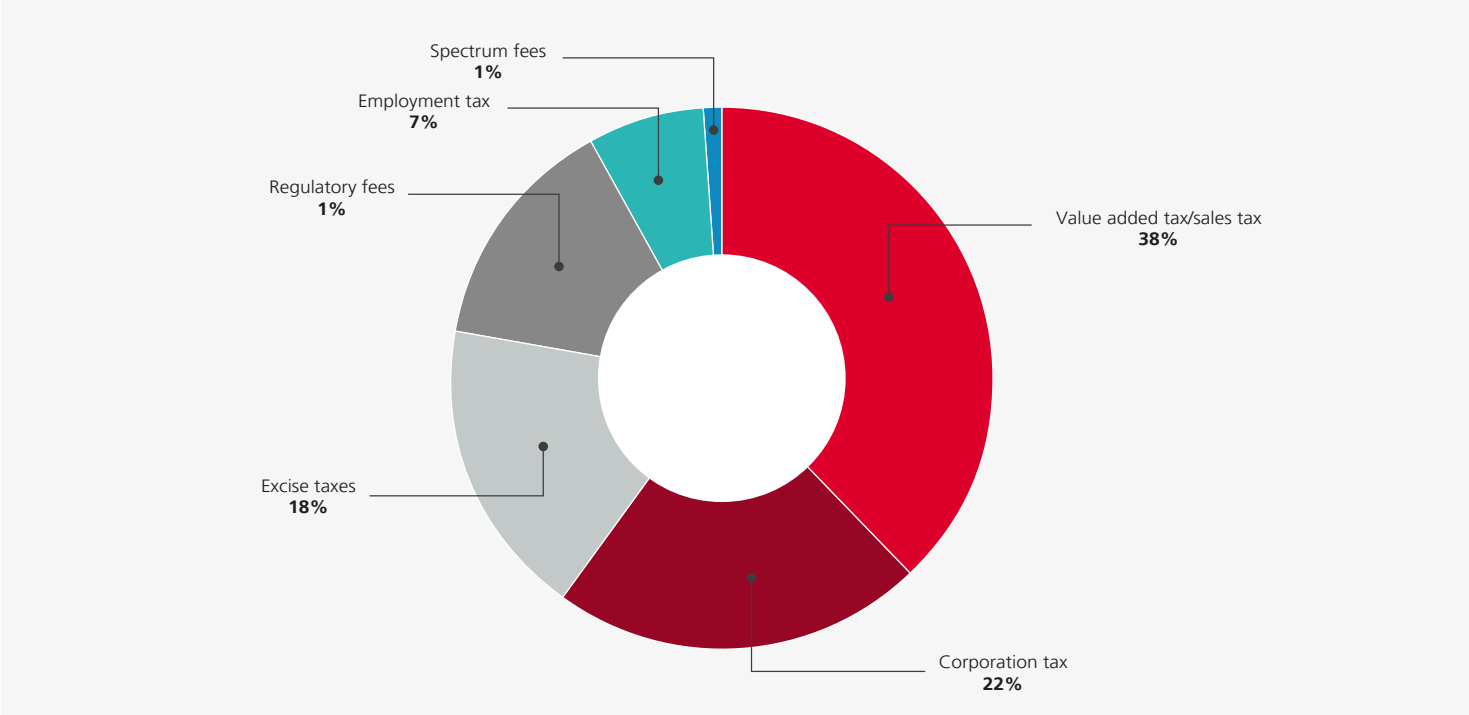


Source: IMF World Economic Outlook Database, mobile operators' data and GSMA analysis⁸

8 <https://www.imf.org/en/Publications/WEO/weo-database/2023/April/select-countries?grp=2603&sq=All-countries/Emerging-market-and-developing-economies/Sub-Saharan-Africa>

As shown in figure 16, in Rwanda, VAT is the largest source of tax revenue generated by the mobile sector, responsible for 38% of the overall tax revenues, followed by corporate tax (22%) and excise taxes (18%).

Figure 16:
Mobile sector tax and fee payments split by type of tax/fee as % of total taxes and fees (2022)



Source: GSMA analysis and operators' data

3.4 Assessment of the mobile sector taxation in Rwanda

The mobile industry acknowledges the importance of taxation to generate funds for government development objectives within a country. Nevertheless, it is crucial to strike a balance that considers the positive economic and socio-economic impacts of

digital connectivity when formulating fiscal policies. To achieve this balance, it is advantageous to adhere to established principles of tax policy design consistently developed by international organisations such as the IMF, OECD, the UN, and World Bank.⁹

⁹ OECD (2014), "Fundamental principles of taxation", in Addressing the Tax Challenges of the Digital Economy, OECD Publishing, Paris. IMF WEO 2022 and IMF (2011) Revenue Mobilization in Developing Countries and Tanzi, V. and Zee, H. (2001) Tax Policy for Developing Countries. IMF, Course on Practical Issues of Tax Policy in Developing Countries, World Bank, April 28-May 1, 2003.

Principals of taxation appying to the mobile sector

- **Taxation should be as broad-based as possible.** Broad-based taxes with single and low rates should be favoured over specific taxes. This should allow the maximisation of revenue with minimal distortions to the consumption and provision of mobile services.
- **Specific taxes should be limited and be based on a clear rationale of externalities.** Specific taxes should be narrowly targeting a few goods mainly on the grounds that their consumption entails negative externalities on society. Given positive externalities, mobile phones and services would not generally be included in a list of goods and services singled out for exceptionally harsh tax treatment.
- **The tax system should be equitable.** Mobile operators and consumers should be treated equally to others in equal circumstances “horizontal equity”. In addition, the tax system should also preserve “vertical equity” by avoiding the imposition of regressive taxes which has a larger impact on consumers of mobile services in the lower income groups.
- **The tax system should be internationally competitive and should not discourage investment.** Uncertainty over future taxation reduces investment as the risk of future tax rises is priced into investment decisions of the mobile operators. Governments should seek to limit unpredictable tax and fee changes and streamline their levies of taxes and fees to reduce the cost of compliance for the investors.

An evaluation of the existing tax regime applied to the mobile sector in Rwanda, based on the principles mentioned above, reveals the following key characteristics:

- The imposition of sector-specific taxes on mobile services in Rwanda **deviates** from the tax principle of **broad-based taxation**. This distortion in the tax structure can adversely affect the consumption and provision of mobile services within the country.
- Excise taxes on consumers also **violates** the **principle of equity** since these taxes are applied uniformly, resulting in individuals with lower incomes paying a greater proportion of their earnings compared to those with higher incomes. Furthermore, the imposition of such taxes fails to recognise **the positive externalities** associated with digital connectivity, which can empower individuals and unlock socio-economic opportunities for communities.
- The current tax system places a heavy burden on the mobile sector, conflicting with the goal of maintaining an internationally competitive tax regime that encourages investment. As shown in Section 3.3, the tax burden in Rwanda is 39% of total market revenue, with 13% coming from sector-specific taxes. Increasing the excise duty to 12.5% will further raise sector-specific taxes, making Rwanda’s tax regime even less competitive in the region and potentially deterring investment in the mobile sector and the adoption of mobile services.

Furthermore, the proposed increase in excise duty on mobile services and the reintroduction of VAT on mobile handsets contradict Rwanda’s digital vision outlined in the National Broadband Policy and Strategy. The vision aims to propel Rwanda into a competitive and innovative global digital economy by ensuring accessible and high-quality broadband services. However, the proposed tax changes will undermine the realisation of this vision for the following reasons:

- Higher taxes will escalate costs for consumers, particularly impacting lower-income individuals, thereby impeding the penetration of smart devices and adoption of mobile services. This barrier will hinder efforts towards digital inclusion and the enhancement of broadband quality.
- Additionally, the heightened tax burden on mobile consumers will reduce the demand for mobile services. Consequently, this diminishes the economic justification for investing in the expansion and enhancement of broadband services

4.

Measuring the sector and economic impacts of proposed excise duty increase and VAT reintroduction on imported handsets

Governments need to strike a balance between generating domestic revenue and fostering digital development. It is essential to weigh the broader, long-term economic and social benefits of digital inclusion against the short-term emphasis on taxing the ICT sector for immediate revenue. An unbalanced tax regime negatively affects not just the ICT sector but also tax revenues and the broader economy in the medium term.

To illustrate this point, this report examines the potential quantitative effects of a proposed increase in excise duty on mobile services and the reinstatement of VAT on imported handsets in Rwanda.

The findings suggest that such a policy change would harm both the mobile sector and overall tax revenues. The analysis uses a two-stage modelling process over a five-year period (2025-2029), first evaluating the impact on Rwanda’s mobile sector and then examining the broader economic effects. Figure 17 below outlines the modelling approach used in the study.

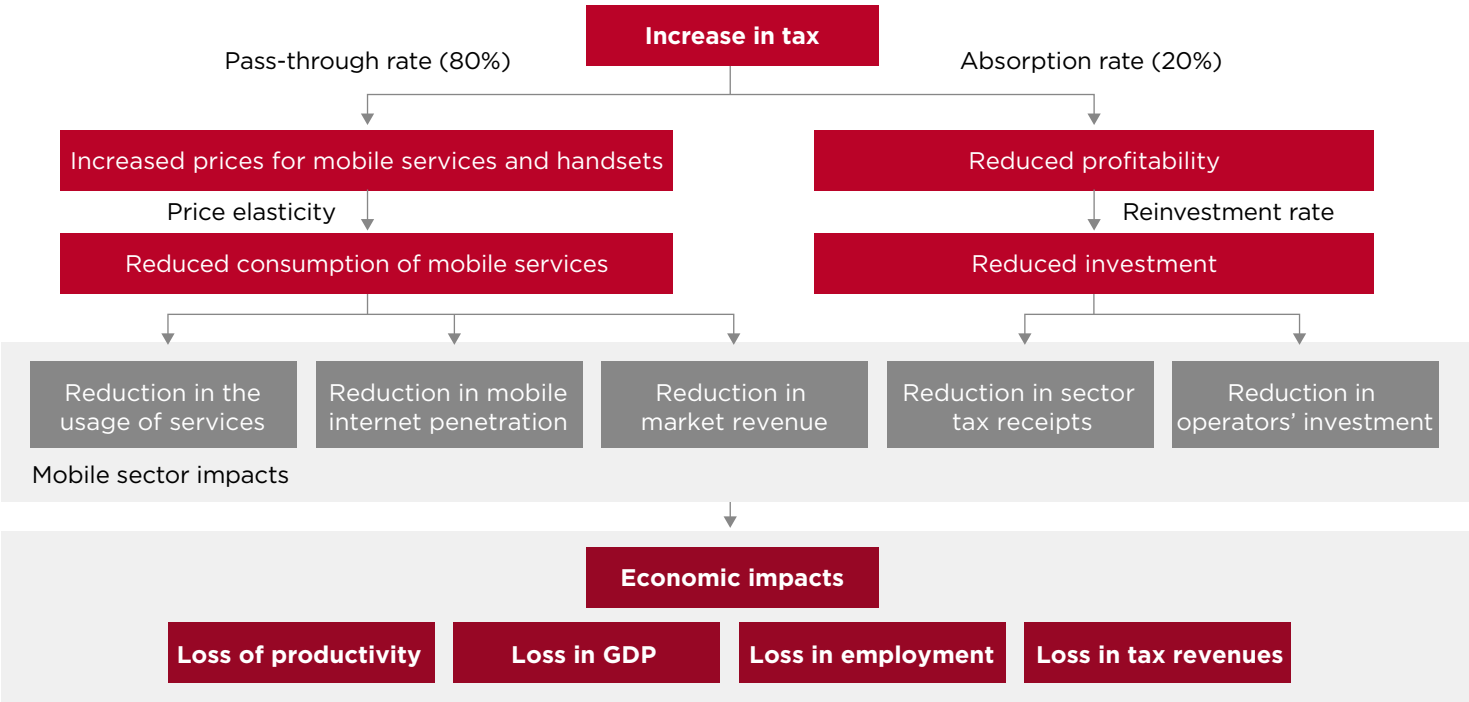
As shown in Figure 17, changes in taxes or fees are expected to impact both the mobile sector and the wider economy. In the report’s analysis, an increase in excise duty from 10% to 12.5%, coupled with the reinstatement of 18% VAT on handsets, is assumed to be largely passed on to consumers (80% in this scenario) through higher prices for mobile services and handsets. The remaining 20% of the cost burden is assumed to be absorbed by mobile operators.

Higher prices for services and handsets will reduce consumer demand. The decline in consumer demand for mobile services and handsets is calculated by multiplying the increase in effective prices of mobile services and handsets (due to tax increase) to usage and ownership elasticities for mobile services and handsets.

Combined with the cost absorption by mobile operators, this will lead to a decline in revenues and profitability. Reduced profitability, in turn, is likely to limit investment in network upgrades and expansion. Consequently, the growth of mobile service usage, total mobile connections, and mobile internet penetration would slow compared to a baseline scenario without tax changes.

The reduced mobile internet penetration would cause a drop in productivity across the economy, resulting in lower output, incomes, and expenditures, ultimately leading to a decline in GDP.¹⁰ This economic contraction would negatively affect employment and decrease government tax revenues across the entire economy.¹¹

Figure 17:
Overview of the modelling approach



Source: EY

10 According to econometric modelling by the ITU for Africa in the report titled “Economic Contribution of Broadband, Digitization, and ICT Regulation”, a 10% increase in mobile broadband penetration in Africa could result in a 2.5% rise in GDP per capita. This figure has been applied to assess the impact of a decline in mobile Internet penetration on Rwanda’s GDP in this report. The ITU report is available at this link: https://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-EF.BDT_AFR-2019-PDF-E.pdf

11 The loss in government tax revenue is calculated by multiplying the GDP loss from reduced mobile internet penetration by Rwanda’s projected tax-to-GDP ratio for each year of the five-year modeling period (2025-2029)

4.1 Assessing the impact of increasing excise duty on mobile services from 10% to 12.5%

This section outlines the potential impacts on the mobile sector and wider economy of the proposed increase in the excise duty on mobile services from 10% to 12.5%. The resulting tax increase would be partially passed onto subscribers in the form of an increase in the effective price of services. The remainder of the tax increase would be met by a combination of reduced network investment and reduced retained profits.

A. Mobile sector impacts

The increase in excise duty on mobile services is forecast to have multiple adverse impacts on the mobile sector in Rwanda. Tables 4 and 5 summarise the key impacts modelled over a five-year period (2025-2029) on the mobile sector and the broader economy, respectively.

Table 4:
Summary of modelled impacts on the mobile sector

Change in connections	The increase in excise duty on mobile services is projected to result in 346,000 fewer unique subscribers and 552,000 fewer mobile connections by 2029. Additionally, unique mobile broadband penetration is expected to decrease by 4.4%, and unique mobile subscribers' penetration by 2.1% by 2029.
Change in data usage	The increase in the price of mobile services would lead to a 6.7% decrease in total data usage compared to the baseline.
Change in market revenue	Total mobile sector revenue would be \$6 million lower compared with the baseline by 2029. This would be driven by lower revenues from the decreased number of connections, and lower overall usage, which offsets the increase in pricing from the tax reform.
Loss of additional investment by operators	There would be reduced investment of around \$2 million per annum by operators due to the increase in the effective tax rate. This amount could have enabled them to further expand their networks and support migration to 4G and 5G technologies by upgrading the existing network infrastructure.

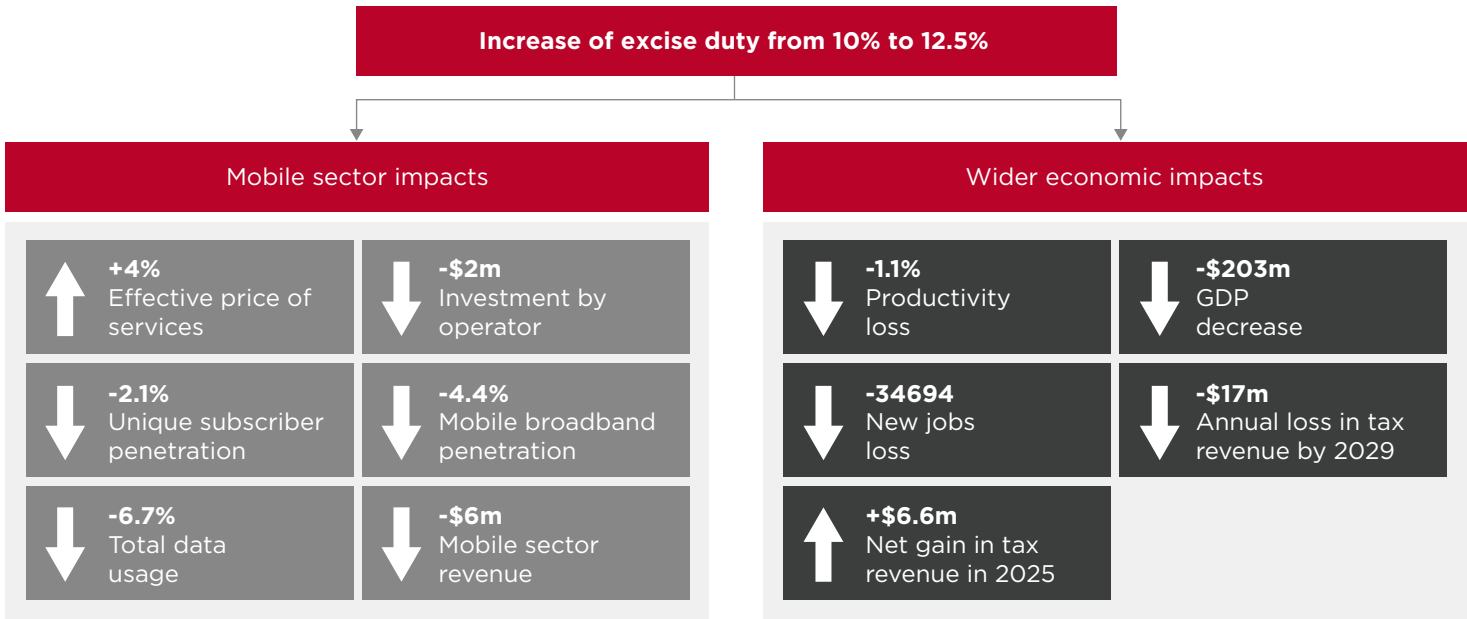
Table 5:
Summary of modelled impacts on the broader economy

Tax revenue impact	After initially increasing by \$6.6 million in 2025, tax revenue will be approximately \$17 million lower per annum by 2029 compared with the baseline forecast, due to the contraction of the mobile sector and its negative impact in the wider economy.
GDP decrease	The decrease in unique MBB penetration of 4% percentage points would lead to a 1.1% loss in productivity across the economy, leading in turn to further decreases in output, incomes and expenditure. As a result, the total GDP would decrease by \$203 million by 2029 compared to the baseline, as the price and productivity effects lead to a chain reaction of contraction across the economy.
Impact on employment	As a result of decreased economic activity, there will be approximately 34,694 less jobs created in the economy by 2029.



The summary of the sector-specific and economic impacts in 2029 is shown in Figure 18 below.

Figure 18:
Summary of the modelled impacts of increasing excise duty from 10% to 12.5%



4.2 Assessing the impacts of reintroducing 18% VAT on handsets

This tax reform is forecast to have the following impacts compared to a “baseline” scenario of no change in current levels of taxation:

A. Mobile sector impacts

Reintroducing of 18% VAT on handsets would increase the cost of mobile phones for households and businesses in Rwanda which could negatively impact mobile internet penetration. Tables 6 and 7 present the main projected impacts on the mobile sector and the wider economy over the five-year period from 2025 to 2029.

Table 6:
Summary of modelled impacts on the mobile sector

Change in connections	The reintroduction of VAT on handsets is projected to result in 538,000 fewer unique subscribers and 859,000 fewer mobile connections by 2029. Additionally, unique mobile broadband penetration is expected to decrease by 8.3%, and unique mobile subscribers’ penetration by 3.3% by 2029.
Change in Data usage	The increase in the price of mobile services would lead to a 10.3 % decrease in total data usage compared to the baseline.
Change in market revenue	Total mobile sector revenue would be \$27 million lower compared with the baseline by 2029. This would be driven by lower revenues from the decreased number of connections, and lower overall usage, which offsets the increase in pricing from the tax reform.
Loss of additional investment by operators	There would be reduced investment of around \$3.3 million per annum by operators due to the increase in the effective tax rate. This amount could have enabled them to further expand their networks and support migration to 4G and 5G technologies by upgrading the existing network infrastructure.

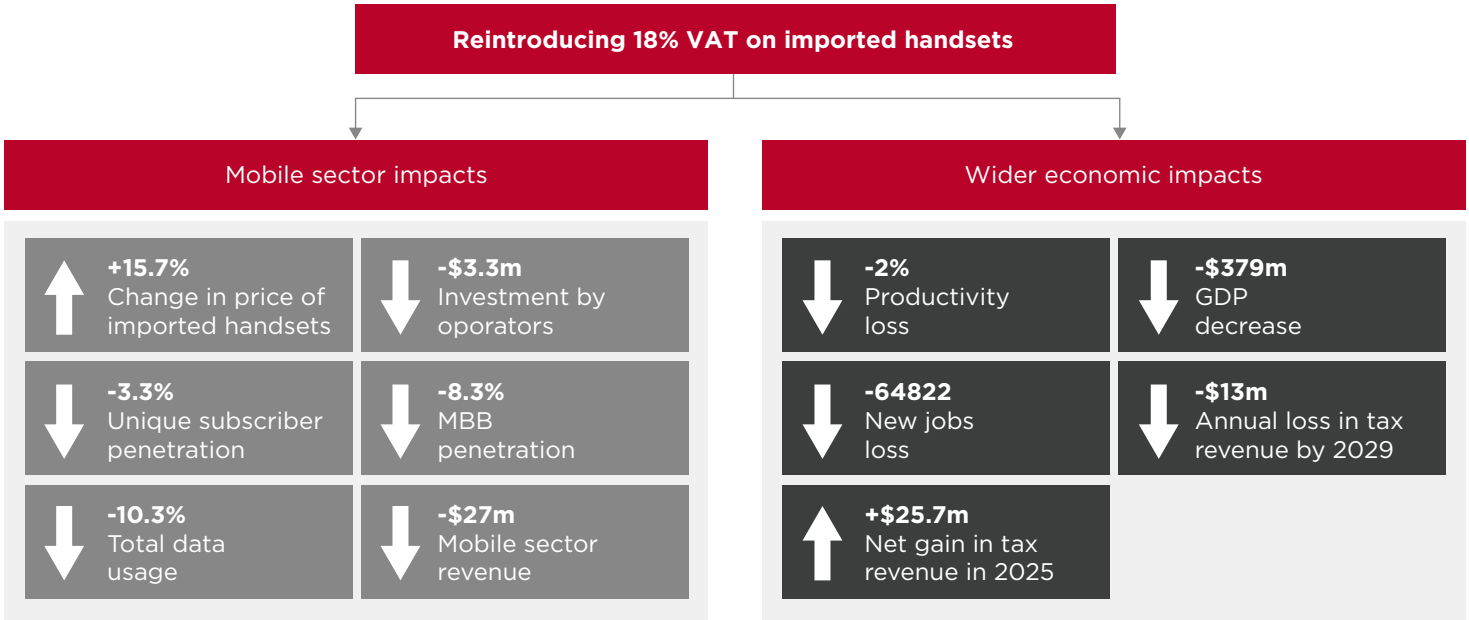
Table 7:
Summary of modelled impacts on the broader economy

Tax revenue impact	After initially increasing by \$25.7 million in 2025, tax revenue will be approximately \$13 million lower per annum by 2029 compared with the baseline forecast, due to the contraction of the mobile sector and its negative impact on the wider economy.
GDP decrease	The decrease in unique MBB penetration of 8.3% percentage points would lead to a 2% loss in productivity across the economy, leading in turn to further decreases in output, incomes and expenditure. As a result, the total GDP would decrease by \$379 million by 2029 compared to the baseline, as the price and productivity effects lead to a chain reaction of contraction across the economy.
Impact on employment	As a result of decreased economic activity, there will be approximately 64,822 less jobs created in the economy by 2029.



The summary of the sector-specific and economic impacts of reintroducing 18% VAT on imported handsets is shown in Figure 19 below.

Figure 19:
Summary of the modelled impacts of reintroducing 18% VAT on imported handsets



4.3 Analysing the combined cumulative impact of proposed tax changes on the mobile sector and the broader economy

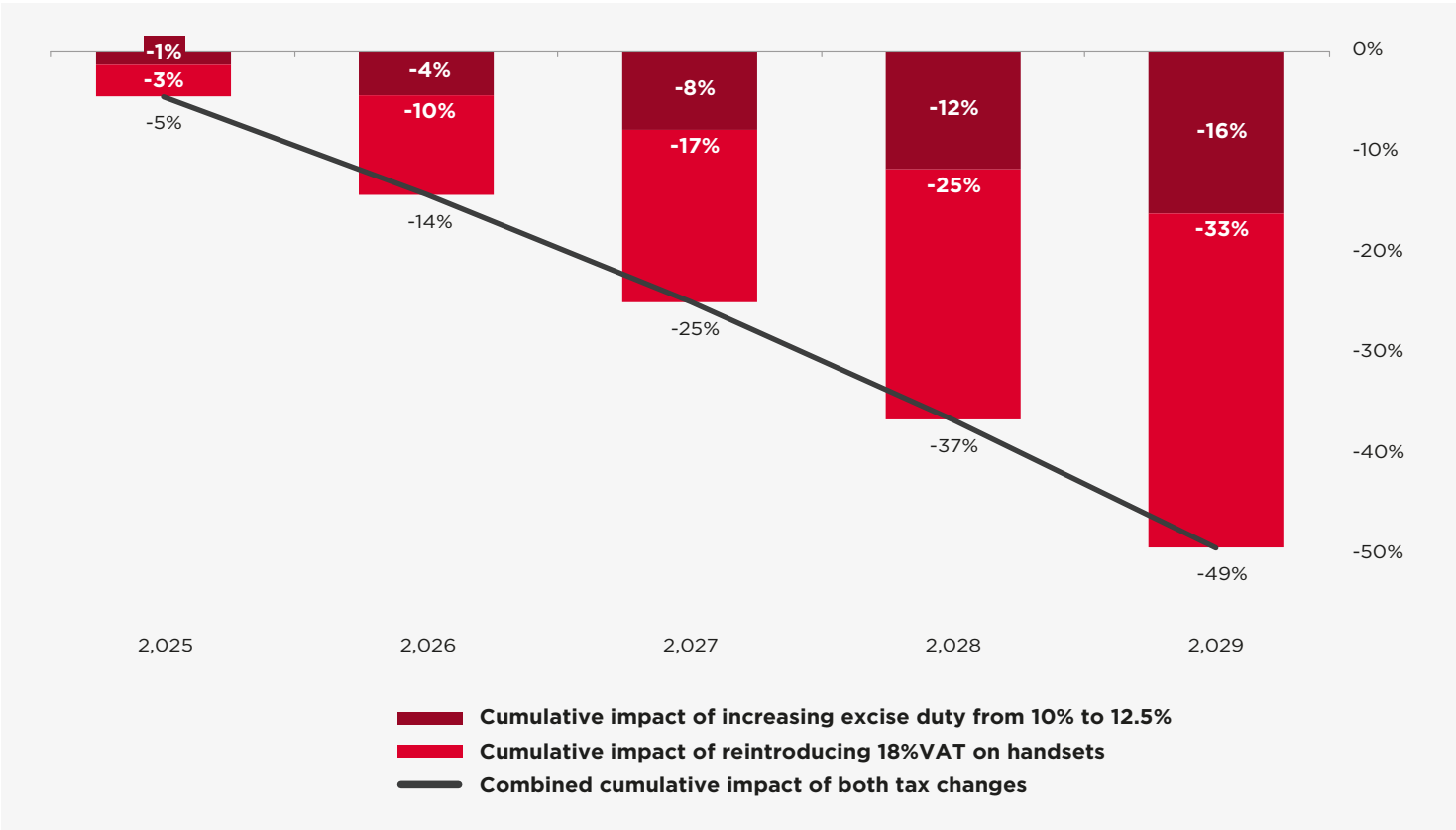
This section summarises the combined cumulative affect of the proposed tax changes on the mobile sector and the broader economy.

A. Combined cumulative impact on the mobile sector

Increasing taxes on mobile services and handsets will raise prices and slow the uptake of mobile services. This reduced uptake will discourage operators from investing in broadband expansion and quality improvements. As shown in Figure 20, compared

to the baseline scenario of no tax change, raising excise duty on mobile services from 10% to 12.5% and reintroducing the 18% VAT on handsets will cumulatively decrease internet penetration by 16% and 33%, respectively, by 2029. Overall, compared to the baseline, these tax changes will lead to a 49% cumulative decrease in mobile internet penetration over five years, conflicting with Rwanda's Broadband Policy and Strategy objective of enhancing access to affordable and quality broadband services.

Figure 20:
Combined cumulative impact of proposed tax changes on mobile internet penetration (2025-2029)

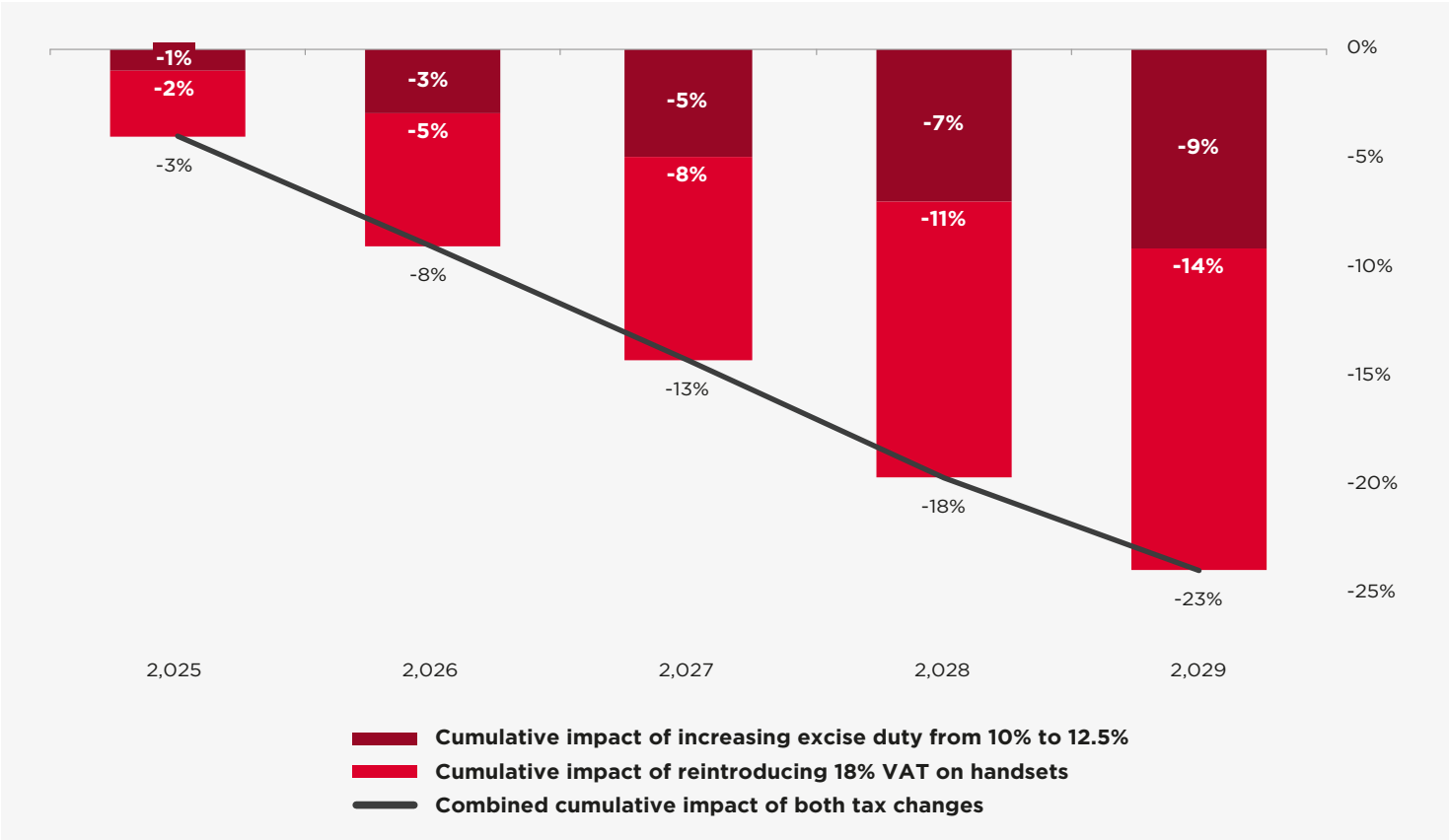


Source: Operators data and GSMA analysis

Furthermore, the proposed tax increases could substantially reduce the number of unique mobile subscribers. As illustrated in Figure 21, increasing excise duty and reintroducing VAT on handsets,

will cumulatively result in 24% less unique mobile subscribers, compared to the baseline, by 2029.

Figure 21:
Combined cumulative impact of proposed tax changes on unique mobile subscribers (2025-2029)



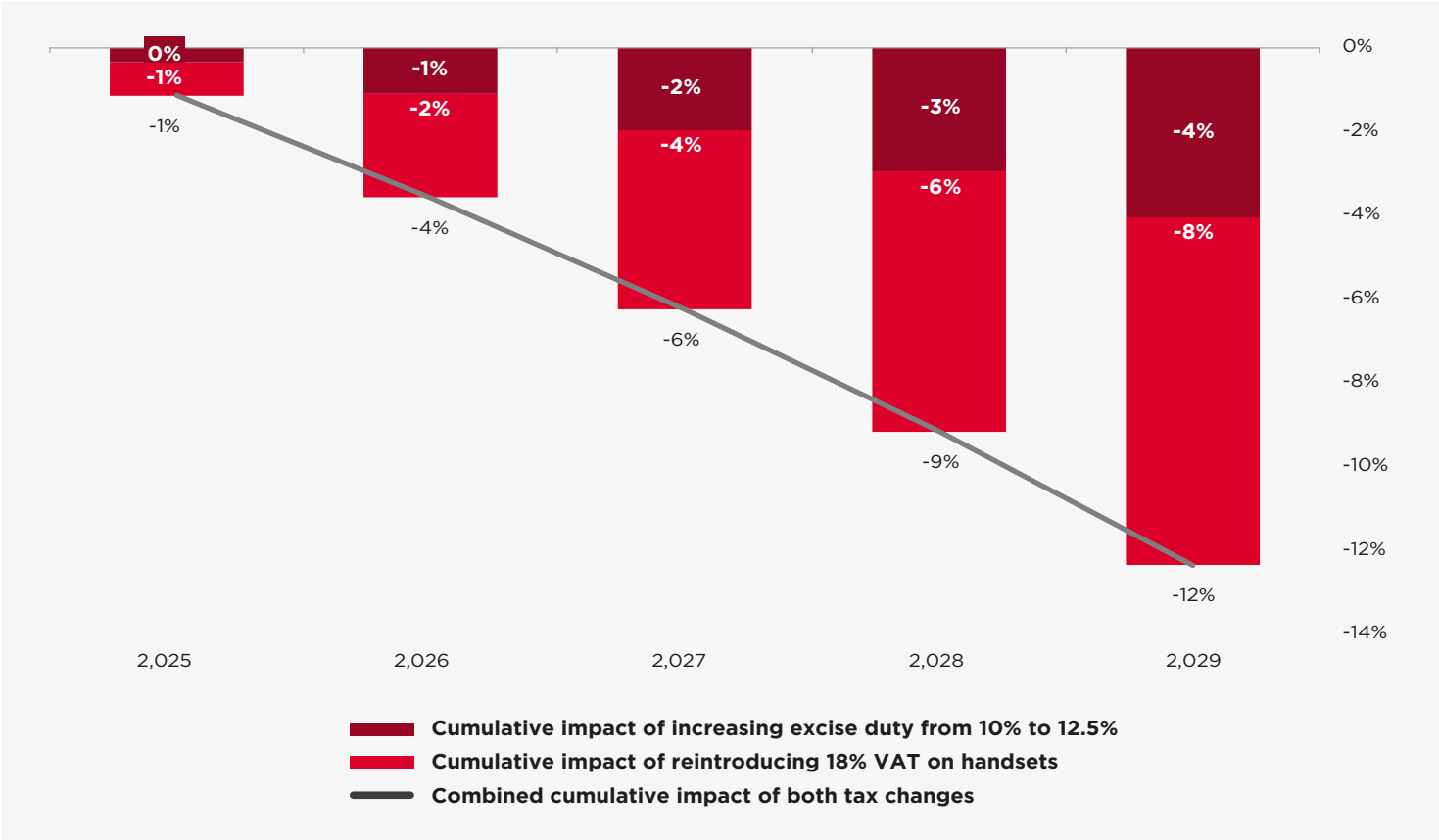
Source: Operators data and GSMA analysis

B. Combined cumulative impact on broader economy

Mobile telephone services are becoming more critical for supporting economic growth and social inclusion. Decreased mobile internet penetration resulting from the proposed tax increases will reduce productivity across the economy, leading to further decreases in output, incomes, and expenditure. As a result, GDP will fall as the reduced productivity triggers a chain reaction of economic contraction. As illustrated in

Figure 22, increasing excise duty and reintroducing VAT on handsets, will cumulatively result in 12% GDP loss, compared to the baseline, by 2029. Furthermore, as a result of implementing proposed tax increases, the reduced economic activity from the productivity impact of lower mobile penetration will lead to a loss of approximately 100,000 jobs by 2029.

Figure 22:
Combined cumulative impact of proposed tax changes on GDP (2025-2029)



Source: Operators data and GSMA analysis

4.4 Tax reform recommendations

As highlighted in the report, the tax regime applied to the mobile sector diverges from widely recognised best tax practices and conflicts with the country's digital goals outlined in the National Broadband Policy and Strategy. The current taxation framework already places a substantial burden on the sector, and any further tax increases could exacerbate this, potentially hindering investment and curbing the adoption of mobile services. Such measures risk

impeding Rwanda's progress in achieving digital transformation and fostering digital inclusion. Based on the results of the preceding quantitative analysis regarding the potential negative impacts of the proposed tax increases on the mobile sector and the broader economy, the report offers the following recommendations aimed at fostering investment in the sector and promoting the adoption of mobile services in Rwanda:

Recommendation 1:

Refrain from raising the excise duty on mobile services from 10% to 12.5% to prevent increasing the cost for consumers, which could negatively affect mobile service adoption.

Recommendation 2:

Avoid reintroducing the 18% VAT on imported handsets, as this could exacerbate the already significant affordability challenges for mobile devices in the country.

Recommendation 3:

Gradually reduce mobile sector-specific taxes to promote equal treatment with other industries, thereby encouraging further investment from operators and boosting the uptake of mobile services.







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