

6 GHz ECONOMIC IMPACT STUDY IN SOUTH AFRICA



Telecom Advisory Services LLC

New York - Buenos Aires - Madrid - Bogota - Quito

New York, December 1st, 2021

THE PURPOSE OF THE PROJECT WAS TO ESTIMATE THE CUMULATIVE ECONOMIC VALUE OF THE DESIGNATION OF THE 6 GHz BAND FOR UNLICENSED USE IN SOUTH AFRICA

	GDP impact	Producer Surplus	Consumer Surplus
Aligning spectrum decision with other advanced economies		X	
Enhance broadband coverage and improve affordability	X		X
Increase speed by reducing Wi-Fi congestion	X		X
Deployment of AR/VR solutions	X	X	
Deployment of IoT	X	X	
Reduction of Enterprise wireless costs		X	
Cellular traffic offloading		X	
Wi-Fi Municipal	X		X
Benefits to consumers of free Wi-Fi traffic offered in public sites	X		X
Residential Wi-Fi Devices and equipment		X	X

SEVERAL FACTORS IN SOUTH AFRICAN TELECOMMUNICATIONS WILL DRIVE THE ECONOMIC IMPACT OF THE 6 GHz BAND ALLOCATION

- Potential role of Wi-Fi to close the digital divide, as currently only 10.80% of households have broadband connectivity (Sources: ITU, ICASA).
- Important role of WISP industry: this technology accounts for 19.83% of the fixed broadband subscriptions and growing (Source: WAPA 2021 survey).
- Importance of public Wi-Fi as a means of connection: 8.17 million users use free Wi-Fi, while 6.58 million users rely on municipal Wi-Fi in 2021 (Sources: Research ICT Africa Survey and ICASA)
- Important improvements from speed gains if the 6GHz band is allocated, with the consequent positive economic spillovers (average broadband speed can increase 62.16% by 2031)
- Local ICT equipment market could benefit from 6 GHz Wi-Fi allocation. The share of local production of electronic equipment is 46.6% according to the South African I/O Matrix
- Important potential for the development of IoT and AR/VR

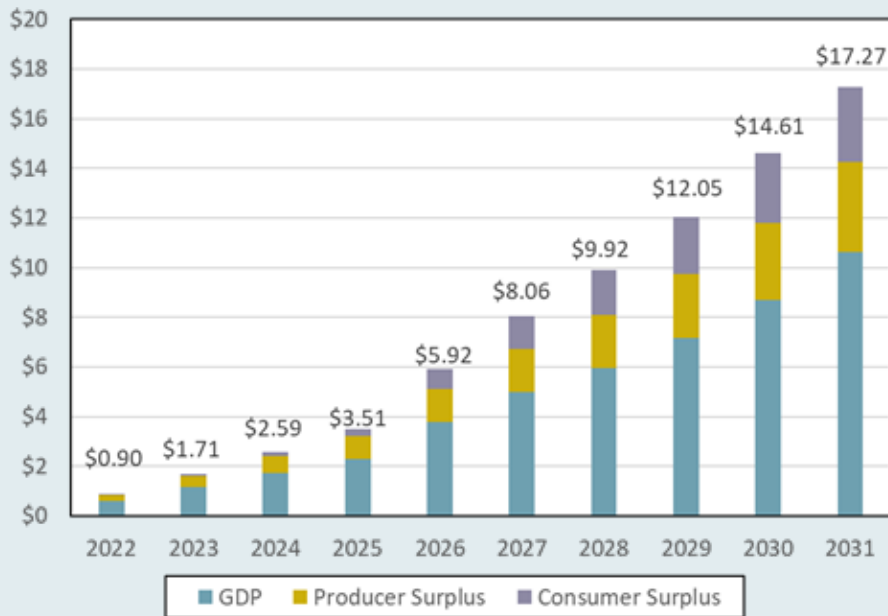
THE ALLOCATION OF THE WHOLE 6 GHz BAND WILL RESULT IN A TOTAL CUMULATIVE ECONOMIC VALUE BETWEEN 2022 AND 2031 OF US\$ 76.53 BILLION

	GDP impact	Producer Surplus	Consumer Surplus
Aligning spectrum decision with other advanced economies		\$0.34	
Enhance broadband coverage and improve affordability	\$13.82		\$0.13
Increase speed by reducing Wi-Fi congestion	\$2.78		\$0.74
Deployment of AR/VR solutions	\$5.63	\$2.12	
Deployment of IoT	\$9.91	\$4.51	
Reduction of Enterprise wireless costs		\$6.34	
Cellular traffic offloading		\$0.91	
Wi-Fi Municipal	\$11.95		\$6.36
Benefits to consumers of free Wi-Fi traffic offered in public sites	\$2.93		\$0.77
Residential Wi-Fi Devices and equipment		\$2.62	\$4.66

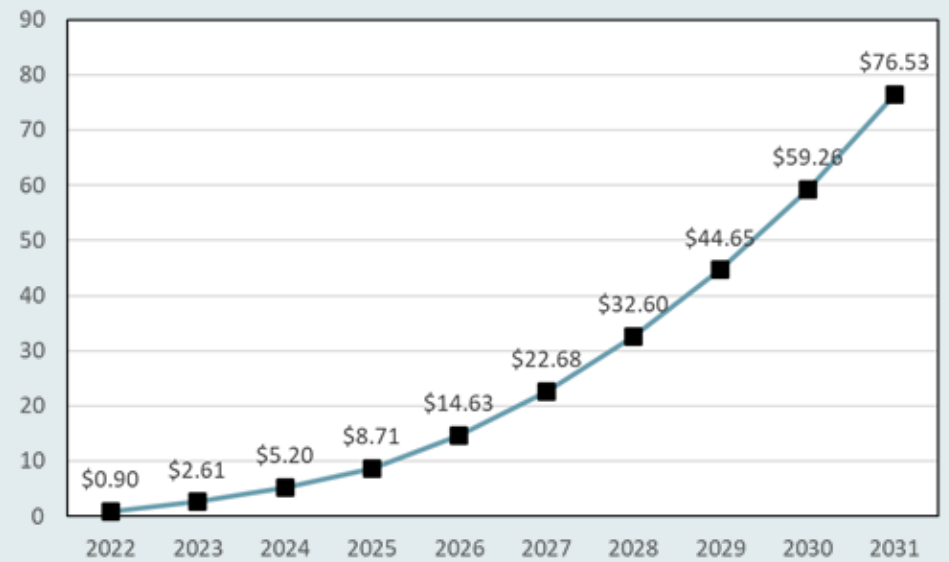
THE ECONOMIC VALUE INCREASES OVER TIME WITH SIGNIFICANT ACCELERATION TOWARDS THE END OF THE PERIOD DUE TO THE VALUE LEVERAGE CAPABILITY OF 6 GHZ

SOUTH AFRICA: ECONOMIC VALUE OF ALLOCATING 1200 MHz IN THE 6 GHZ BAND (2022-2031) (IN US\$ BILLIONS)

Annual Economic Value



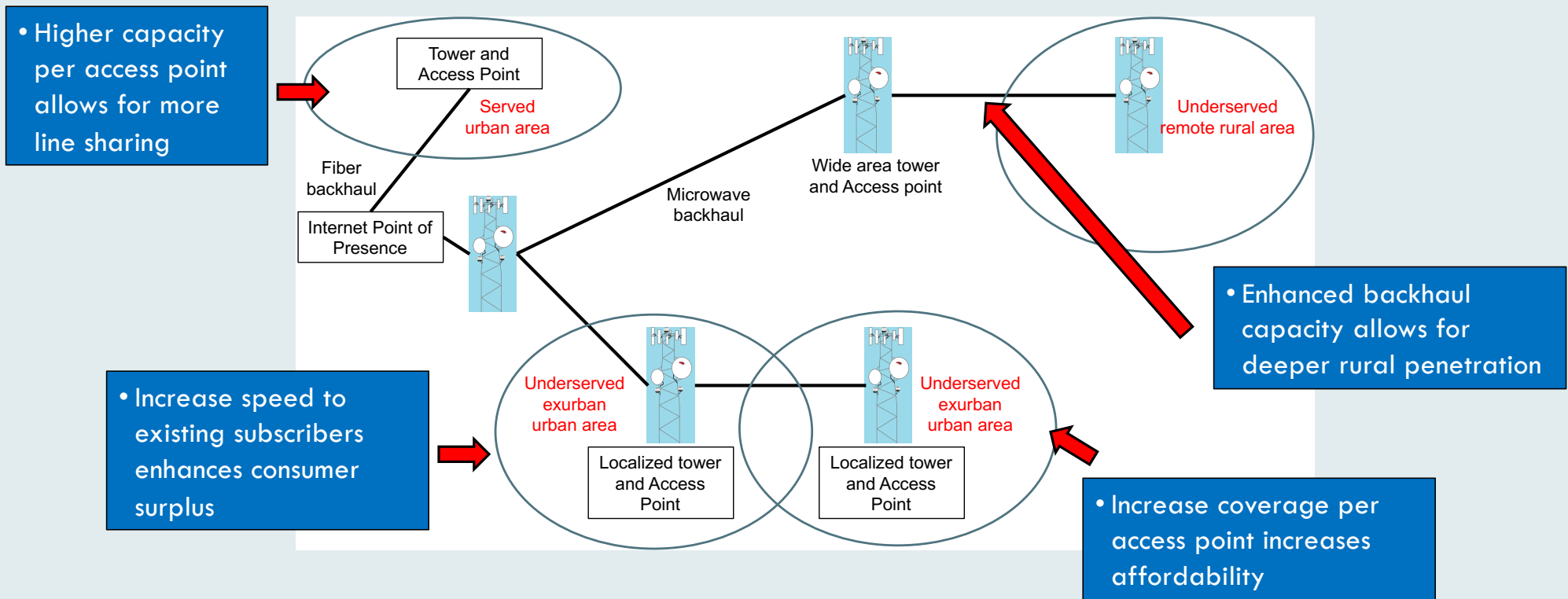
Cumulative Economic Value



Source: Telecom Advisory Services analysis

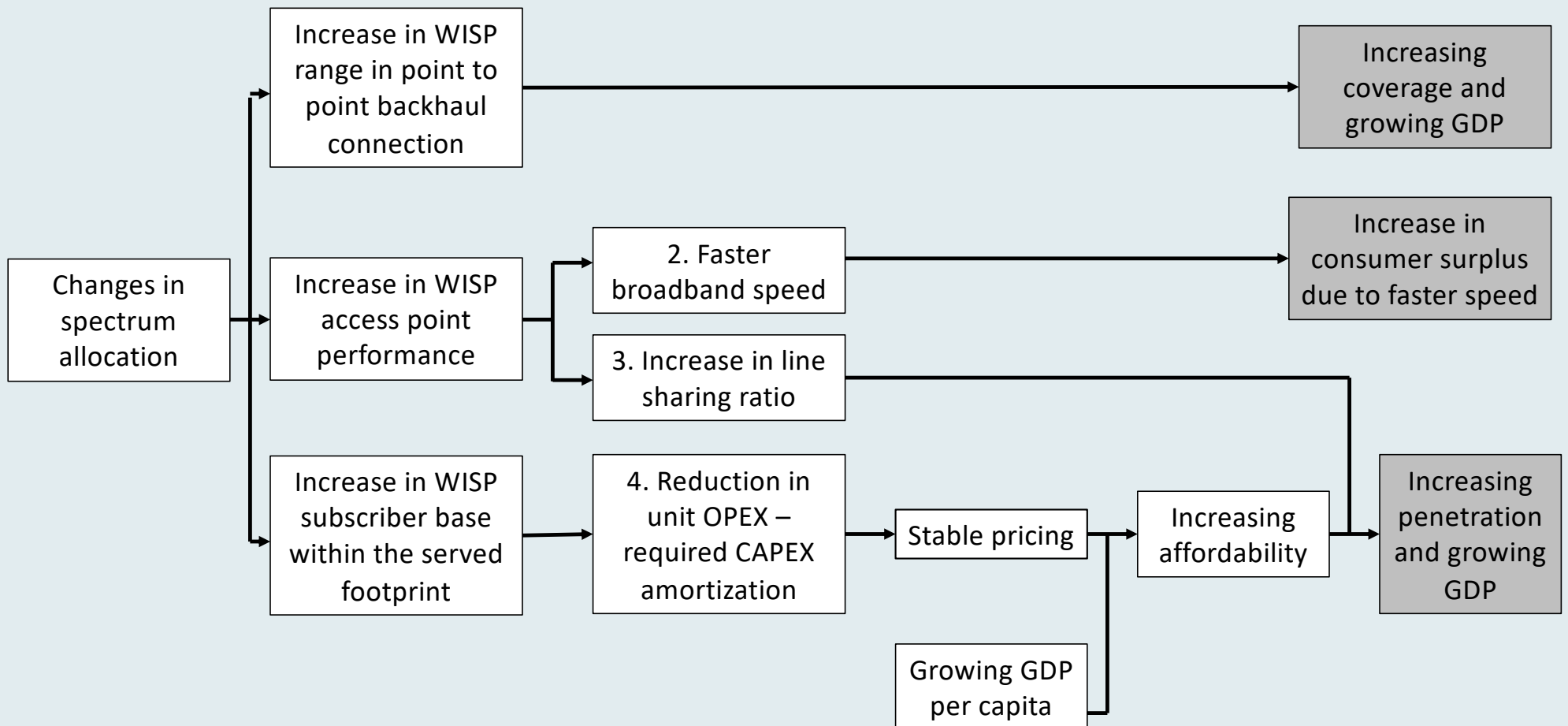
SPECTRUM ALLOCATION IS TECHNOLOGY ENABLER OF WIRELESS ISPs ABILITY TO CONTINUE TACKLING THE DIGITAL DIVIDE

IMPACT OF SPECTRUM ALLOCATION ON A WISP NETWORK



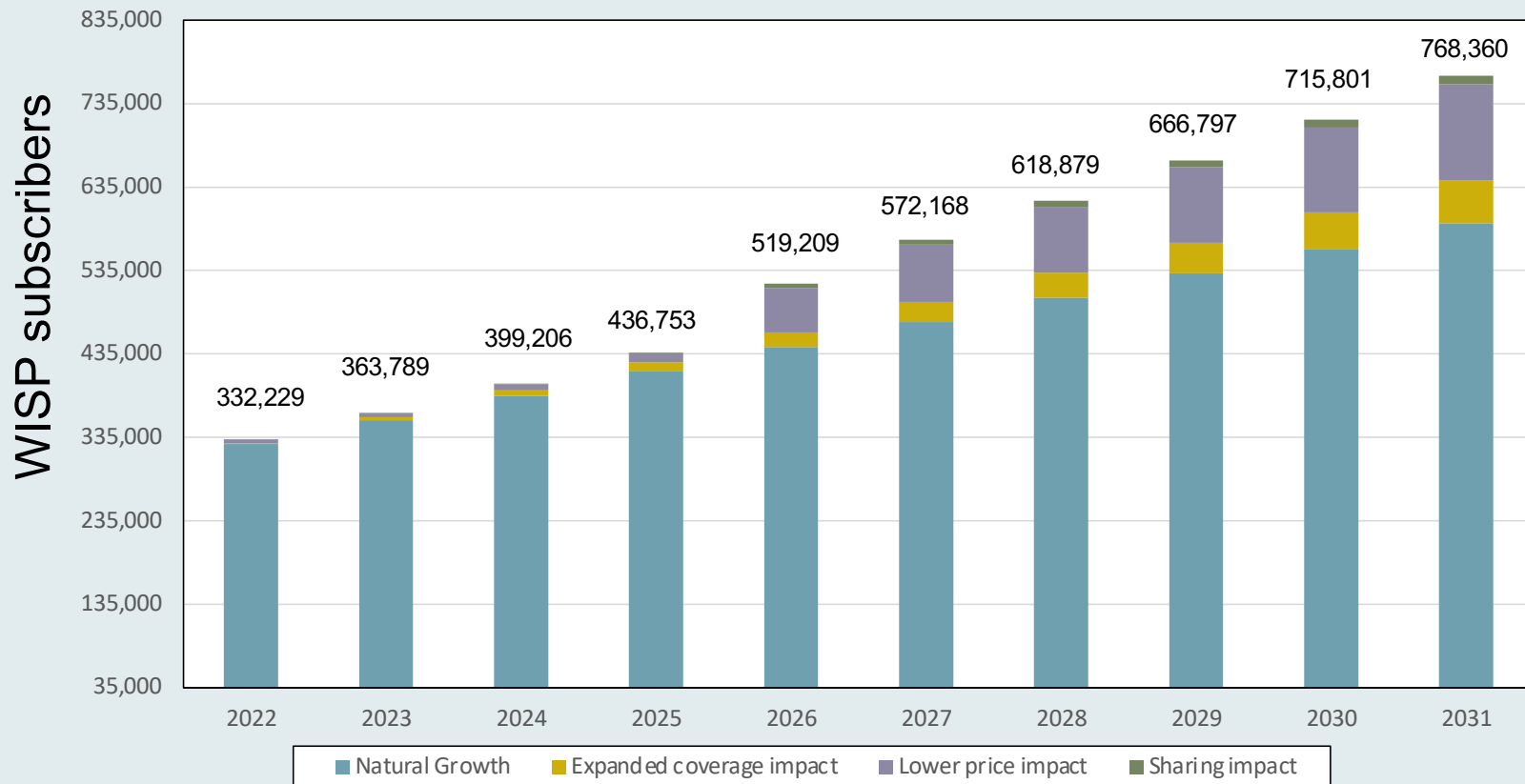
Source: Telecom Advisory Services analysis

THE METHODOLOGY FOR ESTIMATING THE ECONOMIC IMPACT ON THE WISP SECTOR OF SPECTRUM CHANGES IS STRUCTURED AROUND THREE EFFECTS



THE 6 GHz BAND WILL PLAY AN IMPORTANT ROLE BY ENHANCING THE PERFORMANCE OF WISPs

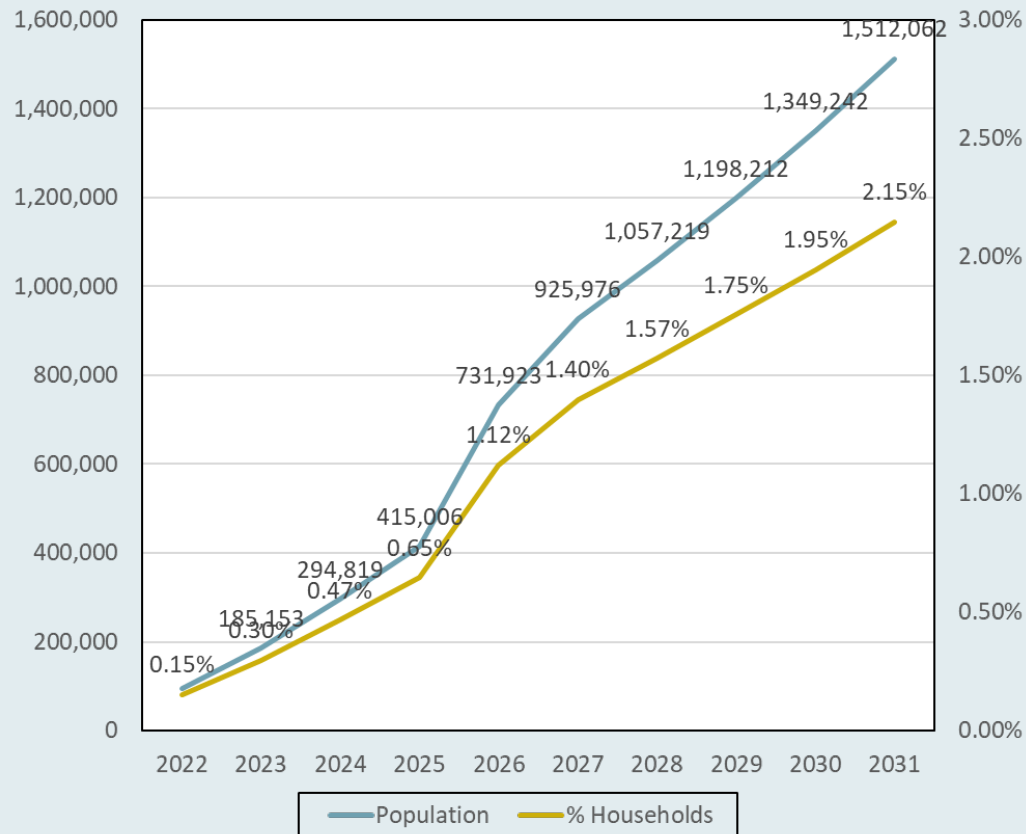
SOUTH AFRICA: IMPACT ON CLOSING THE DIGITAL DIVIDE DUE TO CONTRIBUTION OF 1,200 MHz ALLOCATION TO WISPs (2022-2031)



Source: Telecom Advisory Services analysis

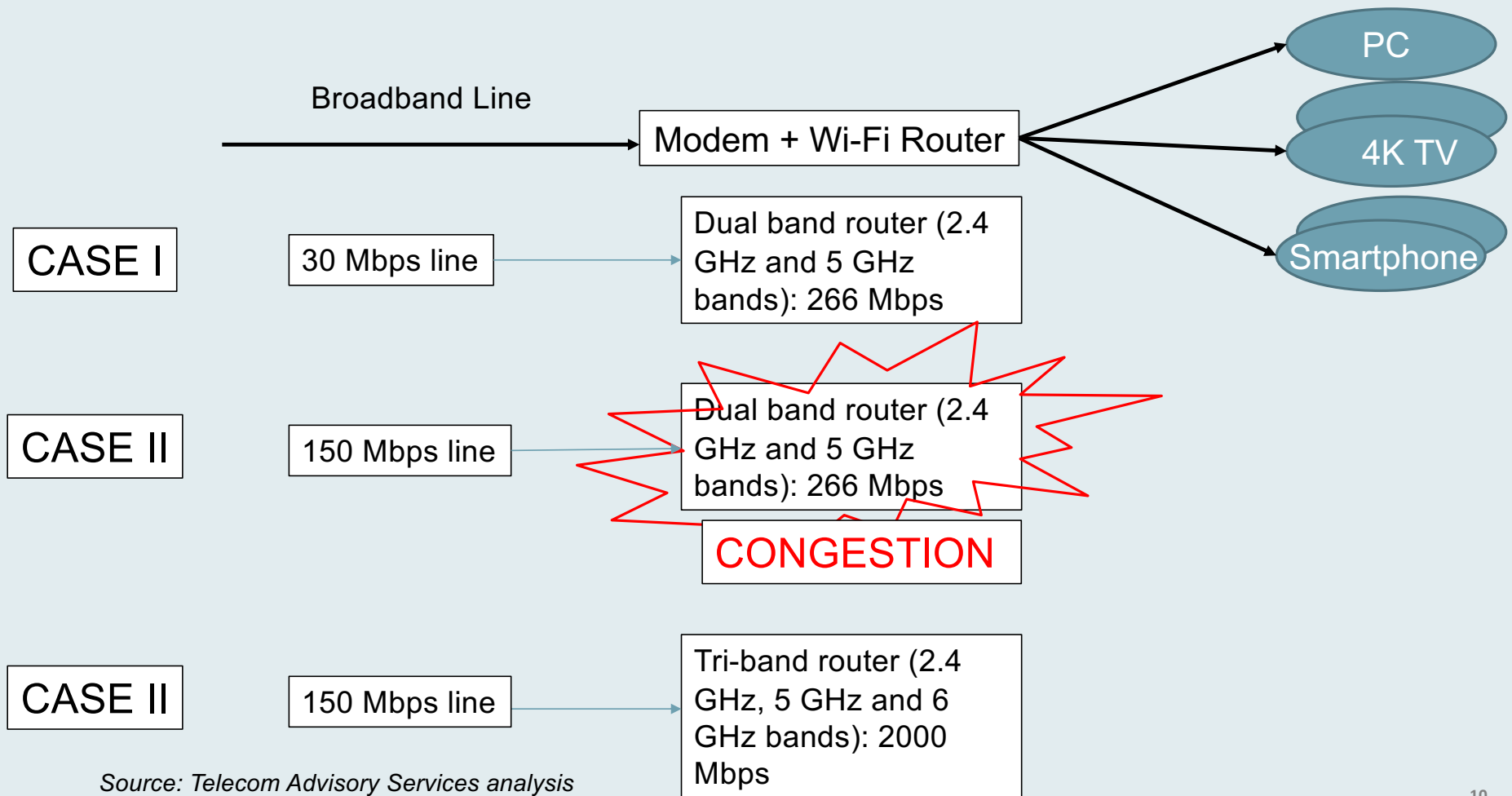
AS A CONSEQUENCE, THE ALLOCATION OF THE 6 GHz BAND WILL HAVE A SIGNIFICANT IMPACT ON REDUCING SOUTH AFRICA'S DIGITAL DIVIDE

IMPACT ON CLOSING THE DIGITAL DIVIDE (2022-2031)



Source: Telecom Advisory Services analysis

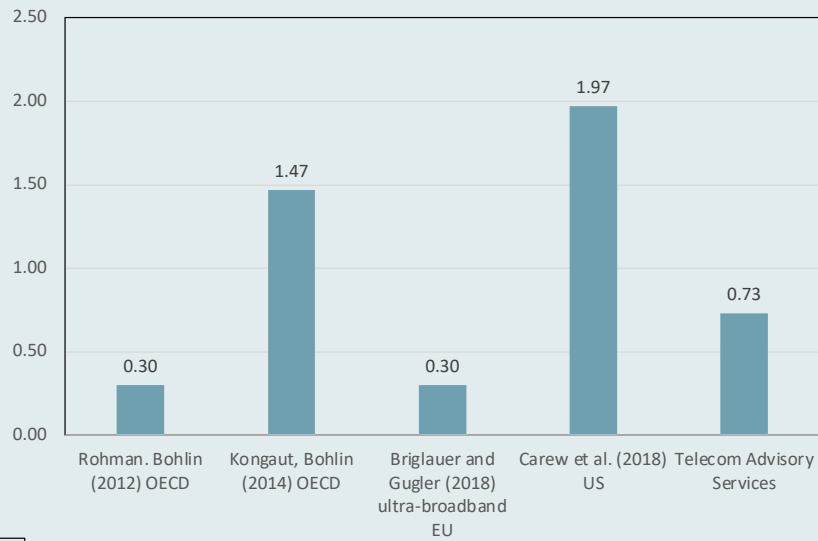
IN ADDITION, WI-FI 6 IS ALSO A GOOD APPROACH TO DEAL WITH RESIDENTIAL BROADBAND SERVICE CONGESTION



Source: Telecom Advisory Services analysis

EVIDENCE INDICATES THAT THE INCREASE IN BROADBAND SPEED HAS A POSITIVE IMPACT ON ECONOMIC GROWTH AND CONSUMER SURPLUS

STUDIES MEASURING THE GDP IMPACT ON BROADBAND SPEED (IMPACT OF 100% INCREASE IN SPEED ON GDP) (%)

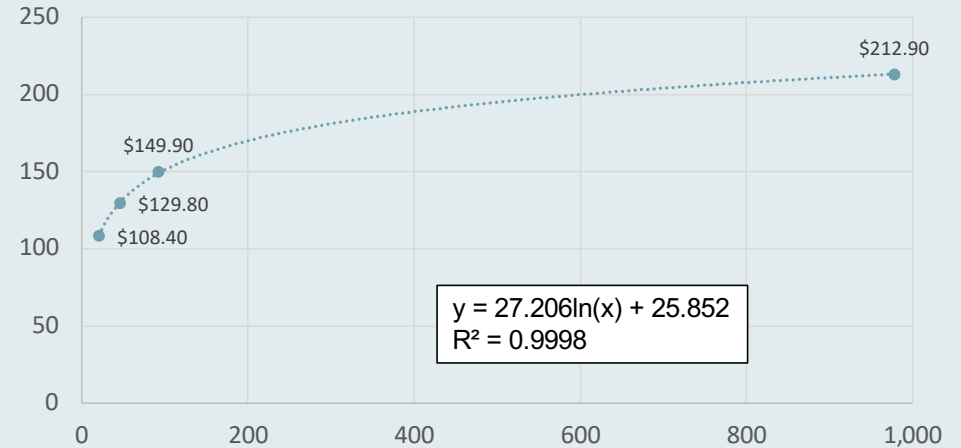


Dependent variable

- GDP per capita
- GDP per capita
- GDP at constant 2011 prices
- Real GDP
- Current GDP

Sources: compiled by Telecom Advisory Services analysis

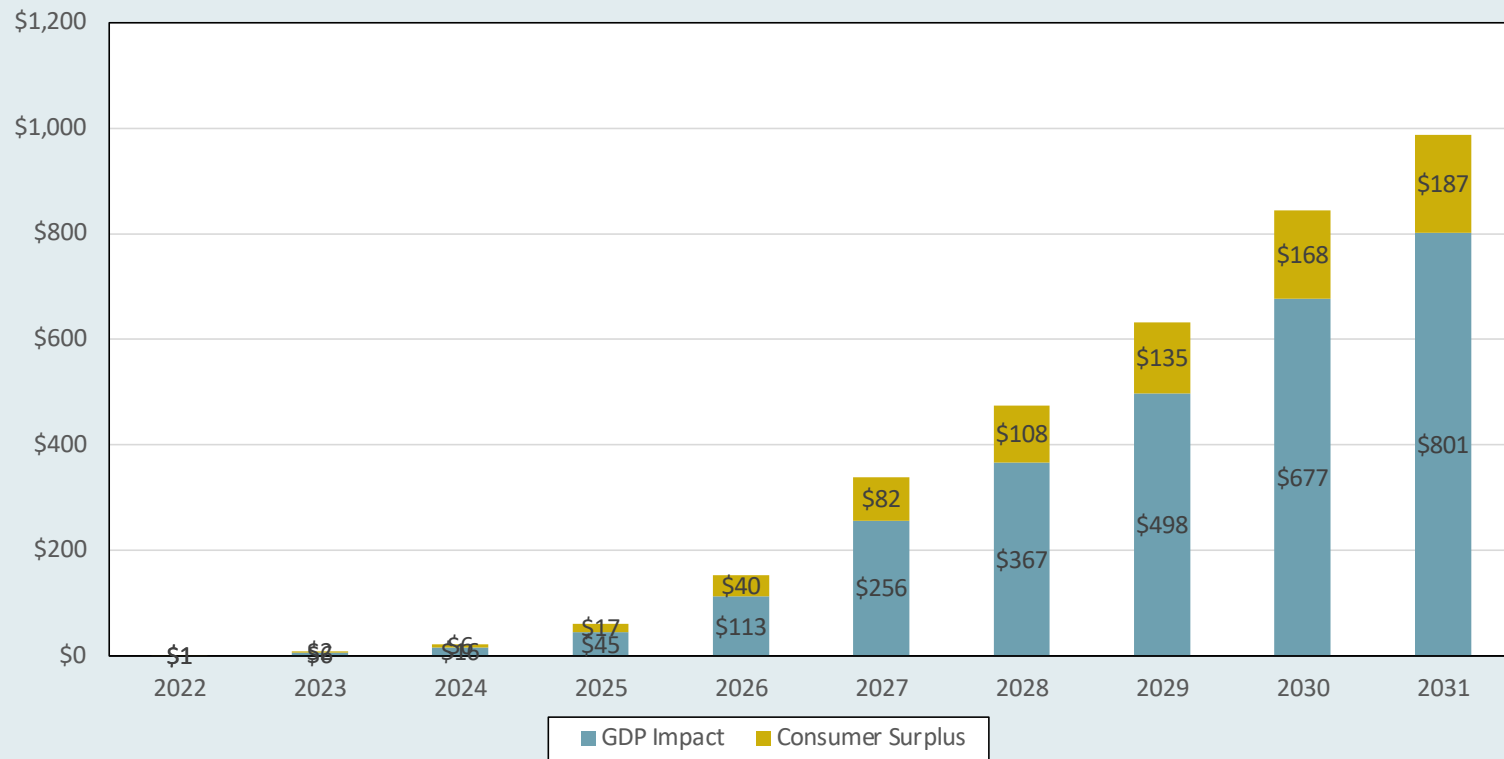
LOG CURVE OF RELATIONSHIP BETWEEN BROADBAND SPEED AND CONSUMER SURPLUS



Sources: Nevo et al. (2016); Liu et al. (2018); Telecom Advisory Services analysis

BY REDUCING WI-FI CONGESTION THE 6 GHz BAND WILL PLAY AN IMPORTANT ROLE IN INCREASING FIXED BROADBAND SPEED AT THE PREMISE LEVEL : TOTAL CUMULATIVE VALUE OF US\$ 3.52 BILLION

SOUTH AFRICA: ECONOMIC IMPACT OF 1,200 MHz ALLOCATION TO REDUCTION OF WI-FI CONGESTION (2022-2031) (IN MILLION US\$)

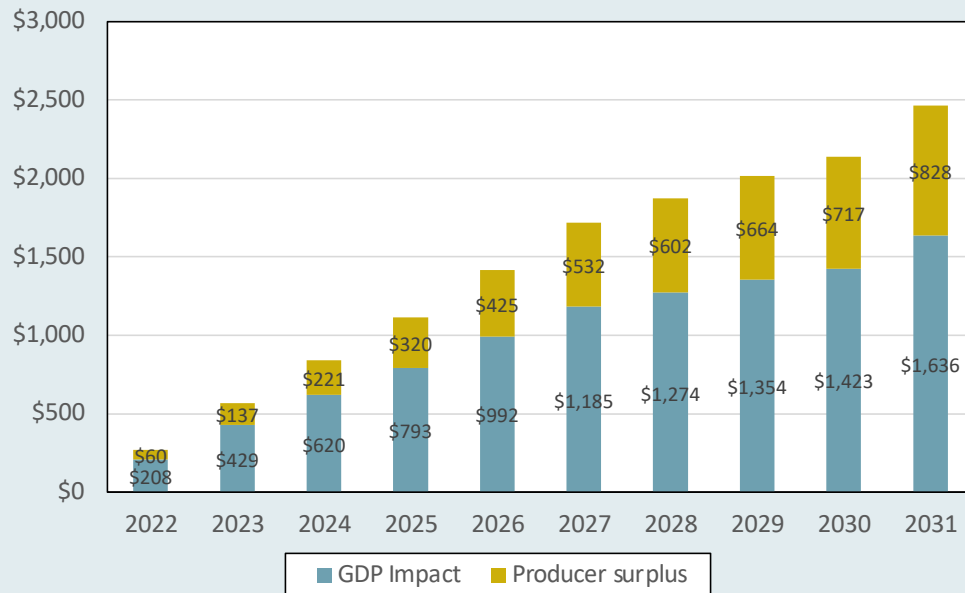


Source: Telecom Advisory Services analysis

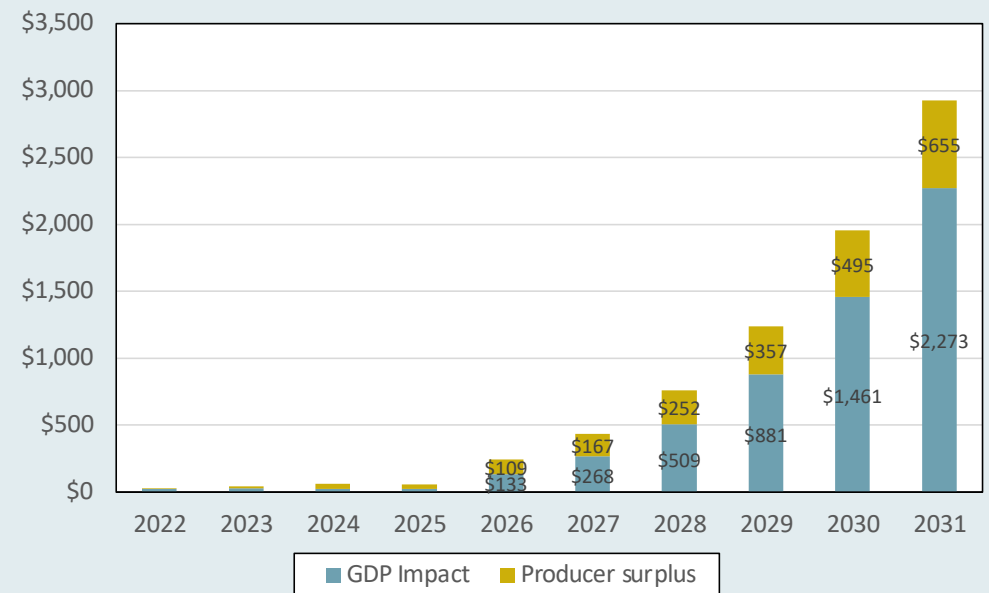
FINALLY, THE 6 GHz BAND WILL CONTRIBUTE TO GDP THROUGH INCREASE IN PRODUCTIVITY, AND PRODUCER SURPLUS FROM AR/VR AND IoT : TOTAL CUMULATIVE VALUE OF US\$ 22.17 BILLION

SOUTH AFRICA: ECONOMIC IMPACT OF 1,200 MHz ALLOCATION TO PRODUCTIVITY GROWTH AND PRODUCER SURPLUS (2022-2031) (IN MILLION US\$)

INTERNET OF THINGS



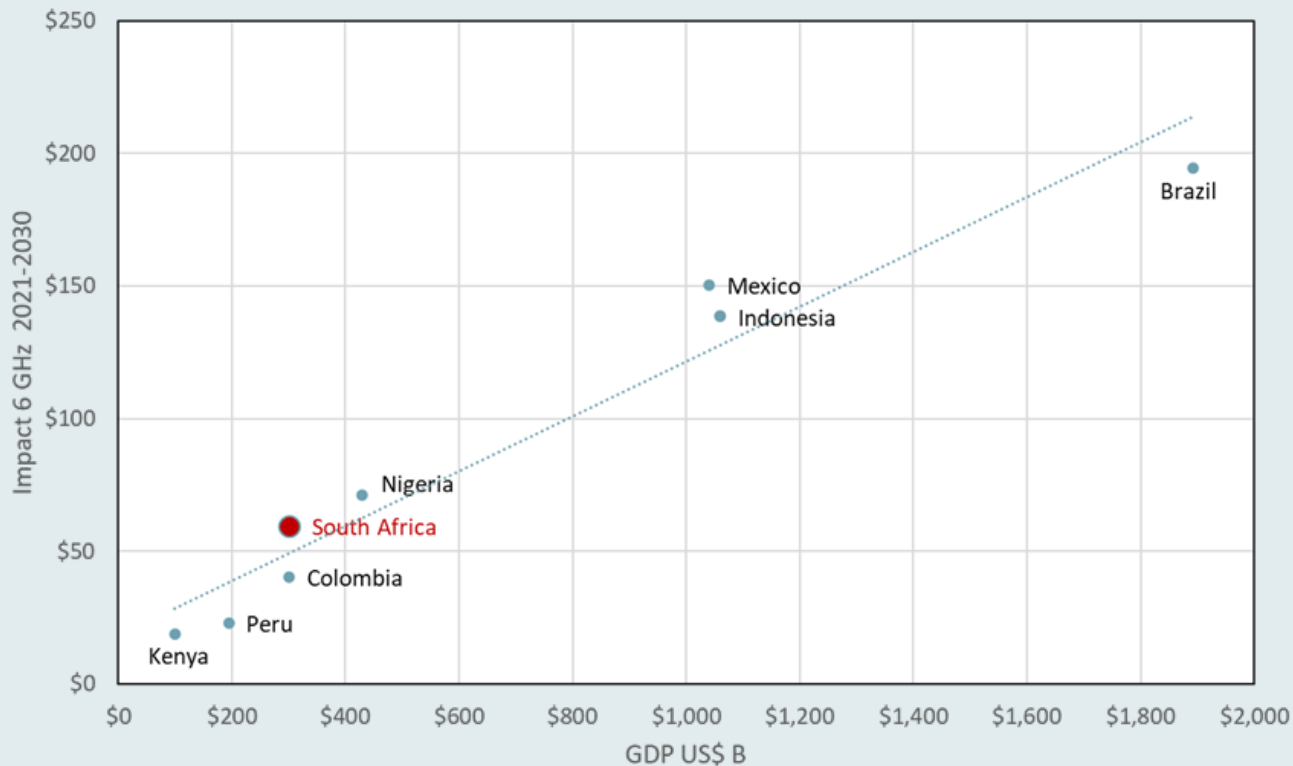
AUGMENTED REALITY/VIRTUAL REALITY



Source: Telecom Advisory Services analysis

THE ECONOMIC IMPACT OF THE 1200 MHZ ALLOCATION FOR SOUTH AFRICA IS IN LINE WITH THE SIZE OF THE COUNTRY'S ECONOMY

SOUTH AFRICA: CUMULATIVE ECONOMIC IMPACT OF 1,200 MHZ AND GDP



Country	Impact 2021-2030 (% 2030 GDP)
South Africa	19.70%
Kenya	18.91%
Nigeria	16.60%
Mexico	14.45%
Colombia	13.43%
Peru	11.71%
Brazil	10.28%
Indonesia	13.06%

NOTE: South African impact is presented through 2030 to make it comparable with other country results

Source: Telecom Advisory Services analysis

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