Closing the Rural Connectivity Gap in Albania

Policy Paper

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Context

This Policy Paper is developed by the International Telecommunication Union (ITU) Office for Europe as a contribution to the "Digital Agriculture and Rural Transformation in Albania" (DART) Joint Programme, implemented together with Food and Agriculture Organization (FAO) and International Labour Organization (ILO). The DART programme aims to foster inclusive digital transformation and create sustainable economic opportunities in rural areas through the development of a national digital agriculture strategy and improved delivery of digital public services to farmers.

The objective of this Policy Paper is to identify the connectivity conditions and policy actions needed to unlock the full potential of rural digitalisation. The document aims to support Albania's ongoing digital development by identifying actionable recommendations to close the rural digital connectivity gap. It focuses on enhancing both infrastructure availability and the adoption of digital services, especially in agriculture, where improved connectivity can boost productivity, market access, and resilience.

Since the introduction of the National Broadband Plan 2020-2025 by the Ministry of Infrastructure and Energy, Albania has made substantial progress in advancing its digital infrastructure, enabling widespread access to mobile and broadband services and laying the foundations for a digital economy. Mobile broadband coverage now reaches virtually 100 per cent of Albania's population and territory, positioning the country as a regional leader in mobile network reach. Likewise, investment in fibre optic infrastructure has significantly expanded fixed broadband capacity in urban, and to a lesser extent, rural areas, supported by a dynamic and increasingly competitive telecoms market. Despite this progress, important digital divides persist—particularly in rural and remote areas. While mobile connectivity is near-universal, fixed broadband infrastructure remains less developed in low-density regions. Geographic disparities, affordability constraints, and digital literacy gaps continue to inhibit equitable access to the full range of digital services. These divides risk undermining inclusive economic development going forward, particularly in rural communities that rely on agriculture and have the most to gain from digital transformation.

Rural digital connectivity is increasingly recognized as essential for inclusive development and Albania's broader digital agenda. It contributes directly to economic growth through integration into digital markets, promotes social equity by narrowing the rural-urban divide, and aligns with Albania's commitments under the Sustainable Development Goals (SDGs) and its EU accession objectives. Moreover, closing the rural digital gap will enable the rollout and adoption of e-government, e-agriculture, and digital financial services that are critical to modernising the rural economy.

Methodology

The paper is informed by a multi-source methodology, including desk research, stakeholder consultations through roundtables, bilateral meetings and questionnaires, and analysis of the most recent policies, legal instruments, regulations and statistical data from Ministry of Infrastructure and Energy (MIE), Ministry of Agriculture and Rural Development (MARD) and national institutions such as the Telecommunications Regulatory Authority (AKEP), the National Statistics Agency (INSTAT), the National

Agency for the Information Society (NAIS / AKSHI), ITU, UNDP Albania, and the, and other. It builds upon existing national policies and strategies such as the Digital Agenda 2022–2026, and the National Broadband Plan 2020–2025, and aims to contribute to Albania's forthcoming Digital Agriculture Strategy.

The paper is structured as follows: It begins with an overview of Albania's telecommunications and broadband landscape, with particular emphasis on the rural connectivity context and the emerging role of digital agriculture. It then examines the national strategies, programmes, policies, and regulatory frameworks currently in place to support rural broadband development. This is followed by a detailed analysis of the key challenges and barriers inhibiting rural connectivity. Building on this foundation, the paper presents a set of targeted policy recommendations, structured around two complementary tracks: one focused on expanding rural broadband access, and the other on fostering the adoption of digital solutions in agriculture. The paper closes with a forward-looking roadmap to 2030, outlining phased interventions, institutional responsibilities, and key enablers. It concludes with a call to action for coordinated and inclusive efforts to achieve a digitally connected and resilient rural Albania.

CURRENT SITUATION: OVERVIEW TELECOMMUNICATIONS MARKET

Telecommunications Market

The Albanian telecommunications market has undergone notable positive developments in recent years, driven by both the expansion of broadband services and structural consolidation within the mobile sector. A key event was the merger of ALBtelecom and One Telecommunications in January 2023, resulting in the formation of "One Albania" and reshaping the competitive landscape.[1] Additionally, external factors such as the COVID-19 pandemic acted as a catalyst, significantly accelerating the demand for reliable and fast broadband services across the country.

Based on information contained in AKEP's Annual Report 2023, Vodafone Albania and One Albania are the two main operators in the mobile services sector, holding the largest shares in the market. Vodafone maintains a leading position, holding approximately 51 per cent of the active SIM card market and 47 per cent of the active mobile broadband users, with a share of 56 per cent in total mobile service revenue. One Albania holds a 53 per cent share in SIM cards, 49 per cent of active users, and 46 per cent of data volume. These two operators have established themselves as the key players in Albania's mobile sector.[2] In late 2023, the number of active mobile telephony users was 2,614,764, while the number of active mobile broadband access users was 2,082,525, comprising 110 per cent and 90 per cent of Albania's population, respectively.[3]

In the fixed broadband sector, the number of subscribers continued to rise steadily, exceeding 631,000 in 2023 (reaching 693,983 in Q1 2025), which reflects a 6 per cent increase from the previous year. The largest players in the fixed broadband market, Vodafone Albania and One Albania, lead the sector, holding 22 per cent and 20 per cent of the market share respectively. This growth has driven Albania's broadband penetration rate, which reached 87 per cent of households[4] in 2023, showcasing the increasing availability and demand for broadband services across the country.[5]

Technological advancements in both mobile and fixed broadband have played a key role in market evolution. On the mobile side, the adoption of 3G and 4G technologies has been widespread, with 99 per cent of the population covered by 3G services. Vodafone Albania leads the 4G network with 97 per cent territorial coverage and 100 per cent population coverage, while One Albania covers 96 per cent of the territory and 99 per cent of the population.

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[1] Tirana Post, "ONE Telecommunications and ALBtelecom legally merge to become ONE Albania", 2023, https://tiranapost.al/english/tech/one-telecommunications-dhe-albtelecom-bashkohen-ligjerisht-per-tu-bere-one--i521715

[2] AKEP Annual Report 2023, https://akep.al/en/about-akep/#raporte

[3] AKEP Statistical Indicators of the Electronic Communications Market 2023, p.4, https://akep.al/wp-content/uploads/2024/06/R2023_Treguesit-Statistikore-te-Tregut-te-Komunikimeve-Elektronike-DTMRr_-003.pdf

[4] Based on the INSTAT Census – 2011, https://www.instat.gov.al/en/themes/censuses/census-of-population-and-housing/

[5] See ft.3, p.21

Table 1: Overview 3G/4G territorial and population coverage in Albania, 2025

Territorial Coverage (%)	Vodafone	One Albania	Population Coverage (%)	Vodafone	One Albania
3G	99	99	**3G**	99	99
4G	97	96	**4G**	100	99

Source: Author, based on AKEP 2024 data

In terms of mobile broadband, more than 2 million active users[6] are accessing mobile data services, with data traffic increasing by 4.95 per cent year-on-year. The demand for faster Internet speeds has also resulted in the continued growth of fixed broadband services, where 69 per cent of subscribers have access to speeds greater than 30 Mbps. Notably, 28 per cent of subscribers now enjoy speeds exceeding 100 Mbps, highlighting the growing trend of high-speed Internet adoption in Albania.[7]

Revenue generation in the telecommunications market remains robust, with mobile services accounting for the largest share, as shown in Figure 1. Vodafone Albania continues to lead revenues, totaling 56 per cent of the total mobile services revenue, while One Albania follows closely, focusing heavily on expanding its mobile broadband infrastructure.

Figure 1: Fixed and mobile revenue 2019-2023 (Million Albania Lek)
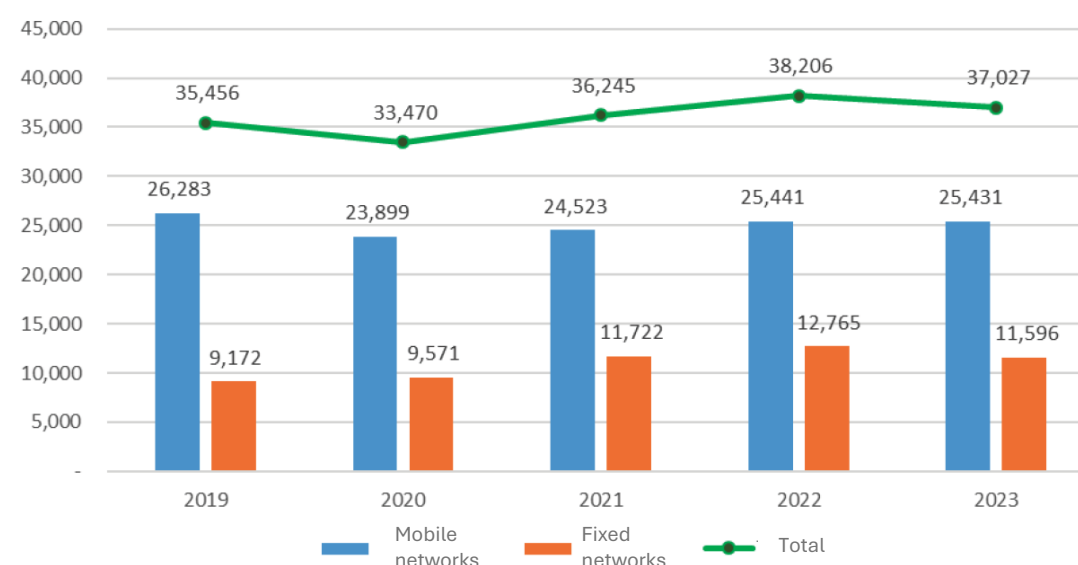
Source: AKEP, revenues reported by electronic communication undertakings.

In 2023, the mobile sector saw investments amounting to 1.8 billion lek, primarily dedicated to enhancing mobile broadband services (83 per cent).[8] In the fixed broadband market, providers also increased their investments, with a reported 2.7 billion lek

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[6] 2.5 million in 2024.

[7] Ibid.

[8] In total in 2023, Vodafone Albania invested LEK 854 million and One Albania LEK 976 million.

allocated to strengthening their network infrastructure, ensuring the continued growth of fibre-based broadband access across the country.[9]

Figure 2 below provides a snapshot of Albania's digital landscape in 2024, highlighting widespread Internet and mobile connectivity.

Figure 2: Key ICT statistics for the most recent year available

Total Population* — **2.4 Million**
Urban / Rural Population** — **64.6% / 35.4%**
Total Internet Users*** — **86.2%**
Mobile Internet (3G/4G) Active Users***** — **90%** (2.1 million)
Household Internet Use*** (91.5% HH Fixed Access 99.3% HH Mobile Access) — **97.1%**
E-Albania Platform use*** — **99.4%** of the population
Cellular Internet Traffic Q4 2024***** — **56 Million GB**
Rural Fixed Internet penetration**** (based on HH and subscriptions) — **≅50%**
Fixed Telephone subscribers***** — **165,000**
Mobile Telephone Active Users***** — **2.5 million** (>100% based on population)

* INSTAT Census 2023
** World Bank Development Indicator 2023
*** INSTAT ICT Household and Individuals Internet Usage Survey 2024
**** Extrapolations are based on:
• **2023 total households (HH):** 755,950
• **Average household size:** 3.2 persons/HH
• **2024 total fixed broadband subscriptions:** 693,983
• **2024 rural fixed broadband subscriptions:** 135,962
• **2023 total population:** 2,402,113
Given that the rural population accounts for **35.4%** of the total, we calculate:
1. 0.354×2,402,113=850,3480.354 (rural population)
2. 850,348÷3.2=265,733850,348 (estimated rural households)
3. Assuming **one fixed broadband subscription per household**, dividing **135,962** rural fixed broadband subscriptions by **265,733** rural households yields a rural household penetration rate of approximately **50%**.
***** AKEP 2024 Statistical Indicators for the Electronic Communications Market

Source: Author

With a population of 2.4 million, 86.2 per cent are Internet users, and 97.1 per cent of households report Internet access—via either fixed (91.5 per cent) or mobile (99.3 per cent) connections. Mobile Internet penetration is strong, with 90 per cent of the population (2.1 million users) using 3G/4G services, while mobile telephone subscriptions exceed 2.5 million, indicating multi-SIM use. E-government adoption is nearly universal, with 99.4 per cent of the population using the e-Albania platform. However, rural fixed Internet penetration remains at an estimated 50 per cent, pointing to ongoing digital divide challenges. Meanwhile, cellular data traffic reached 56 million GB in Q4 2024, and fixed telephone usage continues to decline, with only 165,000 subscribers, reflecting the country's shift to mobile and digital-first communications. The INSTAT ICT Household Survey further shows that 99.8 per cent of individuals have used a smart device/phone to access the Internet. Meanwhile, 28.2 per cent of the population access the Internet through laptops, 27.4 per cent through desktops and 19.1per cent through tablets, and 98.7 per cent of individuals use the Internet to make voice/video calls using OTT apps (e.g. WhatsApp, Skype, Viber, etc.). As regards use of ICTs by enterprises, the INSTAT Household Survey 2024 shows that in 2024, digital

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[9] AKEP Statistical Indicators of the Electronic Communications Market 2023, p.4, https://akep.al/wp-content/uploads/2024/06/R2023_Treguesit-Statistikore-te-Tregut-te-Komunikimeve-Elektronike-DTMRr_-003.pdf

adoption among Albanian enterprises continued to deepen, particularly among businesses with 10 or more employees. 99.3 per cent of these enterprises reported using computers with Internet access, and 88 per cent had download speeds exceeding 30 Mbit/s, while 40.9 per cent reached speeds above 100 Mbit/s.

Key institutions responsible for broadband development

Telecommunications policy-making and broadband infrastructure development in Albania are led by the MIE, which serves as the primary policy-making body responsible for strategy formulation, legal framework development, and national broadband planning. Within MIE, the Directorate for Policies and Development Strategies for Telecommunications and Posts manages the sector, while cross-sector coordination is supported by the Thematic Group on Telecommunications and Broadband, established under the Connectivity Sector Lead Committee. To enhance national coordination and facilitate EU-funded broadband projects, the government established a Broadband Competence Office (BCO)[10] within MIE in late 2023. The BCO serves as a one-stop entity for managing broadband investment programs, coordinating with local authorities and municipalities, operators, and donors, and ensuring alignment with Albania's broadband targets and EU connectivity objectives. [11]

Regulatory oversight is provided by AKEP, which manages spectrum allocation, infrastructure sharing, licensing, and market regulation in alignment with EU directives. The National Agency for Information Society (NAIS) is responsible for e-government and digital services across public institutions, playing a key role in the management of digital platforms such as e-Albania. At the local level, municipalities are tasked with issuing construction permits and managing land access, making them essential actors in broadband rollout.

National Mobile and Fixed Broadband Market in Albania

Mobile Broadband Market

Albania's mobile broadband sector remains the dominant platform for Internet access, driven by widespread mobile phone usage and high penetration of mobile networks. As of Q4 2024, there were approximately 3.4 million SIM card subscriptions, with around 2.5 million active mobile users—a figure reflecting over 100 per cent mobile penetration when compared to Albania's population of 2.4 million[12]. Mobile networks, primarily

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[10] The BCO for Albania was established in late 2023 and is located within the MIE. The BCO acts as a dedicated unit responsible for coordinating broadband development projects, particularly those co-funded by the EU under pre-accession or investment frameworks such as the WBIF. Its role includes: (1) Liaising between municipalities, telecom operators, and central government institutions; (2) Supporting project preparation, tendering, and use of EU funds; and (3) Facilitating local-level implementation of broadband initiatives, especially in rural and underserved areas. The BCO was set up as part of Albania's alignment with EU broadband deployment governance structures, which require a single, nationally recognized entity to coordinate national broadband initiatives and interface with European institutions on digital infrastructure planning.

[11] As recommended in the 2020-2025 National Broadband Plan, the BCO was created as a key measure to address institutional capacities and support, see https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf and https://enlargement.ec.europa.eu/document/download/92844bd9-7cf4-4fb1-bcc2-b42a18371480_en?filename=AL_Cluster_3_report_FINAL_clean_publication.pdf

[12] INSTAT Census – 2023, https://www.instat.gov.al/en/themes/censuses/census-of-population-and-housing/

through Vodafone Albania and One Albania, achieve near-total population coverage, with 3G coverage reported at 99 per cent and LTE (4G) networks covering up to 100 per cent of the population as reported by Vodafone and 99 per cent by One Albania.[13]

Table 2 shows the number of subscribers with 3G/4G broadband access between 2019-2023. Active users of 3G/4G mobile broadband services reached nearly 2.1 million in Q4 2024, representing a slight annual increase of 0.4 per cent despite a quarterly decline due to seasonal and economic adjustments.[14] Mobile data usage continued to expand, with 193 million GB of Internet traffic in 2023, increasing by 4.95 per cent compared to the previous year.[15] On average, each mobile broadband user consumed 8.94 GB/month, and made 145 minutes of outgoing calls, indicating a shift toward data-centric usage.[16]

Table 2: Number of subscribers with 3G/4G broadband access 2019-2023[17]

Year	One in Albania	Vodafone Albania	ALBtelecom	Total	The rate of population density
2019	567,572	940,949	280,737	1,789,258	63%
2020	718,631	981,483	298,465	1,998,579	70%
2021	825,707	925,967	304,770	2,056,444	73%
2022	836,931	1,033,888	269,361	2,140,180	77%
2023	916,755	1,165,770		2,082,525	75%

Source: Processed by AKEP, Data sent by operators

Fixed Broadband Market

The fixed broadband market has also shown steady growth, with 687,000 broadband subscriptions reported in Q4 2024, up from 631,000 in 2023, marking a year-on-year increase of 8.6 per cent. Today (Q1 2025), the total number of fixed broadband subscriptions stands at 693,983 of which 135,962 are in rural areas.[18] Based on information obtained during the Stakeholder Consultation Roundtable in March 2025, there has been a 40 per cent increase in fixed broadband subscriptions since the National Broadband Plan's implementation, with a 10 per cent annual growth rate. Public services being moved online has significantly increased demand for broadband, with over 1,245 services now available on the e-Albania Portal.

Despite this growth, rural regions still lag behind urban areas, with only 19.5 per cent of fixed broadband subscriptions located in rural communities, although these areas represent about 35.4 per cent of Albania's total population[19]. Yet, the household penetration of broadband access from fixed networks was reported by AKEP to stand at

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[13] AKEP Annual Report 2023, Section 1.2, pp. 38-50, https://akep.al/wp-content/uploads/2024/07/ENGLISH_AKEP-RAPORTI-VJETOR-23PRILL-2024-FINAL.pdf

[14] AKEP Statistical Indicators of the Electronic Communications Market Q4 2024, Table 3.5, https://akep.al/wp-content/uploads/2024/06/R2023_Treguesit-Statistikore-te-Tregut-te-Komunikimeve-Elektronike-DTMRr_-003.pdf

[15] AKEP Statistical Indicators of the Electronic Communications Market 2023, Figure 1, p.4, https://akep.al/wp-content/uploads/2024/06/R2023_Treguesit-Statistikore-te-Tregut-te-Komunikimeve-Elektronike-DTMRr_-003.pdf

[16] See ft. 14, p4

[17] See ft. 15, p5

[18] MIE, Information from interview, March 2025.

[19] EC, Albania Report 2024, p. 71, https://enlargement.ec.europa.eu/document/download/a8eec3f9-b2ec-4cb1-8748-9058854dbc68_en?filename=Albaniaper cent 20Reportper cent 202024.pdf

88 per cent in 2023[20], which is largely in line INSTAT household-level fixed broadband penetration figures. In 2024, according to INSTAT's ICT household survey, 91.5 per cent of households had access to fixed broadband, while 97.1 per cent of households overall had some form of Internet access, either via fixed or mobile access.

Figure 3: Penetration of broadband access from fixed networks by population and households 2019-2023[21][22]
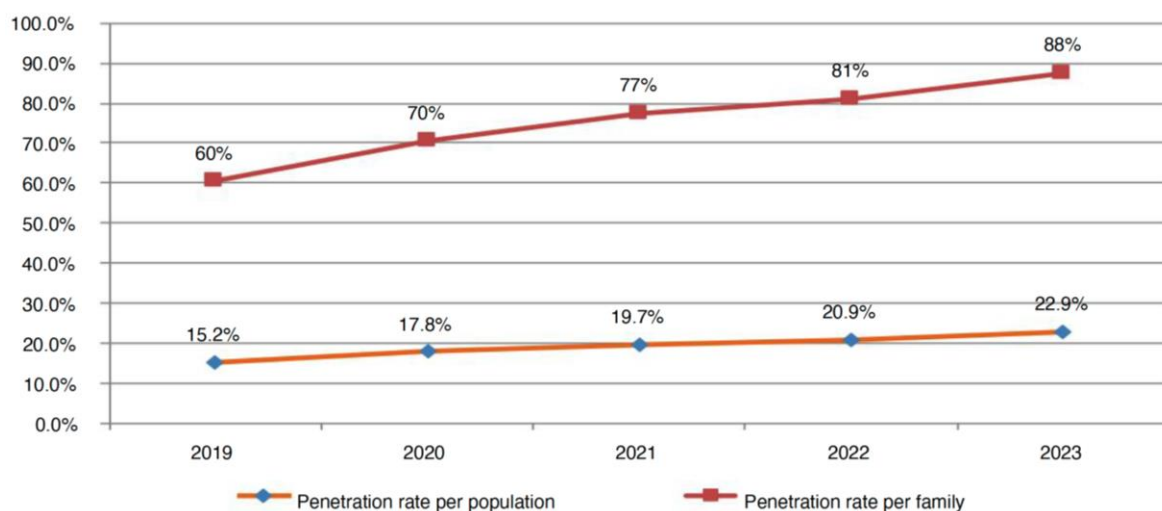
Source: Data sent by operators

Fibre-optic technology has become the predominant mode of delivery. In 2024, over 69 per cent of fixed connections were fibre-based, compared to just 11 per cent in 2016 and 61 per cent in 2022. Fibre has overtaken DSL and coaxial cable modems, with DSL connections—often used in combination with fibre (FTTN/FTTC)—declining significantly. The number of DSL-based connections fell from 85,000 in 2021 to around 48,000 in 2023, while FTTH/FTTB connections rose from 314,000 to over 417,000 in the same period, highlighting a nationwide shift toward faster and higher-quality fibre-optic broadband. This shift aligns with the government's National Broadband Development Plan 2020-2025 and the Digital Agenda[23], which emphasizes high-speed connectivity and aims to reduce the digital divide, especially through FTTH (fibre to the home) deployments.

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[20] AKEP Statistical Indicators of the Electronic Communications Market 2023, p.14, https://akep.al/wp-content/uploads/2024/06/R2023_Treguesit-Statistikore-te-Tregut-te-Komunikimeve-Elektronike-DTMRr_-003.pdf

[21] INSTAT 2011 Census, https://www.instat.gov.al/en/themes/censuses/census-of-population-and-housing/

[22] See ft.20, p14

[23] NAIS, Digital Agenda for Albania 2022-2026, https://dig.watch/resource/digital-agenda-of-albania-2022-2026

Table 3: Fixed broadband connections by technology in Albania, 2024[24]

Fixed broadband technology	Market shares according to technology
Copper line - DSL	0 %
DSL - FTTN/FTTC	3 %
G-fast (fibre over copper)	3 %
FTTH/FTTB	69 %
Coaxial cable modem (TV)	16 %
Other	8 %

Source: AKEP, response to Stakeholder Consultation

The fixed market is primarily served by Vodafone Albania and One Albania but includes over 200 authorized Internet Service Providers ("ISPs")[25], many of which operate regionally or in niche markets and rural areas, where they provide fibre-based broadband. The stakeholder consultation revealed that there are 251 ISPs in the country, with 294,000 fixed subscriptions offering speeds greater than 100 Mbps. While service quality and speeds have improved—83 per cent of users have access speeds greater than 30 Mbps, and 48 per cent exceed 100 Mbps—there remains a disparity between urban and rural service coverage.

Figure 4: Distribution of fixed broadband subscribers by speed 2019-2023[26]
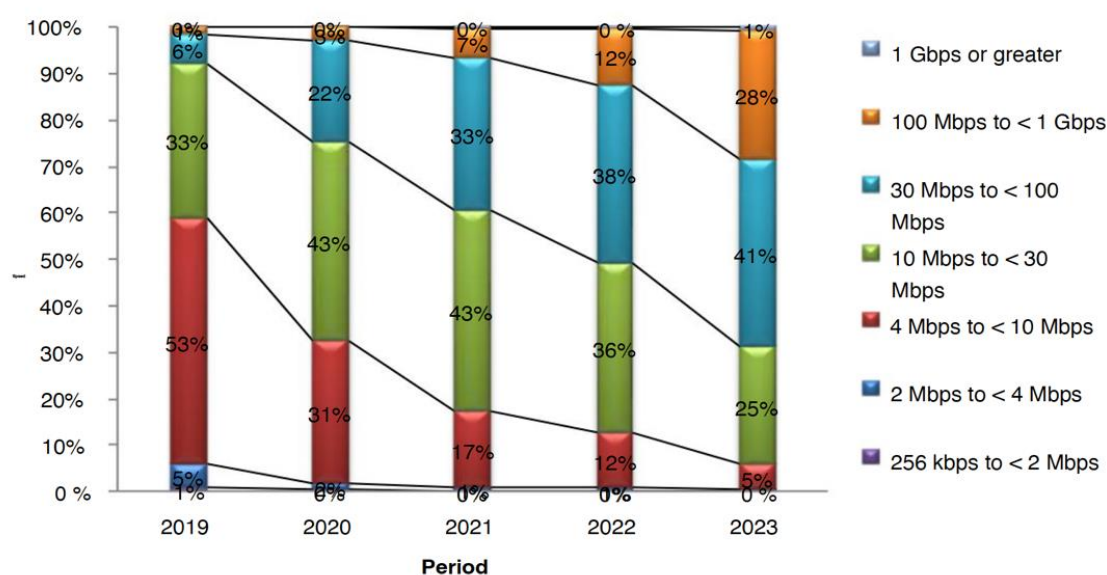
Source: Processed by AKEP, Data sent by operators

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[24] AKEP Statistical Indicators of the Electronic Communications Market 2023, p.16, https://akep.al/wp-content/uploads/2024/06/R2023_Treguesit-Statistikore-te-Tregut-te-Komunikimeve-Elektronike-DTMRr_-003.pdf
[25] 251 in total in 2024
[26] See ft.24, p.17

Table 4: Fixed broadband subscriptions by speed in 2024

Fixed broadband subscriptions by speed	Market share by Internet speed
256 kbps to < 2 Mbps	0%
2 Mbps to < 4 Mbps	0%
4 Mbps to < 10 Mbps	3%
10 Mbps to < 30 Mbps	14%
30 Mbps to < 100 Mbps	41%
100 Mbps to < 1 Gbps	40%
1 Gbps or greater	2%

Source: AKEP response to Stakeholder Consultation

As regards services, the market offers various service packages, including single, double, and triple play options, catering to diverse consumer needs. These packages often bundle Internet, television, fixed and mobile telephony services, providing consumers with integrated and cost-effective solutions. The number of fixed network subscribers that have access to dual and triple bundled services (combination of telephony/Internet/TV) at the end of 2023 was some 300,000 or 6 per cent fewer than in 2022, as shown in Figure 5 below.

Figure 5: Integrated packages (bundles) 2019-2023
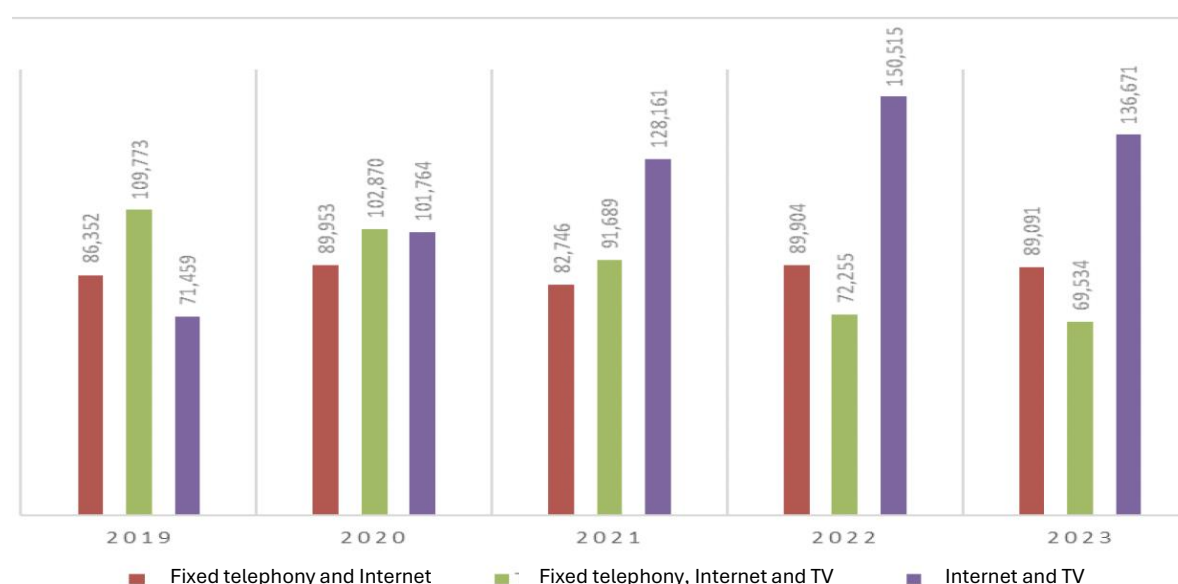
Source: Processed by AKEP, Data sent by operators

Operators highlighted in their responses to the stakeholder consultation questionnaires that efforts to maintain and improve broadband quality of service (QoS) are underway across the sector, with operators deploying advanced network monitoring tools and aligning performance standards with AKEP requirements. Several operators have implemented user-facing platforms, such as integrated speed testing within customer apps, to track service reliability and facilitate consumer feedback. Technology upgrades—including the migration to GPON and the deployment of WiFi 6-enabled

modems—are being rolled out to increase speed and reliability in rural as well as urban areas. However, overall QoS in rural zones is still constrained by infrastructure limitations and a lack of redundancy in remote segments of the network.

BROADBAND CONNECTIVITY LANDSCAPE

This section provides a comprehensive overview of the current state of the broadband connectivity landscape in Albania. Drawing from the most recent data available in the AKEP 2023 Annual Report (Section 1.2), AKEP's 2024 Statistical Indicators for the Electronic Communications Market, INSTAT's 2023 Census[27], ICT Household and Enterprise Surveys[28], the European Commission (EC) Staff Working Document Albania Report 2024 (Chapter 10: Digital Transformation and Media)[29], and the 2024 UNDP Report "Assessing Municipal and Public e-Readiness in Albania"[30], complemented by Internet research and responses to the Stakeholder Consultation questionnaires, the following sections outline the availability of mobile and fixed broadband infrastructure, highlighting population and geographic coverage, available technologies, and market dynamics.

Geographic Disparities

Population distribution, density, and administrative division can have an impact on broadband infrastructure rollout. Figure 6 below illustrates the population distribution, density, and administrative division of Albania, providing key insights relevant to planning rural infrastructure, particularly broadband deployment.

The population distribution map (left) shows a strong concentration of inhabitants in the central-western regions, particularly around Tiranë, Durrës, and Fier, with sparse settlement patterns across mountainous areas in the north (Kukës, Dibër) and south-east (Gjirokastër, Korçë). The population density map (center) further reinforces these differences: Tiranë leads with over 460 inhabitants/km^2, followed by Durrës and Fier, while sparsely populated regions like Gjirokastër and Kukës register below 50 inhabitants/km^2, far below the national average of 83.6/km^2. The administrative division map (right) segments Albania into 12 prefectures and 61 municipalities.

For rural broadband rollout, spatial disparities can require region-specific strategies. While high-density areas are more likely to be able to support commercially viable fibre deployment, rural and mountainous regions often require targeted public investment and innovative solutions (e.g., wireless or satellite broadband), to ensure universal connectivity and digital inclusion in line with national digital transformation goals.

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[27] INSTAT, Census - 2023, https://www.instat.gov.al/en/themes/demography-and-social-indicators/population/#tab3

[28] INSTAT, Usage of Information and Communication Technologies in Entreprises, 2024, https://www.instat.gov.al/en/themes/science-technology-and-innovation/information-and-communication-technologies/#tab3

[29] EC, Albania Report 2024, p. 71, https://enlargement.ec.europa.eu/document/download/a8eec3f9-b2ec-4cb1-8748-9058854dbc68_en?filename=Albaniaper cent 20Reportper cent 202024.pdf

[30] UNDP, Assessing Municipal and Public e-Readiness in Albania, Report 2024, https://www.undp.org/sites/g/files/zskgke326/files/2024-09/dra_national_report_final_eng.pdf

Figure 6: Population distribution, density, and administrative division of Albania 2023

Source: INSTAT Census 2023
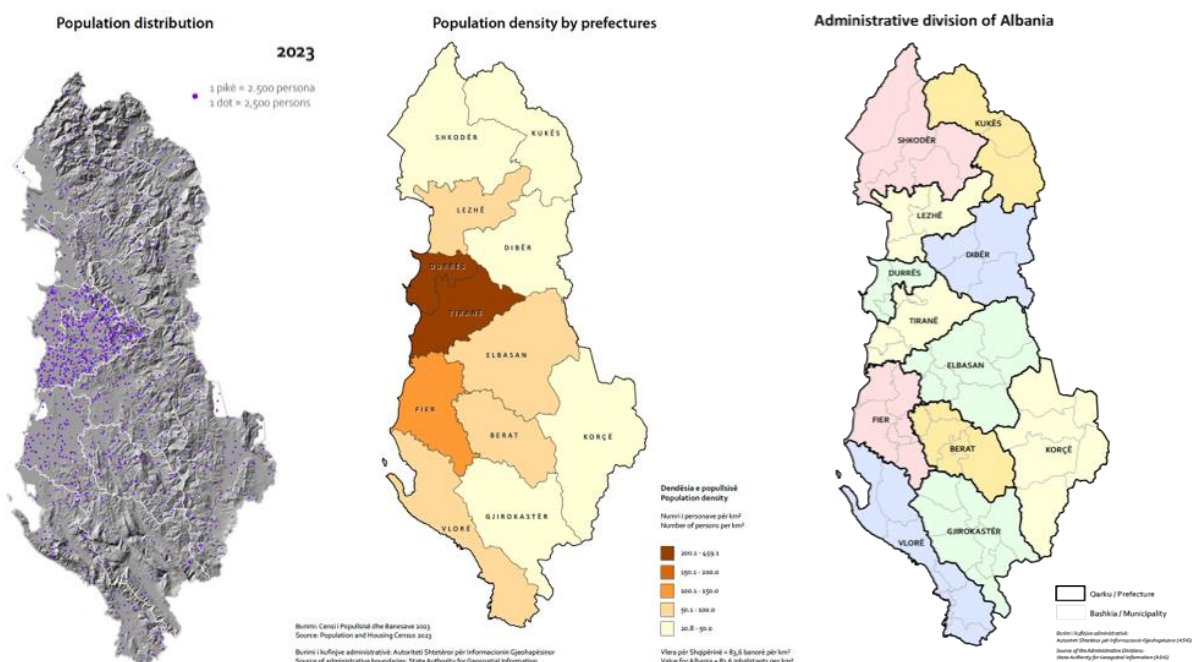
Based on available data from AKEP on fixed broadband penetration at the regional level, geographic disparities in broadband coverage persist across Albania, particularly between urban centres and rural regions. The urban-rural digital divide was highlighted in Albania's National Broadband Plan 2020-2025, noting that in 2019, urban areas accounted for approximately 90 per cent of fixed broadband connections compared to 10 per cent in rural areas.

Although broadband penetration in rural regions increased slightly by 2022 as illustrated in Figure 3 above, significant disparities persisted.[31] Urban population-based fixed broadband penetration averaged 34 per cent, compared to only 9 per cent in rural areas. Urban areas, particularly Tirana, have since benefited significantly from infrastructure investments, achieving broadband penetration rates as high as 46 per cent. Conversely, rural regions such as Dibër and Kukës struggle with penetration rates as low as 6 per cent, highlighting the substantial regional inequalities.

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[31] It should be noted that Figure 3 is based on population and therefore understates the actual penetration of fixed broadband at a household level, a better measure for fixed broadband, given that in most cases, broadband connections are provided to a household rather than an individual.

Figure 7: Fixed broadband penetration rate by population, by region, in 2023
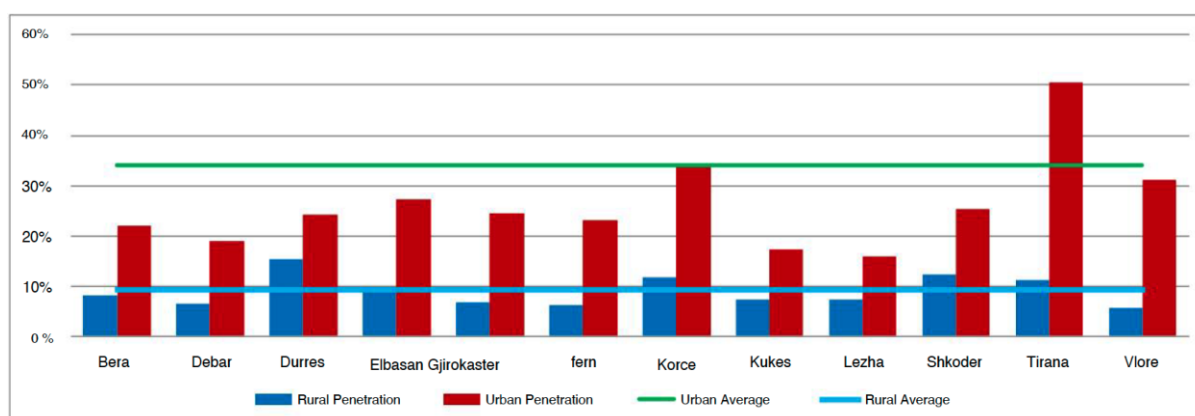
Source: AKEP annual statistics report, 2023[32]

Rural Mobile Broadband Coverage

As confirmed by stakeholders during the stakeholder consultation, mobile Internet coverage in rural Albania is nearly universal in population terms (>99 per cent), but more limited in territorial terms, with some areas still experiencing coverage gaps or lower data quality. Nevertheless, mobile broadband remains the primary mode of access for many rural households due to limited fixed infrastructure. As set out in the INSTAT ICT household survey 2024, 99.3 per cent of total Albanian households with Internet access across Albania rely on mobile broadband, reflecting the high reliance on smartphones for connectivity.

Rural Fixed Broadband Subscriptions

In contrast, fixed broadband infrastructure in rural areas is less comprehensive relative to urban areas, with fibre optic connections still less prevalent in rural communities outside larger villages and towns. Based on most recent AKEP statistics as of 2024, there were 135,962 rural fixed broadband subscriptions out of a total of 693,983 in the first quarter of 2025, amounting to only 19.5 per cent in rural areas.[33] At this point in time, INSTAT does not collect data at the rural household level. Though, based on the number of estimated rural households of roughly 265,733, the national rural fixed broadband household penetration rate can be approximated to be at roughly 50 per cent.[34]

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[32] AKEP Statistical Indicators of the Electronic Communications Market 2023, p.14, https://akep.al/wp-content/uploads/2024/06/R2023_Treguesit-Statistikore-te-Tregut-te-Komunikimeve-Elektronike-DTMRr_-003.pdf

[33] AKEP data 2025, as submitted by all registered ISPs.

[34] It should be noted that this is a high-level estimation and unlikely to be representative of the actual situation on the ground. The derivation of the rural fixed broadband household penetration rate has been done as set out below. Extrapolations are based on:
- 2023 total households (HH): 755,950
- Average household size: 3.2 persons/HH
- 2024 total fixed broadband subscriptions: 693,983
- 2024 rural fixed broadband subscriptions: 135,962
- 2023 total population: 2,402,113

Given that the rural population accounts for **35.4%** of the total, we calculate:
1. 0.354×2,402,113=850,3480.354 (rural population)

However, penetration varies by region, given the different population densities as shown in Figure 6 and Figure 7. Based on the population density and distribution maps as set out above and taking into consideration the findings from the Western Balkan Investment Framework ("*WBIF*") *Feasibility Study for Regional Broadband Infrastructure Development* (WB19-ALB-DII-01) – *Diagnostics Report* 2019 (pending the finalization of the update study expected in Q2 2025)[35], the least populated and most remote regions in Albania that pose the greatest challenges for broadband infrastructure deployment are Gjirokastër, Kukës, Dibër, and parts of Korçë and Berat**.** The population density map shows these regions falling into the lowest density brackets—below 50 inhabitants per km^2**,** significantly lower than the national average of 83.6/km^2**.** The terrain map further indicates that these areas are predominantly mountainous, making them both geographically isolated and technically challenging for laying fibre infrastructure. The Stakeholder Consultation revealed that priority areas for broadband development include white areas in Shkodra, Kukës, Dibra, Vlora, Gjirokastra, Fier, Berat, and Korçë regions.[36]

Figure 8: Fixed broadband subscribers by region (urban/rural) in 2024
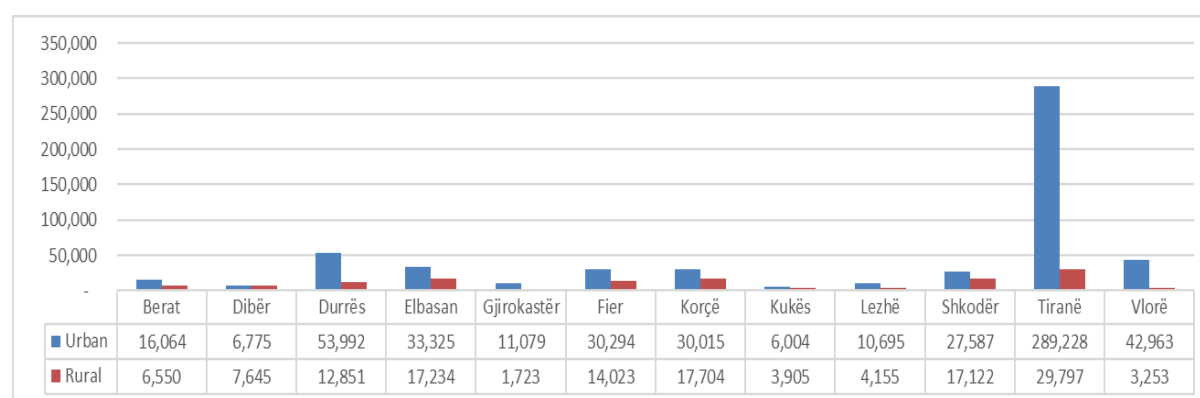
	Berat	Dibër	Durrës	Elbasan	Gjirokastër	Fier	Korçë	Kukës	Lezhë	Shkodër	Tiranë	Vlorë
■ Urban	16,064	6,775	53,992	33,325	11,079	30,294	30,015	6,004	10,695	27,587	289,228	42,963
■ Rural	6,550	7,645	12,851	17,234	1,723	14,023	17,704	3,905	4,155	17,122	29,797	3,253

Source: AKEP Response to Stakeholder Consultation; Population statistics by INSTAT, CENSUS 2023

2. 850,348÷3.2=265,733 (estimated rural households)
3. Assuming **one fixed broadband subscription per household**, dividing **135,962** rural fixed broadband subscriptions by **265,733** rural households yields a rural household penetration rate of approximately **50%**.

[35] Infrastructure Project Facility – Technical Assistance 8 (Ipf8) - Ta2018148 R0 Ipa
Digital Diagnostics For Albania Report, Wb19-Alb-Dii-01, Feasibility Study and Cost-Benefit Analysis for Regional Broadband Infrastructure Development in Albania (WB19-ALB-DII-01) Digital Diagnostic Report 02 September – 22 November 2019
[36] WBIF subproject, WB24-ALB-DII-01 "Albania, Broadband Development in White Areas in Shkodra, Kukës, Dibra, Vlora, Gjirokastra, Fier, Berat, Korçë regions: Feasibility Study Update, Tender Documents", https://wbif.eu/technicalassistancegrants//WB24-ALB-DII-01

Table 5: Fixed broadband subscriptions by area and population in 2024

Region	Urban	Rural	Penetration rate by population
Berat	16,064	6,550	16.0%
Dibër	6,775	7,645	13.5%
Durrës	53,992	12,851	29.5%
Elbasan	33,325	17,234	21.7%
Gjirokastër	11,079	1,723	21.3%
Fier	30,294	14,023	18.4%
Korçë	30,015	17,704	27.6%
Kukës	6,004	3,905	16.0%
Lezhë	10,695	4,155	14.9%
Shkodër	27,587	17,122	28.9%
Tiranë	289,228	29,797	42.1%
Vlorë	42,963	3,253	31.5%
Total	**558,021**	**135,962**	**28.9%**

Source: AKEP Response to Stakeholder Consultation; Population statistics by INSTAT, CENSUS 2023

According to the WBIF Feasibility Study, these regions contain many rural villages with low economic activity, limited underground infrastructure, and high dependence on aerial or wireless technologies. In many cases, fixed broadband is absent altogether, with connectivity only via mobile or radio-based networks. The Feasibility Study also emphasized that fibre rollout in such areas is not commercially viable without public investment, and many municipalities (e.g., in Gjirokastër, Kukës, and remote parts of Berat) lack the permitting efficiency and collaborative frameworks needed to support large-scale infrastructure deployment. As a result, these regions are prioritized as "white zones", i.e., areas with no existing high-speed broadband coverage and no private investment plans—therefore requiring state aid or donor-funded intervention to achieve digital inclusion and meet national and EU broadband targets. Insight Box 1 below provides a brief status update on the pending revision of the WBIF Feasibility Study, expected to be finalized in Q2 2025.

Insight Box 1: Network Operator perspectives on Infrastructure Priorities and Expansion plans 2025-2030[37]

All major network operators in Albania have committed to significant infrastructure expansion efforts over the 2025–2030 period, with a dual focus on fixed and mobile broadband. FTTH/GPON (fibre-to-the-home) deployment continues to concentrate on urban and suburban areas, with rural rollout remaining largely dependent on public co-financing or subsidy schemes due to limited commercial viability. On the mobile front, 5G deployment plans are well-advanced, following a phased implementation roadmap that prioritizes strategic economic and population centres—including ports, hospitals, airports, highways, and tourism zones—with a goal of reaching 85 per cent population coverage by 2030.

In parallel, operators are preparing for nationwide IoT enablement through LTE, with select plans to support agricultural use cases beginning around 2026. Satellite broadband is already in use as a fallback solution in hard-to-reach rural areas, particularly for public services and government institutions where terrestrial access is not feasible.

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[37] Stakeholder Consultation Questionnaire Responses

Broadband Technologies, Speeds and Quality of Service

Broadband technologies deployed in Albania present a diverse mix of legacy and emerging solutions, which reflect both the progress made and the persistent disparities compared to urban areas, as detailed in Table 6 below. Most rural households rely primarily on mobile broadband (3G/4G), which provides average speeds of 30–50 Mbps under optimal conditions. Fixed broadband access is less prevalent in remote rural areas. Although fibre-to-the-home (FTTH) offers superior performance (100 Mbps to 1 Gbps), its deployment remains limited to larger rural municipalities or those near urban centres. [40]

Table 6: Overview of broadband technology by rural and urban areas

Technology	Urban Coverage	Rural Coverage	Average Speeds
Fibre-to-the-Home (FTTH)	Widespread (90 % of connections)	Limited (mainly in larger villages and peri-urban areas)	100 Mbps - 1 Gbps
DSL (ADSL/VDSL)	Declining, replaced by fibre	Non-existent	10 - 30 Mbps
Cable Broadband (HFC)	Available in some cities	Almost non-existent	50 - 200 Mbps
4G Mobile Broadband	Covers up to 100 % of the population	Available but weaker in remote areas	30 - 50 Mbps
5G Mobile Broadband	Early stages in select cities	Not yet available	100 Mbps+ (urban only)
Satellite (Starlink, etc.)	Not widely used	Potential solution for remote areas and already deployed in collaboration with mobile operators	50 - 200 Mbps

While satellite broadband solutions have emerged with the potential to deliver speeds of 50–200 Mbps, their adoption is still limited due to high costs and technical constraints. Nonetheless, collaborative efforts between mobile operators and satellite providers are beginning to address access gaps in the most remote locations, as highlighted during the Stakeholder Consultation Roundtable and responses to stakeholder questionnaires.

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[38] AKEP Response to Stakeholder Questionnaire,

[39] WBIF subproject, WB24-ALB-DII-01 "Albania, Broadband Development in White Areas in Shkodra, Kukës, Dibra, Vlora, Gjirokaster, Fier, Berat, Korçë regions: Feasibility Study Update, Tender Documents", https://wbif.eu/technicalassistancegrants//WB24-ALB-DII-01

[40] AKEP, Fixed Broadband wholesale market analysis, Draft public consultation 2024, https://akep.al/wp-content/uploads/2024/01/Project-public-consultation-BB-wholesale-market-analysis-1.pdf

Additionally, fixed wireless technologies are gaining traction as cost-effective alternatives in areas where terrestrial fibre deployment is not economically viable.

As of 2025, approximately 40 per cent of Albania's 2,400 villages—urban and rural combined—have access to fixed broadband speeds of at least 100 Mbps. However, many rural areas still experience lower performance levels due to infrastructure limitations and challenging geographies. As such, a coordinated strategy is required to ensure rural users benefit from equitable access to high-quality broadband services, critical to digital inclusion and rural economic development.

Insight Box 3: International examples of how to address the rural-urban divide

Improving Internet access in rural areas is crucial for bridging the digital divide and promoting equitable development. Recent public and private sector initiatives, programs, policies, and partnerships have shown significant impact in enhancing rural connectivity globally. Here are some key strategies and examples, with a nuanced focus on broadening the base of contributions and contributors to network costs.

1. Government / Donor Initiatives and Policies

- **Subsidies and Grants**: Governments can provide financial incentives to ISPs to extend broadband infrastructure to rural areas. For instance, the World Bank supported Mozambique with a $300 million grant to increase access to energy and broadband services, demonstrating how financial aid can accelerate infrastructure development.[41]
- **Universal Service Funding Mechanisms** - Universal Service Funding Mechanisms are frameworks designed to ensure widespread access to essential telecommunications services, typically funded through levies on operators, government subsidies, or international support, and can include direct financial assistance, public-private partnerships, and targeted subsidies for underserved areas (e.g. CAF[42]). The ITU's Global Symposium for Regulators (GSR) Best Practice Guidelines highlight the importance of flexible, technology-neutral approaches and innovative funding models that promote sustainability and digital inclusion while leveraging multi-stakeholder partnerships for maximum impact.
- **Western Balkans Investment Framework (WBIF)** – this EU-led donor platform has supported digital infrastructure projects, such as providing broadband to rural households in **Albania and connecting schools in Kosovo and Serbia**.[43]
- **Serbia – The European Bank for Reconstruction and Development (EBRD)** funded broadband infrastructure benefiting over 150,000 rural households and 500 schools.[44]
- **Regulatory Reforms**: Simplifying regulations and reducing bureaucratic hurdles can facilitate quicker deployment of Internet infrastructure.[45]

2. Public-Private Partnerships (PPPs)

- **Collaborative Models**: **Broadband Master Plan of Navarra 2016 – 2021, Spain**, consisting of a public and private collaboration model, the project's focus was to digitalize the public services in Navarra while bringing broadband services to the remote locations to foster the adoption of new technologies in rural areas. The project was awarded the European Broadband Award 2022.[46]

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[41] ITU, Economic and fiscal incentives to accelerate digital transformation – 9th ITU Economic Experts Roundtable: Outcome report, November 2022, https://www.itu.int/hub/publication/d-pref-ef-gov_ps-02-2022/

[42] Federal Communications Commission, Connect America Fund (CAF),

[43] Western Balkans Investment Framework, https://www.wbif.eu/

[44] EBRD, "EU finance expansion of broadband in rural Serbia", December 2022 , https://www.ebrd.com/news/2022/ebrd-eu-finance-expansion-of-broadband-in-rural-serbia.html

[45] ITU, Financing universal access to digital technologies and services, 2021, https://www.itu.int/hub/publication/D-PREF-EF-2021-ECO_FIN/

[46] EC, Broadband Master Plan of Navarra 2016 – 2021, Spain, https://digital-strategy.ec.europa.eu/en/library/broadband-master-plan-navarra-2016-2021-spain

- Partnerships between government agencies, ISPs, development banks and digital platforms can share the costs and benefits of infrastructure projects. **The Internet para Todos initiative in Peru** is a prime example, where Facebook/Meta, IDB Invest, CAF, and Telefonica collaborated to build a 4G network in rural areas, providing connectivity to millions.[47]
- **Shared Networks**: **Ghana's government plans to build a shared 4G and 5G network** with operators and private investors, aiming to provide widespread Internet access without the need for multiple competing infrastructures.[48]

3. Infrastructure Investment

- **Fibre Optic Expansion**: Investing in fibre optic cables to rural areas ensures high-speed and reliable Internet. The ITU's Global Connectivity Report highlights the critical role of middle-mile connectivity in bridging the digital divide.[49] One key example is the **Digital Nord-Pas-de-Calais Project, France** – This project deployed public optic fibre in rural areas, starting with public funds and later attracting private investment. [50]
- **Wireless Solutions**: Deploying wireless technologies like 4G LTE and 5G networks can be more cost-effective and quicker to deploy in rural settings. The development of 5G infrastructure is particularly emphasized for its potential to provide high-speed connectivity in underserved regions.[51]
- **Satellite Internet**: Satellite broadband services can reach remote and underserved areas where terrestrial infrastructure is not feasible. NGSO initiatives are examples of leveraging satellite technology to enhance rural connectivity globally.[52]
- **Infrastructure sharing with other utilities -** Infrastructure sharing with other utilities, such as energy and water companies, can significantly reduce broadband roll-out costs by leveraging existing ducts, poles, and rights-of-way. A successful example in Europe is Sweden's Stokab, where a city-owned company deployed a fibre-optic network using utility infrastructure, allowing multiple service providers to access the network, which reduced deployment costs and accelerated broadband coverage.[53]

4. Innovative Technologies

- **TV White Spaces**: Utilizing unused television broadcast frequencies to deliver wireless Internet over long distances can be a cost-effective solution for rural connectivity.[54]

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[47] Telefonica, "Internet for everyone", https://telefonica.com.pe/sostenibilidad-e-innovacion/Internet-para-todos/ and "4G/5G Investment Opportunities in Africa" Report https://strandconsult.dk/financing-opportunities-for-4g-5g-investment-in-africa/

[48] Advocacy Task Force of the Working Group on 21st Century Financing Models, Financing Opportunities for 4G/5G Investment in Africa, November 2023, https://www.samenacouncil.org/initiatives/industryissues/Financing-Opportunities-for-4G5G-Investment-in-Africa.pdf

[49] ITU, Global Connectivity Report 2022, Chapter 1: "Overview of global connectivity trends", https://www.itu.int/itu-d/reports/statistics/2022/05/29/gcr-chapter-1/

[50] EC, Digital Strategy, Digital Nord-Pas-de-Calais, France, https://digital-strategy.ec.europa.eu/en/library/digital-nord-pas-de-calais-france

[51] See ft.46

[52] Starlink, Starlink technology, https://www.starlink.com/technology; Broadband Commission for Sustainable Development, The role of geostationary satellite networks in meeting the rural connectivity challenge, https://www.broadbandcommission.org/insight/the-role-of-geostationary-satellite-networks-in-meeting-the-rural-connectivity-challenge/

[53] Stokab, "Stokab – The world's largest open fiber network", https://stokab.se/en/stokab

[54] ITU, GSR Discussion Paper on TV White Spaces, https://www.itu.int/en/itu-d/conferences/gsr/documents/gsr_paper_whitespaces_gomez.pdf

- **Mesh Networks**: Community-driven mesh networks can provide resilient and scalable connectivity by linking multiple small nodes to form a wide area network.[55]

5. Economic and Educational Programs

- **Digital Literacy Training**: Offering programs to educate residents on the benefits and uses of the Internet can enhance demand and utilization. Training initiatives in Morocco aim to empower rural women and girls by providing access to digital technologies and education.[56]

6. Local Solutions and Community Networks

- **Cooperative Models**: Forming broadband cooperatives where community members collectively own and manage the network can be effective. These cooperatives can leverage local knowledge and needs to provide tailored solutions. For example, **guifi.net[57], predominantly located in Spain**, **is the world's largest community network**. As of December 2016, guifi.net boasted more than 32,500 operating nodes, serving more than 50,000 people. Wi-Fi was the first technology to be used in the network and remains the most popular.
- **Municipal Networks**: Local governments building and operating their own broadband networks ensure community-focused service provision.

Broadening the Base of Contributions and Contributors

One of the key strategies outlined in the UN Broadband Commission Working Report's "21st Century Financing Models for Bridging Broadband Connectivity Gaps" and the "Financing Opportunities for 4G/5G Investment in Africa" reports is broadening the base of contributions and contributors to network costs. This approach is essential for sustainable and scalable rural connectivity and is also promoted in the ITU's GSR 2023 Best Practice Guidelines[58].

1. Inclusion of Digital Content Providers (DCPs):

- **Equity Investments**: DCPs like Facebook have invested in initiatives such as Internet para Todos, demonstrating the benefits of equity investments in rural broadband projects. These investments help offset the infrastructure costs and create sustainable models where DCPs can gain from increased user bases.[59]
- **Regulatory Obligations**: South Korea's legislation requires large content providers to negotiate network usage fees with broadband providers, ensuring that those who benefit from the infrastructure contribute to its maintenance and expansion.

2. Universal Service Funds (USFs):

- **Expanding Contributions**: The US has proposed the Lowering Broadband Costs for Consumers Act of 2023, which mandates that DCPs with significant traffic and revenue contribute to the USF, supporting broadband deployment and low-income access programs.[60]
- **Utilizing ICT Taxes**: Earmarking a percentage of the proceeds from ICT sector taxes for broadband development projects can provide a steady revenue stream for infrastructure

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[55] The Fast Mode, "Extending broadband to the last mile of rural areas with mesh networking", 2024. https://www.thefastmode.com/expert-opinion/34282-extending-broadband-to-the-last-mile-of-rural-areas-with-mesh-networking; Shape.Host, "Mesh networks: Building a decentralized Internet infrastructure", https://shape.host/resources/mesh-networks-building-a-decentralized-Internet-infrastructure

[56] United Nations, **"**Women's full, equal participation essential to sustainable development, Secretary-General tells Commission on Status of Women", 2023, https://press.un.org/en/2023/wom2225.doc.htm

[57] Guifi.net, Guifi.net project homepage, https://guifi.net/; Guifi.net, The technological project, https://guifi.net/en/technological-project

[58] ITU, Global Symposium for Regulators (GSR-23), 2023,https://www.itu.int/itu-d/meetings/gsr-23/

[59] Telefónica Perú, **"**Internet para Todos", https://telefonica.com.pe/sostenibilidad-e-innovacion/Internet-para-todos/ and Strand Consult, "4G/5G Investment Opportunities in Africa" Report, https://strandconsult.dk/financing-opportunities-for-4g-5g-investment-in-africa/

[60] U.S. Congress, S.3321 – Rural Internet Improvement Act of 2024, 2024,https://www.congress.gov/bill/118th-congress/senate-bill/3321

expansion. This model ensures that the growth of the digital economy directly supports the enhancement of connectivity.[61]

3. **Public-Private Financial Models**:

- **Blended Financing**: Combining public funds with private investments can reduce risks and attract more capital. The European Investment Bank's blended financing for upgrading networks to 4G in Africa is an example of leveraging multiple funding sources to achieve connectivity goals.[62]
- **International Funds**: Establishing international funds to provide low-cost, long-term loans for broadband projects can facilitate large-scale infrastructure development. The proposed International Fund for Broadband Development aims to pool resources from various stakeholders to support global connectivity initiatives.[63]

Improving rural Internet access requires a multifaceted approach, combining government support, private sector innovation, community involvement, and strategic investments in infrastructure and education. By broadening the base of contributions and ensuring that all beneficiaries of digital infrastructure contribute to its development, these efforts can achieve sustainable and equitable connectivity for all regions.

Service Providers and Market Share

The mobile broadband market in Albania is predominantly served by Vodafone Albania and One Albania, the two main mobile network operators with near-universal 4G population coverage.[64] Vodafone Albania has a leading position in mobile services and has expanded into the fixed broadband market—particularly after its acquisition of ABCom—offering high-speed Internet in both urban and semi-rural areas. One Albania, which resulted from the merger of ALBtelecom and One Telecommunications, retains a broad footprint of legacy infrastructure, including DSL networks mostly in cities. It is progressively upgrading these networks to fibre. In addition, alternative Internet service providers such as Abissnet, ASC (Tring), and others operate on a smaller scale, typically delivering localized fixed wireless or fibre-based services in specific rural or peri-urban areas.[65]

The number of operators that have reported to provide services from fixed networks in Albania as of the end of 2023 was 252. Most alternative operators are small and have a very limited network presence in any one urban or rural area in proximity of urban centres. The market of fixed network broadband service provision is marked by many participants that hold a total market share of 32 per cent, which offer a wide variety of plans and offers to service subscribers.

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[61] Broadband Commission, 21st Century Financing and Funding Models, 2020, https://www.broadbandcommission.org/working-groups/21st-century-financing-models-2020/

[62] European Investment Bank (EIB), "USD40 million European backing for Uganda rural telecom expansion", 2024, https://www.eib.org/en/press/all/2024-097-usd40-million-european-backing-for-uganda-rural-telecom-expansion; European Investment Bank (EIB), Unlocking digital connectivity in Africa, https://www.eib.org/attachments/publications/unlocking_digital_connectivity_in_africa_en.pdf

[63] Broadband Commission, 21st Century Financing and Funding Models, 2020, https://www.broadbandcommission.org/working-groups/21st-century-financing-models-2020/

[64] AKEP Annual Report 2023, pp. 43 – 44, https://akep.al/en/about-akep/#raporte

[65] AKEP, Fixed Broadband wholesale market analysis, Draft public consultation 2024, https://akep.al/wp-content/uploads/2024/01/Project-public-consultation-BB-wholesale-market-analysis-1.pdf

Table 7: Fixed broadband market shares in Albania by operator in 2023[66]

Operator	Market Share (%)
One Albania	22%
Vodafone Albania	20%
A.S.C	10%
Abissnet	7%
Digicom	5%
Nisatel	4%
Other Operators (OA)	32%

Source: AKEP Annual Report 2023

ICT use by Households, Individuals and Enterprises in 2024 at the country level

The 2024 ICT Household and Individual Survey conducted by INSTAT[67] reveals a high level of Internet penetration and digital engagement across Albanian households, including both rural and urban households. Among individuals aged 16 to 74, 86.2 per cent reported using the Internet, with 96.4 per cent of them accessing it several times daily, primarily via mobile or smartphones (99.9 per cent). In terms of household access, 97.1 per cent of households reported having Internet connectivity, with 91.5 per cent using fixed broadband and 99.3 per cent using mobile broadband. The e-Albania digital platform saw near-universal adoption, with 99.4 per cent of the population reporting active use.

Digital services are being increasingly adopted: 42.4 per cent of individuals made online purchases in the past 12 months (up by 4 percentage points), with clothing (90.3 per cent) and food delivery (59.7 per cent) among the most common categories. Usage of e-government services also rose, with more users obtaining official information or documents online. Digital skills improved across the board, with notable gains in competencies such as installing applications, file transfers, and spreadsheet use. Meanwhile, online financial activities such as e-banking increased by 3.3 percentage points, reflecting growing confidence in digital tools.[68]

Digital adoption among Albanian enterprises continued to deepen, particularly among businesses with 10 or more employees. 99.3 per cent of these enterprises reported using computers with Internet access, and 88 per cent had download speeds exceeding 30 Mbit/s, while 40.9 per cent reached speeds above 100 Mbit/s. 57.7 per cent of enterprises maintained a website, and 24.5 per cent engaged in e-commerce activities, marking a 9.7 percentage point increase compared to 2023. The highest shares of online sales activity were seen in the information and communication sector (40.3 per cent),

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[66] AKEP Annual Report 2023, p.47, https://akep.al/en/about-akep/#raporte
[67] INSTAT, Survey on Information and Communication Technology (ICT) usage in Households and by Individuals in 2024, https://www.instat.gov.al/media/14621/ict-2024_english.pdf
[68] The survey was conducted between May and July 2024, based on a nationally representative sample of 4,724 households. Data was collected using face-to-face, tablet-assisted interviews and covered various ICT-related dimensions, including device ownership, Internet access, digital services, and user skills. This comprehensive snapshot confirms that Albania is progressing rapidly toward digital inclusion, though continued investment in digital literacy and infrastructure—especially in rural areas—remains crucial.

transportation and storage (18.7 per cent), and accommodation and food services (10.1 per cent).

Enterprises also increasingly embraced digital tools to optimize internal operations. 30.0 per cent used cloud services (up 7 percentage points from 2023), with 70.6 per cent of these applying customer relationship management (CRM) solutions. 83.1 per cent of enterprises used social media for outreach, while 40.7 per cent employed systems enabling automatic internal data sharing across departments. These trends highlight growing digital maturity in the private sector and suggest strong momentum toward further integration of advanced ICT tools in enterprise management and service delivery.

Digital Readiness at the municipality level

To assess Albania's digital ecosystem at the local government level with an emphasis on both institutional (municipal) and public (citizen) digital readiness, UNDP Albania conducted a comprehensive Digital Readiness Assessment[69] between July and December 2023, which was published in February 2024. The assessment was commissioned by UNDP Albania and is aligned with the UNDP Digital Strategy 2022–2025, drawing methodological support from the UNDP Digital Readiness Assessment (DRA) framework and the World Bank's Digital Government Readiness Assessment (DGRA) toolkit.

The digital readiness assessment reveals a clear urban-rural and institutional-public divide in Albania's digital transformation journey. While the public, especially younger and urban populations, show promising digital engagement, municipalities struggle with outdated infrastructure, weak institutional frameworks, and a lack of strategic coherence and rural municipalities and residents face more systemic challenges in infrastructure, skills, and accessibility. Closing these gaps will require targeted capacity building, investments in connectivity and secure infrastructure, and inclusive, citizen-centric service models.

Notably, building trust and aligning municipal perception with public capability will be critical for advancing Albania's digital governance goals. Insight Box 4 provides an overview of the key findings of the assessment.

> **Insight Box 4: Key Findings drawn from the 2024 UNDP Report "Assessing Municipal and Public e-Readiness in Albania"[70]**
>
> The municipal assessment highlights that digital transformation across Albania's local governments has only just started, with an average readiness score of just 31 out of 100. Tirana is the notable outlier, scoring 73, while the rest of the municipalities fall within low to limited readiness levels. A major issue lies in the absence of strategic direction: most municipalities lack structured digitalization plans, dedicated innovation units, or sustainable funding models. Efforts are typically ad hoc, fragmented, and heavily reliant on donor support, which often ends without institutional absorption, leading to discontinued systems and low staff adoption.
>
> **Key Findings**
>
> **Overall Municipal Digital Readiness Score**: 31/100
>
> - Most municipalities show *limited readiness*, with Tirana as the only exception (73/100).

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[69] UNDP, Assessing Municipal and Public e-Readiness in Albania, Report 2024, https://www.undp.org/sites/g/files/zskgke326/files/2024-09/dra_national_report_final_eng.pdf
[70] Ibid.

- Readiness is hindered by underdeveloped infrastructure, limited regulatory awareness, and lack of user-centric approaches.

Municipal Assessment Highlights

- **Government (24/100)**: Limited strategic approach to digital transformation. Digital efforts are fragmented and often unsustainable without donor support.
- **Regulations (25/100)**: Major gaps in awareness of national digital policies and legal frameworks on data privacy and cybersecurity.
- **Infrastructure (19/100)**: Outdated hardware, lack of licensed software, poor connectivity across administrative units, and minimal cybersecurity safeguards.
- **People (67/100)**: High willingness among municipal employees to embrace digital tools; however, there is a critical shortage of qualified IT professionals and training opportunities.
- **User-Centric Service Delivery (20/100)**: Citizen engagement and inclusivity remain weak. Municipal perceptions underestimate public digital capability.

Public Assessment Highlights

Overall Public Digital Readiness Score: **56/100**

- Public readiness is *moderate*, driven by high digital usage but constrained by low digital literacy and limited access to advanced services.
- **Usage (87/100)**: Nearly universal smartphone ownership and daily Internet use.
- **Cultural Norms (77/100)**: High acceptance of digital tools in daily life; generational divide in preferences for in-person vs. digital interaction.
- **Adoption (54/100)**: General openness to learning new digital skills, but older adults and rural residents show lower readiness.
- **Access, Literacy, Protection (each 39/100)**: Significant challenges remain in accessing advanced digital services, building foundational skills, and ensuring cybersecurity confidence.

Notable Insight: A disconnect exists between municipal staff perceptions and actual public digital capacities—highlighting the need for improved awareness and engagement mechanisms.

Key Insights from a rural perspective

From a **rural perspective**, smaller municipalities—which tend to be rural—generally perform worse across all pillars, particularly in infrastructure and governance. These municipalities typically have only basic IT setups, outdated or unlicensed software, and limited or no cybersecurity measures. Administrative units in rural areas often operate in silos, without intranet connections or standardized systems. Furthermore, the lack of stable electricity and inadequate connectivity further undermines digital operations in these areas. Importantly, these rural administrations face the greatest difficulty in attracting qualified IT personnel, with low wages and limited career opportunities making it nearly impossible to compete with the private sector or urban centres like Tirana.

The "**People" pillar was the strongest across all municipalities** (67/100), largely due to self-reported confidence in using digital tools by municipal staff. However, this masks the reality in rural areas where actual institutional support—such as training, standardized usage protocols, and technical expertise— is especially lacking. The absence of structured policies and continuous capacity-building initiatives is more acute in these settings, making it difficult to scale digital practices beyond basic office functions.

The **readiness for user-centric service delivery** remains very low nationwide (20/100), with gaps in rural areas. Vulnerable groups such as the elderly and persons with disabilities face considerable obstacles, not just due to digital illiteracy but also because of poor physical infrastructure, long distances to service points, limited public transport, and scarce access to digital communication channels. These challenges are exacerbated in remote areas where connectivity and digital outreach are minimal. Interestingly, municipal staff—especially in rural areas—tend to underestimate the public's ability to engage with digital tools, assuming high resistance to e-services, even though survey data from citizens suggests otherwise.

Public Digital Readiness Assessment

On the public side, the assessment reveals a **moderately prepared population** with a national average score of 56 out of 100. Digital engagement is high, particularly regarding smartphone use and Internet access, which are nearly ubiquitous in both urban and rural areas. The strongest pillars were "Usage" (87/100) and "Cultural Norms" (77/100), indicating widespread appreciation for the role of digital devices in daily life. Citizens in both contexts—urban and rural—value smartphones as essential, and most report daily Internet usage.

However, the rural population trails behind in several critical dimensions. **Access to digital tools and services** is more difficult in rural areas, with an average readiness score of 30 compared to 44 in urban settings. Rural residents are less likely to own personal computers or laptops and rely more exclusively on smartphones, which limits the range of digital tasks they can perform. E-commerce, online learning, and even basic document handling are more challenging in these areas, often due to both skills gaps and infrastructural barriers.

Digital literacy in rural areas is also considerably weaker. Many rural citizens—especially older individuals—struggle with foundational digital tasks such as browsing, using email, or editing documents. The digital creative sub-skills (e.g. making presentations or using spreadsheets) score particularly low. Only 26 per cent of the general public nationally report intermediate or higher capabilities in this domain, and this proportion is even lower in rural settings. Similarly, perceptions of digital protection and cybersecurity are more limited among rural citizens, who express lower confidence in managing personal data or performing secure online transactions.

In terms of **adoption**, rural populations show a slightly lower—but still significant—willingness to engage with digital services. While 66 per cent of the overall population expressed openness to learning new tools, the percentage was lower among rural and older groups. Interestingly, even in rural areas, a majority still acknowledged the benefits of digital services in improving public service access, although they retained a strong preference for in-person interaction. This reinforces the need for hybrid service models in underserved areas.

Methodology Overview

1. Municipal Digital Readiness Assessment

This component evaluates the digital maturity of Albania's 61 municipalities across five core pillars:

- **Government** (e.g., digital vision, HR, service delivery, budgeting),
- **Regulations** (legal awareness on data governance, transparency),
- **Infrastructure** (equipment, connectivity, cybersecurity),
- **People** (digital skills and usage among municipal employees),
- **User-Centric Service Delivery** (citizen-centric design and accessibility).

Two primary instruments were used:

- A **Municipal Institutional Survey** targeting senior officials on organizational readiness,
- A **Municipal Employee Survey** (self-assessment) capturing employees' digital behaviours and competencies.

Each municipality was scored from 0 to 100 for every pillar, sub-pillar, and overall readiness. Scores were categorized into five readiness levels: Low (0–20), Limited (21–40), Moderate (41–60), Advanced (61–80), and Full Readiness (81–100). Qualitative inputs from interviews and expert field observations complemented the quantitative data

2. Public Digital Readiness Assessment

This component assessed citizens' readiness for and engagement with digital services using a large-scale, representative survey of **11,000 adults (18+)** across municipalities. It evaluated six pillars:

- **Cultural Norms** (importance and perception of digital tools),
- **Usage** (device ownership and frequency),
- **Access** (ease of engaging with digital tools),
- **Adoption** (openness to digital service use),

- **Digital Literacy** (self-reported digital skill levels),
- **Protection** (security perceptions and trust in digital environments).

Data collection was executed via in-person interviews using stratified, multi-stage cluster sampling. Weighting ensured national-level representativeness. Pillars and sub-pillars were scored similarly to the municipal assessment.

Broadband Demand Landscape in Rural Areas

As regards demand for broadband access, there has been significant progress over the last three years. Albania has advanced the digitalization of public administration through the development of a modern and secure government ICT infrastructure, which has facilitated demand.[71] At the core of this infrastructure is GOVnet, the dedicated government network that facilitates secure communication and Internet access across public institutions. As of 2023, 255 state institutions are connected to GOVnet, enabling consistent and reliable digital interaction within the public sector. Supporting this ecosystem is the Government Data Center, managed by NAIS. This facility provides a centralized environment for hosting digital services and virtual resources used by public institutions. Notably, 473 official government websites are hosted within this data center, ensuring high availability, enhanced security, and streamlined service delivery. Moreover, interoperability plays a critical role in facilitating seamless data exchange between institutions. The Government Interoperability Platform enables 63 state electronic systems to interact efficiently, ensuring that data can be securely shared and reused across the public administration. This interconnected architecture underpins the delivery of integrated services, reduces redundancy, and supports a citizen-centric approach to governance.

Despite challenges in connectivity, a wide array of digital services is increasingly accessible to Albania's rural population. Recent advancements in government policies and private sector initiatives have facilitated the expansion of e-services, though rural uptake still lags urban areas due to infrastructural limitations and digital literacy issues.

Under Component 1 of the DART project, the demand for broadband connectivity and digital services in agriculture will be systematically assessed through a dedicated survey targeting farmers to inform the Digital Agricultural Strategy. This survey will gather first-hand insights into farmers' connectivity status, and digital skills (and for Component 2 (enhancement of the Farmers' Portal), service needs, and potential use cases for agricultural digital tools will be assessed). The assessment will be carried out using a structured questionnaire that will be distributed to a representative sample of farmers across Albania.

E-Government Services

The Albanian government's primary digital platform, e-Albania[72], has significantly expanded its range and reach.[73] As of 2022, approximately 95 per cent of public service

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[71] The National Agency for Information Society, https://akshi.gov.al/

[72] E-Albania, Albania's National e-Government Portal, https://e-albania.al/

[73] Yet, the EC notes in its Albania 2024 Report, that service delivery to citizens and businesses needs to be further developed, pointing out that there is no comprehensive strategy for service delivery in force, which should be included in the PAR Strategy. See: EC, Albania Report 2024, p. 27,

applications were available online through e-Albania, which now hosts 1,245 electronic services, from civil registry documents to agricultural subsidy applications.[74] With 2.8 million registered users, the platform has effectively replaced many traditional service channels. Although rural residents can theoretically access these services without traveling to municipal offices, actual usage often depends on local Internet connectivity and digital skills. Many villagers use e-Albania with the help of intermediaries or at community centres due to patchy home Internet and limited digital literacy. The government has rolled out free Wi-Fi in some municipal offices and is opening "one-stop shop" service kiosks in rural communes to assist those who are not online at home.

Figure 9: E-Albania Portal Services
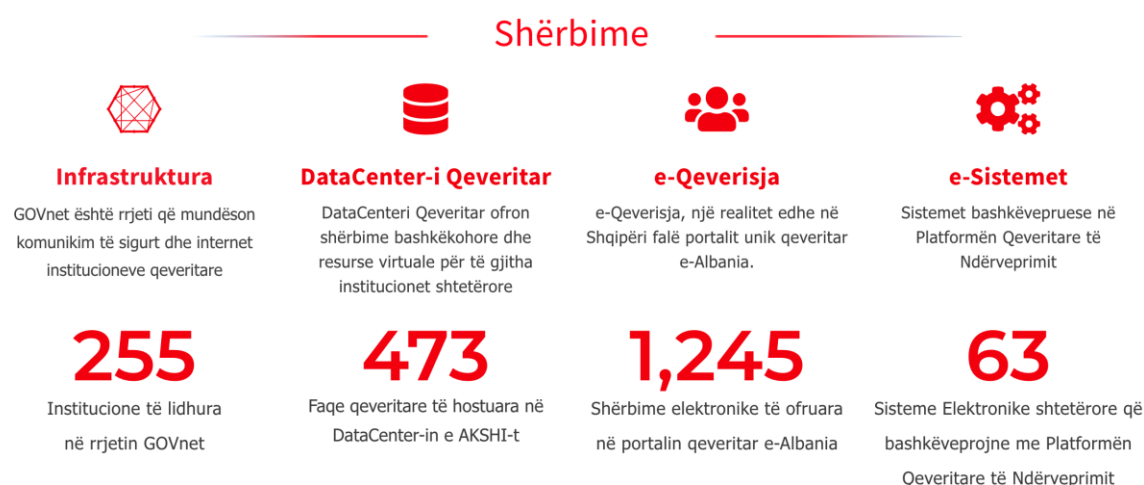
Source: The National Agency for Information Society

E-Health Initiatives

Digital health services in rural Albania are still emerging but evolving. Most rural clinics and family health centres have basic IT equipment and an electronic system for collecting and reporting health information of medical records (HIS) is being piloted.[75] Rural doctors can issue prescriptions through an online system and patients can pick up medicine with an ID, streamlining healthcare delivery.[76] However, telemedicine services (remote consultations, digital referrals) are limited. The government's broadband plan recognizes connectivity as crucial for healthcare and aims to connect 100 per cent of health centres and hospitals with high-speed Internet by 2025.[77] Some pilot projects have introduced telemedicine in remote areas – for example, connecting village clinics with specialists in city hospitals via video link – to improve access to care in communities that lack doctors. A few donor-funded programs have equipped rural health posts with

https://enlargement.ec.europa.eu/document/download/a8eec3f9-b2ec-4cb1-8748-9058854dbc68_en?filename=Albaniaper cent 20Reportper cent 202024.pdf

[74] The National Agency for Information Society, Digital Agenda for Albania 2022-2026, https://dig.watch/resource/digital-agenda-of-albania-2022-2026

[75] EC, Albania Report 2024, p. 70, https://enlargement.ec.europa.eu/document/download/a8eec3f9-b2ec-4cb1-8748-9058854dbc68_en?filename=Albaniaper cent 20Reportper cent 202024.pdf

[76] See, ft.70

[77] MIE, National Broadband Plan of Albania, 2020, https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf

teleconferencing kits and trained staff on e-health tools. Additionally, during the COVID-19 pandemic, there was increased use of phone and WhatsApp consultations in rural areas as a stopgap measure. Looking forward, better connectivity will enable services like electronic health records accessible across facilities, remote diagnosis (e.g. teleradiology), and health education via mobile apps for rural populations. While currently e-health impact is modest outside cities, the foundation is being laid for rural Albanians to benefit from telehealth services once robust Internet links are in place.

Digital Financial Services

Digital finance adoption has increased gradually in rural regions. Major banks provide online and mobile banking services, enabling rural residents to perform essential financial transactions remotely. By 2022, approximately 878,000 bank accounts had Internet banking access. In 2023 the number of online banking transactions reached *7.67 million*, the highest ever.[78] Many of these transactions come from urban users, but rural uptake is growing as well, especially among younger, tech-savvy individuals and those receiving remittances. Mobile payment platforms and fintech solutions are slowly emerging (e.g., e-wallets and mobile payment apps like PayLink[79], EasyPay Albania, M-Pay, other), although rural economies remain predominantly cash-based due to limited digital literacy, trust issues, and patchy connectivity. Continued efforts, including government-backed digital literacy programs and rural financial inclusion initiatives, aim to overcome these barriers and further encourage digital financial adoption.

E-Education and School Connectivity

Efforts to digitalize education have accelerated, especially in response to challenges posed by the COVID-19 pandemic. The current National Broadband Plan Target in education is to connect all schools with high-speed Internet by 2025[80] and integrate digital educational platforms and content into rural education systems (European Commission, Albania Report 2024). Government and donor-supported initiatives, such as "Smart Labs", have provided digital classrooms and Internet connectivity to numerous rural schools.[81] Donor programs (EU and UNICEF) have funded Internet for select rural schools and provided digital training for teachers.[82] Additionally, training programs for teachers in digital skills (such as the EU's SELFIE for Teachers tool) have been implemented to strengthen e-learning capacity.[83] In some communities, NGOs and foundations have created "digital corners" or community Internet centres where students can access PCs and online educational resources after school. E-education services currently available include online portals where high school students can

[78] Multilaw, Multilaw legal network homepage, n.d., https://www.multilaw.com/

[79] PayLink, PayLink Albania – Electronic payment platform, https://paylink.al/en/home/

[80] See ft.73

[81] Western Balkans Investment Framework (WBIF), Regional Broadband Infrastructure Development in Albania (WB-IG07-ALB-DII-01), https://www.wbif.eu/investmentgrants//WB-IG07-ALB-DII-01; Government of Albania, "Intelligent laboratories expand their digital map in schools for quality digital education for children", https://www.kryeministria.al/en/newsroom/laboratoret-inteligjente-shtrijne-harten-e-tyre-digjitale-ne-shkolla-per-nje-edukim-digjital-cilesor-te-femijeve/.

[82] UNICEF Albania, "Transforming education in Albania: Digital learning and interactive tools in classrooms", https://www.unicef.org/albania/stories/transforming-education

[83] European Training Foundation (ETF), "30 years, 30 stories – Albania: Driving digital innovation in education", 2023, https://www.etf.europa.eu/en/news-and-events/news/30-years-30-stories-albania-driving-digital-innovation-education

download curricula, check exam results, or apply to universities electronically. There are also a few e-learning platforms and content libraries (sometimes provided by international donors) that rural teachers use to supplement lessons. Despite these initiatives, substantial gaps persist, which are set out in the Challenges and Barriers section below; many rural students still experience limited access to reliable Internet connections and digital devices.

In summary, rural Albanians today have the potential to access a broad suite of digital services – from e-government and e-health to online banking and agricultural portals – provided they have an Internet connection and the necessary skills. The availability is largely there, thanks to national platforms, but actual usage in rural areas is still catching up to urban levels due to infrastructure and skill gaps. Bridging that gap through training, local support centres, and affordable connectivity is a priority in ongoing initiatives.

Connectivity and Services for Digital Agriculture

Agricultural Digital Landscape Status

Agriculture remains the backbone of rural Albania, employing a significant portion of the population and accounting for nearly 16.22 per cent of GDP[84]. The sector is dominated by approximately 320,000 farms, many of them smallholders, which often operate with limited technological input and infrastructure.[85] While most farmers continue to rely on conventional practices and basic mobile phones, there is a clear generational shift underway. Younger farmers are adopting smartphones, social media, and web-based resources to access agronomic information, market prices, and weather updates. Despite these trends, digital adoption remains uneven and concentrated among more digitally literate or commercially oriented producers. Advanced digital technologies—such as IoT sensors, GPS-guided machinery, and specialized farm management software—are still rare among most producers.

Institutional and Legal Context

The digital transformation of agriculture in Albania is guided by several strategic policies, most notably the Digital Agenda 2022–2026 and sectoral initiatives under MARD. These include the ongoing development of a national Digital Agriculture Strategy and digital governance tools such as e-Albania[86] and the Enhanced Farmer's Portal[87], which may provide farmers with online access to subsidies, registration systems, and advisory content. Agricultural Technology Transfer Centres (ATTCs)[88] and regional extension services (AREBs), coordinated under MARD, are instrumental in implementing these strategies at the local level.

In addition to national strategies such as the Digital Agenda and the National Broadband Plan, the Albanian government and international partners have launched several targeted programs to promote rural connectivity and digital transformation in agriculture. One such initiative is Digital Valley Albania (DiVA), launched in February

[84] World Bank Data, Trading Economics, Albania - Agriculture, value added (% of GDP), https://tradingeconomics.com/albania/agriculture-value-added-percent-of-gdp-wb-data.html
[85] CEIC Data, Albania: Number of Agricultural Farms, https://www.ceicdata.com/en/albania/number-of-agricultural-farms
[86] E-Albania, Albania's National e-Government Portal, https://e-albania.al/
[87] AgroAlbania, Albanian digital agriculture platform, https://agroalbania.al/en/
[88] WBC-RTI, National Agency for Information Society, https://wbc-rti.info/object/organisation/9844.html

2025.[89] DiVA is designed to support digital transformation through services such as technology testing, digital skills development, investment facilitation, and integration of emerging technologies like Artificial Intelligence into agricultural practices. The initiative plays a key role in building digital capacity among rural entrepreneurs and SMEs. A second programme is the Digital Innovation Unit (DIU)[90], a modern innovation hub based in Albania that supports entrepreneurs, startups, and small and medium-sized enterprises (SMEs) in adopting digital technologies. It is part of the European Digital Innovation Hubs (EDIHs) network and is co-funded by the European Commission, providing strategic support for Albania's digital transformation. The DIU is organized as a collaborative platform bringing together key national institutions, universities, research centres, and private sector partners. Another supportive initiative is the FAO Agritourism and Digitalization Project, which supports the diversification and competitiveness of smallholders by embedding digital tools in agrifood value chains and rural tourism models. This includes training modules, advisory services, and market linkage platforms tailored for small-scale producers.[91]

Current Digital Services and AgriTech Initiatives

Public digital services available to Albanian farmers include online applications for subsidy schemes (e.g. fuel support) through e-Albania, crop and livestock registries, and access to advisory services via digital platforms. According to MARD, by early 2025, over 75,000 farmers had applied for subsidies via the e-Albania portal. Other digital services touching rural life include e-commerce and digital marketplaces for artisans and farmers (some villagers sell products via Facebook or local e-market sites), telework hubs (a few projects are exploring coworking spaces in smaller towns for remote workers), and community info platforms (like WhatsApp groups or local portals for weather and pest alerts). However, the vast majority of Albania's ~280,000 smallholder farmers have not yet adopted advanced digital tools – mostly elderly with limited Internet access. And as digital literacy varies widely, more advanced AgriTech solutions—such as IoT-based irrigation, drone mapping, or farm management software—are still in the pilot stage, if non-existent.

Yet, a few promising developments are emerging. For example, Vodafone's Smart Agriculture system has been deployed at Uka Farm[92] near Tirana to monitor irrigation and crop conditions. Moreover, Vodafone has partnered with Doni Fruits[93] and Biobes who use Vodafone's smart agricultural devices.[94] In 2023, the MARD launched the digital

[89] DIVA, Digital Innovation Valley Albania, https://divalbania.eu/; AlbaniaTech, "DIVA marks a new chapter for Albania towards the Digital Europe Programme", https://albaniatech.org/diva-marks-a-new-chapter-for-albania-towards-the-digital-europe-program/, University Metropolitan Tirana, "Digital Valley Albania", https://umt.edu.al/en/digital-valley-albania/

[90] EC, Digital Innovation Hubs Catalogue – DIU Albania, https://european-digital-innovation-hubs.ec.europa.eu/edih-catalogue/diu

[91] FAO, Family farming: Youth-led digitalization of Albania's agriculture, https://www.fao.org/family-farming/detail/en/c/1375617/ ; FAO, "Project promotes agrotourism and digitalization for Albanian smallholder farms", https://www.fao.org/europe/news/detail/Project-promotes-agrotourism-and-digitalization-for-Albanian-smallholder-farms/en.

[92] Vodafone, "UKA Farm: A digital future for farming", 2022, https://www.vodafone.com/news/digital-society/uka-farm; Vodafone, "Digitalising UKA Farm with IoT", 2022, https://www.vodafone.com/news/digital-society/stories/spotlight-stories-digitalising-uka-farm-iot.

[93] Vodafone Albania, UKA Farm success story, 2022, https://www.youtube.com/watch?v=gFTRylpBMR0

[94] Response to Stakeholder Consultation Questionnaire

"Farmer's Portal"[95] – an online platform for farmers to access information on how to apply for subsidies and get advisory services[96]. This portal aims to increase transparency and efficiency in agricultural services, allowing farmers in any village to, for example, register for grants or find market price information via the Internet. Nevertheless, the portal is currently lacking maintenance and updates to reflect the actual digital agriculture state-of-the art – providing the call for action to DART programme. Other initiatives are also applying the "Digital Villages"[97] model to five underserved rural areas as pilots, introducing smart greenhouse controls and precision irrigation and digital platforms linking farmers to markets / e-commerce for farmers, aiming to boost productivity[98].

The DART project aims to boost the adoption of digital solutions in agriculture[99], by leveraging digitalization to improve farm productivity and rural livelihoods – for example, by co-designing the Farmers' Portal with farmers, it aims to delivery meaningful crop management information and digital tools for better data-driven climate-smart decision making. It aims to build an ecosystem that tackles the needs of different stakeholders of the chain, moving agricultural communities towards digital inclusion and supporting MARD towards complying with EU pre-accession requirements. Moreover, efforts are underway to enhance the digital literacy of smallholder farmers, with a focus on women and youth.[100] More generally, many municipal services are now online – property records, civil registries, etc., accessible through central databases, which indirectly benefits rural citizens by streamlining interactions with government. Banks now offer online loan products, reducing the need for in-person visits, and some banks (e.g. OTP Bank) broker crop insurance products[101][102],

Digital Agricultural Use-Cases, Connectivity Requirements and Existing Barriers

Identifying and promoting practical, high-impact digital agriculture use-cases is critical to stimulating rural demand for advanced network infrastructure. The Stakeholder Consultation Roundtable highlighted that mobile network operators in Albania remain hesitant to invest in rural areas due to the high costs of deployment and the limited

[95] AgroAlbania, https://agroalbania.al/en/

[96] Tirana Post, "Agriculture in the digital age: Vodafone Albania success story in agrotechnology", 2023, https://tiranapost.al/english/stil-jete/bujqesia-ne-epoken-dixhitale-vodafone-albania-histori-suksesi-ne-agrok-i531985

[97] FAO, Digital Villages Initiative – Tropoja Village, Albania, 2023, https://www.fao.org/digital-villages-initiative/europe/digital-villages/tropoja-village/en

[98] Joint SDG Fund, "Digitizing SDG localization in Ghana and Albania, 2023", https://www.jointsdgfund.org/article/digitizing-sdg-localization-ghana-and-albania

[99] UNDP MPTF, Project: Sustainable digital transformation of Albania's agriculture, 2023, https://mptf.undp.org/project/00140818; FAO, "United Nations launches ambitious programme for sustainable digital transformation of Albania's agriculture", 2023, https://www.fao.org/europe/news/detail/united-nations-launches-ambitious-programme-for-sustainable-digital-transformation-of-albania-s-agriculture/en

[100] Joint SDG Fund, Mobilizing digital innovation in agriculture in Albania and Tanzania, 2023, https://www.jointsdgfund.org/article/mobilizing-digital-innovation-agriculture-albania-and-tanzania

[101] OTP Bank Albania, Insurance Broker Loan, https://otpbank.al/en/individual/loans/broker-ne-sigurime/

[102] World Bank Disaster Risk Financing and Insurance Program, Agricultural Insurance in Albania: Public–Private Partnerships in Action, 2024, https://www.financialprotectionforum.org/sites/default/files/2025-04/22B.%20English_Agri%20Insurance%20Albania.pdf

commercial case under current demand levels. However, by highlighting use-cases that depend on broadband infrastructure, policymakers and ecosystem actors can make a stronger case for public-private investment. For these use-cases to be meaningful to telecom providers, they must also be relevant, scalable, and supported by a broader digital agricultural ecosystem, including agri-tech innovators, cooperative networks, and well-trained advisory services. Albania's evolving digital agriculture landscape can benefit from different scalable use-cases, ranging from low-cost, scalable solutions such as mobile-based advisory services and digital marketplaces to more advanced tools like IoT-based smart irrigation systems, precision agriculture technologies and remote sensing for crop monitoring. Several of these solutions have been successfully implemented in comparable regional contexts (e.g., Serbia, North Macedonia, Montenegro), often in partnership with telecom operators, development agencies, and local institutions. An overview is provided below in Table 8.

Table 8: Overview of digital agriculture use cases

Solution Category	Example Use-Cases	Required Connectivity & Devices	Illustrative Implementations
Mobile Advisory Services	SMS/IVR weather alerts, market price info, agronomic tips	2G/3G mobile network; basic phone or smartphone	Turkey's Vodafone Farmers' Club (1.3M farmers) [103]; Farmerline (Ghana)
Precision Agriculture & IoT (Crops)	IoT sensors (soil, weather), drone surveys, automated irrigation	3G/4G or LoRa; IoT sensors; smartphone/PC for data;	Serbia Fitomineral project (weather stations + advisory); Smart Watering IoT irrigation (Serbia)
Remote Sensing & Analytics	Satellite crop monitoring, yield mapping, GIS land management	3G/4G or broadband (mobile or fixed); smartphone/PC for apps	OneSoil free NDVI mapping app; EU Copernicus satellites (Albania) [104]
Digital Marketplaces	E-commerce for farm produce, input ordering, blockchain traceability	3G/4G or broadband; smartphone or computer	seljak.me peer-to-peer agri market (Montenegro); Albania's Farmer's Portal
Livestock Tech	GPS herd tracking, smart collars, e-vet apps	GSM/NB-IoT coverage; sensors/tags; smartphone/PC	Mobile cattle trackers idea (Montenegro); National livestock e-registry (Albania) [105]
Smartphone Advisory Apps	App-based guidance on crops, pests, weather	3G/4G mobile Internet; smartphone	Turkey Farmers' Guide App
Digital Farmer Portals	Online subsidy applications, registry updates, farm data tools	3G/4G or fixed Internet; smartphone or PC	e-Albania platform;

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[103] GSMA, Case Study: Vodafone Turkey Farmers' Club, 2023, https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/gsma_resources/case-study-vodafone-turkey-farmers-club/

[104] ITU and FAO, Status of Digital Agriculture in 18 countries of Europe and Central Asia, 2020, https://openknowledge.fao.org/server/api/core/bitstreams/29c2830e-8560-48ff-b636-06af2a1bb778/content and ITU and FAO, Digital Excellence in Agriculture in Europe and Central Asia Good practices in the field of digital agriculture Stocktaking Report, 2021, https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Projects/ITU-FAO/ITU-FAO_StocktakingReport_DigitalExcellenceinAgriculture_EuropeandCentralAsia_CallforGoodPractices_05July.pdf

[105] Ibid.

e-Learning Platforms	Mobile apps and portals offering digital training on farming practices	3G/4G mobile Internet; smartphone or PC	UNDP Digital Skills Programs	
Blockchain & Traceability	Track & trace of premium agri-products (e.g. olive oil, herbs)	Internet/cloud-based; smartphone or PC	Global pilot projects (EU)[106], QR-code traceability apps (initial proposals in Albania)	
Community Wi-Fi Access	Shared Internet points, village Wi-Fi hotspots	Fixed/mobile backhaul, Wi-Fi routers	WiFi4WB programme (EU/GIZ), free Wi-Fi zones in Albanian municipalities	

Source: Author

Barriers and Challenges

Despite a few pilot projects and increasing institutional interest, the uptake of digital agriculture in Albania remains constrained by several interrelated challenges. Many remote fields and greenhouses continue to lack reliable connectivity, particularly in areas where mobile signal may not extend far beyond village centres. Digital literacy is another limiting factor, especially among elderly farmers and in regions without active extension support capable of delivering tailored digital training. Affordability remains a persistent barrier, as the cost of devices and infrastructure often exceeds what smallholders can manage—even with partial subsidies. Moreover, many existing agri-tech solutions are not localized for the Albanian context, either linguistically or in terms of agronomic practices, making them less accessible and relevant to local farmers. Finally, institutional coordination is still emerging: while extension services and ATTCs are central to dissemination, their digital capacities are limited, and linkages between agriculture and telecommunications stakeholders require further development. Table 9 summarizes key barriers and challenges to agri-tech adoption.

Table 9: Key barriers to digital adoption in agriculture

Category	Barrier	Impact on Smallholders	Impact on Commercial Farms	Notes
Connectivity	Limited broadband access in rural areas	**High** – Many small farms lack reliable Internet	Medium – Larger farms may invest in alternatives	Mobile coverage is strong, but fixed broadband is uneven in remote areas
Affordability	High cost of devices (smartphones, sensors) and services	**High** – Upfront costs are a major deterrent	Medium – More ability to invest	Subsidies, leasing, or shared ownership models could reduce barriers
Digital Literacy	Low awareness and skills to use digital tools	**High** – Elderly farmers often lack digital skills	Medium – Staff may require specialized training	Training and advisory programs are critical for uptake
Fragmented Land	Small, scattered plots limit benefits from spatial-oriented	**High** – not justifiable	Low – Less of an issue for consolidated farms	Structural challenge, particularly for precision agriculture

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[106] EU Blockchain Observatory and Forum, AgriFood Workshop Report, 2023
https://blockchain-observatory.ec.europa.eu/document/download/73a43bb8-819c-4870-8132-37fb3313c281_en?filename=EUBOF2.0_AgriFoodWorkshopReport_Final_0.pdf&prefLang=it

	tech (e.g. variable-rate technology)			spatial-variability oriented technology
Institutional Support	Limited extension support for digital services	**High** – Extension often not digitized or proactive	Medium – May rely on private advisors	ATTCs and extension services may benefit from digital and skill upgrade for better outreach
Access to Finance	Limited access to credit or investment for tech adoption	**High** – Especially for informal/unregister ed farms	Medium – Easier access but still a constraint	Tailored credit lines and agri-tech grants could bridge the investment gap. Government incentives for farmers associations & cooperatives.
Trust and Relevance	Perceived lack of relevance or mistrust in new technologies	Medium – Risk aversion common among smallholders	Low – Commercial farms more open to innovation	Demonstrations and peer examples are effective in building trust
Language/ Content	Lack of locally relevant content and tools in Albanian	Medium – Limits engagement with apps/tools	Low – More likely to access international solutions	Localization and inclusion of Albanian-language apps essential
Market Size & Demand	Small domestic market for agri-tech suppliers	Medium – Limits product availability	Medium – Few local vendors for advanced systems	May improve as adoption grows; regional cooperation can help scale solutions
Policy & Incentives	Limited targeted incentives for digital adoption in agriculture	Medium – Few subsidies or programs for small farms	Medium – No systematic support for digital upgrades	Inclusion of agri-tech in national subsidy schemes could incentivize adoption

Source: Author

Recommendations to Improve Digital Integration in Agriculture

Digital technologies present a transformative opportunity for Albania's agricultural sector—but realizing this potential requires a holistic approach. The expansion of rural broadband infrastructure remains a critical priority, particularly to connect remote farm areas through local Wi-Fi networks or shared access points. Simultaneously, the development of Albanian-language applications and localized content tailored to domestic farming conditions will be essential to ensure usability and uptake. A robust agricultural extension system, equipped with digital tools and training programs, must be at the forefront of this transformation to bridge knowledge gaps. Moreover, subsidy schemes should be expanded to cover not only advanced AgriTech devices, but also basic digital tools like smartphones and computers that enable daily digital engagement. Coordinated efforts between government, private sector actors—especially telecom providers—and international partners can build a digitally enabled rural economy that empowers both smallholders and commercial farms. With the right infrastructure, capacity-building, and collaborative frameworks in place, Albania can unlock the full

potential of digital agriculture to drive competitiveness, sustainability, and rural resilience.

- **Invest in rural broadband infrastructure**, including backbone and last-mile connectivity, especially in underserved areas.
- **Develop localized digital content and apps** tailored to Albanian crops, language, and farming contexts.
- **Enhance digital literacy and extension support**, equipping advisors with tools and training to act as facilitators.
- **Expand digital subsidy programs** to include basic equipment (e.g., smartphones, computers) and support shared-service models for IoT and analytics.
- **Promote public-private partnerships (PPP)** with telecom operators, platform developers, and agri-tech startups to ensure sustainability.

Conclusion

While digital adoption in Albania's agricultural sector remains at an early stage, initiatives like Vodafone's Smart Agriculture project, the Smart Villages pilot, and the e-agriculture portal illustrate the transformative potential of connectivity. However, to unlock these benefits across the country, significant challenges must be addressed—ranging from connectivity gaps and digital literacy issues to the high cost and limited localization of digital tools. With continued investment in rural broadband and targeted support for digital agriculture, Albania can drive a modernization of its farming sector that benefits both producers and consumers.

STRATEGIES, PROGRAMMES, POLICIES AND REGULATIONS FOR RURAL BROADBAND DEVELOPMENT

In response to the digital divide to drive the expansion of broadband connectivity across the country, with a special emphasis on rural areas, MIE as the key institution for broadband policy-making and other stakeholders such as AKEP have introduced several measures. These include a new Telecommunications Law adopted in May 2024 in line with the EC Electronic Communications Code[107], updated universal service obligations, market regulation, innovative use of utility infrastructure, donor funding, and coordinated institutional roles. This section sets out different Strategies, Programmes, Policies and Regulations for Rural Broadband Development that are in place in Albania.

National Strategies and Plans

Albania's Digital Agenda (Digital Agenda 2015–2020 and 2022–2026) is a high-level ICT strategy that frames the country's digital transformation. The first Digital Agenda (2015–2020) focused on expanding e-government and online services, achieving over 95 per cent digitization of public services via the e-Albania portal.[108] However, it acknowledged the need to improve digital infrastructure to bridge the urban-rural digital divide. Building on this, the Digital Agenda of Albania 2022–2026 was launched in 2022. This new agenda envisions an inclusive digital society and places greater emphasis on connectivity "anytime, anywhere," aiming to integrate advanced IT and ensure all citizens benefit from digital services. While largely focused on e-governance and digital skills, the Digital Agenda aligns with EU's Digital Decade objectives and implicitly supports broadband expansion as a foundation for its goals. The 2015–2020 agenda is completed, and the 2022–2026 agenda is currently being implemented (ongoing).[109]

Recognizing broadband as critical infrastructure, Albania adopted a first dedicated National Broadband Plan in 2013. This plan set targets such as doubling broadband access by 2017 and delivering high-speed Internet (≥30 Mbps) to at least 50 per cent of households by 2020. Some goals were met – the number of broadband subscribers did double by the late 2010s – but many targets were only partially realized or delayed, especially those involving rural coverage (e.g. connecting every school and village with high-speed Internet). By 2020 a persistent rural–urban gap remained, prompting an update of the strategy.

In 2020, the Albanian government approved an updated broadband development plan to carry the momentum forward. This 2020–2025 Broadband Plan[110] prioritizes extending high-speed networks to underserved rural and remote areas while continuing broadband upgrades in urban centres. It aligns with EU objectives for a "Gigabit Society" and integration into the regional Digital Agenda. Key objectives include expanding the fibre-optic backbone, incentivizing last-mile broadband in rural communities, and preparing

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[107] EC, Albania Report 2024, p.71, https://enlargement.ec.europa.eu/document/download/a8eec3f9-b2ec-4cb1-8748-9058854dbc68_en?filename=Albaniaper%20Report%202024.pdf

[108] The National Agency for Information Society, Digital Agenda for Albania 2022-2026, https://dig.watch/resource/digital-agenda-of-albania-2022-2026

[109] Ibid.

[110] MIE, National Plan Broadband, 2020, https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf

for 5G mobile networks. The plan is backed by detailed feasibility studies and maps out actions to reach unserved "white areas". It explicitly identifies the rural connectivity gap as a major issue and seeks new funding models to address it. The plan is ongoing (in implementation through 2025), with technical studies completed and in the process of update and investment projects being mobilized (see funding programs below).

Albania's overarching development plans (NSDI II 2015–2020 and the draft NSDI/NSDEI 2022–2030) also emphasize digital infrastructure as a development priority. NSDI II integrated the goal of improving ICT infrastructure nationwide as part of Albania's socio-economic development and EU integration efforts. Under NSDI, broadband is viewed as an essential infrastructure for economic growth, education, and governance, akin to other utilities. The forthcoming NSDEI 2022–2030 (National Strategy for Development and European Integration) is expected to continue this focus, highlighting mobile broadband and 5G rollout as key infrastructure targets to connect all communities.[111] Thus, broadband development is embedded in Albania's high-level policy vision.

Albania is also an active participant in the Digital Agenda for the Western Balkans (since 2018), a regional initiative with EU support.[112] This regional agenda lists *"deployment of broadband"* as one of five priorities, complementing Albania's national strategies. Albania's national plans are broadly in line with these regional objectives.

Albania's 5G Roadmap is in full implementation and the process of 5G licensing was completed in November 2024, when AKEP issued individual authorizations to the two mobile operators. 5G services were launched in December 2024. The licenses include coverage obligations, where by 2027, 55 per cent and by 2030, 85 per cent of the population must be covered by 5G services. Specifically, by the end of 2025, 5G services must be available in the ports of Durrës, Vlorë, Shëngjin, Saranda, Porto Romano; at Tirana International, Kukës and Vlora Airports, Tirana- Durrës industrial zone and the hospitals of Tirana. Moreover, all cities in Albania must be covered by the end of 2028 as well as tourist areas, national parks, roads, highways, and tunnels and areas involved in various development projects.[113]

Legislative and Regulatory Framework

Albania has modernized its legal and regulatory framework to facilitate broadband infrastructure deployment and ensure open access, in line with EU best practices. The key legislative and regulatory instruments are set out below.

The Law on Electronic Communications provides the regulatory basis for network deployment and services. Albania's framework has been gradually aligned with the EU telecom acquis. A new Law on Electronic Communications (Law no 54/2024) was adopted in May 2024 to fully harmonize with the European Electronic Communications

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[111]State Agency For Strategic Programming and Aid Coordination (SASPAC), The National Strategy for Development and European Integration (NSDEI) 2022-2030, 2023, [DOC] 1b.-NSDEI-2022-2030-Final-English-Version-23-Jan-1.docx

[112] Western Balkans Investment Framework (WBIF), Digital Infrastructure Sector, https://www.wbif.eu/sectors/digital-infrastructure

[113] AKEP response to the Stakeholder Consultation

Code.[114] This updated law strengthens provisions on universal service, competition, and consumer rights. It includes chapters on open Internet access and net neutrality (aligning with EU Regulation) and it also incorporates rules for state aid and market entry[115] that encourage investment while safeguarding competition.[116] In addition, the new law includes a number of provisions which aim to facilitate the deployment of electronic communications network especially as regards 5G in compliance with Article 57 of the EECC on Deployment and operation of small-area wireless access points. Moreover, the new law has brought improvements also in infrastructure sharing practices. In Chapter VIII, Articles 57 and 58 detail respectively the 'Rights of way' and 'Co-location and sharing of network elements and associated facilities for providers of electronic communications networks. The new law also addresses affordability. According to Article 110 of the Law 54/2024, AKEP shall take measures to ensure affordability for such consumers of adequate broadband Internet access service and voice communications services, by ensuring that support is provided to such consumers for communication purposes or require providers of such services to offer to those consumers tariff options or packages different from those provided under normal commercial conditions, or both.

Furthermore, the Decision of Council of Ministers (DCM) no 504 of 1.8.2024 on physical and technical characteristics of small-area wireless access points was approved, in conformity with EU implementing Regulation (EU) 2020/1070. This decision is in line with Article 57(1) of Directive (EU) 2018/1972 and full alignment with Commission Implementing Regulation (EU) 2020/1070 of 20 July 2020 on specifying the characteristics of small-area wireless access points pursuant to Article 57 paragraph 2 of Directive (EU) 2018/1972 of the European Parliament and the Council establishing the European Electronic Communications.

A pivotal reform was the adoption of Law 120/2016 *"On the development of high-speed electronic communications networks and the provision of the right of way."* This law implements the EU Broadband Cost Reduction Directive, marking the start of a broadband infrastructure reform**.** It facilitates the shared use of existing utilities (transport, energy, water networks) for telecom fibre deployment, mandates coordination of civil works to avoid duplicate digging, and streamlines rights-of-way for broadband. In essence, it allows telecom operators to access passive infrastructure (e.g. poles, ducts) owned by utilities and requires agencies to cooperate on permit processes.[117] Initially, implementation was slow – local authorities were unfamiliar with the new processes, and secondary regulations were delayed. However, efforts are underway to complete the by-laws and enforce the law across institutions. Municipalities and utilities have been instructed (CoM Decision No. 851, 2016) to share cartographic data of infrastructure with telecom authorities to facilitate planning, though full compliance is still being achieved. As of 2023, Albania reports that it is "fully aligned with the EU Broadband Cost Reduction Directive" in legislation, indicating that the

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[114] EC, Albania Cluster 3 Report – FINAL, 2023
https://enlargement.ec.europa.eu/document/download/92844bd9-7cf4-4fb1-bcc2-b42a18371480_en?filename=AL_Cluster_3_report_FINAL_clean_publication.pdf
[115] Which are currently being updated.
[116] The prior law (and amendments through 2016) had already opened the market to competition – Albania's broadband market has over 252 licensed ISPs and has been fully liberalized since 2008.
[117] MIE, National Plan Broadband, 2020, https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf

necessary legal framework is in place, even if practical execution continues to improve.[118] Albania is committed to further aligning its national legislation with the recent EU acquis, in particularly Regulation (EU) 2024/1309 of the European Parliament and of the Council of 29 April 2024 on measures to reduce the cost of deploying gigabit electronic communications networks, amending Regulation (EU) 2015/2120 and repealing Directive 2014/61/EU (Gigabit Infrastructure Act).

In relation the Universal Service Access Regime, Albania's approach to universal service obligations (USO) has evolved from a narrow focus on basic telephony to a broader digital inclusion agenda aligned with EU standards. Historically, the USO framework concentrated on ensuring access to voice services and public payphones. However, in recognition of broadband as a critical enabler of socioeconomic participation, recent regulatory reforms have expanded the scope of universal service to include broadband Internet access. Article 110 of the 54/2024 law defines that, AKEP ensures that all consumers in the Republic of Albania have access at an affordable price, to an adequate broadband Internet access service and to voice communications services, which are available, at the quality specified in their territories, regarding quality specified by AKEP including the underlying connection, at a fixed location.[119]

Despite these advancements, Albania has yet to establish a functioning Universal Service Fund (USF) specifically designed to support broadband deployment.[120] While the legal framework empowers AKEP to manage such a fund—with contributions from licensed operators intended to subsidize both voice and broadband services—no operational funding mechanism has been implemented. Consequently, broadband access in rural areas relies on ad-hoc initiatives, including donor-supported projects and voluntary investments by private operators. Recent legal and regulatory updates define a Minimum Broadband Service, initially benchmarked against DSL-equivalent speeds, as part of the universal service offering. This ensures that all citizens, particularly those in remote locations, have access to a basic level of Internet connectivity. Proposals for a future "5G fund" also reflect an emerging focus on next-generation networks as a component of universal access strategies.

Albania is in the process of operationalizing a state aid framework for broadband development that aligns with European Union guidelines, with a focus on fostering investment in underserved "white areas" where commercial viability is limited. The

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[118] EC, Albania Cluster 3 Report – FINAL, 2023
https://enlargement.ec.europa.eu/document/download/92844bd9-7cf4-4fb1-bcc2-b42a18371480_en?filename=AL_Cluster_3_report_FINAL_clean_publication.pdf

[119] The "Plan for Universal Service in Electronic Communications 2013–2016" marked a significant policy shift by identifying rural and underserved areas with limited coverage and outlining regulatory interventions to address the digital divide. In this context, AKEP in cooperation with mobile network operators, designated specific low-density zones as priorities for infrastructure development. This is based on the AKEP Decision Nr.2648, dated 03. 12. 2015, which approved zones with low population density for covering them with broadband services and zones for improvement. Since 2015, AKEP has facilitated permitting procedures for the installation of base stations in these areas, with at least one mobile operator investing in network expansion under this scheme.

[120] The financing of Universal service obligations is defined in Article 128 of the law 54/2024. Where, based on the net cost calculation referred to in Article 107, AKEP finds that a provider is subject to an unfair burden, the universal service fund shall be created for the compensation of the real costs of the universal service provision. The universal service fund is managed and administered by AKEP.

National Broadband Plan explicitly outlines the use of state aid mechanisms—including subsidies, public–private partnerships (PPPs), and competitive tenders—to support network expansion in these areas. While a formal state aid framework was established in 2019, full alignment with EU State Aid Guidelines is still pending.[121] Nonetheless, the government, through the Ministry of Finance and Economy and the State Aid Commission, is actively refining the legal and procedural foundations to ensure that public support complements, rather than displaces, private sector initiatives.

As regards Rights of Way and Permitting Regulations, besides Law 120/2016, Albania has taken steps to simplify broadband permitting. For example, local authorities are now subject to streamlined timelines for issuing construction permits for broadband infrastructure. By law, permits should be given within a set number of days, although in practice telecom companies report delays of up to 60 working days or more for approvals in some municipalities. Challenges include limited technical expertise at the municipal level and overlapping responsibilities among agencies. To address this, an Integrated Strategic Steering Committee on "Connectivity" was formed in 2018, led by MIE, with a thematic group on telecommunications and broadband. This mechanism aimed to coordinate policies across ministries, regulators, and local governments, ensuring infrastructure projects (roads, energy, telecom) are synchronized. In recent years, MIE has introduced several important regulatory amendments aimed at simplifying the deployment of broadband infrastructure. Notably, Decision of the Council of Ministers (DCM) No. 457, approved on 29 June 2022, amended DCM No. 408 of 13 May 2015 on the Territorial Development Regulation to ease the permitting process for small mobile and Internet antenna installations. Building on this, DCM No. 377, approved on 12 June 2024, further revised the same regulation by exempting civil works related to electronic communications and telecommunications networks from requiring a building permit—aligning with Article 9 of the EU Gigabit Infrastructure Act (Regulation No. 2024/1309). Additionally, Ministerial Instruction No. 10, issued on 23 December 2024, promotes good practices based on the EU's common toolbox for reducing the cost of deploying very high-capacity networks. This guidance, partially aligned with Commission Recommendation (EU) 2020/1307, aims to streamline application procedures and foster a more investment-friendly environment for 5G network deployment across Albania.

Additionally, AKEP has created a national telecom infrastructure Atlas mapping existing fibre and towers to help identify where infrastructure sharing or new build is needed, and as a tool for both the government and operators to plan rural extensions. Atlas is in the process of being upgraded, with a Pre-Feasibility Study having been undertaken in 2022. Proposed upgrades would make Atlas more interoperable, automated, and granular, enhancing its value as a planning and regulatory tool.[122] For a more in-depth discussion of Atlas, please see Insight Box 5 below.

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[121] The Stakeholder Consultation Roundtable of March 2025 highlighted that the EU State Aid Guidelines have not yet been transposed into national law.

[122] Wb23-Alb-Dii-01: Development of A Broadband Atlas for Albania, Pre-Feasibility Study, 22 December 2022, https://www.wbif.eu/technicalassistancegrants//WB23-ALB-DII-01

Insight Box 5: Albania's Broadband Atlas Mapping System[123]

The Broadband Atlas is Albania's national digital mapping platform designed to provide a comprehensive geographic view of broadband infrastructure deployment, service availability, and network performance. As a strategic planning tool, it serves multiple stakeholder groups:

- Regulators **(e.g., AKEP, MIE): enabling evidence-based policy, investment, and infrastructure planning.**
- Telecom operators**: facilitating coordination, avoiding network duplication, and supporting efficient deployment.**
- Municipalities and utilities**: enabling infrastructure reuse, data sharing, and better local level planning.**
- The general public**: improving transparency on broadband availability and quality of service.**

The system offers both public and authorized access, supporting data visualization, basic analysis, and (for operators) data entry and infrastructure reporting.

Ongoing Upgrade and Reform Process

Albania is currently reviewing the Broadband Atlas to make it more comprehensive, interoperable, and future proof. This reform is being guided by a **pre-feasibility study** conducted under the **Western Balkans Investment Framework (WBIF)** and funded by the **European Union**. The study outlines a roadmap to improve data collection methods, enhance technical architecture, and strengthen collaboration between public and private stakeholders.

The upgraded Atlas is being aligned with EU regulatory frameworks, including the European Electronic Communications Code (EECC) **and the** Broadband Cost Reduction Directive (BCRD)**. Drawing from best practices in countries like France (ARCEP), Slovenia (AKOS), and Poland (UKE), the future Atlas will integrate statistical and geospatial datasets and feature advanced tools for identifying underserved "white areas" requiring targeted broadband investment.**

Implementation Progress and Technical Support

In 2023, AKEP, in cooperation with MIE, launched the *"Development of Albania's Broadband ATLAS"* project as part of the WBIF support framework. Key activities to date include:

- Municipal training**: In late 2022, AKEP conducted training sessions for all municipalities on how to use and contribute to the Atlas system.**
- Stakeholder consultations**: Feedback was gathered from telecom operators, municipalities, and other users to inform system enhancements.**
- International collaboration**: At the 2023 Regional Regulatory Forum in Budva, AKEP formally requested technical support from the ITU to assist with the next phase of development.**

In early 2024, the ITU supported the preparation of a **Technical Specification** for implementing the next-generation Broadband Atlas. This specification was delivered to AKEP to guide the transition into the second phase of the project.

Strategic Goals of the New Atlas

The upgraded Broadband Atlas aims to address the limitations of the current system and deliver several key improvements:

- Last-mile coverage**: Extend mapping capabilities to include last-mile infrastructure, especially for mobile and fixed wireless networks.**
- Municipal and utility integration**: Enable data sharing with municipalities and utilities, in line with the BCRD's infrastructure sharing goals.**
- Enhanced accuracy**: Improve the quality and precision of data through better collection tools and methodologies.**

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[123] Ibid.

- Granular visibility: **Provide detailed insights on infrastructure usage rates and ownership of both active and passive assets.**
- Cross-institutional data integration: **Incorporate datasets from key national stakeholders such as ASIG (buildings) and INSTAT (population).**
- White area identification: **Develop tools to better locate and prioritize unserved or underserved areas for broadband development.**

The successful modernization of the Broadband Atlas is considered a critical enabler for closing Albania's rural digital divide, supporting both national planning efforts and future donor-financed investments.

In late 2023, Albania established a Broadband Competence Office (BCO) within the MIE.[124] The BCO acts as a dedicated unit to manage broadband development projects, particularly those co-funded with the EU. Its creation (a requirement under EU guidance) strengthens institutional capacity for rolling out rural broadband by providing a one-stop entity that liaises between municipalities, ministries, and private operators on broadband initiatives. The BCO supports project preparation, tendering, and use of EU funds, which is crucial as Albania embarks on large investment programs for rural broadband. To strengthen collaboration and coordination with municipalities, the MIE sent a letter to all municipalities in February 2025 asking them for information regarding the rules / procedures linked with rights of way and building permissions, as well as to increase the cooperation with AKEP regarding the Atlas data.

Overall, Albania's regulatory framework is largely EU-aligned and pro-investment with an open market. The European Commission has noted that Albania has a *"well-structured institutional setup and a high level of legal alignment"*[125] in digital policy. The focus is now on effective implementation of these laws to translate them into on-the-ground connectivity improvements in rural areas.

Funding Mechanisms and Programs

Expanding broadband to rural Albania requires significant investment. To date, public funding has come from a mix of limited national funds and substantial support from donors (EU and other international partners).

Government Funding and Budget Initiatives

Historically, government budget allocations specifically for rural broadband have been minimal. The country has not yet established a permanent financing scheme (such as a Universal Service Fund or an operational state aid subsidy program) to finance network expansion in commercially unviable areas. This lack of domestic funding is recognized as a bottleneck, and the government is expected to develop such mechanisms (grants or vouchers for rural broadband) as part of its EU integration commitments.

Albania is in the process of operationalizing a state aid framework for broadband development that aligns with EU guidelines, with a focus on fostering investment in

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[124] As recommended in the 2020-2025 National Broadband Plan as a key measure to address institutional capacities and support: https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf and https://enlargement.ec.europa.eu/document/download/92844bd9-7cf4-4fb1-bcc2-b42a18371480_en?filename=AL_Cluster_3_report_FINAL_clean_publication.pdf

[125] EC, Albania Cluster 3 Report – FINAL, 2023
https://enlargement.ec.europa.eu/document/download/92844bd9-7cf4-4fb1-bcc2-b42a18371480_en?filename=AL_Cluster_3_report_FINAL_clean_publication.pdf

underserved "white areas" where commercial viability is limited. The National Broadband Plan explicitly outlines the use of state aid mechanisms—including subsidies, public–private partnerships (PPPs), and competitive tenders—to support network expansion in these areas. While a formal state aid framework was established in 2019, full alignment with EU State Aid Guidelines is still pending.[126] Nonetheless, the Government, through the Ministry of Finance and Economy and the State Aid Commission, is actively refining the legal and procedural foundations to ensure that public support complements, rather than displaces, private sector initiatives. Pilot broadband projects in northern regions such as Shkodra and Dibër illustrate early implementation efforts, supported by preparatory funding through the Western Balkans Investment Framework. These initiatives are structured to blend national resources with EU grants and donor contributions, setting a precedent for broader rural connectivity programs under development.

EU Pre-Accession Funds (IPA) and Western Balkans Investment Framework

Albania has actively leveraged EU grants and technical assistance for broadband. Key projects include Feasibility and Technical Studies: Under the Western Balkans Investment Framework (WBIF), Albania obtained a €520,000 EU grant for a Broadband Feasibility Study (approved in 2018). This study, completed in May 2020, analyzed gaps and proposed an investment plan for broadband infrastructure nationwide. It built on an earlier pre-feasibility study conducted with UNDP support in 2017 that had focused on four northern regions. The studies identified priority areas for intervention and detailed designs for network expansion, especially in rural municipalities.

As part of Albania's *100 Villages Rural Development Program*, a pilot broadband project targeting rural areas in Shkodër, Kukës, Tropojë, and Dibër was prepared.[127] WBIF approved €700,000 for detailed design, environmental and social assessments, and tender documents for this pilot in 2019. This pilot aimed to bring connectivity to underserved villages in mountainous regions and is tied into the national "100 Villages" initiative.

A much larger investment program is in the pipeline because of the above studies. The "Regional Broadband Infrastructure Development" project for Albania was being structured with support from the European Investment Bank (EIB) and EU IPA grants. It envisioned a blended financing approach totaling about €139 million to extend broadband nationwide, heavily benefiting rural areas.[128] In effect, this would bridge much of the rural connectivity gap. As of 2024, the project is pending – the feasibility study is

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[126] The Stakeholder Consultation Roundtable of March 2025 highlighted that the EU State Aid Guidelines have not yet been transposed into national law.

[127] WBIF subproject, WB24-ALB-DII-01 "Albania, Broadband Development in White Areas in Shkodra, Kukës, Dibra, Vlora, Gjirokastra, Fier, Berat, Korçë regions: Detailed Design, ESIA, Tender Documents", https://wbif.eu/technicalassistancegrants//WB22-ALB-DII-02 and MARD, Rural Development Programme 2021-2027, 2022, https://bujqesia.gov.al/wp-content/uploads/2022/09/Programi-IPARD-III_2021-2027_English.pdf

[128] The financing plan includes an expected €30 million EIB loan, around €25 million in Albanian government co-funding, and a request for roughly €41 million in EU grants, alongside an estimated €42 million from private sector contributions. This program aims to ensure broadband access (≥30 Mbps) for hundreds of public institutions and rural communities. According to project targets, it will connect 500 health facilities, 3,000 schools, and dozens of local government offices with high-speed Internet, and raise household broadband coverage to 70% nationwide (from around 30% today).

currently being updated, and funding sources will subsequently be finalized. Once approved, this would move to implementation (making it one of the largest public infrastructure investments in Albania's digital sector).[129]

Albania is also part of a regional broadband initiative to improve backhaul connectivity. In 2018, WBIF approved the Balkans Digital Highway project involving Albania, Montenegro, Kosovo, and North Macedonia. This project (grant of €1.4 million for the region) focuses on infrastructure sharing among power transmission operators to create a regional fibre optic network. Essentially, Albania's Transmission System Operator (OST) shares spare fibre capacity on its grid with neighboring countries, forming a cross-border broadband backbone. While this is more about regional high-capacity links than local access, it indirectly benefits rural areas by lowering the cost of bringing Internet backhaul to remote regions (leveraging existing electricity lines).[130]

International Financial Institutions

In addition to EU grants and EIB loans, other International Financial Institutions (IFIs) are supporting Albania's digital development. The World Bank and EBRD have incorporated broadband into their country strategies, although dedicated lending for rural broadband in Albania has been limited so far. The World Bank's recent country diagnostic noted Albania's lagging rural Internet access and emphasized the need for investment in digital infrastructure for inclusive growth.[131] The EBRD, for its part, has surveyed investor sentiment in Albania's broadband sector – identifying the need for public support in rural areas – and stands ready to co-finance projects alongside the EU.

EU Instrument for Pre-Accession Assistance (IPA) Projects

Beyond WBIF, Albania benefits from bilateral IPA projects. For example, under the EU Economic and Investment Plan for the Western Balkans (2021–2027), rural broadband is flagged as a flagship investment area. Two such "flagship" digital investments in the region (2021–2024) directed €176.8 million to rural broadband and digital education, with €44.6 million coming as EU grants.[132] Part of these funds will be allocated to Albania, particularly for equipping schools with Internet and technology (e.g. smart labs for 615 schools in Albania by 2030, according to regional targets)[133]. Moreover, Albania's National Plan for European Integration 2024–2026 includes commitments to adopt EU-aligned broadband policies and absorb pre-accession funds for connectivity.

Other Donor Programs

Albania has also seen support from programs like USAID and the UN for digital inclusion, although these are more focused on digital skills and e-services. A noteworthy current

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[129] WBIF, Regional Broadband Infrastructure Development, https://www.wbif.eu/project/PRJ-ALB-DII-001#:~:text=WBIF%20Grant%20WB19,1%2C374%2C468%20Total%20Loans%20%E2%82%AC%2030%2C000%2C000

[130] WBIF, Balkans Digital Highway, https://www.wbif.eu/project/PRJ-MULTI-DII-006

[131] WB, Albania E-Commerce Diagnostic: Leveraging the Digital Trade Opportunity, 2020, https://documents.worldbank.org/en/publication/documents-reports/documentdetail/781641608742366947/albania-e-commerce-diagnostic-leveraging-the-digital-trade-opportunity

[132] WBIF, Digital Future, https://www.wbif.eu/sectors/digital-infrastructure#:~:text=Overall%2C%20the%20digital%20future%20benefitted,IPA%20grants%20to%20these%20investments

[133] WBIF, Albania, https://www.wbif.eu/beneficiaries/albania

initiative is WiFi4EU / WiFi4WB, which directly engages municipalities (see next section). Under the new EU-funded "WiFi4WB" (Wi-Fi for Western Balkans) project launched in 2023, up to *500 municipalities across the Western Balkans* (including Albania) will receive grants to install free public Wi-Fi hotspots.[134] This project, co-funded by the EU and Germany (GIZ), builds on the EU's successful WiFi4EU program and will cover many small towns and villages. Each participating Albanian municipality can get funding to set up Wi-Fi access points in public squares, parks, libraries or museums, with ISPs handling the installation. The goal is to connect citizens in rural communities for free, at least in communal spaces, addressing affordability and access on a local scale. *WiFi4WB is currently open for applications* and is an example of targeted donor funding to boost connectivity at the municipal level.

In summary, donor-funded programs are in motion (planned or ongoing) to finance rural broadband, while domestic funding mechanisms are not fully in place. The feasibility and pilot design phases (2017–2020) are completed with some updates being undertaken to account of recent developments in broadband coverage, and Albania can soon move into large-scale implementation with substantial EU/EIB financial backing (investment phase pending final approval in 2024–2025). Meanwhile, stopgap measures[135] like WiFi4WB provide some immediate relief for connectivity in villages. A structured national funding program (e.g. state aid scheme or USF) remains to be established – its absence is being partly filled by the above international funds.

Municipal and Regional Initiatives

While national policies drive the agenda, there have been specific municipal and regional efforts to enhance rural broadband:

100 Villages Integrated Rural Development Program

Launched in 2018, the *100 Villages Integrated Rural Development Program* as mentioned above in relation to funding, aims to spur socio-economic development in selected rural villages across Albania (with a focus on agro-tourism, infrastructure, and services). As part of this holistic approach, improving digital connectivity in those villages is a component. New road construction and other infrastructure works in the 100 Villages are being leveraged to include telecom ducts/fibre. For example, investors note that under this program, when new roads are built in these villages, *"pipes are put in, so we don't have to dig [again]"* for fibre later.[136] This coordination means that these villages will be "broadband-ready" at lower cost. The broadband pilot project (backed by WBIF) in the four northern areas is essentially the telecom arm of the 100 Villages program. As regards status, the 100 Villages program was piloted in 2018–2020, and many infrastructure improvements (roads, water, etc.) in those villages have been completed. The broadband aspect is in progress: network designs have been drawn up for several pilot

[134] WiFi4WB, Free Public Wi-Fi Initiative by GIZ and EU, n.d. https://wifi4wb.eu/#:~:text=Gesellschaft%20f%C3%BCr%20Internationale%20Zusammenarbeit%20%28GIZ%29

[135] and such as the Digital Albania fund (now defunct)

[136] EBRD, Regional Broadband Infrastructure Development, Investor Perceptions and the Broadband Sector, Survey 2020, https://www.ebrd.com/content/dam/ebrd_dxp/assets/pdfs/legal-reform/infrastructure-and-natural-resources/ict/2020-broadband-sector-survey/Broadband%20sector%20SEE%20Region.pdf

villages, but full connectivity will materialize as the above-mentioned investment funds are deployed.

As described in the "Broadband Demand" Section above, municipalities have started establishing one-stop-shops and offering e-services to residents (e.g. civil registries, permit applications via the e-Albania system). However, a challenge emerged: some municipalities lack adequate Internet bandwidth to run these services effectively. The UNDP Digital Readiness Municipal Assessment 2024 found that in numerous local government units, the connectivity to offices was insufficient, hindering the functionality of digital services. For instance, the average rural municipal office might have only basic DSL or even rely on cellular data, which is not stable for high-volume use. In response, the central government (through NAIS) has been working to connect municipal offices and public Wi-Fi points via fibre where possible. The Regional Broadband project described earlier specifically includes connecting local administrations and public institutions in its targets. Thus, improving municipal connectivity is an integral part of the ongoing broadband plans.[137]

WiFi4EU / WiFi4WB Program

Municipalities and grassroots organizations have played an important role, where some municipalities have taken the initiative to provide Internet access to their communities. A few have partnered with ISPs to set up free Wi-Fi zones in town centres or at municipal buildings. For instance, under earlier EU pilots, towns received WiFi4EU vouchers (€15,000 each) to install hotspots in public spaces. Building on that, the WiFi4WB program as described above in the funding section (2023) has and will greatly expand free Wi-Fi in both cities and rural towns, covering an estimated 25 per cent of rural municipalities in the region in its first phase.[138] In Malësi e Madhe, a local ISP partnered with the municipality to install free Wi-Fi hotspots in village centres, enabling residents to access e-services. Similar programs have installed free public Wi-Fi in town squares and tourist villages, such as a solar-powered hotspot in the village of Nivica in 2021. A bilateral donor–funded project in Dibër connected several rural schools via point-to-point wireless links and provided free Wi-Fi in village centres by sharing the school's connection after hours.

Regional and Municipal Approaches

Albania's terrain and settlement patterns mean certain regions (notably the mountainous north and south) have similar connectivity challenges. There have been discussions of regional broadband rings – for example, connecting all municipalities within a region like Dibër with a fibre loop that then joins the national backbone. The WBIF pre-feasibility study in 2017 specifically *focused on four regions (Shkodër, Kukës, Dibër, and another) and 13 municipalities* to identify solutions. Those regions were prioritized

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[137] WBIF, Regional Broadband Infrastructure Development, https://www.wbif.eu/project/PRJ-ALB-DII-001

[138] Seenews, "EU, GIZ launch free public Wi-Fi hotspots project in Western Balkans", 2025, https://seenews.com/news/eu-giz-launch-free-public-wi-fi-hotspots-project-in-western-balkans-1273481. In Albania, dozens of municipalities are expected to benefit. This is a regional initiative, but the execution happens at municipal level – local authorities apply and oversee installation. While public Wi-Fi is not a substitute for home broadband, it provides immediate basic Internet access in villages (for emails, e-government, etc.) and raises digital awareness, potentially increasing future broadband demand.

due to their poor connectivity indicators. As a result, regional pilot projects are planned, such as the fibre backbone extension in the north. Additionally, regional development agencies (with donor support) have explored community networks or cooperative models, though none have materialized yet at large-scale. Cities like Korça have extended their own fibre networks and built a municipal fibre ring to connect key public institutions. These municipal networks have the potential to be expanded into neighboring villages, either directly or by leasing capacity to private operators.

Local Private Initiatives

In absence of formal municipal networks, some small private ISPs have effectively taken on the role of connecting smaller towns and rural neighbourhoods. These local operators often emerge in a specific city or region and gradually extend service to nearby villages, using fixed wireless or fibre. The Stakeholder Consultation of March 2025 confirmed that over 250 small ISPs exist in Albania, and some have begun expanding fibre in rural areas. For example, there are cases of fibre-to-the-home being deployed by local providers in semi-rural communities, and even trials of Broadband-over-Power-Line (BPL) using electric grids for Internet in villages.[139] These bottom-up initiatives often occur where big national operators have not invested, and sometimes municipalities facilitate them (by easing permits or granting access to municipal structures). While not "programs" in a formal sense, they are an important piece of the rural broadband puzzle and the government's strategy is to foster such private initiatives through an open regulatory regime.

Partnerships with the Private Sector

Public-private collaboration is crucial given that telecom operators control most of the existing infrastructure and have technical expertise. Several forms of partnership or coordination are in place:

Regulatory Coverage Obligations

AKEP has worked closely with MNOs to extend coverage to rural zones. As mentioned in the preceding section, AKEP based on AKEP Decision Nr.2648, dated 03. 12. 2015 identified areas of low population density lacking mobile broadband and, with operators (Telecom Albania, Vodafone, Albtelecom), agreed on coverage improvement plans. Operators were granted easier access to build towers in these areas (fast-tracked permits in cooperation with local authorities).[140] In return, they enhanced 3G/4G coverage in many villages. To accelerate the rollout of 5G, 5G licenses now include coverage obligations for rural areas. However, and as the Stakeholder Consultation 2025 revealed, due to the absence of compelling business cases and public funding mechanisms, operators are reluctant to invest in these areas. During the Stakeholder Consultation Roundtable of March 2025, operators requested clarity on potential use cases for 5G networks in rural and more specifically, agricultural settings.

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[139] The EBRD, Regional Broadband Infrastructure Development, Investor Perceptions and the Broadband Sector, Survey 2020, https://www.ebrd.com/content/dam/ebrd_dxp/assets/pdfs/legal-reform/infrastructure-and-natural-resources/ict/2020-broadband-sector-survey/Broadband%20sector%20SEE%20Region.pdf

[140] AKEP, Broadband regulatory developments in Albania, 2017, https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2017/Regulatory%20Conference/Session%202%20Klarina%20AKEP%20-%20Broadband%20Regulation%20-%20September-Budva-2017.pdf, slide 14

Infrastructure Sharing and Utilities

The government encourages telecom operators to share passive infrastructure (such as ducts, poles, and towers) and to make use of assets owned by utilities (electricity, road networks). For instance, Albtelecom (now One Albania) partnered with the state power company OST/OSHEE to lay fibre along high-voltage electric lines to reach remote areas.[141] The Law 120/2016 encourages utility companies to cooperate, and there have been cases of fibre being pulled through water company ducts or along railway lines in partnership with telecom firms. Such cross-sector collaborations can reduce deployment costs significantly (by avoiding new trenching) and are key to rural roll-out. The Stakeholder Consultation Roundtable revealed that despite a legal framework established in 2016 for utility infrastructure sharing, there is a lack of willingness from utility providers to share their infrastructure with telecom operators, citing security concerns.

Within the industry, Albania's telecom operators are also collaborating to improve rural broadband as revealed during the Stakeholder Consultation 2025. One example is infrastructure sharing among mobile operators – instead of each building separate towers in hard-to-reach areas, they sometimes share towers or grant network roaming in rural zones to cover the area cost-effectively. This has been encouraged by the regulator for efficiency as set out in the Legislative and Regulatory Section above. Another example is the use of Albtelecom / One's legacy copper network based on Law 120/2016: Albtelecom (which also provides DSL Internet) is obliged (and has allowed) other ISPs to use its exchanges, predominantly in small towns, to provide upgraded services.[142] Moreover, the government facilitates access to state-owned infrastructure—such as fibre along railways, power lines, and public building sites—which significantly reduces the capital cost for network rollouts in remote areas.[143]

Public-Private Investment Projects

As Albania moves into implementing the large broadband expansion program, a PPP-like model is anticipated. The financing structure (with private sector contributing €42 million of the €139 million total) implies that operators will invest alongside public funds.[144] One likely approach is a gap-funding model: the government (with EU support) will subsidize part of the capital expenditure in rural areas, while operators provide the rest and then operate the networks.[145] This model has been used in EU member states for rural broadband and is being adapted for Albania. A formal PPP framework may be used for building regional backbone loops or wholesale networks that private ISPs can then

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[141] The Balkans Digital Highway project formalizes a multi-country partnership of this kind, letting operators jointly use the fibre optic cables embedded in electric transmission infrastructure.

[142] AKEP, Market Overview and Regulation in Albania, 2016, https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2016/Regulatory%20Conference/Pojani%20session%206.pdf, confirms evidence of commercial uptake by four alternative ISPs; https://akep.al/wp-content/uploads/2024/01/Project-public-consultation-BB-wholesale-market-analysis-1.pdf - AKEP's 2024 Wholesale Market Access Analysis also confirms the ongoing albeit small-scale use of Albtelecom's facilities, typical of smaller municipalities.

[143] Law 120/2016 on "Development of high-speed electronic communications networks & right-of-way" – described in the legislative framework section.

[144] WBIF, Regional Broadband Infrastructure Development, https://www.wbif.eu/project/PRJ-ALB-DII-001

[145] A functional State Aid Framework that could facilitate PPPs has yet to be put in place.

leverage. While no major PPP contract has been signed yet for broadband, the BCO will be coordinating with all telecom operators to structure these investments.[146] According to feedback during the Stakeholder Consultation, operators (fixed and mobile) are involved in consultations under the national broadband plan, assessing their buy-in and co-investment interest.

Small ISPs and Community Networks

The presence of many small ISPs can lead to partnerships and consolidation. The government's stance is to support smaller operators in reaching rural customers, since they often are more willing to serve low-margin areas, as reaffirmed during the Stakeholder Consultation. To this end, AKEP has adopted "open access" regulatory measures – for example, requiring that any operator benefiting from public investment must offer wholesale access to others.[147] In some cases, municipalities have facilitated cooperative models where a local ISP partners with the municipality or a utility for a shared network (though these are still informal).[148] Such micro-level partnerships are expected to grow once the backbone reaches more villages. In this regard it should be highlighted, that during the Stakeholder Consultation Roundtable, smaller operators noted that wholesale access prices are at times too high. Larger operators noted that informal operations by smaller local ISPs are prevalent in rural areas, who often operate without proper registration or reporting, posing a challenge for regulatory oversight and inventory of infrastructure and undermining competition, which can have repercussions for prices and incentives to invest.

Private Sector Expansion and Innovative Solutions

The larger telecom operators are increasingly extending their networks into rural areas. For example, between 2018 and 2019, Vodafone built several new 4G base stations in rural blackspots—improving coverage in previously unserved areas in regions like Bilisht (Devoll) and Puka.[149] Following its merger, One Albania announced an ambitious plan to extend fibre-based broadband to 500,000 households by 2026, including deployment in semi-rural and small-town areas.[150] While fibre is being pushed outward as a priority,

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[146] EC, Albania Cluster 3 Report – FINAL, 2023
https://enlargement.ec.europa.eu/document/download/92844bd9-7cf4-4fb1-bcc2-b42a18371480_en?filename=AL_Cluster_3_report_FINAL_clean_publication.pdf
[147] Incumbent operators (e.g., Albtelecom, now One) are required to unbundle their copper local loops and provide bitstream or fibre access to alternative Internet Service Providers (ISPs). This ensures that even in less profitable rural zones, competitors have the opportunity to offer services. See: AKEP, Fixed Broadband wholesale market analysis, Draft public consultation, https://akep.al/wp-content/uploads/2024/01/Project-public-consultation-BB-wholesale-market-analysis-1.pdf
[148] Also, when the government rolls out fibre to a village school or clinic, they often partner with a local provider to extend that connection to nearby households (the provider gets bandwidth, the community gets service.)
[149] ITU, 5g Country Profile of Albania, 2020, https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2020/5G_EUR_CIS/5G_Albania-final.pdf , Vodafone's coverage map shows that previously black spots are now covered, see Vodafone Mobile's 3G / 4G / 5G coverage map - Bilisht, Bashkia Devoll, Korçë County, Southern Albania, Albania, https://www.nperf.com/en/map/AL_783606.Bilisht/208120.Vodafone-Mobile/signal and Vodafone Mobile's 3G / 4G / 5G coverage map - Puke, Bashkia Pukë, Shkodër County, Northern Albania, Albania, https://www.nperf.com/en/map/AL/3184388.Puke/208120.Vodafone-Mobile/signal
[150] Telecompaper, "Albania announces fibre expansion plans",2024, https://www.telecompaper.com/news/one-albania-announces-fibre-expansion-plans

One Albania's interim solution for very remote villages is FWA. The operator branded its LTE-router offer as HomeNet in 2020 (150 Mb/s headline).[151]

Responses to the Stakeholder Consultation revealed, that all major network operators in Albania have committed to significant infrastructure expansion efforts over the 2025–2030 period, with a dual focus on fixed and mobile broadband. FTTH/GPON (fibre-to-the-home) deployment continues to concentrate on urban and suburban areas, with rural rollout remaining largely dependent on public co-financing or subsidy schemes due to limited commercial viability. On the mobile front, 5G deployment plans are well-advanced, following a phased implementation roadmap that prioritizes strategic economic and population centres—including ports, hospitals, airports, highways, and tourism zones—with a goal of reaching 85 per cent population coverage by 2030. In parallel, operators are preparing for nationwide IoT enablement through LTE, with select plans to support agricultural use cases beginning around 2026 where demand exists. Satellite broadband is already in use as a fallback solution in hard-to-reach rural areas, particularly for public services and government institutions where terrestrial access is not feasible.

Insight Box 6: Operators' Infrastructure Priorities and Expansion Plans (2025–2030)[152]

- Operators are prioritizing the rollout of FTTH in urban and suburban areas, while rural fibre deployment is contingent on financial viability or public subsidies.
- Mobile network investment strategies are centred on phased 5G rollout, with targets to cover 85 per cent of the population by 2030. Initial 5G deployments focus on strategic locations such as cities, hospitals, ports, tourist zones, and national highways.
- IoT coverage over LTE is planned nationally, with IoT-based services for agriculture and rural zones to be introduced mid- to late-decade.
- Where fibre is unfeasible, satellite broadband is being deployed, particularly for public institutions or remote areas lacking backhaul.

Table 10 below provides a summary overview of key Strategies, Programmes, legal instruments, laws, regulations and others that directly or indirectly target the facilitation of rural broadband development.

Table 10: Overview of key strategies & programmes facilitating (rural) broadband development

Initiative	Status	Short Description
Digital Agenda 2015–2020	Completed	Delivered strong progress in e-government and digital skills; rural broadband gaps persisted, leading to updated strategy.
Digital Agenda 2022–2026	Ongoing	Focuses on inclusive digital transformation and broader Internet access aligned with EU Digital Decade.

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[151] Geek Room Albania, "One HomeNet – Shërbimi më i ri që mundëson internet super të shpejtë kudo", 2023, https://geekroom.al/tech/one-homenet-sherbimi-me-i-ri-qe-mundeson-internet-super-te-shpejte-kudo/, Kurti, Rudina, 5G Fixed Wireless Access – LinkedIn post, 2023, https://www.linkedin.com/posts/rudina-kurti-b46964118_5gfixedwirelessaccess-activity-7313116791122157568-ICk-

[152] Stakeholder Consultation Questionnaire Responses 2025

National Broadband Plan 2013–2020	Partially Completed	Met subscriber growth targets; rural access goals only partially achieved.
National Broadband Plan 2020–2025	Ongoing	Prioritizes high-speed network expansion in rural areas with technical studies completed; investment phase in preparation.
National Strategy for Development and Integration (NSDEI) 2022–2030	Drafted	Prioritizes digital infrastructure, rural broadband, and 5G rollout within Albania's EU integration framework.
Law No. 120/2016 (Broadband Infrastructure Law)	In Force	Enables infrastructure sharing, rights of way, and dig-once principles; aligned with EU Cost Reduction Directive.
Law No. 54/2024 on Electronic Communications (EECC Alignment)	In Force	Fully aligns Albania with EU telecom code; strengthens infrastructure sharing, affordability, and co-location rules.
DCM No. 457 of 29.06.2022	Approved	Introduced lighter permitting rules for mobile antennas and Internet infrastructure.
DCM No. 377 of 12.06.2024	Approved	Exempts broadband civil works from building permit requirements; aligned with EU Gigabit Infrastructure Act.
Ministerial Instruction No. 10 of 23.12.2024	Approved	Adopts EU toolbox best practices for cost reduction and 5G investment facilitation.
5G Spectrum Licensing with Coverage Obligations	In Force	Licenses issued in 2024 require 85% population coverage by 2030; obligations for ports, roads, hospitals, and cities.
Municipal and Local Connectivity Initiatives	Ongoing	Includes fibre extensions, coordinated ducting, and free Wi-Fi by municipalities or in public buildings.
Broadband Atlas Upgrade Project	Ongoing	Aims to create real-time, granular, interoperable infrastructure mapping supported by WBIF and ITU.
Broadband Competence Office (BCO)	Established (2023)	Coordinates broadband investment and implementation; liaises with municipalities and telecom operators.
WiFi4EU / WiFi4WB Programme	Ongoing	Provides free public Wi-Fi in rural municipalities through EU and GIZ funding.
100 Villages Integrated Rural Development Programme	Ongoing	Coordinates infrastructure investments with broadband-ready design (e.g., ducting during road works) through EU funding (IPARD, IPA)
WBIF/EIB Broadband Investment Project	Planned	€139M national rural broadband expansion project; implementation pending updated feasibility and funding confirmation.
DART Programme (Digital Agriculture and Rural Transformation)	Ongoing	National initiative supporting rural connectivity and digital agriculture adoption through policy, pilot projects, and extension training implemented by FAO, ILO and ITU and funded by the joint SDG Fund.
Digital Valley Albania (DiVA)	Launched (2025)	Supports rural digital innovation, skills, and integration of emerging tech (AI, IoT) in agriculture and entrepreneurship funded by the European Commission.
European Digital Innovation Hubs Network (DIU)	Ongoing	The Digital Innovation Unit is a leading-edge hub in Albania, fostering digital transformation by supporting entrepreneurs, startups, and SMEs funded by the European Commission.
FAO Agritourism and Digitalization Project	Ongoing	Promotes digitalization of agrifood chains and rural tourism models; focuses on youth and women-led rural businesses.

Smart Villages Pilot Initiative	Pilot Phase	Demonstrates digital solutions (e.g., smart irrigation, e-marketplaces) in 5 rural zones; supported by UN and EU partners.
Farmer's Portal	Launched (2023)	Online platform for subsidy applications, registry management, and advisory services targeted at rural farmers, currently being updated and enhanced through the DART Project.

Source: Stakeholder Consultation 2025, desk research

CHALLENGES AND BARRIERS TO RURAL CONNECTIVITY

Expanding connectivity in rural Albania faces several interrelated challenges. These range from infrastructure investment shortfalls to socioeconomic factors and policy gaps. This section outlines the key challenges and barriers to rural connectivity. Insight Box 7 below sets out network operators' perspectives on key challenges and barriers to rural broadband expansion.

Insight Box 7: Network Operators' Perspective on Key Challenges and Barriers to Rural Broadband Infrastructure Expansion[153]

Economic and Technical Barriers

- **Rural broadband is seen as commercially unviable** without public co-financing, due to low population density, poor demand, and high infrastructure and operational costs.
- **High capital expenditures** are required for backhaul connections and site development in remote areas, especially where existing infrastructure is lacking or owned by dominant operators with high lease prices.

Legal and Administrative Barriers

- **Construction permits** for broadband infrastructure are often processed as if they were for buildings, leading to long delays (ranging from several months to over two years).
- **Fragmented permitting procedures**, including inconsistent rules across municipalities and the requirement for multiple institutional approvals, contribute to further delays and uncertainty.
- **Land registration issues**, particularly in rural zones, hinder the construction of mobile towers or fixed installations due to missing or unclear ownership titles.

Regulatory and Institutional Environment

- The **legal framework** is generally aligned with EU directives, but **implementation remains inconsistent**, especially at the municipal level.
- Operators point to **a lack of integrated policies** between infrastructure, agriculture, and rural development, leading to fragmented planning and inefficiency.
- **Regulatory enforcement** is weak in rural areas, particularly in relation to small ISPs who are perceived to operate without compliance with licensing, QoS, or fiscal obligations.

Infrastructure Sharing and Access to Utilities

- Operators express **support for infrastructure sharing**, and in some cases, have agreements in place with other telecom operators.
- However, **access to utility-owned infrastructure** (e.g. electricity poles) is problematic due to lack of cooperation from utility providers or unresolved regulatory frameworks.
- There is a need for **standardized pricing models**, streamlined access procedures, and stronger enforcement mechanisms for sharing passive infrastructure such as ducts and poles.
- The **ATLAS infrastructure mapping platform** is seen as a useful concept but is criticized as being outdated, incomplete, or not fully transparent; operators advocate for real-time, standardized updates and municipal participation.

Spectrum and 5G Licensing

- While operators have secured **3.5 GHz spectrum licenses**, the **high cost of spectrum fees**—including for microwave links and other bands—is cited as a barrier to accelerated deployment, especially in rural areas.

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[153] Network Operator Stakeholder Consultation Questionnaire Responses 2025

- There is interest in the **upcoming 700 MHz band auction**, but success hinges on keeping auction fees low to incentivize investment in non-commercial areas.
- Operators are open to **public-private partnerships** to expand 5G coverage in rural or agricultural zones if supported by appropriate incentives.

Quality of Service and Consumer Protection

- Operators report ongoing **network optimization and monitoring** in line with regulatory requirements, using advanced tools and user feedback systems.
- Speed test platforms are widely available, and customer complaint mechanisms are generally in place.
- Increases in network performance—especially through technology upgrades such as migration to GPON and WiFi 6—are seen as central to enhancing rural broadband quality.

Market Dynamics and Fair Competition

- Operators describe a **saturated and uneven market**, particularly in the fixed broadband sector, where over 250 ISPs are active—many operating informally or outside of regulatory oversight.
- **Informal or unlicensed ISPs** are seen to distort competition by offering low-cost services without complying with standards or contributing to fiscal and legal obligations.
- In some cases, **local monopolies** exist in residential buildings or areas, where dominant small ISPs block larger providers from entering.

Digital Inclusion and Affordability

- All operators acknowledge that **affordability remains a key barrier** for rural broadband adoption, especially among low-income and low-literacy populations.
- Some operators offer **discounted plans**, loyalty platforms, and low-cost bundles for specific groups (e.g. students, users with disabilities), while others have not yet implemented targeted rural strategies.
- The **cost of devices** and lack of subsidies for routers or smartphones is cited as a barrier to uptake in farming and remote communities.

Broadband for Agriculture and Smart Farming

- Fixed broadband for farmlands is limited and typically only available near roads or in areas with existing urban backhaul.
- Mobile broadband (4G) covers nearly all agricultural zones, but **actual usage by farmers is low**, with limited adoption of smart agriculture solutions.
- Barriers include **low digital awareness, affordability challenges, fragmented landholdings**, and a lack of local agri-tech content or tailored service packages.
- One operator has piloted **IoT-based smart agriculture projects** in partnership with agribusinesses and donors; others are planning services post-2026.
- All operators are **open to PPPs** and public funding mechanisms for agri-connectivity if such initiatives are structured to reduce investment risk and support targeted outreach.

Recommendations from Operators

- **Streamline and digitize permitting procedures**, separating telecom infrastructure permits from general construction regulation.
- **Include broadband infrastructure in all public works planning**, particularly roads and power lines ("Dig Once" principle).
- **Strengthen regulatory enforcement** against non-compliant ISPs and implement competitive safeguards (e.g., geographic market segmentation).
- **Subsidize spectrum fees, reduce 5G equipment taxes**, and incentivize rural rollout through state aid or Universal Service mechanisms.
- **Enhance ATLAS and create a centralized digital infrastructure registry** to support coordinated planning and investment.

- **Boost digital literacy**, especially in agricultural areas, and promote demand creation through training, bundled services, and digital content localization.

Infrastructure Gaps and Investment Shortfalls

The primary obstacle to rural connectivity is inadequate fibre-based broadband infrastructure, especially in remote, mountainous regions. Albania historically had one of the lowest fixed broadband penetration rates in the region – only about *10 per cent* of households had fixed broadband a few years ago, reflecting minimal rural coverage[154]. In Q1 2024, the fixed rural population penetration rate stood at an average of 9 per cent, with an urban fixed penetration rate triple that amount of 31 per cent.[155] Building and maintaining networks in rural areas is costly due to challenging terrain, dispersed settlements, and limited return on investment for operators. A sizable proportion of rural locations rely on mobile networks, with fibre-optic deployments mainly present in larger villages and towns. Mobile operators likewise focused their 4G rollout on cities and main transport corridors first, so several rural settlements are still uncovered or have weak signals. The high cost of deploying backhaul (fibre or microwave links) to isolated areas is a major hurdle. Although Albania's terrain makes wireless solutions attractive, even building cell towers on rugged terrain or power supply to remote sites requires significant capital. Even where 4G mobile coverage exists, some rural settlements experience poor signal or no capacity for home broadband usage. For example, in Valbona residents struggle with unstable Internet especially in winter or peak tourist seasons[156]. Consequently, isolated villages often remain underserved or completely without fixed broadband infrastructure. The absence of significant public funding or universal service mechanisms has exacerbated these infrastructure gaps.[157]

In response to the Stakeholder Consultation, operators uniformly cite the high costs of extending infrastructure to low-density areas, which include both capital expenditures for backhaul and the ongoing burden of operations and maintenance. Return on investment is deemed unsustainable in the absence of subsidies, especially where access to backbone networks is limited or prohibitively priced. These challenges are compounded by administrative delays in the permitting process, where telecommunications infrastructure is often subjected to the same approval pathway as residential or commercial construction. The lack of land ownership documentation in many rural areas presents a further barrier, particularly for mobile tower deployment, where the absence of title deeds prevents legal siting and registration.

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[154] WBIF, Albania, Pilot Project for Rural Broadband Development in Shkodra, Tropoja, Kukës and Dibra: Detailed Design, ESIA, Tender Documents, https://wbif.eu/technicalassistancegrants/WB22-ALB-DII-02
[155] AKEP, Fixed Broadband wholesale market analysis, Draft public consultation, 2024, https://akep.al/wp-content/uploads/2024/01/Project-public-consultation-BB-wholesale-market-analysis-1.pdf
[156] FAO, Digital Villages Initiative – Tropoja Village (Albania), n.d. https://www.fao.org/digital-villages-initiative/europe/digital-villages/tropoja-village/en
[157] AKEP Annual Report, 2023, https://akep.al/en/about-akep/#raporte; National Broadband Plan, 2020, https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf

Insight Box 8: Key messages in relation to Broadband Connectivity from the Draghi Report "The Future of European Competitiveness"[158] (Part B)

The Draghi Report *"The Future of European Competitiveness"* (Part B) highlights broadband infrastructure as a critical enabler for improving Europe's competitiveness in the digital age. It makes a compelling case for **redefining how Europe finances its broadband infrastructure**, urging a **shift from fragmented and undercapitalized models** toward a more **coordinated, investor-friendly ecosystem** that leverages both public and private capital. This approach is essential to closing the investment gap, enhancing competitiveness, and securing digital sovereignty.

Below is a summary of the key messages related to broadband investment and its role in supporting Europe's economic strength and strategic autonomy:

1. Broadband Connectivity as a Foundational Competitiveness Factor

- **High-speed and high-capacity broadband networks** are emphasized as a *cornerstone of Europe's digital transformation* and industrial competitiveness. The report underscores that without this digital infrastructure, advanced technologies such as AI, cloud computing, and the Internet of Things (IoT) cannot be deployed at scale.
- The document notes that **network availability and performance** are becoming central to economic productivity, innovation diffusion, and territorial cohesion.

2. Europe's Gaps in Broadband Deployment

- Europe **lags global competitors**, particularly the U.S. and parts of Asia, in terms of widespread availability and adoption of very high-capacity networks (VHCNs), including fibre-to-the-premises (FTTP) and 5G.
- Investment levels in fixed and mobile networks in the EU remain **fragmented and subscale**, often constrained by insufficient returns on investment due to market fragmentation and regulatory barriers.

3. Strategic Objectives for Broadband Investment

The report outlines key objectives and actionable recommendations:

- **Accelerate VHCN roll-out**, especially in underserved and rural areas, to ensure inclusive access and reduce the digital divide.
- **Strengthen investment incentives** through predictable regulatory frameworks and supportive spectrum management.
- **Modernize and harmonize permitting processes** to reduce deployment costs and delays across Member States.
- **Boost public and blended finance** (e.g., via the Recovery and Resilience Facility and Connecting Europe Facility) to crowd in private investment and bridge market failures in less profitable areas.

4. Proposals for Policy and Governance Reform

- Proposes **a "Digital Infrastructure Act"** to establish unified rules and governance for deployment, facilitate coordination across Member States, and support cross-border infrastructure planning.
- Calls for the creation of **a single digital market for telecoms**, addressing fragmentation in regulation, taxation, and investment frameworks that currently hinder network scale-up and innovation.
- Suggests **pooling EU resources** to support strategic projects (e.g., cross-border fibre corridors, 5G for industrial clusters), as part of a broader strategy to boost Europe's digital sovereignty.

5. Broadband and the Green Transition

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[158] EC, the Draghi Report: A competitiveness strategy for Europe (Part A), In-depth analysis and recommendations (Part B), https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en

- The report links broadband investment to **climate goals**, emphasizing that digital infrastructure (e.g., smart grids, digital twins, remote work capabilities) enables reductions in emissions and improves energy system efficiency.
- Recommends promoting **green-by-design networks** and ensuring that digital infrastructure itself is energy-efficient and sustainable.

6. Economic and Industrial Spillovers

- Broadband networks are seen as essential to enabling **industry 4.0**, digital public services, health tech, and education.
- Investment in broadband is expected to **drive productivity** and support innovation ecosystems, particularly SMEs and startups, through better access to cloud and edge computing services.

Key insights and proposals specifically targeting broadband network funding:

1. The Investment Gap and Financial Challenges

- The EU faces an estimated **€173 billion investment gap** in digital connectivity to meet its 2030 targets — including €114 billion for gigabit broadband and €33 billion for full 5G coverage.
- Telecom operators, who are expected to deliver this infrastructure, are financially constrained. The **return on capital employed (ROCE)** has been consistently lower than the **weighted average cost of capital (WACC)** across Europe's telecom sector, making future investments financially unattractive.
- Telecom market fragmentation (with 34 MNOs and 351 MVNOs) and low prices reduce profitability and discourage large-scale, long-term investment.

2. Proposed Financing and Funding Models

To address this, the report proposes a **multi-pronged strategy** to mobilize both public and private capital:

a) Private Sector Mobilization

- **Increased private investment** is highlighted as a priority, especially for 5G standalone and fibre networks.
- The EU is urged to support the **consolidation of telecom players** to enhance profitability and investment capacity.
- **Public guarantees**, **syndicated loans**, and **quasi-equity instruments** (particularly through the EIB and National Promotional Banks) are proposed to **de-risk private investments**, especially for long-term infrastructure projects like broadband.

b) Public-Private Co-financing Models

- **Blended financing models** are encouraged, combining **grants from EU programmes** (e.g. the Multiannual Financial Framework and the Connecting Europe Facility) with loans and guarantees to attract upfront private capital.
- The report calls for innovative **"pay-back mechanisms"** for infrastructure (e.g. broadband and grids) that do not lead to direct increases in end-user prices.

c) New Governance and Regulatory Structures

- A proposed **"EU Telecoms Act"** would harmonize regulation, simplify rules, and facilitate **cross-border mergers and EU-wide services** — enabling telecom firms to operate at greater scale and attract investment more efficiently.
- Measures include a **passporting system for B2B services**, unified **spectrum auctions**, and pan-EU **technical standards** for APIs, edge computing, and IoT infrastructure.

d) Stimulating Industrial Demand

- The EU is encouraged to **support industry uptake** of new connectivity solutions (e.g. O-RAN, edge computing) to create stronger business cases for telecom operators, thereby incentivizing network upgrades and extensions.

e) Satellite Connectivity and Remote Area Coverage

- The **IRIS2 satellite programme** is another example of blending public (EUR 6 billion) and private (EUR 2.5 billion) investment to expand broadband access in rural and remote areas.

3. Summary of Financial Instruments and Contributors

Instrument/Mechanism	Contributor(s)	Objective
Public guarantees	EIB, NPBs	De-risk private loans for long-term broadband projects
Syndicated loans	EIB, private banks	Reduce risk concentration for telecom infrastructure finance
Equity/quasi-equity	Public-private partnerships	Attract long-term investors while maintaining public interest
Blended finance	EU budget + private funds	Fund satellite, rural broadband, and critical digital infrastructure
Spectrum reform	National & EU regulators	Create incentives aligned with long-term investment needs
Market consolidation	Industry + regulators	Improve investment returns by enabling scale

Affordability and Economic Barriers

Economic factors significantly limit broadband adoption in rural Albania. Although Albania's entry-level national average broadband prices in the previous years were relatively affordable by international standards – around 1.3–1.9 per cent of Gross National Income ("GNI") per capita for a monthly broadband plan[159], which meets the UN affordability target of <2 per cent of income, the reality differs in rural areas, where incomes are relatively lower than in areas such as Tirana. Many rural families find monthly fixed broadband subscriptions (1,200–1,500 ALL or approximately €10-13) financially burdensome, thus limiting demand even where connectivity exists.[160] Recent figures from AKEP on ICT bundles reveal an increase in ICT expenses from 2022 to 2023, as set out in the table below.

Table 11: ITU ICT bundle expenses compared to the GNI per capita (2022/2023)

ITU ICT bundles	Albania		Global Average
	2022	2023	2023
Fixed broadband access bundle (256kbps/5GB)	1.27	2.07	2.21
Low-use mobile service bundle (70 min + 20 SMS)	1.09	1.59	0.73
Low-consumption voice/sms/Internet mobile bundle (70 min + 20 SMS + 500 MB)	1.45	1.59	1.35
Only mobile Internet bundle	2.17	2.07	0.84
High-consumption voice/sms/Internet mobile bundle (140 min + 70 SMS + 2GB)	1.45	2.07	2.00

Source: AKEP Annual Report 2023, p. 52

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[159] MIE, National Broadband Plan, 2020 https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf

[160] Albanian Daily News, "How Many Hours of Work Do Albanians Need to Pay Internet Bill", 2024, https://albaniandailynews.com/news/how-many-hours-of-work-do-albanians-need-to-pay-Internet-bill

Furthermore, the upfront cost of a computer or a smartphone can also be prohibitive. Many rural households do not own a computer, and while most have basic mobile phones, not all can afford Internet-capable smartphones or data plans. Moreover, the standard Value Added Tax (VAT) rate applied to ICT devices such as smartphones and laptops is 20 per cent, and import duties on these products are generally set at 0 per cent, in line with international trade commitments.[161] While this aligns with broader fiscal policies, the current VAT level still poses a financial barrier for many low-income and rural households seeking to access digital tools essential for education, agriculture, and public services. In contrast, countries like North Macedonia have introduced a reduced VAT rate of 5 per cent on ICT equipment to support digital inclusion. To enhance digital accessibility and support the uptake of broadband and digital services in underserved communities, Albania could consider introducing a reduced VAT rate on basic ICT devices as a targeted measure to make digital tools more affordable and inclusive.[162] Additionally, the absence of cheaper, low-tier service options in some places (for example, some villages might only have one provider offering a relatively expensive package) means no budget alternatives for low-income users. Mobile broadband, while widespread, can also be costly, deterring extensive usage among low-income rural households.[163] Without targeted measures (like subsidized services for low-income households or community Internet access points), affordability will continue to limit rural connectivity uptake.

As revealed by the responses to the Stakeholder Consultation Questionnaire, operators take the stance that affordability remains a significant barrier to rural broadband adoption, particularly in regions where household income levels are below the national average. While some operators offer discounted or customized bundles for students, people with disabilities, and low-income households, others report no current rural pricing strategy due to lack of economic viability. Device affordability is also a constraint, with the cost of routers, smartphones, and PCs acting as a barrier to initial connectivity. Operators support initiatives such as device subsidies, digital voucher schemes, and VAT reductions on ICT equipment as effective levers to improve access. However, these require clear public policy backing and alignment with national digital inclusion strategies.

Regulatory and Administrative Hurdles

Albania's policy and regulatory framework for broadband has been evolving, but certain delays and gaps have and continue to impede rural connectivity. Albania still lacks a dedicated Universal Service Fund (USF), or a comprehensive subsidy mechanism (including for state aid) specifically aimed at rural broadband deployment, making network expansion in economically unattractive areas difficult.[164] While efforts are underway to introduce broadband as a universal service and enable a state aid

[161] Grant Thornton, Indirect Tax Guide – Albania, https://www.grantthornton.global/en/insights/indirect-tax-guide/indirect-tax---Albania/
[162] A4AI, Eliminating Luxury Taxation on ICT Essentials – Good Practices, n.d. https://a4ai.org/research/good-practices/eliminating-luxury-taxation-on-ict-essentials/
[163] MediaPost, "Digital Quality of Life Study Reveals How Countries Stack Up", 2020, https://www.mediapost.com/publications/article/354124/digital-quality-of-life-study-reveals-how-countrie.html
[164] MIE, National Broadband Plan, 2020 https://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBand-EN.pdf

mechanism[165], progress is slow, leaving rural areas without guaranteed broadband provision. It should be noted that the stakeholder consultation revealed that MIE is undertaking an update of the WBIF Feasibility Study, Cost-Benefit Analysis and Costing estimation for the remaining "white areas" in Albania. Therefore, Albania is making efforts to close the rural divide through donor funding.

Regulatory hurdles such as complex permit processes for deploying infrastructure and limited enforcement of infrastructure sharing regulations have also hindered rural broadband expansion. For example, different municipalities had varying fees and procedures for right-of-way, and there was no "single window" for telecom permits. Moreover, the UNDP Municipal Digital Readiness Assessment Albania 2024 highlights that municipalities often lack expertise or budgets to facilitate broadband (for instance, coordinating digging of fibre ducts when rebuilding roads). In addition, the EU Gigabit infrastructure Act (GIA) still needs to be transposed into national law.

While operators agreed in their responses to the Stakeholder Consultation Questionnaires that Albania's legal and regulatory framework is largely aligned with EU directives, they highlighted continuing implementation gaps and institutional fragmentation as key barriers that hinder rural broadband expansion. Operators report inconsistencies in how laws are applied across municipalities and ministries, creating procedural inefficiencies and prolonged delays.

A shared concern is the prevalence of the widespread presence of unregistered or non-compliant providers in rural and peri-urban areas, often offering low-cost services without adherence to legal, fiscal, or quality obligations. These practices not only distort market dynamics and undermine investment incentives, but also create uneven service standards, further entrenching the rural digital divide. In some cases, exclusive agreements between building managers and specific ISPs prevent fair access by larger providers, effectively creating localized monopolies. Operators call for stronger regulatory enforcement, geographic market segmentation, and clearer ISP registration and compliance procedures to ensure a level playing field.

In the area of infrastructure sharing, operators expressed general support for infrastructure sharing but report significant challenges in accessing utility-owned infrastructure—particularly that of the national electricity distributor. While some collaboration between telecom providers exists, broader infrastructure sharing remains constrained by the absence of standardized procedures, enforceable obligations, and a transparent pricing regime. The national broadband infrastructure mapping platform, ATLAS, though seen as a valuable concept, is considered outdated and lacking in both functionality and data completeness. Municipal contributions to ATLAS are minimal or non-existent, and updates are neither systematic nor operator-accessible, limiting its utility as a real-time planning and coordination tool.

Spectrum policy and 5G licensing are seen by operators as decisive factors in enabling (or hindering) rural broadband expansion, particularly in mobile networks. While operators have acquired licenses in the 3.5 GHz band, they report that the high cost of licensing fees—both for spectrum and microwave backhaul—significantly impacts

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[165] New Law on Electronic Communications in the Republic of Albania, 2022, https://www.infrastruktura.gov.al/wp-content/uploads/2022/07/Albania-Draft-New-Law-on-Electronic-Communication-July-7-Rev-2_.pdf

deployment timelines and coverage breadth. There is a broad consensus that forthcoming auctions, particularly for the 700 MHz band, should be structured to encourage rural investment by lowering base prices and fees. In general, operators view 5G rollout in rural areas as viable only through a combination of targeted spectrum pricing policies, infrastructure-sharing incentives, and public-private partnership arrangements.

Insight Box 9: Key actions that facilitate the sharing of infrastructure put forward in the EU GIA[166]

The GIA introduces several measures aimed at streamlining the deployment of networks:

- Shared use of infrastructure - Encouraging the shared use of ducts and poles for deploying very high-capacity networks (VHCN) to optimize resources and reduce costs.
- Co-deployment and Coordination of Civil Works – enabling telecom operators to collaborate with public works projects to install fibre optic cables simultaneously, reducing disruptions and expediting broadband expansion.
- Streamlining Administrative Procedures: Simplifying administrative procedures related to network rollout throughout the EU to reduce bureaucratic hurdles and improve efficiency.
- Equipping Buildings with High-speed Ready Infrastructure: Encouraging the provision of buildings with high-speed ready infrastructure and ensuring access to it to facilitate broadband deployment and adoption.

The GIA also seeks to reduce the environmental footprint of electronic communications networks by promoting the deployment of more environmentally efficient technologies, such as fibre and 5G. The re-use of existing physical infrastructure and the greater coordination of civil works will also contribute to reducing the overall environmental impact of deploying networks, through a more efficient use of resources.

The government has taken steps to simplify aspects of some of the barriers (e.g. adopting new rules to streamline permits for 5G network deployment in 2022).[167] In this regard, the stakeholder consultation has revealed that some progress was made regarding permitting and regulatory barriers, with two sub-legal acts passed in 2022 (regarding building permissions for small antennas / small cells) and 2024 (civil works for electronic networks are not subject to building permissions anymore, which makes the process of roll-out faster) to streamline and accelerate the process for rolling out communications networks. Operators are, however, still facing hurdles and continue to request a separation of the process of rolling out electronic telecommunications networks from permitting process for housing and building construction, an issue that was already identified during the consultation phase for the National Broadband Plan 2020-2025.

Digital Literacy and Awareness

Even when infrastructure exists, limited digital literacy in rural communities impedes broadband adoption and actual uptake of digital agriculture solutions remains minimal.

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[166] EC, Recommendation on the regulatory promotion of gigabit connectivity, 2024, https://digital-strategy.ec.europa.eu/en/library/recommendation-regulatory-promotion-gigabit-connectivity ; and EC, Gigabit Infrastructure Act, https://digital-strategy.ec.europa.eu/en/policies/gigabit-infrastructure-act
[167] EC, Albania 2024 Report , https://enlargement.ec.europa.eu/document/download/a8eec3f9-b2ec-4cb1-8748-9058854dbc68_en?filename=Albaniaper%20cent%2020Reportper%20cent%20202024.pdf ; Natalija Gelvanovska-Garcia," From conflict to cooperation: Building a digital highway across the Western Balkans", World Bank Blog, 2023, https://blogs.worldbank.org/en/europeandcentralasia/conflict-cooperation-building-digital-highway-across-western-balkans

Many rural residents, particularly older individuals and marginalized groups such as women and elderly populations, often lack the necessary skills to use digital tools effectively.[168] Educational disparities, generational gaps, and cultural attitudes towards technology further widen this divide.[169] Initiatives aimed at improving digital literacy are emerging but remain insufficiently widespread, leading to low usage of available services. Enhancing digital skills training and raising awareness about the benefits of digital connectivity is essential for bridging this usage gap.[170]

In response to the Stakeholder Consultation Questionnaire, operators report very limited demand for precision farming, IoT-based irrigation, or farm management systems, attributing this to low digital awareness, affordability issues, fragmented land ownership, and a general lack of locally tailored agri-tech content or tools. While some pilot initiatives have been introduced—particularly in partnership with development agencies—most connectivity in agriculture remains limited to basic LTE access.

Insight Box 10: Policies, Recommendations, and Guidelines on Digital Skills Development and Internet Adoption

The period 2020 - 2024 has seen significant efforts by international organizations to develop policies, recommendations, and guidelines aimed at enhancing digital skills and promoting Internet adoption. For example, ITU, GSMA, and the European Commission have been at the forefront of these initiatives, focusing on bridging the digital divide and equipping individuals and communities with the necessary digital competencies to thrive in the digital age.

Key Initiatives and Recommendations

ITU

1. **ITU Digital Skills Toolkit 2024**[171]:

   - **Objective**: To provide policymakers and stakeholders with practical guidance on developing national digital skills strategies.
   - **Components**: Engaging stakeholders, assessing existing policies, developing strategies for various proficiency levels, and focusing on under-represented groups.
   - **Implementation**: The toolkit offers step-by-step guidance and examples from global programs to serve as models for developing and implementing digital skills strategies.

2. **Digital Skills Insights 2021**[172]:

   - **Focus**: Examines the impact of COVID-19 on digital skills development and anticipates future digital skills requirements.
   - **Key Messages**: Emphasizes the need for digital skills as a key enabler for digital transformation and economic resilience. Highlights the importance of adapting digital skills frameworks to local contexts, particularly in developing countries.

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[168] Citizens, "Digital governance penalizes pensioners and rural areas, lacks access to online services", 2024, https://citizens.al/en/2024/03/01/qeverisja-dixhitale-penalizon-pensionistet-dhe-zonat-rurale-mungon-aksesi-ne-sherbimet-online/

[169] FAO, Digital Villages Initiative – Tropoja Village (Albania), https://www.fao.org/digital-villages-initiative/europe/digital-villages/tropoja-village/en

[170] EC, Albania Report, 2024, https://enlargement.ec.europa.eu/document/download/a8eec3f9-b2ec-4cb1-8748-9058854dbc68_en?filename=Albania%20Report%202024.pdf

[171] ITU Digital Skills Toolkit, 2024 https://academy.itu.int/itu-d/projects-activities/research-publications/digital-skills-toolkit

[172] ITU, Digital Skills Insights 2021, https://academy.itu.int/itu-d/projects-activities/research-publications/digital-skills-insights/digital-skills-insights-2021

3. **Digital Transformation Centres (DTC) Initiative**[173]:

   - **Objective**: To strengthen digital capacities in underserved communities through training in basic and intermediate digital skills.
   - **Impact**: Over 100,000 people trained, with a focus on marginalized groups including women and youth.

GSMA[174]

1. **GSMA Innovation Fund for Mobile Internet Adoption and Digital Inclusion**:

   - **Purpose**: To address key barriers to mobile Internet adoption and deliver life-enhancing mobile Internet services.
   - **Achievements**: Funded startups and SMEs across Africa and Asia, focusing on closing the mobile Internet usage gap and delivering sustainable impact to local communities.

2. **Mobile Internet Skills Training Toolkit (MISTT)**:

   - **Objective**: To teach basic mobile digital skills using a 'train the trainer' approach.
   - **Content**: Includes short lessons in PDF and video format to help users effectively and safely use mobile Internet services.

EC[175]

1. **Digital Education Action Plan (2021-2027)**:

   - **Aim**: To ensure universal access to high-quality digital education and training.
   - **Recommendations**: Develop national strategies for digital education, invest in digital infrastructure, and provide targeted training for educators to use digital technologies effectively.
   - **Future Steps**: Launch surveys to gather insights, create guidelines for digital education content, and facilitate the recognition of digital skills certifications.

2. **Council Recommendations on Digital Skills**:

   - **Key Actions**: Boost digital skills at all education levels, from basic to advanced and specialist skills, including AI.
   - **Support for Educators**: Develop guidelines to help teachers and trainers understand and confidently use digital tools.

Areas for Improvement and Suggested Measures

1. **Enhancing Digital Literacy**: Focus on providing comprehensive digital literacy programs, especially in low-income and rural areas, to bridge the digital divide.
2. **Public-Private Partnerships**: Encourage collaborations between governments, private sector, and educational institutions to create sustainable digital skills development programs.
3. **Targeted Initiatives**: Implement targeted initiatives to support under-represented groups, including women, youth, and persons with disabilities.
4. **Regular Updates and Assessments**: Establish mechanisms for regularly updating digital skills strategies and conducting assessments to ensure they meet evolving technological and market needs.

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[173] ITU, Digital Transformation Centres Initiative, https://academy.itu.int/itu-d/projects-activities/digital-transformation-centres-initiative
[174] GSMA Innovation Fund for Mobile Internet Adoption and Digital Inclusion, https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/gsma-innovation-fund-mobile-Internet-adoption/
[175] European Education Area, https://education.ec.europa.eu/news/european-council-adopts-two-recommendations-on-digital-education-and-skills

Reliability of Power and Infrastructure

A practical challenge in remote areas is the reliability of electricity and backhaul. Frequent power outages in some rural regions can knock out communications (e.g. a 4G base station or a DSLAM in a village may go down when electricity cuts occur).[176] While Albania's power grid has improved, rural distribution is still prone to faults, affecting continuous Internet availability. The 2024 OECD "Western Balkan Competitiveness Outlook"[177] highlights persisting issues with outdated electricity infrastructure and consequential energy losses. Some remote telecom sites rely on solar panels or generators, which need maintenance. Moreover, rural sites are more exposed to harsh weather (heavy snow can isolate areas, impacting microwave links or satellite feeds). Such conditions lead to intermittent and unreliable Internet services, discouraging consistent broadband use and operator investments in these regions.

These challenges as outlined above are recognized by Albanian authorities and international partners. The digital divide between urban and rural areas is repeatedly highlighted as a concern that requires intervention.[178] In essence, market forces alone cannot close the rural gap, and now the task is to overcome the above barriers through smart policies, funding, and capacity-building. Efforts like subsidizing rural networks, improving affordability, simplifying regulations, and running digital literacy programs are all needed in parallel to tackle the multifaceted nature of the rural connectivity gap. Table 21 below summarizes the challenges and barriers to rural connectivity as outlined above.

Table 12: Overview of challenges and barriers to rural connectivity

Thematic Area	Challenge	Description
Infrastructure and Technological Gaps	Limited rural fixed broadband coverage	Only ~19.5% of subscriptions are in rural areas, despite these areas comprising over one-third of the population. Rural household penetration is estimated to roughly stand at ~50%.
	Technological lag	Remote rural areas still rely on radio-based systems with limited speed, while fibre is concentrated in urban peri-urban zones.
	Uneven mobile broadband quality	Mobile broadband is widespread but less reliable in mountainous or remote areas due to terrain and tower siting challenges.
	Power reliability issues	Frequent electricity outages in rural areas disrupt connectivity and deter infrastructure investment.
Economic and Affordability Constraints	High broadband service cost for rural users	Broadband prices, while nationally affordable, are still high for many rural residents given lower income levels.
	High cost of entry (devices and installation)	Smartphones, routers, and laptops remain unaffordable for many households, limiting initial adoption.

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[176] FAO, Digital Villages Initiative – Tropoja Village (Albania),
https://www.fao.org/digital-villages-initiative/europe/digital-villages/tropoja-village/en
[177] OECD , Western Balkans Competitiveness Outlook 2024: Regional Profile, Competitiveness and Private Sector Development, 2024, See p. 43, https://doi.org/10.1787/170b0e53-en.,
[178]AKEP, Fixed Broadband wholesale market analysis Draft public consultation, 2024,
https://akep.al/wp-content/uploads/2024/01/Project-public-consultation-BB-wholesale-market-analysis-1.pdf

	Lack of low-tier pricing or bundled service options	Few affordable packages exist; limited provider competition in some areas further restricts choice.
Regulatory, Institutional, and Market Barriers	Absence of an operational Universal Service Fund (USF)	Although legally foreseen, no functioning USF is yet in place to subsidize rural broadband deployment.
	Delayed or underdeveloped state aid mechanisms	Albania's state aid framework is not yet aligned with EU State Aid Guidelines, delaying targeted funding.
	High spectrum and microwave fees	Licensing and backhaul costs are significantly above EU averages, disincentivizing rural investment.
	Permitting bottlenecks and municipal capacity gaps	Permit processes vary by municipality, often slow and fragmented; many lack digital permitting systems or trained staff.
	Weak enforcement of infrastructure sharing	Legal provisions exist, but enforcement is poor; utility providers often refuse access due to security or institutional resistance.
Infrastructure Sharing and Mapping Constraints	Limited access to utility infrastructure (e.g. OSHEE, OST)	Telecom operators face systemic resistance accessing electricity poles or ducts, slowing rural rollout.
	ATLAS broadband mapping platform limitations	ATLAS is underutilized, lacks last-mile data, real-time updates, and municipal integration. It is not operator-accessible for planning.
Demand-Side and Societal Barriers	Digital literacy deficits	Many rural residents—especially elderly, women, or marginalized groups—lack basic digital skills.
	Lack of awareness or perceived value	Many rural users, especially farmers, perceive broadband as non-essential; trust and relevance remain low.
	No national awareness campaigns for rural areas	There are no systematic efforts to promote broadband adoption, educate users, or showcase benefits in agriculture or daily life.
	Lack of localized and Albanian-language tools	Most AgriTech or digital public services are not adapted to local needs, limiting uptake.
Agricultural Sector-Specific Barriers	Weak digital use cases in agriculture	Precision farming, smart irrigation, or IoT solutions are rare; digital demand from the farming sector remains underdeveloped.
	Fragmented landholdings limit scalability	Many small farms cannot justify investment in digital tools due to scale and returns.
Governance and Institutional Coordination Challenges	Fragmented inter-ministerial planning	Poor coordination between Infrastructure, Agriculture, and Energy ministries undermines co-deployment and rural investment synergies.
	Low municipal digital readiness	Most rural municipalities lack broadband plans, trained IT staff, and capacity to manage rollout coordination.
	Disconnect between national strategy and local delivery	Centralized policies are not effectively localized; poor feedback loops hinder responsiveness to rural realities.
Monitoring, Data, and Market Transparency	Inadequate rural connectivity data	Lack of disaggregated data and informal ISP activity reporting impedes oversight and strategic planning.
	Informal/unregistered ISPs distort competition	Many rural areas are served by informal providers not subject to licensing, QoS, or fiscal obligations, undermining formal operators.
	Local monopolies in buildings or villages	Some property managers or local operators block competition, creating barriers to service diversity and pricing transparency.

Source: Stakeholder Consultation 2025, desk research

Insight Box 11 below provides a summary overview of best practice tools for the optimized deployment of Very High-Capacity Networks as contained in the European Commission's Connectivity Toolbox.

Insight Box 11: Summary Overview of the European Commission Report on Connectivity Toolbox[179][180]

The report by the Special Group for developing a common Union Toolbox for connectivity outlines best practices **for reducing the costs of Very High-Capacity Networks** (VHCN) deployment and investment-friendly authorization of 5G radio spectrum. The key recommendations and best practices are summarized below:

1. **Streamlining Permit Granting Procedures**:

   - **Legal Framework Diversity**: The deployment of digital infrastructure involves a range of laws, from telecommunications to environmental protection, varying by member state.
   - **Permit Exemptions**: Some member states offer permit exemptions for minor projects, while others have centralized management for permit granting.
   - **Tacit Approval**: Used by nine member states to ensure deadlines are met, with a general four-month deadline.
   - **Fast-Track Mechanisms**: Includes legislation to reduce procedures and deadlines, and use of deployment plans in private domains.
   - **Single Information Points (SIPs)**: Centralized platforms in some member states to coordinate and monitor permit granting processes, integrating geospatial data for efficiency.

2. **Improving Transparency**:

   - **SIP Functionality**: Varies across member states, often managed by telecom NRAs or ministries, providing access to geo-referenced data on infrastructure.
   - **Georeferenced Information**: Use of Web Mapping Service (WMS) and Web Feature Service (WFS) technologies for real-time data access.

3. **Expanding Access Rights to Existing Infrastructure**:

   - **Public Infrastructure Access**: Some member states allow free or simplified access to public properties for deploying small cells and other infrastructure.
   - **Coordination with Municipalities**: Broadband Competence Offices (BCOs) mediate between operators and municipalities to facilitate infrastructure deployment.

4. **Dispute Resolution Mechanism**:

   - **National Regulatory Authorities (NRAs)**: Serve as the primary dispute settlement body for access to physical infrastructure, with alternative dispute resolution mechanisms also in place.

5. **Environmental Aspects**:

   - **Reducing Environmental Footprint**: Measures include infrastructure sharing, energy-efficient networks, and recycling of materials.
   - **Environmental Assessments**: Regulations often apply during network rollouts, with assessments required for installations in sensitive areas.

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[179] EC, Summary Report of Best Practices, Outcome of phase 1 of the work of the Special Group for developing a common Union Toolbox for connectivity, 2020, https://ec.europa.eu/information_society/newsroom/image/document/2020-51/compilation_report_special_group_-_summary_and_annex_002_A201FFA5-9ACE-4742-1ACCE7F8A8EC2438_72388.pdf

[180] EC, Connectivity Toolbox for 5G and fast broadband, https://digital-strategy.ec.europa.eu/en/policies/connectivity-toolbox

6. **Spectrum Management**:

   - **Reserve Prices**: Set based on benchmarking and country-specific factors, often including instalment payment options.
   - **Spectrum Scarcity**: Full allocation of available spectrum bands is prioritized, with measures to migrate existing services and reserve spectrum for public safety.
   - **Cross-Border Use Cases**: Identified industrial use cases with cross-border dimensions, emphasizing harmonized technical regulations and coordination.

RECOMMENDATIONS AND PROPOSED FUTURE MILESTONES TO 2030

To effectively close Albania's rural connectivity gap and accelerate the adoption of digital agriculture technologies, a coordinated dual strategy is essential—one that simultaneously strengthens the supply of rural broadband infrastructure and stimulates demand through local capacity building, digital service delivery, and ecosystem innovation. The recommendations presented in this section are not only firmly grounded in Albania's current policy, institutional, and market realities, but also aligned with international best practices as outlined in this report. They build on the existing national frameworks such as the National Broadband Plan, Digital Agenda, and forthcoming e-Agriculture Strategy, while directly responding to stakeholder priorities, particularly those expressed by network operators, the MIE and the regulatory authority AKEP, municipalities, and the agricultural sector represented by MARD and the Agency for Innovation and Excellence during consultations. Critically, these recommendations also reflect global norms and proven models from the EU Connectivity Toolbox, the ITU Academy, the Gigabit Infrastructure Act, and the ITU and GSMA digital inclusion guidelines. Measures such as separating telecom permitting from general construction, enforcing infrastructure-sharing rules, subsidizing rural spectrum access, regulating informal ISPs, and scaling smart village models are not only viable in the Albanian context—they are increasingly standard in countries seeking to bridge rural digital divides (see Annex 1 for an alignment mapping).

The recommendations are structured along two complementary tracks:

1. **Closing the rural broadband connectivity gap**—through investment incentives, regulatory streamlining, affordability measures, and improved governance.

2. **Enabling the adoption of digital agri-tech solutions**—through demand stimulation, localized digital content, digital literacy, and targeted innovation support.

Together, these tracks offer an integrated roadmap that reflects Albania's development priorities, aligns with EU accession objectives, and lays the foundation for a resilient, inclusive rural digital economy.

Table 13: Policy recommendations for rural connectivity and digital agri-tech adoption

Thematic Area	Subdomain	Recommendations
A. Closing the Rural Connectivity Gap		
Infrastructure & Investment	• Activate and operationalize the Universal Service Fund (USF)	Use USF to subsidize broadband rollout in high-cost rural and agricultural zones.
	• Expand PPP-based fibre/FWA investments in white zones	Structure co-financing with private sector and donors to reach commercially unviable areas.
	• Include broadband infrastructure in all public works ("Dig Once")	Mandate integration of ducts and fibre into roads, utility corridors, and public works.
	• Improve utility coordination for infrastructure sharing	Enforce infrastructure reuse mandates for poles, ducts, towers with OSHEE, OST, etc.

	• Improve energy reliability for rural telecom sites	Promote backup systems (solar, battery) to stabilize service in power-outage-prone zones.
Policy, Regulatory & Affordability Reform	• Streamline and digitize permitting via a Single Information Point (SIP)	Separate telecom infrastructure permits from construction; introduce online platform with geospatial tools.
	• Reduce spectrum fees and 5G equipment taxes	Reform pricing to incentivize rural rollout; align with EU practices.
	• Operationalize the state aid framework and enforce Law 120/2016	Ensure infrastructure cost-sharing and access rights through KPIs and monitoring.
	• Introduce rural broadband voucher scheme	Support low-income rural users with demand-side subsidies.
	• Reduce VAT/import duties on ICT devices	Make smartphones, routers, laptops more affordable for rural consumers.
Governance & Market Transparency	• Strengthen the Broadband Competence Office (BCO)	Lead coordination of national/local broadband efforts, particularly in white zones.
	• Enhance and expand the ATLAS broadband mapping platform	Include last-mile data, municipal infrastructure, and access for operators; serve as digital infrastructure registry.
	• Regulate informal ISPs and enforce market rules	Introduce geographic market segmentation and reporting requirements to ensure fair competition.
	• Launch ICT market census and reporting requirements	Disaggregate rural data and bring unlicensed ISPs under regulatory visibility.
B. Enabling Digital Agriculture Transformation		
Digital Literacy & Affordable Access	• Deploy mobile digital literacy units and rural ICT hubs	Use buses, post offices, schools, and libraries to train rural populations.
	• Boost digital literacy and demand stimulation in agriculture	Promote awareness campaigns, bundled agri-digital services, and farmer training.
	• Launch subsidized rural device access scheme	Co-finance mobile devices and modems for farmers, youth, and cooperatives.
2. Localized Digital Services	• Develop and localize digital tools for farmers	Integrate Albanian-language weather alerts, e-subsidies, and market info into e-Albania and Farmer Portal.
	• Digitize ATTCs and municipal agriculture offices	Equip them with dashboards, IoT kits, and e-extension services.
3. Ecosystem & Innovation Support	• Scale the Smart Villages initiative	Expand pilots to rural municipalities by 2030.
	• Launch an AgriTech Innovation Fund	Support early-stage ventures offering localized agri-digital solutions.
	• Establish a national Digital Agriculture Coordination Group	Align policy between MARD, MIE, AKEP, NAIS, telecoms, and donors.

Source: Stakeholder Consultation 2025, desk research

Proposed Future Milestones until 2030

To operationalize the recommendations set out in this policy paper, a sequenced and time-bound roadmap is essential. The following two tables outline proposed future milestones through 2030 that are critical to closing Albania's rural digital divide and enabling the effective uptake of digital agriculture solutions. Table 23 presents the phased milestones for expanding rural broadband infrastructure, with a focus on investment mobilization, regulatory streamlining, affordability, and institutional coordination. Table 24 focuses on milestones for driving the adoption of digital

agriculture, including demand stimulation, localized digital content development, skills training, and innovation support.

Table 14: Proposed future milestones for closing the rural connectivity gap

Year	Milestone	Relevant Stakeholders
2025	Activate the Universal Service Fund (USF) and finalize broadband state aid framework	MIE, AKEP, Ministry of Finance
2025	Approve legal basis for broadband voucher scheme	MIE, Ministry of Finance
2025	Upgrade Broadband Atlas with last-mile and utility infrastructure data	AKEP, MIE, municipalities
2025	Require ISP registration and reporting, including informal ISPs	AKEP
2026	Launch pilot broadband affordability scheme (e.g. 3,000 rural households)	MIE, AKEP, Ministry of Finance
2026	Begin permitting reform and develop a Single Information Point (SIP)	MIE, municipalities
2026	Initiate spectrum fee reform and rural coverage incentives	AKEP, Ministry of Finance
2026	Conduct national ICT market census with rural household data	INSTAT, AKEP
2028	Scale PPP broadband deployment and voucher/device access (target: 20% rural households)	MIE, private sector, AKEP
2028	Conduct enforcement review of infrastructure sharing (Law 120/2016)	AKEP, MIE
2030	Achieve 100% rural school and health centre broadband connectivity	MIE, Ministry of Education, Ministry of Health
2030	Provide service affordability support and basic device access to 50% of rural households	MIE, Ministry of Finance, telecom operators

Source: Stakeholder Consultation 2025, desk research

Table 15: Proposed future milestones for digital transformation of agriculture

Year	Milestone	Relevant Stakeholders
2026	Deploy mobile ICT literacy units and launch school-based ICT hubs	Ministry of Education, municipalities
2027	Start co-financed ICT device access scheme for farmers, students, and women	MARD, Ministry of Education, Ministry of Finance
2027	Launch Albanian-language AgriApp suite (e-subsidies, weather, market info)	MARD, NAIS
2027	Launch Smart Villages pilot in 5 municipalities	MARD, municipalities, donor partners
2027	Begin digital upgrades of ATTCs and municipal agriculture offices	MARD, municipalities
2028	Launch AgriTech Innovation Fund	MARD, Ministry of Finance, donors
2028	Begin commercialization support for AgriTech pilots	MARD, private sector, donor partners
2029	Institutionalize Smart Villages in national rural development strategy	MARD
2029	Establish Digital Agriculture Coordination Group (MARD, MIE, NAIS, AKEP)	MARD, MIE, NAIS, AKEP
2030	Complete national rollout of Farmer Portal-based digital agri-services	MARD, NAIS, telecom operators

Source: Stakeholder Consultation 2025, desk research

CONCLUSION

Albania stands at a critical juncture in its journey toward inclusive digital transformation. While remarkable progress has been made in expanding mobile and fixed broadband access, particularly in urban areas, the persistent disparities in rural connectivity risk leaving behind a significant portion of the population. These gaps are not solely infrastructural—they are deeply intertwined with regulatory, economic, institutional, and human capacity constraints.

This policy paper has outlined a comprehensive framework of actionable recommendations to close the rural connectivity gap and enable the uptake of digital agriculture solutions. From establishing robust funding and regulatory mechanisms to stimulating demand through digital literacy and localized services, the strategy presented is both ambitious and achievable.

The proposed future milestones to 2030 offer a structured pathway to align stakeholders, synchronize investments, and build institutional capacity to deliver on Albania's national digital objectives. Foundational reforms must be fast-tracked to unlock subsequent infrastructure deployments and service innovation. At the same time, targeted interventions in agriculture can catalyze rural transformation, enhancing productivity, sustainability, and resilience. To achieve these goals, sustained political commitment, cross-sector collaboration, and effective implementation will be key. With the right policy mix and inclusive governance, Albania can bridge its rural digital divide and build a digitally empowered future for all its citizens—one that supports equitable growth and reinforces its trajectory toward European integration.

ANNEXES
ANNEX 1: Recommendations Alignment Mapping

Recommendation Area	Local Relevance in Albania	International Alignment	Status
Universal Service Fund activation	Enabled in Law No. 54/2024; currently dormant	ITU GSR, EU Broadband Cost Reduction Directive	Fully aligned
State aid operationalization	Partially aligned; formal framework exists but needs activation	EU State Aid Guidelines	Fully aligned
"Dig Once" principle in public works	Codified in Law 120/2016; weakly implemented	EU GIA; Connectivity Toolbox	Fully aligned
Single Information Point (SIP)	Missing; municipal permitting highly fragmented	EU Connectivity Toolbox	Highly recommended
Reduce VAT/import duties on ICT	Currently 20% VAT; North Macedonia model cited	Common affordability lever (ITU, EU)	Relevant & effective
Spectrum fee reform for rural 5G	Very high fees reported by operators	Draghi Report, ITU best practice	Strong case to proceed
ATLAS upgrade and access	Existing system: limited municipal/operator use	EU mapping norms, GIA	Directly aligned
Permitting reform & digitalisation	DCM 377 & 457 show progress; full SIP still needed	EU GIA & Connectivity Toolbox	Aligned with phased roadmap
Infrastructure sharing with utilities	Law 120/2016 allows, but OSHEE, OST resist	"Stokab" and other EU public utility sharing models	Reform needed
Informal ISP regulation and fair competition	250+ ISPs; some unregistered, distorting prices	Best practice supports market transparency	Locally urgent
Smart Villages & localized AgriTech	Pilots active via UN/FAO/DART; scalable	GSR 2023, ITU Smart Villages guidance	Strong local fit
AgriTech Innovation Fund	Not yet existing; highly relevant for rural innovation	EIB, World Bank, EU Smart Specialisation	High-impact recommendation
Digital skills & awareness programs (mobile units, hubs)	Piloted by NGOs/UNDP; needs scale-up	ITU Digital Skills Toolkit, GSMA MISTT	Fully validated
Localized Albanian-language tools for farmers	Farmer's Portal launched; still early-stage	Best practice for adoption in local contexts	Strong relevance
Device subsidy scheme	Suggested by operators; affordability remains a top barrier	Used in Nepal, Latin America, EU states	High-priority measure