A4AI ALLIANCE FOR AFFORDABLE INTERNET

RURAL BROADBAND POLICY FRAMEWORK: CONNECTING THE UNCONNECTED

A Rural Broadband Policy Framework providing guidance to address the 'Digital Divide'

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Contents

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Introduction

The internet has revolutionised the way that many of us live our lives, enabling new forms of communication, fostering online communities, fuelling economic growth, and facilitating all manner of entertainment.

Yet about half of the world's population remains offline, and only about 19% of the Least Developed Countries' (LDCs) population has access to the internet.[1]

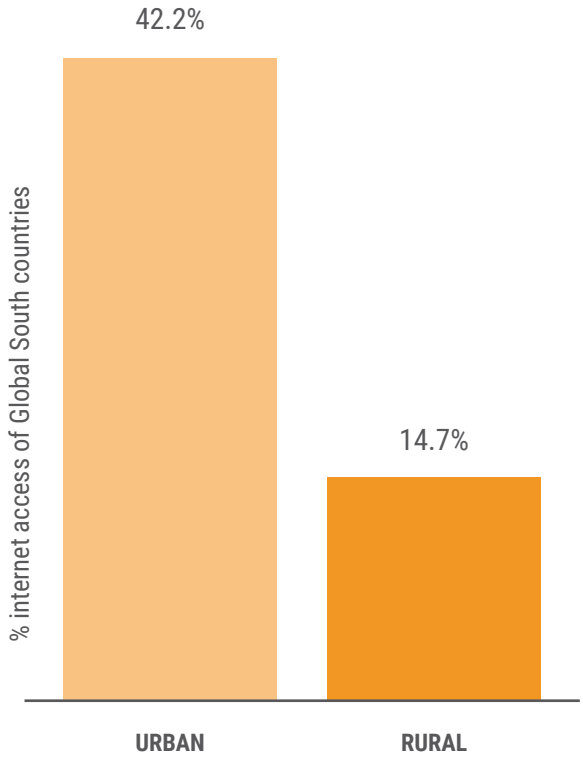
The reality of access in rural areas across the world is even more bleak, with access[2] in rural areas sitting at about 14% compared to 42% in urban areas in Global South countries (see table below).

Table 1. Internet access in urban and rural areas of Global South countries, as % of households

COUNTRY	URBAN	RURAL
Bhutan	70.9	28.7
Bolivia	20.6	1.7
Brazil	65.1	33.6
Colombia	58.6	17
Ecuador	46.1	16.6
El Salvador	26	2.6
Guinea	9	0.7
Mali	41.4	6.9
Niger	39.5	4.9
Nigeria	18	2.4
Pakistan	34.1	15.3
Panama	63.6	27.3
Samoa	10.8	2.1
South Africa	70.1	42.7
Zimbabwe	61.4	17.5
Average, all 15	**42.4**	**14.7**

NOTE: This table is limited to those countries in the Global South that report internet access along the urban-rural division within the ITU World Telecommunication/ICT Indicators Database.

Figure 1. Average internet access in urban and rural areas



1 ITU 2019, Measuring Digital Development - Facts and Figures.
2 A4AI 2019, Raising the bar for internet access: Introducing "Meaningful Connectivity"

It is more urgent than ever to focus on affordable and meaningful mobile broadband internet access to deliver on the promise and opportunities of digital development in developing countries of the Global South, with special attention to rural areas and LDCs in general. In order to achieve the universal goals for reducing inequality and achieving universal access by 2030, it is crucial to have clear frameworks that can guide and speed up progress. This Rural Broadband Policy Framework (RBPF) aims to provide guidance to address the persistent 'Digital Divide', with a focus on the context and challenges faced in rural areas.

The factors below and other factors result in lower-than-average internet penetration in rural areas—even in countries where this average is already low.

This 'Rural-Urban Divide' is particularly unfortunate, as rural areas—which are by their very nature, remote—have a disproportionate need for, and would disproportionately benefit from, improved broadband connectivity. Among other things, such connectivity could allow rural communities to benefit from informational resources and expertise available in other parts of the world—e.g., through access to broader social communities, public/e-government services, telemedicine resources, remote learning, e-commerce, among other services and resources.

Governments can make progress to close the Rural-Urban Divide by developing and implementing specific policies for that express purpose. This paper identifies a series of high-level recommendations that are intended to assist policymakers in crafting those policies. This guidance is based on observations and experiences of what has worked (and not worked) across the globe. That said, a 'one-size-fits-all' solution is unlikely to work across all countries or regions, but rather, this paper provides suggested policy actions that can be implemented to address challenges faced in rural areas.

It is our hope that this framework and accompanying resources will provide a basis for considering and adopting policy approaches most likely to facilitate the deployment and adoption of new and/or better broadband infrastructure and services in underserved rural areas.

Rural areas face special connectivity-related challenges and other severe divides not faced in urbanised areas. Among other things:

- Rural areas are often separated from existing infrastructure by significant distances and challenging terrain. Consequently, connecting rural areas to the internet is typically substantially more difficult and expensive than connecting more urbanised areas.
- Rural areas often lack the resources and supportive infrastructure necessary to facilitate broadband deployment (e.g., technical skills and access to reliable electricity sources—especially in emerging markets).
- Rural areas have lower population densities than more urbanised areas, meaning the number of potential customers in these areas is smaller. This makes it difficult to support the traditional business case for the large investments necessary to deploy broadband infrastructure in rural areas.
- Rural areas often have average incomes below that of more urbanised areas, creating affordability challenges—particularly when coupled with higher rates often charged in these areas as well as other economic and social structural constraints, including gender-based inequalities and other marginalising factors for rural populations.
- Rural areas often experience compounding effects of other forms of social exclusion, such as gender, socio-economic class, ethnicity or race. In Niger, for example, the digital gender gap is 83% between men and women in urban areas – this gap grows to 533% when looking only in rural areas. This puts certain groups – e.g., women in rural areas – at a stark disadvantage without targeted policy interventions.

DEVELOPING THE RURAL BROADBAND POLICY FRAMEWORK

01

The first step in developing a rural broadband policy framework (RBPF) is to establish the key criteria that 'good' rural broadband policies should satisfy.

We identify six such criteria:

1 Broadband policies should improve the availability of high-quality, affordable broadband services in underserved rural areas.

Policies should address the special connectivity challenges faced by these areas and ensure that rural services are comparable to urban service—i.e., policies must be intentional in addressing and reducing the Rural-Urban Divide.

2 Rural broadband policies should draw from real-world experience—locally, regionally, and globally

Policymakers should learn from the successes and failures of their counterparts in other markets—recognizing that 'context is king' and results in one country or under one set of circumstances do not guarantee similar results in other countries/circumstances. That said, while policymakers generally should give preference to approaches that have been proven (with appropriate locally relevant evidence) to be effective, they should also embrace innovation and be open to trial or test new approaches that may be uniquely suited for rural development.

3 Rural broadband policies should harness the resources and capabilities of the private sector and complementary providers, such as community networks.

Policymakers should support business cases for private-sector investment in rural broadband infrastructure by: (i) creating appropriate incentives for and eliminating unnecessary impediments to such investment; and (ii) ensuring that regulations are targeted, light-touch, and competitively and technologically neutral. In addition, policymakers can leverage self-organised community networks through a more enabling regulatory environment and spectrum policies that support these networks, especially in areas where a business case may not exist or may be more difficult to sustain.

4 Rural broadband policies should be comprehensive.

Policies that make broadband services available by encouraging infrastructure deployment will be of limited value if other policies do not also ensure that those services are affordable, and that there is adequate consumer demand for such services. Policymakers should be careful to consider the various aspects of the rural broadband challenge holistically. This will require participatory and consultative processes that ensure those living in rural areas are able to help shape the policy. It should also be open to the testing of new business models and innovations that can improve broadband adoption in rural areas.

5 Rural broadband policies (and all broadband policies) must be gender responsive.

This first means that the policy is designed with the recognition that a gender gap in access and use may exist in the country and may even be more exacerbated in rural communities. Based on sex-disaggregated data on internet use, rural broadband policies should identify the barriers to improved internet use among women and put in place targeted programs with the associated resources to remove those barriers.

6 Effective implementation will require evidence and standards.

The policy must be evidence-based including the use of sex-disaggregated data where available. It should also ensure that adequate data collection processes are put in place for future evaluations and updates of the policy. All good policies will include measurable targets including access and use (% of population using broadband internet within X years); affordability (i.e., defined by the UN Broadband Commission as entry level data priced at less than 2% of average monthly income); and meaningful connectivity (e.g., % of the population using the internet with defined broadband speeds, relevant devices, etc).

After establishing the high-level criteria that the RBPF should satisfy, policymakers must develop and implement the actual policies that will constitute that framework. We believe this is best achieved through an inclusive, iterative, and consultative process. Among other benefits, such a process should: (i) help to generate better ideas and better substantive outcomes; (ii) provide a vehicle for reconciling potential conflicts between stakeholders and aligning their interests to the extent possible; (iii) enhance the perceived legitimacy of the rural broadband policies that are ultimately adopted; and (v) strengthen the capacity of local governments and communities to deploy solutions under the framework.

More specifically, we believe the process should be deliberately constructed with the following desired attributes in mind:

- **The policymaking process should encourage broad participation.** The process should encourage broad participation by relevant stakeholders, including but not limited to civil society organisations, service providers, investors, community groups and other non-profit organisations, equipment manufacturers and vendors, trade associations and other members of the business community, and local government. Policymakers should make a special effort to improve competition and encourage potential new entrants to participate, as they are likely to play a major role in addressing rural broadband challenges under the new framework.
- **The policymaking process should be transparent.** The process should be transparent to all stakeholders as well as the general public. Policymakers should clearly: (i) define the specific problems to be addressed by the RBPF; (ii) explain the various approaches being considered to address these problems; (iii) when appropriate, propose specific policies, rules, and/or regulations to implement these approaches; and (iv) once final decisions have been reached, publish them. It is important to articulate a clear explanation for how and why decisions were made, their goals, time-bound targets and monitoring mechanisms.
- **The policymaking process should allow stakeholders to meaningfully participate.** Stakeholders should have the opportunity to engage with policymakers and each other through public fora and other meetings. Policymakers should also explicitly invite stakeholders to provide written feedback and inputs with respect to the government's policy proposals, as well as submissions by other stakeholders. Efforts should be made to ensure that civil society groups are able to meaningfully participate throughout the process. The process should not favour feedback from certain sources over others—e.g., incumbent feedback vs. new entrant feedback. Stakeholders should also participate in the ongoing monitoring and evaluation mechanisms.

The results of the process should be captured in a specific, documentary work product specifically focused on rural policy issues (e.g., a "Rural Broadband Plan"). This will allow policymakers and other stakeholders to more easily: (i) evaluate the success or failure of the framework; (ii) make necessary adjustments over time; and (iii) hold the appropriate parties accountable.

ELEMENTS OF THE RURAL BROADBAND POLICY FRAMEWORK

02

This paper identifies a series of high-level recommendations that are intended to assist policymakers in crafting the policies that will support rural broadband development.

A Harnessing Market Competition While Addressing Market Failures

A cornerstone of modern economic policy is the notion that market competition encourages efficiency, drives innovation and investment, and helps consumers through increased choice, lower prices, and better service quality.

As a general matter, policymakers harness competitive market dynamics for the benefit of consumers in rural areas—by staying out of the way where possible, and promulgating targeted regulations where necessary to address instances where the market is failing to function as expected or otherwise meet the needs of the public. For example, the RBPF should first emphasize competition at the wholesale and retail levels, and can permit wholesale service providers to offer retail services while maintaining this goal (for example by requiring the wholesaler to operate via separate entities at the retail level) and vice versa. Service providers in rural areas should operate using technology-neutral licensing, which for example would mean the ability to provide retail MNO, MVNO, fixed wireless, or fixed wireline services (subject to appropriate protections designed to prevent anti-competitive abuses).

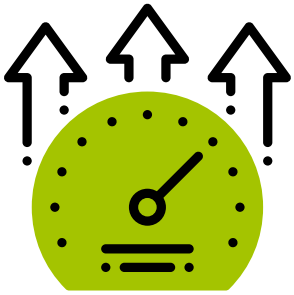
The RBPF should also recognize the limits of what the market alone can deliver. Most notably for present purposes, the market is clearly failing to ensure that broadband services are deployed in rural areas and that is why policymakers have established rural development funds or universal access service funds. Although the market may eventually correct itself—and private actors may independently solve many of the rural broadband challenges—there is no guarantee that this will occur, and in the interim consumers in rural areas have been left behind. Policymakers can take targeted action to address this market failure, including by expediting the ability of private-sector actors to overcome structural impediments to broadband deployment.

In particular, the RBPF encourages infrastructure sharing at the wholesale level—which will ultimately facilitate greater competition at the retail level. Rural broadband infrastructure is often prohibitively expensive for any single operator to deploy; consequently, the infrastructure is never deployed, and consumers are left without any service (and certainly do not have access to multiple, competitive service options). Operators can overcome this obstacle by sharing infrastructure on a wholesale basis—and effectively sharing the associated costs. There are various models for how this could be done. For example, an operator or third party could construct (and potentially operate) the infrastructure, which could then be offered to retail service providers on a

wholesale basis. The retail operators would then be free to compete on price and features—the consumer benefits from the lower prices that competition is intended to drive. A number of countries have also undertaken more direct forms of engagement and investment through public-private partnerships such as the Red Compartida in Mexico and the 4G mobile network in Rwanda. Universal Service and Access Funds (USAFs) can also be uniquely positioned to support connectivity and networking in rural areas on a cooperative or wholesale basis.

Policymakers can facilitate rural infrastructure sharing of this type by, among other things:

- Making infrastructure sharing options and benefits clear to all players;
- Licensing wholesale providers in the market to support competitive and cost-effective retail services;
- Ensuring that demand for shared infrastructure can be effectively aggregated by granting exclusive rights to operate as a wholesale infrastructure operator on a region-by-region basis;
- Granting specific advantages to MNOs that rely on wholesale infrastructure;
- Where they are proven to be effective, support the use of new and innovative revenue-sharing business models between wholesale infrastructure operators and the retail service providers they support, (as opposed to fixed-fees or traffic-based pricing). This can ensure that incentives are appropriately aligned. One nascent example of this is Internet Para Todos in Peru.



B Streamlining Regulatory Processes

Although regulations can serve an important function, by their very nature they impose costs and burdens on regulated parties—including those operating in rural areas. Policymakers must carefully balance the costs and benefits of the rural broadband policies they promulgate.

We recommend that policymakers adhere to the following guidance:

- **The RBPF should eliminate policies and regulations that are not necessary to achieve a valid and well-defined objective.** Simply stated, policies and regulations of this type impose costs that are not offset by tangible benefits to the public. Eliminating these policies and regulations will allow operators to deploy infrastructure in rural areas more efficiently and at a lower cost.
- **The RBPF should create a supportive regulatory environment for nascent rural operations.** Fines do not need to be the first and only enforcement tactic available to a regulator. For example, policymakers could consider non-punitive forms of regulatory enforcement as first-step remedies to enable private network operators to scale up their rural broadband facilities and to increase the likelihood that those facilities, and the networks they support, will be viable in the long term. Examples of this practice include: (i) cooperatively-defined improvement plans between network operators and regulators with clear, publicly accountable targets; (ii) publishing quality of service performance data; and (iii) licensing incentives that encourage deployment to motivate operators to improve their networks rather than penalise directly for under-performance
- **The RBPF should include space for innovations to scale.** Many of the most impactful innovations in rural connectivity start at the smallest of project scales. To encourage further expansion and innovation, the framework should come ready-made to support networks of all sizes and with explicit regulatory recognition for these

smaller networks. Promising practices in this area include the community network license frameworks in Argentina and Uganda, which come with smaller fees and eased reporting requirements to match with the reduced capacity of these networks.

- **The RBPF should streamline regulations governing market entry in rural areas.** Policymakers should make it easy for both established operators and new entrants to enter rural markets (subject to appropriate protections to limit the potential for strategic anti-competitive behaviour). Processes for obtaining any necessary licenses and authorisations should be streamlined, and license and related fees should be reasonable and reflective of the regulator's actual administrative costs. Similarly, the framework should incorporate efficient processes for type approval of new rural-optimised technologies so they can be leveraged without unnecessary burden or delay. This process should also include streamlined licensing and reasonable spectrum access for community networks.
- **The RBPF should streamline processes for obtaining access to rights-of-way (ROWs).** ROW access enables operators to deploy facilities in rural areas by leveraging existing roads, ducts, and other infrastructure. When ROW permitting issues arise—which is far from uncommon—they have the potential to delay or to altogether frustrate efforts to deploy such facilities. The framework should incorporate a national policy that simplifies the application process and minimises the need to obtain complex approvals from multiple local authorities. Policy makers may also want to consider price caps for ROWs and access to other passive infrastructure, such as electricity poles.
- **The RBPF should leverage potential advantages within dig-once policies.** To reduce the barrier that the approval process poses to network deployment, policymakers should consider ways to maximise the potential return within each approval to provide improvements and services within the telecommunications sector and across other sectors, such as transportation, energy, and education. This change can be particularly valuable when considering public works projects and the extension of fibre optic backbone to rural areas.

These measures can have a significant positive impact on efforts to deploy rural broadband infrastructure and services.

C Public Access and Universal Service and Access Funds

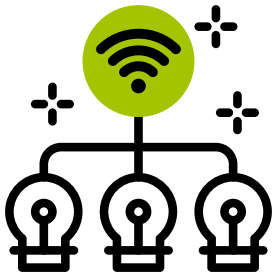
A crucial component of any strategy to address the rural-urban digital divide is the provision of public access facilities. These include telecentres, community centres, post offices, libraries, and public WiFi networks that provide people with affordable or free access to computers, tablets, and other communication devices and associated services with an internet connection.

Financing rural public access solutions can come from a range of sources including public funds, public-private partnerships, or specifically designed mechanisms to address the connectivity gap such as Universal Service & Access Funds (USAFs).

In order to make such mechanisms effective we recommend the following:

Invest in public access solutions as part of the RBPF. These facilities may also serve as anchor points for community networks that can also reach those people with their own mobile and computing devices. The potential of public access solutions to enable connectivity in rural areas among those that still cannot afford to connect is significant – and for the most part – remains untapped. Particular attention should be paid to the sustainability of these projects by minimising these costs. Many strategies for this approach exist, such as sharing the facility with other activities, using existing structures, and encouraging community ownership and management.

- **Employ public access facilities as community institutions to ensure broader socio-economic impact in society.** Public access facilities can support local community needs for healthcare services, educational programs, and social inclusion by offering programs targeted at often excluded groups such as those with disabilities, women, and others. They can also support a wide range of entrepreneurial activities, especially if these facilities are in areas without electricity and designed so that additional energy is available for these. In so doing, public access facilities can ensure that rural broadband efforts are more likely to support national development goals.
- **Establish and implement effective USAFs to support investments in underserved rural areas.** These funds can be used to finance the expansion of broadband infrastructure to underserved rural areas, with a special focus on connecting public institutions and facilities, to provide start-up funding for complementary providers, such as community networks, and to increase individual access by, for example, subsidising end-user devices. Additionally, USAFs should be used to reduce the digital gender gap within countries as a step towards ensuring universal access by addressing the specific barriers faced by women in accessing the internet.
- **Ensure that USAFs operate under non-discriminatory conditions (including fair collection and distribution), and according to transparent and consultative processes, incorporating stakeholder inputs and priorities (including those of the private sector and civil society).** Effective fund administration also requires the prioritisation of clear target goals, and monitoring to measure the effectiveness and impact of USAF programmes and projects. In addition, one-time infrastructure and other expenditures to enable access must be prioritised. Any ongoing subsidies must be targeted to individuals rather than providers.
- **To improve transparency and accountability, USAFs can adopt and employ open data practices** when providing data on periodic disbursements, project information, and other metrics tracking fund performance. In the case of USAFs, providing this kind of open data can improve competition in the bidding process, allow greater transparency in the allocation of subsidies, and perhaps most importantly, make the allocation of funds more efficient and cost-effective.



D Effectively Managing Spectrum Resources

Wireless communications technologies can be leveraged as a key means of helping to overcome impediments to extending broadband services to rural areas.

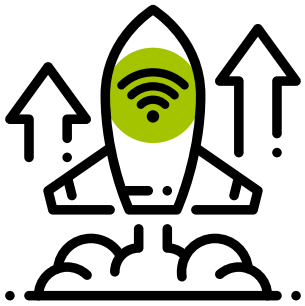
These technologies sidestep many of the significant costs associated with deploying wireline networks in rural areas—e.g., laying fibre over great distances across and through rough terrain. Notably, these technologies may be valuable even where "last-mile" connectivity is provided on a wired basis, as they can facilitate more efficient access and backhaul. In short, while these technologies are not perfect and can face their own limitations—e.g., line-of-sight and capacity issues—they nevertheless offer an attractive option for serving many rural areas.

To use wireless communications technologies effectively, operators must be able to access and use sufficient radio frequency (RF) spectrum, free from harmful interference. Facilitating such access should therefore be a key objective of any RBPF.

Experience suggests several approaches that are likely to increase the extent to which spectrum can be efficiently leveraged to support broadband networks in rural areas:

- **The RBPF should seek to "unlock" spectrum so that it can be effectively leveraged to address rural connectivity challenges.** Spectrum allocations should increase to meet the networking demand of mobile operators, community networks, and public access WiFi projects. This is easier said than done, given artificial limitations on spectrum availability that may be deeply embedded in legacy policies and regulations. However, the effort is worthwhile, as even marginal gains could make it significantly easier for operators—and, in particular, new entrants—to enter the market.
- **The RBPF should incentivise operators to use their licensed spectrum resources in a timely manner and for the benefit of rural areas.** The framework should encourage operators to expedite network deployment and deter the "warehousing" of spectrum resources—e.g., by granting spectrum licenses for the longest-practicable fixed term, with a renewal expectation only if certain deployment milestones are met. These policies incentivise operators to make the long-term investments necessary to deploy infrastructure in the first instance, and to continuously upgrade that infrastructure over time.
- **The RBPF should apply special, more flexible rules for spectrum use in rural areas.** The framework should define specific designated areas ("DAs") in rural areas, within which operators and community networks would enjoy additional flexibility. For example, operators in DAs could be granted regulatory relief to allow them to share or make "opportunistic" use of underutilised spectrum, and/or to use microwave spectrum for backhaul purposes at low or no cost. Community networks can also gain substantial support with alternative means of spectrum allocation that meet their typically more limited geographic coverage and more limited revenue-generating potential that makes large, national-level spectrum packages unaffordable at their scale.
- **The RBPF should enable unlicensed use of spectrum at additional wavelengths.** Beyond the rubric of licensed spectrum, a space for unlicensed use of spectrum can enable new technologies to scale and new networks to fill coverage gaps. This offers a space for the 'lightest touch' of regulatory control that could substantially reduce the barriers to entry for smaller-scale networks. Examples of promising practice include work at the 850MHz band in Mexico.
- **The RBPF should make spectrum available on a technology-neutral basis.** The framework should be flexible enough to permit spectrum to be used and shared by and across different technologies and platforms (e.g., mobile, fixed wireless, satellite). This flexibility would help to facilitate the mix of technical solutions necessary to improve connectivity in rural areas.
- **The RBPF should facilitate the reallocation of spectrum over time.** Spectrum allocation decisions typically reflect policymakers' informed guesses about what technologies and business models are likely to succeed in the long term. But these guesses are not always accurate, and, in any event, spectrum needs and priorities shift over time. Policymakers should periodically reevaluate utilisation, deployment, device availability, and user adoption with respect to each spectrum band and use case—and should 'refarm' spectrum bands that are not being used effectively. For example, in rural areas it may be appropriate to repurpose spectrum for unlicensed use.
- **The RBPF should encourage spectrum sharing, under appropriate conditions.** Spectrum sharing can effectively increase the number of parties that have access to spectrum—e.g., to include new entrants—and thus the efficiency with which that spectrum is used. The framework should permit such sharing, across operators and technologies, under specific conditions designed to mitigate the potential for harmful interference, and in a manner that facilitates market entry by new operators (which otherwise might be impossible with purely exclusive-use spectrum). Many countries have already started in this area by using TV white spaces to provide connectivity in rural areas. Another policy practice that could particularly help rural areas is the adoption of a "use it or share it" policy that discourages operators with national spectrum allocations from blocking others from using those wavelengths in areas where the operator provides no coverage.

By approaching spectrum management in this fashion, policymakers can help to address—and overcome—the special challenges faced by operators in rural areas.



E Leveraging Innovative Technologies, Architectures, and Business Models

Innovation can help to shatter assumptions about the viability of potential rural broadband operations.

Among other things, novel technologies, architectures, and business models can reduce the cost and complexity of rural deployments, and thus support a viable business case where none previously existed. The RBPF should be flexible enough to accommodate such innovation as it occurs; 'legacy' regulations, built around old technologies and architectures, should not prevent these benefits from being realised.

We recommend the following approaches to help foster and reap the benefits of innovation:

- **The RBPF should afford operators flexibility in structuring their networks and businesses.** The framework should neither prescribe use of particular technical or business solutions, nor impose regulatory requirements that are so restrictive that they effectively dictate the same result. Instead, operators should have the freedom to utilise any technologies, standards, or architectures to meet minimum service standards provided they: (i) satisfy applicable coverage milestones; and (ii) operate within broad technical parameters designed to protect the public and ensure compatibility between adjacent operations.
- **The RBPF should promote the free flow of information.** The framework should allow operators to design and implement networks efficiently—even if this means that information must flow across borders or between different local jurisdictions—e.g., to facilitate use of cloud-based network management technologies. Policy frameworks should not be the source of artificial restrictions to the network's performance – through blocking, throttling, filtering, or other means of limitation. The framework should also eschew data localisation requirements that would restrict the network's performance.
- **The RBPF should ensure that rural populations can benefit from the same service standards as others in the country (e.g., in urban areas).** Equitable economic development is important if we do not want to exacerbate the urban-rural divide. It is therefore important to ensure all people whether in rural or urban areas have access to broadband services that are subject to the same minimum standards (e.g., minimum broadband download/upload speeds, etc.).
- **The RBPF should support network cooperation.** Reliable and affordable internet service in rural areas will require the participation of several actors and networks of varying backgrounds and sizes. Consequently, the framework should expect this multitude of service providers and help set the terms for their interconnection and cooperation. For example, expensive terms of access to numbering services, if made unaffordable for smaller operators because of their scale, or uncompetitive behaviours among network operators that exclude smaller networks from interconnecting with larger networks, can impede the integration of these multiple networks into a cohesive whole as the internet.

These measures can help to ensure that rural areas benefit from innovative network technologies and business models.

F Adopting Appropriate Tax and Fee Structures

Tax policy is more than just a revenue-generating tool. Rather, a country's tax structure helps to define incentives and disincentives for particular behaviours by those subject to taxation—be they corporations, organisations, or individuals.

We recommend that policymakers adopt tax and fee structures that encourage the deployment of broadband infrastructure and services in rural areas. Among other things, policymakers should consider: (i) permitting operators to deduct certain costs related to rural broadband infrastructure deployment; (ii) providing tax credits to operators that meet coverage milestones in a timely fashion; and/or (iii) eliminating any "double taxation" of wholesale and retail operators.

We further recommend that policymakers amend tax and fee regimes to remove potential impediments to rural broadband deployment. In particular:

- **Policymakers should consider reducing or eliminating taxes and fees charged in rural areas.** These taxes and fees are often a 'drag' on investment, and consume resources that could otherwise be used by operators to strengthen and expand rural deployments. Corrective actions could include: (i) limiting ROW fees to amounts necessary to recoup costs of maintaining relevant public facilities; (ii) limiting tariffs and other customs fees to reduce the overall cost of importing consumer and network equipment from abroad; and (iii) limiting regulatory fees to make it easier for operators to deploy in rural areas and update their networks over time.
- **Policymakers should ensure that the tax regime is competitively and technologically neutral and non-distortive.** Policymakers should not use taxes and fees to effectively pick 'winners'" and 'losers' in the market—e.g., by establishing different tax rates for different technologies. On the other hand, policymakers should embrace measures that support the entire market and help to foster competition, such as the rural broadband tax incentives described above. Policymakers should also ensure that the tax regime is transparent, predictable, and enforced on a consistent and even-handed basis.
- **Policymakers should ensure that rural broadband services are taxed in a manner similar to or more favourable than other services.** Broadband connectivity creates positive externalities, benefitting not only the individuals being connected, but also the communities in which they reside and society more broadly. This suggests that broadband services and their inputs should be taxed in a manner that is more favourable than (or, at least on par with) other types of services. Yet, in many countries, broadband services are taxed at a higher effective tax rate than other services. The imposition of sector-specific taxes in this fashion sends the wrong message and is counterproductive.
- **Policymakers should ensure that tax regimes do not render broadband services unaffordable.** Taxes and fees often constitute a significant percentage of the cost of obtaining broadband services at the retail level. This impact is generally regressive in nature, in that taxes and fees are far less likely to prevent a relatively wealthy person from procuring such services but could very well create a barrier to such access for lower-income and disadvantaged persons, including women[3]. Policymakers should ensure that taxes and fees do not result in service rates that are beyond the reach of the average citizen in rural areas—e.g., by lowering taxes and fees in those areas or exempting certain classes of consumers.

These measures can make deployment in rural markets less costly—and therefore more likely. Moreover, although these measures could lead to some loss of revenue in the near term, in the longer term they can actually increase revenues by stimulating economic activity and enlarging the tax base.

3 A4AI 2019, Who wins? Who loses? Understanding women's experiences of social media taxation in East and Southern Africa.

G Stimulating Demand for Broadband Services

The preceding sections have focused principally on impediments to broadband infrastructure deployment and service provision—i.e., supply-side challenges.

But a sustainable business case for the provision of rural broadband services can exist only where there is sufficient demand for such services. In many rural areas, such demand does not exist. Accordingly, an effective rural broadband framework should attempt to stimulate such demand.

Four broad strategies for achieving this goal:

- **The RBPF should seek to enhance digital literacy amongst the rural population.** Policymakers should promote educational programs focused on digital literacy – from basic to advanced – through existing public access facilities, community, school, and municipal programs. They can embed inclusive digital skills support within community spaces like libraries and post offices and make sure these facilities are welcoming and safe for all users, regardless of gender, income, or age. Policymakers should work with private-sector actors to develop programs and incentives to address gaps and improve digital literacy skills, especially for women and young people. Success in this strategy runs in parallel with investment in public access: the facilities funded and supported by the government or a USAF can then be venues for this up-skilling.
- **Promote practices that protect the safety, privacy, and personal data of rural populations.** This work starts with laws and regulations that protect the rights of users, including their personal privacy. Next, converting these laws from principles to practice requires public education and support around their function and meaning. For example, policymakers could establish internet ambassador programs to teach consumers how to get online and better utilise internet resources in a safe and secure manner that protects their privacy and their personal data, thereby driving trust in and demand for broadband services.
- **The RBPF should facilitate the development of relevant content that are responsive to local needs and languages.** Policymakers should promote the creation of content relevant to rural communities (e.g., local news, content in local languages). Among other things, governments can partner with private-sector actors to assist local residents to produce such content.
- **Governments can play a significant role in stimulating demand for rural broadband services.** Among other things, governments can: (i) build e-government services and portals and offer free access to them to help incentivise community engagement and use of the internet on an ongoing basis; (ii) help local businesses to establish an online presence and foster e-commerce at the local level; (iii) encourage the development of community hubs to foster the creation of localised internet ecosystems; and (iv) support the role of public access to stimulate market demand for broadband services by prioritising underserved communities. Indeed, the potential for demand stimulation may represent the most significant economic effect of public internet access. Many who may first connect through public access will ultimately shift some of their use toward traditional commercial services for the convenience of personal, non-public access.

Efforts of this type are critical to help sustain rural broadband operations over time.

NEXT STEPS

03

This RBPF provides the foundation for a series of activities and supporting materials that will be developed to facilitate engagement and implementation of this Framework.

These will include the following, among others:

- Selected case studies to illustrate the elements of the Framework in action.
- An effective web-based tool to share the Framework and accompanying resources.
- A series of seminars, workshops and webinars to engage with policymakers and support implementation of the Framework across the regions.

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