National Farmers Federation

Regional Telecommunications Review

July 2024



The National Farmers' Federation (NFF) is the voice of Australian farmers.

The NFF was established in 1979 as the national peak body representing farmers and more broadly, agriculture across Australia. The NFF's membership comprises all of Australia's major agricultural commodities across the breadth and the length of the supply chain.

Operating under a federated structure, individual farmers join their respective state farm organisation and/or national commodity council. These organisations form the NFF.

The NFF represents Australian agriculture on national and foreign policy issues including workplace relations, trade and natural resource management. Our members complement this work through the delivery of direct 'grass roots' member services as well as state-based policy and commodity-specific interests.

NFF Member Organisations













































































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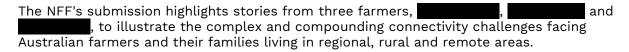
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Executive Summary

The National Farmers' Federation (NFF) welcomes the opportunity to provide a submission to the Regional Telecommunications Independent Review Committee (RTIRC) conducting the Regional Telecommunications Review (RTR).

Regional, rural and remote Australians place the utmost importance on accessible, reliable, affordable and quality connectivity services. Such services are fundamental to their everyday economic, social, health and educational outcomes, the importance of which is often heightened for those living outside of metropolitan areas.

While significant advances have been made in recent years, many regional Australians continue to face connectivity challenges. Service quality, reliability and accessibility issues remain, presenting ongoing primary connectivity barriers for regional Australians, farm businesses and workers. As economic activity and service delivery continue to migrate online, such accessibility challenges must be addressed.



The NFF recommends that RTIRC consider the following initiatives to deliver improved connectivity outcomes for Australian farmers and regional, rural and remote communities.

- Ongoing investment programs in connectivity infrastructure: The NFF supports
 ongoing public funding of investment programs to ensure the delivery of
 connectivity service expansion and quality improvements. Program design must
 consider the ongoing advancement of technological solutions, such as satellitedelivered connectivity and in-field connectivity solutions.
- 2. **Universal Service Obligation (USO) reform:** The NFF supports reform of the USO to address ageing infrastructure, with consideration of a technology-agnostic approach to USO delivery, providing it exceeds existing reliability standards. Recognition however must remain of the role of USO elements such as the Copper Continuity Obligation in delivering USO services to some consumers.
- 3. **Universal Service Guarantee (USG):** The NFF supports updated telecommunication service guarantees, with adequate service performance reflecting the needs of consumers and businesses.
- 4. **Investment in network resilience:** Ongoing investment must be made in network resilience programs in order to better support service continuity during periods of natural disaster.
- 5. **Roaming during natural disasters:** The NFF supports mobile roaming during times of natural disaster.
- 6. **Infrastructure sharing:** The NFF supports efforts by government to further facilitate connectivity infrastructure sharing in regional areas to promote competition, efficient asset use and ongoing network expansion.
- 7. **Network sharing:** The NFF supports market-led network sharing arrangements that enable competitive market outcomes. Where such arrangements do not materialise, consideration should be given to requiring network sharing by Mobile Network Operators on commercial terms in a manner that does not hinder ongoing investment.



- 8. **Connectivity research, development, and extension:** Government and industry, including the Rural Research and Development Corporation network, should continue to research and invest in connectivity advancements and adoption.
- 9. **Regional Telecommunications Review:** The NFF strongly supports the triennial Regional Telecommunications Review process. This process should be well-resourced and led by an independent review panel which includes agricultural and on-farm connectivity expertise.
- 10. Audit of regional mobile coverage & performance: Funding should be provided to undertake an investigation and audit of mobile coverage & performance across regional Australia. This should include the reporting of experienced congestion levels. The NFF supports the ongoing National Audit of Mobile Coverage, which partially addresses this recommendation.
- 11. **3G shutdown and 5G transition:** The shutdown of 3G, ongoing role of 4G and rollout of 5G networks must lead to positive connectivity outcomes.
- 12. **Equitable and efficient spectrum allocation:** The NFF supports the equitable and efficient distribution of spectrum to foster a competitive environment that fosters investment in network expansion and improvement.
- 13. Addressing non-infrastructure related challenges: Non-infrastructure related connectivity challenges, such as congestion, backhaul capacity and spectrum allocation, must be overcome to ensure positive connectivity outcomes.
- 14. **Sustained resourcing of the Regional Tech Hub:** The NFF supports the ongoing funding of the Regional Tech Hub to provide Australians with independent connectivity advice and as a key means to improve connectivity literacy.
- 15. **Farm Data Code:** The Farm Data Code and its certification framework should be reviewed periodically to ensure it remains contemporary. Support must be given to facilitate its adoption by providers operating in the Australian market.
- 16. Active assessment of risks and opportunities associated with digital agriculture:

 Proactive and ongoing work is required to assess the impacts of new technologies on producers, formulate new policies where appropriate, and lead initiatives to address issues.
- 17. **AgTech adoption initiatives:** The NFF is committed to working with government, partners, industry participants and research networks (including AgriFutures) to continue work expanding Agtech adoption by producers.



Introduction

The National Farmers' Federation (NFF) welcomes the opportunity to provide a submission to the Regional Telecommunications Independent Review Committee (RTIRC) conducting the Regional Telecommunications Reivew (RTR).

Connectivity

Regional, rural and remote Australians place the utmost importance on accessible, reliable, affordable and quality connectivity services. Such services are fundamental to their everyday economic, social, health and educational outcomes, the importance of which is often heightened for those living outside of metropolitan areas.

While significant advances have been made in recent years, many regional Australians continue to face connectivity challenges. Service quality, reliability and accessibility issues remain, presenting ongoing primary connectivity barriers for regional Australians, farm businesses and workers. As economic activity and service delivery continue to migrate online, such accessibility challenges must be addressed.

Improving connectivity in regional areas continues to present a fundamental opportunity to drive the competitiveness and productivity of the agricultural sector in the decades to come. Advancements in connectivity continue to be an essential requirement to support Australian agriculture's 2030 \$100 billion farm-gate revenue aspiration.

Recent years have seen an acceleration in the importance of connectivity services and changes to the connectivity landscape. The 2021 Regional Telecommunications Review identified a "step change in the demand for telecommunications" with a new paradigm in the essential nature of connectivity to everyday lives as well as being essential to underpinning the opportunities that exist in the ever-digitising economy now more than ever.¹

Furthermore, recent years have seen a number of material developments within the regional connectivity landscape. Publicly funded investment schemes have experienced a period of sustained bi-partisan support, with programs maturing and the co-investment incentives for mobile operators diminishing. Regional telecommunication infrastructure markets have undergone significant ownership changes, with historical integrated models of ownership being replaced by third-party infrastructure owners. Finally, and perhaps most significantly, the ongoing advancement of technological solutions, such as satellite-delivered connectivity, has resulted in potential material changes to how connectivity services may be delivered, particularly to those in Australia's more rural and remote areas.

Digital agriculture

Connectivity and digital agriculture are intrinsically linked, with connectivity advancements underpinning the adoption of digital agricultural practices. As connectivity continues to advance, the growth of digital agriculture in areas such as automation, digital intelligence and farm data will present growing opportunities and risks for producers. Continually

¹ Regional Telecommunications Review, 2021, 2021 Regional Telecommunications Review - A step change in demand, Pg 1.



improving connectivity services are key to materialising the estimated \$20 billion AgTech opportunity.²

Digitising agriculture will be critical to unlocking key markets, increasing sustainability, efficiency and productivity. These opportunities are rapidly evolving and offer numerous potential benefits to producers and the sector more broadly.

However, as digital agriculture continues to grow in importance, the associated risks are also heightened. Issues of access, privacy and safety surrounding the use of personal and farm data are increasing in risk for producers. Moreover, the increased automation of farming practices and digital-intelligence services will require additional policy considerations.

Given these emerging issues surrounding producers' data, the NFF's 2030 roadmap identified the need to ensure farmers have appropriate control of their data and the value derived from it. In 2020, the NFF developed the Australian Farm Data Code to address fairness and privacy in the collection, use, and sharing of producers' data.

Going forward, it is imperative that further considerations are given to the risks and opportunities associated with the digitisation of agriculture that will increasingly arise in the coming decade to ensure they support positive outcomes for Australian producers.

Principles

Principles The NFF endorses the following principles regarding connectivity:

- 1. All Australians must have accessible, reliable, cost-effective, resilient and quality connectivity outcomes.
- 2. Policy and regulatory settings should support a **pro-competitive regional connectivity market** that fosters continual service competition and innovation in order to deliver connectivity outcomes.
- 3. Appropriate regulatory intervention and public investment remains required to ensure the delivery of connectivity outcomes to all Australians in the absence of any market-led solutions.
- 4. Connectivity services are an essential requirement to **support Australian agriculture to achieve its 2030 \$100 billion farm-gate revenue target**, in particular the ongoing adoption and uptake of AgTech solutions.
- 5. Connectivity services are critical to the safety of all Australians during and after **periods of natural disasters.**
- 6. **Connectivity literacy** is an integral element of ensuring all Australians can effectivity access and utilise connectivity services, and fully participate in the digital economy, including AgTech adoption.

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² Department of Agriculture and Water Resources, 2017. Accelerating precision agriculture to decision agriculture: Enabling digital agriculture in Australia. Cotton Research and Development Corporation, Australia

- 7. **Farm data** must be subject to best practices surrounding its collection, use, control, and sharing.
- 8. **Connectivity, digital, and other technology** advancements should lead to positive production, privacy and safety outcomes for producers.
- 9. The rapidly and ever-changing nature of the regional connectivity environment necessitates **ongoing review of contemporary policy, market and technology settings.**

Telecommunications consumers

Being and staying connected

Australian farming families in regional, rural and remote Australia need to be connected and stay connected. Accessible, reliable and affordable telecommunications networks and services are critical to enable rural Australians to go about their day-to-day activities and to achieve equity with their urban counterparts.

Reliability & quality

Local connectivity gaps continue to be frustrating and unsafe for Australian farmers.

Reliable and high-quality connectivity underpins modern agriculture, enabling efficient farm management, market access and daily business operations. In rural and remote areas, health and safety is often intrinsically tied to reliable and quality connectivity. Connectivity allows access to the benefits of telehealth, emergency responses in isolated situations and communication during natural disasters. For those living outside of metropolitan areas, there may also be a stronger reliance on reliable connectivity for education, social and wellbeing outcomes. The industry and communities simply cannot afford any lapse or degradation in their service reliability and quality.

Additionally, primary connectivity barriers must be addressed in order for farmers to capitalise on new, emerging and sustainable AgTech. A failure to do so will impact farmers' productivity, efficiency, adoption and economic prosperity.

The NFF believes the following issues can and often do impact reliability:

- more frequent interruptions to state-managed power supplies leading to more frequent service outages
- relatively poor performance of regional telecommunications providers in maintaining their network infrastructure
- challenges maintaining a sustainable network (skilled workforce, availability & location)
- lack of competition
- the scale of and practical challenges in delivering and supplying telecommunications infrastructure in difficult and varied terrains
- the expense of repairing network outages quickly in more remote areas when things go wrong.



Network capacity

The NFF is of the view that farmers find network capacity issues are also a day-to-day challenge. Capacity issues are compounded during peak tourist seasons, during local events like agricultural shows or when construction projects bring new people into an area. We also note concern that capacity issues will grow in regional areas as a direct result of the 3G network shutdown.

Further, NFF members continue to call for more information on networks' voice prioritisation, with an aim to ensure the capability to make a phone call takes priority over, for example, downloading entertainment content.

The essential role of reliable connectivity for farming and family life with

Overview

explains the importance of reliable and quality connectivity for his farm business and family in regional Victoria. explains how internet connectivity is crucial for banking, operating farm machinery with GPS, accessing educational resources for his children, and enabling his wife's advertising and media business to operate remotely. He highlights challenges faced in the region, such as teacher shortages forcing them to send their eldest child to boarding school, and connectivity issues impacting emergency services like calling triple zero during a football incident. expresses concerns about the proposed shutdown of the 3G network and the need for constant upgrades to maintain connectivity. He emphasises the self-sufficiency required in regional areas due to the lack of reliable services and infrastructure compared to cities.

For the full story, see page 20 or click here.

The NFF recommends the following priorities:

Ongoing investment programs in connectivity infrastructure (Principle 1, 2, 3 & 5): The NFF supports ongoing public funding of investment programs to ensure the delivery of connectivity service expansion and quality improvements. Program design must consider the ongoing advancement of technological solutions, such as satellite-delivered connectivity and in-field connectivity solutions.

Investment in network resilience (Principle 1 & 5): Ongoing investment must be made in network resilience programs in order to better support service continuity during periods of natural disaster.

Roaming during natural disasters (Principle 5): The NFF supports mobile roaming during times of natural disaster.

Audit of regional mobile coverage & performance (Principle 1): Funding should be provided to undertake an investigation and audit of mobile coverage & performance across regional Australia. This should include the reporting of experienced congestion levels. The NFF supports the ongoing National Audit of Mobile Coverage, which partially addresses this recommendation.

Equitable and efficient spectrum allocation (Principle 2, 4 & 9): The NFF supports the equitable and efficient distribution of spectrum to foster a competitive environment that fosters investment in network expansion and improvement.

Addressing non-infrastructure related challenges (Principle 1, 3 & 9): Non-infrastructure related connectivity challenges, such as congestion, backhaul capacity and spectrum allocation, must be overcome to ensure positive connectivity outcomes.

Universal service arrangements

The importance of universal service access for Australian farmers

The NFF has long held the view that universal service requirements are a critical element of the connectivity legislative and regulatory landscape. The NFF has stated in its submission to every RTIRC that a USO must remain in place. In more recent years this has extended to the Universal Service Guarantee (USG) for broadband provision.

While the regional telecommunications market has undergone significant changes in recent years, there remains a cohort of Australians for whom the market would otherwise not provide baseline services to, in the absence of regulatory intervention.

The NFF believes it is critical that a Universal Services Framework (USF) is maintained to provide a baseline level of connectivity to all Australians.

The copper network has provided a historically reliable mode of USO delivery for many Australians in regional areas. However, user experience indicates that a cohort of customers on legacy networks, including the copper network and high-capacity radio connectors, experience ongoing issues with service reliability, down time and repair waits. These issues, most often associated with the ageing of the networks, have been stated publicly by telecommunications companies and affirmed by independent reviews. On this basis, the NFF supports efforts to consider sensible USF reform.

A capability/outcomes approach to a modern universal service delivery and guiding principles

Future USF reform should be driven by a clear understanding of what capabilities and outcomes are needed by users from universal services both now and into the future. The NFF understands the Australian Communications Consumer Action Network has suggested the adoption of a capabilities framework which aims to support social inclusion, improved economic livelihoods, and an increase in participation in social life, along with improved security and safety. Such an approach has merit and is worthy of further consideration by RTIRC.

Clear principles such as universal access, service reliability and quality, affordability, resilience and flexibility should underpin any reform agenda.

Minimum internet speed guarantee

The NFF suggests that a capabilities lens is pertinent to RTIRC's consideration of the appropriate minimum internet speed guarantee to meet modern standards. Farmers don't just rely on universal services for essential interpersonal communication or to contact emergency services. No different to their metropolitan counterparts, farmers want reliable and affordable connectivity that will consistently support their business operations, liveability and seamlessly handle significant and evolving data requirements. As a pertinent example, information which was previously distributed via paper is now preferentially or exclusively available online, poor connectivity may prohibit consumers' access to taxation, bank statements and health records. We want to avoid further situations where minimum internet speed or poor connectivity in general is a barrier to quality-of-life improvements or the adoption of increasingly productive, efficient or sustainable farming practices.



Delivery considerations

Given the apparent consensus of the impact of ageing infrastructure on the ability to deliver the USO, the NFF supports consideration of a technology neutral/agnostic approach to future USO delivery.

However, a significant body of work is required to build the evidence base for such a change to ensure regional users are not left worse off under any reform arrangements. Mobile services should not be mandated as a service to be provided under the USF, but ongoing effort should be given to network expansion to compliment fixed services and build system redundancy.

The NFF believes a modern USF should be dynamic, rather than static as is the case with the existing arrangements. Given the pace of technological change and the ever-growing importance of connectivity to provide a great number of baseline services, institutional settings should allow for appropriate periodic review of outcomes and delivery means. Caution should be applied to moving towards a provider agnostic approach to USF delivery given it may dimmish the ability of regulators to assess, manage and enforce compliance and reliability standards, as well as reduce consumer understanding of their USF rights.

For more information, please refer to the NFF's submission to the Better delivery of Universal Services discussion paper, March 2024.

The NFF recommends the following priorities:

Universal Service Obligation (USO) reform (Principle 1 & 3): The NFF in principle supports reform of the USO to address ageing infrastructure, with consideration of a technology-agnostic approach to USO delivery, providing it exceeds existing reliability standards. Recognition however must remain of the role of USO elements such as the Copper Continuity Obligation in delivering USO services to some consumers.

Universal Service Guarantee (Principle 1 & 3): The NFF supports updated telecommunication service guarantees, with adequate service performance reflecting the needs of consumers and businesses.

Mobile

Regional Australians, like their metropolitan counterparts, place significant importance on the coverage, reliability and resilience of mobile communications. Mobile connectivity plays a vital role in supporting the everyday business, education, social and health outcomes of regional Australians.

While programs to support mobile infrastructure expansion have seen increased coverage in recent years (though largely concentrated in regional and rural areas), connectivity and service quality issues remain. Long-term mobile blackspots remain a significant and serious problem for those working, travelling and living in regional, rural and remote areas.

Many farmers do not have reliable or constant mobile network coverage across their farming properties or surrounding road networks. As described by the Australian Broadband Advisory Council Agri-Tech Expert Working Group, "salt and pepper connectivity" is holding back online business and administrative functions, the full use of digital functionality on existing equipment, the use of digital technologies that need reliable and ubiquitous connectivity and is forcing costly offline work-arounds for farmers and agri-tech providers.



The key mobile-related findings of the NFF's 2021 telecommunications survey supported the assertion that regional Australians rely heavily on mobile services but continue to face coverage and service quality issues, including:

- Approximately 50% of the respondents rely on mobile data for connectivity and less than 5% use satellite technology to connect;
- 32% of respondents only have constant or reliable mobile network coverage on 1-24% of their property and over 10% have no connectivity at all;
- Approximately 45% of respondents believed the quality of the mobile network coverage at the main residence had declined in the past 12 months; and
- 50% of respondents reported the reliability of mobile network coverage had declined.

Mobile communications infrastructure, and the regulatory and commercial settings surrounding it, need to meet these reasonable service expectations and best support ongoing improvements to overcome the challenges being faced. Equally, NFF members remain cognisant of the need to ensure infrastructure providers deploy appropriate and timely engagement with communities prior to commencing telecommunications infrastructure projects, a problem commonly associated with the construction of mobile towers.

3G network shutdown

We recognise that the shutdown of the 3G network presents the opportunity for enhanced connectivity across the country, including in regional, rural and remote areas. Closing the 3G network will allow mobile network providers to repurpose the 3G spectrum to enhance 4G and expand 5G networks. Telstra has publicly guaranteed that after the 31st of August 2024, equivalent coverage will be available in areas which were previously and primarily reliant on the 3G network. We understand that Optus has implied a similar commitment. The NFF welcomes such commitments and will hold providers accountable to ensure that equivalent or improved coverage is delivered as of key shutdown dates.

However, farmers and communities are understandably apprehensive about what the 3G network shutdown means for them. The 3G network has been a reliable lifeline for many consumers, but particularly those in rural and remote areas. The 3G network continues to provide a safety net during emergencies and natural disasters and many still consider it an essential component of reliable connectivity. With existing primary connectivity barriers, including a strong reliance on the 3G network in some areas, it is these communities that will invariably suffer the lion's share of adverse consequences through the transition.

NFF members are concerned about:

- Anecdotal reports that service is diminishing or shifting in the lead up to the shutdown.
- The likelihood that the shutdown will lead to poor(er) connectivity outcomes.
- Impacted devices and unforeseen consequences.
- Their ability to raise concerns and resolve issues quickly and effectively.



Comments from Cotton Australia members

"Transitioning from 3G to 4G telecommunications has been a real headache for us. We've had more dropped calls and connectivity issues than ever before, making it difficult to manage our operations efficiently." - Cotton Grower near Dirranbandi.

"We're being told that 4G will be better than 3G, but we don't have much confidence in that. Over the last 20 years, we've seen a steady decline in coverage standards, and from what we are currently experiencing, this does not seem to be the case." - Cotton Grower near Talwood.

"Since the 4G tower went up, the number of calls dropping out hasn't improved at all compared to 3G, which was already pathetic." - Cotton Grower from Theodore.

The NFF has critical expectations of providers to ensure a seamless transition and protect the fundamental needs of regional, rural and remote communities. These expectations include:

- 1. Connectivity must be equivalent or improved.
- 2. Providers must prioritise accountability and transparency through the transition.
- 3. Proactive, robust and considered efforts are made to inform consumers and avoid adverse consequences.
- 4. Post-network shutdown issues are addressed quickly and effectively. To achieve that, we expect communication efforts and services beyond business-as-usual.

The NFF recommends the following priorities:

Infrastructure sharing (Principle 1 & 3): The NFF supports efforts by government to further facilitate connectivity infrastructure sharing in regional areas to promote competition, efficient asset use and ongoing network expansion.

Network sharing (Principle 1 & 3): The NFF supports market-led network sharing arrangements that support competitive market outcomes. Where such arrangements do not materialise, consideration should be given to requiring network sharing by Mobile Network Operators on commercial terms in a manner that does not hinder ongoing investment.

Audit of regional mobile coverage & performance (Principle 1): Funding should be provided to undertake an investigation and audit of mobile coverage & performance across regional Australia. This should include the reporting of experienced congestion levels. The NFF supports the ongoing National Audit of Mobile Coverage, which partially addresses this recommendation.

3G shutdown and **5G** transition (Principle 1, 4 & 8): The shutdown of 3G, ongoing role of 4G and rollout of 5G networks must lead to positive connectivity outcomes.

Equitable and efficient spectrum allocation (Principle 2, 4 & 9): The NFF supports the equitable and efficient distribution of spectrum to foster a competitive environment that fosters investment in network expansion and improvement.

Addressing non-infrastructure related challenges (Principle 1, 3 & 9): Non-infrastructure related connectivity challenges, such as congestion, backhaul capacity and spectrum allocation, must be overcome to ensure positive connectivity outcomes.

Fixed broadband

The NFF affirms the issues identified by the RTIRC in regard to fixed broadband. There is no simple nor one-size-fits-all solution to improving the fixed broadband options available to regional, rural and remote Australians.

The cost of building and maintaining telecommunications infrastructure in rural and remote areas can be a barrier to offering better services. We acknowledge that LEO satellite internet services have the potential to enhance internet access in remote parts of the country, particularly in areas where traditional terrestrial infrastructure deployment is impractical or cost prohibitive. However, NFF members resonate with the concerns outlined by RTIRC, including the shorter lifespan of LEO satellites, foreign ownership, and complexities of installation and support.

Ultimately, the NFF supports ensuring as many options as possible are available to rural and remote consumers, to allow consumers to identify the best broadband service dependent on their geography and capability requirements.

Disaster resilience and emergency

The NFF is of the view that the ability to communicate during natural hazard events and emergencies is critical for the safety of communities and to help coordinate emergency response. Telecommunications help to keep residents informed and provide timely information to emergency personnel during emergencies and natural disasters.

While telecommunications providers actively plan for emergencies and natural hazard events, services may become unavailable due to loss of power supply or direct damage.

No communications network is impervious to natural hazards, but regional, rural and remote Australians expect to be able to communicate effectively when disaster strikes, to help them navigate these events as safely as possible.

A key challenge is maintaining mobile services during and after disasters, particularly when infrastructure is cut off from mains power. For example, in severe bushfire events far more mobile service outages tend to be caused by loss of power than by direct fire damage.

When mobile infrastructure loses power during a natural hazard event, devices cannot make or receive emergency calls or access the internet even if residents have power elsewhere.

Mobile roaming (TDR)

The NFF believes a temporary disaster roaming capability (TDR, roaming) in emergency situations is a common-sense initiative. No one in an emergency should be left without potentially lifesaving communications due to not being a customer of a particular network.

While triple zero emergency calls are permitted on all networks, many instances arise during emergency situations that do not require these emergency calls but are of no less importance to individuals. The geographical spread of households in regional areas can make responses by emergency services often difficult, if not impossible. Key information is often relayed via mobile communications between family members, neighbours and the broader community. A pertinent example of this is people in transit who are unexpectedly caught in an emergency situation, such as fire or flood, and require assistance.

Moreover, in many natural disasters, emergency services have explicitly outlined to some regional communities that during the acute event period, emergency services assistance

will simply not be provided. This further demonstrates the need to ensure every effort is made to provide the most unrestricted communications channels where possible in these circumstances. For instance, during bushfires, the resource constraints of local bush fire brigades often see inter-neighbour responses put in place to protect properties, assets and lives. While UHF services play a key role in communicating during these periods, often mobile communications are utilised in conjunction. UHFs are most often only installed in work vehicles and in some instances a base station in the main residence, so additional communications methods are often needed when handheld radios do not suffice.

To ensure the temporary roaming arrangements best meet the needs of consumers, text, voice and data services should all be made available during emergencies. This would include, for instance, calls that may need to be placed to triple zero via the Video Relay Service or other National Relay Service calling options which require text or data capability.

With regards to customer charges under a temporary roaming scenario, the NFF is not advocating that mobile network operators unduly carry the costs to service use by customers of other networks. Appropriate mechanisms should be investigated so that costs are appropriately accounted for and attributed to the right carriers/customers if roaming was to be put in place during these periods.

Overview The interview covers experience with connectivity and communication services on her remote cattle station in rural Queensland. Key topics discussed include the importance of reliable connectivity for business operations, safety, and accessing essential services like banking and education. highlights challenges like aging infrastructure, service outages, and the need for backup options. She shares her perspective on the value of universal service obligations and the need for rigorous testing of new technologies before rollout. The interview also covers how connectivity fared during recent natural disasters like flooding, and advocacy efforts through industry groups to ensure rural voices are heard. For the full story, see page 22 or click here.

The NFF recommends the following priorities:

Investment in network resilience (Principle 1 & 5): Ongoing investment must be made in network resilience programs in order to better support service continuity during periods of natural disaster.

Roaming during natural disasters: The NFF supports mobile roaming during times of natural disaster.

The impact of government and private investment

Private investment

Noting RTIRC's acknowledgement of the recent, divestments in tower assets from Telstra, Optus and TPG Telecom to tower companies like Amplitel, Indara and Waveconn, the NFF makes the following comments.

- Appropriate regulatory intervention and public investment is required to ensure the delivery of connectivity outcomes to all Australians in the absence of any market-led solutions.
- The NFF supports efforts to ensure facilities and tower access regimes are fit for purpose and effectively facilitate competition and investment in the mobile services market for the benefit for rural, regional and remote consumers.
- The NFF is broadly supportive of considering intervention to increase choice for regional, rural and remote consumers and investment to improve regional mobile coverage.
- The NFF supports, in principle, the extension of facilities access provisions to cover all mobile network infrastructure providers, provided that this reform furthers and aligns with the above objectives.
- Any proposed reforms should complement the government's objectives to address the regulatory barriers to co-investment in multi-carrier regional mobile infrastructure, and, more broadly, enable greater investment to improve regional mobile coverage.

We refer RTIRC to the NFF's submission to the Department of Infrastructure, Transport, Regional Development, Communications and the Arts' (the Department) Effectiveness of telecommunications facilities and tower access regulations issues paper (Issues Paper).

Government programs

The NFF strongly supports ongoing public funding to ensure the delivery of connectivity service expansion and quality improvements. Program design must consider the ongoing advancement of technological solutions, such as satellite-delivered connectivity and infield connectivity solutions.

This includes programs that support the expansion connectivity services in less commercial areas, as well as programs which support consumers to overcome connectivity literacy barriers.

The NFF supports the ongoing value of the following programs:

- On Farm Connectivity Program: The Australian Government's On Farm Connectivity Program is providing \$30 million over 2 years to enable eligible primary producers in agriculture, forestry and/or fisheries to take advantage of connected machinery and sensor technology.
- Mobile Network Hardening Program: The Mobile Network Hardening Program (MNHP) is funding upgrades (\$23.5 million under Round 1) to mprove the resilience of Australia's mobile network telecommunications infrastructure in regional Australia. The \$15 million Round 2 is being assessed with outcomes expected to be announced in the near future.
- **Peri-Urban Mobile Program:** The Peri-Urban Mobile Program (PUMP) is a grants program that provides funding to improve mobile connectivity in bushfire prone areas on the peri-urban fringe of Australia's major urban and regional cities. Up to \$63 million has been committed to 3 rounds of the program, with Round 1 supporting delivery of mobile solutions in 6 major cities. Round 2 has been expanded to include 13 regional cities and recently closed for applications, with outcomes to be announced in due course.
- The Mobile Black Spot Program: The Mobile Black Spot Program (MBSP) is a long-running Government competitive grants program that invests in telecommunications infrastructure to improve mobile coverage and competition across Australia. The MBSP is supported by co-contributions from state and local governments, national Mobile Network Operators (Optus, Telstra, TPG Telecom Ltd



(formerly Vodafone) and Mobile Network Infrastructure Providers (Field Solutions Group and OneWi-Fi).

- The Regional Connectivity Program: The Regional Connectivity Program (RCP) is a competitive grants program funding 'place-based' telecommunications infrastructure projects which respond to local priorities and maximise economic opportunities and social benefits for regional, rural and remote Australian communities and businesses. The RCP complements the NBN and the MBSP by targeting the delivery of new and improved access to broadband and improved mobile connectivity in areas of high economic and social value primarily outside of the NBN fixed-line footprint.
- The Regional Tech Hub: The Regional Tech Hub (RTH, the Hub) was launched in December 2020 to provide independent and factual information to help people in regional and rural Australia get connected and stay connected more easily. The Hub provides a range of practical resources aimed at helping regional consumers find appropriate telecommunications services in their area, as well as troubleshooting tips, escalating faults with service providers and helping users to understand their consumer rights. The Hub also provides resources relating to online security and e-safety to assist people in regional areas to have a safe and positive online experience.
- School Student Broadband Initiative: In February 2023, the Minister for Communications launched the School Student Broadband Initiative, providing free NBN services to up to 30,000 unconnected families with school-aged children. The Initiative was recently extended until 31 December 2025 and aims to boost education opportunities and narrow the digital divide and cost-of-living pressures.

Regional Tech Hub (RTH)

We refer RTIRC to the Regional Tech Hub's submission to the Review. The NFF strongly believes the RTH is having a significant and tangible impact on the systemic connectivity literacy barriers in regional, rural and remote Australia. The government funded initiative continues to deliver significant value for money and is ideally positioned to expand their increasing impact with adequate, sustainable resourcing.

From frustration to solution with the support of Regional Tech Hub with
Overview
, a farmer from Gunning, New South Wales discusses his
where he raises lambs and produces wool. He highlights the importance of internet connectivity for his business operations, including banking, emails, and phone services. Initially, had limited options with Telstra as the primary provider in his area. However, after attending a Regional Tech Hub forum, he learned about Starlink and was able to set up the service through Telstra, providing him with reliable internet speeds of around 50 Mbps. acknowledges that while some farmers struggle with technology
literacy, he has made efforts to stay up-to-date. He emphasises the valuable guidance
provided by the Regional Tech Hub in exploring connectivity options suitable for his location. expresses satisfaction with Starlink's performance and Telstra's customer support.
For the full story, see page 26 or click here.

The NFF supports the following priorities:

Ongoing investment programs in connectivity infrastructure (Principle 1, 2, 3 & 5): The NFF supports ongoing public funding of investment programs to ensure the delivery of connectivity service expansion and quality improvements. Program design must consider the ongoing advancement of technological solutions, such as satellite-delivered connectivity and in-field connectivity solutions.

Sustained resourcing of the Regional Tech Hub (Principle 4 & 6): The NFF supports the ongoing funding of the Regional Tech Hub to provide Australians with independent connectivity advice and as a key means to improve connectivity literacy.

Other considerations

Please refer to the Digital Agriculture section in the introduction.

The NFF supports the following priorities:

Farm Data Code (Principle 7): The Farm Data Code and its certification framework should be reviewed periodically to ensure it remains contemporary. Support must be given to facilitate its adoption by providers operating in the Australian market.

Active assessment of risks and opportunities associated with digital agriculture: Proactive and ongoing work is required to assess the impacts of new technologies on producers, formulate new policies where appropriate, and lead initiatives to address issues.

AgTech adoption initiatives: The NFF is committed to working with government, partners, industry participants and research networks (including AgriFutures) to continue work expanding Agtech adoption by producers.

Conclusion

The NFF thanks the RTIRC for the opportunity to make a submission to the Region	ıal
Telecommunications Reivew. The policy contact for this matter is	
via e-mail cwunderstiz@nff.org.au.	

Regards,



Case studies: Complex and compounding connectivity challenges continue to plague the bush

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(1) The essential role of reliable connectivity for farming and family life
Interviewee: VIC I GrainGrowers' National Policy Council
In a wheatbelt town in rural Victoria, faces a paradox that many city dwellers might find hard to grasp. From his kitchen window, he can see the phone tower. Yet, reliable connectivity remains a constant challenge. This modern lifeline, essential for his farm business and family, flickers unpredictably like a faltering beacon in the distance.
"I can see the phone tower from home, less than a kilometre away. It's like someone is turning the dial up and down; one day we have really good reception and for the next two weeks we have just average reception," says
Importance of connectivity for farm business
runs a 2600 ha mixed farm business, comprising of oilseeds, cereals, legumes and fat lamb production. Like many other farm businesses, he relies heavily on reliable internet connectivity; internet banking has replaced cheque books, and farm machinery relies on GPS connectivity to monitor and control.
"All our machinery runs through GPS. We can tap on the phone and actually see what our tractor or harvester is doing whether it's 20 or 30 kilometres away or even if I was overseas. We can't run the business without good connectivity."
This dependency extends to every aspect of the farm. From managing crops with precision farming techniques to ensuring the machinery operates efficiently, connectivity is as vital as the rain that nourishes the soil. However, the inconsistency in service can disrupt operations and increase stress levels, highlighting the gap between the rural and urban digital divide.
A lifeline for families
For wife and three kids, the stakes of reliable internet are just as high.
The local high school struggles with a severe shortage of teachers, forcing and his wife to send their eldest child to boarding school.
"We've got subjects where the kids are missing out on two or three classes a week if not more," shares, his voice tinged with frustration.
"We've had to take a little bit on our own back with education for our two youngest. We've downloaded extra programs for the kids on their iPads for some extra learning at home.
"We're really at rock bottom in our area, especially in the Wimmera. It's not just our local high school in the area that are struggling for teachers.

"The oldest is really enjoying boarding school but at the same time you can see where the private schools are very well resourced; his academic scores are really, really good."

The family also rely on good connectivity to access telehealth services for their middle child.

"Our middle child has ADHD, and we use telehealth to connect with his pediatrician and other specialists. During COVID, good connectivity was crucial for talking to his pediatrician and other specialists."

says By FIVE plays an instrumental role in how families across the Wimmera Southern Mallee region access specialist care through telehealth.

wife runs her own rural advertising agency from home. For her, stable and fast internet is non-negotiable.

"Thank God for Elon Musk and Starlink," says with a sense of relief. "We would have terrible internet without it. Starlink has been a godsend for us, allowing my wife to work from home efficiently."

Living approximately from Warracknabeal and for both the farm and the home business. It saves travel time, allows for more efficient work, and lets the family focus on what truly matters.

A struggle for consistent connectivity

property experiences what he calls 'salt and pepper connectivity'.

"We can drive to one corner of a paddock and have reception, then move to the other side and it's gone. All I've done is drive a kilometre across from one corner to the other. You can still see the tower, but the reception varies like someone's turning a dial up and down."

This inconsistency isn't just frustrating; it can be dangerous.

"There are plenty of times when calls have dropped out. Depending on where you are on the farm, if you're standing behind something or under something, the signal just gets blocked."

The proposed shutdown of the 3G Network

With the proposed shutdown of the 3G network, concerns grow.

"We've had to update a few weather stations around the farm because they were on the 3G network. It makes no sense to change something that's still working. It comes back to that old adage, 'If it ain't broke, why fix it.'"

For many in regional areas, the transition to newer networks feels like another hurdle to jump, especially when the existing systems work adequately. The constant need for upgrades and adaptations can feel overwhelming, adding to the list of challenges that regional Australians face daily.

Blackspots a matter of life and death

The importance of reliable connectivity becomes starkly evident in emergencies. recalls an incident at a local football match this year where a player was injured and the struggle to connect a triple zero call. Officials had to move away from the ground to find a signal, highlighting the concerning issue of connectivity blackspots even in the middle of town.



"They had to run off the oval to get any sort of reception. It was bizarre to have a black spot in the middle of a football ground. We were lucky there were a couple of nurses and off -duty ambulance personnel, but it could have been much worse."

This scenario underscores a critical issue: the expectation of connectivity is not just a convenience but a necessity.

The forgotten regions

As continues to navigate the challenges of farming and family life in rural Victoria, his story is a reminder of the disparities between urban and rural Australia.

"There's a lot of problems in regional Australia. We've spoken about education and connectivity, but we could also talk about roads until the cows come home. We've become very city-centric, and I don't hold a lot of faith in our local politicians."

For ______ it's not just about the struggle for better internet but a call to recognise and address the broader issues faced by regional communities. Reliable connectivity is more than a convenience; it's a lifeline that supports education, business, health, and safety. As the digital divide continues to widen, stories like ______ highlight the urgent need for equitable infrastructure and services across all of Australia.

(2) Staying connected in a crisis

By ________ QLD I AgForce Telecommunications Committee Chair

can vividly recall the moment when connectivity was more than just a convenience - it was a lifeline.

"We were dealing with a severe flood, and communication was crucial to warn our neighbors downstream. It's very worrying when you can't get any messages out to let people know what's going on or even to let them know you're okay."

Living on a cattle station in remote Queensland, reliable connectivity is essential for business operations, safety, and keeping in touch with family, friends and community. However, this lifeline is often threatened by aging infrastructure, frequent outages and natural disasters. Through her advocacy and unwavering determination, highlights the urgent need for robust and resilient connectivity solutions in rural Australia.

The importance of connectivity in rural areas

For and her husband connectivity is a constant necessity.

"We're a family-owned and managed beef grazing property. Our home base is northwest Queensland, close to the Queensland/Territory border," she explains.

The nearest outback town, Camooweal, is over 100 kilometres away, and the vast distances between neighbors and services amplify the need for reliable communication.

"There are days when I'm managing cattle, coordinating with suppliers, and checking in with my staff—all through my phone. Without reliable connectivity, everything grinds to a halt," says

"We all depend on it for safety concerns, but especially if you employ or run a business out here. You need communications, not only for the social side of it, but to do the banking, for you to pay wages, for you to communicate with staff."

Historically, and others in remote areas relied on HF radios and Flying Doctor radios, systems that were often limited by the region's challenging topography. Today, the landscape has evolved significantly with the introduction of satellite internet and mobile networks, yet the importance of reliable connectivity remains critical.

"I think you'll find that particularly out in more rural and remote areas, people go to great lengths to try to have enough variance in their communications. They are spending a lot of their own funding to try to ensure to have the best services they can have available so that if the need arises, they have got some way of still communicating.

"Staying connected is important. People feel isolated by where they live anyway, and that fear, the safety factor, really compounds that. They'd like to know they can get onto somebody if they need help."

Challenges faced

Despite advancements, connectivity is far from flawless. Aging infrastructure, such as the high-capacity radio concentrator (HCRC) phone systems, often fail, leaving communities vulnerable.

"There's not many of these towers left in Australia. They do go out. Glitches can knock them out. They're very old technology and hard to maintain," notes.

The reliance on satellite internet, while generally effective, also has its limitations, particularly during adverse weather conditions.

"If the power goes out, we lose those services. And it takes a while to get things fixed out here.

"The good thing is we have options at the moment. If the land line is down, but our satellite technologies are up, we can do wifi calling. You can't rely solely on one type of service."

This reliance on multiple communication methods underscores the need for redundancy in rural connectivity. experience during the 2023 Gulf of Carpentaria flooding illustrates this point.

"We were very reliant on the Sky Muster service," recalls, detailing how she used satellite internet to warn downstream communities about the impending floodwaters. Yet, when the landline was submerged and the internet equipment went underwater, the fragility of their connectivity became starkly evident.

"Living out here, you learn to be self-sufficient. But even the most self-sufficient need a reliable means of communication, especially when you're dealing with the unpredictable nature of the land and weather."

Impact of natural disasters

Natural disasters, such as the severe flooding in March 2023, test the limits of rural connectivity. station experienced over 500 millimeters of rain within 36 hours, inundating buildings and cutting off essential services.

Despite these conditions, satellite internet service, Sky Muster, proved surprisingly resilient, allowing her to maintain communication and coordinate safety measures.

"Even in the torrential rain, we found that for the most part, it blipped out a couple of times but not much," she explains.



However, the loss of the landline once the cable washed away highlighted the vulnerability of their communication infrastructure.

"I fully expected us to lose all connectivity. I've been in a situation here on the station once before. Our main concern was to let people know what was happening so they were aware and could prepare.

"We knew we'd be dealing with a lot of water but that lack of communications is a worry because you've always got to expect the unexpected and it's hard to let others know what's going on if you've got no connectivity.

"There are some properties and a community north of up here that do rely on that mobile tower for voice service, and this tower was out during the flooding. It was extremely frustrating and terrifying for them, particularly if there's families of people who haven't evacuated."

Universal services and advocacy

is a staunch advocate for the value of universal service arrangements

to ensure connectivity in regional, remote and rural areas.

"There needs to be some form of universal service, whether it's USO [Universal Service Obligation] or USG [Universal Service Guarantee], for people in rural and remote areas," she insists.

The universal services framework guarantees that all Australians have access to essential communication services, a promise that Wendy believes is crucial for the sustainability of rural communities.

"I think it's critical that some type of universal service remains. What that service looks like into the future is what the discussions are right now. It possibly may take a new form but I think it's important to remember that it really needs to exist for people out here. The competition isn't healthy enough, or large enough, at this stage to reply solely on competition to keep services running for people out in the bush."

also stresses the importance of rigorous testing of new technologies before they are rolled out.

"There really needs to be due diligence, particularly even after projects have rolled out. There needs to be significant wide-ranging trialing of whatever a new type of product is, especially if it's going to be taking over a large portion of a type of service," she argues.

Her advocacy extends to ensuring that rural voices are heard in governmental and industry discussions about connectivity as AgForce Telecommunications Committee Chair.

When you're the tech support

hopes for a future where connectivity is both reliable and straightforward. She envisions a day when rural Australians don't need to be experts in telecommunications just to stay connected.

"People should be able to have whatever device they want. They shouldn't need to know if they're on 3G, 4G or what type of antenna they have.

"When people come from other areas, who haven't grown up in these districts and with these types of services, it's very confronting and very worrying for them."



Over the years, has become quite proficient in troubleshooting connectivity issues.

"You have to know your systems inside and out. There's no tech support team that can just pop by when you're out here. You're the tech support."

This necessity has led to a deep understanding of the technology that keeps their communication lines open. Yet, the transition away from 3G has been fraught with challenges.

"I've had to learn how to fix things on the fly. From setting up repeaters to understanding signal strengths; it's a steep learning curve but absolutely essential.

"Sometimes, it feels like I have to be an IT expert on top of everything else. I've spent countless hours troubleshooting connectivity issues because there's no one else to do it.

"But that shouldn't be the norm."

The goal is to make connectivity as seamless and dependable as it is in urban areas, ensuring that rural communities can thrive.

says support initiatives like the Regional Tech Hub have been a game-changer.

"At least we now have a dedicated independent service where people can contact someone for tech help. And quite often one of the first things you're asked is, 'What type of service do you have?'. They often have no idea, but they can take a picture of it and send it to someone, and someone can tell them."

The Regional Tech Hub provides a lifeline for those in remote areas who struggle with connectivity issues. It offers guidance and troubleshooting support, which is invaluable in regions where tech assistance is not readily available.

"There's still a long way to go before people can actually just work and live out in rural and remote Australia without knowing something about their connectivity. But having a service like the Regional Tech Hub is a significant step forward."

A vision for the future: reliable connectivity for all

experiences on highlight the vital importance of reliable connectivity for rural Australians. Her advocacy for universal services and rigorous testing of new technologies underscores the ongoing challenges and opportunities in ensuring that all Australians, regardless of location, have access to essential communication services.

Looking ahead, is cautiously optimistic about the promises of improved connectivity. New technologies and networks could revolutionise life on the station, making operations more efficient and providing greater security during emergencies. However, there's a lingering skepticism.

"We need to see these improvements, not just hear about them. Our lives and livelihoods depend on it."

"The idea of faster, more reliable internet and mobile services is fantastic, but we need to see these improvements materialise. Empty promises won't help us when we're in a crisis."



The broader implications for rural communities are significant. Enhanced connectivity could mean better access to healthcare, education, and social interaction, fundamentally transforming the quality of life in remote areas.

"Improved connectivity would mean kids could access better educational resources, and we could get medical advice without the long trips to town.

"Staving connected is staving safe. And that's something we can't afford to compromise

on."
(3) From frustration to solution with the support of Regional Tech Hub
Interviewee: NSW
For the frustration of spending two days to print a single bank statement was a turning point. At has seen many changes in agriculture, but the struggle for reliable internet connectivity in regional Australia has been one of the most pressing challenges.
The importance of connectivity
For NSW, cannot be overstated. Over the years, as the digital world has expanded, so too has reliance on a stable internet connection. Whether it's managing finances or communicating with suppliers, connectivity has become integral to the farm's daily operations.
Like many farmers in regional areas, initially faced significant hurdles with internet connectivity. The primary service provider in area was Telstra, and while the service was reliable, options were limited.
"Telstra was our major provider, who we're still with and have no problems with," notes.
The signal strength of other providers like Optus and Vodafone was poor, leaving Telstra as the sole viable option.
Discovery of the Regional Tech Hub
journey towards improved connectivity took a pivotal turn when he attended a Regional Tech Hub forum in October last year.
The Regional Tech Hub (the Hub) was launched in December 2020 to provide independent and factual information to help people in regional and rural Australia get connected and stay connected more easily. The Hub provides a range of practical resources aimed at helping regional consumers find appropriate telecommunications services in their area, as well as troubleshooting tips, escalating faults with service providers and helping users to understand their consumer rights.
The Hub was able to pinpoint coverage on property and provide him with invaluable guidance.

"I knew about a forum they were holding in Crookwell. I went along, spoke to them about

what they had, and they looked into my situation," recalls.

Leading Australian Agriculture

Through the forum, learned about Starlink, a satellite internet service provided by SpaceX, and how it could be integrated through Telstra. This discovery was a gamechanger. Transitioning to Starlink was a relatively smooth process, albeit with a learning curve for both and the service providers.
"I think I was the first person who bought the Starlink dish and the plan from Telstra in says with a hint of pride.
Despite some initial challenges, the collaboration between and Telstra resulted in a successful setup, providing with a reliable internet connection. The benefits were immediate and profound.
"There have been no dropouts. We get a guaranteed 50 megabytes per second."
This stable and high-speed connection has significantly enhanced his ability to manage the farm's operations efficiently. From quickly printing bank statements to ensuring seamless communication, the upgrade has alleviated many of the frustrations that once plagued his workday.
Overcoming technological challenges
Staying up to date with technology can be daunting, especially for those who are not digital natives. At acknowledges this but emphasises the importance of perseverance.
"It still continues to be challenging. You talk to a lot of people and they just get frustrated with it all, thinking that it's all too hard. And it probably is for some because we're not young anymore, and if you don't keep up with it then you get left behind."
has made a concerted effort to stay informed and adapt to new technologies, a mindset that has served him well. The Regional Tech Hub played a crucial role in this journey, not only providing information but also offering hands-on support.
"They guided me through it."
The personalised assistance helped demystify the process, making it more accessible.
Future prospects
experience underscores the potential for technological advancements to transform rural farming. He is optimistic about the future and the role of services like the Regional Tech Hub in bridging the digital divide.
"They weren't there to sell the products. They were to guide us in the direction of what we could do," he says, appreciating the unbiased support that helped him make an informed decision.
The broader implications of improved connectivity in regional areas are significant. Reliable internet can enhance not only business operations but also quality of life, enabling access to telehealth, education, and entertainment. For farmers like

represents a step towards a more efficient, connected and resilient agricultural sector.

Living in a small town in NSW, has navigated the challenges of limited internet options, leveraging the support of the Regional Tech Hub to set up reliable connectivity.





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National Farmers Federation

