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2021 Regional Telecommunications Review Secretariat
Department of Infrastructure, Transport, Regional Development and Communications
GPO Box 594
CANBERRA ACT 2601

By Post & By Email: secretariat@rtirc.gov.au

Dear Secretariat

Re: Submission to the Regional Telecommunications Review 2021 Issues Paper

AgForce Queensland Farmers (AgForce) is a peak organisation representing Queensland's cane, cattle, grain and sheep & wool producers. The cane, beef, grain, sheep & wool industries in Queensland generated around \$7.8 billion in on-farm value of production in 2019-20. AgForce's purpose is to advance sustainable agribusiness and strives to ensure the long-term growth, viability, competitiveness and profitability of these industries. Almost 6000 farmers, individuals and businesses provide support to AgForce through membership. Queensland primary producers provide high-quality food and fibre to Australian and overseas consumers and contribute significantly to the social fabric of regional, rural, and remote communities.

AgForce would like to thank the Regional Telecommunications Independent Review Committee (the Committee) for the opportunity to provide a submission to the Committee's review into telecommunications services in regional, rural and remote (RRR) areas of Australia. The Review is an important element in keeping RRR communications needs 'front of mind' for government and for the telecommunications industry. Doing so every three years enables progress to be mapped and delivers welcome accountability. These Reviews must continue given the importance of these issues to our members and their communities.

Introduction

As stated in our submission to the 2018 review, Queensland is the most decentralised state in Australia and the need for fairer, more reliable, and more affordable phone and internet services remains a high priority issue for people living and working in RRR areas.

Effective, reliable, and affordable phone and internet services are an essential part of everyday life for RRR Queenslanders, providing an economic and social lifeline. Telecommunication services are vitally important for community safety, to support business development, enhance children's education and maintain social connections.

The following submission will respond to the Regional Telecommunications Review 2021 Issues Paper to provide insights into the needs of those living in RRR Queensland.

Through ongoing interactions with our members, we believe internet connectivity, access, reliability and unavailable or inconsistent mobile phone coverage remain top priority issues requiring attention, with a key element in the response to those issues involving investing in connectivity literacy and effective support networks to get RRR users connected and to help them stay connected.

Summary of key points and recommendations (in bold):

- These Reviews are very important in keeping RRR communications needs and the progress towards meeting them 'front of mind' for all stakeholders and they should continue.
- AgForce would like to acknowledge the significant progress that has been made concerning RRR telecommunications services and support provision.
- However, 36% of Queensland respondents to the NFF survey had no mobile phone coverage or less than ¼ of their property was covered, half of the respondents were unsatisfied with their mobile phone services and 4 in 10 thought services had declined in the last 12 months – poor mobile phone coverage remains a key issue for telecommunications in Queensland.
- Reliability of services in the past 12 months had declined for mobile network coverage, internet connectivity or landline services for 43%, 34% and 21% respectively of Queensland survey respondents. This reported decline in reliability is of significant concern, particularly given the potential risks to life and well-being and the flow-on impacts on the adoption of productivity-supporting technology in business (a key barrier being internet connectivity)
- There is concern about potential impacts on mobile coverage as later generation networks are introduced, particularly on the edge of existing coverage and as High Capacity Radio Concentrator (HCRC) systems become more unreliable
- **Continued investment in the Mobile Black Spot Program and further funding into the maintenance, upgrade and upkeep of alternate forms of telecommunications (like HCRC, UHF) until mobile black spots coverage is effective, should be recommended by the Review**
- Further, about 1 in 4 respondents had successfully adopted new connectivity enhancing solutions, in some cases with added benefits of improving reception for all local users and AgForce suggests **the Review consider supporting the provision of financial assistance by government for individual connectivity initiatives, such as rebates.**
- For internet connectivity, 42% reported no coverage or less than ¼ of their property had coverage, more than 4 in 10 were unsatisfied with their internet services and 1 in 3 thought service quality had declined in the last 12 months – similar to mobile phone coverage as a key limitation to broadacre businesses in Queensland
- It is important not to underestimate the demand arising with domestic migration and permanent relocation and the ongoing supply of services to meet this demand. The increasing use of Virtual Private Network (VPN) in RRR areas, including by relocating professional workers, is bringing data demand and lag time challenges, including for the Sky Muster service. **Effective immediate planning and capacity building for the expanding future demand with domestic migration should be supported by the Review.**
- **AgForce recommends the 2021 Review support a Universal Service Guarantee (USG) that extends to internet access, including data availability and affordability considerations, while retaining fixed phone line provisions**
- With 3 in 4 respondents experiencing ongoing issues with their landline, mobile or internet service in the last 12 months, **it is recommended that the 2021 Review support service providers improving their end user support efforts, including having technical staff more easily accessible, with expectations potentially built into the Universal Service Guarantee, with or without incentives for expertise to be provided more than 150km from the cities**
- There is significant interest in Low Earth Orbit satellites to address connectivity challenges, and this interest needs to be met with accessible decision-support information and ensuring that RRR areas all benefit from the government approved rollout of this technology.

- Potential exists for government-funded, physical infrastructure in RRR areas to play an increased role in connectivity coverage and it is **recommended that the Review adopt an initiative to map existing tower infrastructure and support collaborations** adding additional services and unlocking its full value.
- Just over half of Queensland survey respondents believed there is a lack of information to allow consumers to identify, choose and use the best connectivity options for their circumstances. As has been identified in past Reviews, it is vital that RRR end-users are educated on what telecommunications solutions are available for their individual situations and to have easy access to trusted, independent and informed expertise to assess options:
 - **AgForce recommends the Regional Tech Hub to be expanded further, in terms of both expertise and capability and resourced appropriately and publicly promoted and marketed.**
 - **Regional digital champions is a positive initiative providing basic and welcome help in setting up technology and connectivity and should be supported**
 - **the Government could look to provide further funding for RRR located trainers**
 - **the establishment (or promotion if it already exists) of an independent commercial service to help RRR people make solution choices for their own individual situation**

NFF Telecommunications Survey Results

AgForce was a strong supporter of the National Farmers Federation (NFF) National Telecommunications Survey 2021 (the NFF Survey). We promoted it to our members and have presented the Queensland-relevant results in this submission, including comparing findings to our own 2018 member survey. AgForce acknowledges the efforts of NFF, its staff and members in developing and undertaking the survey and thank NFF for the opportunity to quote it in this submission.

As a member of NFF, AgForce supports the NFF submission to the Review, but where any divergence of views occurs, our submission conveys AgForce's position.

Overarching results for Queensland

There were 181 respondents from Queensland, of which about half (n=89) were farmers and about a quarter described themselves as rural residents (n=47). Of the farmer respondents, 56% were beef producers and a further 22% had beef and sheep, or grains and beef or sheep enterprises. A further 10% had grain enterprises.

Of Queensland respondents (n=163), 36% had a copper fixed phoneline connection to their main residence, about a quarter had no landline connection, about 7% had a Next G Wireless Link and 6% had a HCRC connection.

Of Queensland respondents (n = 164), 34% connected to the Internet via NBN SkyMuster satellite, 19.5% connected by mobile broadband, 18% by NBN fixed wireless and 10% by NBN fixed line. About 6% had a non-nbn wireless internet provider and 4% had no connection.

In relation to mobile phone coverage on their property outside of their main residence, of Queensland respondents (n=163):

- 7% reported no mobile phone
- 9% reported 0% (no coverage)
- 27% reported 1 – 24% coverage (very patchy)
- 14% reported 25 – 49% coverage (patchy)
- 12% reported 50 – 74% coverage (slightly patchy)
- 11% reported 75 – 99% coverage (near full coverage)
- 6% reported 100% (full coverage)

So less than 30% of respondents reported that more than 50% of their properties had mobile coverage and about half were unsatisfied with that service, pointing to mobile coverage as an ongoing limitation for many RRR businesses and families. Limitations to coverage extends to important road transportation routes in RRR areas, including the national road network.

In relation to internet connectivity, of Queensland respondents (n=165), 44% connected via mobile data, 26% had no connection, 8% had coverage extension from a house connection (as Wi-Fi or a radio link) and 2% had a satellite connection. In relation to internet coverage on property, of Queensland respondents (n=165):

- 13% reported 0% coverage
- 29% reported 1 - 24% coverage (very patchy)
- 15% reported 24 – 49% coverage (patchy)
- 11% reported 50- 74% coverage (slightly patchy)
- 12% reported 75 – 99% coverage (near full coverage)
- 7% reported 100% full coverage.

Similarly, the AgForce 2018 survey reported that only 22.5% of respondents were fortunate enough to have 50% or more of their property with constant or reliable internet connection. Poor connectivity away from the homestead is a significant limitation to productivity gains and enterprise growth for broadacre agriculture.

In July 2018, AgForce surveyed members as part of the Regional Telecommunications Review 2018

National survey seeking insights into their experiences with telecommunications providers and regional connectivity. In total there were a total of 82 responses covering 42 post codes. Of those responses 79 % of responses identified as being a farmer, 8.5 % as a rural resident and 7% as being a rural business. The responses from that 2018 AgForce survey are used in this submission to compare against the NFF results, while noting making direct, valid comparisons between the two surveys is difficult.

Table 1: Queensland respondent overall satisfaction (%) with their services (Source: NFF Survey 2021)

	Unsatisfied	Somewhat satisfied	Satisfied	Very satisfied	Extremely satisfied	N/A
Main residence internet	22.6	35.2	22.0	10.1	6.9	3.1
Property internet	42.1	18.6	8.3	4.8	2.1	24.1
Main residence mobile service	39.5	27.4	14.7	7.6	5.1	5.7
Property mobile service	49.7	15.0	9.8	5.2	2.6	17.7
Fixed line phone (landline)	12.3	16.1	24.5	12.3	4.5	30.3

This skewing towards dissatisfaction with telecommunications services in RRR Queensland remains consistent with the findings from the 2018 AgForce survey.

Committee Question Responses

The rest of this submission will directly address the relevant questions posed by the Committee.

Adequacy – Changing Demand

1. What telecommunications services are required in regional Australia to meet current and future needs? Are there any things regional communities and businesses need to do, but cannot, on their existing services?

Progress made

AgForce would like to acknowledge the significant progress that has been made concerning RRR telecommunications services and support provision.

Since the last Review, there has been significant improvement reported in the Digital Inclusion Index for Rural Queensland, across access, affordability and digital ability areas, with the index rising from 51.7 in 2017, to 56.8 in 2020¹.

Elements supporting this improving outcome are the establishment of the Regional Tech Hub (RTH), continued investment in the Mobile Black Spot Program (MBSP) which is strongly supported, the Sky Muster plus enablement and further investments by Telstra into on-ground extension. Challenges remain and it is vital that governments and other stakeholders continue to invest in securing better outcomes for RRR areas.

Continuing issues

Internet connectivity, access, reliability and unavailable or inconsistent mobile phone coverage remain top priority issues and this is backed up by available survey data. Also important is the education of users in the use of technology and what is available that will meet their needs.

As we noted in our 2018 submission, the Australian agricultural industry is diverse and no two farming enterprises are the same. Therefore, the technology mix and solutions need to reflect this diversity of enterprises and needs. A mixture of fixed and mobile options along with bandwidth is needed to respond to the connectivity requirements of the Australian agricultural industry.

In relation to timing of their last update of telecommunications equipment/devices/providers, Queensland respondents to the NFF Survey (n = 156), 78% had updated their mobile phones in the last 2 years and 62% their internet devices. However, over half had not changed mobile service providers in the last 5 years (despite quality of services declining for about 4 in 10 respondents over the past 12 months), about half for landline service providers and 44% for internet providers (despite quality of services declining for about 3 in 10 respondents over the past 12 months). Thus, while technology is being more regularly updated, the providers of those services are not, potentially due to a lack of suitable alternative providers.

nbn Sky Muster

Since the last RTIRC review, nbn Sky Muster has been a good point of access for those who cannot access an alternative faster service – with about 1 in 3 Queensland respondents to the NFF review connected via nbn SkyMuster satellite. However, it still experiences real challenges with latency. For example, an accountancy firm in Southwest Queensland cannot utilise a cloud service effectively for its business needs due to latency issues. AgForce supports a better service being made available from Sky Muster through using new technology.

Itinerant workers

Currently many itinerant workers, such as fencers, musterers, drovers, fishing trawler operators etc, do not have any options for accessing internet services apart from through a mobile service, which often is not available in the areas where this work takes place. Only 30% of Queensland respondents had more than 50% internet coverage of their properties.

Primary production industries rely heavily on these workers. We need to have a data service that enables attraction and retention of these workers as well as supports their personal safety while working and living in RRR areas. Portable mobile stations or mobile LEO satellite services are potentially part of the solution.

2. What changes in demand, barriers or challenges need to be addressed when it comes to telecommunications services in regional, rural and remote Australia?

In relation to trend changes in quality of services over the past 12 months, Queensland respondents to the NFF survey (n = 160) indicated that in relation to mobile network coverage 48% thought quality of services were about the same however, 42% thought they had declined and only about 1% thought quality of services had improved.

¹ [TLS ADII Report-2020_WebU.pdf \(digitalinclusionindex.org.au\)](https://www.digitalinclusionindex.org.au/TLS_ADII_Report-2020_WebU.pdf)

In relation to trend changes in quality of services over the past 12 months, Queensland respondents to the NFF survey (n = 160) indicated that in relation to internet connectivity, 58% thought quality of services had remained the same and 32% thought it had declined and 4% thought it had improved.

In relation to trend changes in quality of services over the past 12 months, Queensland respondents to the NFF survey (n = 160) indicated that in relation to landline services, about half thought quality of services had stayed the same, 20% thought it had declined and less than 1% thought it had improved.

Data and VPN use

The lack of data volume has diminished somewhat as a prime limitation unless the usage involves video-streaming or use of a Virtual Private Network (VPN). VPN use is likely to become increasingly common, particularly for professional workers relocating out of larger urban centres as a result of the COVID pandemic or for 'tree changes' and VPN use is bringing data demand challenges for the Sky Muster service.

The focus is turning more to reliability, speed and affordability as usage increases. RRR users are looking for the offer of unlimited plans and low-latency, high-speed connections comparable to what is available in urban areas. It should also be noted that as more data becomes available the more that is used.

In relation to data affordability, the majority of Queensland respondents with an internet-only connection (about 47%) spent between \$50 and \$99 per month. The majority of Queensland respondents with an internet and phone bundle (about 43%) spent about \$100 to \$199 per month and a roughly equal number of respondents with a bundle landline, phone and mobile plan spent between \$100 and 199 per month or \$200 to \$399 per month (32 and 31 % respectively). About 3% of Queensland respondents spent over \$1,000 per month on connectivity.

When it came to current internet speed and data allowance for current internet needs, the NFF survey showed that 49% of Queensland based respondents (n = 160) rated it poor for their property and 29% rated it poor for their main residence. Only 35% rated it good or excellent for their main residence, falling to 16% for their whole property. A Universal Service Guarantee (USG) that extends to internet access is supported and outlined further below.

Unrealistic expectations by providers of end user technical troubleshooting

From the NFF Survey, of Queensland respondents (n=151), over three quarters (76%) had experienced ongoing issues with their landline, mobile or internet service in the last 12 months. Encouragingly, this proportion with ongoing issues is lower than the 87% reported in the AgForce survey of 2018.

When it came to speaking to a service provider about connectivity, 10% had spoken in the past week, 16% between a week and a month ago, 24% between a month and 6 months ago, 25% between 6 and 12 months ago and 17% more than a year ago. About 9% had never spoken to their provider. When it came to satisfaction with the service providers response (n = 157), 30% were unsatisfied and 34% only 'somewhat satisfied'. 56% said that the issue was not resolved or not yet resolved.

Issue resolution was sought by two thirds of respondents (total n = 147) by using the customer service channels provided by telecommunication service providers (email, call centre, online chat function) or by going in-store (17%) and about 29% either did it themselves or asked family/friends/community who use similar technologies. Only about 5% use free services such as the Regional Tech Hub. Unfortunately, about 18% do nothing as they have tried and found it too hard.

As noted in our 2018 submission, it is important that those experiencing issues can turn to a variety of information sources such as a provider's website and helplines. AgForce has established escalation processes for our members who are experiencing issues with Telstra and nbn. This process is for those who have already raised an issue with these providers but have not achieved a suitable resolution.

In their efforts to control costs, many service providers including the nbn seem to have policies or approaches that puts the onus back on the end user to solve technical issues in their service provision – with technical expert support largely not readily available to product users.

Pages of detailed, complex and unclear technical instructions are often provided with limited technical experts to guide end users through the process of obtaining a solution to their problems. This is very inefficient, costly and frustrating for the users of these products and a disincentive for many to update their telecommunications services.

Unsupported user efforts to put together a workable system in RRR areas represents a significant expenditure of time and an opportunity cost to the individual, their business and their community. Technical troubleshooting is not ‘core business’ for RRR users.

For example, the nbn do not use monitoring systems for their connections and require specific requests by affected end users to fix issues with their satellite Network Termination Devices (NTDs), as opposed to the preferred solution of monitoring for issues and applying fixes automatically.

Providers, such as nbn, need to step up and take ownership of that gap in support, such as having technical staff located and more easily accessible in RRR areas to deal in a timely way with trouble-shooting issues. Such embedding of capability could also be seen as an important part of enabling the wider regionalisation agenda. Including expectations of provider provision and availability of support could be built into the Universal Service Guarantee, with or without incentives for expertise to be provided more than 150km from the cities.

Management of superseded technology

The process of providers superseding and replacing older technology in RRR areas, which are often reliant on that older technology, is a concern and challenge. For example, there is concern about the 2024 closure of the 3G network being progressed by Telstra and potential impacts on mobile coverage, particularly on the periphery of coverage where boosters are already needed to secure a strong signal. The NFF survey indicated that while 56% of respondents in Queensland were aware of the Telstra 3G switch-off in 2024, about 43% were unsure if they had technologies that were 3G compatible only, with 17% recognising that they did have such technology.

While moving to 4G and 4GX resulted in significantly more coverage there was also inconsistencies in that coverage ‘boost’.

Further, HCRC systems are becoming more unreliable, as equipment becomes increasingly obsolescent and technical repair skills fall in supply and more often is used simply as a backup system – particularly for personal safety reasons. ‘Alternative voice’ trials to replace the HCRC system are running too slowly to keep up with the pace of change and are just based on the existing satellite platforms with the same mobile service tacked on. AgForce would like to see some new thinking on these issues.

As a result of these developments, UHF radios are again taking on a bigger role in keeping neighbours connected. Local government is taking over the licensing of UHF repeaters but without the capacity to effectively maintain the repeater system. Further consideration is needed of providing public funding for the maintenance, upgrade and upkeep of these forms of telecommunications (UHF) until mobile black spots coverage is effective.

3. How have the Government’s policies and programs affected telecommunications service outcomes in regional, rural and remote Australia? How can these be improved?

Universal Service Guarantee (USG)

As stated earlier, in relation to internet coverage on property, 57 % of Queensland respondents to the NFF Survey reported less than 50% coverage on their properties, including 13% that had no coverage. Only 23% reported greater than 50% coverage.

Beyond including expectations of provider provision of support, the USG could be expanded from only covering landline and mobile phone services to also include internet access, given digital access can be just as critical in our society and economy as voice connections. This could include data availability and affordability considerations, towards greater equity in opportunity with urban consumers.

However, as noted in our 2018 Review submission, access and use of a landline service remain critical to those living in RRR Australia. The AgForce survey in 2018 indicated 83 % of people are reliant upon their landline even when they have access to their mobile and/or internet connection. The 2021 NFF survey pointed out that 36% of Queensland respondents still had a copper fixed phoneline connection to their main residence.

While the traditional copper landline has become obsolete in many urban locations, the reliance upon this infrastructure continues to be vital for many situated in RRR areas. Access to and ongoing provision of a copper line should not be removed from any future Universal service agreements.

Mobile phone coverage

As identified earlier, mobile phone coverage remains a key challenge for RRR Queensland, even in more closely settled/inner-rural areas and along major transport corridors. In relation to mobile phone coverage on property outside of their main residence, the NFF Survey indicated that half of Queensland respondents reported less than 50% coverage and almost 1 in 10 reported no coverage at all. As stated in our 2018 Review submission, AgForce remains a strong supporter of the Mobile Black Spot Program and its ongoing funding, particularly as the more expensive to service areas become more prominent. We recognise the efforts of governments to fill in the coverage ‘gaps’.

About 28% of Queensland respondents (n = 148) to the NFF Survey had successfully adopted new connectivity enhancing solutions (eg, mobile repeater or Wifi solutions) to improve their connectivity in their home or on farm. Further, 24% had tried new solutions that were not successful. The most common solution was a booster (in-line amplifier) for 54%, antennas for 51% and repeaters for 19%. About 41% had spent between \$1,000 and \$5,000 on their solutions and 4% between \$5,000 and \$10,000. These personal solution adoption rates are greater than that reported in the AgForce 2018 survey, where personal infrastructure investment options including antennas (one third of respondents), boosters (28 %) and repeaters (4%).

Due to resulting improvements in service, the use of boosters is increasing and has the added benefit of taking some of the load off the tower, so improving the reception for all local users. For example, 2 mobile boosters to get coverage on a rural property cost in the order of \$10,000-\$15,000.

Financial support by government for use of these boosters in RRR area would help uptake and be good for increasing the range of the tower and extending its longevity. If adopted, such subsidies for boosters should not be seen by governments as fully meeting their responsibility to address the need for support.

Further, it has been proposed that telecommunications companies should enable Wifi calling (telephone calls over the internet or VOIP) to all phones capable of that functionality, not just the selected ones the individual companies sell. Wifi calling requires the telecommunications carrier to enable firmware on their system and for the phone maker to do the same on the phone. Telstra have done this for selected phones that they sell eg, Iphone and Samsung and have also partnered with Google to enable phone calls over their Nest and Hub range of devices. However, some phone models (eg, the Sony XY2 Compact) are capable of Wifi calling but the firmware is not enabled by Telstra.

While AgForce are not aware of the actual extent of this issue, enabling this throughout Australia would allow rural and remote users who do not have mobile coverage to use their phones at home, receiving text messages and phone calls through their home broadband connection.

Personal solutions assistance

As identified in the last section, many people in RRR areas are being proactive and investing in developing their own personal telecommunications solutions and further and faster progress could be achieved by further incentivising them given the significant personal cost of doing so.

This could be structured as a rebate program for developing bespoke communications solutions for primary producer's own properties – either as individuals or collectives. For example, a 25% rebate provided by state government as part of a regional development and regionalisation agenda. How do we use government policies, levers and frameworks to do so?

CASE STUDY: ANDREW SEVIL, cotton/grain/cattle producer from St George

Around 2016 we had very limited internet connectivity, less than 1MB/sec, and I didn't want the latency issues that is associated with satellite services. I decided to try to reach available 4G service in St George and Dirranbandi, so we built and erected a 53m, guyed mast tower.

We load balance two services (Telstra/Optus) to supply connectivity to the residential homes (2), worker accommodation (1) and also distribute the Wifi to several points around the property for vehicles/tractors etc, to access. These vehicles then redistribute the signal for use by all employees and management.

We have also created an area wide LoRaWan network and currently have approximately 15 LoRa gateways around the district, as well as in South Australia and other areas in Qld. We deploy sensors/devices for things such as water channel levels, water storage levels, diesel tank sensors, flow meters, coldroom temperature, and weather stations.

The added benefit of the tower is it provides access for neighbouring properties to utilise its height for their own connectivity. We also have the ability to potentially change providers and access high speed airfibre services coming into the area.

Overall, the benefits of our system are much faster internet, low latency and the option of different providers. The benefit of height enables this. Also makes the connectivity to all areas of the property possible. The key learning is that 'height is king'. It's so important to get above the trees and provide a 'line of sight' to enable high speed connections.

Plenty of people are prepared to invest at a local level in towers, solutions, etc. Many just need some input into what up to date, available technology is pertinent to their situation. This is addressed later in this submission.

Adequacy - Service Reliability

4. How do service reliability issues impact on regional communities and businesses? How do outages, including in natural disasters, impact on communities and businesses?

When queried about reliability of service trends in the past 12 months, the Queensland respondents to the NFF Survey (n = 160) indicated that reliability had declined for mobile network coverage, internet connectivity or landline services for 43%, 34% and 21% respectively. Less than 2% of respondents for each of mobile services, internet connectivity or landlines reported than services had improved. This reported decline in reliability is of significant concern.

About three quarters of Queensland respondents rated internet connectivity as extremely important to their business. Technologies or actions most commonly reported as requiring connectivity include business compliance reporting, tag readers, security, weather stations, sensors and livestock monitoring. About 6 in 10 respondents indicated that the reliability of their current connectivity limits their ability to adopt technologies or practices that they would otherwise want in their system.

There are a range of impacts of unreliable service on RRR communities and the individuals that make them up – from the merely annoying to the life-threatening.

For example, chronic or intractable problems with technology and connectivity and seemingly never-ending efforts and funds required to fix them, can cause significant mental health challenges for technology users and their families. They can also be impacts on business performance and on achieving remote education outcomes.

CASE STUDY: KYLIE STRETTON, Cattle grazier, North Queensland

In May 2021, my husband was involved in an accident at our cattle station in North Queensland. We could get him back to the homestead to talk to the Royal Flying Doctors directly to organise retrieval and immediate medical assistance using our RFDS Medical Chest. We are by no means remote; we can see the glow of lights from both Townsville (80km in a direct line) and Charters Towers (40km direct line) at night.

Our voice telecommunications are accessed via a HCRC landline and the 3G network from a tower 46km away, using Cel-Fi boosters with aerials mounted on high masts (installed at the cost of approximately \$4,000 each on two houses). Unfortunately, neither connection could be deemed reliable, with the HCRC working about 60% of the time and the mobile service working around 75%.

*Of course, they both decided to fail simultaneously on the day in question, leaving me with no acceptable way to speak to the RFDS quickly. I had forgotten wi-fi calling via my SkyMuster connection in my panic, but I have often found that very difficult to connect and use. I was running between the two houses (200m apart), trying to get either landline to work, as well as running to places away from the house where I knew I could get mobile services without the aid of the booster in case that was the issue (it wasn't). Finally, after ten minutes and many callbacks from the RFDS, I was able to get a stable mobile connection where we had positioned my husband and was able to be by his side while talking to the RFDS. This incident highlighted that **no matter how many options we have available to us, they're of no use if they're not reliable, particularly landlines.***

5. How might such impacts be addressed to ensure greater reliability? How can the network resilience be addressed in regional areas?

Suggested improvements to service reliability are identified throughout this submission and include expanding the USG to also include internet access, addressing mobile black spot issues and supporting users in finding viable personal solutions.

AgForce also supports the establishment of regional connectivity plans, through which RRR communities can advocate for what they need.

Adequacy – Covid 19

6. How did the use of digital services change for regional consumers and businesses during the response to the COVID-19 pandemic? What insights for future service delivery does this provide?

About 63% of Queensland-based respondents to the NFF Survey indicated that concerns about reduced levels of connectivity would impact their decision to move to, from, or between a RRR location.

The significant move towards remote working through the COVID-19 pandemic has added further demand for digital services in regional areas. SkyMuster Plus has been a good service to contribute to meeting these needs but some issues encountered have included:

- VPN issues need to be addressed
- Community/end user knowledge is still very low
- Some Retail Service Providers (RSPs) are trying to sell higher standard SkyMuster plans rather than Plus plans, and other RSPs don't even provide Plus plans

- Microsoft Office 365 problems on SkyMuster are also causing huge issues now, especially for those in lockdown
- the RTH, RSPs and nbn need to improve end user assistance.

Approaches to address these issues is covered in more detail elsewhere in this submission.

There are a number of impacts of isolation on safety and health and welfare, including mental wellbeing and these impacts are exacerbated by a lack of connectivity which limits management options. It can be 'soul destroying' not having connection and not knowing where to get support to address it. Noting generally poorer health services and outcomes in RRR areas, particularly rural and remote, the ability to connect, access support and the ability to fix quickly is vital.

Opportunity – Regional Development

8. How can investment in telecommunications infrastructure work with other programs and policies to encourage economic development in regional Australia?

The COVID-19 pandemic has sparked many social and work-related changes, including greater interest within the urban population in living and working in RRR area of Australia. As associated migration from urban areas occurs, with it comes expectations about the liveability and an expectation of reliable telecommunications and internet services able to be accessed from anywhere. Compared to fixed points of access, mobile points of connection are becoming increasingly important.

It is important not to underestimate the demand arising with domestic migration and permanent moves and the ongoing supply of services to meet this demand. Providers need to build capacity now for multiples of the current service demands likely arising in the future, particularly given the pace of change.

An emerging issue is the use of VPNs by people working for large companies who are based in RRR areas. If we see large scale migration occurring, then lag times when using a VPN in those areas can be a problem where they need to be used for longer than short-term periods. This situation points to the question: 'What is the plan for those with VPN requirements in RRR areas?'

9. What role could innovation, including new models, alternative investors or new ways of doing business, play to encourage investment in regional telecommunications infrastructure? What are the barriers?

We have outlined previously the potential for personal investment in the context of finding connectivity solutions using (or re-combining) available technologies, but there is also potential to incentivise private investment into identifying and subsequently developing new, ground-breaking, innovative ideas. Innovators are the starting point in future progress however the high risk to return ratio is often a key barrier to their investment. Some incentives, such as grants, could make a real difference to the pipeline of solutions needed to address RRR telecommunications needs and achieve its potential.

Opportunity – Emerging Technologies

10. To what extent will new technologies enable significant change to the delivery of telecommunications services in regional Australia over the next 5-10 years? Are there any barriers to accessing these technologies?

The Australian agricultural industry is striving towards a farm-gate value of \$100 billion by 2030. One of the identified enablers of achieving this goal is innovation and the application of new technology.

As stated before, about three quarters of Queensland respondents to the NFF Survey rated internet connectivity as extremely important to their business. Technologies or actions most reported as requiring connectivity include business compliance reporting, tag readers, security, weather stations, sensors and livestock monitoring.

AgForce's telecommunication survey in 2018 showed that 100 % of respondents identified barriers that are preventing the uptake of new technology. Of those identified the following are the five key issues:

1. Internet connection is not strong enough
2. Do not have access to new technology
3. Too expensive
4. Do not know what new technology is available
5. Do not have technical support

When it comes to the major barriers to the uptake of on-farm technologies in 2021 we see similar identified barriers, with internet connectivity still easily the most frequently identified barrier. The NFF Survey results are that Queensland respondents (n = 137) most frequently noted:

- | | |
|---|-----|
| • Internet connection is not strong enough | 65% |
| • Too expensive | 28% |
| • Do not have technical support | 23% |
| • Do not know what new technology is available | 23% |
| • Do not know how to use the technology | 19% |
| • Do not have access to new technology | 17% |
| • No sure how to make it all work together | 15% |
| • Do not understand how to connect the technology to the internet | 12% |
| • Too complicated | 12% |
| • Other (please specify) | 12% |
| • Technology is incompatible with other products I have | 12% |
| • Takes too much time | 10% |
| • I need someone to contact as a starting point | 10% |
| • Investment outweighs the benefits | 10% |
| • No barriers | 8% |
| • Too many options | 7% |
| • Not worth it | 7% |
| • Do not trust providers with my data | 7% |

Low Earth Orbit (LEO) satellites

Given that strength of internet connectivity remains a major issue, there is significant interest in what service improvements will be delivered from the emergence of LEO satellites. Based on the experience to date with Starlink in Victoria, if LEO satellite service delivery is done well it will solve many RRR telecommunications issues. There are also reports that the Starlink satellite broadband service has the capacity to become mobile, with satellite receiver dishes potentially able to be mounted on vehicles in future.

Performance indications are that upload and download speeds, latency and data availability are far superior to what is currently available from nbn Sky Muster. It is noted that new satellites are being developed which may slow down the rollout of the Starlink system and there are some identified challenges with overseas parts supply and replacement.

User interest in LEO options needs to be met with accessible and relevant information and knowledge to inform potential customers' decisions as well as efforts to ensure that RRR areas will all benefit from the government approved rollout of such technology. The reliability of such information is also important with independent testing and reviewing indicated.

11. How can Government better support the rapid rollout of and investment in new telecommunications solutions in regional areas?

Greater focus and investment into user education and support is needed to match the roll out of infrastructure – there is no point investing in infrastructure if no one knows how to use it. A more effective RTH would be a great contributor to this goal. See below for further comment on the RTH.

Opportunity – Maximising Outcomes

12. How can different levels of Government, the telecommunications industry and regional communities better co-ordinate their efforts to improve telecommunications in regional Australia?

Shared tower infrastructure

There is significant existing, government-funded, physical telecommunications infrastructure in place across RRR areas, including 'line of sight' HCRC towers. While significant questions of ownership and competition would have to be worked through, this infrastructure could be used to 'bolt on' new technology options.

To help understand what is possible and to use it, a proposed initiative would be to map the existing tower infrastructure that could support connectivity gap 'fill-ins' and develop visible and transparent recommendations about how they could be used. This would involve stakeholders such as BAI Connections (formerly Broadcast Australia) and Telstra in a collaboration that facilitates a workable system, particularly for local stakeholders.

AgForce understands that Telstra is in the process of a business restructure that will assist in making existing tower infrastructure more available for adding additional services and unlocking its full value. Telstra also seems to be moving towards greater collaboration with other service providers, such as TPG and Optus, on meeting future coverage needs and developing collaborative solutions. This approach is very welcomed and will help deliver improved services to RRR areas.

13. What changes to Government investment programs are required to ensure they continue to be effective in delivering improved telecommunications?

Access to trusted and independent advice

In our 2018 submission, AgForce proposed that the most significant impediment to uptake of improved telecommunications and connectivity is access to trusted and independent advice on telecommunication services. This was firstly enabling of improved decisions on what products and services are best suited to someone's circumstances; followed by how to maximise benefits through improvements to digital literacy. It was concluded that if RRR Queensland was to get the most out of improvements to connectivity, they will need independent, trusted advisors to help them along the way.

RRR Australians struggle to access and fully utilise telecommunications technologies as demonstrated in both the AgForce 2018 and the NFF 2021 surveys. There is a need to bridge the gap between existing telecommunications offerings in RRR Australia and the digital ability of end users to apply these services to improve their lifestyles and businesses. In 2016, AgForce became aware of this pressing digital literacy issue and developed a Telecommunications Innovation Project (TIP), aimed at solving this issue, and sought industry and government collaboration. Further information on the TIP is contained in AgForce's submission to the 2018 review.

The Regional Tech Hub (RTH)² initiative was warmly welcomed by RRR stakeholders, including AgForce, upon its establishment. However, to some frustration, the RTH is still delivering only a small proportion of the services that the volunteer Better Internet for Rural, Regional and Remote Australia (BIRRR) was providing and wait times for provision of problem solutions remains extended – up to 3 weeks to get an answer from the RTH to people referred to them by BIRRR.

It is vital that RRR end users are educated on what solutions are available for their individual situations and have someone with expertise to call to talk through options. This is where the RTH should be operating, alongside support from regionally located employees of telecommunications providers. Telstra Country Wide was a former service that provided solutions quickly, and the current trend back to regional call centres is encouraging. End users need a better system than call centres staffed with operators who do not understand rural issues.

² <https://regionalttechhub.org.au/>

It is timely for the RTH to be expanded further, in terms of both expertise and capability and resourced appropriately. This includes having more people on the ground to sit down with end users to find solutions, like nbn Local. Alongside this is a need for government to promote and market to the public the RTH service and its capabilities, to continue to grow use of its services and divert demand from volunteer services, such as BIRRR.

Regional digital champions is a positive initiative seen in other states that provides basic and welcome help in setting up technology and connectivity.

Additionally, the Government could look to provide funding for regional area trainers, such as through the Queensland Research and Education Network (QREN) Networking the Nation funding.

Awareness - Education

14. How can regional consumers be better supported to identify, choose and use the best connectivity options for their circumstances, as well as to understand and use their consumer rights?

Just under half of the Queensland based respondents (n = 147) to the NFF Survey had done some training or self-education in the last 12 months to improve their digital ability. For most it was learning by experience (55%), then from peers, family and friends (48%) or accessing online resources such as blogs or videos (46%). This is consistent with the AgForce survey results in 2018.

There needs to be more independent and individually personalised advice available to ensure the needs of the end user are met and where a commercial imperative for suppliers or installers is not driving the interactions. BIRR remains independent and is actively across telecommunications needs. The RTH needs to be supported further in achieving service delivery outcomes.

Independent choice support

An important potential solution would be for the establishment (or promotion if it already exists) of an independent commercial service to help people make choices about solutions for their own individual situation. This goes beyond simply getting connected. Similar concepts include the Kondinin farming group, consumer group CHOICE, independent technology comparison site AgTechFinder.com.au or the more urban focussed WhistleOut, but applied at a more local level in RRR Australia. The RTH and BIRRR also have comparison tables, but currently these are not very user friendly in terms of functionality, and timeframes for responses for the RTH.

Part of this support could include a greater expectation on technical services and product providers to test their own products *in situ* on property at no or low risk to the end user ie, demonstrate effectiveness in that context prior to the end user paying for the services, rather than having to pay to be the 'guinea pig' in technology refinement. At the moment much of the risk in developing an effective service rest with the individual user in RRR areas.

Awareness – Public Information

15. To what extent is public information on connectivity options, including predictive coverage data and speeds, sufficient to help regional customers make informed decisions? What other information is needed?

Just over half of NFF respondents believed there is a lack of information to allow consumers to identify, choose and use the best connectivity options for their personal circumstances. Information needs to meet the needs of the audience when they need it to maximise its benefit – clarity, accessibility, timeliness. Information should be available at all times for when end users encounter issues and go seeking solutions.

For any inquiries in relation to this submission please contact Dr Dale Miller, General Manager – Policy on [REDACTED] [@agforceqld.org.au](mailto:[REDACTED]@agforceqld.org.au) or [REDACTED].

Yours faithfully

A handwritten signature in black ink, appearing to be 'M. Guerin', written in a cursive style.

Michael Guerin
Chief Executive Officer