

November 2022



MAPPING THE DIGITAL GAP

Measuring Digital Inclusion and Media Use in Remote Aboriginal and Torres Strait Islander Communities 2021-24

ERUB (DARNLEY ISLAND),
ZENADTH KES (TORRES STRAIT) QUEENSLAND
COMMUNITY OUTCOMES REPORT 2022



Acknowledgement of Country

We respectfully acknowledge the Erubam Buaigiz people, the Traditional Owners for Erub, and all Torres Strait Islands peoples, and pay our respect to their Ancestors and Elders, past and present. We also acknowledge the Traditional Custodians and their Ancestors of the lands and waters across Australia where we work, live and undertake our research.

About the Mapping the Digital Gap Research Project

Mapping the Digital Gap is a 4-year research project working in partnership with local organisations in 12 remote First Nations communities to generate a detailed account of digital inclusion and uses of digital services including news and media, track changes over time, and inform appropriate local strategies and services enabling informed decision making by remote Aboriginal and Torres Strait Islander people. It is being undertaken through RMIT University as part of Centre of Excellence for Automated Decision Making and Society, in partnership with Telstra.

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tsima4mw.org.au

TSIMA Manager: Diat Alferink

Senior Broadcaster/ Research Support: Jenni Enosa

Community Co-Researchers

Nixon Mye and Lala Gutchen (pictured below)



Torres Strait Islands Regional Council:

Erub Councillor: Jimmy Gela

Divisional Manager: John Armitage

Research Participants and Stakeholders:

Thank you to all the community residents and local agency staff who generously participated in the surveys and interviews, providing the personal experience to make this research meaningful. As well as 44 community residents surveyed, we conducted 6 interviews with local residents and 8 interviews with stakeholder agencies including:

1. Torres Strait Island Regional Council (TSIRC)
2. TSIRC Engineering
3. Erub Primary Health Care Centre
4. Tagai State School – Erub campus
5. Torres Strait Islander Media Association
6. My Pathways (Community Development Program provider)
7. Erub Arts

Erub research trip dates:

4th to 8th April 2022

Attending RMIT University researchers:

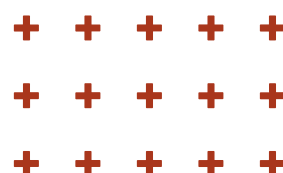
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Figure 1: Photo of research team in Erub - Dr Indigo Holcombe-James, Co-researchers Nixon Mye and Lala Gutchen, Dr Lyndon Ormond-Parker, Dr Daniel Featherstone, in front of the 'Tree of Knowledge' in the central area of Erub Community.



1. EXECUTIVE SUMMARY

Erub (Darnley) Island is located in the eastern island group of Zenadth Kes (Torres Strait), near the Great Barrier Reef (see Figure 2). It is approximately 200km northeast of Horn Island, where the regional airport is located. The traditional owners are the Erubam Buaigiz people.

Erub is approximately 3km long by 2km wide. Erub's population of 326 is dispersed across 19 villages, comprising:

- + Nine villages on the southern side of the island – Isem, Tor, Iwau, Banidog (Banidun), Greenhill, Mogor, Dadamud, Seim and Badog;
- + Three villages on the south-westerly side - Medigee, the Central Business District, and Babineur and Wau;
- + Three westerly villages - Kedarwasi, Egruie, and Sadi;
- + And four villages on the north-east side - Saager, Zaum, Zaum Paur and Ewi (See Erub map in Appendix 4).

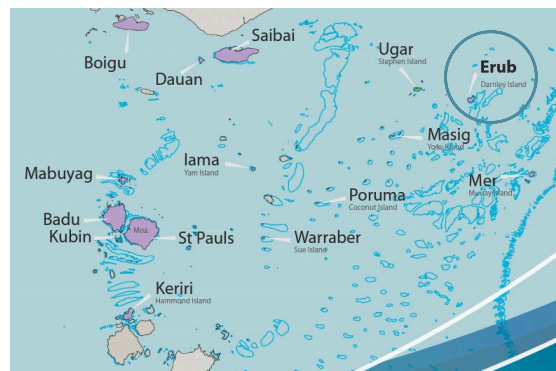


Figure 2: Location of Erub Island in Zenadth Kes (Torres Strait) (Source: TSIRC Planning Scheme, page 293)

Our first research visit to Erub was undertaken from the 4th to 8th April 2022. The RMIT research team worked with community research partner Torres Strait Islander Media Association (TSIMA), co-researchers Lala Gutchen and Nixon Mye and TSIMA Senior Broadcaster Jenni Enosa, with local support from the Torres Strait Islands Regional Council.

The team had a highly productive week engaging with residents and agencies discussing telecommunications use, digital inclusion, and media use in Erub and across the Zenadth Kes (Torres Strait) region. We would like to thank all residents and agency staff who participated in the research and made us feel very welcome.

Based on 44 surveys and 14 interviews with residents and stakeholders, this report outlines the findings from our initial visit and highlights the current dynamics underpinning access and use of media, communications and online services and the digital inclusion challenges that Erub confronts. Section 3 of this report outlines the existing communications and media services available on Erub, with a full audit provided in Appendix 2.

Erub has unique communications challenges because is a remote island with communications access via a regional microwave repeater network providing backhaul for 3G/4G mobile and ADSL services, as well as satellite internet and some VHF and UHF radio use. Its hilly terrain, dispersed population across eight villages, and extensive use of boats for fishing and inter-island travel also make for challenging communications access. At the same time, Erub faces a range of barriers to digital inclusion that are experienced by many other remote First Nations communities, with typically low household incomes and limited fixed home phone or internet access, and affordable and reliable use of media and online services.

This report is intended to assist TSIMA, TSIRC and community agencies to better understand the key barriers to digital inclusion in Erub, assist in identifying communications infrastructure and program needs, and support planning and advocacy with government and industry stakeholders. Section 6 of the report details considerations that may be useful for developing a local digital inclusion plan, in addition to strategies that could be deployed to address these identified barriers.

This report is also part our commitment to Indigenous data sovereignty, to provide data and research findings from the Mapping the Digital Gap project to the participating communities to use for their own analysis, planning and advocacy. The report will be updated following research visits in 2023 and 2024.

Key Findings

Pre-paid mobile is the primary means of phone and Internet access.

- + 98% of the 44 survey respondents primarily use a mobile phone for making phone calls, with only two (5%) not owning a mobile phone.
- + 90% are reliant on pre-paid mobile services.
- + Only 1 survey respondents (2%) had a fixed line home telephone.

There is limited use of fixed internet by agencies or households.

- + 77% of households surveyed do not have any form of fixed home Internet, with 16% having NBN Sky Muster and 20% using a portable 4G modem. There are an estimated 14 Sky Muster services on Erub.
- + Most agencies report using ADSL or 4G as their primary internet service. Some use Sky Muster as a backup service but spoke of limited speed and unreliable access in wet season and heavy cloud.



44

surveys conducted



14

interviews conducted
(9 agency representatives and 12 community residents)



“Sometimes the signal is bad and keeps dropping off ... where I live I can actually see the red light on the tower. [But when] the signal's cut off ... no calls can be made and internet access is difficult ... it also affects the workplace, like EFTPOS, phone lines and computers ... Notices are then placed to advise community of the technical issue.”

- John Armitage, TSIRC Divisional Manager for Erub

4G mobile coverage in Erub has limited range and is congested and unreliable.

- + Despite recent upgrades, the 4G mobile coverage available to Erub remains limited to only the central town area (Saim and Dadamud Villages with little or no coverage in the Island's other six villages and the north, east and western parts of the Island. There is limited 3G access received from neighbouring islands at some sites on the island and out to sea.
- + 63% of regular Internet users surveyed gave the reason for not using the Internet more often as “I do not have convenient access to the Internet”.
- + Respondents described issues of little or no 4G coverage on many parts of the island, regular outages and dropouts, slow services during peak periods and low penetration inside houses.
- + In response to the limited range and unreliability of the existing coverage, TSIRC representatives told us that they want a 4G tower located at the top of the Island that enables coverage of the whole Island, as well as out to sea.



“[We want] improvement of the technology for the region, speed up a bit, so we [in Torres Strait] come in line with the mainland communities. We must not be neglected, not ... ‘That’s all right, they’re on the fringes’. We’re Australian, we’re equal to them down there. That’s what I want to say.”

- Kapua Gutchen, My Pathways Supervisor/ Cultural Leader, 2022

Mobile communications are critical for health and safety, including while out at sea.

- + Reliable communications are a health and safety concern, for dealing with emergency situations, and for elderly and vulnerable people living in villages without phone or internet connectivity.
- + Erub Islanders travel significant distances out to sea in dinghies for fishing or inter-island travel. They rely on the 3G coverage from nearby islands to alert family or local authorities if in trouble. Electronic beacons such as EPIRBs are not seen as effective alternatives due to the time delay from activation to search and rescue.
- + Research participants reported significant concern about the likely impact of the planned switch-off of the 3G network in June 2024.



"The 15 islands are divided by water. If I want to go to Murray [Island, I don't] jump in a car and drive over there. You have to go by boat. That's like 26 miles, and 26 miles to Yorke. If you're looking at that area, it's a reasonable amount of area that you covered. When you get out of mobile range, you're on your own."

- Lesley Pitt, TSIRC Division

There is a high level of digital ability in Erub.

- + 93% of survey respondents use the Internet regularly or semi-regularly, with only 3 (7%) having last used it more than 6 months ago and no respondents having never used the Internet. Of the 93% of Internet users:
 - o 95% had used online banking or apps in the previous 6 months, and 95% had accessed a government service online;
 - o 95% had used the internet to keep in touch with family or friends in the previous 6 months, and 90% had used entertainment services (e.g., streaming video/music, playing online games);
 - o 78% responded that the statement 'I know how to send and receive emails' is 'very true' of them; 78% chose 'very true' to the statement 'I know how to open a new internet browser tab', and 75% chose 'very true' to 'I know how to complete online forms'.

About a quarter of residents surveyed have a home Internet connection.

77% of individuals surveyed do not have any form of fixed home Internet (i.e. NBN Sky Muster, ADSL) with 7 households (16%) having an NBN Sky Muster service and 9 (20%) using mobile broadband such as 4G modem.

Affordability is a key concern constraining Internet access and use of digital services.

- + 41% of regular Internet users indicated the main reason they do not use the Internet more often was "The Internet is too expensive for me".
- + 41% had sacrificed essential household costs (food, bills, etc.) to afford Internet access in the past 6 months.
- + There is an average of 4.4 mobile phones per household, with average household cost for mobile services of \$187/month (37% pay over \$200/month) plus \$100/month for those households with fixed broadband.

The full survey results are available in Appendix 1. Note that more detailed data analysis and weighting of results against ABS statistics will be undertaken in early 2023 prior to display of the data on the Australian Digital Inclusion Index dashboard. This process may result in minor variations from these statistics.

A detailed audit of demographics, community information, and communications and media services available, as at April 2022, is provided in Appendix 2.

What is Digital Inclusion? How is it measured?

Digital inclusion refers to equitable and reliable access to and use of information and communication technologies for participation in social and economic life.

The Australian Digital Inclusion Index (ADII, Thomas et al., 2021) is an annual national survey that measures three dimensions of digital inclusion: Access, Affordability and Digital Ability. ADII scores range from 0 to 100. The higher the score, the greater the level of digital inclusion. ADII scores are relative: they allow comparisons across different social groups and geographic areas, and over time.

People living in Australia's 1100 remote Indigenous communities are likely to be among the most digitally excluded Australians. The ADII has previously found that people in remote communities often have extremely limited access to digital infrastructure and services and encounter very high costs for Internet access, especially in relation to their income (Thomas et al., 2018; Thomas et al., 2019).

The Mapping the Digital Gap project uses an amended version of the survey that underpins the ADII (the Australian Internet Usage Survey) to collect digital inclusion data. The Mapping the Digital Gap survey results will be available on the ADII website, with interactive charts that will provide insight into community-specific results as well comparison with other participating communities and national results collected by the ADII.

In 2021, access to information and services enabling participation in informed decision making regarding their own lives was introduced as a new Closing the Gap outcome (17). This new target 17 includes a goal of equal levels of digital inclusion for Aboriginal and Torres Strait Islander people by 2026.

The Mapping the Digital Gap project is targeted at remote First Nations communities and does not include digital inclusion of First Nations people living in urban and regional centres. However, it is hoped this project will provide data that will help in measuring the scale and nature of this digital gap over time, as well as insights into strategies to address key obstacles and reduce the digital gap for all First Nations people.

DIGITAL INCLUSION



According to the 2021 Australian Bureau of Statistics (ABS) Census, the population of Erub is 326 with 292 (90%) identifying as Torres Strait Islander and/or Aboriginal people. The average age is 30 and average personal weekly income is \$332. There are 80 occupied private dwellings with an average of 3.5 people per household.

2. INTRODUCTION

Access to reliable and effective communications services has been identified as a critical issue for the Torres Strait region for many years. Torres Strait Regional Authority (TSRA) and Torres Strait Island Regional Council (TSIRC) have both identified the need for improved communications infrastructure across the region for service delivery, social and economic development, health and safety, education, security and bio-security (see Section 4- Regional Programs and Planning). A 2021 Torres Cape Indigenous Council Alliance (TCICA) report¹ also identified reliable telecommunications as a critical element to regional sustainability across the Cape York and Torres Strait regions.

As a result of the advocacy from TSIRC, and co-investment from TSRA, Queensland and Australian Government and Telstra, significant improvements have been made across the region over the last five years through the \$8.26 million Torres Strait Digital Foundation Project and the \$7.32 million Digital Expansion Project. These projects have upgraded mobile coverage from very limited 3G coverage on some Torres Strait islands to now having 4G coverage on 14 islands, with an upgraded microwave backhaul network connecting to the fibre optic cable at the top of Cape York. TSIRC is continuing to seek further investment to complete the full scope of the telecommunications project.



"It's come a long way from Bu shell and smoke signal. There's already [big changes]. There was only one VHF here [to communicate with] the outside world ... [Then, in the the 1980s] there was one public phone. ... You queue up for talk or you're expecting a call. ... [Then landlines came] to the houses. That's got better. Now [with mobile phones] we can be anywhere now ... Well, almost."

- Kapua Gutchen, My Pathways Supervisor and Cultural Leader

Telstra is the only mobile and fixed line telecommunications provider on Erub. As a result of the upgrade projects just described, the mobile services available to Erub Islanders was upgraded from 3G to 4G in 2018, and the mobile tower was heightened in 2021, enabling improvements to broadband speed and reliability.

However, 4G mobile coverage only covers the central town area (Saim and Dadamud Villages). Due to the hilly terrain, there is little or no coverage to many of the other six villages on the island, the airport and north side of the island, and out to sea. Some locations receive a weak 3G signal from neighbouring islands but much of the island is without coverage. While greatly improved and appreciated, the 4G service is still described by Erub residents as unreliable with regular dropouts, congested during peak use periods, and low penetration inside buildings. Accordingly, despite these upgrades, there are still significant telecommunications issues on Erub, including limited mobile coverage, low home Internet access, and affordability barriers.



Figure 3: Communications tower on Erub

¹ Babacan, H., McHugh, J., Marshall, A., Gopalkrishnan, N. and Dale, A. (2021). TCICA Region Telecommunications and Digital Connectivity Review Final Report 2021. Report prepared for Torres and Cape Indigenous Councils Alliance (TCICA) by Cairns Institute at James Cook University (JCU) and Digital Media Research Centre at Queensland University of Technology (QUT).



"We're still old school here ... we've been promised ... a relay station up here on the hill ... most of the reception, the coverage is just at the front side [of the island] and once you're at the back, once you're down below, you're out ... if you're out [at sea there's...] not much coverage out there ... you got villages further east from us, they have to go up the hill to get reception."

- John Bourne Mye, Police Officer

Residents of Erub Island have significant concerns about the planned switch-off of Telstra's 3G services in June 2024. There is, as yet, no indication of how the existing 3G coverage, including out to sea, will be replaced. It is unclear what this means for the existing 3G coverage across the Torres Strait, particularly beyond the settlements and out to sea where there is extensive inter-island travel, fishing and border security activity.



"We want the [mobile] service right round our island ... So when we go out the back of the island, we got good service. Then we go out to the reef, we have good service right round ... safety for the fisherman ... I want a good service for my children, my grandchildren, so they can like go around, live on country ... [learn] our cultural knowledge."

- Florence Gutchen, Artsworke r/Artist/Elder

Residents of Erub Island rely primarily on pre-paid mobile for Internet access and, as a result, pay premium rates to use online services. With the Australian government's 2021 Digital Government Strategy² aiming to have all government services available online by 2025, it is increasingly important that remote communities have reliable Internet access and an adequate level of digital literacy to access these services. While our survey found a high level of digital ability on Erub, including skills in and experiences of using government and banking services on mobile devices, there were no public access facilities or Wi-Fi available on the Island at the time of our visit. Without community access facilities or free Wi-Fi the cost of accessing such online services shifts to a user-pays model, creating a further barrier for people who are vulnerable or on low income to receiving needed support. Since our visit, an NBN Wi-Fi service has been installed and the Indigenous Knowledge Centre has re-opened for community use.

The majority of households surveyed (77%) do not have any form of fixed Internet at their household. Beyond 4G mobile coverage, the only other Internet access option in Erub is the NBN Sky Muster satellite. Despite a high proportion of households on the island being located in villages with limited or no 4G coverage, survey respondents reported little uptake of Sky Muster services. Local agencies and staff housing were more likely to report using Sky Muster services. In total, an estimated 14 of 80 households are currently using Sky Muster services.

However, satellite services are affected by heavy cloud or rain, reducing access to NBN Sky Muster as well as TV and radio services. Of those using Sky Muster services, there were mixed reports about its performance, with some users describing reliability issues, mostly due to cloud or rain, as well as high costs of plans and the need for higher data limits.

During periods of heavy rainfall across the Torres Strait, especially in wet season, the microwave signal required for backhaul of 4G, ADSL and phone services can be interrupted. This creates health and safety risks in the community as well as food security issues with EFTPOS and ATM unavailable. While some agencies have

² <https://www.dta.gov.au/digital-government-strategy>

satellite services as backup, there are no redundancy communications services for most residents who are increasingly reliant on mobile connectivity.

Maintenance of IT and satellite equipment is a critical issue in the Torres Strait, being a recurring and costly factor for agencies and residents. The climatic factors of wet season, high salt levels in the wind, humidity and coastal winds impact on IT equipment, with high levels of rust on steel towers, guy wires and satellite dishes.

Climate change is having a significant and increasing impact for Torres Strait Islanders, with rising sea levels threatening the liveability of several islands in the near future. While Erub is a hilly island, climate change is already leading to planned relocation of housing and infrastructure to higher ground. Climate change is also evident in coral bleaching and consequent reduction in fish populations, a staple food source for Erub islanders. In terms of communications, climate change impacts weather systems which affect communications quality, and requires travel further out to sea for fishing, requiring expanded mobile coverage for safety.

In interviews with staff from local agencies, research participants talked about the importance of having reliable communications and the need for upgraded infrastructure for effective service delivery. Some described challenges in using cloud-based database and records management systems and online administrative systems, with the Erub Primary Health Care Centre having to keep both paper-based records as well as its online patient records due to unreliable services and internet speed issues. Some agencies use SkyMuster as a backup in case of Telstra network outage or alternate between 4G and SkyMuster services as required.

As elsewhere around the world, COVID-19 restrictions led to increased use of online services and videoconferencing for telehealth, online meetings and training, but unreliable communications made it challenging. There was increased reliance on tele-health during the COVID-19 restrictions, however poor-quality communications led to patients losing interest in using tele-health. The closure of schools during COVID-19 lockdowns, including boarding schools, and the shift to home-based online learning had a detrimental impact on education outcomes for many children in Erub, due to the lack of home Internet and devices and limited access to online lessons and meetings.



"There's the lack of equity ... we're left kind of in the dark zone ... I think that there needs to be an appreciation that we are a part of Queensland, we are a part of Australia. And NBN and all these things that are being promised and we're sitting outside that circle [and we need programs to] help us catch up. To give us the equity, to give our community a chance to study, to progress, to connect ... we need a voice to get out there and step up for us."

- Karen Neilson, Erub Primary Health Centre

As elsewhere, during the lockdown periods over the last two years there was a much greater demand on Internet data for accessing news, services and information, as well as mobile and social media communications and entertainment. Young people are particularly heavy internet users with streaming services (e.g., YouTube, Netflix, Stan, TikTok, Spotify etc.), gaming and other high-bandwidth applications increasing in popularity, with some individuals paying high monthly bills for unlimited data plans. Limited access to free-to-air TV services, due to VAST direct-to-home satellite services not working in about 25% of households, is exacerbating the demand for online streaming and subscription services, and further privatising the costs of entertainment.

The growing need for broadband services for work, communication, entertainment, study and general use has led to significantly increased demand on data, consistent with national data use which increases by about 20% each year³. On Erub, the increase in demand for digital services is far greater than the supply of infrastructure

³ <https://www.acma.gov.au/publications/2021-12/report/communications-and-media-australia-how-we-use-internet>

enabling access, leading to congestion during peak periods. The prohibitive costs of fast broadband and generous data allowances are creating a growing digital divide at the local level.

There is relatively high level of digital literacy and cyber-safety awareness in Erub, with survey respondents indicating their use of online services for banking, Centrelink, MyGov, licensing and completing forms online, as well as online shopping, social media, and entertainment services. However, there is demand for more digital skills training and support, particularly by elders and those needing to improve or develop skills for the workplace and increase awareness of scams and other cyber-safety issues. There was also demand for facilities and training to undertake creative and cultural projects including language recording, cultural archiving, and video and music production.



“[We need connectivity to] create employment for communities ... build capacity of the local businesses, and basically put us on par with the rest of the world.”

- Jenni Enosa, TSIMA Senior Broadcaster

To address the media and communications needs identified in this report, and support improvements in digital inclusion and service delivery, it is recommended that a Digital Inclusion Plan be developed for Erub. Based on the audit of existing media and communications infrastructure and services outlined in Section 3 (and Appendix 2), current planning (Section 4) and analysis of surveys and interviews with community residents and stakeholders in Section 5, a list of potential strategies for consideration for a Digital Inclusion Plan are provided in Section 6. As part of our ongoing research work with the Erub community in 2023-24, the Mapping the Digital Gap team will assist with developing this plan.

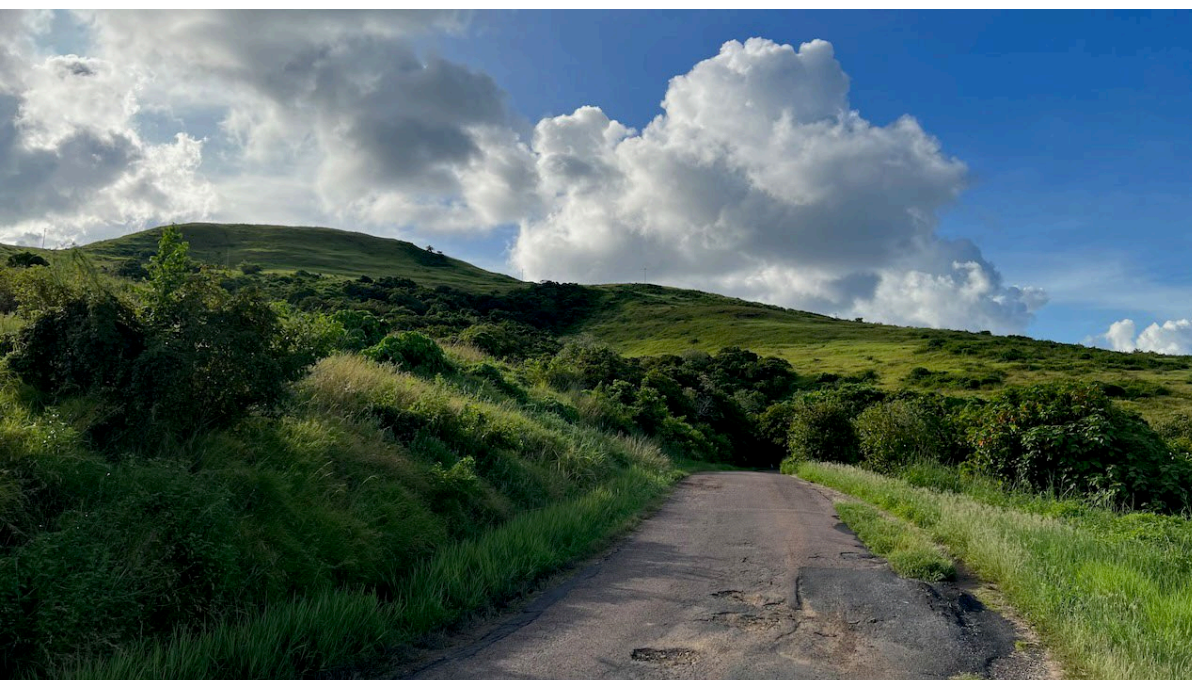


Figure 4: Erub is very hilly with 19 villages spread around the island.



pre-paid billing option, an estimated 11 dwellings (of 80) have Sky Muster services, with another three to be installed. These are primarily in agency staff houses or outside the 4G coverage area.

Public Wi-Fi: There was no public Wi-Fi available in Erub at the time of our visit. Since our visit, NBN installed a free public Wi-Fi hotspot at the TSIRC building on 28th May 2022 under its Communities in Isolation program. NBN said that this service was co-designed with the community in terms of determining access times, restricted sites, bandwidth allocation and daily download limits per device.

HF/UHF Radio: There is a HF radio tower located at the top of the island used by Borderforce for border security and search and rescue communications. HF radio is not used by the police, health, or other local agencies, who primarily rely on mobile or satellite phones for emergency communications. There was no indication of UHF radio being used on the island.

Telemetry: While telemetry systems are commonly used for monitoring water pumps, sewerage plants and other municipal services in communities, we have not had confirmation from TSIRC about Erub's systems.

Media Services

Radio services: TSIMA 4MW broadcasts an AM service across the region on 1260AM. Radio 4DI FM (the local RIBS service) re-transmits TSIMA 4MW via VAST satellite (Channel 922) on 106.1FM with local content from Erub RIBS most weekday mornings. ABC Far North radio is broadcast on 1062 AM from Thursday Island, with Erub receiving a weak signal.

TV services: Free to air TV is only available via VAST satellite direct-to-home, however about 25% of houses do not have the VAST service working (see Section 5). Some houses have subscription satellite TV services (Foxtel or Austar), especially to access sports and movies.

Regional and Local news: Regional news is shared via TSIMA 4MW radio, Torres News (managed by TSIMA since 2020), TSRA and TSIRC websites and Facebook pages. Local Erub news is shared via Radio 4DI, community noticeboards (TSIRC, IBIS store), distribution of flyers and a Facebook page called 'Erub Notices'.

Newspaper: The local IBIS store sells the weekly Torres News newspaper, published by TSIMA.

Access and Support Facilities

Community Access facilities: The Indigenous Knowledge Centre (IKC), situated at the rear of the TSIRC office, was not open to the public at the time of our visit. In previous years, the IKC provided community access computers, library facilities, language and cultural projects, and occasional training workshops through Deadly Digital Communities and Tech Savvy Seniors (coordinated by State Library of Queensland). Since our visit, the IKC has re-opened in the afternoons with the Healthy Lifestyle Officer offering activities for kids. The IKC Coordinator role is waiting to be filled. The Centrelink office, currently within the IKC, is open from 9am-12pm weekdays and has one computer available for accessing Centrelink, banking and other government services.

IT Support: Support in accessing and using online services is available at the Centrelink office and TSIRC office.

Mobile phones and recharge sales: A limited range of pre-paid Android smartphones and flip phones are available from IBIS store as well as Telstra pre-paid recharge vouchers.

4. REGIONAL PROGRAMS AND PLANNING

The *Torres Strait Development Plan 2019-2022* lists one of the regional Issues limiting economic development as “Lack of some critical infrastructure such as communication infrastructure.”⁵ The Plan outlines the TSRA Regional Economic Investment Strategy, with Phase Two aiming to “identify priorities and strategies to address the Torres Strait region’s economic development enablers, such as transport and communications infrastructure”⁶. A key activity planned under the Safe Communities programme is to “support safe and accessible community infrastructure and land and sea communication systems.”⁷

The TSIRC’s *Queensland Government Deputation 2016* outlined priority areas for development in the region, listing Digital Connectivity as Priority Area 7.⁸ TSIRC sought a Queensland Government contribution towards a planned \$25.44 million multi-stage Torres Strait Mobile Network Expansion Project (TSMNEP), aimed at expanding mobile coverage and upgrading telephony and data services across the Torres Strait region.

In June 2018, the Torres Strait Regional Authority (TSRA), Queensland Government and Telstra finalised the the first phase of this work, the \$8.26 million Torres Strait Digital Foundation Project. Begun in January 2017, this first phase delivered improved 3G performance across all sites where that network was already available, established new 4G coverage on two of the central islands (Badu Island and Kubin Village on Moa Island), saw the installation of more ADSL ports on Horn Island, and delivered new 4G infrastructure at Mabuaig Island, Ugar, Erub and Mer Islands. An additional \$410,000 was provided for a 4G base station at Erub Island under the Australian Government’s Mobile Black Spot Program.

TSRA and TSIRC successfully advocated for Stage Two co-investment from Telstra, Queensland, and Australian governments, to ensure “the Torres Strait region is capable of delivering the technology and innovation needed to protect our borders and deliver multiple socioeconomic, educational, health and community safety outcomes for the island communities and people of the Torres Strait region.”⁹

The \$7.32 million¹⁰ Torres Strait Digital Expansion Project was successfully completed in 2021, building upon stage one to upgrade the telecommunication infrastructure needed to deliver 4G coverage to all remaining islands of the Torres Strait. A Queensland Government press release stated that the project would deliver high-speed mobile internet access to 14 islands by 2021, with a Telstra representative stating that “Currently, many islands across the Torres Strait have patchy outdoor coverage, if they do have it at all, while some only have 3G services”¹¹. This project involved 12 separate projects across 10 islands, with a key focus on upgrading 4G Base stations in the Top Western islands of the Torres Strait to address biosecurity risks due to the proximity to Papua New Guinea and Indonesia.

However, further investment was required to complete the original scope of the project. TSIRC’s 2019 deputation to Queensland Government listed ‘Support Digital Transformation & Connected Islands’ as Priority Area 3¹². TSIRC outlined the issue of regular communication blackouts, sometimes lasting several days, requiring costly workarounds for essential services and business continuity, and argued that “Inadequate or band-aid style investment approaches in connectivity will drive an even greater digital divide for our

⁵ Page 22, *Torres Strait Development Plan 2019-2022*. Source: <https://www.tsra.gov.au/the-tsra/programmes/economic-development/torres-strait-development-plan>

⁶ TSRA 2019:23

⁷ TSRA 2019:97

⁸ TSIRC Queensland Government Deputation 2016 Source: <http://www.tsirc.qld.gov.au/sites/default/files/PDFs/Projects/Communications%20State%20Government%20Deputations%20October%202016%20FOR%20WEB.pdf>

⁹ TSRA Annual report 2017-18:24

¹⁰ Telstra contributed \$3.66 million, with Queensland Government contributing \$2.26 million and TSRA \$1.4 million.

¹¹ Queensland government 30/10/2019. Source: <https://statements.qld.gov.au/statements/88754>

¹² <http://tsirc.qld.gov.au/sites/default/files/TSIRC%20QLD%20Government%20Deputations%202019.pdf>

communities in economic participation, social inclusion and access to essential services like allied health and tertiary studies".¹³

The Deputation called for further Queensland Government investment in four areas: upgraded telephony and data access to all TSIRC communities, parity with mainland infrastructure; expanded Smart Cities and Suburbs Program to include regional and remote areas; new programs that foster renewable energy, digital adaption and automation opportunities for remote communities; a Digital Local Government and Rural/ Regional Telecommunications Program to increase benefits of technology, connectedness and innovation¹⁴.

Telstra also announced in October 2019 that it would switch off its 3G networks in June 2024¹⁵ with Telstra committing to boost its 4G coverage to a "materially equivalent size and reach" compared to the 3G network¹⁶. Expanded 4G coverage across the region would be beneficial, particularly out to sea where there is extensive inter-island travel, fishing and border security activity. However, Telstra provide the following information on its coverage maps regarding offshore coverage:

"The offshore coverage shown is only indicative of where a device may operate. Factors beyond Telstra's control such as the weather, tides, sea conditions and your antenna installation (type and height of antenna above sea level) can significantly influence the actual user experience of coverage, data speed and performance. Public mobile networks must not be relied upon as a primary method of emergency communication at sea."¹⁷

Recent reports have highlighted the need for telecommunications improvements in the Torres Strait region. The *TCICA Region Telecommunications and Digital Connectivity Final Report 2021*¹⁸, commissioned by Torres and Cape Indigenous Councils Alliance, identified key challenges across the Torres Strait and Cape York region and outlined six strategic focus areas for a regional Telecommunications and Digital Connectivity Strategy. A 2021 report by the Rural Economies Centre of Excellence entitled *Leveraging digital development in regional and rural Queensland: Policy Discussion Paper*¹⁹ argued that "a more holistic and bold approach is required that prioritises and invests in both the hard infrastructure and the social infrastructure needed to achieve overall digital inclusion, social equality, and economic development"²⁰. The report outlined six recommendations to the Queensland Government to lead digital development efforts in regional Queensland, including a call to address "the urban-rural digital divide with appropriate place-based analysis, planning, and solution building"²¹.

The Torres Strait region may be eligible for funding under the Labor Government's *Better Connectivity Plan for Regional and Rural Australia* initiative, which allocated \$400 million to expand regional mobile coverage and improve resilience of communications systems and \$200 million for two further rounds of the Regional Connectivity Program to improve connectivity in regional, rural and First Nations communities²². Queensland Government and Telstra also announced a program to improve connectivity in Qld schools on 31st March 2022²³, which Erub school may be eligible for. Further funding initiatives for remote First Nations communications infrastructure and programs may be announced in future budget cycles.

¹³ TSIRC 2019:10

¹⁴ TSIRC 2019:10

¹⁵ <https://www.zdnet.com/article/telstra-flags-3g-switch-off-planned-for-2024/>

¹⁶ See: <https://www.telstra.com.au/support/mobiles-devices/3g-closure>

¹⁷ Source: <https://www.telstra.com.au/coverage-networks/our-coverage>

¹⁸ Babacan, H., McHugh, J., Marshall, A., Gopalkrishnan, N. and Dale, A. (2021). *TCICA Region Telecommunications and Digital Connectivity Review Final Report 2021*.

¹⁹ Marshall, A., Babacan, H., & Dale, A. (2021). *Leveraging digital development in regional and rural Queensland: Policy Discussion Paper*. Rural Economies Centre of Excellence: QUT Digital Media Research Centre and James Cook University. Brisbane.

²⁰ Marshall, Babacan & Dale 2021: Executive Summary p.ii

²¹ Marshall, Babacan & Dale 2021, p. iii

²² Source: <https://minister.infrastructure.gov.au/rowland/media-release/albanese-government-better-connect-inform-and-empower-australians>

²³ <https://exchange.telstra.com.au/were-bringing-faster-Internet-to-qld-schools/>

5. KEY FINDINGS FROM DATA ANALYSIS

This Section provides key findings from the interviews undertaken with community leaders and stakeholders, the surveys with residents, and observational data. The full survey results are included in Appendix 1.

Note that the survey data provided is based on initial analysis of 44 surveys undertaken. A more detailed survey data analysis and weighting against ABS statistics will be undertaken in early 2023 for release on the Australian Digital Inclusion Index dashboard. Minor variations from the statistics presented here are likely.

Access

Pre-paid mobile is the primary means of phone and Internet access

43 of 44 survey respondents (98%) regularly use a mobile phone for calls, with only two not owning a mobile phone. Only one respondent (2%) had a fixed line phone in their home, and one was without any phone access. There are no public phones on Erub.

Of those with mobile phones, 88% had smartphones as their main phone, and 90% used pre-paid services. 95% of regular Internet users said their smartphone is their primary means of Internet access.

There is limited fixed home internet access

Most individuals surveyed (77%) reported that their homes do not have any form of fixed Internet. Despite several villages on Erub Island receiving limited or no 4G coverage, alternative modes of coverage such as Sky Muster appear to be under-utilised, with only seven (16%) of the 44 surveyed reporting that their household had an NBN Sky Muster service and nine (20%) used a non-phone mobile broadband, such as a portable 4G modem.

At the time of our visit, there were an estimated 11 houses with Sky Muster services on Erub, primarily in households of agency staff, people with regular income or households in villages outside of the 4G coverage area. Another three residents reported that they were waiting to have Sky Muster installed. In survey responses and interviews, Erub Island residents reported that they were not using Sky Muster primarily because it is only offered through a post-paid (billed) option, is unreliable in wet season, and has insufficient data limits.

While improved, the 4G mobile network remains patchy, unreliable, and congested

Since the upgrade of Erub's mobile service from 3G to 4G in 2018, and the network upgrade in 2021, the 4G bandwidth available has improved and the service become more reliable. Erub residents and agencies such as the school and the primary health care centre now rely heavily on the 4G service for phone calls and internet use. However, during periods of heavy rainfall across the Torres Strait, especially in wet season, the microwave signal required for backhaul of 4G and all internet and phone services can be interrupted.

However, like elsewhere around Australia, use of 4G services have increased, leading to congestion during peak use periods. Interviewees also described ongoing issues of regular dropouts, patchy coverage, congestion, and low penetration in houses.

- + "We definitely need to have an improved level of connectivity, a stronger bandwidth, more availability. The expense, I know for us personally, we pay \$300 a month for a Telstra service that is barely there." (Karin Neilson, Erub Primary Health Centre, 2022)



Figure 6: Erub resident and artist Florence Gutchen

- “[Our signal frequently] drops out ... We understand these sort of things drops out when you’ve got natural disaster, but you see, Torres Strait, it’s not a cyclone area, it’s not an area of flood ... you expect mainstream people with a flood down south, fire, them thing cuts out, you can understand. It shouldn’t be happening up here.” (Kapua Gutchen, My Pathways Supervisor/ Cultural Leader, 2022)

The 4G coverage is limited on Erub Island

Local leaders and community residents consistently identified areas on the Island where 4G coverage failed to reach. Currently, the central villages of the island (Medigee, Saim and Dadamud Villages) are the most connected locations on the Island. Due to hilly terrain, there is little or no coverage to many of the other six villages on the Island, the airport and north side of the island, and out to sea. Some locations receive a weak 3G signal from neighbouring islands – Ugar (Stephen Island) to the north, Mer (Murray Island) to the south-east and Masig (Yorke Island) to the south-west – but much of the Island is without coverage.

- “When we’re here in the main village, where everything is located like the council office and shop, we get it good ... when you go further East of the other villages, there is not much ... When we go to the back of the island, nothing. There’s ... small spots where you go up on the hill ... but when you go down in the valley you get zilch, there’s nothing there.” (Nixon Mye, resident, 2022)

As previously noted, the Island’s mobile tower was heightened in 2018. However, as it has remained in the same location, the coverage footprint provided has remained largely unchanged. As noted by TSIRC Councillor Jimmy Gela, if the mobile tower had been installed on the highest point of the island, the signal would cover all villages, reaching the island’s north side, and extending out to sea.

- “[The signal] would overlap with Stephen Island and Yorke Island and also Mer Island...[but] they install it down here on this small hill when I advocated to be up there ... they need to consider relocating the tower from here and put it up on the highest place up there which is where it’s supposed to go in the first place.” (Jimmy Gela, TSIRC Councillor, TSRA Board member, 2022)

There were calls for an additional tower to be located at the top of the Island from many interviewees and survey respondents (see Comments Section in Appendix 1). Co-researcher Lala Gutchen described how the limited connectivity available to the north side of the Island, where her family’s traditional homeland and fishing waters are located, limits the family’s ability to visit and carry out cultural practices. This was reiterated by long-term resident Lesley Pitt, who described how coverage limitations impact on service delivery and emergency communications:

- “If I need to talk to my boss in Cairns, I have to come all the way from where I work to here to answer his call ... we were hoping that, when the upgrade happened a couple of years back, will improve that, but it didn’t probably another 5 years before we can have an [upgrade again].” (Lesley Pitt, TSIRC Division Engineering Supervisor, 2022)

Councillor Jimmy Gela is seeking to have mobile boosters installed to fill coverage gaps for several villages:

- “There’s four areas [that are] an ideal spot to have [a booster]. There’s four going this way [east] and you can have one up coming up on the airstrip ... so it’ll be good for business and like I said emergencies and safety out at sea.” (Jimmy Gela, TSIRC Councillor, TSRA Board member, 2022)



Figure 7: Co-researcher Lala Gutchen searches for mobile reception while out fishing.

Mixed reviews of the NBN Sky Muster satellite service

There were mixed reviews in relation to the performance of the NBN Sky Muster satellite services. Some users described the benefits of having a broadband service such as enabling household internet access and streaming, while others focused on issues such as dropouts during cloud cover (especially in wet season), high costs of plans, and the need for higher data limits. To mitigate these issues, some residents reported alternating between 4G and Sky Muster services.

- + “I use my mobile data plus we got, at home, we got SkyMesh²⁴... Sometime the mobile playing up. Then we go to SkyMesh. Then the SkyMesh play up and then we come back to mobile.” (Florence Gutchen, Artsworke/ Artist/ Elder, 2022)

For services and industries on the Island, these limitations impact their ability to provide critical services and to conduct their core business. For Erub Arts, the bandwidth of their Sky Muster service is not always sufficient for their needs, particularly when sending large files such as high-resolution photos of artworks. Similarly, the Erub campus of Tagai State College had chosen to revert to 4G for their primary connectivity needs, instead using the NBN Sky Muster as a backup service.

- + “The satellite doesn't like the weather up here, and this time of the year when we've got a lot of cloud and rain and all the things that go with that, our satellite was in and out ... we identified that Telstra's 4G network was actually more effective than the NBN satellite.” (Gary Taylor, IT Support, Erub School, 2022)

Delays in maintenance of satellite equipment was also raised as an issue:

- + “Last October, we were without the internet for 6 weeks while we waited for a technician to come ... [to fix] a part on the satellite dish that had deteriorated with the weather and the conditions up here ... it's just unbearable to go through things like that.” (Diann Lui, Manager Erub Arts, 2022)

TSIMA are using Sky Muster services to provide internet access to RIBS broadcast facilities at Poruma, Iama, Warraber and St Pauls. While this service mostly meets their needs, TSIMA manager Diat Alferink described how congestion and dropouts during cloudy weather impact on live radio broadcasts from these sites²⁵.

Impact of network outages

Interviewees told us that outages are a common problem on Erub because the Island is near the end of a relayed microwave network²⁶:

- + “There are times when the signal goes down ... on the Telstra towers here. It's not just Telstra tower on Darnley. If that goes down, our reception goes down. We're affected by the local neighbouring islands, as well. If their tower goes down ... we shut down as well.” (Nixon Mye, resident, 2022)

Network outages can have a significant consequence. If 4G, ADSL and phone services are unable to be used, nor can critical services like EFTPOS, ATMs, or cloud-based systems. Several agencies on the Island use NBN Sky Muster satellite service for redundancy during outages and congestion periods. However, satellite services are also affected by heavy cloud or rain. This can lead to a lack of any communications services during periods of heavy rainfall, including VAST TV and radio which also are satellite-delivered. This creates health and safety risks in the community.

There are few redundancy communications options available for Erub residents, most of whom are solely reliant on mobile connectivity for day-to-day services and applications:

²⁴ Skymesh is a retail service provider for NBN Sky Muster <https://www.skymesh.net.au/>

²⁵ Live RIBS Radio shows are conveyed to the TSIMA Radio hub on Thursday Island using codecs over an IP link.

²⁶ The microwave network map in Figure 7 (p12) indicates that the Erub tower also provides the link to Mer and Ugar.

- + “When [the mobile signal] gets cut off, it’s your life is in the palm of your hand. You’ve got your internet banking there, you’ve got all these things there. So when that becomes useless ... people suffer. Because everything is digital.” (Jenni Enosa, TSIMA Senior Broadcaster, 2022)

All agencies and residents described the importance of having reliable communications. Several agencies urged the need for further upgrades to communications for Erub to address the speed, reliability and congestion issues described above.

Mobile communications are critical for safety at sea

Many Erub Islanders travel significant distances out to sea in dinghies for fishing or travelling to neighbouring islands. There is currently a lack of 4G coverage out to sea. While Telstra warns that “public mobile networks must not be relied upon as a primary method of emergency communication at sea”²⁷, interviewees described a heavy reliance by seafarers on the 3G coverage to alert family or local authorities if in trouble at sea.

- + “[We need communications] not only on land but ... our island’s surrounded by sea and most of us, we all fishermen and we travel way out there. Most of the places out here, especially at the back of the island, there’s no reception. Once you go further out, you’re on your own ... there’s sort of blind spots everywhere, even on the island itself ... [A mobile tower on the hill] should cover the radius, go further out. It’ll benefit us, if you do have an engine problem, motor problem and out there, we still can communicate.” (John Bourne Mye, Police Officer, Erub, 2022)
- + “People don’t go fish on the back of the island because if they distress at sea ... [like] something plays up with the outboard, how are they going to text and tell them they’re drifting? Once you drift back off the island you end up in Papua New Guinea.” (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)

Interviewees told us that rapid response to breakdowns is critical. They reported that emergency beacons, such as EPIRBs²⁸, can have an estimated 4-5 hour delay between sending an SOS signal to Canberra and a search and rescue helicopter arriving from Horn Island, in which time boats have been carried north into Papua New Guinean waters. Search and rescue teams can also struggle to locate a small dinghy broken down at sea.

- + “There have been times when dinghies are out on sea, when there is an outboard motor problem in rough weather conditions, search and rescue is done by the locals and community local Police, but it can be difficult. It’s like looking for a needle out on sea. Whereas if we get good mobile coverage, it will allow the person in the dinghy to contact someone and give precise directions of where they’re located out on sea. If we have good mobile coverage, communication will not be an issue.” (John Armitage, TSIRC Divisional Manager for Erub, 2022)
- + “The only vessel that we’ve got available is the rangers, and sometimes we utilise them but usually it’s just the chopper they’ll send



Figure 8: Fishing on dinghies is a common occupation in the Torres Strait

²⁷ Source: <https://www.telstra.com.au/coverage-networks/our-coverage>

²⁸ An Emergency Position Indicating Radio Beacon (EPIRB) is a device to alert search and rescue services in case of an emergency out at sea.

out. And if somebody close, then I go ... even though we haven't got any UHF or whatever. They did supply us with VHF but it's no use." (John Bourne Mye, Police Officer, Erub, 2022)

Concerns about impact of the 3G network switch-off in 2024

The 3G coverage is currently significantly greater throughout the region than the 4G coverage. Where there is no 4G service on Erub, weak 3G signals from nearby islands (Stephen and Mer Island) can be picked up at certain locations around the island, enabling emergency calls to be made.

- + "If the signal is down in the community, we can go up to the hills, and we still get [3G] reception up on the hill. We just go up to the hill, send a message ... As long as your family members know that you're safe, you're alive. You just don't have reception." (Nixon Mye, RIBS broadcaster/ digital content producer, 2022)

However, interview respondents were very concerned about the likely impact of the planned switch-off of the 3G network in June 2024, especially out to sea if the replacement 4G service does not fill the existing coverage area. Some urged that the 4G service expand on the existing coverage both on the island and out to sea.

Maintenance of IT and satellite equipment

Maintenance of IT and satellite equipment is a critical issue in the Torres Strait. The climatic factors of wet season, high salt levels, humidity, and coastal winds impact on IT equipment, resulting in significant rust on steel towers, guy wires and satellite dishes.

- + "[Salt air affects all the equipment] such as every vehicle, we see in trucks and stuff like that ... Also, all these satellite dishes, the one that almost on the waterfront, all the way down, it just chew the things away. It's a continuous issue with maintenance. It won't stop." (Lesley Pitt, TSIRC Division Engineering Supervisor, 2022)
- + "It's really difficult to keep those tools operational up here. They're designed for an environment down south where we don't have high humidity, we don't have high levels of salt in the environment, and all the things that will kill the electronics. So it's keep it simple." (Gary Taylor, IT Support, Erub School, 2022)

However, with limited technicians available in the Torres Strait region, the lack of timely and affordable IT support is a critical issue. Most technical roles are outsourced by key agencies to technicians from regional centres such as Cairns or Brisbane, resulting in high costs and delays in getting IT equipment or systems working. TSIMA Senior Broadcaster Jenni Enosa described the the impact of monsoonal winds on satellite dishes or broadcast towers, with the expense of a technician, helicopter hire and parts needed to reinstate the services.

Even repairs to landlines or fixed internet can involve lengthy delays in access while waiting for a technician:

- + "We've had elderly community members, who have had to wait to get their landline fixed. It's not like you ring and someone comes the same day to fix the issue. It's more of a waiting game for Telstra to fly into community." (John Armitage, TSIRC Divisional Manager for Erub, 2022)



Figure 9: The proximity to salt water in Erub causes rapid corrosion of communications infrastructure

In response to these dynamics, residents told us that having expertise available on the island would be a useful step. There are calls for technical training to provide local support and jobs:

- + “There needs to be a capacity building in terms of getting our people to ... become IT experts, broadcast technicians ... I’m constantly dealing with someone from outside of the Torres Strait to fix the problem. Why can’t I just ring up someone locally to be on Darnley to come in and fix the problem for Walter?” (Jenni Enosa, TSIMA Senior Broadcaster, 2022)

Service Delivery and Use of Online Services

Effective coverage is critical for health service delivery

Reliable communications are crucial for the Erub Primary Health Care Centre, which provides health services for both Erub and Ugar (Stephen Island):

- + “We deal with emergencies, primary healthcare, across the whole islands ... we need communications for emergency situations and we can be very challenged by not having good access or connectivity ... A few months ago, we had a plane crash at the airstrip and we’ve got no reception at the airstrip. So, it’s a big health risk ... even in the clinic, we have poor connectivity ... we do have a back-up phone. It’ll only work outside though. So, if we had a cyclone ... we’d still have to go outside to use that satellite phone ... So, communications are a big challenge and can impact patient safety and our safety at times.” (Karin Neilson, Erub Primary Health Centre, 2022)

During the COVID-19 restrictions, there was increased use of tele-health by the Erub Primary Health Care Centre, when doctors or specialists were unable to visit the community in person. Tele-health can save lives and reduce costs due to more immediate diagnosis, reduced number of Royal Flying Doctor Service flights, and remote support for on-site treatment or emergency procedures.

- + “Telehealth is a very, very important part of what we do ... [when we need] a doctor or a specialist, in emergency situations, we’ll link up with telehealth. [...However because the] signal is so poor, the pictures will be blurred ... we work around it as much as we can ... taking photographs off our mobile phones and then sending that via Messenger we have to be resourceful.” (Karin Neilson, Erub Primary Health Care Centre, 2022)

However, the unreliability and poor image quality led to patients not wanting to use the tele-health service:

- + “People get disheartened ... it’s a resource we need, but there’s not a lot of buy in with it because of the quality.” (Karin Neilson, Erub Primary Health Care Centre, 2022)

Several residents raised concerns about elderly or vulnerable people living in villages or sites without any phone connectivity and were therefore unable to notify of a health issue or other emergency situation:

- + “We’ve got some vulnerable people living the other side of the island and if they have an emergency, they’ve got no phone service to call us. They’ve got to wait for someone to come by or check in on them before we know that there’s a problem. So, it’s a huge health risk ... My husband’s been out installing booster aerials on elders’ roofs, so that ... they can dial out if they’ve got an emergency.” (Karin Neilson, Erub Primary Health Centre, 2022)

Impact of COVID-19 and misinformation about vaccines

COVID-19 restrictions led to increased use of online services for telehealth, online meetings and training, but unreliable communications made this reliance challenging. Staff from some agencies worked from home during COVID-19 restrictions, including TSIMA staff on Thursday Island who broadcast and pre-recorded radio shows from home. However, working remotely was not an option for some agencies due to staff having limited home internet and over-crowded housing.

There was a lot of misinformation spread via social media during the COVID-19 pandemic, resulting in a high level of vaccine hesitancy across the Torres Strait region during the vaccine rollout in 2021:

- + “Misinformation ... was being shared on Facebook, Tik Tok, YouTube about vaccinations and we worked really hard to overcome that ... using face-to-face, engaging with

community, using that relationship more than social media...[as well as weekly information flyers and] the local radio station. [...I would tell people] we've all had the vaccine and none of us have got forks stuck to us, because that was a big thing, was getting forks stuck to you and picking up 5G reception." (Karin Neilson, Erub Primary Health Centre, 2022)

When COVID-19 spread across the region in December 2021, the hesitancy turned to a rapid vaccination take-up. TSIMA's Radio 4MW played an important role in getting reliable information out during the pandemic.

During COVID-19 restrictions, some non-local staff could not visit their families for extended periods. Unlike in other areas of Australia, the barriers to telecommunications access and use described in this report meant that digital connections and devices did not provide the social lifeline for Erub residents that it did for others:

- + "You're isolated. You're not able to travel because of COVID lockdowns ... and yet you can't FaceTime with family, whether it's just to welcome a new bub into the family." (Karin Neilson, Erub Primary Health Centre, 2022)

Poor internet access and connectivity impacts on education outcomes

The Erub campus of Tagai School has 52 children enrolled, four teaching staff and 15 local support staff. While broadband is needed for student learning, external communication and staff development, the school struggles with low connectivity speeds and outages, impacting on many online learning applications and resources.

- + "Internet access is fundamental, it's part of our core business every day [... but] when internet was down for a week [during COVID], we couldn't provide a service. It went back to paper and pen learning." (Jody Warbrick, Principal, and Gary Taylor, IT Support, Erub School, 2022)

The closure of schools during COVID-19 lockdowns, including boarding schools, and the shift to home-based online learning had a detrimental impact on education outcomes for many children in Erub, where the lack of home Internet and devices limited access to online lessons and meetings.

- + "If people don't have a laptop or they don't have access, how are they going to do their homework? I'd say that people were disadvantaged." (Diat Alferink, TSIMA Operations Manager, 2022)
- + "Home schooling lasted for six weeks... because me and my daughter, we live downstairs [without internet access], it made it hard ... You have to have money to pay for Internet, so ... some of my relatives didn't have that." (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)

Use of Teams and videoconferencing

Videoconferencing applications (e.g. Teams, Zoom) were increasingly used during the pandemic by local agencies (including TSIRC office health care centre, school, Erub Arts) for meetings, professional development, client communications and online support. Some interviewees described this as a positive experience:

- + "I think it's a good thing really because people see each other and they can actually talk face-to-face ... it's less expensive, you don't have to fly in, you know, because we're from such a big region and maybe this is where the technology is really important. I think it's the way of the future." (Diat Alferink, TSIMA Operations Manager, 2022)

Other interviewees struggled with connectivity issues for working and having meetings from home:

- + "I use [Zoom for classes and meetings and] for law work, 'cause I'm dealing with climate change cases at the moment, and it's been really difficult at times ... we got cut off when we were talking to the barrister ... I work from home, so I have my weekly Zoom meetings, update with my program directors ... [but due to poor Internet coverage, I have to] send a message to my boss and say, "Oh, no. It's dropped out again ... the Internet was that bad that I had to hang one of the dongles ... on the verandah so it could catch Murray Island reception." (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)

TSIRC used videoconferencing for meetings during the pandemic, but with varied connectivity levels across the region, is now moving back to in-person meetings. Erub Arts had to order special IT equipment (cameras, microphones etc) to enable a remote-delivered studio workshops with the artists via Teams. Despite this equipment, Diann Lui described online workshops as risky because of the unreliable connectivity.

Use of Cloud-based and automated online systems in remote context

Cloud-based and automated systems are increasingly being used to improve record-keeping and data management, especially for regional and State-wide service providers. For instance, Erub Arts use the SAM online database for all arts records and sales, with local arts workers training in data entry.

However, online systems require reliable Internet access. The Health Care Centre have moved to server-based patient records and communication systems but due to poor connectivity are having to duplicate effort:

- + “[We use] a server-based system, but we also keep paper-based files we have a dual system because of the unreliability of the service.” (Karin Neilson, Erub Primary Health Centre, 2022)

Need for reliable communications to run a local business

Some local businesses have set up websites and Facebook accounts for online promotions and sales.

- + “There are a few locals here looking to start a business ... hopefully this coverage ... [improves because] it'll be part of their livelihood, part of the livelihood of the community.” (Jimmy Gela, TSIRC Councillor, TSRA Board member, 2022)

While going digital is working for some, others reported issues due to coverage ‘shadow areas’ and connectivity for online sales. TSIMA has contract staff based across the region who contribute stories or photographs for the Torres News, however poor communications can affect their ability to do their job:

- + “We’ve got someone who works with us at Torres News ... it’s really hard for her sometimes to be able to send an email or [invoice] ... because of the reception at times. And that’s Badu which is the third largest community in the Torres Strait.” (Diat Alferink, TSIMA Operations Manager, 2022)

Erub Arts have participated in online exhibitions and digital art fairs but found connectivity to be a limitation. Erub Arts use social media as a marketing tool, describing digital communications as a specialist area needed by businesses for online marketing and promotions now. This could be an area for skills development in the region.

Communications use for border security and biosecurity

Being located only 40km from Papua New Guinean waters, Erub Island and the Torres Strait more broadly is often at the frontline of illegal immigration, quarantine issues, and other illegal activity. Reliable communications are critical for effective border security:

- + “We border ... Papua New Guinea, and a lot of illegal things, we need instantly to report ... there’s nothing outside of us. It’s another nation over there. So, that’s why the communication [of] the Torres Strait must be improved from the current state.” (Kapua Gutchen, My Pathways Supervisor/ Cultural Leader, 2022)

Borderforce have a HF tower on the top of the uppermost hill in Erub to communicate with the Borderforce boats. While there is space to locate a mobile tower on the top of the island, TSIRC thought it unlikely that Borderforce would share the HF tower with other agencies. The RIBS (formerly BRACS) FM radio broadcast tower used to also be on the hill but has been relocated to near the school. There was also a UHF radio tower at the top of the hill previously.

Access to media and new services

A quarter of households do not have a working VAST TV service

The VAST²⁹ direct-to-home satellite TV service was installed on all premises in remote communities by the Australian Government in about 2013, with the ongoing maintenance to be a householder responsibility. Prior to the rollout of VAST, Erub had only two TV channels working via local broadcast – ABC and channel 10.

However, the VAST satellite service is no longer working in about 25% of the households of those surveyed. This is typically due to damage to satellite equipment or cabling (36% of those with VAST not working), or failure of set-top boxes (45% of those with VAST not working), often because of surges in the community power supply. The cost of a replacement set-top box is about \$380 at the IBIS supermarket in Erub. As a result of VAST free-to-air services not working, there has been uptake of subscription TV services (Foxtel or Austar), however the monthly bills are a cost burden for some households.

While most remote regions do not have coordinated VAST maintenance, TSIRC Housing Services do undertake basic repairs to VAST satellite dishes on households, but not set-top boxes.

Demand for online entertainment and gaming has increased

As in other parts of the country, there is growing demand in Erub for streaming services such as movies, TV series, sports, and music content, as well as online gaming among young people. This has increased congestion on the 4G network, slowing Internet services at peak times, exacerbated by the limited free-to-air TV services. The increased usage also leads to a significant cost burden for households reliant on pre-paid mobile data.

- + “I’ve got the 9now app and Foxtel and Netflix, Stan. ... [But now] I buy more recharge more than before ... Now I’ve got to buy [\$30 recharge] every fortnight ...[I] try not to binge it, do it now and then.” (Nixon Mye, RIBS broadcaster/ digital content producer, 2022)

Local media and information services

The use of local information sources enables delivery of reliable and trusted information to counter misinformation on social media. The Torres Strait Islander Media Association (TSIMA) 4MW radio service is the primary radio service for the Zenadth Kes (Torres Strait) region, with an AM radio service from Thursday Island and FM radio transmitters on 14 of the islands. TSIMA has three active remote Indigenous broadcasting service (RIBS) communities at Warraber, Iama and Erub, with Badu also coming on in 2022, which can broadcast locally or do weekly shows over the regional network. When the RIBS is not broadcasting locally, TSIMA 4MW provides regional news and weather and bed programming.

Radio is seen as an effective way of sharing local news with agencies on Erub, such as TSIRC, the clinic and school, using the RIBS to distribute local information, including COVID-19 updates. Erub School students are also learning how to share news, songs and stories through Radio 4DI to the community.

The Erub RIBS service Radio 4DI is broadcast from the RIBS studio by the Erub Arts centre where veteran broadcaster Walter Lui has been providing local news, information and music requests for over 25 years. Walter also does a regional radio show, streamed via an IP link to Radio 4MW, each Monday and Wednesday.



Figure 10: Radio broadcaster Walter Lui in the Erub RIBS studio

²⁹ VAST stands for Viewer Access Satellite Television

- “[Now you can broadcast] to the other parts [of] Torres Strait or further away ... you’re speaking to your family living on the other island communities. It’s so great to send them greetings, send them a shoutout, a song.” (Walter Lui, Erub Radio Broadcaster, 2022)

However, broadcasting over the regional network requires reliable connectivity:

- “If Walter’s internet is down then he can’t come on air, he can only do it locally.” (Jenni Enosa, TSIMA Senior Broadcaster, 2022)

Being over 200km from Thursday Island, the AM signal for Radio 4MW and ABC is weak at Erub, however the FM broadcast of Radio 4DI also has limited range. RIBS Broadcaster Nixon Mye would like to see it improved:

- “[The radio signal is] only going two villages away ... I’m not getting any of these people to hear it [my radio show] because it’s not going anywhere.” (Nixon Mye, RIBS broadcaster/digital content producer, 2022)

Beyond radio, Torres Strait news and information is shared via Torres News (managed by TSIMA since 2020), TSRA and TSIRC Facebook pages, flyers, noticeboards, and word of mouth.

- “Some of them listen to the radio, but most people, they’re always on Facebook, ‘cause we have a Torres Strait Island Regional Council Facebook, so any news updates are on that page ... [During COVID] our Divisional Manager has been really good ... constantly doing hand-delivered messaging ... [of flyers about what] the disaster management group put in place, like, how many COVID cases are on the island.” (Lala Gutchen, Language facilitator/teacher/ fisherwoman/ advocate, 2022)

Nixon Mye established a local Facebook page during COVID-19 restrictions:

- “I started up a group page ... called Erub notices ... [it] has been very useful to the people that’s in isolation, because they get their information through there, because people text me, and I put it on the Facebook ... [People use it] to sell stuff, like selling, buying ... if there’s a public meeting, or if there’s an inter-agency meeting where the public can come and be involved. Schools, they tell me to upload stuff for them.” (Nixon Mye, RIBS broadcaster/ digital content producer, 2022)



Figure 11: Noticeboard in TSIRC office

Affordability

Affordability of mobile data and devices is a significant concern

Affordability of Internet access is a key issue for Erub residents due to low incomes and high pre-paid data costs. The second most common reason given by regular Internet users for why they don’t use the Internet more often was “The Internet is too expensive for me” (41%). Also, 41% of respondents said that they have had to cut back on essential household costs to afford personal or household Internet within the past six months.

Erub residents are primarily using pre-paid mobile services for phone and Internet access as it enables people to pay what they can afford, rather than commit to a monthly billed service. For this reason, there is limited take-up of NBN Sky Muster services, which only offers fixed-term monthly post-paid plans.

Data use has increased with uptake of online streaming services such as Netflix and/or games, particularly by young people, increasing monthly costs:

- + *"When I didn't have those apps, \$30 would last me the month. Now, sometimes I have to do 60 or even 90 ... especially if I'm bingeing an app, or watching movies or downloading" (Nixon Mye, resident, 2022)*

There is limited information available in the community on telecommunications plans or managing costs. Gary Taylor, who provides IT support to the Erub School and other schools in the region, said more awareness is needed in this area. Gary helps school staff understand how to manage mobile data and costs effectively, but there is no support available to most others in the community.

Digital Ability

High level of digital literacy

Of the people surveyed in Erub, most had relatively high levels of basic IT skills, with 93% of survey respondents using the Internet regularly or semi-regularly and 95% of those using social media, online banking, and online government services.

High levels of digital literacy enable personal agency and capability in accessing online information and services independently and developing digital skills needed for work, enterprise, or governance. It also allows more choices, with 88% of regular users doing online shopping, particularly doing COVID restrictions. While 93% of regular internet users reported being able to send and receive emails, email is primarily used for government services and workplace communications.

With services increasingly moving online, digital literacy is becoming a necessary life skill. However, there are limited opportunities in Erub to develop more advanced capabilities and workplace readiness skills due to reliance on mobile devices and limited bandwidth. Cr Jimmy Gela identified the need for trade training as well as administration training to create a pathway for young people into executive positions and better jobs.

Use of online services

There is high take-up and competence among Erub residents in use of online services for banking, Centrelink, MyGov, licensing and completing forms online.

- + *"I use the internet also, for shopping online, and the government services like ATO ... pay my car registration It's a very useful tool to have, especially living out here, when we don't have direct access to stuff like that ... [It's better online than calling because] sometimes we're on hold for so long, our credit finish, or time's up." (Nixon Mye, RIBS broadcaster/ digital content producer, 2022)*
- + *"We used to have a lot of clients coming in to access our Centrelink Computer and Phone. Now they can access MyGov and other Centrelink forms using their own private mobile phone." (John Armitage, TSIRC Divisional Manager for Erub, 2022)*

Need for ICT Access and Support

The vast majority of survey respondents—89% (39 of 44 people)—had used the internet in the last week. The most commonly used device amongst survey respondents was the smartphone (95%), with very few reporting access to computers or laptops at home due to cost and unavailability. The main reason regular Internet users gave for not using the Internet more often was "I do not have convenient access to the Internet" (63%). Availability of community access computers is important for digital skills development such as keyboard skills, MS Office applications, as well as online research and services.

- + *"I think people are pretty adept at learning computer skills and everyone can use a smartphone pretty well, so I think that the ability to do it is there...I think, just access to the resources is difficult." (Karin Neilson, Erub Primary Health Centre, 2022)*

There is currently limited access to computers on Erub. The Indigenous Knowledge Centre (IKC) was not functioning during our visit and anecdotally has had limited use over the last two years. TSIRC advised that the Erub IKC will re-open soon and will provide computer access and support:

- + “People can come in to the IKC and staff will be available to assist and educate elderly community members. Not all our elderly and community members are educated in this area. There are no issues with the younger generation as they are more switched on. We’re currently purchasing more computers and iPads for our IKC.” (John Armitage, TSIRC Divisional Manager for Erub, 2022)

Support in using online government services is available at the Centrelink and TSIRC office during opening hours. There was demand for more digital literacy training and support, especially for the elderly, people with disabilities, and those with low English and digital literacy. The IKC could be a useful space for computer access and computer skills workshops through Deadly Digital Communities and Tech Savvy Seniors (both coordinated by State Library of Queensland).

- + “[I] want to know how to type letters and things ... on the computer and change it there ... like Lala and others.” (Kapua Gutchen, My Pathways Supervisor/ Cultural Leader, 2022)

There was demand from community members for the IKC to be better utilised as a space for online learning, research and working on digital projects, including language and culture projects.

- + “I think we should have our own library and proper computer facilities where the kids can come and use it for an hour like down in the mainland. You know the libraries where you go, and have Wi-Fi systems as well, because...a lot of family members, they can’t afford credit, and they’re like, ‘Can I use your hotspot?’ ... I wish we had that [free Wi-Fi] up here, but we don’t.” (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)

Most Erub households are mobile only, with only a few having access to a laptop or computer. This limits the development of keyboard skills and use of applications, such as Microsoft Office, used in most workplaces. Jody Warbrick, the Principal of the Erub campus of Tagai School, said that the lack of keyboard skills by school students was an issue for students preparing for NAPLAN tests which were done online in 2022. She wants more digital skills training for students and staff to use computers, however noted that digital skills is not currently listed as a priority area for Tagai College.

TSIMA Operations Manager Diat Alferink said that more training and support is needed, but it needs to be done using cultural modes of learning. This includes using a ‘just-in-time’ approach, providing support when and where skills are needed, rather than a ‘just-in-case’ workshop model on topics that may not be relevant.

Peer learning is an effective means of learning, both formal and informal

There is also demand for a digital mentor role to provide one-on-one peer training support. Peer learning is an effective means of learning both by service agency staff and within the home environment:

- + “To learn [to use online services] they allow their nephews or niece, sons or daughters or even the staff can assist ... I hope they further their knowledge of technologies because I for one am just a starter myself. I’m just a beginner.” (Jimmy Gela, TSIRC Councillor, TSRA Board member, 2022)
- + “If one knows, they’ll show the other ... Most community members are fairly switched on ... the younger generation are more educated in modern technology than what we are.” (John Armitage, TSIRC Divisional Manager for Erub, 2022)

Online learning is starting to be embraced

While online professional development training can save travel time and expense for agencies, there was a mixed experience of its effectiveness due to poor connectivity and cost. Most training is still done face to face, with people flying to Thursday Island or Cairns for study. TSIRC sends its staff to Cairns to learn new systems.

76% of the regular Internet users surveyed said they had used the Internet for some form of learning or study in the last six months. This enables people to stay living in the community with their family while studying. However, the issues of connectivity and data cost were described as barriers to online learning:

- + “I wanted to go out to do Uni, but ... I feel that I must stay on country and study here ... [to] achieve my goal as a First Nation person to revitalise my language ... But the problem was that the signal is very bad ... If they better the Telstra service and then we wouldn't worry about leaving the island to go. I would prefer to do my study [online] ... instead of leaving country.” (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)

Use of Apps for Communications and Learning

Diann Lui said that the Erub artists use WhatsApp for group messaging, especially while on overseas trips and during COVID to keep connected. Erub Arts are also keen to move to digital Board meeting papers for directors to reduce use of paper, but many older people don't use email or have iPads to access the documents.

Artswoker and artist Florence Gutchen uses ICTs at home for family communications and cultural research as well as using email and Microsoft Teams for her work and training at Erub Arts. Through her Artworker training with Indigenous Art Centre Alliance in Cairns, Florence is learning to use the Story Art Money (SAM) database, and studying art law, governance and photography online. She also does cultural research.

Nixon Mye described using a range of apps including the Stan streaming app, GarageBand (for music production), YouTube and the WillyWeather app. He also takes photos and videos on his phone and posts these on Facebook and Instagram. Nixon is also one of several local musicians creating music using digital applications such as Garageband, and sharing their work on YouTube, FaceBook, Soundcloud and iTunes.

- + “We were doing a lot of music stuff, on the GarageBand, that was the app. So, that was like the whole reason why we got the iPad, so we could do some music ... There's a lot of people here that are very talented in the music industry ... [and] neighbouring islands as well.” (Nixon Mye, RIBS broadcaster/ digital content producer, 2022)

There is interest in more music production training and a studio facility to enable more professional recording and production work.

Social media is a primary means of communication

Beyond voice and text communications, social media is a primary means of keeping in touch with family or friends (95% of regular users), engaging with community (90%), and meeting new friends or reconnecting with old friends online (88%). 41% of people use Facebook daily to access news and information. The primary platforms used are Facebook, TikTok and Instagram.

- + “If we want to reach community around messaging I think Instagram and TikTok for younger ones, but also Facebook's still pretty relevant.” (Diat Alferink, TSIMA Operations Manager, 2022)

Some older people are learning to use social media to stay connected with family members dispersed across the region and mainland. Walter Lui described the changes in family communications because of social media:

- + “[Nowadays with social media] It doesn't matter you're on the other side of this region, they know where you are. ... [You can] send a message, send a photo to a family living down south ... Our children or grandchildren send the photo themselves ... down to grandpa or grandma somewhere else, other side in this region. So happy to see.” (Walter Lui, Erub Radio Broadcaster, 2022)

Cyber safety and scams are a significant concern

Local agencies have identified a range of cyber-safety issues prevalent in the region from scams, access to inappropriate content, online bullying and harassment, and posted comments leading to family disputes.

- + “I hear at times of arguments on Facebook. Our IT Department send out notifications about cyber safety and scams that we have to be aware of.” (John Armitage, TSIRC Divisional Manager for Erub, 2022)

There were calls for more cyber-safety training, especially with scam calls, texts and online messages becoming more commonplace, and limited awareness of how to discern and avoid them.

- + “A couple of people got scammed on the island ... People have lost thousands of dollars” (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)
- + “I think people need to be educated ... [about scam calls and people] giving all their details and next minute they’ve got \$500 stolen out of their bank account.” (Diat Alferink, TSIMA Operations Manager, 2022)

In a region that values cultural respect, there is concern about the erosion of cultural protocols via social media:

- + “If there’s a death on the Island, and we do have cultural protocol about how we approach getting the news across, but there’s some idiot ... put it on Facebook ... You don’t have that right to, until the elder of the family does give the okay ... [We need] to have a clean line between cultural protocols and your right to go on [social] media.” (John Bourne Mye, Police Officer, Erub, 2022)

There was also a caution about posting images on social media depicting hunting of turtles and dugongs, a cultural food source, as this can attract backlash from animal rights activists.

Demand for digital programs to support language and cultural maintenance and local content

With elders identifying the impact of western media and online content on language and culture, and changing cultural practice due to climate change, there is growing demand for language and cultural recording projects:

- + “[With] rising sea levels now, six communities are possibly unliveable in the next 70 to 100 years in the Torres Strait ... that’s why this cultural maintenance, language renewal, myths and legend, animation, that we’re working on developing is really important and gives voice to our identity and our culture.” (Diat Alferink, TSIMA Operations Manager, 2022)

Cr Jimmy Gela is concerned that cultural stories are fading away in the era of Netflix and YouTube, with TSRA supporting language projects. Currently the rangers use Traditional Ecological Knowledge software to record information about plants and animals, fish and locations and language. They have developed a detailed seasonal calendar with input from Kapua Gutchen and daughter Lala Gutchen.

Kapua Gutchen argues that young people need to learn the language to maintain their identity as an Erub Meriam person. He and other elders identified the need for a language project in the 1990s:

- + “Kids were more becoming Torres Strait Creole speakers ... we thought we should hold on to our traditional language ... the Australian Literacy and Numeracy Foundation [ALNF, have helped us to] record the language and try save the language ... [Now] I can tell that some of the children know more language than their parents that didn’t speak anything.” (Kapua Gutchen, My Pathways Supervisor/ Cultural Leader, 2022)

Lala works as a First Language programs facilitator using the Living First Language Platform developed by Australian Literacy and Numeracy Foundation³⁰ to record and document the Erub Mir dialect of the Meriam Mir language spoken on Erub and Ugar (Stephen Island).

- + “We’ve recorded over 3,000 words to the platform.... We’ve documented a lot of new stories and ... translated old dance songs and ... hymns so that these generations could understand what they’re singing about now.” (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)

Lala photographs and documents local plants, animals and fish species and uses digital platforms such as Instagram to teach people the names in the Erub Mir dialect, including people living away from country. She teaches the language remotely, face-to-face, and even through online networks.

- + “I have my Instagram page where I go on there and I put pictures and stuff, videos of the island, and I translate them in language. So I’m basically teaching the language off a platform that requires to use Internet.” (Lala Gutchen, Language facilitator/ teacher/ fisherwoman/ advocate, 2022)

Erub Arts manager Diann Lui said there was community interest in setting up a digital media unit, building on projects undertaken by Erub Arts, to make animations and movies in traditional language. She suggested this could be done through collaboration with TSIMA, the arts centre, and the IKC, and maybe as a My Pathways project. She suggested starting by collecting existing information and build on existing projects and capacity.

There is demand for programs that support digital content creation by young people. Dian Lui said that the next generation of artists are coming from the digital era, with Erub Arts having a digital entry in this year’s Telstra awards. Some young people are doing video production using online apps:

- + “When we go out on the reef, we take videos or pictures ...[We edit] the video together, and add music and whatever and post it up. Makes families down the South miss island and they want to come back.” (Nixon Mye, resident, 2022)

TSIMA are keen to set up a media hub on every island for creating and accessing content and archives.

- + “We need to have more [Torres Strait] content, whether it’s on NITV or indigiTUBE, or even our own platforms ... to raise that awareness [of our history] in our younger generation. Media’s really important and able to do that.” (Diat Alferink, TSIMA Operations Manager, 2022)



Figure 12: Lala Gutchen with the Erub Kerker seasonal calendar



Figure 13: Photo archive wall in Erub IKC

³⁰ See: <https://alnf.org/2019/07/12/alnf-technology-helping-save-erub-language/>

6. CONSIDERATIONS FOR LOCAL DIGITAL INCLUSION PLAN

Developing a local Digital Inclusion Plan would enable a coordinated whole-of-community approach to address some of the challenges outlined in this report. It would also provide a useful tool for advocacy to government, industry, and fundraising efforts.

Some of the gaps and strategies suggested during community and agency consultation are outlined below, to assist community stakeholders in considering possible strategies to improve communications services and digital inclusion in Erub. These are not intended to be prescriptive, nor are they listed in order of priority.

Note: Reference to the plans and programs by TSIRC, TSRA and TCICA outlined in Section 4 could also help to align a local digital inclusion plan to regional planning, coordination and fundraising.

Identified Issue	Possible Actions	Potential Stakeholders
Access		
Expanded 4G mobile coverage to six unserved villages, airport and north side of island, and out to sea.	Advocate to Telstra and Queensland and Australian Governments for additional 4G tower at top of island, plus increased speed, reliability, and coverage to meet growing demand. Advocate to Telstra to expand 4G coverage footprint as part of planned upgrade from 3G, prior to 3G switch-off in mid-2024. Apply for funding (e.g., through Regional Connectivity Program) for 4G small cell, boosters or repeaters³¹ for unserved villages.	TSIRC, Telstra, Queensland Government, Australian Government (DITRDC)
Need for fast, low latency broadband services with unlimited data for agency and business use.	Trial of Starlink satellite service for agency and/or business use (Note: Queensland Government are currently undertaking a trial of Starlink). TSRA to consider including support for reliable Internet connectivity as part of business loans.	TSIRC, TSRA, Queensland Government
Need for improved safety and emergency communications, especially for ocean fishing, sea rescue, border security.	Explore options for expanded use of HF & UHF radio and satellite communications for safety and emergency communications in areas without mobile coverage and while out to sea; explore options for sharing of Borderforce HF radio facility with other agencies.	TSIRC, Borderforce, Queensland Police, Rangers, Erub Primary Health Care Centre
Need for community access computers and software in Indigenous Knowledge Centre (IKC).	Seek funding through State Library of Queensland (SLQ) for new community access computers and regularly used software ³² , including learning games.	TSIRC/ Erub IKC, SLQ

³¹ Some options of repeaters at: <https://www.telstra.com.au/coverage-networks/network-coverage-extension-devices>

³² Refurbished computers and discount software available through Connecting Up: <https://www.connectingup.org/>

Identified Issue	Possible Actions	Potential Stakeholders
VAST direct-to-home satellite TV services not working in about 25% of homes; high cost for households to repair equipment and replace set-top boxes.	Advocate for funding to upgrade damaged or rusted satellite dishes, replace VAST set-top boxes in homes where not working, and provide shelf unit and power surge protectors for all set-top boxes. Arrange bulk purchase of set-top boxes and surge protectors and provide at subsidised cost in IBIS stores across region.	TSIRC, Queensland Government housing, Australian Government (DITRDC), IBIS store
Limited access to Radio 4DI FM radio service across island; TSIMA 4MW and ABC AM radio services poor quality signal.	Move broadcast tower to higher location to reach more of community and install higher powered FM transmitter. Consider establishing transmission of at least one ABC radio service as FM from Erub RIBS facility.	TSIMA/ Erub RIBS, TSIRC, TSRA
Affordability		
Primary use of pre-paid mobile data; limited awareness of options.	Provide easy-to-read materials in store, IKC and post office (posters, brochures) and radio messages outlining how to reduce data use and options for affordable mobile and data services.	TSIRC/ Erub IKC, SLQ, ACCAN, TSIMA, IBIS store, Telstra, Sky Muster retail service providers
Need for public Wi-Fi to provide affordable access to online services.	Establish NBN satellite service and free public Wi-Fi with content filtering in town centre. (Note: NBN installed Wi-Fi on 28 th May 2022). Review NBN Wi-Fi usage and explore need for Wi-Fi in other public sites with limited 4G coverage (e.g., airport and visitor's quarters).	TSIRC, NBN, Australian Government/ Centrelink, Queensland Government
Supply robust cases for phones to reduce replacement costs.	Store to supply water-resistant mobile cases to reduce water and screen damage and replacement cost.	IBIS store
Digital Ability		
Need for digital skills in using mobile and computer-based applications, online services and security, particularly for seniors.	Provide in-house training and support opportunities at IKC (with support from Deadly Digital Training and Tech Savvy Seniors supported by SLQ) in basic IT skills, mobile and online services (MyGov, banking, shopping, travel bookings etc) and managing security.	TSIRC/ Erub IKC, SLQ, My Pathways
Provide workshops for workforce readiness, trade & administration skills and business development.	Run specific workshops on workforce readiness (CV preparation, MS office, keyboard/typing skills, email use, job search etc), trade skills, administration and business skills (email, business development).	TSIRC/ Erub IKC, SLQ, Tagai TAFE, My Pathways

Identified Issue	Possible Actions	Potential Stakeholders
	accounting, HR, project management etc) and IT skills for governance and leadership.	
Mentor support in use of government and online services when needed.	Explore possible employment of local Digital Mentor to support people to independently use government and online services/ apps (e.g., MyGov, Centrelink, banking services); located either at TSIRC, Centrelink office or Erub IKC.	TSIRC/ Erub IKC, Australian Government/ Centrelink, banks or other online service providers
Concerns around cyber-safety issues especially scams and on social media.	Arrange cyber-safety awareness workshops (including in schools and workplaces) as well as locally targeted posters and radio promos to build awareness.	TSIRC/ Erub IKC, TSIMA, Erub campus of Tagai School
Other Identified Needs		
Lack of IT and technical support.	Arrange IT technical services company as regular service provider to support multiple agencies' needs (to reduce travel time and costs). Provide technical training for local people to provide first-in support.	TSIRC, My Pathways
Demand for digital media and music production for local language and cultural maintenance and skills development, and need for a facility to support production and archiving of existing content.	Explore options for a multi-media facility to support existing language and cultural projects (i.e. Rangers' Traditional Ecological Knowledge, Living First Language Platform, Erub Arts' videos/animations) and support learning and use of multi-media production (e.g. videos, animation, online content), music recording and archiving could be within the community, possibly at IKC, Erub Arts or the school. Explore options for skills development in digital photography, audio recording, video, music production and journalism. Seek support for language and cultural recording projects.	TSIMA, Erub Arts, IKC, TSIRC, TSRA (funding), Rangers, My Pathways (possible projects), Australian Literacy and Numeracy Foundation, First Nations Media Australia (already supporting Erub with the Living First Language Platform)

Appendix 1: Summary of Survey results

Note: This is based on initial analysis of the 44 surveys undertaken. More detailed data analysis and weighting of results against ABS statistics will be undertaken in early 2023 prior to display of the data on the Australian Digital Inclusion Index dashboard. This process may result in minor variations from these statistics.

Demographics

- + **Gender:** 59% of respondents were female, 37% male and 4% (two) were non-binary or gender fluid.
- + **Identity:** 98% of respondents identified as Torres Strait Islander or both Aboriginal and Torres Strait Islander.
- + **Education:** 25% have completed up to year 12, 27% have completed a Certificate course, and 14% have attained a Diploma or Bachelor degree, and 16% attained year 10 or lower.
- + **Employment:** 70% were employed or engaged in CDP activities (45% of these full-time), 9% were unemployed, and 14% were doing home duties. 27% had been looking for work in the last month.
- + **Welfare:** 52% received some form of government pension or benefit, primarily Family Tax Benefit and JobSeeker/ Youth Allowance.
- + **Housing:** 50% lived in multi-generational or shared households, with an average of 5.5 people per house. 61% of respondents said they pay rent to the public housing authority, with 34% boarding or living at home.
- + **Health:** 9% (four people) had a long-term disability or health condition.
- + **Language:** 77% of respondents spoke Torres Strait Islander Kriol (or Youmpla tok) and 52% spoke Erub/Miriam Mer (with 95% of respondents speaking at least one Torres Strait Islander language at home). 95% of respondents indicated they understand written and spoken English very or quite well.
- + **Income:** The average weekly household income was about \$750-\$800. 30% of respondents' household income was \$400 per week or lower, 34% between \$500 to \$1250 per week, and 32% between \$1250-3500.

Phone and Data Use

- + **Phone Use:** 43 of 44 respondents (98%) regularly used a mobile phone for phone calls, with only one using a fixed line phone in their home, and one without phone access.
- + **Public Phone:** 59% reported not using the public phone, with only two (5%) saying the public phone was reliable.
- + **Phone ownership:** Only two respondents did not have a mobile phone. Of those with phones, 88% had smartphones as their main mobile phone, and 90% used pre-paid services.
- + **Data use:** Average monthly data allowances per user were: 20 (47%) use up to 10GB/month, 14 (33%) 11-40GB/month, 12% (five people) 41-100GB/ month and 7% (three people) unlimited. However, 76% reported exceeding their data



59%

female respondents



98%

Torres Strait Islander or
Aboriginal and Torres
Strait Islander



70%

Employed (full-time,
part-time, casual, CDP)



98%

Own or share a mobile
phone



\$187

Average monthly
household expenditure



28%

Listen daily to TSIMA
4MW / Erub RIBS daily or
weekly



61%

Get emergency
information direct and in
person

limit at least once in the past year, and 21% (nine people) exceeded limits at least every two months, suggesting higher data use.

- + **Household Expenditure:** There is an average of 4.4 mobile phone services per household. Of the 43 responses on household mobile expenditure, the total expenditure was \$8060/month, an average household cost of \$187/month. 16 (37%) of households paid up to \$100/month, 11 (25%) paid \$101 - \$200/month, nine (21%) paid between \$201-\$300/month, and seven (16%) paid over \$300/month. Of the 38 responses on household mobile expenditure, the average household cost was \$117/month. 21 (55%) households paid up to \$100/month, 11 (29%) paid \$101 - \$200/month, and six (16%) paid over \$200/month.

Media Use

- + **Radio Listening:** The most popular radio stations were local, with 28% listening to the First Nations radio service (Radio 4MW/ Erub RIBS) daily or weekly and only 7% listening to ABC radio daily or weekly. However, 30% of survey respondents said they never listen to radio.
- + **Radio Access:** There are various ways that people listen to radio (multi-choice question) - 45% of respondents said they listen by car radio, 11% listen on a radio at home, 11% through the TV/VAST satellite dish, and 9% listen via streaming on a phone or tablet.
- + **TV Access:** 84% of respondents reported getting TV services via VAST satellite dish, 50% reported using streamed services on their phones, and 27% used a satellite subscription TV service.
- + **VAST TV Access:** VAST satellite TV is the only means of access to free TV services in Erub. 73% of respondents reported having VAST satellite TV working, with 25% saying the VAST wasn't working and one (2%) without VAST. Of those that reported the VAST not working, 45% said it was because the set-top box was not working, and 36% due to a damaged dish or cabling.
- + **TV and Online Content:** YouTube was most popular (50% watch daily) followed by commercial television stations (7,9,10) (45% daily), streaming services (Netflix, Stan etc. - 41% daily). NITV, ABC and SBS were popular as more occasional watches (respectively, 27%, 25% and 25% daily, and 45%, 41%, and 41% watching weekly or occasionally).
- + **News and Information Services:** Sources of news and information were widely distributed, with the most popular daily services being Facebook (41% daily), direct and in person (39% daily), commercial TV (36% daily) and other social media (e.g. Twitter, TikTok etc. - 34% daily), with online news services (27%), noticeboards or posters (25%), NITV (25%), ABC TV (23%), and Radio 4MW (18%) as secondary sources of news and information. The Torres News rated highly as a weekly (27%) or occasional (34%) source of news.
- + **Emergency Information:** The most commonly used sources of emergency information were also varied, with direct and in-person communication and noticeboards and posters being most common (both 61%), followed by Facebook (55%), text messages (50%), commercial TV (45%), and ABC TV (42%). 7 people (16%) specified receiving emergency information via hand delivered messaging from their Divisional Manager or from the local council.



89%

Of survey respondents used the Internet in the past week



0%

Never use the Internet



41%

Of regular users gave the reason "The Internet is too expensive" for not using the Internet more



63%

Of regular users gave the reason "I do not have convenient access to the Internet"



77%

Of households do not have any form of fixed home Internet



93%

Can send and receive emails



95%

Use online banking



95%

Use social media

Internet use

- + **Latest Internet Use:** 89% (39 of 44 people) had used the Internet in the last week, with only three people (7%) having last used it more than six months ago and no respondents having never used the Internet.
- + **Regular Internet Users:** Of those who had used the Internet within the last month (93%, 41 people):
 - o 66% said they used the Internet almost constantly and another 22% several times a day.
 - o The most common online devices used are the smartphone (95%), tablet (46%) smart TV (39%), laptop computer (39%) and desktop computer (32%).
 - o Some people use Internet provided by others, with 44% reporting using the Internet at the house of friends or family and 4% using Internet at their place of work or education.
 - o The main reasons people gave for not using the Internet more often were “I do not have convenient access to the Internet” (63%) and “The Internet is too expensive for me” (41%), with some residents also voicing concerns about privacy and scams (17%), lack of confidence (15%), or simply not needing to (17%).
 - o There was a broad range of concern about time spent online, with 22% extremely concerned about how it affected their wellbeing and relationships, 15% moderately concerned, 27% slightly concerned, and 29% not at all concerned.
- + **Low Internet Users:** The three people who rarely used the Internet cited lack of confidence, concern about privacy, scams, or inappropriate content, and not prioritizing the Internet as their reasoning. All three respondents had considered using the Internet since social and physical distancing restriction introductions were introduced due to COVID.
- + **Impact of COVID-19 on Use:** Lockdowns (39%) and social and physical distancing restrictions (34%) were cited as the main reasons for increased Internet use during COVID-19 restrictions.
- + **Fixed Broadband Services:** The majority of survey respondents (77%) do not have any form of fixed Internet at their household. Seven households (16%) report having an NBN Sky Muster service, with most at speeds between 25-50 Mbps. Of the 10 respondents with fixed broadband, two had less than 100GB data per month, five had between 200 and 500GB per month and three had unlimited data, with 50% exceeding their limit at least once over the last year. The average cost was \$99.75 a month.
- + **Mobile Broadband Service:** Nine households (20%) used a form of mobile broadband other than phone data (portable 4G modem, laptop SIM) for data sharing, with 78% of these pre-paid, and 55% exceeding their data limit between 5-12 times over the last year.
- + **Affordability of Internet:** 41% of respondents said that they have had to cut back on essential household costs in order to afford personal or household Internet within the past six months.

Digital Ability

- + **Regular Internet Users:** Of those who regularly or semi-regularly use the Internet (41 out of 44 people):
 - o Most people reported being able to send and receive emails (93% said ‘very true’ or ‘mostly true’), find and install apps/software (90%), open a new Internet browser tab (90%), connect to a Wi-Fi network (90%), download and then open a file (88%), use a mobile phone or device as a Wi-Fi hotspot (88%), and complete online forms (85%).
 - o Online security and cyber-safety awareness are also reasonably high, with most people knowing how to set and manage secure passwords (90%), identify which apps/software are

safe to download (83%), adjust privacy settings (83%), check if information is trustworthy (93%), add or remove friends or followers on social media (88%) and manage and decide what personal information to share online (85%).

- Most people are able to produce online content (71%) and post videos (83%), but there was lower confidence in creating websites (42% said 'very true' or 'mostly true'). There is good awareness of online copyright law (74%).
- Most people know how to connect smart devices (e.g. smart TV) to the Internet (83%) and adjust privacy and security settings (81%).
- The main online activities include online banking (95%), accessing government services (95%) package tracking (88%), online shopping (88%), comparing prices (83%) and accessing health information (83%).
- Social media is popular for keeping in touch with family or friends (95%), engaging with community (90%), and meeting new friends or reconnecting with old friends online (88%).
- 90% of respondents had used online entertainment services in the past six months (e.g. streaming video/music, playing online games) and 54% had attended a music, arts, or cultural event online.

COMMENTS

Note: Survey respondents were given the opportunity to add a comment at the end of the survey to raise any areas of concern or need relating to the survey topics covered. As the surveys are anonymous, comments are not attributed to any individual. The anecdotes have been grouped according to key themes.

Expanded Mobile Coverage

- + Need signal range at the back of the Island.
- + Hoping to get good connectivity throughout our villages on the island ASAP.
- + I think that the location of current Telstra tower is not convenient for our island and range of no reception around the back.
- + Very poor mobile reception and don't get much signal downstairs in a two-storey house. Poor signal inside but have to go outside for signal to use the Internet.



"We need to improve the signal and reception to be more than it is now because ... It's playing up. We want to improve more so that we can get a signal around the island and on the reef ... For safety when people go out. I want it to be good because it could change our lives."

- + Signal tower needs to be put in a different location to be able to give wider coverage.
- + We need Telstra to supply the end villages.
- + We need coverage on the back of the island. Most people go around the island and spend time out there. It's not safe. It would be good to put a tower up the back there.
- + We need better connectivity around the Torres Strait from Murray Island to Boigu Island.
- + Where I live the reception is not very good.

Quality of Service Issues

- + I live right next to the signal tower and I personally still receive poor coverage on my mobile device. And we need more jobs up here because our community is growing.



"I'd like to see the Internet and things on the island improved to the level down south like on the mainland. So we're equal. Across Australia it needs to be the same. We need communications. Because we live on the border of another country. We can see PNG over there. It'd only 48 miles away. Illegal activity we need to have good communications so we can report them. Especially now with international movements into the Solomon Islands. It's a real safety thing. We need good communication."

- + I would like to see a faster upgrade in our connectivity system.
- + Reception is not good in our community it tends to drop out even without strong winds or bad weather.
- + Reception is very intermittent and negatively impacts our use on a regular basis
- + When signal is down our credit is finished, only parts of our community gets good reception.
- + With COVID. We don't know what that's developing into. There could be stronger strains. All these things mean we need good communication.
- + If there's a conflict, who will win the fight? The country that comes out on top will be the country with the best communication.

Affordability and Data Use Issues



"The costs are too much. Telstra could find a better deal. People are struggling. I'm on pre-paid and it's really hard. If we get thirty dollars credit you can watch two movies and that's it."

- + I hope this project will work out to benefit my community in better connectivity. Because I live in the CBD and I lend my Sky Muster password out all the time to help people that are in the CBD with no credit to access banking etc.



Figure 14:
Traditional rock fish
traps on the reef
surrounding Erub



Appendix 2: Community Communications Audit

About the Community	
Community Name:	Erub Island
Alternate name	Darnley Island
Traditional owners/ Language group	Erubam Buaigiz / Erub Mer
Location (Coords)	9.5975° S, 143.7614° E
Region	Zenadth Kes (Torres Strait), Queensland
LGA/Shire/ Regional Council	Torres Strait Islands Regional Council
Land Council	Torres Strait Islands Regional Council
Regional Service Centre, distance	Horn Island - 200km; Horn Island to Cairns - 793km; 993km in two flights to regional centre
Remoteness (ABS)	Very Remote
Population Data - ABS 2021	
ABS link	https://abs.gov.au/census/find-census-data/quickstats/2021/SAL30983
ABS link- Aboriginal and Torres Strait Islander Quickstats	https://abs.gov.au/census/find-census-data/quickstats/2021/ILOC30700501
Total population	326
Aboriginal and Torres Strait Islander population	292 - 89.6%; (19 / 5.8% not stated)
Gender breakdown	50.2% male/ 49.8% female
Median age and breakdown	Median age 30; 103 (31.6%) 0-19 years; 56 (17.2%) 20-29 years; 44 (13.5%) 30-39 years; 39 (12.0%) 40-49 years; 22 (6.7%) 50-59 years; 38 (11.7%) 60-69 years; 18 (5.5%) 70+ years
Number of families and number of children per family	84 families; Avg 1.9 children for families with children, 1.0 for all households (including without children)
Language group, no. of first language speakers	267 (90.1%) speak Yumplatok (Torres Strait Creole), 6 (1.8%) speak Creole or other Indigenous languages
% Aboriginal and Torres Strait Islander people who speak an Aboriginal and Torres Strait Islander language	91.8% speak an Aboriginal and/or Torres Strait Islander language at home
% Aboriginal and Torres Strait Islander people who speak English at home	7 (2.4%) speak only English at home
Employment levels: number of people working, on Jobseeker, CDP, aged or disability pension etc	ABS employment data not yet released

Education levels: No of people reached	10 attending pre-school; 51 attending primary school; 17 attending secondary school; 5 attending tertiary; 34 unstated (full data set not yet released)
Number of dwellings	80 occupied dwellings (community housing)
Housing suitability: Average people per household/ bedroom	Avg 3.5 people per household; 0.8 people per bedroom
Median weekly household income	\$974 (\$900 for ATSI households)
Median weekly personal income – for residents over 15 years of age	\$401 (\$387 for Aboriginal and/or Torres Strait Islander people)
Average weekly rent	\$150
Community Services and Plans	
Community Layout Plan	See: TSIRC – Zenadth Kes Planning Scheme 2018 (Erub Local Plan pp.291-316)
Agencies in community	Torres Strait Island Regional Council, Tagai State School, Biosecurity office, Erub Primary Health Care, Ibis Supermarket (CEQ); Erub Arts; Erubam Rangers; Indigenous Knowledge Centre (run by TSIRC, supported by State Library of Queensland); Torres Strait Police; Prescribed Body Corporate.
Visiting agencies	Ergon Energy; Indigenous Consumer Advice Network (ICAN); Telstra; Police; NBN; State Emergency Service (SES); contractors
Community Development Plan	See: TSIRC – Zenadth Kes Planning Scheme 2018 (Erub Local Plan – pp.291-316); TSRA Torres Strait and Northern Peninsula Regional Plan 2009-2029 – Erub Community Booklet 2012
Power supply/type/backup in community; Relevance to telecommunications	Local diesel generator managed by Ergon Energy; backup generator at health centre. Telstra services run off mains power with battery backup.
Use of power cards in households	Yes, Ergon Energy; can buy from TSIRC office or IBIS store.
Basics card site?	No
Types of Communications Available	
Public phones	No public phones in Erub
Home phones	Several, number unknown
Mobile – 3G, 4G, 5G, small cell (satellite backhaul), provider, location of base station	3G, 4G available; backhaul via microwave links coming from top of Cape York via Thursday Island; main tower near school (tower height raised and upgraded about 2017)
Coverage description	Covers south-west side of island, but several villages have little or no reception due to hilly terrain. See Telstra coverage map: https://www.telstra.com.au/coverage-networks/our-coverage

ADSL, number of connections	Unknown
Business grade services, number of connections	Unknown
Fibre to community	No, backhaul via microwave links from NPA
Satellite services, number, locations, provider	Sky Muster on 11 houses/agencies (estimate), three more coming
UHF or HF Radio	HF radio set up on hill by Australian Border Force with Immigration (Dept Agriculture and Forestry); Use of UHF unknown
Status of services: faults, issues, speeds during peak use time etc	Reports of regular 4G network dropouts and data dropouts/slow speed due to microwave links failing, weather impacts, power outages, and congestion; Reports of NBN Sky Muster dropouts in heavy cloud or rain
Communications Programs History	TSIRC and TSRA have co-invested in 4G network and microwave backhaul upgrade to 6 communities across TSI (including Erub) since 2014-15, with another agreement signed in 2020-21. Erub had 4G tower extended in 2017.
Any planned upgrades?	Not known if further Telstra upgrades are planned. TSIRC have requested 4G tower on top of hill and four small cells or boosters to cover villages with poor or no 4G coverage
Emergency information system	Limited emergency communications. HF radio managed by Australian Border Force with Immigration; Satellite phones used by other agencies.
Telemetry network	Unknown
Media Services Available	
Radio services broadcast	TSIMA 4MW 1260AM (922 VAST); 4DI- 106.1FM; ABC radio 1062 AM
TV services	TV delivery via VAST direct-to-home; several houses don't have VAST working - see survey
RIBS radio station	Local broadcasters Walter Lui and Nixon Mye broadcast locally from Erub RIBS
RIMO	TSIMA (based on Waiben/Thursday Island)
Other media services	Torres News published weekly by TSIMA (available in IBIS store)

Community Access Facilities

Internet access facilities	IKC not currently available for computer access and training purposes (IKC has reportedly had limited use over the last two years); planned to re-open in late 2022
Public Wi-Fi availability and mode	No public Wi-Fi during visit; Wi-Fi access in IKC by password for in-house use only; NBN installed Communities in Isolation Wi-Fi from TSIRC building on 28/5/22
Access computers available in other facilities	Centrelink (for Centrelink purposes only); no access computers in IKC currently
Programs supporting community access	No; Erub IKC would be eligible for Deadly Digital Communities and Tech Savvy Seniors program through State Library of Queensland

Expenditure Data

Amount of money being spent on telecommunications per month	No details
Expenditure on mobile prepaid cards per month	No details
Expenditure on Wi-Fi vouchers per month	No details
Any cost saving mechanisms in place	None identified

Training / Skills Data

Number of community members that have undertaken digital training	No details; demand for more digital skills and cyber-safety training, including for seniors
Nature and provider of training programs	No details
Training options available	My Pathways offer some courses but not in digital skills
Any workplace digital skills training	Some agencies do online staff training by Zoom (School, health, Shire etc) but most training face to face; Artswokers do training in Stories Art Money (SAM) database
Staff/resources to support digital skills/access	IKC coordinator/ Centrelink office

Use of online services/ applications

Apps or digital tools in use	Lala Gutchen using Living First Language Platform for language recording/documentation, supported by Australian Literacy and Numeracy Foundation; SAM database well used at Art centre; State Library of Queensland provides access to historical records; no other local archive systems in use
Use of My Gov, government services, banking	MyGov and Internet banking used independently by most people – see survey
Number of people using social media	Used broadly (see survey results) but some people wary about Facebook due to misinformation and conflict

Number of people using email	Used by most workers in government agencies, community services, local business etc. Limited reporting of use amongst community residents
Number of people using streaming services	Majority of community using YouTube, Netflix, music streaming or other services
Telehealth usage	Being used at Erub Primary Health Care Centre, although limited by connectivity
Online education or training	Limited use, mostly staff training
Online court hearings or prison visits	No, all court hearings done in person
Cyber-safety or scam support	No cyber-safety training or resources available; ICAN can assist people who have been scammed



Figure 15:
Foreshore of
Medigee village



Appendix 3: Photos of Research Activities



Figures 16 and 17: The research team met with TSIRC Councillor Jimmy Gela (far left) and TSIRC staff.



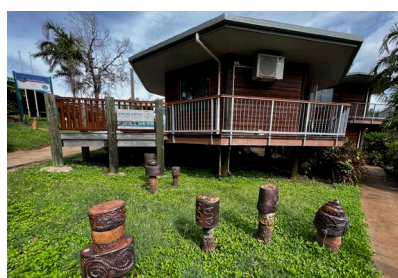
Figures 18 & 19: During the week 44 surveys were conducted by the co-researchers and RMIT team.



Figures 20 & 21: An audit was undertaken of communications and media services, support facilities and sales.



Figures 22 & 23: TSIMA Senior Broadcaster Jenni Enosa interviewed the team on Radio 4MW.



Figures 24 & 25: The team interviewed local agencies including Erub Arts and My Pathway CDP Supervisor Kapua Gutchen.

Appendix 4: Map of Erub (Darnley) Island

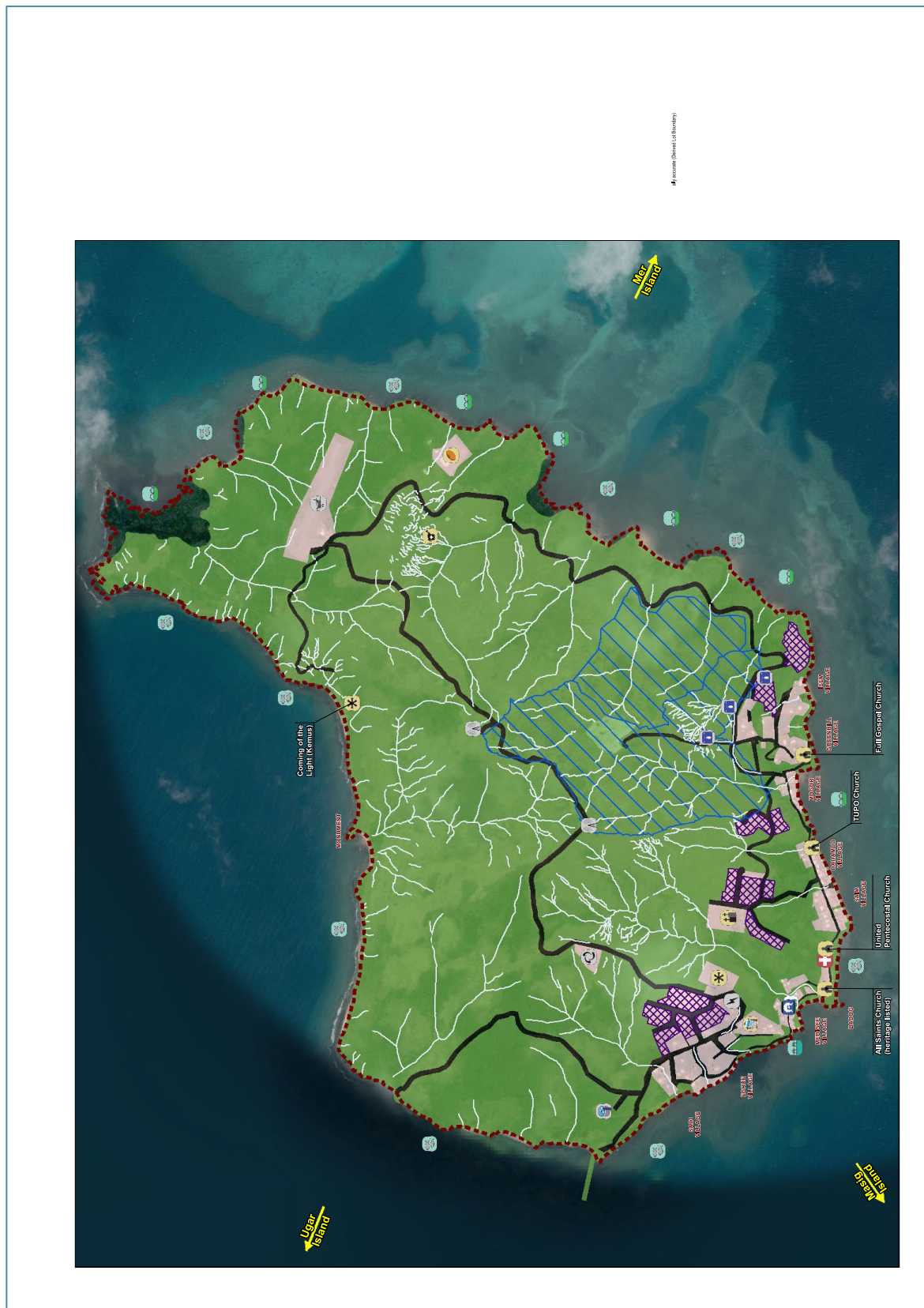


Figure 26: Map of Erub Island (Source: TSIRC Planning Scheme page 269)