

An aerial photograph of a river valley. The river flows through the center, surrounded by green fields and some residential areas. In the background, there are mountains under a clear sky. The text is overlaid on this image.

CLIMATE READY TWEED PROJECT

FINAL REPORT

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• Tweed EcoCruises	• SoILife
• Murwillumbah Community Centre	• Anrise
• Recycled Mats	• South Pole

ABOUT THE GRIFFITH CLIMATE ACTION BEACON

Griffith's Climate Action Beacon is a five-year, \$5 million commitment by Griffith to develop the knowledge, leadership, capacity and responses to enable effective and just climate action throughout society. We use a partnership approach that recognises the importance of both research and practice in defining and achieving collective climate action. The Climate Action Beacon focuses specifically on interdisciplinary research and cross-sectoral practice collaborations as catalysts for climate action. Our two platforms for collaboration are the Climate Action Research platform and the Climate Ready Initiative. We also have an education platform - Climate Action Learning program that includes innovative programs and work-integrated learning possibilities.

Climate Action Research platform is a network of over 150 researchers across all disciplines working to address climate action. Three themes guide our research: Motivating climate action, Transitioning to a zero-carbon and climate resilient future and ensuring Climate Justice. Read about the more than twenty-plus innovative projects helping Australia be able to take effective climate action:

<https://www.griffith.edu.au/research/climate-action/climate-action-research-platform>

Climate Ready Initiative (CRI) is a partnership-based social impact initiative that works with society to help shape a prosperous and just future for all. We seek to enable climate action by unlocking the economic and social development pathways that value net-zero emissions and climate resilience. The CRI is housed by the Griffith Climate Action Beacon and builds on decades of trusted climate action and development partnerships and engagements in Australia, the Asia Pacific Region and Internationally. The Climate Ready Initiative is guided by a board of diverse and trusted eminent leaders, and has a highly experienced and well-respected staff team, and an excellent pool of CRI associates. The CRI helps to facilitate, empower, and progress the transformative actions needed to advance effective and just climate action.

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Executive Summary

Griffith University was contracted by Tweed Shire Council (TSC) under a grant from the Federal Government (Preparing Australian Communities PACL000479), to identify local climate action strategies and support for the Tweed Shire community to reduce their carbon footprint and respond to natural hazards and climate events.

The overarching aim for the Tweed Climate Ready project is to provide an evidence base that will support Tweed Shire community interests and capacity to respond to localised climate change risks and impacts. TSC have been internally working on climate action for a number of years, however, this research is the first comprehensive baseline assessment of community perspectives on climate action.

This project forms a critical foundation for future action. The project outputs, including this report, will support Council and emergency response agencies when preparing key plans (for example the Greenhouse Gas Emissions Reduction Strategy) and inform further collaborative and community-led climate action.

This project was designed around an emerging method for community engaged climate action - Transformative Community Governance for climate action (Jackson, 2021; Jackson et al., 2023, (in development)) – founded on five principles – strategic and nested, systemic, collaborative, social learning, strengths-based approaches that foster transformative learning, deeper and more rapid change to respond to the uncertainties of climate change.

This approach is capable of providing a stable Shire wide framework for guiding meaningful community-based climate action while simultaneously leveraging the geographic and cultural diversity of the Tweed.

This project begins to establish a baseline about the readiness of Tweed residents for climate action based on their existing efforts and their feedback on challenges and opportunities for further action to reduce their and by extension, the Tweed's carbon footprint.

To gather this baseline data, this project scaffolded two surveys - one targeting Tweed Ecofest 2022 participants (n=53), and an online community survey (n=256), interviews (n=29) and co-design workshops (n=50) over a ten-month period from September 2022 to June 2023. The team worked closely with the Tweed Shire Council (including the Aboriginal Advisory Committee), exploring existing Council climate actions alongside numerous meetings with Council staff and their community networks.

KEY FINDINGS

Attitudes And Experiences With Climate Change

- On average, survey respondents ***tended to agree*** with this statement 'I am certain that climate change is really happening', and that it is an issue that 'requires urgent action now'. Further survey respondents indicated climate change as only a moderately serious problem right now and in 2050. This is at odds with the strong consensus from the global scientific community at the forefront of climate science that urgent climate action is required now (IPCC, 2022). This result points to a need for rapid education and skilling up of the community in terms of climate science, risks, impacts and appropriate action that can be taken locally. However, the project also identified a large pool of enthusiastic community members who support strong action and who are leading climate action. This diversity of views reinforces the importance of leadership from Council in setting a climate action agenda and working collaboratively with the community to build relationships and trust and provide legitimacy for strong climate action decisions.
- The survey data highlights how impacted the Tweed community was by the recent floods, and the scale of impacts and flow on effects on Tweed residents. This data also points to the extensive experiential lessons that can be shared by residents in the Tweed about climate related events.

Community Climate Action

- The top four responses in relation to actions taken due to environmental impact/concern were Carry your own reusable drink container always or nearly always (61.9%), Signed a petition, written letter, or social media post in support of an environmental issue in the past three years (58.3%), refuse to use non-biodegradable plastic products always or nearly always (56.7%) and voted for candidate or party because of their (pro-environmental) policies (54%).
- Interviews revealed a diverse range of carbon reduction action by community members (40 references to carbon reduction actions were made either as key actions interviewees did themselves or suggestions) with repeated emphasis on: Waste reduction and plastic reduction; Energy (including renewables), energy conservation and efficiency behaviours, water conservation, reducing emissions from driving vehicles (which included public transport and active transport infrastructure such as riding and walking, EV's, e-bikes and education and awareness raising). Then growing own food and investing in or purchasing 'sustainable' infrastructure or equipment.
- In the Community Climate Action Readiness Survey respondents were asked to indicate their level of preparedness for different climate related events (flood, drought, bushfire, storms, heatwave or other) on a scale of 'none', 'basic', & 'strong'. The majority of respondents had no plan at all for these types of events.
- Across the four community workshops the personal/household scale actions that were the most referenced by individuals were: to Eat less red meat (10); Throw away less food (9); and Invest in rooftop solar for your home, Reduce energy consumption at home, Raise awareness and education, and Go minimal – reduce your consumption of products generally, were all equally important with 8 people each noting them. Nineteen further personal or household climate actions were written down by participants as important (Appendix C – Community Climate Actions from Workshops). Some of these contrasted with the survey findings which showed less willingness to act (such as reduce energy consumption at home).
- For community-scale actions, individuals noted advocating for public transport improvements as the clear top priority (10), Join with others to establish a community voice to help with climate action strategy and supportive policies locally and regionally (6); Create local education programs to raise awareness of climate change impacts locally (5); and Develop a community led waste management strategy (5) as the other top priorities. 31 additional community-scale climate actions were written down by participants (Appendix C – Community Climate Actions from Workshops)

Tweed Comparison With National Climate Action Survey

The Griffith University Climate Action Beacon has conducted a National Climate Action Survey in 2021 and 2022 (see [here](#)). This has enabled some comparison of the national data with the Tweed Shire data as some questions were the same.

- In terms of adopting pro-environmental behaviours, when we compare the top five behaviours adopted for environmental reasons with the findings from the national climate action survey findings, Tweed residents were more likely to carry their own reusable drink container, refuse to use non-biodegradable plastic products, and grow some of your fruit, vegetables, and/or herbs. However, they were less likely to turn off appliances like TVs and computers at the wall when not in use. Their washing of their clothes in the cold (rather than hot) water mirrored national trends. Tweed residents also practice community-oriented behaviours more than the national average for environmental purposes. These include voting, signing a petition, and donating money.
- Regarding already consuming green energy, the Tweed residents exceed the national average on all fronts. Among the rest of the respondents, when their level of interest in adopting green energy options in the next three years was compared, Tweed residents reported higher interest in installing solar batteries at home, getting a green car, and involvement in local projects; they reported lower interest in generating own energy and purchasing green energy.

- Concern about climate change between Tweed residents (69%) and their national counterparts (66.8%) was comparable.
- If asked by a person they respect, Tweed residents were more likely to adopt community behaviours (for example volunteer, join a campaign, write a letter, participate in non-violence disobedience) than their national counterparts. Similarly, Tweed residents were more willing to adopt practices than their national counterparts to reduce climate impact. These include having renewable energy infrastructure, changing lifestyle, working with the local community, accepting cuts in the standard of living, and paying significantly more for energy-efficient products. The only practice they were less willing to adopt was to reduce energy use.
- Tweed Shire residents' response to "I do not believe climate change is happening" at 11.1% is higher than the national survey figure of 7.3%.

Barriers To Climate Action

- The top 4 barriers to reducing their carbon footprint selected by survey respondents were: These actions are not able to stop or solve environmental problems (30.6%); lack of trust in authorities supplying information about environmental issues (30.2%); the actions are too expensive (21.8%); and environmentally friendly products or services are unavailable (20.6%).
- Key themes of barriers raised in interviews were:
 - financial costs of climate action;
 - accessibility of trusted climate change and climate action information and supportive structures, policies and programs.
 - lack of leadership in government agencies
 - lack of supportive structures such as infrastructure or policies and programs
 - attitudes of apathy and a sense of powerlessness (no value in taking action)
 - perceived as too difficult or time consuming.
- The interviews highlighted many situations where combinations of structural barriers exist, with attitudinal or knowledge barriers which led to community members struggling to act (or act in an impactful or effective way). For example, lack of public transport infrastructure in place and limited policy support for carbon reduction initiatives from local and other levels of government and business in relation to transport means low uptake of public transport, despite some community members wanting to reduce car use. Not only does this combination of barriers inhibit climate action, but it exacerbates negative attitudes including powerlessness, frustration, or apathy towards taking climate action.
- Interviewees also highlighted several barriers that apply to specific carbon emissions reduction actions: for reducing waste and consumption of products; participating in clean energy and taking energy savings actions; using sustainable transport options and alternatives to driving fossil-fuel run cars; and conserving use of water
- Major barriers arising from interviews relating to climate event preparedness and response included: a lack of coordination between agencies; timing of emergency service responses; poor or inaccessibility to reliable communications; timing of major infrastructure repairs; access to post-disaster support and the interaction of these in combination to create mental health and wellbeing issues.

Enablers Of Climate Action

- A key success factor in engaging and collaborating with community members for climate action (or more generally) is tapping into existing networks of organisations, leaders and communication. Understanding how community members interact with both informal and formal networks and the types and sources of key information that community members use is critical to designing effective climate action strategies.
- Climate education, awareness raising, and capacity building was the most consistent theme emerging across all stages of this research. Structured and supported programs together with community events, and activities across a range of formats were identified as necessary by community members.

- Internet searches and talking with others in the community were the highest indicated sources of climate-related information.
- The next most popular sources of information on climate action were internet-based sources and included social media and news outlets, (examples included The Guardian, ABC, CNN, and the Daily Mail). Other climate sources included industry magazines and newsletters. This was followed by the Tweed Shire Council website, and by online activism and scientific organisations such as the Bureau of Meteorology, Climate Council and NASA.
- The engagement of young people and the importance of ensuring they participate in local climate action planning was raised from both the stakeholder interviews and again in the co-design workshops – which resulted in a number of strategies that listed young people as key stakeholders to engage as part of the design and/or implementation of climate action initiatives.
- The theme of the role of Council in local climate action was strong throughout the different stages of this research. In exploring roles for enabling local climate action, interviewees were asked specifically what role they thought TSC could play in community climate action in the Shire. The strongest theme was for TSC to demonstrate climate action leadership in their own operations and assets, programs and policies and integrate across Council activities.
- Interviewees were asked who they thought should be involved in the climate actions discussed throughout the interview. Other than local government, state & federal government were the most commonly referred to, followed by industry and business, Civil Society Organisations (CSOs) and Not For Profits (NFPs). A key focus was on leadership but also partnership and collaboration with local Council and local organisations, which is a strong theme generally and would go some way to addressing the identified key barrier to climate action locally - of poor coordination and collaboration between climate governance actors.
- In the vein of coordination and collaboration, a number of interviewees stressed the importance of involving 'everyone' if we are to be successful in addressing the climate challenge. A key strength identified, particularly in elaborating on what worked well in response to the floods and bushfires of recent years, was the strong social capital that was drawn on.

RECOMMENDATIONS

The following recommendations have been synthesised out of the research conducted in this project including drawing on the community perspectives and preferences, review of literature and the authors' expertise with community climate action and resilience building. These recommendations aim to address key barriers, establish a strong foundation for community climate action and create an enabling environment that will support community members and supporting agencies to build leadership capacity for climate action over time.

1. **Incorporate Community-Based Climate Action in climate action responses** – Continue the community dialogue and build on the research findings and outcomes from this project to include community-led actions in Council and emergency agencies' allocation of resourcing and plans for future work/action.
2. **Prioritise Climate Action at the Intersection of Impact and Interest (Transport and Clean, Efficient Energy)** – In developing Recommendation 1 prioritise strategies based on what this project found to be high impact (in terms of mitigation) and high interest (as indicated by the community) to address transport and electricity emissions as a priority:
 - a. Key barriers identified in this project to reducing transport emissions include: addressing the lack of public, shared and active transport options and strengthening cross-governmental collaboration to ensure sustainable, reliable infrastructure and services for Tweed residents; co-designing a community strategy and feasible target to reduce car trips and make alternative trips safe and viable for Tweed residents.
 - b. Structural and behavioural barriers identified in this project to clean energy uptake and energy efficiency to be addressed using a range of levers to promote and support efficiency practices to residents. Including through addressing rising (and inequitable) costs of electricity, financial

incentives, education, and bulk buys or discounts for energy efficient appliances and clean energy sources.

- c. In addition, prioritise waste and consumption, water efficiency and other key impact areas identified in this project. Although lower in terms of direct emissions, were identified as high interest from community members and high willingness to act with key barriers identified to guide targeted strategies.
3. **Establish Community Climate Action Reference Group** – A community reference group Terms of Reference would include in the first instance to co-design an evidence-based agenda and priorities for climate action in the Tweed and provide guidance and advice to Council as a key leader in community climate action. Members are to be drawn from the community, experts in climate science, action and engagement, and representatives of key local groups or organisations.
 4. **Establish a Community Sustainability/Climate Action Hub** – A hub model builds on the existing groups and resources but provides a coordinating role and physical and virtual space for: a resource library, skills building and training events, learning and discussion nights, and climate action showcases. The hub could play multiple roles in addressing barriers including accessibility of information, trusted sources of information, the need for capacity building and can facilitate a range of the recommendations from this project.
 5. **Establish a Program of Community Climate Champions** – Building on the network of existing groups and motivated individuals in the Tweed, a Climate Champions program is a strategic means of building distributed climate action leadership and capacity, providing trusted voices within communities and disseminating quality and timely information about climate change risks, and actions throughout the community. To ensure sustainability of the program, and avoid reliance on volunteerism for success, a model that supports paid positions and formal connections to planning and decision-making through Council (such as the Community Climate Action Reference Group – Recommendation 3 above) is recommended. However this group should maintain independence from Council to ensure the community perspectives are represented without perceived bias.
 6. **Climate Communication and Education Series – ‘Meet people where they’re at’** – In delivering information about climate change – design messages for target audiences recognising the diversity within the community and that climate risks and impacts amplify existing disadvantage. An inclusive program that considers and encourages participation of women, young people, First Nations, people living with a disability, CALD communities and those in lower socio-economic brackets in the Tweed is important for representation. Using multiple narratives that tap into the many local drivers for climate action that will reduce emissions and build community preparedness, such as reducing costs, strengthening community resilience, protecting resources for future generations, emergency preparedness and so on. Possible initiatives could include:
 - a. **Program of Climate Forums** (during existing forums or new targeted events) – this program includes interactive sessions with special guest speakers and opportunities for discussion and dialogue amongst attendees, to allow for two-way and transformative learning opportunities about key foundations of climate science, risks and actions relevant to the Tweed community.
 - b. **Training and Capacity Building** – Building on existing training opportunities including the Red Cross Community-led Resilience teams model, training community climate champions and other interested community members to establish a foundational knowledge of a range of topics including climate science and risks, impacts and outcomes of climate actions, preparing plans for climate risks, and further upstream topics such as how to run a community group, effective community engagement, or grant writing.
 - c. **Tweed Climate Action Partners program** – A partners program aims to support and build effective outreach and engagement across the community (and support achieving other recommendations here) while also tapping into funding, sponsorship and other forms of support for community climate action. The program could include an agreement outlining key outcomes,

program brand and goals for participation/outreach rates. Partners could include sporting organisations, such as SLSC, surfing and boardriders clubs, football, rugby, tennis; and businesses, industry and industry associations in the Tweed; Community organisations such as Aboriginal Land Council, Elders and Leaders (plus TSC Aboriginal Advisory Committee (AAC)), Tweed Youth Services and Schools, Disability Services and Aged Care Services and institutions.

7. **Progress Baseline Understanding Through Local Risk and Vulnerability Assessments Across Key Infrastructure** – Continue to build the understanding of how climate projections will impact the Tweed Shire including exploring the compounding and cascading impacts of climate change, including for water, energy, transport and telecommunications infrastructure, as a foundation on which to design effective community responses and preparedness plans.
8. **Update Emergency Governance Procedures** – Community views of what worked and did not in floods and bushfires generated in this project should inform updates to current government and agency procedures through dialogue with communities. Participants of this project called for a coordinated approach by key emergency services organisations to ensure timely and quality information and guidance to communities at each stage of the disaster and recovery process.
9. **Seek Sustainable Funding for Climate Action in the Tweed** – Implementation of the recommendations in this study will require the expansion of financial resources. Council could support community-led climate action through advocacy for a transformative community governance approach to climate action with funding agencies in state and federal government, identifying existing grants and possible funding streams to apply for and supporting community groups and proponents to engage funding bodies and funds with grant-writing expertise and training.
10. **Continue Place-Based Projects and Research** – Continue to pursue research and evidence-based climate action that build on the knowledge generated in this project. This includes further application of small-scale trials of Transformative Community Governance for climate action projects that apply key principles and incorporate monitoring and evaluation of impacts to support social learning outcomes. Connecting technical experts, social science experts, community engagement experts and community leaders to assess the feasibility of particular GHG emissions reductions strategies and inform long-term planning.

CONCURRENT COUNCIL ACTIONS

This report will be submitted to Tweed Shire Council for consideration and will be made publicly available. During preparation of this report, TSC have continued progressing priority areas for climate action and have indicated, in alignment with the findings and recommendations for this project, a range of next steps that are being actioned:

- **Climate Change Working Group:** Councillors have requested a working group be established to input into Council's climate change work. In its Community Strategic Plan, Council has committed to develop a Climate Change Adaptation Plan and Shire-wide Emissions Reduction Strategy, both of which would benefit from the input and advice of a community-based working group, particularly with expertise in climate science, community action and engagement, well networked with local groups and organisations.
- **Community Action Network:** to maintain momentum on community appetites for action and connection with others keen to be involved in community-led environmental and climate change responses, Council is setting up a Community Action Network. By coordinating quarterly gatherings for community members to share and progress their own and each other's actions and projects, Council aims to build capacity and provide support where there is energy and enthusiasm for community-led projects.
- **Locality Based Adaptation Options:** In response to Council's Climate Change Risk Assessment, Council will prepare a Climate Change Adaptation Plan to better understand the options, costs, benefits and community perspectives to reduce the likelihood and consequences of climate change-related risks.

PART ONE - CONTEXT SETTING

1 Introduction

Climate change is the defining challenge of our time. Climate science is demonstrating significant impacts from the existing 1.1 degrees of atmospheric warming above pre-industrial levels, with many ecological thresholds already being challenged and uncertain and unpredictable outcomes anticipated from complex feedback loops between crucial earth systems.

The impacts of climate change predicted for Australia include (IPCC, 2022):

- Further warming and sea-level rise
- More hot days and heatwaves, less snow
- More rainfall in the north
- Less Apr-Oct rainfall in south-west and south-east
- More extreme fire weather days in south & east

Record rain and one of the worst recorded flood disasters between February and April 2022 following shortly after the 2019-2020 south-eastern Australian wildfires highlighted for many the reality of climate change impacts that had been warned of for decades. The 2019-2020 South-Eastern Australian wildfires burned up to 8.1 million hectares and led to 114 listed threatened species losing at least half of their habitat and 49 losing over 80%. More than 3,000 houses were destroyed, 33 people killed, and a further 429 deaths and 3230 hospitalizations. An estimated \$1.95 billion in health costs, \$2.3 billion in insured losses, and \$3.6 billion in losses for tourism, hospitality, agriculture and forestry were incurred.

However, action on climate change has not taken place anywhere near the rate, scale or depth required, largely due to it being framed as a purely technical challenge (Wamsler, et al., 2021) or scientific observation, seemingly distant from the everyday experiences of communities. Recent, repeated and unprecedented fire and flood events have affirmed the observations of leading Australian scientists (IPCC, 2022) that the human and community dimensions of this changed climate are key risks, and in particular:

- Cascading, compounding and aggregate impacts on cities, settlements, infrastructure, supply chains and services due to wildfires, floods, droughts, heatwaves, storms and sea level rise; and
- The inability of institutions and governance systems to manage climate risks.

These human and community dimensions of climate risks are the contemporary and acute experience of the Tweed Shire Council and its residents (human and other species) in the wake of the 2022 floods.

We are in “The Critical Decade” to keep global warming below the threshold of 1.5 degrees of warming above pre-industrial levels progresses (UNFCCC, 2022). The essential challenge in climate action is shifting perspectives from a technical mindset to one that views environmental problems as a complex interrelationship between humans (along with our technology and social structures) as intrinsically interrelated with our environment. And hence viewing climate change as a socio-ecological and socio-cultural problem and framing subsequent solutions as such places the power to change in the actions of everyday people and our communities – however defined. That is, viewing the role of humans as both actors in creating destructive climate change and as agents of change in the shift towards a more sustainable and less carbon-intensive society. While much of this change needs to happen at the global scale the local and/or community actions continue to be core in both fostering climate action and translating global efforts to the local places where we live, work and play. Globally, community action amongst

households and neighbourhoods, villages and towns is valued for its capacity to enact change in place, where people reside.

From this perspective, much of the focus for enabling responsive climate action at a pace and scale that can address this global challenge, will come from identifying evidence-based, locally relevant and place-based strategies. Meaningful engagement of communities in place with a view to building capacity for sustainable climate action at the local scale can be translated across regions and nationally, building a solid foundation for climate action and future resilient communities.

1.1 About This Project

Griffith University was contracted by Tweed Shire Council (TSC) under a grant from the Federal Government (Preparing Australian Communities PACL000479), to identify local climate action strategies and support the Tweed Shire community to reduce their carbon footprint and respond to natural hazards and climate events. The overarching aim for the Tweed Climate Ready project is to provide an evidence base that will support Tweed community interests and capacity to respond to localised climate change risks and impacts. TSC has been internally working on climate action for a number of years, however, this research is the first comprehensive baseline assessment of community perspectives on climate action. As such this project forms a critical foundation for future action. The project outputs, including this report, will support Council staff in preparing key plans (for example the Greenhouse Gas Emissions Reduction Strategy) and establish a foundation for further council and agency-led and/or community-led climate action.

The research conducted in this project is significant in that it brings together an emerging methodology being developed by Griffith Climate Action Beacon researchers – a Transformative Community Governance approach to climate action (Jackson, 2021; Jackson et al., 2023, in development) including establishing and demonstrating collaborative partnerships and a dialogue approach that corrals local government (Tweed Shire Council (TSC)), academia (Griffith University) and community members to trial, test and facilitate transformative climate action locally in Australia.

2 Context for Climate Action in the Tweed Shire

2.1 Climate Risks and Hazards in the Tweed

Observational data show that the climate in Tweed Shire is already changing, with an increase in average temperature of 1.44°C since 1910, an increased sea level of 0.1m since 1993, an increase in number of days of fire weather and consecutive days of hot days, increasing sea surface temperatures and increasing variability of rainfall (Figure 1).

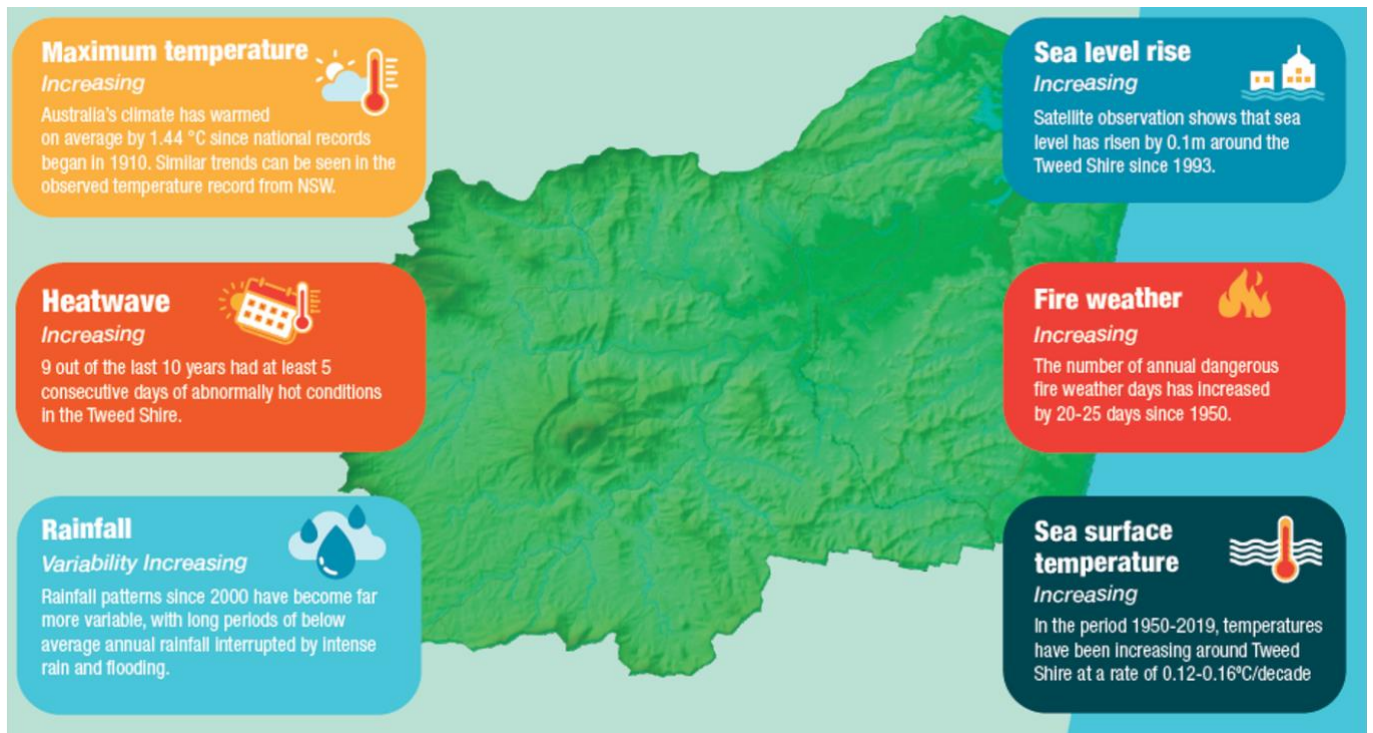


Figure 1. Existing climate change observations in the Tweed Shire

(Source: BMT, 2022, care of Tweed Shire Council)

Key climate trends and future projections for the Tweed Shire outlined in Figure 2 indicate continuing trends with significant increases in key parameters such as heat, hot days, bushfire risk, rainfall, rainfall intensity and flooding, and sea level rise.

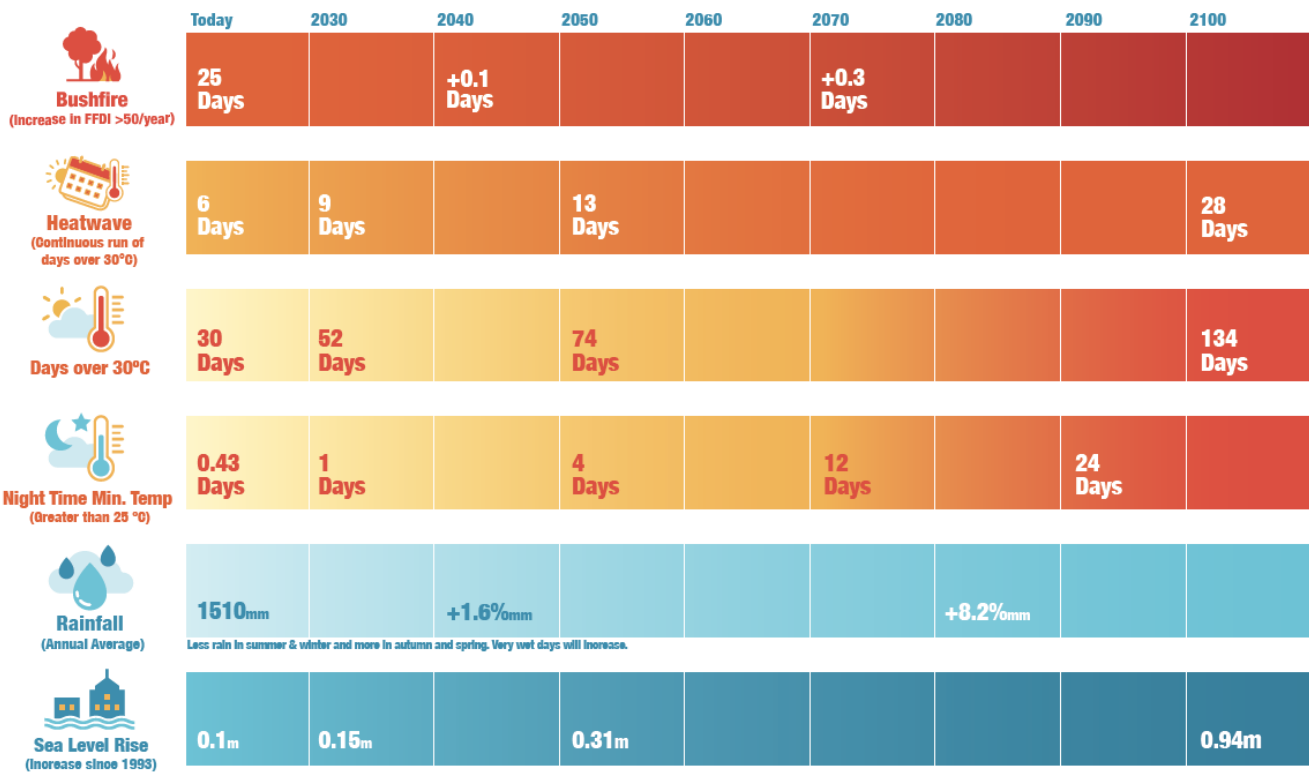


Figure 2. Projected climate change in the Tweed Shire out to 2100

(Source: BMT, 2022, care of Tweed Shire Council)

These high-level trends indicate a need not only for local contribution to emissions mitigation actions in Australia and globally, but to plan and prepare for likely future impacts and risks. Local responses should be undertaken in sustainable ways that seek changes capable of reducing and mitigating key crises while in parallel and relatedly, building more climate resilient communities.

2.2 Policy Environment for Climate Action in the Tweed Shire

Australia is one of the highest per capita greenhouse gas emitters globally (Climate Watch, 2020), almost double the OECD average (OECD, 2021), and yet has not been a global leader in climate policy. Despite the lack of national policy leadership over more than a decade, State, territory and many local governments, communities and businesses have established commitments that have supported climate action. In NSW, the State Government set objectives to achieve net zero emissions by 2050 and make NSW more resilient to a changing climate guided by the NSW Climate Change Policy Framework (NSW Government, 2016). Commitments for this decade include a target of 50 per cent emissions reduction on 2005 levels by 2030.

Further, in 2022, a shift in policy on climate change federally saw renewed commitments through legislation to reduce greenhouse gas emissions (by 43% below 2005 levels by 2030 and net zero by 2050 (Commonwealth of Australia, 2022) and funds allocated for disaster response and community resilience building. These federal government actions have supported stronger local and state actions. Despite the strengthening of various policies around climate change response and action, the science shows that a target of net zero by 2050 will fail to keep global warming under critical thresholds. Recent global revisions urge that we should be considering the same targets pushed forward to 2040 at a minimum (IPCC sixth assessment report, 2022). The need to rapidly

accelerate climate action has also been highlighted in the aftermath of the devastating floods on the East Coast of Australia in 2022 which closely followed devastating bushfires in the summer of 2019-2020.

In the Tweed Shire, climate action is located within a suite of commitments and management policies by Tweed Shire Council (TSC) including: signing on to the declaration of a Climate Emergency in 2017 and the need for a rapid shift to a more resilient, zero-carbon society together with over 100 other councils across Australia; a Climate Change Risk Assessment that identified 135 risks to Council's assets, operations and programs, and an Interim Climate Change Action Plan which describes 57 actions in response to the climate emergency. The council also reports to the Global Covenant of Mayors - a global alliance for local government climate leadership by more than 11,700 cities from 120 countries. Of note, TSC was one of 122 cities out of 1,000+ (and six in Oceania) to receive top score (A) for its climate action and reporting which requires a city-wide emissions inventory, publicly available climate action plan, completion of a climate risk and vulnerability assessment, and a climate adaptation plan. More information and reporting are located on Tweed Shire Council's Climate Change webpage: (<https://www.tweed.nsw.gov.au/environment/climate-sustainability/climate-change>).

2.3 Community emissions and climate action in the Tweed Shire

To date, the priority focus for climate action through TSC has been on reducing its own carbon footprint from assets and operations, focussing on solar and energy efficiency projects. Twenty projects from the Renewable Energy Action Plan (Tweed Shire Council, 2017) have been completed since 2017, tripling Council's renewable energy generation capacity. Emissions from grid electricity have been reduced by 25% and are on track for a 50% reduction by 2025 through more solar and efficiency projects. Council also entered a 10-year offsite Power Purchase Agreement to source more than half of the Council's electricity from NSW wind and solar farms. As Figure 3 shows, greenhouse gas emissions are on a downward trend. However, diesel use, attributed to transport fuel use during the flood response and recovery during the 2021/22 year jumped significantly. Although this was an anomaly within the downward trend of GHG emissions, future disasters could lead to similar spikes unless alternative plans are made. Supporting this action is a net zero emissions target by 2030 for all Council operations.

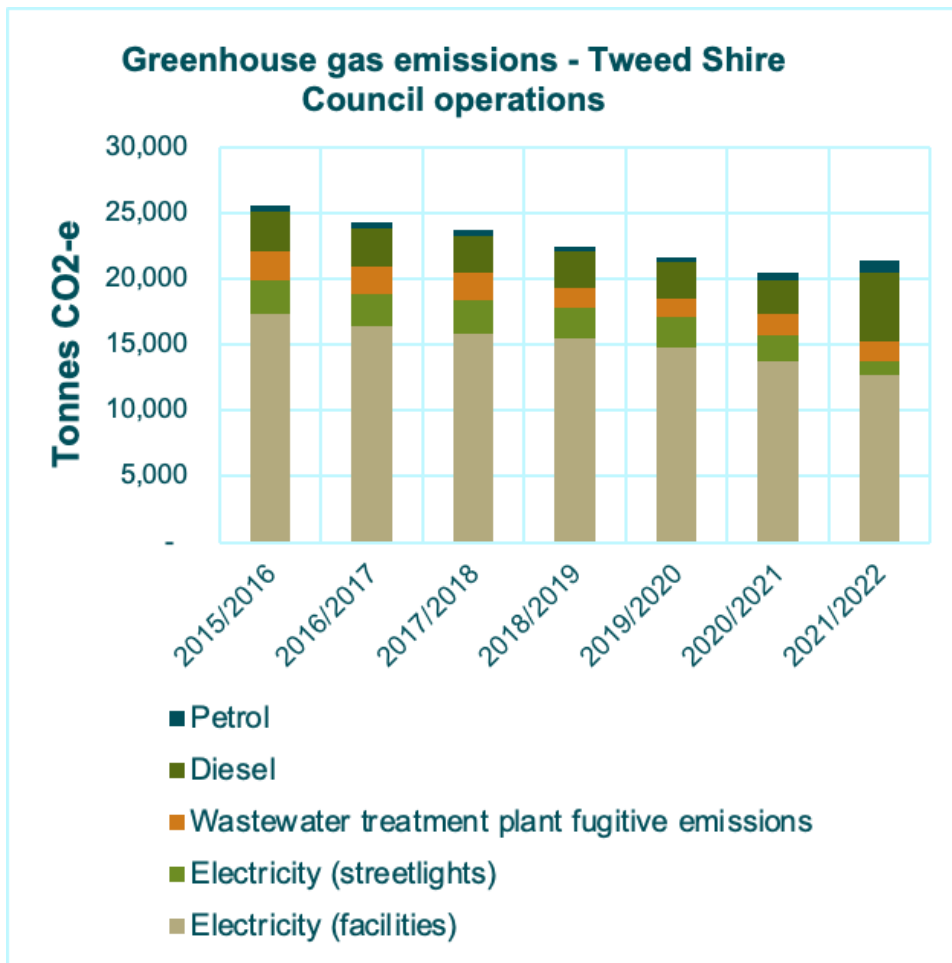


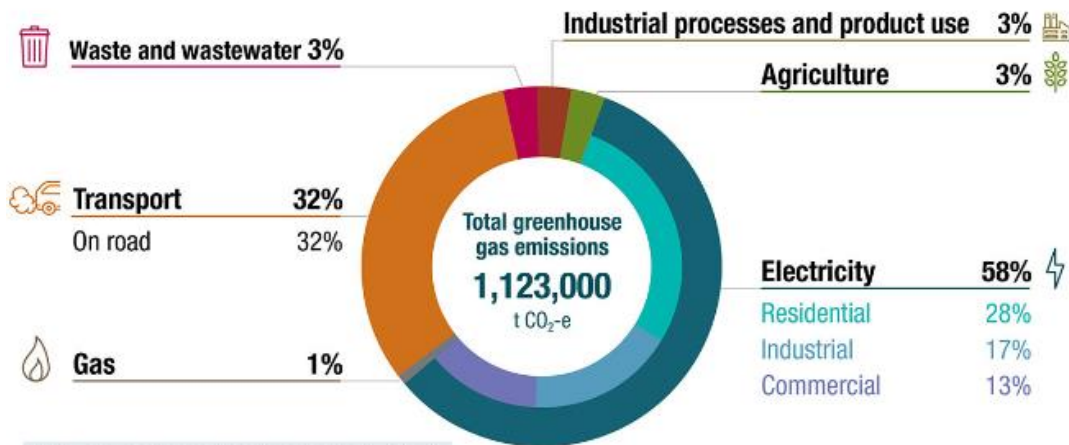
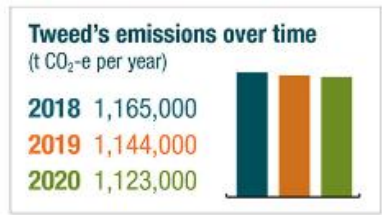
Figure 3. Emissions 2015-present Tweed Shire (source: Tweed Shire Council 2023)

More recently the council has turned its attention to reducing community emissions (i.e. emissions from across the Tweed Shire not from Council operations) and is currently preparing a Greenhouse Gas (GHG) Emissions Reductions Strategy to which this project will contribute.

The Tweed profile generated by Snapshot climate (Figure 4) indicates a declining GHG emissions trend from 2018-2020 with 58% arising from electricity use and 32% from transport-related emissions. Although there is no breakdown of the transport emissions, together with residential electricity use (28%) these two are the largest components of GHG emissions, combined to constitute 60% of the profile. This suggests a significant opportunity to mitigate emissions in the Shire by engaging and supporting community members to address transport and residential electricity emissions through efficiency improvements, changes in behaviours and improving infrastructure and options available to residents and visitors.

Tweed Shire

2020 greenhouse gas emissions snapshot



t CO₂-e means tonnes of carbon dioxide equivalent

Source: snapshotclimate.com.au

Figure 4. Tweed Shire Greenhouse Gas Emissions Snapshot 2020

More than 50% of households (on average) across the Tweed Shire have solar panels to supplement or provide their electricity, one of the highest uptakes in the Northern Rivers (Australian PV Institute PV map, 2023). Council also have active programs that seek to encourage greater active transport in the community and public transport infrastructure and connections. Council has also run annual home energy efficiency, solar and battery workshops to support people on fixed incomes focusing on electricity cost reduction. Free Home Energy Assessments have also been issued as prizes to participating community members to generate an action plan of energy-saving ideas which they can then implement.

Climate action also covers adaptation and resilience building to existing and future climate impacts and for TSC has included considerations of water security including community efficiency program and increasing the storage for the main water source. Further programs in relation to improving publicly available information on climate risks such as floods through the Tweed Open Data Hub – a GIS interactive mapping platform; Industry Central land swap that enables businesses within the high flood risk zone (South Murwillumbah) to relocate; and supporting Emergency management and preparedness through the Tweed Shire [Emergency Dashboard](#) as well as improving urban cooling via increasing shade through the Cool Towns program, and a range of other conservation, natural area, coastal and land management programs and supporting inclusive and creative communities.

These existing efforts form a solid foundation to pursue community climate action. A critical component of community climate action is securing buy-in and support from the community. Currently there is no coordinated, accessible whole of Shire information to assist Council in understanding the current state of community perceptions and experiences with climate change and climate action. This information is indispensable to developing meaningful, impactful and targeted climate action strategies.

As we move through this critical decade of climate action, understanding the baseline across not only the technical and scientific aspects of climate risks and solutions, but the social and cultural dimensions of climate action including community willingness to take action - or not – is necessary to collectively move the Tweed community from adhoc and reactive, to proactive and prepared for the challenges and opportunities that lie ahead.

In this report we present findings from a ten-month study between September 2022 and June 2023 – the Community Climate Ready project in the Tweed. Co-designed with the TSC, this project is valuable and robust feedback from Tweed residents and community organisations, capable of affecting Transformative Community-Based Climate Action (Jackson et al, 2023 in development) and informing future community and place-based climate action.

3 Approach To The Project

This Climate Ready Tweed project adheres to ethical principles according to the national research ethics framework and is approved under Griffith University Research Ethics, GU Ref No: 2022/776.

The project was guided by the original scope of work from Tweed Shire Council under the grant received to seek expertise on behaviour change for reducing the carbon footprint and preparing for natural hazards in the Tweed. However, with significant in-kind contribution from the Griffith Climate Action Beacon, the project took the opportunity to broaden the scope to test a more transformative approach to local climate action. We adopted a transdisciplinary research approach which is suitable for real-world problem solving as it is centred around societal issues and problems as central to driving research questions and the methodologies and methods selected to address them. It is also appropriate for complex problems such as climate change, which disciplinary research fails to address. From this approach we recognise the value of including diverse types of knowledge to work towards real world solutions to climate change that are embedded in place. That includes the perspectives of community members as valid sources of data. In seeking to create evidence-based transformative change at the local level, we draw on a Transformative Community Governance approach applied to climate action (Jackson, 2021). A transformative community governance approach recognises the scale and pace of change needed to address climate change and is grounded in an ecological and social justice worldview. The vision underpinning this is to facilitate a shift from a community that is currently vulnerable and reactive to climate risks and events, to proactive and prepared and therefore building resilience for the uncertainties of climate change at the local level (Figure 5).

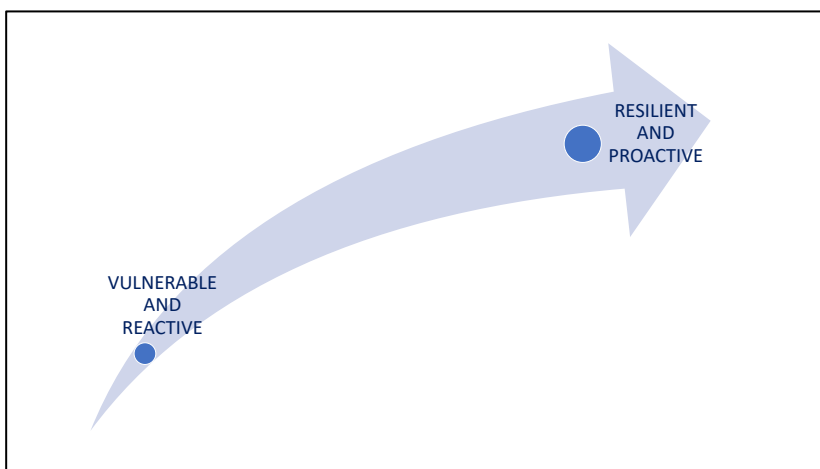


Figure 5 Vision for transformative change to support communities shift from climate vulnerability to resilience

A Transformative Community Governance approach is founded on five principles described briefly here:

Strategic and Nested – The term ‘strategic’ primarily relates to effectively and systematically achieving long-term goals. In this sense, being strategic requires establishing and connecting activities to a collective vision (of climate resilient communities) for the future which serves as a source of inspiration for change and aspirational goals to work towards. ‘Nested’ relates primarily to the spatial dimension of governance, noting that community-scale governance activities do not occur in isolation, rather, governance at both smaller and larger scales influence and shape the possibilities for action at the community level. In this context we are seeking to locate community perspectives within the broader framing of government policies and the scientific evidence for climate action and gathering data that informs both the personal/household scale and the community scale, while connecting into larger scale of regional risks, impacts, policies and action.

Systemic thinking - with a demonstrated need to rapidly shift away from traditional technocratic, top-down solutions and management, a systemic view of community climate action considers the whole system including the social and cultural aspects of climate change. These are interwoven with the ecological impacts of climate change and what scientists are telling us is projected to happen as the climate changes. A key premise for this work was assessing the baseline for community climate action from a systemic perspective and integrating and understanding the meanings people attribute to parts of the system. In this context, understanding the attitudes and perspectives of community members and their lived experience of climate change and climate action are critical to planning effectively for the future. Synthesising these with scientific studies and policy provides a fuller understanding of the issues and possible solutions to help build robust, locally relevant pathways to change.

Collaborative Dialogue – The importance of collaboration between actors is fundamental to identifying strategies that will transform how we respond to the climate challenge. Creating spaces for authentic dialogue which is premised on deep listening and creating a shared understanding about climate issues and what action could be supported in the Tweed. Dialogue is critical for generating inclusive outcomes and may help to shift from knowledge to motivating action.

Social Learning – Access to and dissemination of key localised data and information is a foundation for social learning. But recognising that people learn not just from one way information provision, but through learning from others, sharing stories and experiences and allowing for emergent learning is also important for transformative change. Transformative learning is learning that seeks to:

“promote changes that go beyond behavioral change, posing a challenge to existing beliefs and ideas, and promoting the reconstruction of meanings. It suggests a more radical paradigm shift, rather than a change within the existing paradigm.” (Palma & Pedrozo, 2016, p.2)

Further the design of this project aims to provide feedback throughout to participants and key actors such as TSC and other stakeholders to start building a network and facilitate organic and transformative learning opportunities to shift the paradigm of climate action in the Shire.

Strengths-based - in this project we recognise that the Tweed community has multiple strengths at its disposal across a range of capitals – natural, social, human, built, cultural, financial, political – that inform and provide a foundation for effective sustained climate action in the region. The project aims to identify some of these strengths through a participatory community approach on which future community climate action strategies can be designed.

In addition to these principles, we approach the topic of community-based climate action by considering across two dimensions:

- Nexus of mitigation and adaptation – how to mitigate and reduce our carbon footprint as well as prepare for and respond to local climate impacts and events (natural hazards) such as floods, bushfires and so on.

And two scales:

- From both a personal/household scale (individual action) as well as a community scale (collective action).

3.1 Project Design

The research was designed to establish a systemic baseline understanding of the Tweed community in relation to climate and climate action, while concurrently building capacity for local collective action through connecting people and providing evidence-based information. The desired outcome of this research is to provide a foundation for action and so the research was designed iteratively, with each stage building on the previous findings to ensure a tailored approach.

3.1.1 Project Aims

The project aimed to understand Tweed Shire residents' perceptions of climate risks in their region and identify actions they have taken to mitigate or adapt to climate change. It also builds on local data gathered to identify effective messages to support climate action and adaptation in the community. This knowledge is a foundation for co-design and implementation of community climate strategies in Tweed Shire.

To achieve this aim, the research objectives are to:

- Capture residents' perceptions, knowledge and experience of natural hazards and climate-related events;
- identify existing efforts of Tweed residents to reduce their carbon emissions;
- gauge their capacity for preparedness and responsiveness to climate-related events and barriers and enablers to action;
- develop likely strategies, programs, initiatives, and incentives which can help build resilience to natural hazards.

In this project, we applied a mixed methods qualitative approach that can support a transformative change towards effective climate engagement and, ultimately, climate action. Using a mixed methods approach supports a deeper understanding of, in this case, community perspectives on relevant climate action issues.

3.1.2 Key Questions and Methods

Key questions guided the research:

1. What are people's attitudes and experiences with climate change locally?
2. What types of climate action are they already undertaking?
3. What are the challenges and barriers community members face in taking action?
4. What are the supportive structures, processes and enabling factors that help community members take action?
5. What do community members see as key areas for climate action and climate solutions locally and who should be involved or lead these?

The project was conducted in three main stages: we collected survey data, interviewed Tweed Shire residents and stakeholders, and conducted open community co-design workshops.

Stage 1 - Gather local climate-related data, knowledge, perceptions and experiences

This included risks and hazards, community perceptions, experiences, knowledge and views of climate actions, through a review of key documents including government reports, policies and plans and fact sheets, together with a short targeted survey of Tweed EcoFest 2022 attendees (Figure 6 and Figure 7) and a more comprehensive

community survey. The aim here was to establish a baseline understanding of the current state of climate science literacy and awareness of projected impacts and actions.

Tweed Shire residents aged 18 and over were eligible to take the surveys. Three questions from the EcoFest survey sought to establish participants experience and interest in climate action (n=53) while 252 eligible and complete surveys were included in the analysis from the main online community survey.



Figure 6. The Griffith Climate Ready Team at Tweed EcoFest 2022.

Image source: Tweed Shire Council

Participant recruitment aimed to provide a fair representation of the Tweed Shire community on key demographic markers of postcode, gender and age.



Figure 7. Griffith Climate Ready Project Lead Melissa Jackson instructing Tweed resident on survey at Tweed EcoFest 2022.

Image source: Tweed Shire Council

Residents from every Tweed postcode took the survey. More females (57.5%) than males (38%) completed the survey. In the analysis, comparisons were also made to the National Climate Action Survey conducted by Griffith University Climate Action Beacon in 2021 (Bradley, 2022) and in 2022 (Bradley, et al., 2023).

Stage 2 – Community interviews

Semi-structured interviews were conducted during February and March 2023. Twenty-two survey respondents from Tweed Shire were interviewed. An additional seven interviews were conducted with local practitioners and stakeholders bringing the total to with twenty-nine. The surveys were conducted online or by phone and allowed for in-depth exploration into some of the themes emerging from the survey in Stage 1, including personal and community barriers and enablers to climate action, preferred climate actions and the roles of various groups or agencies in climate action.

Stage 3 - Co-design workshops

Four community co-design workshops were held, focusing on building connections between the community of motivated residents and prioritising and co-design locally relevant climate action strategies for the Tweed (Figure 8).



Figure 8. Tweed Heads workshop participants brainstorming priority climate actions.

Image source: Salvador Cantellano

Fifty participants participated across the four workshops and provided their insights, shared in discussions on the climate actions and strategies that they would like to see taken forward (Figure 9).



Figure 9. Murwillumbah community climate action workshop

Image source: Salvador Cantellano

These three stages and the activities undertaken are detailed further in Appendix A – Summary of Methods.

PART TWO - RESEARCH FINDINGS

In this part of the report, we discuss significant findings from across the stages of the research, structured according to the key questions introduced above.

4 Baseline of Community Climate Action in the Tweed

In understanding attitudes towards climate change, Table 1 Table 2 show respondents' sentiment on average towards the certainty of climate change, the seriousness of climate change and the vulnerability of Tweed (and Northern Rivers region) to the effects of climate change.

Table 1. Aggregated community views on the certainty of climate change

To what extent do you agree or disagree with this statement:	Strongly Disagree	Disagree	Tend to Disagree	Neither Agree Nor Disagree	Tend to Agree	Agree	Strongly Agree
D3. I am certain that climate change is really happening					*		
D29. Climate change is an issue that requires urgent action NOW					*		

Table 2. Community perceptions of the seriousness of climate change

	Not at all	A little/low	Slightly	Moderate	Vulner-able	Highly	Extremely
D15. How serious a problem do you think climate change is right now?				*			
D16. How serious a problem do you think climate change will be in 2050?				*			
D18. How vulnerable do you think the Tweed and Northern Rivers region is to one or more natural disasters?					*		
D20. How vulnerable do you think the Tweed and Northern Rivers region is to the impacts of climate change?				*			

Greyed out cells indicate that was not an option for those questions.

The results reveal a moderate recognition of the problem, its seriousness and the vulnerability of the region to its impacts. The variation in results between 'vulnerability to climate changes' and 'vulnerability to natural disasters' suggests a slight variation between association of climate change with natural disasters among some respondents.

Although individual responses varied, on average, respondents *tended to agree* that 'climate change is real' and that it is an issue that 'requires urgent action now'. While scientists at the fore of climate forecasts (IPCC, 2022) strongly agree that action is urgent now. This result points to a significant disparity between the scientific community and the Tweed community on the need for urgent action (i.e. strong agreement).

4.1 Community experiences with climate change events and impacts

As highlighted in Section 2, the Tweed/Northern Rivers region of NSW has not only experienced the incremental impacts of climate change including rising sea levels and associated coastal erosion, increasing number of hot days and temperatures overall but has also been impacted by some of the worst natural disasters on record in recent years including the devastating bushfires of 2019-20 summer season and floods in 2022. As anticipated, a high proportion of Tweed survey respondents indicated direct and indirect experiences with flooding events and associated impacts on lives and livelihoods.

Table 3. Comparison of Tweed and National survey respondents experience with the recent flooding events

C9. During the recent flooding events (in the Tweed Shire and Northern NSW region), did you:	Tweed (no.)	Tweed (%)	National Repeat* (%)	National New (%)
<i>observe damage to other people's property?</i>	232	92	68	66
<i>witness other people directly impacted by the flooding?</i>	227	90	59	66
<i>have a family member or close friend impacted by the flooding?</i>	162	64	51	56
<i>help clean up after the flooding?</i>	141	56	29	27
<i>get physically 'cut-off' or 'trapped' in some place?</i>	138	55	27	30
<i>lose the capacity to perform your usual work in your usual way?</i>	123	49	29	31
<i>experience any property damage/loss?</i>	88	35	32	30
<i>experience any financial loss?</i>	83	33	28	28
<i>experience psychological distress or trauma?</i>	77	31	22	24
<i>get involved in rescue work associated with the flooding?</i>	75	30	5	11
<i>have any other person/s needed to become dependent on you?</i>	46	18	9	9
<i>need to spend one or more nights somewhere other than your home?</i>	21	8	8	14
<i>suffer any physical injury?</i>	9	4	1	3

All table values are rounded up to the nearest whole percentage

*National repeat are respondents who completed both the 2021 and 2022 National Climate Action Survey. National new only completed the 2022 survey. National respondents were asked about the 2022 East Coast flooding events more broadly (ie. Not in the Tweed or northern NSW region).

As indicated in Table 3, 55% of respondents were physically cut off or trapped during the event, and a massive 90+% indicated witnessing other people being impacted or having property damaged, 64% had family or close friends impacted and almost a third (31%) of respondents indicating they have experienced psychological distress or trauma due to the floods. Compared with the national figures (as per the NCAS, 2022), in some cases this is over double that of the national respondents¹. The survey data highlights how impacted the Tweed community was by the recent floods, and the scale of impacts and flow-on effects on Tweed residents. This data also points to the extensive experiential lessons that can be shared by residents in the Tweed about climate-related events. These initial survey results informed the design of the interviews and co-design workshops and the conversations that

¹ We note that as a national survey, there are many respondents who do not live in areas impacted by the floods, so numbers will naturally be lower.

followed on climate action – whether in mitigating or preparing and responding and adapting to climate impacts and events.

4.2 Types of action Tweed community members are taking

Tweed Shire residents were first asked about environmentally conscious (as a proxy for climate actions) household behaviours they do and their reasons for doing so (see Question A6 in the Tweed Community Climate Ready Survey Report (Bradley et al, 2023). Table 4 collates survey responses to these questions.

Table 4. Types of action being taken – results from Tweed community survey respondents (QA6)

A6. Do you always or nearly always (%):	No, no opportunity to do	No, for another reason	Yes, not concern for environment	Yes, environmental concern
Wash your clothes in cold (rather than hot) water.	1.6	21.0	39.7	37.7
Turn off 'at the wall' appliances like TVs and computers when not in use.	4.8	50.0	23.8	21.4
Carry your own reusable drink container.	2.0	13.1	23.0	61.9
Refuse to use non-biodegradable plastic products (e.g., bags, straws, etc.)	10.7	25.8	6.7	56.7
Have you in the last two weeks (%):				
Used public transport.	47.2	40.5	8.3	4.0
Eaten fewer than two servings of red meat.	1.6	51.6	29.8	17.1
Point out to other people that their behaviour is harming the environment	19.0	50.4	1.2	20.4
Have you in the last three years (%):				
Signed a petition, written letter, SM post, in support of environmental issue.	8.3	27.4	6.0	58.3
Donated money to a group that aims to protect the environment.	7.9	48.0	4.0	40.1
Attended a pro-environmental rally, meeting, march, or protest.	15.5	61.9	2.4	20.2
Participated in a litter clean-up, beach clean-up, land-care project, or similar.	11.9	46.4	6.0	35.7
Voted for candidate or party because of its/their pro-environmental policies.	3.2	38.1	4.8	54.0
Savings/ superannuation funds out of institutions that invest in fossil fuels	14.3	63.5	1.2	21.0
Contacted government member about an environment/climate change issue.	7.9	55.6	5.60	31.0

The top four responses in relation to actions taken due to environmental impact/concern were (highlighted in yellow): Carry your own reusable drink container always or nearly always (61.9%), Signed a petition, written letter, or social media post in support of an environmental issue in the past three years (58.3%), refuse to use non-biodegradable plastic products always or nearly always (56.7%) and voted for candidate or party because of their (pro-environmental) policies (54%).

The top four actions taken but not due to environmental impact or concern (highlighted in peach) and noting significantly lower percentages than for environmental top 4 listed above, were: always or nearly always washing clothes in cold water (39.7%), eaten fewer than two servings of red meat (29.8%), always or nearly always turning off appliances and equipment at the wall (23.8%) and carry your own reusable drink container (23.0%). Noting the last option is the only option in the top four for both environmental and non-environmental reasons.

The top four actions that people did not do from the list were shifting savings or superannuation funds out of fossil fuel investments (63.5%), attended a pro-environmental rally, meeting, march or protest (61.9%), contacted a government member about an environmental/climate change issue (55.6%), and eaten fewer than two servings of red meat in the past two weeks (51.6%).

Of interest in terms of addressing either structural or infrastructural barriers, and creating opportunities for residents to take climate action, the most significant action not taken due to there being no opportunity to do so was using public transport in the past two weeks (47%).

The value in understanding the drivers for certain climate-related actions and testing the frequency of these actions, helps to build a picture of what types of actions have multiple drivers and where key messages and support can be targeted to support particular actions.

4.2.1 Analysis of sub-groups who are likely to take particular types of climate action

The research team conducted an analysis of the survey results to identify any actions that may be significant for certain groups within the community. Notable observations are discussed below:

Women and younger respondents (< 30 years old) were more likely than males and older residents to adopt pro-environmental behaviours (as per QA6 in survey). Women were also more likely to adopt pro-environmental behaviours if asked by a trusted person. Regarding adopting specific pro-environmental behaviours (QA6 of survey), women generally reported higher adoption than men in several activities, and also more likely for environmental reasons.

The **level of education** was a significant influence on some types of climate action, with higher educated individuals more likely to wash their clothes in cold (rather than hot) water, eating fewer than two serves of red meat, and voted in an election for a candidate or party because of its/their environmental policies. However, they refused to adopt several behaviours than lower educated respondents for non-environmental reasons.

Location of residence (determined by postcode) influenced behaviours both positively and negatively toward climate action, especially those residing in codes 2484 (Murwillumbah)-2487 (Kingscliff). These respondents were more likely to grow some of their own fruit, vegetables, and herbs, but less likely to use public transport than residents in other postcodes.

Culturally and linguistically diverse (CALD) respondents were less likely to vote in an election for a candidate or party because of its/their pro-environmental policies than non-CALD respondents, but more likely to point out to other people that their behaviour is harming the environment.

Those who **earn \$80,000 - \$200,000** were less likely to contact a government member about an environmental or climate change issue than those earning lower incomes.

Finally, interest in using green energy sources (A9) was higher among younger respondents, women, and CALD residents.

4.2.2 Comparison of Tweed Shire residents with national survey responses

In terms of adopting pro-environmental behaviours, when we compare the top five behaviours adopted for environmental reasons with the findings from the national climate action survey findings, Tweed residents were more likely to carry their own reusable drink container, refuse to use non-biodegradable plastic products, and grow some of your fruit, vegetables, and/or herbs. However, they were less likely to turn off appliances like TVs and computers at the wall when not in use. Their washing of their clothes in the cold (rather than hot) water mirrored national trends. Tweed residents also practice community-oriented behaviours more than the national average for environmental purposes. These include voting, signing a petition, and donating money.

Regarding already consuming green energy, the Tweed residents exceed the national average on all fronts (A9). Among the rest of the respondents, when their level of interest in adopting green energy options in the next three

years was compared, Tweed residents reported higher interest in installing solar batteries at home, getting a green car, and practising in local projects; they reported lower levels of interest in generating own energy and purchasing green energy.

Concern about climate change (QE1) between Tweed residents (69%) and their national counterparts (66.8%) was on par.

If asked by a person they respect (F5), Tweed residents were more likely to adopt community behaviours (for example volunteer, join a campaign, write a letter, or participate in non-violence disobedience) than their national counterparts. Similarly, Tweed residents were more willing to adopt practices than their national counterparts to reduce climate impact (F6). These include having renewable energy infrastructure, changing lifestyle, working with the local community, accepting cuts in the standard of living, and paying significantly more for energy-efficient products. The only practice they were less willing to adopt was to reduce energy use.

4.2.3 Climate actions identified by interviewees

The interviews provided an opportunity to build on the survey and explore in more detail the climate actions people were undertaking or planning to undertake.

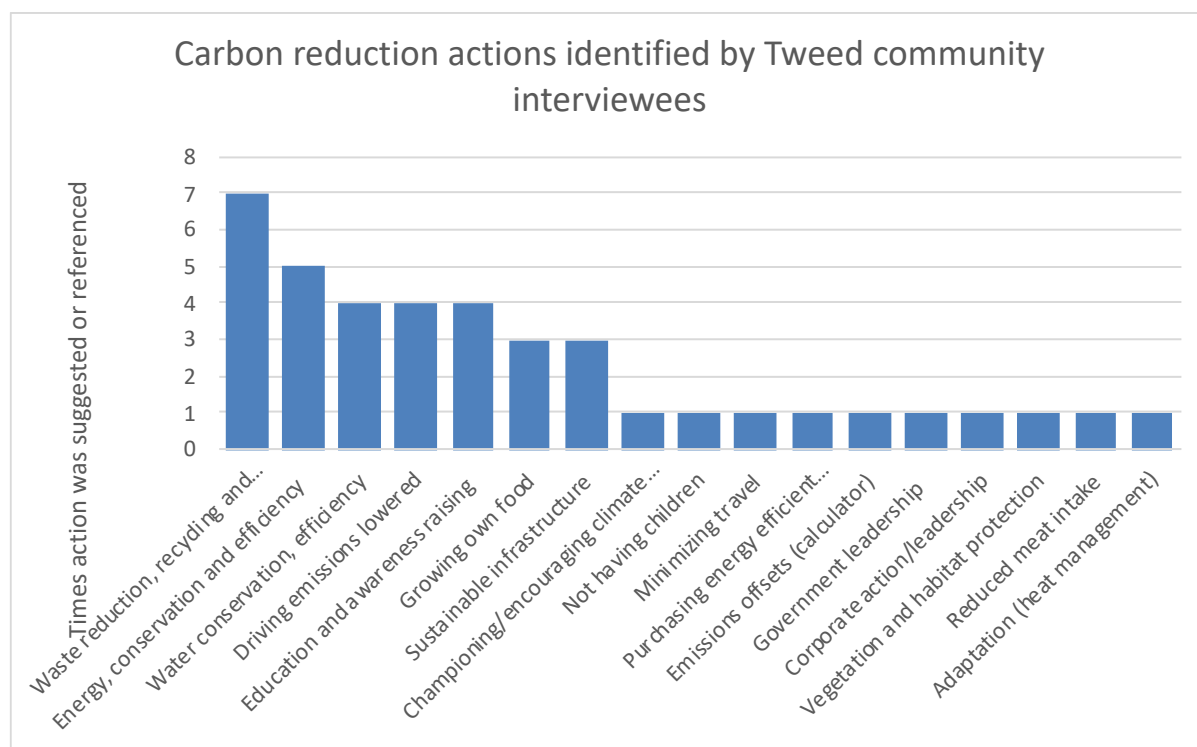


Figure 10: Carbon Reduction Actions or Suggestions from community Interviews

Interviews revealed a diverse range of carbon reduction action by community members (40 references to carbon reduction actions were made either as key actions interviewees did themselves or suggestions). As highlighted in Figure 10, the actions most referenced were: Waste reduction and plastic reduction; Energy (including renewables), energy conservation and efficiency behaviours, water conservation, reducing emissions from driving vehicles (which included public transport and active transport infrastructure such as riding and walking, EV’s, e-bikes and education and awareness raising). Then growing own food and investing in or purchasing ‘sustainable’ infrastructure or equipment.

4.2.4 Community Climate Action - preparedness

In the Community Climate Action Readiness Survey respondents were asked to indicate their level of preparedness for different climate-related events (flood, drought, bushfire, storms, heatwave or other) on a scale of 'none', 'basic', & 'strong'. The majority of respondents had no plan at all for these types of events. This contrasts with the survey results (see Table 38, 39 and 40 respectively) in relation to the 2022 floods where 21% of respondents indicated they used guidance to inform their plans (Deshpande, et al., 2023).

In terms of actions to prepare for natural disasters and climate-related events, the interviewees were asked to describe in more detail, what, if any plans they had at their home in relation to climate-related events (see Question 3a in Appendix B – Interviews Schedule). Less than half of respondents asked (10) had plans of some sort, eight of these were created with their family or community and two used organisations such as SES or Tweed Shire Council. Figure 11 highlights a range of preparedness actions, with the majority simple actions focused on:

- storing food, fuel, water and other supplies;
- building maintenance; and
- preparing documents.

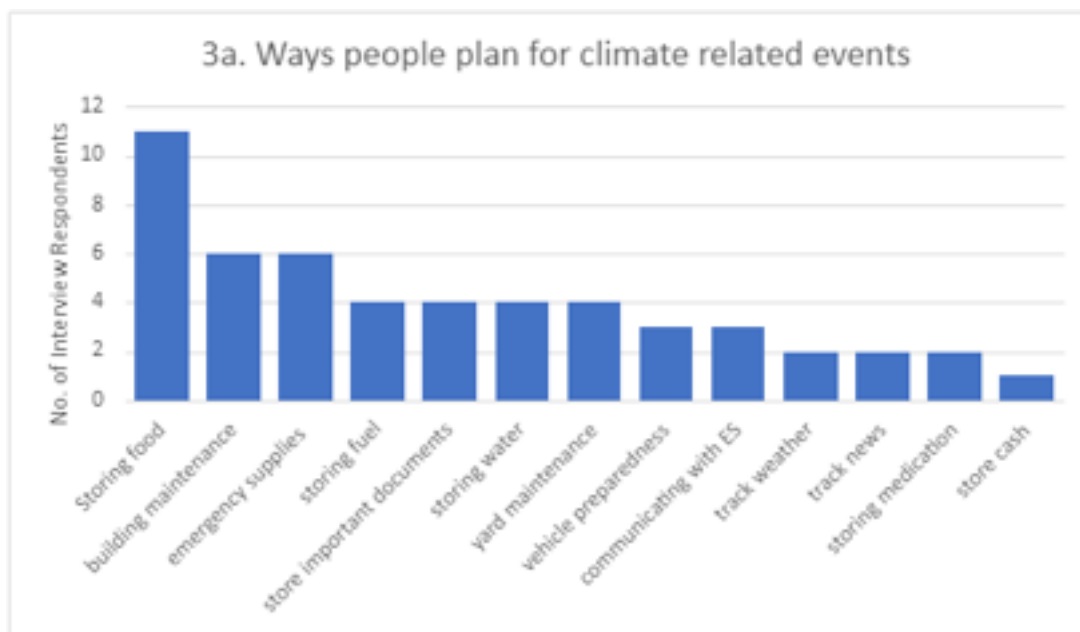


Figure 11. Planning for climate-related events

Some interviewees indicated they had no plans in the survey, yet during the interview described plans, even if less formal. This gave insight into what interviewees considered a preparedness plan. The following indicative quotes highlight some of these simple actions:

"We don't have a formalized plan, even though I know we're supposed to. We kind of just learned it on the fly from the last floods." TS13

"We've got a pantry, we've got a bit of food in there." - TS22

"I have a plan for packing the car and getting out as soon as I need to and which items from the house I'd grab and toss in the car ... Yeah, basically a list of what I'd grab, empty the safe, that sort of thing, toss it in the car, and get out early." - TS04

"We have a four-wheel drive, so we'd be a little bit better off if we had to go over roads that are not great." - TS05

Others indicated additional levels of preparedness:

"We've got firefighting equipment and we clean up sort of twigs and branches and stuff. We keep that away to make sure we've got good fire breaks." - TS13

"I've got a caravan that can work without power. I've now got Internet that's satellite driven that I can set up to keep Internet and communications and light and power and cooking ... It's probably more of the camping sort of things that did it, but the camping side going off-grid sort of set me up quite well at home." - TS15

"I follow a lot of shit hits the fan groups from America, but I like to follow it because I'm always over prepared for everything and it makes me feel calmer just to know that there's, you know, something I can do." -TS07

One interviewee discussed incorporating preparedness and planning into daily life through gift-giving:

"I talked about this with my friends and family a lot when I give gifts. I give survivalist gifts, so they all have waterproof backpacks and life straws and fire-starting kits and first aid guides and stuff like that. So maybe my immediate community is a bit more prepared." - TS02

Respondents were asked if they utilised the plans they described at any time in the past few years (Question 3b in Appendix B – Interviews Schedule). Interestingly, only one interviewee used the existing plan recently. In addition, most interviewees created the plans after the floods of 2022, for example:

"It was after the floods last year. We discussed it with our friends who live on the same street as us who sort of now have a similar plan." - TS10

"I only started prepping after the big floods we had here, so now I just have like everything stored away." - TS07

Multiple respondents indicated key Emergency Services Organisations (ESO's) as a resource for making plans and ensuring preparedness in a variety of ways. For example:

"I started looking for Australian preparedness resources and found Red Cross' Climate Ready Plan which was a booklet that takes you through the different things that you do to be prepared for different disasters." - TS02

"...after taking that [Red Cross] CCR course, it was quite useful as well." - TS03

"We have numbers saved and have them on the fridge. Like the SES phone number and numbers that we can call if the electricity goes out or you know how to manage if we know there's a flood event coming." - TS10

"We had the SES delivering things here. If it looks like flood, we can bag up our garage. ??That was effective, but if it [flood] comes over the garage there's nothing we can do." - TS16

Another one discussed how they received information from Council about emergency preparedness:

"That little package was excellent from Council. It was just something that I picked up at the Council and we read through, and we discussed, and we feel like that we're sort of prepared. Don't think you can never be 100% prepared, but we have a little bit of a plan so..." -TS11

4.2.5 Climate actions identified in the community co-design workshops

In Stage 3 at the community workshops, the focus was on identifying and prioritising climate actions with participants, both individually and as a group. Participants were first asked to individually review a provided list of personal or household-scale climate actions they find important or do themselves. Across the four community workshops the personal/household scale actions that were the most referenced by individuals were: to Eat less red meat (10); Throw away less food (9); and Invest in rooftop solar for your home; Reduce energy consumption at home; Raise awareness and education; and Go minimal – reduce your consumption of products generally were the equal next important with eight people each noting them. Nineteen further personal or household climate actions were written down by participants as important (see Appendix C – Community Climate Actions from Workshops) across themes of reducing consumption, reuse and recycling of products, food and packaging, reducing consumption of water and energy, making things last longer through care and repair (including vehicles) and supporting biodiversity and greening the urban environment, regeneration, forests and ecosystems through reducing the use of chemicals, providing grant support to landowners, and planting endemic species amongst others.

For community-scale actions, individuals noted advocating for public transport improvements as the clear top priority (10), Join with others to establish a community voice to help with climate action strategy and supportive policies locally and regionally (6); Create local education programs to raise awareness of climate change impacts locally (5); and Develop a community led waste management strategy (5) as the other top priorities. 31 additional community-scale climate actions were written down by participants (Appendix C – Community Climate Actions from Workshops) including across themes of improved sustainable housing – requirements and footprints, flood resilience planning, establishing hubs for various engagement and awareness and supporting a sharing economy including repair and rental, access and education to low carbon products, produce and food sharing; a strong theme of supporting reuse and recycling packaging and linking to local businesses and getting them to act, transport themes again – EV's and buses, mobilising to lobby government to stop fossil fuel subsidies and mining, and a number of actions related to greening the environment, reducing clearing, encouraging tree planting and engaging council and local politicians.

5 Barriers and Challenges to local climate action

5.1 General Barriers to Reducing Carbon Footprint

The top 4 barriers to reducing their carbon footprint (highlighted in yellow in Table 5) selected by respondents were (see **Error! Reference source not found.**): These actions are not able to stop or solve environmental problems

(30.6%); lack of trust in authorities supplying information about environmental issues (30.2%); the actions are too expensive (21.8%); and environmentally friendly products or services are unavailable (20.6%).

Table 5. Limitations (barriers and challenges) preventing climate-friendly actions from Tweed community survey respondents (QA8)

	A8. Which of the following LIMIT your involvement in further pro-environmental actions?	No. of respondent	Percent*
1	These actions are not going to stop or solve environmental problems	77	30.6
2	I do not trust the authorities that give out information about environmental issues	76	30.2
3	These actions are too expensive	55	21.8
4	The environmentally friendly product or service is not available	52	20.6
5	I am too busy/I do not have enough time	47	18.7
6	I have my own routines, habits, and ways of doing things that are different from these	40	15.9
7	The environmentally friendly product or service that is available is not of satisfactory quality	40	15.9
8	None of the above	35	13.9
9	These actions are too inconvenient/too much effort	31	12.3
10	I don't think we are currently facing environmental problems worth addressing	29	11.5
11	I do not believe climate change is happening	28	11.1
12	Environmental problems are too great for me/for one individual to have any impact	22	8.7
13	I do not know what to do	21	8.3
14	I have health concerns/reasons or believe these behaviours are not suitable for my health	20	7.9
15	These actions are not a high priority, so I never seem to get around to them	16	6.3
16	I am not aware of the benefits of these behaviours for the environment	14	5.6
17	I can't do these things because of my age, ill health, or disability	14	5.6
18	I do not know whom to talk to, contact, or engage with on environmental issues	13	5.2
19	These behaviours do not benefit me	11	4.4
20	These behaviours do not suit the lifestyle of my family or friends – that's not the way we do things	11	4.4
21	I am not particularly interested in environmental issues	9	3.6
22	I did not cause any environmental problems, so I have no responsibility to fix them	4	1.6

Survey respondents suggested other barriers, with the top open responses including : Climate change not being just (hu)man-made (9), Others producing more emissions (5), and Believing in a bias or censorship of other views (4). Interestingly, Tweed Shire residents' response to "I do not believe climate change is happening" at 11.1% is higher than the national survey figure of 7.3% (Bradley, Deshpande, and Paas, 2023).

In analysing the survey results regarding barriers to adopting pro-environment behaviours (QA8), gender and income play an influential role. Most often, men reflect stronger barriers than women on the efficacy of behaviours to solve environmental issues. Higher-income respondents cited inconvenience and lack of time as stronger than lower income, while lower-income respondents cited health concerns as stronger barriers. Older respondents reported that environmental behaviours were too expensive, and homeowners reported environmental products of low quality.

When comparing the results from the Tweed survey with the national level, among the top 5 barriers (QA8), Tweed residents expressed stronger barriers to the efficacy of action, trust in authorities, and availability of environment-friendly products. On the contrary, they expressed a lower level for actions being expensive and respondents being busy.

Interview findings expanded on the types of action Tweed residents were taking or wanted to take and the barriers they experienced in doing so. Key themes of barriers raised in interviews were:

- financial costs of climate action;

- accessibility of trusted climate change and climate action information and supportive structures, policies and programs.
- lack of leadership in government agencies
- lack of supportive structures such as infrastructure or policies and programs
- attitudes of apathy and a sense of powerlessness (no value in taking action)
- perceived as too difficult or time consuming

Further, the interviews highlighted many situations where combinations of structural barriers exist, with attitudinal or knowledge barriers which led to community members struggling to act (or act in an impactful or effective way). For example, the lack of public transport infrastructure in place and limited policy support for carbon reduction initiatives from local and other levels of government and business in relation to transport means low uptake of public transport, despite some community members wanting to reduce car use. Not only does the combined existence of barriers inhibit climate action, but it exacerbates negative attitudes including powerlessness, frustration, or apathy towards taking climate action.

Further elaboration on interviewees perspectives on climate action barriers is presented in the following sections.

5.1.1 Financial costs of taking climate action

Upfront costs, a known barrier to engaging in pro-environmental behaviour, were reported 19 times across 12 interviews. Costs associated with buying sustainable products including organic or local foods or cloth nappies, and larger investments such as the installation of solar panels on houses and the purchase of an electric vehicle were reported as preventing people from reducing their carbon footprint.

"If you [are] wanting to implement more environmentally sustainable behaviours and changes in the household, it is a lot more expensive." – TS08

"It's really just making it easier I think that's the main reason for myself and many. Well, I think that's what it comes down to for almost everybody really, but for myself it is affordability and ease." - TS20

This is also compounded by the general costs of living and limited accessibility to sustainable options in the community, particularly for young people.

"As a young person or as a student...I suppose a lot of the more environmentally conscious decisions are just too expensive." – TS20

5.1.2 Accessibility of information and awareness about the need for climate action and what climate actions have an impact

Lack of accessibility of information and awareness about how to reduce their carbon footprint was also prevalent in the interviews, referenced 17 times across 8 interviewees. This theme included discussion around a lack of understanding about broader sustainability and climate action initiatives and the relative impacts and where to begin. As the following quotes exemplify:

"So I think people are just feeling a bit of loss of like what's actually what can they do, that is actually effective in helping...I think from like a community level, you just need to hear from higher up like you know this is what our community needs to be doing that will actually be effective." – TS10

"But just a bit more maybe community awareness. Like when you get comments on social media saying, Oh well, the Council's not doing things about our roads, but they've got this putting all this money into the Green Paper or whatever they call the environmental paper, then there needs to be more community engagement and awareness so that people understand well why? Why is that important and how is that going to impact on them?" - TS11

Interviewees talked to various issues in relation to understanding impacts and outcomes from different actions and generally the need for raising awareness across a range of areas. For example, the effectiveness of using electric cars on mitigating climate impacts, the role of recycling and reducing consumption of products, confusion around how carbon offsetting functioned or how to inform decision-making such as determining relative value and comparing solar set ups and installers and just general communication about events, tools and support for taking climate action. For example:

"It's a rail trail and I'm following that on Facebook and ... it sounds really, really good, because it's going to get people more out into the environment and make them more aware of environmental issues and I think some more publicity in regard to getting that out there. Obviously social medias are a really big way to get things out there, but there's a lot of people who won't do Facebook who are not involved." – TS12

5.1.3 Apathy and a sense of powerlessness toward taking climate action

The concept of apathy amongst the general population was raised as a key theme (8 references across four interviews), which was linked to inhibiting individual and community level climate action and associated with lack of hope or feelings of powerlessness to take action and in the impact or effectiveness of actions to arrest the climate crisis. These were reflected both in attitudes expressed by interviewees and also in talking about engaging others in climate action. For example, in relation to reducing personal carbon footprint:

"I'm deeply pessimistic I must say. Yeah, we'd have to reduce our standard of living severely, and is anyone prepared to do that? Like I still fly to Germany to visit my family. I'm blowing my carbon budget straight away...If you want to become carbon neutral you can forget about that. So yeah, I'm not quite ready for that. - TS13

And in highlighting preparedness for future climate-related events, the following quotes demonstrate themes emerging across the interviews:

"... there's probably going to be massive...disasters, and ... the majority of the people, need to wake up to the fact that ... we've got problems and we just need to live differently, you know? But, ... I would think 80% of the people don't care. I'm aware and don't care, and how do you change that around?" - TS19

"... there's also a level of apathy that comes after a disaster that people don't prepare for the next one, like nobody around me is talking about what happens the next time that road gets washed out, or what happens the next time our community's threatened by a bush fire." - TS02

One response highlighted the lack of a sense of empowerment or being able to meaningfully have impact as an individual, instead, suggesting technology advancements are the solution.

"... as an individual, there's virtually nothing I can do in where I live to mitigate the effects of climate change...I think even as a collective group there's very little we can do. I'm not against the greening of the earth. I'm not against clean energy. I'm not against anything like that. But to me the technology isn't there yet to make it viable." - TS16

In turn, apathy shown by others around individual or community climate action was talked about as frustrating and demotivating among those who were taking climate action, as highlighted in the following quote:

"That's the frustrating thing, isn't it? It gets back to that business of like living the way we live. I mean, you feel as if you're 2% of the population, that, you know most of the people couldn't give a rats ass...they couldn't be bothered. They're into consumerism." – TS19

5.2 Barriers To Key Carbon Reduction Actions

Interviewees also highlighted several barriers that apply to specific carbon emissions reduction actions: for reducing waste and consumption of products; participating in clean energy and taking energy savings actions; using sustainable transport options and alternatives to driving fossil-fuel run cars; and conserving use of water. The barriers to these specific climate actions are discussed briefly below.

5.2.1 Barriers to Reducing Waste and Consuming Less

Waste reduction and plastic reduction was the most common theme discussed in terms of local climate action in the Tweed by interviewees. Barriers and challenges for people were reported at several levels that impacted individuals' capacity and attitudes towards reducing waste, the use of plastic and recycling practices. In addition to the discussed attitudes and apathy above, (in)convenience factor and behaviours around throwing waste into landfill as opposed to rinsing and putting in the recycling bin were identified as an ongoing barrier, one that is well documented and a key part of many local government programs across Australia.

Interviewees elaborated on the lack of supportive structures, organisations and options for effective waste reduction or recycling, and the impact on whether people bother to take action. Associated with this was the sentiment, that if people don't feel confident that their efforts have any impact in the end, then they are less motivated to take action. The lack of clear information about how and if waste is being reprocessed or recycled was related as a key challenge and interviews mentioned the need for top-down management to support individual level waste reduction. For example:

"There just needs to be more awareness, like I don't think people know what is and isn't helping, like even minor things like ... a small family can think that they're doing the right thing by recycling. But then you hear on the news or you hear from somebody else that the recycling is actually not even going to recycling plants anymore, it's just going into landfill. So I think people are just feeling a bit of loss of like what's actually what can they do." TS10

"It's the whole recycling thing, really. I feel like we could do a lot more recycling and it's not happening as well as we could be. Especially looking at the whole red cycle soft plastic thing that just suddenly stopped that we were really keen on". - TS05

Combined with the inconvenience of having to add in a few more decisions and steps in daily behaviours to recycle things, the concern over resident's recycling behaviour is warranted as evidenced by a Tweed Shire waste audit that

more than half of the waste put to landfill (red bins) could be recycled (yellow bins) or composted (green bins) (Tweed Shire Council, 2021).

Action further up the product lifecycle chain was raised as a major issue for some interviewees, who were concerned about the limited options and accessibility for purchasing sustainably packaged items and food. For example, one community member discussed that while they were happy with NSW reducing single-use plastic waste that there were still limited options for non-plastic packaging on food items:

"Maybe we don't need to have triple wrapped [products] and I feel like that's again, yes, we can vote with our money and stop buying those brands, but when there's no choice, there's no choice." TS05

This theme was also raised separately in the co-design workshops as an area for action as well (see Section 7 for further detail).

5.2.2 Barriers to Cleaner Energy and Energy Savings

Renewable energy, energy efficiency and conservation were a key climate action area raised in the surveys and interviews. Thematic analysis of interviews identified several barriers associated with reducing carbon footprint through energy saving or efficiency, with it referenced 13 times by 7 interviewees. As mentioned in general barriers to climate action, costs associated with making sustainable investments in solar power for homes were a strong barrier theme raised (4 interviewees). As the following quote exemplifies, payment of significant upfront costs is a major barrier, particularly if payback periods may be years, especially for those who may not be planning to live in their homes long term.

"So. If you're talking about well, in five years time or ten years time, we're going to save in our electricity costs and that's going to be of benefit to the environment... people are not always as willing to see that. They're more like, 'well, what are we going to get now?' " -TS11

Limited decision-making control over choosing solar power for tenants living in rental housing was also considered a barrier that needs to be addressed, particularly associated with the increasing housing affordability and housing crisis in the region.

"... for me specifically, you know, what things that I can do to just make a difference...we rent, so I don't believe that solar panels would be something that we could do." -TS07

Interviewee's also outlined difficulties and challenges navigating the complexities of installing solar power in apartment complexes with strata approvals and determining spread of costs and benefits across all building residents. Also of concern was accessibility to trusted information on products, suppliers and impacts of different solar products, which was linked with a potential role for council to help consumers navigate.

5.2.3 Barriers to the Use of Sustainable Transport and Driving Alternatives

The challenges associated with reducing transport emissions were one of the stronger themes raised by interviewees (referenced 26 times by 11 interviewees) and included driving lower emission vehicles, using alternative transport such as buses or bikes as well as driving less to reduce carbon footprint. Key barriers were the

lack of alternatives and options to driving cars in the Tweed Shire (9 references). This included a lack of public transport infrastructure and inefficient services and connections, with the sense that Tweed residents are extremely reliant on cars for commuting and other essential trips.

"... bus service is next to non existing. So yeah, we're really dependent on car transport and yeah, so far electric cars are totally out of affordable range." - TS13

The lack of bike paths and associated bike riding infrastructure in the Tweed region was viewed as a key limitation for the use of this mode of transport, for example:

"...it's dangerous to get around here on a bike, there's hardly any bike paths, and it's just there are no options or limited options for people who want to use something other than a car to get around". – TS02

Interviewees also identified upfront costs barriers associated with purchasing an electric vehicle to reduce driving emissions,;

"I guess our only real barriers would be money, like I would definitely do a lot more if I had more money like purchasing electric vehicle." – TS06

Other barriers to the uptake of EV's were with concerns around infrastructure - availability of charging stations in the region and whilst traveling. The barrier themes emerging around transport suggest that community members are open to reducing their carbon footprint by improving their transport practices. However, infrastructure and associated services needs to be improved in the region in order to enable individuals to use sustainable transport options.

5.2.4 Barriers to Conservation of Water

Barriers towards water conservation was also identified in the interviews. Limited knowledge or awareness on when water restrictions were in place was identified by one respondent as a barrier, but also the changes in timing and lack of communication about these changes led to confusion and therefore was a barrier for local people taking part in conserving water, suggesting a role for council to do more in terms of ensuring that community members were aware of the restrictions:

"Water conservation was good when we had like limits on...but I know people here in my complex said oh is there water restrictions at the moment? ...I know I had to inform a few people to say, well, yes we are under water restrictions...so maybe that sort of publicity there needs to be a way to reach more people so that they're aware" - TS11

However, another respondent felt that enforcing water restrictions should not be necessary due to the belief that water is not being managed properly by the council. The participant believed that much of the water that could be used was being wasted:

"We should never have to go on water restrictions with the amount of water that's pumping out of this during floods and heavy rains... it's not lack of water. It's water mismanagement". - TS18

These views indicate a gap in communications and understanding of residents about water and a need for better awareness and education of the community about the relationship between water use, energy demand and impacts of flood events and rainfall on water supply systems and how the Council manages its water supply.

5.3 Barriers to Preparedness and Response to Natural Disasters and Climate-related Events

Interviewees were asked about their experiences with climate related events, natural hazards and disasters and what challenges or barriers hindered their preparedness and effective and timely response at the community level. As indicated in Section 4.1, the majority of interviewees drew on deep personal experiences and perspectives, primarily of the 2022 floods, but also the 2019-2020 bushfires as well as other disasters. Acknowledging that the floods were unprecedented in scale and damage, interviewees talked about their role in immediate and longer-term response and the role of different parts of the community, including community members, local organisations and the council who all did their best in responding to the disaster. In relation to barriers and challenges to effective response and preparedness, four key themes recurred throughout the interviews relating to immediate and post-response coordination and communication, the timing of support and access to ongoing support and assistance. These were considered across immediate and medium-term disaster response and recovery processes.

Major barriers arising from interviews relating to climate event preparedness and response included: a lack of coordination between agencies; timing of emergency service responses; poor or inaccessibility to reliable communications; timing of major infrastructure repairs; access to post-disaster support and the interaction of these in combination to create mental health and wellbeing issues. These are discussed further below.

5.3.1 Poor Communications – Unclear, Confusing Messages and Lack of Communications

Communication networks were raised as a key barrier to emergency preparedness and response across all stages of the research, with the use of text message, radio and social media by the council, emergency organisations and community groups were identified as an effective means of alerting community members and keeping them informed of impacts, emerging risks and threats and where to go for support during events. However, with floods for example, telecommunications were out in many parts of the Tweed for a week or longer, during the critical part of the emergency response, which highlighted the vulnerability of people without power, phone or internet. Suggestions included addressing the underlying vulnerability of major telecommunications infrastructure to the region and lobbying and advocating for a more climate resilient system.

Further, respondents also reported that the council had implemented text messaging to alert community members despite the fact that an estimated 50,000 people in the region had lost internet and phone connection, and were unable to receive alerts. Interviewees reported having friends and family isolated and unable to be contacted.

"I had no Internet connection, which was scary because I wanted to know how my kids were. That was terrible" – TS18

With internet connection being lost interviewees related compounding impacts on community members ability to respond to the flooding event, due to limited access to information to find out what was happening along with ATM's not working people were unable to access cash, and with many systems offline, basics such as buying groceries and petrol were cash based for a limited time. Interviewees reported having to rely on family or friends where they could, or do without until the systems returned.

This lack of timely information was raised by a number of interviewees who acknowledged the council and emergency services for providing resources and updates but reported that it should have been earlier and more frequent and accessible.

"I've noticed that Council have implemented a lot, like text messaging services and stuff to be more prepared for next time, but there wasn't enough communication in the immediate hours and days in the lead up and then the response after the fact." TS08

Some interviewees reflected on some of the telecommunications being irrelevant or misleading, which then added to the confusion. In relation to immediate response, one interviewee reported how they had been told they needed to evacuate their home, only after the roads had been inundated with flooding in which they would have had to wade through floodwater to get to the evacuation centre.

"When we got the order to evacuate, it was already too late and it says that the roads were already cut off and then, like I said, the evacuation centre is right next to us....It was actually, technically cut off from us, so we would have had to wade through water to go to them..." - TS05

An associated issue was how the poor communication led to confusion about where community members needed to go to get support, with word-of-mouth information being spread incorrectly, ultimately leading support services taking longer to get set up or be impactful in the region.

"Word of mouth that had just been warped into something that was just wrong around how to access services...there was just a lot of double handling with what Council was doing and then what the community groups were trying to do, but without talking to each other" – TS20

5.3.2 Poor Coordination and Leadership by Key Agencies

Strongly correlated with poor and often mixed communications and messages, interviewees reported on poor coordination across key agencies that they thought would be coordinating responses. Factors such as clear delegation and guiding volunteer actions and organisations during the floods arose eight times across the interviews. This lack of coordination also led to volunteers being unable to assist effectively in recovery. One interviewee who was volunteering with a local surf club during the floods reported that while they were prepared to assist the community with boats and logistics, due to poor delegation and coordination the volunteers were given no direction and in the end did not dispatch any boats and so did not help.

Further elaboration was on the timing of the response to the event from government agencies and emergency services. The inefficient timing of response from government agencies and the council was a strong theme (referenced 10 times throughout the interviews). Timing of response was reported at two levels – the initial timing of immediate response, and post event in relation to the repair of infrastructure, such as roads and telecommunications.

A perceived lack of formal leadership and adequate response to the flood crisis was described as community taking charge which was seen as a strength. Community members often took up proactive decisions while waiting on guidance from local agencies such as the SES and others who coordinated emergency clothing, food and shelter. As one interviewee describes:

"I think it was like, the community's response to it, you know, there was obviously a lot of support that was needed from the government and it wasn't happening fast enough for the community...it was just all hands on deck...while we sort of waited for the higher ups to jump in." - TS10

5.3.3 Slow repair of key infrastructure damage

In the weeks and months after the floods, a key theme raised by interviewees was slow timing related to repairing roads in particular (6 references), the internet and telecommunications, and overgrown vegetation in some parts of the community. Interviewees reported months going by without repair of major road damage, slippages and potholes. Interviewees reported that this resulted in having to take alternative routes, often significantly longer, when commuting which adds additional burden to the recovery process. However, while community members expressed feelings of frustration around the lack of efficiency in addressing infrastructure damage, there was a sense of understanding of the circumstances. However, the frustration in terms of impacts on daily life continued to be felt as the following quotes exemplify:

"One of the roads still isn't fixed...we have a single lane that goes through now. So it's a stop light, but for seven months. So it was up until from March until the end of September beginning of October there we had to go around the long way...It was really annoying, but you know." TS02

"And then of course, the recovery effort since then is just dragging on and on and on and on. And I mean, there's a lot of people still, you know, living. In temporary accommodation and you know there's major sort of issues with that too." - TS19

5.3.4 Access to and communication about post-disaster support

Other general barriers reported by community members during the interviews related to climate event preparedness and response included difficulty in accessing disaster relief funding (referenced 5 times). One interviewee reported paying a neighbour with a carton of alcohol to help with the removal of flood debris rather than wait an extended period of time for disaster relief funding.

"Well, the paperwork was also incredible. Just to get some funding \$1000 my sister got. And what she had to go through...she ended up buying a huge calendar and was just writing in appointments here, appointments there" -TS09

Following the theme of poor communication and coordination of information and action, this was raised in relation to the longer recovery process as well, with residents indicating frustration at the slow and perceived ineffectual machinations of government to mobilise appropriate responses. They elaborated on issues of timely information as a key area for improvement as well as quality of information – ensuring top-down policy is matched to things that matter to communities following disasters and emergency events. For example:

"They're the ones who are tasked with responding to people who are affected by the floods and they are moving extraordinarily slow. There's supposed to be great deal of transparency. There's none." - TS16

As one participant related, information from the state government on the buyback scheme was shared via a mobile information service, but the community wasn't aware of what it was, what information it was sharing and effectively had low visitation rates due to poor communication:

"I can't help my community to mobilise into that scheme if I don't even know how it is relevant to us in any way, flicking me an e-mail that I can maybe pass on or make up a post myself and put on our Facebook group...like that's not really helpful." – S3

Running sessions focused on preparedness for the next events came across as pre-emptive, considering there had not been formally facilitated meetings or opportunities for the community members to debrief and download about their experiences. One stakeholder described community resistance to be talking about resilience to government bodies because the community was still in recovery mode and likely needed more mental health support rather than pushing for next steps. Similarly, this issue was raised in relation to engaging students and schools. As one stakeholder describes when attempting to encourage school participation in a climate ready program:

"the principal...she thought 'my school community is going to interpret this as another resilience initiative and push back... it's going to be too hard. So the answer at that time was to pull out [from participating]" – S6

The issue of coordination was also raised in relation to the need to work together for long-term planning and visioning. This was raised in terms of general land management and development planning, infrastructure planning and how to prepare for climate change impacts more broadly. As highlighted by this quote:

"There's no one looking at the long-term solutions. They keep patching the road. It's already at water level. We're gonna be patching this forever." -TS14

"Government needs to give us a plan but there is no plan. We hear bits of information. We're just told things. There's no proper debate, no proper discussion, and there seems to be one group of people who shout louder than the rest of the people and the rest of it is gonna keep quiet about it." -TS21

5.3.5 Impacts on Mental Health and Wellbeing as a barrier to action

Another less immediately obvious theme that emerged as interviewees reflected on their experiences, indicated the stress, strain and mental health impacts from climate events and disasters, particularly described in relation to the 2022 floods. Mental health impacts were referenced four times and emerged while participants reflected on their experiences. Mental health, positive outlook and considerations of the future were cumulatively impacted by worries and concerns of financial distress associated with rebuilding homes, businesses and communities. One interviewee for example referred to the loss and damage and concern over financial compensation which contributed to additional stress in the recovery period:

"\$20,000 compared to \$120,000 loss is nothing. And encouraging them to. To rebuild the house, to go through the same amount of destruction, ecological impact, financial distress" – TS14.

The mental health impacts post-disaster on young people were also highlighted by interviewees, with interviewees describing youth struggling to process the disasters and experiencing and observing the direct impacts of climate change in their lives:

"This community really saw the effects of climate change through those floods. But I also think that since then I guess there's been a real defeatist mentality with young people." – S1

Cumulative impacts on mental health and individual and community wellbeing from having multiple disasters in succession (including some areas with repeated flooding just as things were settling down), were also referenced in

interviews. The interviews highlighted the significant trauma and fear still associated with the recent events, with limited opportunity for community members to de-brief in a safe environment, and with many still suffering and experiencing ongoing impacts.

These impacts and ongoing challenges were linked by interviewees with a lack of interest or pessimism for taking future climate action. As one interviewee described, holding conversations with people in the community about how to prepare for the next disaster was challenging as people have a sense of hopelessness.

"Nobody around me is talking about what happens to the next time that road gets washed out, or what happens the next time our communities threatened by a bush fire...it's also hard to maintain that level of interest." - TS02

This theme highlighted that experiencing multiple disasters without being able to process them individually or collectively in a healthy and supportive way, has implications for capacity and willingness to participate in future planning and climate action strategies.

6 Enablers for local climate action

As the focus of this research is on climate readiness and action, community perspectives on factors that enable and support communities to adopt and implement climate actions were an important component. Factors to both support personal capacity to take climate action and those contributing to an enabling environment for effective local climate action, e.g. policies and programs. A key success factor in engaging and collaborating with community members for climate action (or more generally) is tapping into existing networks of organisations, leaders and communication. Understanding how community members interact with both informal and formal networks and the types and sources of key information that community members use is critical to designing effective climate action strategies.

The results presented below are based on participants perspectives of both what has worked well in the past, and suggestions for what might work well in the future and to overcome particular barriers. Strong themes emerged across the dimensions of local climate action:

- Educating and building awareness and capacity of the community to understand climate risks, hazards and effective action;
- Exploring the role of Council as an enabler for community climate action
- Building on the strength of community and community networks to support climate action
- Improving communications and coordination between government agencies and community

6.1 Education, Awareness and Capacity Building

Climate education, awareness raising and capacity building was the most consistent theme emerging across all stages of this research. Structured and supported programs together with community events, and activities across a range of formats were identified as needed by community members:

"I think become more active in promoting these [climate survey] types of events and making it known ... they need to really get some social media marketing strategies and just really push it further. Make it really clear to us what it is we can do practically and obviously events in the community just make gatherings where we can have forums and talk about this." - TS01

The people running this area are responsible for it and are responsible for the people within it, so they should be providing them with information on what their impact is and how they can be helping so just more awareness.’ -TS10

“More education around adaptation and climate change and what people can do as well.’ - TS20

There is also evidence to suggest that some of the key barriers identified through this research – in particular, apathy, feelings of powerlessness and lack of knowledge about climate risks, impacts and actions that can be taken locally to mitigate and adapt to climate change - would be addressed at least in part, via a comprehensive local community climate education program. This education program would be premised on meaningful community engagement discussed below.

6.1.1 Engaging the community

Education, awareness raising and capacity building are founded on establishing impactful and meaningful communication that leads to a better understanding of the need for climate action and ways to achieve it.

Where community source their climate information

Prior to engaging the community, it is critical to establish where people currently source information and knowledge about climate risks, impacts and actions. Interviewees were asked about the resources or information found useful to support them in taking climate action and reducing their carbon footprint (Appendix B, Questions 2b, 9). As Figure 12 shows, internet searches and talking with others in the community were the highest indicated sources of climate-related information.

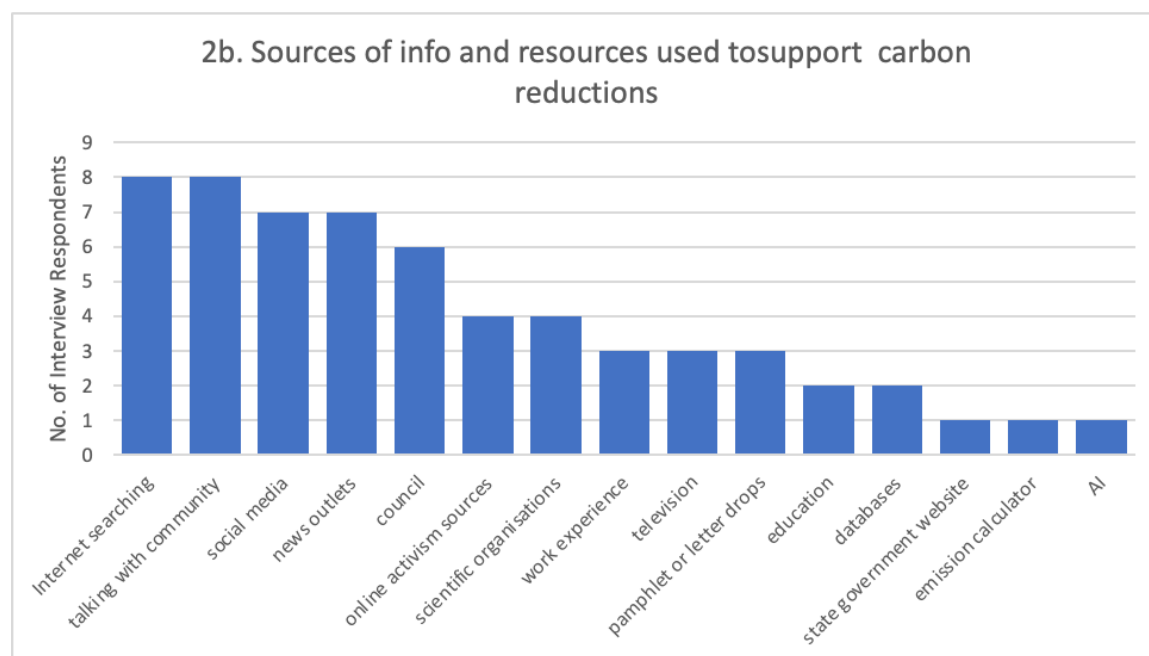


Figure 12. Interviewee perspectives on preferred sources of information and resources to support climate action

The equal highest indicated source of information on climate, climate action and events for interviewees was through talking with the community, whether with neighbours or through local groups and networks. As one interviewee explained:

"I've definitely found the local Landcare group helpful for ... reducing your carbon footprint because we're planting trees and clearing the area of weeds and hoping that certain trees will displace other trees." - TS12

"Just talk talking with neighbours and talking in in the community... and I read the Renew magazine regularly - that gives good info. But yeah, I've been involved with people who are concerned about the environment. So a lot of it really is just straight from mouth to mouth." - TS13

Internet searching was for multiple purposes, including searching for one off information, others were continually aiming to improve their knowledge of how to implement for example, installing solar or switching energy providers as this interviewee was referring to:

"...I'm forever scanning through websites and gathering information on how to better do things" - TS19

The next most popular sources of information were internet-based sources and included social media and news outlets, (examples included The Guardian, ABC, CNN, and the Daily Mail). Other climate sources included industry magazines and newsletters. This was followed by the Tweed Shire Council website, and by online activism and scientific organisations such as the Bureau of Meteorology, Climate Council and NASA. This result is interesting in the context of the national survey findings, where the most trusted source of climate-related information was scientific organisations, and yet a much larger percentage source their information from mainstream news networks and social media, which is a less trusted source, highlights a need to bridge the gap between the quality of climate information and information outlets (NCAS, 2023). Although the following quote provides insights into the way people are already discerning the quality of the information they are exposed to:

"...I exposed myself in social media to the kinds of things that I think help benefit or help one live a more green life, but also, I think you can see ... when stuff is greenwashing or just like paying lip service to being environmentally friendly. So I feel like those sorts of things are resources that help me get a better picture of what's real and what's making a difference and what's just, you know, feels good but doesn't make a difference." - TS02

A key source of information on all things local was community Facebook pages.

"I am in a Facebook page from the Bilambil area and Tweed Shire Council posts various activities and stuff like that and surveys like this one to that Facebook page. So that's how I'm mainly get any information to do with Climate events" - TS01

Other sources of information included career, work experience and education which provided residents with in-depth sources of knowledge and experiential learning about climate issues and impacts. For example:

"Employment in the industry definitely opened my eyes to some of the things that can be done." TS02

"My in-depth understanding comes from university." -TS20

“Because I was a registered nurse and as part of that, when I worked in emergency, I was on the disaster squad. I’ve always been really conscious of it because we used to get called out to virtually everything. So, it’s just something I almost grew up with.” - TS04

What types of support do the community want?

Interviewees were also asked about the types of support they might need to take effective climate action. As Figure 13 shows, themes were primarily about quality information provision about climate risks and climate science, local climate impacts as well as what actions are most effective and impactful in terms of mitigation and adaptation.

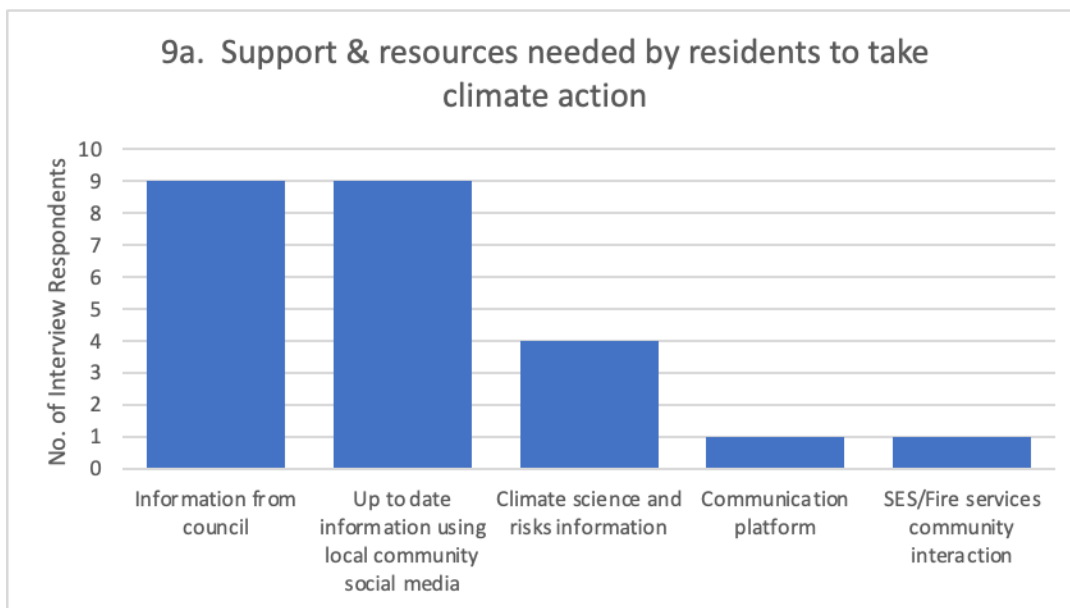


Figure 13. Interviewee responses to types of support needed to help them take action on climate change

Some examples include:

“Basically reducing carbon footprints for dummies, but if it’s just really easy stuff you know, you’d be like, bullet point it. I could probably follow it ... What I can do to help out and what that means for me specifically, you know, what things that I can do to just make a difference.” - TS07

“Easier comparison of what’s on the market, both from the solar but also what a battery can bring in...The fact that you may have a battery, so even though you have potentially a huge solar system, most of it doesn’t actually go back into the grid, so you shouldn’t be penalised for that because you’re not actually overloading the system.” - TS05

A few interviewees also indicated that utility (electricity and water) companies are also crucial in playing a role for climate action with one stating:

“Energy companies need to be accountable to try and encourage the direction that people want to go to help the environment, not just being price competitive.” – TS11

Guidance on preparing emergency plans and resources as well as information for them to make informed decisions came through in the interviews as key types of information.

"Do a clear flooding plan. So have a deeper plan and simulated floods plan. I think that would help you know say 'OK look in in case of a flood we know this will happen first'." - TS14

"Resources for climate emergencies might be good to have. Like a prototype or a default example of a plan, a heat wave plan. I'm sure that doesn't exist exactly because wouldn't want to give people the wrong intention, but also like I kind of need some idea to get going on what a heat wave plan typically is, then sort of modify that to my situation." - TS11

"I would like to have a plan, you know which is a sensible plan for there and everybody works along the same direction to achieve." - TS21

The community survey was also analysed to understand any significant differences between groups/demographics in relation to the sources of information they use. The findings indicated that higher-educated people were more likely to source information on climate change and extreme weather events than less-educated people. Their go-to source is scientific organisations for the former and scientific organisations and Emergency Services Organisations (ESO's) for the latter. In relation to emergency events, residents located in postcodes 2484 (Murwillumbah, Tyalgum, Chillingham, Stokers Siding etc.), 2485 (Tweed Heads, etc.) and 2486 (Bilambil, Banora Point, etc.) trusted Emergency Services Organisations to keep up to date on emergency events whereas this was not significant for other postcodes. Women tended to trust ESO's more than men during the days following a natural disaster or climate-related event. During the weeks and months following the event, women, more than men, expanded their trusted media sources, including the Council newsletter and website as their most trusted source. Among social media platforms, Facebook was the most popular across the region. These elements further inform the types of outreach and communications channels that will reach particular sub-groups within the Tweed based on their existing uses.

Engaging young people in climate action

The engagement of young people and the importance of ensuring they participate in local climate action planning was raised from both the stakeholder interviews and again in the co-design workshops – that resulted in a number of strategies that listed young people as key stakeholders to engage as part of the design and/or implementation of climate action initiatives. For example, one stakeholder involved in school-based climate programs highlighted how important is to upskill young people's leadership capacity and become more involved with community and share their ideas. The programs' role in building young people's leadership, increasing their sense of identity and knowledge alongside parent and peer support may be enablers to both individual and community scale carbon reduction. Talking about this process, they explain:

"...peer to peer, and to nurture the leadership aspect through the process so that they can then start to speak more in community about things and to share their ideas" S6

However, the stakeholder also noted that there needed to be proper methods of communication of knowledge when engaging young people, often through social media platforms and in a way that is easily digestible.

"Communication and content that in terms of the use of language and the amount of it that also meets young people, where they're at. So what does a young person want to digest or what language really resonates for them?" S6

Although data was not available on the ways young people engage, stakeholders indicated the importance of encouraging and supporting young people as important actors in climate action leadership was raised by interviewees, and for stakeholders who worked directly with young people, some useful guidance was provided on how to do so in a more effective way:

"We got Facebook pages and somebody recently recommended that we get an Instagram account... so that we can reach out to younger demographics...using a variety of platforms social media platforms is important."

Others who work with young people went further to go beyond just reaching out through platforms young people use, rather ensuring that young people need to be in the room in decision making contexts around local climate action and participants in that process:

"I guess it's actually about talking to young people and involving young people in the creation of the content. So rather than content being created for young people and put on the sites where they are, it's actually more than that. It needs to be the young people being involved with the creation of the content because they know what the trends are and they know how to get that information to other young people." – S1

"...you're sitting in a room with the executives from the Department of Environment and the Minister for Energy and you're having all of these very open, direct discussions...having some form of platform or venue where youth and leaders can meet and have these sorts of conversations. I think it formally or informally is missing and quite critical." – S6

6.2 Who should lead and be involved in local climate action

In building capacity for climate action it is important to understand community members' expectations for climate leadership and action and gauge their willingness to lead action.

6.2.1 Local council as an enabler for local climate action

The theme of the role of the Council in local climate action was strong throughout the different stages of this research. In exploring roles for enabling local climate action, interviewees were asked specifically what role they thought Tweed Shire Council could play in community climate action in the Shire. As Figure 14 shows, a range of possible roles were suggested by interview participants for how the Council could support community climate action. The strongest theme was for Council to demonstrate climate action leadership in their own operations and assets, programs and policies and integrate across council activities.

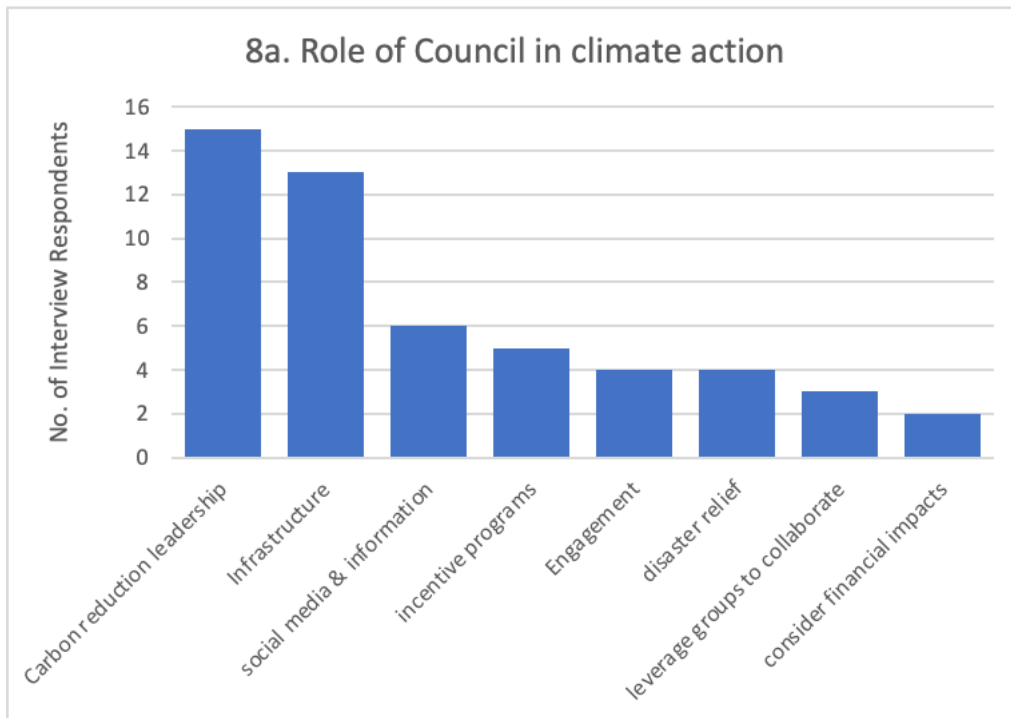


Figure 14. Interviewee perspectives on the role of council in supporting climate action

Leadership on climate action from the Council was the strongest response to this question and covered both leading climate action for council operations and activities, as well as facilitating and strengthening the capacity of the community to take action and supporting organisations across the community to build their leadership capability.

“Encourage people to take action and Council themselves lead by example as well. Like, don't be so afraid of people who aren't really keen on climate and climate change and the impact.” -TS06

There was a sentiment from a number of interviewees that TSC was generally proactive on eco-and climate-friendly activities.

“[Tweed Council] plays a role in mitigation, which I think continuing what it already does, you know, preventing fracked gas is a good start. Limiting the sort of extractive industries, I'm not really familiar with the regulatory environment here. Council only has so much power. If they have the opportunity to introduce a tax on petrol or those kinds of things to pressure people to make alternative choices, I'm very open to stuff like that.” - TS02

“Tweed Council tend to be fairly proactive in that way, but they need to be the instigators for a lot of it because they've got a wide reach and they can reach all the different organizations who don't necessarily work together.” - TS04

“I'm really thankful that the Council is talking to you, you know, is interested in having these conversations...I've got very strong links with the Tweed Shire Council.” – S3

Additionally the theme of responsibility for key infrastructure – operation, maintenance and repair was raised as a key role for Council in climate action. This including references to development planning, roads, communication, and power, although respondents also indicated a lack of clear understanding of roles and responsibilities between different levels of government for these activities and the need to work with other levels of government.

“Council's going to stop allowing developments to go on in floodplain areas in the area that I'm in, there are some, but I can see the Council has done some good work in some areas.” - TS22

“...land developments and land kind of swaps is probably something that at the Council level would be reasonable, but I think it's all sounds like it needs state and federal support to achieve a lot of those things anyway.” - TS20

Interviews also highlighted a potential role for Council to provide specific support and incentives for business participation in climate action. Others cautioned Council involvement in too broad a scope of climate action as the following quotes highlight:

“...getting the local businesses to be more involved ...if Council had some, I don't know, tax credits. I don't know what they can do, to be honest, but that would be great.” -TS03

“Any sort of reducing reduction of carbon footprint I think needs to be price matched or value for money. I don't think putting in the latest technology and increasing rates to cover that is necessarily the best option. There has to be a return or a payback, or a saving at some point at some level, not just an environmental saving, but a dollar value return on anything they move towards as far as reducing carbon emissions.” - TS15

“Their interest is basically protecting the local community. They should just concentrate on mitigating the effects of the floods and stuff like that and... to my mind, they don't have any other impact on the thing.” - TS21

Going back to information and awareness and education in the community, this was considered a key role that Council could play to support community climate action, including continuing and expanding some of the awareness and education activities they have held in the past, and promotion of local climate action events and education activities, such as through email notification and newsletter channels. For example:

“Tweed Council had a session where you could learn about solar panels ... and I think there's another one actually... so they're pretty proactive in that respect.” - TS04

“The newsletter comes out or in the local paper, and that gives you lots of information on different events that are coming up that are worth going to...that's where I found out about the World Environment Day.” - TS04

Others viewed the role of Council as critical in dissemination of climate information, community engagement and awareness raising and education activities about climate risks, actions and events:

“I don't know how much the community understand... I didn't really understand everything that they [Council] were focusing on...There needs to be more community engagement and awareness so that people understand well why? Why is that important and how is that going to impact on them?” TS11

“...they've got some subsidy programs for farmers looking at alternative practices ...more of that kind of thing at the local level that motivates people to take like micro-actions I think can go a long way to building momentum and getting some bigger picture action.” – TS02

6.2.2 Coordination and collaboration between climate governance actors

Interviewees were asked who they thought should be involved in the climate actions discussed throughout the interview. Other than local government (already discussed above), Figure 15 shows that state and federal government were the most commonly referred to as needing to lead on climate action, this was followed by industry and business, Civil Society Organisations (CSO) and Not For Profits (NFP).

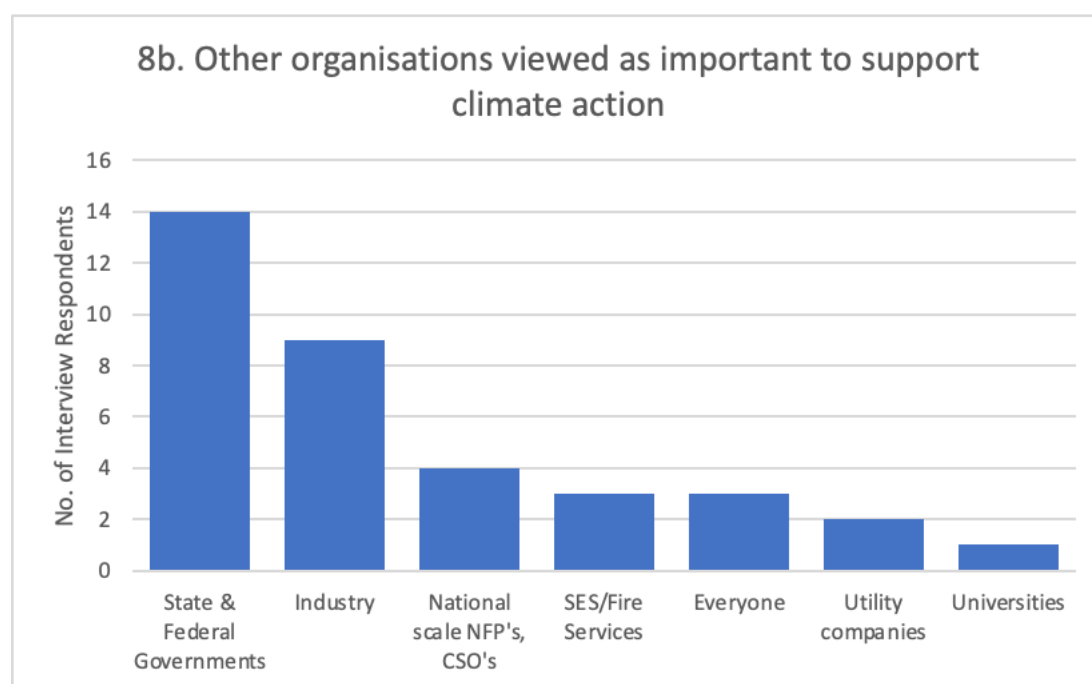


Figure 15. Interview results on who needs to be involved in climate action in the Tweed (Q8b) (excluding local council which was the focus of a separate question)

A key focus was on leadership but also partnership and collaboration with local council and local organisations, which is a strong theme generally and would go some way to addressing the identified key barrier to climate action locally - of poor coordination and collaboration between climate governance actors (as discussed in (Section 5.3 Barriers to Preparedness and Response to Natural Disasters and Climate-related Events). As the following quotes exemplify:

“I think local and state governments need to work together rather than just pointing the fingers.” -TS16

“I think the state government can also do more around working with the local governments on adaptation, whether it be to provide funding for adaptation works... or buyback grants for property...” - TS20

“A lot’s going to depend on who’s in a position of power, like at the Council. Unfortunately – we have a system where there’s a lot of changes in government...a long term plan needed...but that can be a problem especially at the State level.” -TS11

At the community scale, respondents reported that cross-agency coordination to improve support in different areas was critical in the context of disaster preparedness, planning and response. Suggestions included coordinating with the Salvation Army, Red Cross, the SES and others to identify early the locations to set up evacuation centres and donations and food supplies during events. The theme of cross agency coordination emerged as foundational for facilitating social learning amongst those tasked with leadership roles and improving the capacity of individuals, groups and the whole Tweed community system to respond to climate risks and take preventative climate action.

6.3 Building on community strengths and networks

In the vein of coordination and collaboration, a number of interviewees stressed the importance of involving ‘everyone’ if we are to be successful in addressing the climate challenge. A key strength identified, particularly in elaborating on what worked well in response to the floods and bushfires of recent years, was the strong social capital that was drawn on. The positive role of local people as first responders was described in numerous ways with neighbours helping each other out, the broader community pitching in both in rescues and clean ups, providing food and resources, donations and volunteering in evacuation centres and generally ensuring providing support to others during the crisis, as the following quotes exemplify:

“I’m quite comfortable that I’ll be fine and around here all the neighbours look after each other.” - TS17

“I think what emerged from everything was that the community rallies together and you’ve got these really, really smart people who just understand what’s needed and they band together and they just get on with it and they do stuff.” – TS19

A further theme in terms of using that community bonds to support climate action, was to support local organisations that know and are made up of community members, to implement the actions they have identified as important, with suggestions to provide funding and training to build capacity for these local groups to be more effective and sustainable over the long-term.

The majority of interviewees indicated involvement with a community group to some extent in the Tweed Region, with some being involved in multiple groups. As indicated in Figure 16 these included environment and community oriented groups, as well as wildlife and included landcare, Northern Rivers Guardians, Together Pottsville, as well as local choirs, sports clubs and disaster relief.

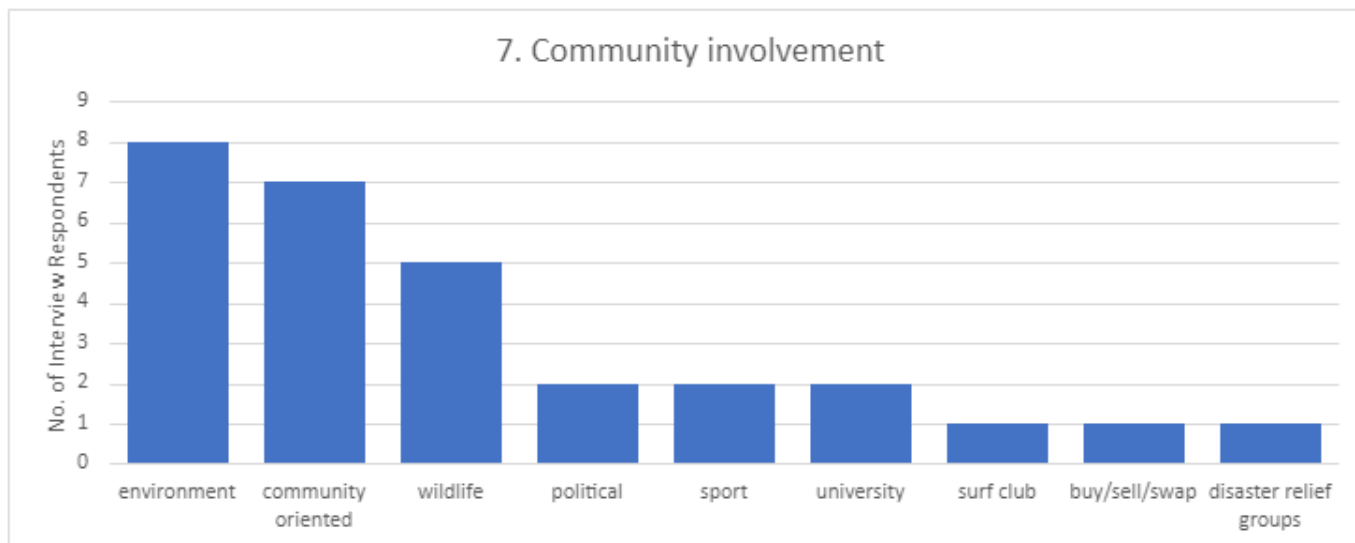


Figure 16. Interviewees involvement in local community groups

Community groups often rely entirely on volunteers and interviewees also talked to about the constraints of expanding the scope of community engagement and activities because of lack of people or resources, including funds. Often one or two people can be the lynchpin in the success of a community group, and as such, interviewees identified a need to support those people and skill up others to be able to take on additional roles and to avoid groups failing if key people are no longer available. Supporting a grass-roots program of climate action through these organisations was referenced across a number of interviews, particularly with a need for funding and resources such as training being a key support activity government could take on.

“As much as possible be locally run and managed, rather than a state or head office. Have some full-time paid staff who are trained and coordinate at a local level.” - TS15

“I think that top-down approaches have the most impact and so I think that the communities should come up with ideas and do small scale things to initiate changes and be good, role models and good prototypes for ways of living.” – TS12

Climate change response programs and environmental groups that were already active in the area were referenced as well organised and good starting points for further climate action. For example:

“Maybe it's a way of the Council getting everyone to collaborate, so that now everyone's doing the same thing or leveraging these groups to help ... getting the local businesses to be more involved because that's something we're trying to do ourselves.” – TS03

Together Pottsville and Resilient Uki, were examples of active groups identified and had already undertaken capacity building within their groups, noting the Red Cross Climate Ready Communities Training which was identified as a valuable education and training activity to participate in.

Working in partnership with Indigenous leaders, Elders and organisations was also a theme identified within the interviews. One stakeholder discussed the role of climate change and its impacts on cultural practices and the connections with conservation and sustainable fishing practices. They highlighted the importance of authentic collaboration between council or other actors and the Aboriginal and Torres Strait Islander community, ensuring that structures are in place for Indigenous peoples can continue participating in cultural activities and using

Indigenous knowledge to build sustainable practices – around fishing, but also climate action and sharing this knowledge with others. This stakeholder identified positive outcomes associated with working closely with local Elders and groups:

“the [conservation] management plan is good too... It's about the number of stuff you can take and the cultural events as well...elders, like the people who can't actually go out and hunt no more, and do that, some of it was for them and not getting in trouble for doing it as well but having restricted zones and unrestricted ones too.” S5

Despite the strength of community bonds, as discussed in Section 5.3.5. it is also necessary to recognise what was highlighted through this research, that there is significant trauma and fear still associated with the recent disasters – bushfires and floods in particular – and compounded with the covid pandemic. Further there has been limited opportunity for community members to de-brief in a safe environment, and many are still suffering and experiencing ongoing impacts. This will continue to impact the capacity of people to think of the future and proactively engage in climate action planning and activities.

7 Community co-design of priority climate actions and strategies

As described in Section 3, Stage 3 of this project involved conducting four community climate action workshops that aimed to generate ideas and prioritise strategies for local climate action from community members (Figure 17). Participants were first asked to individually review the list of personal or household-scale climate actions they find important or do themselves and add to that list (see Section 4.2). After working through a group prioritisation process, the following climate actions were developed further by teams into a strategy to support implementation in the community.



Figure 17. Community climate action workshop in Cabarita

A detailed version of the workshop outputs is provided in Appendix C – Community Climate Actions from Workshops, including lists of prioritised climate actions at both the personal/household and community scale. In this section, we introduce the priority climate action strategies that were co-designed by participants during the sessions.

Workshop 1:

- a) Awareness and education – Not Know, Not Care; to They Know, They Care.
- b) Ecosystem-based adaptation
- c) Advocacy for public transport

Workshop 2:

- a) Encourage climate action (personal and community)
- b) Reduce waste

Workshop 3:

- a) Soil Health=Climate Health
- b) Community Engagement and Care Program
- c) Community Voice/government Action (Loud, Vehement, Effective)

Workshop 4:

- a) Electrify Everything Using Green Power
- b) S.O.A (Save Our Arses)
- c) The Community Hub

Participants were invited to work in small groups to co-design their preferred strategies including detailing the following points: desired outcome, actionable steps, identifying stakeholders, resources, training or capacity building needs and how to create awareness (Figure 18). Details of these strategies can also be found in Appendix C – Community Climate Actions from Workshops.

The co-design workshops reinforced the strong theme emerging throughout this research of the need for better and targeted community climate education, awareness raising and building capacity for climate action. All of the strategies included some element of community engagement and education, with five of them solely focused on a program of community education or engagement, either broadly for climate change and climate action or focused on particular aspects. For example Strategy 1a involved the majority of that workshops participants interested in working towards developing a community awareness and education program that supported people to care more about climate action. They highlighted the need to create a sense of fun and using community events to get people interested while making them educational but in a structured way such as through a series of topics and delivering these while also measuring and tracking progress.



Figure 18. Example of Co-design workshop outputs - strategy development activity (Workshop 4)

Workshop 2 priority strategies, were also centred on this approach – one team working on a range of activities around climate action, and the other focusing on addressing the waste problem and combining community education with lobbying and engaging businesses in their community. Similarly, in workshop 3 community education and engagement strategies were common themes, but the Soil Health-Climate Health group focused on particular issues and detailed specific outcomes in relation to being able to measure the impacts of the program on soil metrics as well as knowledge within the community. The idea of building a ‘Grow Your Own’ community through a range of strategies and promotional ideas including bringing high profile ‘ambassadors’ on board, such as Costa, being out in the community such as at markets as well as getting support from public and private sources. The coverage included a diverse range of people groups from the community, schools to government, to education institutions to influencers. A train-the-trainer model was also noted as important to building capacity and growing the program. Strategy 3b also had community engagement at its core, centred around climate change impacts and also included using local networks, and local media and specifically mentioned targeting the involvement of youth networks and groups. An idea to break down the barrier of engaging and motivating interest and moving into action was identified and the idea of ‘One Act Locally’ which is based on encouraging motivated people to have a conversation with one person about local climate action and spread awareness and encourage action organically through personal networks of friends, families, neighbours as a foundation for change.

Strategy 3c also drew on similar ideas, but focused on addressing structural barriers to climate action through lobbying and advocacy. This strategy focused on building a network of like-minded community members to leverage their agency to influence politicians locally and to then represent their views towards outcomes of changes in regulations and laws at the federal level such as taxes and subsidies that support climate action and reduce emissions (e.g. fossil fuel subsidies and corporate tax breaks). In mobilising the community, this group reflected on a series of community events and forums where speakers could raise awareness of the issues and

what actions could be taken, followed by setting up action groups on particular topics – such as organising bus trips to parliament to speak with politicians. Resources needed included a means to connect likeminded people to form a core action group, plus funding such as from a council grant and support for training and environmental education and use of social media and supporting people to be active agents of positive change. Strategy 4c outlined a detailed plan to establish a community hub that could undertake many of the other activities the other strategies identified. The model included a place-based approach in which different needs of different communities were identified and a tool and resource library developed, and projects planned around these, setting up of a central hub and satellite with resources shared across them.

The remaining strategies prioritised by community workshop participants, were more targeted to building towards specific climate action strategies and overcoming key barriers to impactful climate action including waste reduction, public transport and working towards shifting away from reliance on fossil fuels across the Shire. Each of these also drew on many of the community education and engagement components discussed above. For example, Strategy 1b) focused on generating more reliable, efficient and usable public transport in the Tweed. This group aimed to address the preventing residents from shifting away from reliance on cars. They focused on advocacy and coordination across local and state governments to improve the public transport and EV infrastructure so that it was available and easy to access for residents. While Strategy 4a) focused on electrifying everything in the Tweed, and referenced leveraging local community movements from elsewhere in Australia and internationally to demonstrate how to go about decarbonising. The vision for this strategy was to have a completely fossil fuel free Tweed and identify a program to work towards that. The group identified that this would require strong partnership with experts, TSC and state government to ensure development of an action plan was targeted and would actually have the desired impact. The group did not necessarily have these skills themselves, and would need to tap into technical advice and resources to identify what the actual actions would be and progress towards a zero carbon community. Initial awareness raising could be done through a high profile community event, supported by key influencers and trusted sources of information on the topic including academics and community climate leaders who could speak about the issues and possibilities and a facilitated discussion to gather a working group and start actioning and developing a more structured plan for the Tweed.

Strategy 4b) focused on a community emergency response program, entitled S.O.A. - Save Our Arses which was part of the strategy to engage the community to realise the seriousness of the challenge happening and the importance of the task to be well prepared at a community level. The focus of this strategy was on timely, well coordinated responses to disasters through providing support and training for residents. The team designed a localised risk assessment and support for developing plans locally and connecting people so that they know who to contact and what to do in emergencies. Discussion after connected similarities to existing Red Cross training and community resilience teams that the TSC support, but which the team members were not aware of when developing.

In terms of resources needed, nearly all workshop strategies listed funding as a key resource, which also raised the issue of how community groups/members get access to, or find that funding. Also listed was support with venues or spaces to hold community events, support for food and refreshments and technical support to measure outcomes and impacts, all of which could be facilitated by TSC.

8 Implications for practice and implementing climate action locally

The Tweed Climate Ready Project aimed to understand Tweed Shire residents' perceptions and experiences of climate risks and hazards in their region and identify actions they have taken to mitigate or adapt to climate change. The research has provided a wealth of information from which many actions can be supported. Considering the need for transformative change across society to rethink, redesign, reinvigorate and tap into the opportunities associated with climate change and to address the climate crisis, this project was designed to move beyond a focus on behaviour change which can attempt to simplify the complex issue of responding to climate change, and often produces short-term change as people revert back if the incentives or prompts used to enact change are removed. Rather, a transformative approach recognises and engages with the complexity that is inherent in community-based action. The interacting and interdependent factors that shape how we make choices and decisions are not simple and are influenced by environment, culture, social structures, geography, political environment, socio-economics, gender, ethnicity and so on, and thus any change management program must recognise and work with these influences in place. To inform a way forward, in this section we reflect on the project findings in the context of five foundational principles of transformative community climate action (Jackson, 2021, Jackson et al., in preparation) - strategic and nested, systemic thinking, collaborative dialogue, social learning, and strengths-based strategies. We note that there are not hard boundaries between these principles and they are mutually reinforcing, so activities that address all five are likely to be strong transformative levers. We reflect on these in terms of implications for practice and taking climate action forward in a strategic way in the Tweed Shire.

8.1 A strategic and nested approach

The climate crisis will not be solved with a 'silver bullet', but rather a network of efforts at all levels and parts of society where understanding of the issues and capacity to act is embedded in place. Focusing on community-scale climate action is important as this is the site of people's daily lives and interactions. The project findings highlighted that this extends down to the villages and towns in the Tweed which have all been impacted by climate change in different ways, and even the neighbourhoods that are mobilising responses in different ways.

8.1.1 Establishing priority areas for action – at the intersection of impact and interest

This project also informs a strategic response in the sense of helping guide where to begin in tackling the broad suite of possible actions. Limited resources (funding and people) are available in the region for this type of work, so any generated or won should be strategically employed. This research shows that targeted support of actions at the intersection of both impact (in terms of reducing carbon footprint or adapting to projected climate risks), and the priorities and needs of the community outlined here, will increase likelihood of build enthusiasm amongst community members and therefore sustaining interest, participation and ultimately having impact. From the research in this project we find that the Tweed community's carbon footprint shows two sources of GHG emissions that make up 60% of the community's total – transport and electricity use. These are also key to community climate action as they are diffuse and distributed sources of emissions, i.e. coming from all people across the Shire. Therefore an effective program of action could impact all Tweed residents. Similarly, these are two areas of priority action raised by community members for which there was an appetite for action with both being priority strategies focused on in the community workshops, as well as a good understanding of some of the key barriers identified, such as improving public transport, bike, EV and other alternative infrastructure. In terms of engaging community members, the increase in electricity tariffs and rates from July 1, 2023 and the infrastructure investment happening over the next decade in South East Queensland leading up to the Olympics in 2032 in Brisbane, are both

significant opportunities to leverage community and stakeholders to support reducing Tweed community emissions from electricity and transport.

8.1.2 Consider willingness of Tweed residents to take climate action

The project established the community's concern and interest in climate change and willingness to take climate action which is important in informing a strategic plan of action. On the whole, Tweed residents concern about climate change was comparable to the national average. Tweed residents also have a significantly higher direct and indirect experience with climate-related disasters which was associated with stronger beliefs, deeper concern, and greater readiness for climate action. However, the survey also showed Tweed residents have a higher percentage of people who do not believe climate change is happening than the national figure (11.1% compared with 7.3%).

But Tweed residents were more likely than the national average to:

- do some carbon reduction actions, e.g. carry their own reusable drink container, refuse to use non-biodegradable plastic products, and grow own fruit and vegetables;
- consume more green energy than the national average;
- practice community-oriented behaviours for environmental purposes including voting, signing a petition, and donating money; and
- adopt practices to reduce climate impact, including having renewable energy infrastructure, changing lifestyle, working with the local community, accepting cuts in the standard of living, and paying significantly more for energy-efficient products.

The survey also showed that they were more likely to not take public transport than the national average, but this was not for environmental reasons. Throughout the interviews and co-design workshops it was highlighted that alternative transport options were limited and this is a key barrier that will need to be addressed to improve transport emissions in the Shire.

Priority areas also included waste management, reduction of waste and plastic packaging in the region, water efficiency and management, support for understanding climate change risks and impacts locally, education programs, more community events, support for local leadership and groups already working this space, building a network of climate active residents and connecting this to other local government areas through knowledge sharing forums.

In terms of addressing barriers to emergency and climate-event preparedness, more resources are needed to build knowledge and capacity on the ground. This could be facilitated by establishing a program to achieve a Tweed household uptake target (for example 50% by 2025, 100% by 2030) of household preparedness plans for local climate risks and hazards including severe storms, floods, bushfires and heatwaves.

8.1.3 Connectivity and coordination across agencies

By ensuring this principle is adhered to going forward, recognition that community climate action does not happen in isolation, and that the individual/ household, as well as the regional, state, national and international levels all interact to support or hinder progress. As such, a coordinated approach that ensures bottom-up developed ideas align with, and are integrated into, a strategic plan of action is required. Connecting local action to key national, regional and local policies and plans and tracking progress and providing feedback to the community on progress will be important as motivators to action. Further, leveraging resources at other levels through government grants,

expertise, business and industry leadership and support will be important for success and ensuring community members are rewarded for their efforts and to address feelings of apathy and powerlessness. Coordination within and between council/s, state and federal governments to address the timing and appropriateness of information and support to communities is needed to address the key barrier identified by community members in relation to immediate response and post-disaster recovery and infrastructure breakdowns experienced.

8.1.4 Responding to diverse interests and perspectives in the community

Communities are not homogenous and this research highlighted diversity in how people experience climate change impacts, their willingness to take action and the barriers they experience. A key approach then for building community climate action is to 'Meet people where they're at' – that is understanding who is in the community, consideration of the likelihood/willingness to take action, and acceptance of human-induced climate change narrative all shape what types of messages and strategies are used to reach out. Key findings of relevance are recapped briefly here:

Impacts and experiences of climate change differ across communities within the Tweed, with residents noting significantly different experiences with climate-related events.

Disaster-related trauma continues to impact the capacity of people to think of the future and proactively engage in climate action planning and activities.

There is a tension between experiencing multiple climate-related events that are connected to increased support for climate action, and the increased mental stress, anxiety and trauma that experiencing these events creates which evokes feelings of powerlessness and negative implications for willingness to participate in further planning and climate action strategies.

Different groups are more likely to act on different types of things. For example women, young people, CALD are more likely to recognise climate change as a more serious problem.

A strategic approach where limited resources are available, suggests that Council and other groups focus on already engaged, enthusiastic 'early adopters' as a starting point to gather "low-hanging fruit" and build examples from which to generate more interest within the community. For example, by connecting with those who participated in the co-design workshops in this project.

In contrast, a significant group of people who do not engage with the narrative of human-induced climate change, means different narratives are necessary, such as a focus on pragmatic outcomes such as efficient use of resources, cost efficiency, sustainable development and preparedness for disasters and community resilience building may be more engaging with 'sceptical' members of the community. At the same time, some resources could be put towards building general awareness of the issues of climate change in the Tweed and using these narratives to 'start small' by encouraging simple actions that may lead to further impactful actions (nudging).

Accessibility of information would need to target particular cohorts in the community, such as youth, elderly, Mums, tradesmen, sports clubs and so on, and create partnerships to work with them to identify strategies to engage them in climate actions relevant to them. This could be facilitated through development of a knowledge hub – both virtual and physical which aims to support the achievement of a zero-carbon community.

8.1.5 Council as a facilitator of community climate action

There is clearly a significant role that Tweed Shire Council can play in facilitating the Tweed community in achieving net zero and this is supported strongly by the findings of this research. One key enabler is to increase the funding and human resources dedicated to community climate action within the council itself.

Forming a Tweed steering group that includes those program leaders and department heads that have responsibility for various elements of climate action and responses, including sustainability, climate change and GHG emissions, disaster response, water and hydrological management, and others, as well as key state government reps, community group reps and leaders to guide the agenda for action.

Overcoming some of the structural barriers such as coordination and communication issues and infrastructure breakdowns experienced in the floods, providing subsidies and tax breaks, and financial incentives for taking up particular climate actions were themes emerging in this research. Working collaboratively with other councils, state and Federal governments to address the timing and appropriateness of information and support to communities.

8.2 A systemic approach

By focusing on establishing this systemic community baseline assessment the lived experience and social and cultural aspects of climate change have been highlighted and we have a clearer understanding of what the community is willing to do, what is important to them and therefore important input to design more meaningful and impactful community climate initiatives.

A systemic approach shifting Tweed residents daily practices such as getting from one place to another (or using appliances and energy or water or eating, and so on), to be more carbon friendly actions, from a systems perspective, social practice theory tells us that our daily practices are created and reinforced by three interacting aspects: competences (skills, knowledge and know-how), material factors (infrastructure, products, access) and meanings (including attitudes, values, social norms, rules). If we think of these as a tripod with three legs, supporting the desired practice, then all three legs need to be stable for the practice to become stable. When all three of these elements reinforce the new (sustainable/climate-friendly) practice and they are stable and supportive, this practice, such as commuting via bike or public transport rather than car, then becomes stable. If one of the three is absent, such as the infrastructure does not support community members to replace car trips with buses, then the new practice will be unstable and likely revert to older (easier practices with less barriers). This understanding is critical to designing any programs that are working towards carbon neutrality/positive - to support these practices the barriers that exist in these spaces must be addressed, as well as tapping into factors that create an enabling environment.

8.3 A social learning approach

Social learning views all projects and activities as opportunities for learning and transformative change at the individual, community and organisational levels. By viewing community interactions as opportunities for transformative change with respect to climate change and climate action, there are a number of forums that may facilitate social learning and thus support a paradigm shift within the community.

8.3.1 Community Climate Action Hub

Linking in to the previous to principles, consideration of scaling up climate action and building learning and capacity over the long-term must be considered at each intervention point. This could be facilitated by development of a Tweed Community Climate hub – both virtual and physical space/platform for knowledge sharing, resourcing and connectivity for all those interested in sustainability, climate action and related activities within the Tweed. The need for good quality, accessible information was identified as very important to community members and ensuring that future actions build on existing knowledge rather than repeating efforts. That includes the knowledge generated in this and previous studies locally. A community climate action hub could be a key mechanism to grow and support achievement of a zero carbon community. This idea was raised as a priority for development in Workshop 4 with a range of ideas generated and a number of enthusiastic community members indicating interest in progressing this idea collaboratively. This hub (and spoke) model – could take the form of a physical and virtual space that acts as a local climate data and resource library, meeting and training space, and shopfront for all things climate (and broader sustainability outcomes). The role of existing community groups with aligned interests would

be a logical starting point from which to identify priority needs and build a comprehensive climate action strategy for the Tweed respectful of needs in different parts of the Shire. The hub could incorporate expansion of an existing groups' activities and scope, or, establish a new purposeful 'umbrella' group consisting of key members of local climate groups. A dedicated hub space and online platform would then enable satellites (existing groups and interested parties) in the villages and towns across the Tweed to connect and strengthen ties, pooling/sharing of resources and help to support to implement local strategies as well as share lessons and ideas about what works and doesn't.

8.3.2 Community Climate Champions Program

Further to this idea, establishing a network of Community Climate Champions (or similar) that are supported through training and leadership skills building could be an affiliated program to delivery and strategic direction of Tweed Climate Hub. This idea fulfils the need to ensure key messages are coming from trusted sources and that the community's capacity for climate action is being built. This is essentially a leadership program supported by funding from the Council and other levels of government. This also supports a place-based approach that connects with the smaller communities within the Tweed and enables communication across these groups and social learning as well as growing capacity through train-the-trainer initiatives. These would be connected in to existing groups and programs, such as the community resilience teams beginning to be established across the region.

8.3.3 Community Climate Education Program

Providing this through a comprehensive program of education that is fun, creative and builds energy and enthusiasm within the community for climate action will be important. Tapping into existing networks and events will be important and that includes the obvious, such as World Environment Day, EcoFest or Sustainable Housing expos and so on, but also non-environmental focused festivals, events – such as sporting events - surf carnivals, arts or music festivals, community gatherings, network and association meetings and other spaces where different members of the community come together.

Other sources of information are social media, letterbox drops, posters and using word of mouth. Peer-to-peer learning programs for young people. Ensuring leaders in the community – TV personalities, musicians and sports personalities for example, are influential and will be listened to by their key demographics.

With regards to barriers to climate preparedness, more resources are needed to build knowledge and capacity on the ground and this includes working towards a target of 100% of residents having a plan for the climate risks they are exposed to such as severe storms, floods, bushfires, and heatwaves.

8.4 A collaborative approach

The focus on collaborative processes and co-design aimed to identify and reinvigorate existing networks of actors from which future community engagement, capacity building and climate programs can draw, with a pool of interested and willing climate leaders identified. As a precursor to this and as one of the strongest themes emerging throughout this project, regular, ongoing community education events – such as webinars, workshops could be hosted by the council on the theme of climate risks, climate action (by action area and sub-actions, such as energy efficiency, solar, bike riding and how to address some of the barriers that people face).

The barrier of poor accessibility of information could ensure targeted information is available in ways that match the needs of particular cohorts in the community, such as youth, elderly, mothers, tradesmen, sports clubs and so on, and create partnerships to work with them to identify strategies to engage them in climate actions relevant to them

8.4.1 Creating spaces for collaborative dialogue

Dialogue is a tool critical for generating inclusivity in community processes and may help to shift from knowledge to motivating action because information has to "fit" the situation and be both understood and trusted by those who

are to act on it” (Innes and Booher, 2010). Dialogue involves both speaking and listening to others and being open to learning from others views. When designing interactions around climate action, Council and community groups must consider moving beyond one, or even two-way communication and creating both informal and formal spaces and processes that support real dialogue to overcome some of the barriers to collective climate action.

Collaborative dialogue is important to building a shared understanding by collectively defining problems and possible solutions. The project findings showed that community members are interpreting different elements of climate change, understanding the impacts and possible actions in varied ways and as such language used to engage community members sits differently. The role of dialogue in the meaning of a plan for emergencies varies widely - careful with language and important to educate people on what preparedness actually looks like. It varies from person to person - this implies a general level of education and awareness raising across the board to raise the level of understanding, and in particular shared understanding of appropriate preparedness.

8.4.2 TSC as a Facilitator for Community Climate Leadership

While collaboration implies shared power, information and design of climate action locally, the project (and particularly co-design workshops) also highlighted that residents who wanted action on climate locally, were not always willing to take leadership roles in the next stages of development or were not in a position or felt they had the knowledge or skills to progress. In collaborative processes, there is still a need for initiating and leading co-design processes and in this research TSC was strongly implicated in playing a central role and providing leadership for the community through a range of coordination and support actions. Such actions included leading the development of the initiatives listed above, evidence-based goal setting and continual improvement in its own operations, establishing/strengthening key networks across the community, working collaboratively to take action and providing guidance and expertise to coordinate community action with strategic actions at the council level. Further, advocacy and decision-making for climate friendly infrastructure for the region and working with other agencies where this does not fall within the remit of the Council. The State and Federal Governments are also perceived as key sources of leadership and resourcing of climate action – including funding, expertise and guidance for communities. Overcoming the key barriers to coordination and communication across agencies by working together on regional change needs to be improved according to this study.

8.4.3 Climate Partners Program

The study identified a desire from residents to learn more through accessible and locally relevant climate science and information about what actions will be impactful in reducing emissions or preparing for local climate risks. Engaging industry and business as well as community associations and larger scale networks was also seen as an important way to accelerate effective climate action across the Tweed. A partnership program could provide a productive avenue to facilitate a number of outcomes – such as engaging the less engage, building climate literacy and awareness across the community and supporting and providing resources for community members to take climate action. Key community groups such as sporting clubs – SLSC’s, boardriders, rugby, football, bowls and so on; residents associations and business chambers, would have large memberships that could support outreach to community members who may currently have no interest in taking climate action.

Innovative and creative tools for engagement in collaboration with key partners could be explored. The concept of gamification for example, (i.e. using sporting metaphor or friendly competition to engage groups of people in climate action activities) would be well aligned and apply to any group that would like to reduce their carbon footprint. Such a program could be a comprehensive undertaking – but is an example of how to ‘*Meet people where they are at*’ and make climate action fun. There are many creative approaches to community climate action, which would need to be identified in alignment with a strategic approach outlined above. Similarly, engaging local businesses and as champions and larger corporations that operate in the Tweed as sponsors and supporters of climate action, additional funding could be raised to support the community’s aspirations.

8.5 A strengths-based approach

The strengths-based approach values the expertise and knowledge embedded within the Tweed community and recognises the diversity of groups and perspectives as well as lived experience. A number of reflections on key actions and pathways introduced already in this section tap into the strengths present in the community. The systemic baseline assessment conducted within this project identified a number of key strengths from which future climate action can be built on. The project found that if asked by a person they respect, Tweed residents were more likely to adopt community-oriented climate actions, for example volunteering, joining a campaign, writing a letter, and participating in non-violent disobedience, than their national counterparts. This sense of community and community-oriented behaviours was viewed as a strength by participants in this project. For example, the strong social bonds and community spirit that came to the fore in response to the disasters were key. The local community groups that have been leading in multiple streams of climate action including community resilience building and carbon and environmental footprint were also identified as an important strength within the Tweed. Related to this, the levels of volunteerism (particularly women) and motivated community members who are already engaged in community groups and networks are key strengths on which to build.

Young people are considered a strength in this space, showing enthusiasm and motivation for action but only if included and involved in local climate decision-making in ways and formats that are meaningful to them. The connection to the natural environment, including through coastal activities such as surfing, fishing, boating, as well as the strong Indigenous leadership and coordination within the Bundjalung nation are all areas that should be leveraged to support long-term climate action and resilience building.

In ensuring these existing strengths are built up over time, the project also identified a need to support these individuals, groups and networks through funding and capacity building. Issues such as burnout of volunteers, and not knowing how to effectively run a group or having the time and resources to do so on a volunteer basis, all constrain further effective community climate action.

Feedback from co-design participants on things that worked well included connecting with like-minded people and enthusiasm generated through the workshop discussions, as well as shifting towards proactive design of activities (see Appendix D). The momentum generated through this project should also be built on by facilitating an opportunity for this group and others to continue to connect and progress the ideas generated to date.

In this section we have provided a high-level synthesis of possible climate action pathways from a transformative community climate action perspective drawing on the research throughout this project. Building on this, in the following section, we propose a number of key recommendations for implementation to progress community climate action in the Tweed Shire.

9 Recommendations

The following recommendations have been synthesised out of the research conducted in this project including drawing on the community perspectives and preferences, review of literature and the authors' expertise with community climate action and resilience building. These recommendations aim to address key barriers, establish a strong foundation for community climate action and create an enabling environment that will support community members and supporting agencies to build leadership capacity for climate action over time.

1. **Incorporate Community-Based Climate Action in climate action responses** – Continue the community dialogue and build on the research findings and outcomes from this project to include community-led actions in Council and emergency agencies' allocation of resourcing and plans for future work/action.
2. **Prioritise Climate Action at the Intersection of Impact and Interest (Transport and Clean, Efficient Energy)** – In developing Recommendation 1 prioritise strategies based on what this project found to be high impact (in terms of mitigation) and high interest (as indicated by the community) to address transport and electricity emissions as a priority:
 - d. Key barriers identified in this project to reducing transport emissions include: addressing the lack of public, shared and active transport options and strengthening cross-governmental collaboration to ensure sustainable, reliable infrastructure and services for Tweed residents; co-designing a community strategy and feasible target to reduce car trips and make alternative trips safe and viable for Tweed residents.
 - e. Structural and behavioural barriers identified in this project to clean energy uptake and energy efficiency to be addressed using a range of levers to promote and support efficiency practices to residents. Including through addressing rising (and inequitable) costs of electricity, financial incentives, education, and bulk buys or discounts for energy efficient appliances and clean energy sources.
 - f. In addition, prioritise waste and consumption, water efficiency and other key impact areas identified in this project. Although lower in terms of direct emissions, were identified as high interest from community members and high willingness to act with key barriers identified to guide targeted strategies.
3. **Establish Community Climate Action Reference Group** – A community reference group Terms of Reference would include in the first instance to co-design an evidence-based agenda and priorities for climate action in the Tweed and provide guidance and advice to Council as a key leader in community climate action. Members are to be drawn from the community, experts in climate science, action and engagement, and representatives of key local groups or organisations.
4. **Establish a Community Sustainability/Climate Action Hub** – A hub model builds on the existing groups and resources but provides a coordinating role and physical and virtual space for: a resource library, skills building and training events, learning and discussion nights, and climate action showcases. The hub could play multiple roles in addressing barriers including accessibility of information, trusted sources of information, the need for capacity building and can facilitate a range of the recommendations from this project.
5. **Establish a Program of Community Climate Champions** – Building on the network of existing groups and motivated individuals in the Tweed, a Climate Champions program is a strategic means of building distributed climate action leadership and capacity, providing trusted voices within communities and

disseminating quality and timely information about climate change risks, and actions throughout the community. To ensure sustainability of the program, and avoid reliance on volunteerism for success, a model that supports paid positions and formal connections to planning and decision-making through Council (such as the Community Climate Action Reference Group – Recommendation 3 above) is recommended. However this group should maintain independence from Council to ensure the community perspectives are represented without perceived bias.

6. **Climate Communication and Education Series – ‘Meet people where they’re at’** – In delivering information about climate change – design messages for target audiences recognising the diversity within the community and that climate risks and impacts amplify existing disadvantage. An inclusive program that considers and encourages participation of women, young people, First Nations, people living with a disability, CALD communities and those in lower socio-economic brackets in the Tweed is important for representation. Using multiple narratives that tap into the many local drivers for climate action that will reduce emissions and build community preparedness, such as reducing costs, strengthening community resilience, protecting resources for future generations, emergency preparedness and so on. Possible initiatives could include:
 - g. **Program of Climate Forums** (during existing forums or new targeted events) – this program includes interactive sessions with special guest speakers and opportunities for discussion and dialogue amongst attendees, to allow for two-way and transformative learning opportunities about key foundations of climate science, risks and actions relevant to the Tweed community.
 - h. **Training and Capacity Building** – Building on existing training opportunities including the Red Cross Community-led Resilience teams model, training community climate champions and other interested community members to establish a foundational knowledge of a range of topics including climate science and risks, impacts and outcomes of climate actions, preparing plans for climate risks, and further upstream topics such as how to run a community group, effective community engagement, or grant writing.
 - i. **Tweed Climate Action Partners program** – A partners program aims to support and build effective outreach and engagement across the community (and support achieving other recommendations here) while also tapping into funding, sponsorship and other forms of support for community climate action. The program could include an agreement outlining key outcomes, program brand and goals for participation/outreach rates. Partners could include sporting organisations, such as SLSC, surfing and boardriders clubs, football, rugby, tennis; and businesses, industry and industry associations in the Tweed; Community organisations such as Aboriginal Land Council, Elders and Leaders (plus TSC Aboriginal Advisory Committee (AAC)), Tweed Youth Services and Schools, Disability Services and Aged Care Services and institutions.
7. **Progress Baseline Understanding Through Local Risk and Vulnerability Assessments Across Key Infrastructure** – Continue to build the understanding of how climate projections will impact the Tweed Shire including exploring the compounding and cascading impacts of climate change, including for water, energy, transport and telecommunications infrastructure, as a foundation on which to design effective community responses and preparedness plans.
8. **Update Emergency Governance Procedures** – Community views of what worked and did not in floods and bushfires generated in this project should inform updates to current government and agency procedures through dialogue with communities. Participants of this project called for a coordinated approach by key emergency services organisations to ensure timely and quality information and guidance to communities at each stage of the disaster and recovery process.
9. **Seek Sustainable Funding for Climate Action in the Tweed** – Implementation of the recommendations in this study will require the expansion of financial resources. Council could support community-led climate action through advocacy for a transformative community governance approach to climate action with funding agencies in state and federal government, identifying existing grants and possible funding streams

to apply for and supporting community groups and proponents to engage funding bodies and funds with grant-writing expertise and training.

10. **Continue Place-Based Projects and Research** – Continue to pursue research and evidence-based climate action that build on the knowledge generated in this project. This includes further application of small-scale trials of Transformative Community Governance for climate action projects that apply key principles and incorporate monitoring and evaluation of impacts to support social learning outcomes. Connecting technical experts, social science experts, community engagement experts and community leaders to assess the feasibility of particular GHG emissions reductions strategies and inform long-term planning.

CONCURRENT COUNCIL ACTIONS

This report will be submitted to Tweed Shire Council for consideration and will be made publicly available. During preparation of this report, TSC have continued progressing priority areas for climate action and have indicated, in alignment with the findings and recommendations from this project, a range of next steps that are being actioned:

- **Climate Change Working Group:** Councillors have requested a working group be established to input into Council's climate change work. In its Community Strategic Plan, Council has committed to develop a Climate Change Adaptation Plan and Shire-wide Emissions Reduction Strategy, both of which would benefit from the input and advice of a community-based working group, particularly with expertise in climate science, community action and engagement, well networked with local groups and organisations.
- **Community Action Network:** to maintain momentum on community appetites for action and connection with others keen to be involved in community-led environmental and climate change responses, Council is setting up a Community Action Network. By coordinating quarterly gatherings for community members to share and progress their own and each other's actions and projects, Council aims to build capacity and provide support where there is energy and enthusiasm for community-led projects.
- **Locality Based Adaptation Options:** In response to Council's Climate Change Risk Assessment, Council will prepare a Climate Change Adaptation Plan to better understand the options, costs, benefits and community perspectives to reduce the likelihood and consequences of climate change-related risks.

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Appendix A – Summary of Methods

Body copy here

Key questions guided the research:

1. What are people’s experiences with climate change locally?
2. What types of climate action are they already undertaking?
3. What are the challenges and barriers community members face in taking action?
4. What are the supportive structures, processes and enabling factors that help community members take action?
5. What do community members see as key areas for climate action and climate solutions locally and who should be involved or lead these?

Table 6. Summary of Project Methods and Data

Stage and timing	Research Question	Aim	Methods	Data – type and sources
1 A – Desktop Review 1 October – 12 November 2022	n/a – setting the scene for climate action in the Tweed	Establish existing baseline of local climate risks and projections, policies and framing for climate action	Targeted Document review of localised climate risks, policy environment; community-focused climate education messages or guidance.	TSC website; localised climate studies, relevant policies, plans and strategies in place; any previous community engagement, community-focused messaging and guidance on climate risks and preparedness/action provided to Tweed residents
1 B – Surveys and kickoff community engagement i) 13 Nov – 30 Nov 23 ii) 13 Nov – 30 Jan 23 iii) 13 Nov – 30 Apr 23	RQ 1-5	Establish baseline of resident knowledge, perceptions, views on climate action. Recruit participants to participate in i) survey; ii) interviews; iii) co-design community workshops	Recruitment methods: In person - Tweed EcoFest, presentation to TSC Aboriginal Advisory Council; Online and local promotion via community facebook groups, TSC website, Griffith CAB website and media release; direct email to TSC sustainability network list, staff and researcher networks e.g. Tweed Coast Youth Services, residents associations; community leaders, P&Cs, business chambers, Sports clubs	Community (Tweed Shire Residents) climate knowledge, perceptions and experiences of risks, impacts and action, including emergencies, disasters and mitigation and adaptation; Barriers and enablers to taking action.

		Conduct survey	Conduct Survey: - Written or online survey tool through LimeSurvey. Analysis via SPSS.	
Stage 2 – Community Interviews Mar-Apr 23	RQ 2-5	Follow up with survey participants to explore in-depth themes of climate action and resilience	Participants self-identified from Stage 1 (supplemented with further direct recruitment if required) Semi-structured interviews by online video/phone	Further exploration of key themes concerning taking climate action
Stage 3 – Community Climate Action Workshops May 23	RQ 4-5	Identify and co-design community-based climate action strategies, and identify support mechanisms, actions and structures needed	Recruitment: Direct email invite to Stage 1 and 2 participants; open invitation and promotion across local networks as per Stage 1B, postering. 4 workshops to enable different people from different places and with different experiences of climate change to participate – Tweed Heads, Uki, Murwillumbah, Cabarita Beach. Interactive sessions designed to identify personal preferences for climate action, collective priorities and co-design and development of a number of priority strategies	Data directly from workshop participants and their collective brainstorming.

Stage 1 Methods. A baseline of local climate data, risks, hazards knowledge and actions

This stage established a baseline understanding of the current state of climate change literacy and climate action in the Tweed Shire including knowledge and experiences of Tweed Shire residents in relation to impacts, mitigation, adaptation and resilience. From this place-based evidence, a foundation from which to identify strategies and support mechanisms for the community was established. Baseline data was gathered from a targeted document review and community surveys – including a mini survey distributed during the TSC EcoFest held in Knox Park, Murwillumbah on 13 November 2022 and an online main survey.

A targeted review of reports, plans, policies and strategies was conducted to identify existing data on local climate risks, commitments, plans, and mitigation actions and preparedness as well as efforts to engage the Tweed community. The review also factored into the design of key questions within the surveys.

Community Survey

Details of the community survey design can be found in the associated Climate Ready Tweed Survey Final Report, a brief overview follows. The community survey aimed to establish a baseline understanding of Tweed Shire residents' perceptions and experiences with climate action. This included responses to greenhouse gas emissions and any actions to reduce their carbon footprint, as well as preparedness for and adaptation strategies for climate events such as floods and bushfires. The survey questions were shaped by the document review and to align with the National Climate Action Survey (conducted by Griffith University Climate Action Beacon in 2021 and 2022) to allow for further comparative analysis in subsequent research. The survey instrument consisted of two separate but related surveys:

1. Festival survey (Eco Fest 13 November 2022) - a 5-minute self-administered survey targeting a minimum of 50 attendees (iPad or hard copy form) aiming to understand festival attendees opinions on the event and how they have been engaged in learning about climate issues through the event activities and stalls as well as to identify participants for further stages of this project.
2. Online community survey: A 30-minute online self-administered survey targeting a minimum of 200 respondents using the LimeSurvey platform.

Participants were recruited during November 2022 and January 2023 via the following strategies:

- In person – EcoFestival including a stall, public talk and in person conversations between project team and community members
- Online (passive) recruitment through TSC and Griffith CAB website, media release
- Snowballing – sharing the invitation and link through local networks of the Tweed Council and research team

An incentive to participate in the survey was provided by a prize draw at the EcoFest with 4 draws occurring throughout the event. And a large prize draw for the main online survey. Prizes were donated by local businesses and the Tweed Council provided runners up with \$100 vouchers 'Keep It Local' to spend in participating local businesses.

The main community survey was administered online via LimeSurvey and structured into three main parts to allow exploration of themes of relevance to effective climate action: 1) climate knowledge, experiences and perceptions; 2) capacity for action concerning mitigation, resilience and adaptation; and 3) demographic data. A project Information Sheet and consent form were incorporated into the survey instrument as per research ethics requirements.

About the survey participants

Tweed Shire residents aged 18 and over were eligible to take the survey, and 252 eligible and complete surveys were included in the analysis. Participant recruitment aimed to provide a fair representation of the Tweed Shire community on key demographic markers of postcode, gender and age. Residents from every Tweed postcode took the survey. More females (57.5%) than males (38%) completed the survey. Those in the 18–29-year age group, unemployed, low household income, lower education levels, and Indigenous were slightly underrepresented.

A multithreaded approach provides opportunities to address any imbalances and so we were able to target underrepresented groups in the interview phase alongside additional effort to recruit survey participants. Understanding who participated guides our interpretation of the survey results and how these relate to the broader Tweed population. Details on education level, income, culturally or linguistically diverse (CALD), home tenancy can be found in the Tweed Community Climate Ready Survey Report. Survey results were used to inform design of the interview schedule outlined in the next section.

Stage 2 – Community Interviews

Interview Method

Semi-structured interviews were conducted with Tweed community members during February and March 2023. 22 survey respondents from Tweed Shire were interviewed. An additional 7 interviews were conducted with local practitioners and stakeholders bringing the total to 29. The interviews were between 30-60 minutes and held online via Microsoft Teams, Zoom or by phone.

The interviews further explored themes arising from the survey, with a focus on better understanding barriers and enablers and local solutions to community climate action. Questions were categorised under three broad themes which also guided the analysis:

1. Barriers and enablers to carbon reductions
2. Experience with climate events
3. Solutions and pathways forward

Recruitment of interviewees

Selecting general interviewees drew from 140 survey respondents (out of the 252 total) who indicated interest in being interviewed by the research team. The target interview number was approximately 20 and aimed to provide a representative demographic spread of the Tweed Shire (age, gender, and cultural diversity), different views on climate change (pro-environment to sceptical), and different levels of climate-related event plans and preparedness (none, basic, strong). After categorising the 140 respondents based on these aspects from survey results, invitations were offered via email and worked through the list until saturation (minimum of 20) accepted. In addition, six (6) community stakeholders representative of groups including those under represented by the survey were interviewed to supplement understanding of climate action in the Tweed Shire. These included those working with young people, Indigenous groups and those engaging community and facilitating local climate/sustainability action groups.

For the interviews, a thematic analysis was undertaken to identify core themes emerging from the responses. understand participants' opinions on climate change and climate adaptation and their experiences of the programs and generate initial ideas about what type of messages would make residents more engaged in climate action and environmental-related behaviour change.

Stage 3 – Community Co-design workshops

In Stage 3, the aim was to establish a cohort of interested and enthusiastic community members who may be a foundation group from which to generate further community climate action. During these workshops, a series of co-design activities identified and prioritised locally relevant climate strategies from the community's perspective. In the context of a larger transformative change program, the outputs of this stage form an important foundation for community climate action plans and councils' strategies. These workshops validate and reinforce community priorities and areas of interest.

Four community climate ready workshops of 2.5 hours each, were conducted in person in May 2023 at four venues across the Shire: Tweed Heads (11th), Uki (13th), Murwillumbah (18th) and Cabarita (20th). The first round of invitations were sent to self-identified contact list from Stages 1 and 2 of this project. Second round included a mixed approach of direct email invitations to the same networks as identified in Stage 1, including residents associations, community leaders including councillors, Aboriginal Advisory Committee, council staff, post on council facebook page and on community facebook pages (via council communications team), local postering as well as snowballing through those networks. 66 residents registered for the four workshops via the invitation, about three quarters of those attended with 13 (TH), 7 (Uki), 16 (M'bah) and 13 (Caba) people participating in each respectively.

Detailed description and outputs from the co-design session were collated and shared with all registered participants within two weeks of the workshops (available at XXX) together with an opportunity to connect via self-organising through a Google spreadsheet.

Appendix B – Interviews Schedule

Read introductory script and info sheet (sent in advance via email) and get verbal consent (from everyone, even if they have sent through consent form) to collect this data

GENERAL INFORMATION

NAME: AGE:

PHONE:

EMAIL:

DATE: TIME:

CONSENT FORM SIGNED AND RETURNED? Y/N

VERBAL CONSENT PROVIDED? Y/N

1. Which community (village, town etc.) within the Tweed do you live?
 - a. Are there other communities you have close ties to (e.g. family, work, recreational time etc.)?

THEME A – BARRIERS & ENABLERS TO REDUCING CARBON FOOTPRINT/GHG EMISSIONS

Firstly we'd like to talk about taking action to reduce carbon footprint (GHG emissions) at home or in the community.

2. You indicated in the survey [a few things/ one thing/ a lot of things] that you currently do to take action at home to reduce your emissions.
 - a. What have you found challenging or preventing you from taking action to reduce your carbon footprint (GHG emissions) at home or in the community?
 - b. What resources, information have you found useful, supportive, helped you to take action to reduce your carbon footprint (GHG emissions) (either specifically or generally)?

- i. *[Follow up Q – Tell me more about those resources. make sure have enough detail to be able to identify it and follow it up if we want to produce a list of resources at end of project]*

THEME B - EXPERIENCES WITH CLIMATE CHANGE EVENTS

The next couple of questions are about extreme events planning and preparedness.

3. You indicated in the survey that you [DO] have a plan in place for extreme events [name which ones listed].
 - a. Can you describe that plan and what it involves?
 - b. Did you use the plan to guide action in recent years/during events?
 - c. Did you prepare that with your family or others in your community? Support from any organisation?

3. ALTERNATIVE (IF NO PLANS): You indicated in the survey that you [DO NOT] have a plan for extreme events [name which ones listed] [This option only for those who indicated no to all].
 - a. Can you talk about that?
 - a. [Prompt - Would you like to have one or not concerned?]

4. Are there other preparations or planning you would like to do that would help you feel more prepared or in control, but have not yet done?
 - a. If yes, what? And what reasons have prevented you?

5. In your experiences with climate related crises such as the floods and bushfires:
 - a. What worked well (was efficient, effective) in your community and region in relation to preparedness and response to the events during and after?

 - b. What did NOT work well (was inefficient, ineffective) in your community and region in relation to preparedness and response to the events during and after?

THEME C – SOLUTIONS – PATHWAYS FORWARD

The next questions are about thinking about the future and how we can collectively act to reduce climate risks and impacts locally and to reduce our carbon footprint.

6. Do you have any ideas on how your particular community, or the Tweed Shire more broadly can collectively achieve zero emissions and prepare for climate impacts locally?
7. Are you part of any groups or community networks or activities (whether climate-related or not) in the Tweed?
8. Who should be involved in these actions?
 - a. What role do you think Tweed Shire Council should have in supporting climate action in the Tweed?
 - b. What other organisations should be involved in these actions and in what role?

[Optional question if time]

9. What information or resources have you found useful, or would you like to have in helping you take climate action (whether in reducing your carbon footprint at home or preparing for natural hazards and emergencies)?
 - a. How would you like to access this information? What format is most easily accessed by you?
How often would you expect to refer to it?
10. Do you have any other comments, suggestions on this topic you'd like to share?

Appendix C – Community Climate Actions from Workshops

A detailed summary of workshop outputs is available upon request to the authors or Tweed Shire Council Sustainability Officer and will be made available on the Council website.

Participants were first asked to individually review the list of personal or household-scale climate actions they find important or do themselves. **Error! Reference source not found.** summarises all worksheets from each of the four community workshops and presents them in order of the most numbers. Participants were also invited to add to their own priorities to the starting list provided, with the following additions made:

1. Make reusable bags out of old clothes
2. Buy recycled goods
3. Redivert food waste
4. Buy bulk produce with your neighbours
5. Avoid shopping packets for food at supermarket
6. Buy/fix more used goods
7. Food packaging
8. Minimize food packaging
9. Reduce water consumption
10. Be aware of carbon footprint through carbon calculator
11. Drive an old car/repairs
12. Solar on cars
13. Make homes warmer/cooler e.g. filling gaps, planting for shade, making/installing warm curtains for winter, insulating homes
14. Volunteer in community
15. Help landowners to regenerate their property through grants
16. Growing organic
17. Regenerating farmed produce and meat
18. Plant endemic/local species in garden/street verge
19. Stop glyphosate use

Table 7. Co-design workshop sheets of personal or household scale climate actions supported by participants

<i>Personal or Household Climate Actions</i>	<i>TH</i>	<i>Uki</i>	<i>MB</i>	<i>Caba</i>	<i>Total</i>
<i>Eat less red meat</i>	4	0	3	3	10
<i>Throw away less food</i>	5	0	2	2	9
<i>Invest in rooftop solar for your home</i>	2	0	3	3	8
<i>Reduce energy consumption at home</i>	4	0	3	1	8
<i>Raise awareness and education</i>	1	2	3	2	8
<i>Go minimal - reduce your consumption of products generally</i>	4	0	2	2	8
<i>Grow own fruit/veggies/herbs</i>	2	0	2	3	7
<i>Carry reusable drink containers</i>	1	0	1	5	7
<i>Invest your money in climate friendly industries or businesses, remove from fossil fuel industries</i>	1	1	1	4	7
<i>Encourage climate action by others</i>	2	2	2	0	6
<i>Reduce unnecessary spending</i>	2	0	3	1	6
<i>Make a plan for emergencies</i>	2	0	2	2	6
<i>Use cold water to wash clothes</i>	2	0	2	1	5
<i>Donate to pro-environmental groups</i>	1	0	1	2	4
<i>Invest in an Electric Vehicle</i>	1	0	0	3	4
<i>Use environmentally friendly products</i>	1	0	2	1	4
<i>Buy local goods</i>	1	1	1	1	4
<i>Learn how to compost</i>	1	0	2	0	3
<i>Contact government members about environmental issue</i>	2	0	1	0	3
<i>Refuse to use non-reusable/non-biodegradable plastic products</i>	0	1	1	1	3
<i>Vote for pro-environmental politicians</i>	0	0	3	0	3
<i>Minimize air travel</i>	1	0	2	0	3
<i>Participate in beach clean-up or land care projects</i>	2	0	1	0	3
<i>Walk, bike, or take public transport instead of drive</i>	0	0	0	3	3
<i>Purchase an E-bike</i>	0	0	0	2	2
<i>Ride a bike</i>	1	0	0	1	2
<i>Attend a pro-environmental rally, march, or protest</i>	0	0	1	0	1
<i>Member of an environmental group</i>	0	0	1	0	1
<i>Don't have children</i>	0	0	1	0	1
<i>Change energy supplier to a more green company</i>	0	0	0	0	0

Participants were also invited to add to their own priorities to the starting list provided, with the following additions made:

1. Councils to implement tougher eco housing requirements
2. All community moving in tiny homes/granny flats
3. Set up a group to design and plan for flood resilience
4. Local tool + household rental hub to reduce purchase of unnecessary items
5. Community/regional gardens of food forests - sustainable hub
6. More resilience hubs - shared solar, water tanks, community garden
7. More farmers markets
8. Community produce share
9. Sharing household items e.g. sewing machines, movers
10. Community based complexes consolidating power generated through renewables
11. Education
12. Reduce population
13. Ban plastic bags
14. Reduce food packaging and make more recyclable
15. Support local businesses that are reducing their environmental footprint
16. Return/swap beer bottles to get another carton (like in UK)
17. Have more bulk products available to reduce packaging
18. Low impact transport - Buses less cars
19. EV chargers along the road
20. Financial incentives for batteries
21. Mobilize large numbers of people and protest about the federal government fossil fuel subsidies
22. Government stop glyphosate and chemical use
23. Government spending for climate
24. Campaign local government
25. Pressure governments to stop all new fossil fuel mines and fossil fuel subsidies
26. Get response from government members if you contacted them
27. Community should stop cutting trees down
28. Preserve what we have
29. Incentives for landcare
30. Stop wood burning for energy
31. Support the growth of trees (carbon)

Table 8. Co-design workshop sheets of community scale climate actions supported by participants

<i>Community Climate Action</i>	<i>TH</i>	<i>Uki</i>	<i>MB</i>	<i>Caba</i>	<i>Total</i>
<i>Advocate for public transportation improvements</i>	5	1	1	3	10
<i>Join with others to establish a community voice to help with climate action strategy and supportive policies locally and regionally</i>	1	0	2	3	6
<i>Create local education programs to raise awareness of climate change impacts locally</i>	1	1	2	1	5
<i>Develop a community led waste management strategy</i>	1	1	1	2	5
<i>Join with others to advocate for renters and low-income earners to participate affordably in clean energy transition</i>	1	0	0	3	4
<i>Campaign for better financial incentives for household rooftop solar and break down barriers to uptake of solar</i>	3	0	0	1	4
<i>Spread information to help create plans in case of climate related events</i>	2	0	0	2	4
<i>Community led practices prioritizing ecosystem-based adaptation strategies</i>	1	0	0	3	4
<i>Connect to or set up a community renewable energy group to promote community owned and operated renewable energy systems</i>	0	0	1	2	3
<i>Engage others to reduce their carbon footprint through local events</i>	1	0	1	1	3
<i>Join or establish a bulk buy for electric vehicles to increase purchasing power</i>	0	1	1	1	3
<i>Join local landcare and dunecare group to support rehabilitation</i>	1	0	0	1	2
<i>Get involved with local businesses and organisations to strengthen ecosystem health and wildlife</i>	0	0	1	1	2
<i>Campaign to businesses, organisations, state, and local government to collaborate to help reduce carbon emissions</i>	0	1	0	1	2
<i>Set up a neighbourhood or community network for emergency response</i>	0	0	1	1	2
<i>Use or set up group to develop a climate risk rating map to help influence and assess new developments</i>	0	0	0	1	1
<i>Get involved with community organisations and help the coordination during climate related events</i>	1	0	0	0	1
<i>Local projects to increase awareness of environmentally friendly behaviour changes</i>	0	0	0	1	1
<i>Run a fundraiser and use funds to help transition the community to low-carbon and climate resilient future</i>	0	0	0	1	1
<i>Undertake SES or Red Cross training for preparedness and response to emergencies</i>	0	0	0	0	0

Appendix D – Participant Feedback from Community Workshops

The following lists direct feedback from participants of each of the four workshops across four questions.

What worked well:

Tweed:

- Commentary and illustrations
- Consult on each table with each person having input
- Feedback by groups interesting
- Like minded people coming together
- Structure and agenda
- Workshopping at tables after informed dialogue on issues
- People from different backgrounds had a say
- People coming together to discuss issues
- Tactile way of presenting ideas and topics
- Group basically in agreement

Uki:

- Everything
- Look forward to connecting to community
- Thank you. No specific feedback. It was good overall
- Venue, set up, whole workshop
- Good meeting lots of nice people
- Open discussions with others
- Group discussions
- Good community venue
- Great facilitator
- Very friendly atmosphere

Murwillumbah:

- Loved it! Loved connecting with like minded people passionate about the environment
- Thank you for an insightful evening
- Focusing discussion and raising issues
- Someone to help us with the instructions -was great to have kerrie at the table
- Explanation in the beginning by melissa was good
- Well structured workshop format facilitated some positive outcomes
- Encouraged sharing and caring
- Bringing like minded people and having a meaningful conversation
- The people at the table
- Group discussion – listening and building on each other's ideas
- Community discussions on group tables
- Good statistical PowerPoint especially tweed based bring it local relevance
- Participants made to think about how ideas can be implemented
- Discussion and outcomes with open and honest speak
- Having great people at our table to work with
- The format of the workshop

- Table discussion – good diversity of people
- Group work

Cabarita:

- Local ideas
- Passionate people
- Good facilitation
- Great forum and format
- Small groups prioritizing their issues
- Opening presentation
- Facilitators
- Small group discussion
- Bo was a good guide
- I like the workshop process
- Excellent facilitator
- Good atmosphere conducive to sharing ideas
- The intro
- The group discussion
- Food was amazing
- Having a facilitator at the table
- Working in a group
- Set up and encouragement
- Leadership by mel
- Provision of background to product – community response great
- Well run and great facilitator to help us on track and time
- Small groups and knowledgeable group members
- Passionate, respectful participants
- Structure of activities, facilitator at each table
- Council involvement (some knowledge on what's existing)
- Small group conversation
- Collaborative process
- Like how the ideas were drilled down to specifics
- Table groups worked positively

What could be improved:

Tweed:

- Tighter program to fit all bits
- More participants
- More advertising about the workshop
- Increase broader understanding of individual accountability
- Survey prior to focus priorities and concerns would help with workshop
- Time (lack of)

Uki:

- Shame there were so few people
- Indigenous people are hard to get to attend these workshops but would be keen to hear from them
- More people

- Participant numbers
- How do we involve more people in workshops like this.
- Involving already existing groups

Murwillumbah:

- Feedback session longer, time for questions
- Little more time – but we produced a good summary of sticky notes when under pressure
- Add a section on the big worksheet about barriers and how to overcome them
- More specific topics to focus our discussion – the topics seemed to be general and bit vague
- How to involve young people and school children
- AC was very cold
- Maybe there was an excess of food and waste
- More specific text of references
- Waiver infrastructure with the first task – leaving the meeting with one task we could do individually or on a table
- Getting our group to focus
- Healthier food

Cabarita:

- Probably needed better sound
- More creative ways of looking at what is and 3d mapping (u-lab tutoring)
- Knowing who all is here not just at our table
- Larger range of age groups (perhaps engagement issue)
- Info session beforehand may not be needed as participants are aware of the climate science if they're involved
- Interaction between groups minimal
- More time
- Maybe a slightly longer session
- Some of the slides with numbers were small and the info was good but hard to see
- Would have liked more information on climate action around the world. What's working
- More guidance on best investment areas to focus on in addressing causes of climate change
- Greater input and promotion to get more involved

Questions raised for you:

Tweed:

- How to involve more people in environmental issues and why people don't attend info sessions or workshops like this
- How to get momentum on good ideas or intentions
- Outcomes leading to action on climate change adaptation, resilience and mitigation
- Something important to us about responsibility and benefit., it costs more than money
- It's important to act

Uki:

- Understand that council does not know how to respond to climate action because they need national and state support
- Really inspired but now how to go forth myself

- How to make time and create pannon to start something new

Murwillumbah:

- Where is our local XR group?
- How can I connect with my local villages community group
- What will this lead to and what will my involvement be?
- I came here feeling that individual actions were insignificant in the grand scheme of climate change and it's implications. I came away feeling more hopeful
- Perceived community helplessness – change from with in – we're all in it together
- The federal government just guaranteed 41.1\$ billion in fossil fuel subsidies! How is it that there is not more community outrage at this squandering of tax payer dollars & add fuel to the existential crisis we are confronting?
- How can that info be more widely disseminated, no ordinary folks are motivated
- Can the ideas work in real life
- Where will this information go? How will it be used?
- Where to? What way forward?
- How much help can discussion at a table really bring to the climate crisis?
- How to engage first nations knowledge and perspectives
- All on the paper but what with funding of \$6k for 1.3 FTES for the 'critical' decade is criminal
- Balancing local and global needs and building awareness

Cabarita:

- How can council promote and support solar in multiple dwellings
- Communications between local groups
- Where are the young people
- What is our level of preparedness in the tweed
- What planning decisions are being made in light of rising sea levels/floods/heatwaves etc
- How do we resource our ideas - \$ and people
- How to connect with each other to become actionable
- Next steps – how can we action these ideas
- Great ideas how does it really proceed into action?
- Who is responsible? Pathways and action
- How do we reach, engage and inspire more people
- How do we equip and empower volunteers to give their time

Ideas that inspired you:

Tweed:

- Ideas mainly confirmed own approach
- Having micro approach that turned macro
- All different ideas and enthusiasm
- Education, public transport
- Save the earth
- All of it was very inspiring
- Utilizing groups that exist and leverage enthusiasm in Landcare wildlife rescue
- Enthusiasm of many to look at issues regarding environment
- Steering committee idea

Uki:

- Ways of making political change
- Idea of getting someone eg Anne Tiernan to teach people how to lobby effectively
- All the ideas that were put forth
- Best is Less
- Seeing the pannon of others is inspiring

Murwillumbah:

- Think local and global act local
- Other people that have more energy to progress the ideas and actions
- Soil health climate health
- Hearing other people with similar concerns and values
- Specific local actions which are doable. How to make the post of people power
- The people at the table
- Community interest
- People proactive and passionate about making a difference
- Soil health
- Act local
- People who are passionate inspire me, Great that events like this happens
- Potential to inspire community action on climate change
- I want to organize a demonstration
- Engaging community to take radical action
- Volunteering and community building
- Education with children

Cabarita:

- Community hub and training and capacity building ideas
- Community resilience hub
- The people who are here
- How ideas are connected
- Community hub- love that idea but linking in with existing resources in each community
- The idea of getting the 'electrification' maybe up and running
- Community hubs – local spaces
- Many
- Having Saul Griffith speak at a public meeting
- Electrification of council as a model
- Community hub
- Community hubs!
- Eco hub and local response
- Hub
- Electrify everything

