

The impact of housing vulnerability on climate disaster recovery: The 2022 Northern Rivers Floods

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Summary

Background

In February 2022, and again one month later, major floods struck the Northern Rivers region of New South Wales. The region had been subject to flooding in 2021 and 2017, as well as bushfires in 2019 and COVID-19 in 2020 and 2021. Government efforts since the floods have focused on restoring some stability to the region, by rebuilding and so returning those affected by the floods to their homes. Two public inquiries into the NSW Government's response to the floods highlighted the importance of expediting this recovery process.

The housing system in the Northern Rivers was, however, significantly constrained before the floods. Sale prices and rents were increasing faster than inflation, social housing wait times stretched for years, and enumerated homelessness and housing compromise was already in the thousands. The latest floods have worsened an already strained housing system in the Northern Rivers. In addition to thousands of homes rendered uninhabitable from flooding, the event exposed the high levels of 'housing vulnerability' in the region: with shortages of low-cost options on the private rental market and inadequate levels of social, affordable, and temporary/transitional housing.

This report has examined the extent to which existing constraints in the housing system have hindered the flood recovery process. Specifically, it has examined the:

- (a) ongoing housing support needed during the medium-term recovery period for parts of the community in vulnerable housing situations, and
- (b) characteristics needed for any 'new normal' housing system that the recovery process works towards, to minimise the disruptions of future climate disasters.

Key findings

After the recent floods, housing support services (for people who are homeless or at risk of homelessness) were subsumed into the flood-response evacuation and emergency housing systems put in place. This included both human resourcing from within public and non-governmental sectors, and the use of housing stock – from hotels and other forms of 'temporary housing' that form part of standard homelessness support programs, to private and social rentals previously available to households on low incomes or with other specific housing needs. This has worsened the situation for people already experiencing homelessness before the floods. Many have had their support services subsumed into wider disaster response efforts that, while welcomed, often do not reflect, and so do not accommodate, their specific circumstances and needs.

The chronic challenge of housing vulnerable people in the community continues to be significantly disrupted, as acute challenges of housing flood-affected communities is prioritised. To be clear, there is an overlap in these two challenges, and the response to the acute challenge following climate disasters should not be compromised; but neither should addressing the chronic housing challenges. That chronic challenge – described by many as a housing 'crisis' – is evidenced by the abovementioned price rises in the private rental market in recent years and related rise in rental stress.

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There are two dimensions to regional rental markets that make them particularly susceptible to the shocks brought about by the loss of stock following a climate disaster, such as the recent Northern Rivers floods. The first is the evidently small size of the private rental market – particularly sub-markets for which there are very few substitutes to absorb the loss of supply: small towns or more remote communities (particularly Indigenous communities) that are not well connected to other housing markets; and housing for large families and housing that is accessible to older people or those with a disability. These groups find it, albeit anecdotally, most difficult to secure suitable housing on the rental market, unless compromising quality, location, or affordability.

The second dimension of the longer-term housing crisis in the Northern Rivers, and other regions, is the evident 'decoupling' of demand and supply, with a loss of private rentals that were, historically, available at a price point affordable to those whose incomes come from pensions or other government payments. Options on the private rental market for those on low incomes are increasingly scarce, creating a 'tipping point' where alternatives to private rental need to fill the gap in housing supply. Various forms of subsidised, social rental housing are not available at a scale for this growing cohort priced out of the private rental market. The shock to housing supply caused by the recent floods has accelerated this urgent and growing need for subsidised housing options in the Northern Rivers.

The corollary of the dysfunctional housing system after the floods has been multiple other disruptions to the recovery process for some parts of the community. This includes exposing more renters and owners to inappropriate housing, including:

- more informal tenures (e.g., staying with friends, informal rentals);
- sub-standard dwellings, including exposure to cold and damp (e.g., returning to floodaffected properties, but also increasing acceptance of low-standard housing that would not previously be countenanced); or
- locations removed from their support networks, community, or employment opportunities.

These housing compromises have exacerbated disruptions to health, income, social connection, and wellbeing that continue to impact the community and delay the recovery process.

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Recommendations

These findings highlight the need for interventions into the housing system of the Northern Rivers, in both the medium term to facilitate the recovery process, but also the longer term to improve resilience against future climate disasters. Specifically, it is recommended governments work with communities and other stakeholders to address eight key shortcomings:

- 1. Identify clear pathways for people to move out of emergency accommodation and into semi-permanent medium-term housing
- 2. Develop more detailed planning around any proposed 'pod home' villages
- 3. Support tenants from the medium-term failings of the private rental market
- Mitigate the impacts of displacement and dislocation from existing community connections
- 5. Build capacity for a more deliberate role for local civil society in response to crisis
- 6. Resource community response accordingly (not rolling one-offs)
- 7. Develop housing system intelligence to inform disaster preparedness and recovery planning
- 8. Develop a more sustainable ongoing social housing sector

Importantly, as the frequency and intensity of climate disasters will increase, the findings and recommendations of this report can inform the wider response to climate disaster planning across regional areas of Australia.

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Housing is a known challenge in post-disaster recovery

Australian and international literature on climate disasters consistently highlights the disruptive effect of housing vulnerability on the recovery processes. The extent of housing vulnerability in the Northern Rivers is evident across a diverse set of parameters – from rental stress to manifest homelessness.

These conditions created significant risks for the Northern Rivers community in the event of a climate disaster. Indeed, much of the public discussion that has followed the recent Northern Rivers floods has focused on the importance of overcoming the loss of housing. However, the challenges facing the most vulnerable parts of the community remain under-reported.

This first part of the report outlines the context for considering how housing vulnerability has exacerbated the impacts of the Northern Rivers flood. It draws on academic literature, available local data, media, and the outcomes of the recent public inquiries into the Northern Rivers flood response.

1. Housing vulnerability increases the disruption of climate disasters

1.1. Housing loss causes immediate problems

In the event of a climate disaster, an individual sense of affectedness is multifactored and difficult to quantify. For many, though, one of the biggest disruptions is the loss of their homes. This includes property owners losing their assets, but also occupants of private and social rentals, those in informal living arrangements and those experiencing varying degrees of homelessness. ²

The loss of housing during a climate disaster can have direct effects on health and wellbeing, where that loss of shelter reduces protection from rain, smoke, or other environmental hazards.³ In the immediate aftermath of a climate disaster, *response* efforts often primarily focus on suitable alternative accommodation – alongside basic provisions of food, clothing, and so on.

1.2. Housing loss, damages, and lack of housing access delay recovery

After the immediate *response*, a longer-term *recovery* phase unfolds. Housing is, again, among a key challenge for many people affected, and central to the various interventions and supports provided: from the ongoing need to secure temporary housing, to the reconstruction of permanent housing, and the transition between the two.^{1,4}

We define recovery from climate disaster as the process to 'build back better'. Build Back Better is a framework to utilise the reconstruction process to improve a community's social, economic, physical and environmental conditions to create a more resilient community. ^{8,9} Here, resilience is the "capacity of a neighbourhood or geographically defined community to anticipate, absorb and manage stressors and efficiently return to daily activities in the wake of a shock to social, physical, or ecological systems." ^{10(p1)} Central to efforts to 'build back better' is the need to respond to pre-existing housing vulnerability, particularly issues faced by marginalised groups. ^{11,12,9}

We define housing vulnerability as those housing conditions associated with socio-economic disadvantage of communities and individuals, such as residential overcrowding, informal or insecure tenure, housing stress and housing in poor conditions. In the context of disaster recovery, housing vulnerability considers both pre-existing and emerging conditions. Housing vulnerability affects different parts of the local community and occurs under different circumstances, and can exacerbate the impact of a climate disaster through, for example, housing loss and recovery issues for tenants and homeowners, or by contributing to an affordable housing shortage.

Those parts of the community affected by pre-existing housing vulnerability are, by definition, more likely than other people to suffer from a shock within climate disaster in the first instance and will struggle to improve their pre-disaster conditions or regain pre-disaster function thereafter.¹³

It is widely acknowledged that recovery from climate disaster spans different phases,⁵ with housing vulnerability a key issue in the middle and long-term recovery phase following climate disasters.¹⁴ Housing vulnerability exacerbates socio-economic inequalities in local

communities,^{15,16} it accentuates social conflicts around housing programs by increasing public and political pressure,^{5,15} and disrupts livelihoods and economic and social status in communities affected by disaster.^{14,17} Additionally, housing vulnerability impacts the overall economic and social recovery of affected communities, and undermines community resilience.^{18,19}

The pace of individual recovery will vary and, following the immediate urgency, multiple factors will dictate individual capacity and desire to rebuild over the medium and long-term.²⁰ As such, responses from support services will require a more comprehensive evaluation of the affected sites, vulnerability and risk, drawing upon consultations with the local community.^{e.g., 5} The aim is not to 'rush' recovery, but a crucial role of support services, including governments, is to ensure individuals affected are able to identify a clear pathway to recovery.²¹

To remove barriers with the potential to delay individual recovery, the aim of support services in this phase is to provide clarity across multi-sector policies, and long-term strategic planning, including housing support. Further, support along the path to recovery is critical as local communities require ongoing consultation and information to diminish frustration and anxiety associated with long-term plans and uncertainty. Such considerations would help decrease the vulnerability of affected populations in the long-term.

It is in this medium-term recovery phase that opportunities arise to develop tools to overcome barriers and so introduce more sustainable and equitable housing systems.⁴ Addressing housing vulnerability in this phase aligns with broader objectives to 'build back better'.^{5,12} The recovery process after the recent floods in the Northern Rivers, particularly how vulnerable parts of the community are supported, will determine how equitable, sustainable and ultimately resilient the resulting local community will be in the face of future climate disasters.

1.3. Vulnerable communities are more likely to experience housing loss

A recent study on disaster resilience in Australia showed that regional areas only have a moderate capacity for disaster resilience and moderate adaptive capacity.²² After the recent Northern Rivers floods housing vulnerability and the medium-term community recovery will likely be a challenge.

Housing vulnerability is a big predictor of the likelihood of which parts of a community will experience more medium-term disruptions and difficulties in coping with and recovering from the impact of a climate disaster. Housing vulnerability includes factors such as homelessness, tenure insecurity in the private rental sector; poor housing quality in terms of building construction of permanent and temporary housing (e.g., flood-affected houses and temporary caravans), housing suitability in non-private dwellings (e.g., overcrowding in hostels, boarding rooms), relocation and displacement.¹⁷ Housing vulnerability also includes unaffordable housing repair or reconstruction costs, availability of building materials and procuring building expertise, and barriers associated with demolition or building approvals.^{23,24}

Several studies have been conducted on the capacity of different parts of a community to recover in the medium to long-term from climate disasters. It is widely demonstrated that low-income communities take longer to recover from climate disasters than high income communities. 9,14,15,17,20,21

Reviews into the nexus of poverty and disasters in the United States found low-income renters, people experiencing homelessness, middle-class families, and low-income elderly women are more likely to struggle to recover after disaster. There is nuance within the broad category of 'housing vulnerability', with low-income marginal homeowners, landowners and renters likely to take longer to recover, due to limited accessibility to government housing programs, limited capacity to find alternative housing, and delays to repair damaged housing.^{e.g., 19,26}

Low-income communities are another group that can take longer to recover in the long term. Low-income families living in poorly constructed housing, for example, are less able to afford to repair their dwelling, so might be forced to relocate after a climate disaster in order to access government sponsored housing or live in temporary housing while waiting for information about where they will be resettled.⁵

Community members relocated to a foreign environment are less likely to fully recover in the long term, due to: difficulty developing a sense of community with non-established groups of cultural and socioeconomic classes, further exposure to climate disasters at resettlement camps, and disruption in terms of job continuity and livelihood.⁵ Other vulnerable groups that may find recovery challenging are Indigenous Australians,³ older people, migrants, uninsured homeowners, extended or multi-generational families,²⁷ and occupants of single-room apartments or similar.¹⁴

Social capital, housing vulnerability and disaster resilience are deeply interconnected. Social capital plays an important role in post-disaster recovery. ^{28,19,21} It has been demonstrated how neighbourhoods with strong social networks supported residents in the recovery and reconstruction of disaster affected areas. ³¹ Research shows that residents' social capital facilitate collective action, reciprocity, and civic engagement independent of social vulnerability. ³² In addition, communities with strong social ties have greater capacity to share resources, organise and lobby government to respond to their needs, overcome resource inequalities due to socioeconomic or race conditions, ³³ and help communities respond to and recover from disaster, independent of social vulnerability. ^{32,10}

2. The Northern Rivers housing system was already constrained

2.1. Homelessness

In 2016, across the Northern Rivers, 733 people were homeless and 1,619 people lived under compromised dwelling conditions.³⁴ These populations represented nearly 9% of the total in NSW (27,483) in 2016.

Table 1. Homeless and dwelling compromise in the Northern Rivers, by operational group (2016)

	(2010)		
•	Homeless	Persons living in improvised dwellings, tents, or sleeping out	429
		Persons in supported accommodation for the homeless	187
		Persons in other improvised dwellings	117
	Dwelling Compromise	Persons staying temporarily with other households	344
		Persons living in boarding houses	146
		Persons in other temporary lodgings	26
		Persons living in 'severely' crowded dwellings	137
		Persons living in other crowded dwellings	408
		Persons who are marginally housed in caravan parks	558

Source: Australian Bureau of Statistics 2016

In the Northern Rivers, the total number of improvised homes increased by 1,362 between 2011 and 2016. "Improvised homes" includes caravans, cabins, houseboats, tents, and rough sleepers out both inside and outside caravan parks (including caravans in private backyards). In 2016, there were 6,751 improvised homes which can be divided by local government areas as follows:

Table 2: Improvised homes in the Northern Rivers, by local government area (2016)			
Tweed Shire	2,318		
Clarence Valley	1,412		
Byron Shire	1,007		
Ballina Shire	808		
City of Lismore	594		
Richmond Valley	490		
Kyogle Council	122		

Source: Australian Bureau of Statistics 2016

2.2. Social housing waitlists

In 2021, there were 2,150 applicants for social housing in the Northern Rivers, representing 4.3% of all NSW social housing applicants (49,928). The social housing applicants included general applicants (87%) and priority applicants (13%). Priority applicants are "applicants with complex and urgent housing needs who are not able to rent privately".³⁵

According to the NSW Department of Communities & Justice,³⁵ the expected waiting time for social housing varies across the local government areas. Tweed Shire has the longest waiting period for social housing: 10 or more years for 1-, 2-, 3-, and 4-bedrooms social housing units. Kyogle Council and Clarence Valley are the areas with the "shortest" waiting period within the Northern Rivers region: 5 to 10 years for 2-bedrooms units, 2 to 5 years for 4-bedroom units. The Richmond Valley Council appears to be the only area in Northern Rivers region with no social housing supply.

Table 3. Waiting time (years) for social housing applicants in the Northern Rivers, by local government area at 30 June 2021

Area	1-bed	2-bed	3-bed	4-bed
Tweed Shire	10+	10+	10+	10+
City of Lismore	5 to 10	10+	5 to 10	5 to 10
Ballina Shire	5 to 10	5 to 10	5 to 10	5 to 10
Byron Shire	10+	10+	10+	5 to 10
Richmond Valley Council	NA	NA	NA	NA
Kyogle Council	NA	5 to 10	5 to 10	2 to 5
Clarence Valley Council	5 to 10	5 to 10	2 to 5	2 to 5

Source: NSW Government Communities & Justice³⁵

2.3. Rental stress and rising rent and sales prices in private rentals

Between 2017 and 2021, among the local government areas in the Northern Rivers, Tweed Shire residents and City of Lismore residents experienced the highest median weekly rent increase (39.5% and 36.4%), while Kyogle Council residents experienced the lowest median weekly rent increase (14.3%). All council areas had higher rates of growth than NSW overall, which increased by 4.2%, according to the NSW Government Rent Report.³⁶

Median weekly rent in Byron Shire was highest (\$670) in December 2021, compared with all other local government areas in the Northern Rivers, and higher than median rents in NSW (\$465). In the same period, median weekly rent in the Kyogle Council area was lowest (\$320) among the Northern Rivers local government areas.

Table 4: House rents in the Northern Rivers, by local government area **Med Value Dec Med Value Dec** % Change 2017 2021 **Byron Shire** 590 27.1 750 **Tweed Shire** 430 600 39.5 **Clarence Valley Council** 350 430 22.9 **Ballina Shire** 450 600 33.3 **Kyogle Council** 280 320 14.3 35.5 **Richmond Valley Council** 310 420 **City of Lismore** 330 450 36.4

475

495

4.2

Source: NSW Government Rent Report³⁶

New South Wales

Between 2017 and 2021, among the local government areas in the Northern Rivers region, median sales price growth ranged from 104.8% in Byron Shire to 48.6% in Clarence Valley Council. All council areas had higher rates of growth than NSW overall, which increased by 30.4%, according to the NSW Government Sales Report.³⁷

The median sale price in Byron Shire was highest among the local government areas in the Northern Rivers in December 2021 (\$1.7 million), and also higher than the median price for NSW (\$880k). In the same period, median price in the Richmond Valley Council area was lowest (\$488k) among the Northern Rivers local government areas.

Table 5: House sales	price in the Northern	Rivers, by local	government area
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	Med Value Dec 2017	Med Value Dec 2021	% Change
	\$'000s	\$'000s	
Byron Shire	830	1,700	104.8
Tweed Shire	560	870	55.4
Clarence Valley Council	370	550	48.6
Ballina Shire	594	1,010	70.0
Kyogle Council	300	500	66.7
Richmond Valley Council	320	488	52.5
City of Lismore	379	690	82.1
New South Wales	675	880	30.4

Source: NSW Government Sales Report³⁷

In 2021, 45% of private renters in the Northern Rivers were experiencing rental stress, compared to a rate of 36% across both regional NSW and NSW overall, and 32% across Australia. The levels of rental stress reflect the proportion of private rental households, regardless of income and housing type, spending 30% or more of their income. In 2021, all local government areas in the Northern Rivers region exceeded the state-wide rates of rental stress, with Lismore City having the lowest proportion of households experiencing rental stress (41%), and Byron Shire having the highest proportion of households experiencing rental stress (50%).

Table 6: Levels of rental stress in the Northern Rivers, by local government area (2021) **Byron Shire** 50% **Tweed Shire** 47% **Clarence Valley Council** 43% **Ballina Shire** 42% **Kyogle Council** 42% **Richmond Valley Council** 42% 41% **City of Lismore New South Wales** 36%

Source: Australian Bureau of Statistics 202138

3. Housing has been a prominent part of the discussion after the Northern Rivers floods

3.1. Immediate impacts and response

The incredibly disruptive flooding events in February and March 2022 garnered much media attention. Although not all media coverage focussed on it, housing issues were central to much of the coverage (see the Appendix).

The evacuation orders, the inundation of residential properties, and the rescuing of people from their homes during the flooding was a common dimension to the immediate news coverage of the floods. 40,000 people were subject to evacuation orders, with 7,000 homes estimated to be inundated by flood waters or in some other way flood affected.³⁹ Stories in the news told of people being reluctant to evacuate, being separated from family or pets, trying to protect their homes, or being stranded or isolated by flood waters, landslides or damaged bridges or other infrastructure.^{40,41,42,43} There were also stories relaying the death of one elderly person who did not manage to evacuate.⁴⁴

Some media coverage relayed the efforts of the community to help check up on neighbours or others who were not accounted for. In addition to the provision of governmental, and other formal, support at the evacuation centres, this informal response and crisis management was a common theme, with people staying with friends or even strangers. While universally lauded, informal responses did conceal, or otherwise make it harder to assess, the real need for emergency housing in the immediate aftermath.

3.2. Ongoing disruptions and recovery

After the flooding events themselves, news coverage turned its attention to the clean-up.⁴⁷ This included the challenge of making people's homes habitable again, of people losing possessions from their homes, and of the gaps in insurance coverage of many – either because they were not previously considered at risk of flooding or because insurance had become too expensive.⁴⁸

There were also news stories relaying the challenge of reconstruction. In the immediate term, there was a lot of uncertainty about what would happen to damaged homes, and so a sense of 'limbo' affecting those unsure of if and when they would be able to begin rebuilding.^{49,50} This was reported to have a large emotional toll on people.⁴⁸ There was also commentary that the house rebuilding process was going to face significant hurdles, in terms of delays or elevated costs, with limited labour and materials in the region to respond to the anticipated demand.
^{51,52}

The uncertainty about the prospect of people returning to their own homes was coupled with uncertainty about the medium-term accommodation options and the difficulty of staying in the evacuation centres.^{53,54} The options available included hotel rooms and sports camp dormitories, some mobile homes and the promise of 'pod homes'.⁵⁵ There was initial appeal among those looking for medium-term housing to secure a pod home on their property while they renovated,⁵⁶ and lamenting of the delays in their arrival.⁵⁷ However, the media coverage then switched to considering them a form of supported housing for those with chronic

housing challenges – in specific 'villages' and managed by a community housing provider.⁵⁸ Another government response that was raised, but yet to be resolved at the time of writing (see the inquiries below), was the question of land swaps or buy-backs for flood affected properties.⁴⁴ This lack of certainty compounded the sense of 'limbo'.

The shortage of options for people to move out of the evacuation centres led to regular noting of people taking informal support – staying with friends or even strangers,^{59,60} or even moving back into their own homes or camping on their own properties, without power, water or other infrastructure.^{61,62} A driver of this latter option was the lack of pet-friendly temporary/emergency accommodation.⁶³ The risks of living in unsafe housing,⁶⁴ particularly as mould emerged or the weather turned cold,⁶⁵ was another common feature of news narratives.

Affected people accepting compromised housing conditions, either in their own homes or in other temporary options, like caravans or garages, was also linked to the longer-term challenges facing the housing market in the Northern Rivers. This included the ongoing affordability and availability challenges in private and social rental,⁶⁶ as well as holiday lettings reducing housing supply, despite being seen by some as pivotal to the region's tourism economy.^{59,67} There was some limited coverage highlighting the challenges of particularly vulnerable communities,⁶⁸ including victim-survivors of domestic violence,⁶⁹ people with a disability⁷⁰ or remote Indigenous communities.⁷¹

3.3. Longer term policy response

More recent coverage focused on longer-term interventions, including land-swaps and buy-backs, planning controls to ensure new developments are more resilient to climate disasters, or a 'planned retreat' from existing developed areas.^{72,73,74,75} In addition to those already mentioned, other government support covered by more recent media included financial support for rental payments, for renovation costs and for rates costs.^{55,72,76} There was also media interest in the two inquiries established to review the government's response to the floods.⁷⁷

3.4. The NSW Government and Legislative Council inquiries

On 21 March 2022, the Acting Premier announced an independent inquiry into the causes of, preparedness for, response to and recovery from the 2022 catastrophic flood event (the 'Independent Inquiry'). Separately, on 23 March 2022, the Legislative Council of the NSW Parliament established an inquiry into the response to major flooding across New South Wales in 2022 (the 'Parliamentary Inquiry').

The terms of reference for each inquiry only made oblique references to the extent to which the housing system played a role in the floods translating to significant disruptions to the community. In the Independent Inquiry, the Terms of Reference included consideration of (inter alia) 'responses to floods, particularly measures to protect property' and 'recovery from floods, including immediate housing measures'. The Parliamentary Inquiry had more confined terms of reference, focusing specifically on the preparation, resourcing, coordination, communication, and effectiveness of the NSW Government's response. There is no direct consideration of housing, however the NSW Government's 'departments and agencies'

examined by the Parliamentary Inquiry include those with carriage of housing policy and planning.

In both cases, the inquiries comprised significant consultation with those affected by the floods across NSW, including in the Northern Rivers. This included public hearings and other opportunities for input, but notably included receipt of written submissions. The Independent Inquiry published over 1200 submissions it received, and the Parliamentary Inquiry published nearly 100 submissions. As such, the focus of the two inquiries provides another important channel to reveal the public discourse around the floods and the housing challenges in particular.

There were several common themes across the two inquiries, particularly where they considered housing systems and challenges:

Communities need to be resourced to respond to disasters

Although not explicitly intersecting with housing systems, both inquiries acknowledged the essential role of the local community in the effectiveness of the immediate disaster response. This was partly acknowledging the capacity community members could offer individually, but which was often not utilised. However, building on a longstanding and known phenomenon in disaster response, there was also recognition of the role of established local civil society in contributing to, even coordinating, the response – from community groups to non-governmental organisations. The Parliamentary Inquiry recommended community groups be integrated into disaster response, 79(p87) and the Independent Inquiry similarly recognised the role for not-for-profits in the recovery process. 78(p169)

The importance of this acknowledgement is that much of the capacity for the community to respond to disaster reflects the presence of a robust civil society of community groups and support services. These services, as noted in the next part of this report, are pivotal in ongoing social support for vulnerable people in the community. They offer existing institutional capacity to pivot to disaster response but are not typically well-resourced to do so. Of note, the Independent Inquiry highlights the need to train those in the local community in immediate disaster response, 78(pp107, 116, 204) but does not, unlike the Parliamentary Inquiry, reflect on the role of local civil society networks within the community serving as a conduit for the bespoke/reactive structures that proved effective in responding to the Northern Rivers floods.

Recovery processes need to be faster

Also not confined to a question of housing, both inquiries placed a particular emphasis on speeding up the recovery process. The Independent Inquiry unpacked the importance of a 'reconstruction' authority to improve the efficiency of the recovery process, ^{1(from p237)} and similarly highlighted that the priority was to rehouse flood-affected people quickly. ^{78(p299)}

Both inquiries also emphasised the impacts of delays during the recovery process. The Parliamentary Inquiry discussed the challenges of establishing emergency/temporary and medium-term housing options in the Northern Rivers. ^{79(pp94, 123)} And the Independent Inquiry connected the delays and uncertainty in the recovery process with mental health impacts and the wellbeing of those affected. ^{78(p231)}

Housing location and stock is not well equipped to deal with floods

There were many facets that fall under this broad dimension of the inquiries' findings. One very prominent feature of both was the challenges of mould after the floods. The Parliamentary Inquiry and the Independent Inquiry noted this challenge in the flood-affected areas, along with the direct damage of water ingress, to both dwelling and contents. ^{79(pp104, 125),78(p297)}

The shortcomings of the location of existing housing, insofar as it is flood prone, was also a feature. This included discussion about the insurance costs and challenges for those living in flood-prone land in the Parliamentary Inquiry, 79(p99) and the age and condition of housing stock in flood-prone land in the Independent Inquiry. 78(p298)

This theme extended to consideration of planning to adapt for future disaster risk. This included extensive discussion of options for planned retreat through buy-backs and land-swaps with owners of flood-prone properties, 79(pp97, 123),78(p292) and improving building standards, and measures such as 'house raising', on flood-prone land. 79(p127),78(p298)

The chronic 'housing crisis' was a factor in the impacts of the recent floods

In both inquiries, and of particular relevance to this report, there was recognition that the longstanding 'crisis' in housing affordability had translated to greater impacts on the community. ^{79(pp92, 122),78(p296)} The cost of private rentals was noted with particular reference to the fact that such conditions made it harder for flood-affected households to find alternate medium-term accommodation, and that it inhibited government ability to provide temporary or emergency accommodation to those same flood-affected households.

"There are still some 1300 in emergency housing across the Northern Rivers, more than four months after the floods. This is driving more demand for social, affordable and market rental housing and has worsened homelessness. Urgent action is needed to provide fit for purpose, resilient homes for the displaced or those who continue to reside on high-risk floodplains." 78(p300)

One additional section of the Independent Inquiry noted that housing compromise, manifest as long-term tenancies in caravan parks not intended for that purpose, also exposed vulnerable people to the impacts of floods.^{78(p303)}

4. More vulnerable Northern Rivers community members have had less attention

This review of the recent public discourse about the shortcomings of Northern Rivers flood response, through media and public inquiry processes, highlights the multiple ways the housing system in the Northern Rivers intersects with the challenges of responding to and recovering from climate disasters. In both media and the inquiries, though, the emphasis is on the challenges facing the community 'as a whole'.

The risk of this framing is a tendency to homogenise the community that is affected by the floods. The problem is that the concomitant recommendations for interventions will respond to the needs of the parts of the community that reflect that homogenised amalgam – such as homeowners, or those with good health, mobility, personal support, or economic capacity. Through such a lens, the emphasis on the need for government support to catalyse a 'quick' recovery, by removing barriers so individuals can identify a path to 'get back to normal', is appropriate.

However, there are a few points to note here. First, this general conclusion that the inquiries homogenise the community is not universally true. The Independent Inquiry makes specific mention of members of the community already experiencing housing and other vulnerabilities. One notable passage is:

"No evacuation centre can be expected to be an enjoyable place for anyone escaping a natural disaster. However, vulnerable populations are particularly at risk during disasters. In the case of the Northern Rivers, many vulnerable people live in less resilient accommodation in lower lying flood-affected areas. This group is more likely to be disadvantaged by flood events and their needs should be better considered in the development of emergency management plans. These cohorts are also less likely to have stable friends and families to stay with after an evacuation, so the transition from evacuation centres to alternative accommodation for vulnerable people needs to be particularly considered as part of disaster planning and preparation." 78(p152)

Second, this is not to suggest that homeowners or financially secure parts of the community are not vulnerable to floods, or not in need of better structures to support them after climate disasters, as recommended through the inquiries. It is simply to stress that the focus on these parts of the community leaves little space to unpack the heterogeneous needs of others, particularly those with greater, more complex, or more specific need for support during the recovery phase, particularly for those for whom that phase will be more protracted.

The effect is that parts of the community that are vulnerable, or marginalised, in normal conditions, such as those facing homelessness or in need of social housing, are similarly marginalised during the recovery processes after a disaster. The quotation from the Independent Inquiry on the previous page even notes that the recent floods, and inadequate response, is creating "more demand for social... housing and has worsened homelessness". Although not likely the intent of the report's authors, this passage inadvertently implies pre-existing unmet demand for social housing and homelessness is less of a concern.

More generally, there is an understandable reluctance to engage with the challenges in the housing system faced by the Northern Rivers as part of an inquiry into the recent floods because those challenges are:

- chronic not acute (like the elevated levels of homelessness, noted earlier in this report);
- universal, not local (like social housing shortages across Australia); and ultimately
- multifaceted, not flood-caused (like the loss of low-cost rental attributed to urban-regional migration during COVID-19).

Despite this criticism (on language used as much as intent of the inquiry report authors), the Independent Inquiry had one wide-ranging recommendation (Recommendation 24) that parallels the recommendations outlined later in this report. Some notable points within that recommendation are: $\frac{1(p \text{ from 302})}{1}$

- ensuring flood-displaced residents in emergency housing who have no safe return to home options are re-homed in more permanent settlements where community can be reestablished, and that emergency housing clusters do not take on de facto permanency (cf. Recommendation 1 of this report)
- developing a code for flood resilient, environmentally sustainable building that accounts for current and likely future supply chain disruptions and extends to modular and manufactured homes (cf. Recommendation 2 of this report)
- additional market interventions to improve rental affordability and ease vacancy shortages to reverse homelessness and take pressure off social housing waitlists (cf. Recommendation 3 of this report)
- investing additional state, Commonwealth, and private sector monies to grow the stock of social and affordable housing (cf. Recommendation 8 of this report)

What is notable about these recommendations, both from the analysis of this report and the Independent Inquiry, is that they are not new. There have been longstanding calls for such measures. There is a similar familiarity to the recommendations in this report – such as increasing social housing or improving tenancy security in the private sector – that have been advocated outside the specific context of disaster recovery.

There are crucial links between the Northern Rivers flood impacts and housing vulnerability

To better understand the diverse interventions needed, it is necessary to understand the specific impacts of the floods in the Northern Rivers on more vulnerable people in the community. This includes the pressures on support services, and on the temporary, social and 'low cost' private rental sectors.

This second part of the report thematically reports the emerging issues facing these people in the community, and the shortcomings in support provided to them after the recent Northern Rivers floods. It is based on, and presents excerpts from, interviews with key stakeholders in the emergency response and longer-term housing and community support services (see the Appendix for details).

5. Existing housing support services were diverted to contribute to the flood response

5.1. Existing local housing support networks were readily redeployed

One prevalent pattern in the response to the recent floods was existing networks of housing support providers being redeployed to support the disaster response efforts.

"Every NGO, they're trying to do emergency relief stuff but doing business as usual as well. So, that didn't work, because... the bandwidth so small it's just impossible." (WS1)

Organisations in this space – both public and non-governmental – felt capable of contributing to relief efforts, but not well resourced to do so.

"The focus has changed, they're in emergency response now. So that you're not proactively and strategically working; we've always worked within limited resources." (CH1)

5.2. Support providers were flood affected too

These organisations, like all parts of the community, were also affected by the floods. This includes loss of offices, facilities and housing and accommodation that is usually available to help meet client needs.

"Three of our offices went underwater. We lost everything... so the first few weeks were really finding ... what else we needed to do? Ringing around, checking." (WS2)

Many staff members were also affected by the floods, and faced their own disruptions to homes, families, and community networks. This meant human resources for services providers were also disrupted.

"Your frontline staff, they're both impacted personally but also... if it's not the direct impact on the properties, it's family, friends. That impact has been so broad you just can't get away from it." (CH1)

5.3. 'Business as usual' roles disrupted at worst possible time

The combination of disruptions to service providers has created greater challenges to the capacity to focus on, and continue to provide, ongoing 'business as usual' support for vulnerable clients.

"Over the last four years, we've been in constant disaster management mode, particularly around bushfire, flood, COVID ... Usually using [our housing options] for emergency accommodation. So, prior to any disaster we already had this... very difficult space to navigate because there's just not enough housing for us to be able to place people in." (WS1)

This disruption is expected, however, to have limited ongoing impact, with most service providers adjusting to the changing conditions and returning to more typical operations.

"Over time we were successful, so I can thankfully say we did get across all of our clients. That took a group effort. So, everyone stepped down at their work roles and we just went into phoning and calling and trying to get in touch." (WS3)

5.4. This is not a 'one off' demand on resources

The providers were also increasingly having to develop their capacity in servicing communities after climate disasters, particularly where funding was beginning to be made available to provide such services.

"We've really been in that cycle of emergency planning and response for some time. We basically set up a crisis management team some time ago and they've just pivoted from one episode to the next." (CH1)

In some cases, there has been a concerted effort to integrate disaster response into the 'business as usual' services that they provide.

"I am now thinking about... whether [our organisation] needs to change its focus over the next year or two to be a place to bring communities back together and deal with trauma...The focus has kind of shifted a little bit. It's more about recovery now." (CH1)

Again, however, this was difficult, with funding and support for such service provision linked to individual events. The frequent, even ongoing, nature of such events, and so the ongoing need for such services, meant many organisations have had 'one-off' teams operating for several years.

"We're three or four years into extra crisis money time being thrown at us... But [it's] also exhausting because you have to be this super resilient organisation that keeps saying, 'no, please wonderful staff stay because we'll find money somehow!'... And yet, who knows what will be in a year when those permanent staff have been given the fourth fixed-term contract and say, 'no, I'm going to leave'. We won't be able to deliver in the same way." (TU1)

6. Already-scarce housing options for vulnerable people became non-existent after the floods

6.1. Connecting people with housing has become harder

Although service providers have increasingly been able to pivot back to providing their core services, the flood has had longer-lasting impacts on the housing and accommodation options that are available to provide this support.

"It's like there's nowhere to go anymore. There are no wins. It seems that the whole private rental market is just not available. I mean initially because it was unaffordable and now, because of the loss of stock, they even increased the unaffordability of it all." (CH2)

Housing and accommodation options were already in extremely short supply before the floods. Under conditions following the flood, there is often no housing or accommodation options to offer to those presenting for support or, at least, confusion about whether clients of homeless services should be folded into emergency accommodation support.

"There was still the gap between people who were [rough] sleeping, weren't seen as flood affected, even though where they were sleeping had gone underwater. So, we were having a lot of discussions about who was entitled to get temporary accommodation." (WS2)

6.2. Need for social housing has increased

One area particularly affected has been the supply of social housing – both public and community housing. Those experiencing acute impacts from the floods are elevated to the highest priority, and so adding to already long waitlists for social housing.

"We're talking 1,500 people that don't have accommodation. Social housing isn't necessarily the option for all, but it certainly is for a proportion." (SG1)

"There is an incredible mismatch between supply and demand for social housing across the board." (SG1)

Significantly, the floods have meant some people who would always have been eligible for social housing but were not previously on waitlists, are now seeking, and in some cases being offered, social housing options.

"They had a granny flat, somebody helped them out [with below-market rental]. But now [the owner's] family members were flooded out... And they fixed the granny flat, and they moved into that... People who've been renting granny flats and smaller single accommodation, they can't go back, or the owners are not going to let them back." (WS2)

The housing arrangements of this latent source of social housing demand were, in some cases informal, unaffordable, or otherwise unsuitable. Even suitable housing options (like low-cost private rentals, discussed below) have been lost or disrupted due to the floods, creating the potential that this increase in demand for social housing will be permanent.

"We haven't seen a massive spike in [new demand]: [the demand emerging now] may already have been to us for assistance and... have, in the meantime, resolved their situation in the private rental market. And it is now being affected. So, because they simply can't go back to

that property, we're now reinitiating that application. And, because you were suitably housed before, you weren't prioritised above other people that were also in urgent need. But now you absolutely are." (SG1)

6.3. Temporary housing options have been lost to other occupants

Hotel rooms, hostels and other forms of temporary or transitional accommodation have also been severely diminished for high-needs clients, particularly those at risk of homelessness.

"We've learnt through providers that half of our temporary accommodation across a huge region is wiped out. [Limited accommodation] is still in existence and people not flood-affected are trying to access [it] as well." (WS3)

As noted above, this is partly a function of many sources of accommodation being directly flood affected. It is also a function of the accommodation increasingly being occupied by those in the community that are directly flood affected.

"[I know] of several individuals who have tried to access temporary accommodation and being informed that, well, there's simply nothing available in Lismore." (HS1)

Importantly, these sources of accommodation for vulnerable households are likely to remain below pre-flood levels for some time.

"In Lismore, for example, every caravan park and motel was actually flooded, so there were no accommodation options in the CBD of Lismore or at all...! have to go at least 30 kilometres away to start looking at accommodation options." (LS2)

6.4. Evacuation centres did provide temporary options for at-risk homeless

One observation made, to counter this narrative of a dearth of housing options for those at risk of homelessness, has been the availability of evacuation centre accommodation and resources to connect them to temporary accommodation.

"[We had a] situation where an individual was given an allocation of temporary accommodation. Not because he was flood affected, it resulted from the evacuation centre." (HS1)

This option is not primarily for high-need clients of homelessness services, though, meaning the emergency accommodation options are not always fit for purpose, particularly for those in need of 'wrap around' services for health and income support as well.

"The real concern I'm hearing from staff is around people that have mental health problems and are possibly being thrust into shared places or all the motorhomes or especially the evacuation centres.... They're not accustomed to being around large crowds or having to interact with other people that possibly may not be on the same level as them or have other mental health concerns themselves." (LS1)

And, importantly, this source of accommodation is not expected to remain available over the medium term. The shortage of alternatives, though, is thought to create difficulties in moving vulnerable people to alternatives in a realistic timeframe.

"It was evacuation centres initially, but once they closed down, obviously the temporary accommodation that was previously available was just swamped, like the demand was way above the supply." (RM1)

7. Parts of the housing system are too 'thin' to withstand lost supply

7.1. Social and affordable housing is ever more scarce

As noted above, subsidised housing options for those on low incomes was already in short supply before the floods. As such, any housing lost from this sector due to the floods is difficult, if not impossible, to find substitutes for.

"People who already needed housing, weren't getting a house. They've got no chance of getting housing now because of the [flood] that displaced social housing tenants who need to be relocated. Currently, tenants living in temporary accommodation are being parachuted into any available social housing stock." (CH2)

Similarly, the floods have disrupted the pipeline of future supply to this sector. Given its small scale, such disruptions have an outsized impact on the ability of organisations to provide support services.

"And there were some organisations that were starting to think about building, and we were building too. We had twelve small homes [under construction]. They were 'out of flood' but they got flooded this time... It was still being built, so we got builders insurance. Now we're trying to think 'what will we do?' because now it's 'in flood'." (WS2)

The sector was also facing challenges with rising costs – particularly insurances – that was undermining the already difficult financial viability of social housing.

7.2. Smaller communities make finding private rental housing harder

Similar observations were made with respect to the private rental market. Small regional towns typically have lower volumes of private rental properties. As such, and particularly as rents were growing before the floods, alternatives to a rental lost to the floods are difficult to find.

"The places affected by floods are the ones we're talking about that, you know, were previously a little bit more affordable. So, there was already nowhere for people to go." (CH2)

There is also a much lower level of integration with other housing markets across the region (between various small towns, for example), compared with larger metropolitan contexts.

"There is an issue, and we need to be able to build a different model for regional towns and remote rural communities because we can't rely on the normal economic forces and models to tide us through. Particularly in this rebuilding, we're in a state of an emergency." (CH1)

This is particularly true when access to a private vehicle is limited (shared among adults in a household, for example). The result is that these other towns do not serve as substitutes for someone forced to find a new rental.

"From South Ballina to Ballina, it's \$100 each way for a taxi to go grocery shopping... she had a stove and everything where they located her in a cabin in the caravan park. But it would cost her \$100 to get to the grocery store. Then they would put families into motels without any cooking facilities... Those guys had to go and buy take away food all the time." (LS2)

7.3. Housing suitable for specific needs is particularly difficult

When tenants have particularly specific housing needs, finding a suitable substitute is even harder. Large, or extended, families were identified as one key cohort that is likely to find new housing options difficult to secure.

"Lots of families are a bigger one [cohort]. You might not be able to fit them into caravans with everyone." (LS1)

Similarly, those with more limited mobility, due to age or disability, are likely to find accessible housing difficult to secure.

"Everything that we've got is not fit for purpose. It's old and the refuges we've got aren't accessible for people with disability. But that's already a group that were already desperate and [we] couldn't deal with. Now they're even further back." (CH2)

7.4. Rental markets at low-cost end of market also dissipating

Longer-term increases in rents, as noted, have also meant that fewer options are available at prices affordable to those on low incomes.

"The rental market really changed with COVID because people were working from home... and the prices were up. And now... we've got this flood impacted group. So, they're moving into that space. Our vulnerable cohort, they haven't even got a look in for getting that sort of rental accommodation at all." (WS1)

These factors all suggest a 'thinner' private rental market across the Northern Rivers that has less capacity to absorb shocks, particularly negative supply-side shocks like a climate disaster.

"So, we've been impacted in lots of different ways, but it's a really thin market, slow supply, with not a lot of options to build. So, it's really constrained." (CH1)

"There's a dearth of available tenancies and affordability was an issue beforehand. There was already a rental crisis and because there was a shortage, the demand and the rent were being pushed up. I'm concerned that it's still happening or it's happening more since the floods because there's less supply." (RM1)

One factor that emerged was the availability of suitable rental housing for those with pets. As discussed below, people's concern for, and desire to stay with, their pets during the recovery process made securing suitable housing much more difficult.

7.5. Limited medium-term options for those with longer disruptions

The 'pod home villages' proposed as part of the solution to medium-term housing shortages had not been employed by Resilience NSW, or the NSW Government generally, before these floods. As such, implementation has understandably experienced issues and been slower than hoped.

"But it is very slow going. They plan to have thousands rolled out eventually. It's having some delays with getting permission where they could put it on land." (SG1)

"The response of the community in some flooded areas has been quite antagonistic – that they don't want the villages here. And so that process of trying to liaise with different government agencies [creates]... a communication issue generally between trying to get that many people on the same page." (LC2)

Pod homes have been deployed in other natural disasters, but in those cases were used in smaller volumes, and typically located on the occupants' properties while they awaited repairs to their home.

"It's homeowners or people that own their own properties and they want a pod. So, they have somewhere to live whilst they rebuild. And whilst they can do repairs that are necessary, they are the cohort that have been asking the loudest for that sort of a solution." (SG1)

In the Northern Rivers case, 'pod homes' will be in villages or estates, more akin to caravan parks. Such arrangements are not suitable for all those seeking medium-term housing options, including those with need for wrap-around services.

"Pod villages [are being built] in different places all across Northern NSW, and the intent is that they are for up to two years. So, we're not talking short-term, couple of months here and there, we are talking about stable accommodation: they're fully powered, access to services. They need know where the nearest shops are... In some locations, they're trying to build almost a mini village and have a small supermarket right there for people to access." (SG1)

"But that's not a long-term solution. I think it's just to give someone a roof over their head until things settle down." (RM1)

And there are no identified medium-term options for those for whom the pods are not suitable – large families, for example – who are likely to continue to occupy emergency accommodation until permanent housing can be secured.

"These pod sites are literally 'meanwhile' uses now, but there may have to be a discussion about how they're 'meanwhile' now but can we step-by-step transition them into a more integrated housing solution?" (LC1)

"Hotel accommodation or the pods, for example, is just temporary... That was kind of an emergency response. But I think [we need] a broader long-term response to the temporary emergency housing." (RM1)

8. Low-cost private rental is less viable under post-flood conditions

8.1. Repairs, insurances and lost rental income costs add up

With respect to the private rental sector, it is noted that lower-cost options are more common in areas at higher risk of flooding, so are disproportionately affected.

"The owners of properties have just walked away. They're not coming back... There won't be stock there because, if you've had you know serious inundation over that short period – if we say five to six years – their houses need to be rebuilt because of structural damage" (WS1)

This has translated to higher ongoing costs, like insurance, higher capital costs to cover repairs, and more disrupted revenues, where tenants cannot remain in the property.

"[For] one person, the house actually collapsed on itself because of the damage of the flood. So, there's no house for them to go back to. With the landlord themself [living on the same site]. They're certainly not financially able to repair. So, they're also displaced, and they don't know if there's any way that they can. It's just all a big mess." (HS1)

Low-cost rental options are also more likely to be informal, which adds to the likelihood of complications with tenancies and housing repairs.

"Many of the people that we see in that lower socioeconomic group, are fairly socially isolated. Probably renting either in social housing or in various less than formal lease agreements, like some dodgy backyard arrangement with a live-in landlord. It's all a bit messy and a bit complicated and no one really knows who's responsible for the house, and no one's sure if they're going to rebuild." (HS1)

There is also, like all property owners (discussed below), concern about whether the property will be 'bought out', or otherwise declared 'flood prone' and so become less valuable, which would make capital investment less worthwhile.

"Over the last few years, [insurers have] said, 'we are now no longer insuring these particular properties because they're flood prone'. And now we're hearing whole postcodes will be effectively blacklisted. So, if there's discussion that Lismore is now not going to be insured as a postcode, how do you make the decision to reinvest to rebuild?" (CH1)

8.2. 'Satisficing' model less viable under new conditions

The low-cost end of the private rental market is more likely to be 'satisficing' landlords: that is, those that are seeking passive investments that cover costs and realise some notional threshold of returns. Such landlords contrast with active investors with a desire to maximise returns.

"We're often looking for good will, you know, social cause investors [as landlords]. [But] they've got to make their money back at some point. So, they can't afford to rent to us anymore." (WS1)

This cohort of satisficing landlords is often more reluctant to sink capital into the abovementioned costs, including for repairs and upgrades, irrespective of whether those costs can be recouped by higher rental incomes. This creates an additional barrier to effectively bringing this stock back online.

In parallel, property values are growing, particularly for other segments of the housing market, such as short-term rental, holiday homes and owner occupation of incoming 'scene changers' from more expensive markets. This has the effect of dwellings exiting the low-cost rental market to these other tenures and uses.

"We've all heard that talk about affordability in the major cities and people migrate north and that is a big impact.... that limited supply is actually being partly taken by people migrating or moving or looking at how they can work from home and still hold down a job." (CH1)

Even when dwellings stay in the private rental market, they are likely lost to other price points, to absorb the higher costs noted above.

"We're seeing no cause evictions because people know that... the flood is a way to exit. And they won't re-establish those tenancies. They can rent to the open market easier and with more return." (WS1)

This loss of 'low-cost' private rental options to other price segments of private rental is increasing as rental is in short supply generally following the floods. The result is the market tends to 'bottom out' at prices above those affordable to those on low incomes.

"The [outgoing] landlord may have paid some amount 10 or 20 years ago... They opt to sell. That landlord comes in and pays a much higher price and says, 'we'll get it rent appraised', and says, 'this is what you're paying'. Effectively it's a termination notice, because [the current tenant] can't afford it." (RM1)

8.3. Historic pension-rent tether increasingly lost

These factors combined have brought the rental market to a tipping point, with the low-cost end of the private rental sector previously including some options for those on pensions or other government payments.

"[In one area with] lower rents in some streets and suburbs, there's \$500 for a 3 bedroom... \$500 is surprising for a 3-bedroom fibro... It was probably \$350 [six months ago]. It was affordable for a family on Centrelink payments. It no longer is."

If private rental options at this particular price point are lost, and not replaced, then there will be a significant increase in housing stress, overcrowding and other compromises and risks of homelessness.

"But because of just how devastatingly affected Northern NSW is, there's nothing in the private market available, so there's no houses, units, townhouses, any type of accommodation that people can rent, even if they wanted to. Which means even if they do want to get out of emergency accommodation, they don't have anything to tap into or to go to" (SG1)

This cohort for whom the private rental sectors stops being a source of suitable housing will also increase the demand for social and affordable housing.

"The private rental market has been the place where clients get exited too. That's the work we do because the social housing sector is just not big enough to accommodate all the need out there." (CH2)

9. Housing vulnerability has compounded other disadvantages that make recovery difficult

9.1. Mould and cold - health impacts of poorer housing

Compromises on housing, including living with flood-damaged housing, creates health risks, with exposure to mould an oft-cited hazard.

"Obviously the most prevalent one at the moment is water ingress into the structure, which leads to mould, which leads to all sorts of issues, absolutely including potential health impacts." (RM1)

Whether the result of flooding directly, or to maintain a degree of affordability (including accepting mobile homes and other temporary dwellings), compromises on quality also translate to health impacts caused by exposure to cold, particularly over the longer term.

"People staying at their properties without kitchens and without carpet, it's winter... but thinking about the health effects that are ongoing for people, staying in tents or staying in their garden sheds is what I've heard as well" (LS1)

There is also an acknowledged difficulty in providing health services needed as part of the response and recovery when people are lacking housing.

"Housing, and the lack of housing – and it was quite limited previously – has become a major concern for our clients and the support we can provide. Because without housing we're limited [in] how far we can help them. We can advocate as much as possible and help them get on to list for pods and DCJ housing. However, there's limited stock." (LS1)

9.2. Accommodation is not a substitute for a home

Many families remain in emergency accommodation, months later. They are unable to make firm plans with the above noted decisions about land swaps, property buy-backs, flood-risk status, and insurance claims still pending.

"At the moment, people don't know what's going to happen and people don't know 'how far do I look at renovating my house? What do I do?' There're also people who might have rental properties so suddenly that can't have their tenants back in." (LS2)

This uncertainty creates a high degree of anxiety and is translating to significant mental health crisis among those still out of a permanent home.

"We've got people coming in who've got children that are in their household who were traumatised because they've lost all these things and don't know how to do it and deal with it. We have seen an incredible amount and with referrals from us to counselling and you know any associated services" (WS1)

Even in the absence of uncertainty, the sense that the home serves a purpose beyond shelter is important to recognise. Understandably, that sense was set to the side in the acute aftermath of the floods as emergency options were found. However, occupants lack a degree of autonomy or agency over the emergency accommodation that leaves them without a sense of self, agency and security that a home offers.

"If you have been staying with friends or family for this long. And that wasn't planned, then no doubt things are getting a bit strained. And you can't be in temporary accommodation forever. And moving people around different communities for this many months is also exhausting. And it just adds to drama" (WS3)

One cited example of this has been the inability for people to continue living with their pets in emergency accommodation.

"Pets are so critical to people's health and their well-being and their mental health... And people will say, 'I'd rather sleep in my car so I can have my dog with me because I will not be separated', and we can't force accommodation providers to let them take pets." (SG1)

Also of note, the only medium-term housing support that has been identified so far, the 'pod home' villages, have proven to be equally undesirable for some holding out for a more permanent solution.

"Clients are being offered the pods but choosing to reject them. Not all, there are plenty that are taking up the offer. But there are many that said, 'no, I'd rather stay in emergency accommodation, in the camp or in the motel. I don't want to go to a pod.'" (SG1)

9.3. Exposure to unlawful, or potentially unlawful, activity

Although opportunistic crimes were not evidently widespread, in some rural properties or communities, there have been noted issues with some crime, where mostly evacuated communities had left properties unmonitored.

"There has been looting, there has been people feeling unsafe and leaving their properties because of the looting. I'm unsure how bad it is right now... I know I spoke to someone who's open to business downtown and they've been broken into three or four times since reopening." (LS1)

The above noted rental market constraints, coupled with the acute impacts of the floods, is also leading to instances of tenants accepting evictions or rent hikes that they might otherwise have fought on legal grounds, to preserve their tenancy.

"Since the floods because, so many people are in crisis, the tenants' capacity to manage those things [preventing tenancy termination] has been diminished because they're dealing with displacement or homelessness." (RM1)

More egregious instances have seen tenants returning to find their belongings removed from their home.

"[The owner gets an] assessment from insurance or makes a unilateral decision that the tenancy can no longer continue, so they're saying 'you can't come back' [and] going in and turfing people's possessions out onto the street. It was quite chaotic around that stage, because there was a huge push to help get the rubbish cleared out. But we spoke to a lot of [renters] where having a chance to consider what's happened and sort through their possessions was not really taking into account." (RM1)

9.4. Displacement issues and economic opportunity

The lack of options, whether in the temporary, social, or private rental sectors, makes displacement more likely. This has impacts on social wellbeing, as connections to services and personal networks can be severed when people move further away.

"Friends were having to move house every three to four months and, for a child [there's little] understanding why [they] had no sense of security in that home and that they're always on the move... [and have] got to move schools. There's a whole group of youth growing up that are experiencing the disruption." (LC1)

"It is very challenging to get people to accept that [moving somewhere else] or want to do that because they've lived there for 30 years. For example, their whole family grew up in Lismore where their friends are, and their networks are, and their connections are." (SG1)

"What is the sense of self for them [residents] when they've been displaced? And I know there's been families that have been moved up to Brisbane and offered places there as well as some that have gone down to Coffs Harbour." (LS1)

This has impacts on demand for services in surrounding areas, where personal networks are lacking.

"[For] our clients moving, probably the closest Casino, and that's about half an hour away. Some have gone down further, about an hour and a half away to Grafton, so you are really in a different area. Sometimes people residing in Casino come in and use services of Lismore and vice versa, but there are a lot more people from Lismore using the services of Casino." (WS3)

Some participants noted that these geographic 'knock-on' effects had the potential to put strain on social services and housing markets in surrounding regions that were not directly affected by the floods.

Displacement also has the potential to impact access to income opportunities, with informal networks often the source of jobs and income among low-income groups, and low incomes making travel costs prohibitive for job access.

"If you went to work in Lismore... We don't have buses that just take people. The cost of transport to go into Lismore from Wollongbar is cost prohibitive... So, for people who were working [on low incomes], it wouldn't be viable for them." (LS2)

In contrast, in some cases the dire options available locally on the Northern Rivers has served as an impetus to move some people to more appropriate locations – with 'appropriate' a function of access to personal support networks or more suitable services or housing.

"Another [client] that we've been supporting was able to move... [to] put her in much closer contact to a child that was living in care with a relative just over the border, and also put her much closer to her own supports with her mother and other family." (HS1)

Increasing the strain experienced in the Northern Rivers is not, however, an appropriate means to generate such outcomes.

10. Not everyone has been able to rely on informal support

10.1. Each community network has a different capacity to support each other

To a large extent, the first response, and much ongoing support in the aftermath of the floods, was from within the Northern Rivers community.

"I've been blown away with the immediate response of the community, even involving housing. So those informal structures, arrangements and things that were immediate and they really did help when nothing else was available. But I wonder if there's something in... formally recognising the community response and making it intentional in that first stage of disaster response and therefore having a plan to resource communities that know what to do." (WS3)

It has been noted, though, that not all parts of the community have friends with a spare car, or spare clothes or, of most relevance to this report, a spare room to accommodate those without housing. The parts of the community with fewer resources surplus to their immediate needs are those that are more vulnerable overall.

"People who have family went to family; people who could go out of town went out of town. The people that we often spoke to were people who don't necessarily have that broader support network, they might not be close to their family, they might not be linked in with their personal support network to have somewhere to go." (RM1)

There is also evidence that 'spending' social capital on the disaster response is having longer-term impacts on community cohesion.

"It's hard for people to engage because they're no longer using the villages as their everyday centre and as their place where they run into people on the street, and they drop their kids off from school. So, it's been quite interesting to watch how that physical impact, even though they weren't [all] flood impacted, has fractured what was socially cohesive ...[had] really strong social connections and social capital to respond most effectively after floods." (LC3)

10.2. Unsustainability of relying on informal supports over the medium term

The ongoing scale of disruption, and subsequent need for support services, is still to be fully revealed, with more people emerging long after the floods in need of emergency accommodation:

"Over the last couple of months, we're having continual spikes [in demand for services] with new people coming forward... The reason that happens is people have been staying with friends or family or couch surfing and, for whatever reason, it's too much. Maybe everyone's getting on each other's nerves; they've overstayed their welcome. We don't know the reasons, but they've now come forward to go 'I simply can't stay there anymore. I didn't have accommodation because of the floods. Now I need assistance.' And so that continues to happen even now." (SG1)

This highlights the limitations of informal support structures through the medium term, which will place demand on support services, particularly for parts of the community for whom 'returning to normal' is not possible.

"A lot of these people are living in temporary scenarios that are usually holiday letting or short-term rental accommodation. We could be heading towards another crisis where all these locals who are flood-affected get booted out from there. And if we don't have any pod villages set-up in time for that, then potentially we have a whole swath of displaced people... who are now being booted out because we rely on the visitor economy." (LC2)

This will include those already identified, those experiencing ongoing disruptions, and those for whom informal support was sufficient to meet needs in the short term but is no longer.

10.3. Limited access to formal supports

It should also be noted that many people not directly affected by the floods will be impacted indirectly by the floods. This includes other renters experiencing rent hikes due to limited supply.

"It's just hard at the moment. So, they might not be flood related exactly. But they're just talking about how hard it is to find housing because of the floods." (TU1)

It includes those on social housing waitlists that will likely see longer delays before they are housed in the social rental sector.

"Prior to 28 February 2022, we had long waitlist of people who were listed for priority housing, who needed housing urgently. The people who are being housed now are the people who are, on a priority basis, the social housing tenants who were displaced by the flood." (CH2)

"There are no private rentals, social housing is priority, and this situation is pushing people that are already on the waitlist further down." (WS2)

For those experiencing housing vulnerability due to either longer term factors or indirect factors of the recent floods (like difficulty finding affordable rental options), there is a sense that informal support is not a response to climate disaster and so has not increased since the floods despite a greater need.

Further, there was some fear that those not directly affected by floods might not have access to formal support. To be clear, the consensus among participants was that a very loose definition of 'flood affected' had typically been accepted, in terms of accessing financial support. This was the case for both direct support to those in the community and indirect support through payments to non-governmental support services that are to be spent on those affected by the floods. There was, however, some concern interim support payments would close despite ongoing needs in the community.

It was also noted, counter to superficial expectation, that the more vulnerable parts of the community were more readily able to navigate the processes to access formal support services. This 'red tape' resilience was attributed to previous experience with government agencies and systems.

"[It's] the new people saying they cannot believe the amount of hoops they have to jump through because you have to register and you have to provide your ID and, in some instances, your ID needs to be witnessed..." (LS1)

Actions are needed to reduce the impacts of future disasters

These findings highlight the need for interventions into the housing system of the Northern Rivers, in both the medium term to facilitate the recovery process, but also the longer term to improve resilience against future natural disasters.

Importantly, as the frequency and intensity of climate disasters will increase, the findings and recommendations of this report can inform the wider response to climate disaster planning across regional areas of Australia.

This section summarises key recommendations for future interventions to better ensure the housing system is resilient against the impacts of climate disasters.

11. The 'recovery phase' will take longer for some, and support needs to reflect this

As stated at the outset of this report, one key area to address is recognition that the medium-term recovery phase will not be the same for everyone in the community. This applies to the Northern Rivers region over the coming months and years. More broadly, it also applies to government policy and planning, in anticipation of more frequent and more extreme climate disasters, particularly in regional areas.

The dominant planning strategy for the recovery phase has been 'acceleration'. That is, to provide the needed support to the recovery, such that – in terms of housing – people can return to a permanent home as soon as they are ready. This is rational, even laudable. However, it belies expectation, and experience from previous disasters, that the recovery phase will last years, not months, despite these efforts.

The 'acceleration' focus has created a blind spot in the planning strategy. There is little ongoing support for those not permanently rehoused during recovery. Interventions to provide such support are largely confined to three largely under resourced measures:

- a tacit 'long tail' for continued demand for short-term emergency accommodation,
- an equally tacit reliance on already-strained 'business as usual' housing support systems, and
- a singular, and previously untested by the NSW Government, plan to provide 'pod' homes in temporary villages across the community.

This is inadequate to meet the needs of those who will not be rehoused during the years ahead. In addition to acceleration measures, four specific recommendations are proposed to better support the community, particularly those in vulnerable housing situations, during the recovery period.

1) Identify clear pathways for people to move out of emergency accommodation and into semi-permanent medium-term housing

There are significant problems with having people accommodated in dorm-style sports camps and hotel rooms over the medium term. The process for moving these people into more appropriate interim housing, however, is largely falling to the limited resources usually dedicated to finding housing for those at risk of homelessness. Better resourcing of this service provided both within government and beyond – through local housing services – is essential to ensure the process is effective.

Another intervention is the need for wider availability of rental payment support. Widening the existing availability of such payments – with existing instances of bond and initial payments covered as part of the emergency housing transition noted – responds to the fact that rental markets are experiencing the coinciding of negative supply shock (loss of flood-affected dwellings) and positive demand shock (people looking for medium-term options while awaiting repairs or decisions relating to their primary home to be finalised).

Importantly, support for finding and paying for specific housing needs should also be resourced. This is already practice in existing support systems but is important to ensure

people for whom the pod villages (see below) are not appropriate do not experience prolonged periods in emergency accommodation.

2) Develop more detailed planning around any proposed 'pod home' villages

The 'pod-home' villages, whilst innovative, clearly lacked crucial details, and so have proven slow to implement. Some facets of the pod home village model – identifying sites suitably serviced with infrastructure, supply chains and logistics around delivering and installing the pod homes, and operational management structures for the dwellings and tenancies – will improve through the current experience.

However, broader questions about which parts of the community this medium-term option is intended to support, their pathways into the pods (from emergency accommodation) and out of the pods (into permanent homes) also remain unclear. Evidence that the village model is less desirable to many still in emergency hotel accommodation suggests their contribution to the recovery process requires more detailed investigation.

On one hand, if intended for homeowners whilst they undertake repairs or finalise securing a new home, there seems to be little benefit of the village model over on-site use of the pods, as has been the model following other recent disasters. On the other hand, if intended for more vulnerable households with anticipated ongoing difficulty in securing permanent housing, it is more important to ensure the villages are appropriately resourced for tenant support and 'wrap around' services. Communication about the intent of the villages needs to be clearly articulated, with community concerns filling the vacuum of information in the current case.

3) Protect tenants from the medium-term failings of the private rental market

Although there will be some tenants who will struggle to uphold tenancies, emerging evidence suggests the greater drivers of loss of tenancy after the recent floods are not a function of tenants themselves. The sector is strained, with owners wanting to redirect properties to sell, rent or otherwise redirect their properties to different households (even themselves or family). There are also upward pressures on rents, due to stock lost and increased demand. This translates to very difficult circumstances for existing tenants.

Options to implement tighter restrictions around rent increases and no-fault evictions, which are widely argued to be needed generally, should particularly be investigated and implemented during a medium-term recovery period when rental markets are susceptible to fluctuations and disruptions. Although not possible for the Northern Rivers, such measures should be developed for consistent application following future climate disasters.

In instances of tenancies terminated due to building inhabitability, support for securing tenant belongings as part of relocation into emergency accommodation and beyond (see 1) should be provided, to minimise the risk of loss or damage to those belongings.

4) Mitigate the impacts of displacement and dislocation from existing community connections

One noted pattern following the floods has been the impact of people relocating away from their homes and communities for emergency and interim accommodation. In some cases, people are remaining on flood-affected properties rather than move too far from their homes and communities.

Car dependency is significant – 'you need to own a car' is a common refrain in the Northern Rivers, and typical of many regional areas. This is not universally possible, particularly among low-income parts of the community with a concertedly local scope in their day-to-day lives. Even car owners face having to drive a lot more, adding cost and competition for the use of a car shared among family members.

Another important pattern is the need for more infrastructure, particularly more regular community transport, to overcome the impacts of disrupted connections to work, school, shops, support services and, importantly in the case of Indigenous Australians, Country.

12. 'New normal' includes ongoing risk of disaster, and support needs to reflect this

The second overarching area this project investigated is the required characteristics of any future housing system so that future climate disasters – which are expected to be more frequent and severe – have less impact on the community.

Efforts towards better 'preparedness' are a central pillar of disaster planning, with more 'resilient' systems presented as crucial. This includes 'hard' infrastructure – physical interventions and engineering solutions – to mitigate the impacts of climate disasters. It also includes 'soft' infrastructure – capacity among the community, and organisations tasked with supporting the community, in the event of a climate disaster.

The housing system is no exception. In addition to measures proposed in other disaster resilience plans, four specific recommendations are proposed to better support the community, particularly those in vulnerable housing situations, against the impacts of future climate disasters.

5) Build capacity for a more deliberate role for local civil society in response to crisis

One overarching theme from the recent Northern Rivers floods is that the local community was best positioned to mobilise support and adapt to local conditions and context in the immediate aftermath. Much of this role was not formally planned or supported before the floods, with local networks for sharing information and resources emerging organically. This local crisis response was, and continues to be, led by numerous established local civil society networks who provide ongoing support services. This includes services connected to supporting disadvantaged communities and people experiencing long-standing housing vulnerability.

It is important that the role of these service providers is acknowledged and supported in this function. Building capacity into their structures and operations to be able to provide crisis response – in addition to, rather than instead of, ongoing provision of support services – is essential. Ultimately, this requires resourcing. There remains an important role for government-led response in the days following a climate disaster, but it should be better integrated with and responsive to local service providers, and indeed wider community networks.

Many support organisations experienced challenges with staffing: many staff are flood-affected, and organisations experienced burnout and turnover. Support organisations also experienced disruptions to 'business as usual' services caused directly by the floods – blocked roads, building damage, supply chain interruptions, etc. Evidence highlighted the importance of identifying, preparing for and accommodating these challenges within these organisations, so that operations could continue, even ramp up.

A final important role of civil society organisations is their capacity to connect with geographically wider networks to provide support. This function should also be formalised and supported. These networks have reach beyond the region immediately affected by a climate

disaster. This can buttress local services that can, as above, be adversely affected by a disaster too. Examples include providing phone-based support to contact clients and community members in need of support, having remote staff coordinate logistics, and bringing staff and volunteers into aid relief efforts.

6) Resource local not-for-profit contributions to the response and recovery effort accordingly (not rolling one-offs)

In the immediate response phase, but also in the medium-term recovery phase outlined in the previous section, the experience has been for funding to be provided to organisations tasked with delivering support services in one-off tranches. Organisations have, however, jumped from responding from one crisis to another – including COVID-19, bushfires and floods in 2017. The result has been an often-ongoing need for services, but no ongoing certainty around funding.

Recognition of the escalating frequency of climate disasters means such 'crisis response and recovery' functions should be increasingly built into 'business as usual' operations within these organisations. To do so will mean secure, ongoing funding sources to deliver this ongoing service. There have also been calls for better resourcing during that immediate response phase, to better integrate social service providers into the emergency response effort.⁸¹

7) Develop housing system intelligence to inform disaster preparedness and recovery planning

Chronic failings of the housing system have long been recognised in the Northern Rivers, from enumerated homelessness, increasing rental stress and long waitlists for social housing (as outlined in section 2). Yet there remains a gap in the extent to which this local housing context is informing disaster planning.

Important questions like the tenure splits of dwellings in flood-prone land, the likely demand from rough sleepers during flood events, the volume of private rental – particularly for niche products like accessible housing or housing suitable for large or extended families, can all assist in preparing for the likely need for particular housing and services following climate disasters. Development of a more fine-grained set of housing data to inform planning for disasters should be made available across all areas.

8) Develop a more sustainable ongoing social housing sector

This is, perhaps, a new reason for implementing a long-touted solution to other problems. But the disruptions caused by climate disasters, and the inherent inability for a housing market to absorb the acute shocks of increased demand or decreased supply, point to the need for more social housing. Social housing (including temporary accommodation and market-tethered affordable housing) is, like all infrastructure, something needed in the community, but which market failures mean is not provided by the private sector.

A more robust social housing supply, which at a minimum is adequate to meet existing wait lists, has a two-fold benefit. First, it reduces the exposure to disruptions that climate disasters would cause those in otherwise vulnerable housing situations. Second, it reduces the pressure

on the private rental sector, and so the relative scarcity of private rental options following disasters, thus reducing the price fluctuations of market rents that can further impact those affected.

More temporary accommodation options within the social housing sector, such as hostels and boarding rooms, will also contribute to the pool of emergency accommodation, and more broadly offer capacity to absorb new demand into alternatives like hotels, after a disaster.

The mechanisms for delivering social housing are well rehearsed and not repeated at length here. They include planning system measures to incorporate social housing into new developments and create advantageous land values for affordable housing land-uses. Importantly, it includes more resourcing for the community and Aboriginal housing sectors, and ongoing support for the maintenance and renewal of existing public housing.

Appendix

About this research

This research was commissioned by a consortium of service providers active in the Northern Rivers, comprising St Vincent de Paul Society (NSW), Mission Australia, The Salvation Army Australia, Social Futures, Australian Red Cross, and Tenants Unions of NSW. NSW Shelter, YFoundations and Homelessness NSW have also guided the development of this report. These organisations have provided key services long term and in response to the floods on the Northern Rivers.

The project emerged in response to concern about people's housing needs not being met in the medium-term on the Northern Rivers, and that this event could have a long-term detrimental impact on housing affordability in the Northern Rivers.

This project investigated the role housing system constraints – particularly 'housing vulnerability', or parts of the community having insecure, inadequate, or unaffordable housing – have played in slowing post-disaster recovery, examining the current Northern Rivers flooding recovery as a case study.

The research questions that this study addressed were:

- 1. Which housing system constraints have been found to slow post-disaster recovery in other contexts?
- 2. What pre-existing housing system constraints were evident in the Northern Rivers region before the recent flooding events?
- 3. What evidence is emerging in the Northern Rivers that housing system constraints are slowing the post-disaster recovery?
- 4. What evidence is emerging in the Northern Rivers that current post-disaster programs to overcome housing system constraints are having their intended effect?

About the authors

The research was undertaken by City Futures Research Centre. Based in UNSW's Faculty of Arts, Design and Architecture, City Futures is the national leader in scholarly applied urban and housing research. Our work advances the understanding of cities and regions, focusing on people, places, policies and technologies, the issues they face and the impact they can make on our environment and economy. We partner with research institutions, industry, government, community organisations to solve the most complex problems facing Australian society. We train the next generation of urban and housing thinkers, shapers, and analysts through a range of teaching programs and comprehensive research interests

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Alessia Cibin

Alessia is Research Assistant at City Futures Research Centre. Her interest in housing and post-disaster recovery draws upon her previous experience as urban planner at the Department of City Planning and Private Housing in the Veneto region, Italy, where in 2010 she supported the post-flooding recovery by engaging with no-profit organisations and local councils. Currently, she is PhD Candidate at University of Technology Sydney. Alessia has a background in urban planning and policies, and she served 10 years as an elected representative in Italian local government (2009-2019).

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Research methods

The research comprised desktop analysis and interviews with stakeholders. Desktop analysis provided the context for understanding housing vulnerability and the post-disaster recovery response to the flooding events in Northern Rivers. Desktop analysis included three components: a review of the academic literature on housing vulnerability and post-disaster recovery, an analysis of local statistics to understand the local housing context in Northern Rivers, and a review of media and policy documents that followed the recent floods.

The media analysis, in addition to the research team following news coverage directly, comprised a search of ProQuest database of The Guardian and ABC News, between 1-Feb and 1-Jul for: disaster OR flood*; AND "Northern Rivers" OR NSW OR Lismore OR Byron; AND hous* OR home*. This resulted in a sample of 69 stories, or 49 once duplicates or false hits were removed. The indexing was evidently not perfect (website searches turned up other news stories that should have been picked up), but it did provide a randomised sample of news stories that touched on housing issues following the floods in the Northern Rivers.

The interviews with stakeholders commenced with discovery phase to identify key organisations across local services, welfare services, emergency services, homelessness services, community housing and rental market actors. Prospective participants as residents with first-hand hardship experience due to the flooding events were excluded due to risk of distress arising when sensitive topics discussed during interviews.

Between July and August 2022, 15 interviews were conducted, both individually (one-to-one) and collectively (max three participants) based on participants' request or interest in engaging with other local service providers. Interviews lasted between 60 and 90 minutes. Interviews were undertaken remotely with MS Teams which enabled audio recording and automatic transcription with expressed consent of all participants.

Interviews were structured around four main themes:

- 1) experience in post-disaster support provision,
- 2) observations about the impacts of housing vulnerability affecting the community after the flooding disaster,
- 3) experiences of how housing vulnerability has affected the post-disaster recovery efforts,
- 4) perspectives on measures to reduce the impact of housing vulnerability on recovery from future disasters.

These themes and notes taken during the interviews provided initial extraction of relevant qualitative data. Direct quotes and detailed notes describing the content of the interviews and focus groups were then thematically organised. The thematic organisation, while initially following the interview/focus group guide, was iterative, and based on the themes that emerge through the data collection.

This study has some limitations. First, interviews with stakeholders do not reflect a balance in geographic variegation, for example, Lismore vs Coraki, etc. Second, the interviews should not be considered as an exhaustive sample of service providers, indeed some sectors like emergency services and private businesses involved in housing sectors (e.g., real estate agencies were not represented. Further data collection would be required to gain knowledge of all facets of the housing system such as caravan homes, informal tenures (granny flats), landlords, and share houses. It is noted that the data collection occurred while many service providers were, and still are, addressing the immediate aftermath of flooding. Therefore, additional interviews were not possible due the lack of capacity to engage in conversations.

This research obtained ethics approval HREC: HC220329.

References

- 1. Brady K, Gibbs L, Harms L. Hierarchies of affectedness after disasters. *Health Place*. 2021;72:102687. doi:10.1016/j.healthplace.2021.102687
- 2. Lee JY, Van Zandt S. Housing Tenure and Social Vulnerability to Disasters: A Review of the Evidence. *J Plan Lit*. 2019;34(2):156170. doi:10.1177/0885412218812080
- Matthews V, Longman J, Berry HL, et al. Differential mental health impact six months after extensive river flooding in Rural Australia: A cross-sectional analysis through an equity lens. Front Public Health. 2019;7. doi:10.3389/fpubh.2019.00367
- Brundiers K, Eakin HC. Leveraging post-disaster windows of opportunities for change towards sustainability: A framework. Sustainability. 2018;10(5):1390. doi:10.3390/su10051390
- 5. Ingram JC, Franco G, Rio CR del, Khazai B. Post-disaster recovery dilemmas: challenges in balancing short-term and long-term needs for vulnerability reduction. *Environ Sci Policy*. 2006;9(7):607613. doi:10.1016/j.envsci.2006.07.006
- 6. Olshansky RB, Johnson LA, Topping KC. Rebuilding Communities Following Disaster: Lessons from Kobe and Los Angeles. *Built Environ*. 2006;32(4):354374. doi:10.2148/benv.32.4.354
- 7. Safapour E, Kermanshachi S, Pamidimukkala A. Post-disaster recovery in urban and rural communities: Challenges and strategies. *Int J Disaster Risk Reduct*. 2021;64. doi:10.1016/j.ijdrr.2021.102535
- 8. Mannakkara S, Wilkinson S. Re-conceptualising "Building Back Better" to improve post-disaster recovery. *Int J Manag Proj Bus*. 2014;7(3):327341. doi:10.1108/IJMPB-10-2013-0054
- 9. Kennedy J, Ashmore J, Babister E, Kelman I. The meaning of 'Build Back Better': Evidence from post-tsunami Aceh and Sri Lanka. *J Contingencies Crisis Manag.* 2007;16(1):2436. doi:10.1111/j.1468-5973.2008.00529.x
- Aldrich DP, Page-Tan C, Fraser T. A Janus-Faced Resource: Social Capital and Resilience Trade-Offs. In: Trump B, Florin MV, Linkov I, eds. IRGC Resource Guide on Resilience (Vol. 2): Domains of Resilience for Complex Interconnected Systems. Vol 2.; 2018:17. https://beta.irgc.org/wp-content/uploads/2018/12/Aldrich-et-al-for-IRGC-Resilience-Guide-Vol-2-2018.pdf
- 11. Clinton WJ. Lessons Learned from Tsunami Recovery: Key Propositions for Building Back Better. United Nations Secretary-General's Special Envoy for Tsunami Recovery; 2006.
- 12. Fernandez G, Ahmed I. "Build back better" approach to disaster recovery: Research trends since 2006. *Prog Disaster Sci.* 2019;1. doi:http://dx.doi.org/10.1016/j.pdisas.2019.100003
- 13. McConnell ED. Rented, crowded, and unaffordable? Social vulnerabilities and the accumulation of precarious housing conditions in Los Angeles. *Hous Policy Debate*. 2017;27(1):6079. doi:doi.org/10.1080/10511482.2016.1164738
- 14. Comerio MC. Disaster recovery and community renewal: Housing approaches. Cityscape. 2014;16(2):5168.
- 15. Boano C. Housing anxiety and multiple geographies in post-tsunami Sri Lanka. *Disasters*. 2009;33(4):762785. doi:10.1111/j.1467-7717.2009.01108.x
- 16. Peacock WG, Van Zandt S, Zhang Y, Highfield WE. Inequities in long-term housing recovery after disasters. *J Am Plann Assoc.* 2014;80(4):356371. doi:10.1080/01944363.2014.980440
- 17. Sapat A, Esnard AM, eds. Coming Home after Disaster: Multiple Dimensions of Housing Recovery. Routledge; 2016. doi:10.4324/9781315404264
- 18. Bilau AA, Witt E, Lill I. Analysis of measures for managing issues in post-disaster housing reconstruction. *Buildings*. 2017;7(2):29. doi:10.3390/buildings7020029
- 19. Mukherji A. From tenants to homeowners: Housing renters after disaster in Bhuj, India. *Hous Stud*. 2015;30(7):11351157. doi:10.1080/02673037.2015.1008423
- 20. Gibbs L, Molyneaux R, Harms L, et al. 10 Years Beyond Bushfires Report 2020. University of Melbourne; 2021. https://mspgh.unimelb.edu.au/__data/assets/pdf_file/0004/4165843/10-years-Beyond-Bushfires-report.pdf
- 21. Bird D, King D, Haynes K, Box P, Okada T, Nairn K. *Impact of the 2010-11 Floods and the Factors That Inhibit and Enable Household Adaptation Strategies*. National Climate Change Adaptation Research Facility; 2013.
- 22. Parsons M, Reeve I, McGregor J, et al. Disaster resilience in Australia: A geographic assessment using an index of coping and adaptive capacity. *Int J Disaster Risk Reduct*. 2021;62:115.
- 23. Chang Y, Wilkinson S, Potangaroa R, Seville E. Resourcing challenges for post-disaster housing reconstruction: a comparative analysis. *Build Res Inf*. 2010;38(3):247264. doi:10.1080/09613211003693945
- Jayasuriya S, McCawley P. Reconstruction after a Major Disaster: Lessons from the Post-Tsunami Experience in Indonesia, Sri Lanka, and Thailand.; 2008. Accessed September 20, 2022. https://www.econstor.eu/handle/10419/53611

- 25. Fothergill A, Peek LA. Poverty and Disasters in the United States: A Review of Recent Sociological Findings. *Nat Hazards*. 2004;32(1):89110. doi:10.1023/B:NHAZ.0000026792.76181.d9
- 26. Peacock WG, Dash N, Zhang Y, Van Zandt S. Post-disaster sheltering, temporary housing and permanent housing recovery. In: *Handbook of Disaster Research*. Handbooks of Sociology and Social Research. Springer; 2018:569-594.
- 27. Kammerbauer M, Wamsler C. Social inequality and marginalization in post-disaster recovery: Challenging the consensus? *Int J Disaster Risk Reduct*. 2017;24:411418. doi:10.1016/j.ijdrr.2017.06.019
- 28. Fraser T, Aldrich D, Small A. Connecting Social Capital and Vulnerability: Citation Network Analysis of Disaster Studies. *Nat Hazards Rev.* 2021;22. doi:10.1061/(ASCE)NH.1527-6996.0000469
- 29. Aldrich DP, Ingham V, Hanvin R. Getting Connected: Using Networks to Build Business Community Resilience in the Blue Mountains. corporate2community; 2022.
- 30. Lee J, Aldrich DP, Kiyota E, Yasuhiro T, Sawada Y. Social capital building interventions and self-reported post-disaster recovery in Ofunato, Japan. *Sci Rep.* 2022;12(1):10274. doi:10.1038/s41598-022-14537-8
- 31. Aldrich DP. Ties that bond, ties that build: Social capital and governments in post disaster recovery. 2011;Studies in Emergent Order(4):5868.
- 32. Aldrich DP. Social Capital and Community Resilience. Am Behav Sci. 2014;59(2). doi:10.1177/0002764214550299
- 33. Aldrich DP. Social, not physical, infrastructure: the critical role of civil society after the 1923 Tokyo earthquake. Disaster Recovery. Published online 2011. doi:10.2139/ssrn.1903911
- 34. Australian Bureau of Statistics. Census of Population and Housing: Estimating Homelessness, 2016. Published 2018. Accessed May 29, 2022. https://www.abs.gov.au/statistics/people/housing/census-population-and-housing-estimating-homelessness/latest-release
- 35. NSW Government C& J. Expected waiting times for social housing. Family & Community Services. Published 2020. Accessed May 29, 2022. https://www.facs.nsw.gov.au/housing/help/applying-assistance/expected-waiting-times
- 36. DCJ Statistics. NSW Government Rent Report Dec 2017 Dec 2021. Tableau Software. Published 2022. Accessed October 10, 2022. https://public.tableau.com/views/Rentandsales_15565127794310/Rent?%3Adisplay_static_image=y&%3Abootstrap WhenNotified=true&%3Aembed=true&%3Alanguage=en-US&:embed=y&:showVizHome=n&:apiID=host0#navType=0&navSrc=Parse
- 37. DCJ Statistics. NSW Government Sales Report Dec 2017 Dec 2021. Tableau Public. Published 2022. Accessed October 10, 2022. https://public.tableau.com/app/profile/facs.statistics/viz/Rentandsales_15565127794310/Rent
- 38. Australian Bureau of Statistics. Rent affordability indicator, by local government area and section of state. Census of Population and Housing: 2021. Published 2021. Accessed October 12, 2022. https://www.abs.gov.au/census/guidecensus-data/census-dictionary/2021/variables-topic/housing/rent-affordability-indicator-raid
- 39. Paulina V, Lauren P, Shoebridge J. Flood rescues in northern NSW resume as rain expected to move south, Ballina on flood alert. *ABC News*. https://www.abc.net.au/news/2022-03-01/lismore-flood-rescues-resume-as-rain-expected-to-head-south/100869912. Published March 1, 2022.
- 40. MacKenzie B, Jones A. Multiple landslides in Main Arm send house falling down mountainside, residents set up pulley system to deliver supplies. *ABC News*. https://www.abc.net.au/news/2022-03-02/main-arm-sets-up-pulley-to-receive-goods-after-flood/100876716. Published March 2, 2022. Accessed September 19, 2022.
- 41. Isaacs M. 'Next level destruction': NSW residents detail the moments floods devastated their homes. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/06/next-level-destruction-nsw-residents-detail-themoments-floods-devastated-their-homes. Published March 6, 2022. Accessed September 19, 2022.
- 42. Clure E, Xiao A. Tanya and Dion moved to Lismore six months ago. Now they're without a home for the second time in a month. *ABC News*. https://www.abc.net.au/news/2022-03-30/couple-in-lismore-without-a-home-twice-in-a-month-due-to-floods/100952484. Published March 30, 2022. Accessed September 19, 2022.
- 43. Thackray L. DJ the miracle flood dog found after three nights alone. *ABC News*. https://www.abc.net.au/news/2022-03-04/dj-the-miracle-flood-dog-found-after-three-nights/100883526. Published March 4, 2022. Accessed September 19, 2022.
- 44. First death of NSW flood crisis confirmed as woman's body found in flooded Lismore home, Ballina Hospital evacuated. *ABC News.* https://www.abc.net.au/news/2022-03-01/first-death-confirmed-in-lismore-flooding/100871118. Published March 1, 2022. Accessed September 19, 2022.
- 45. Touma R, Tondorf C. Flood of help: how the NSW and Queensland disaster has brought neighbours closer together. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/02/flood-of-help-how-the-nsw-and-queensland-disaster-has-brought-neighbours-closer-together. Published March 1, 2022. Accessed September 19, 2022.

- 46. Wahlquist C, Touma R, Tondorf C. Lismore counts the devastation as Ballina braces for its worst flood in history. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/01/as-water-laps-at-rooftops-in-lismore-ballina-braces-for-its-worst-flood-in-history. Published March 1, 2022. Accessed September 19, 2022.
- 47. Readfearn G. 'A year's worth of landfill': what will happen to all the waste from flood-damaged homes in Queensland and NSW? *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/09/qld-and-nsw-floods-create-mountains-of-waste-and-spark-environmental-and-vermin-fears. Published March 8, 2022. Accessed September 19, 2022
- 48. Tondorf C. 'Worse than 2017': Lismore faces mammoth rebuild after flood as community inundated by loss. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/06/worse-than-2017-lismore-faces-mammoth-rebuild-after-flood-as-community-inundated-by-loss. Published 2022. Accessed September 19, 2022.
- 49. Turnbull S. Flooded buildings in Lismore may not be condemned despite NSW Premier's warning. *ABC News*. https://www.abc.net.au/news/2022-03-07/thousands-of-flooded-buildings-in-north-nsw-may-not-be-condemned/100889230. Published March 7, 2022. Accessed September 19, 2022.
- 50. White L. Lack of housing options leaves flood-affected Northern Rivers residents in limbo. *ABC News*. https://www.abc.net.au/news/2022-04-14/flood-affected-northern-rivers-residents-in-housing-limbo/100987526. Published April 14, 2022. Accessed May 18, 2022.
- 51. Sheehan H. "Crushed" Northern Rivers building industry calls for help to rebuild flood-impacted region. *ABC News*. https://www.abc.net.au/news/2022-03-14/northern-rivers-building-chaos-post-floods/100906842. Published March 14, 2022. Accessed September 19, 2022.
- 52. Rubbo L, Harper D. Northern NSW floodwaters recede but it may take longer for some communities to return home. *ABC News*. https://www.abc.net.au/news/2022-04-02/floodwaters-recede-northern-nsw-evacuation-orders-in-place/100961464. Published April 2, 2022. Accessed September 19, 2022.
- 53. Oataway L, Shoebridge J. Flood victims told to leave emergency housing in Byron Bay to make way for Easter holiday-makers. *ABC News*. https://www.abc.net.au/news/2022-04-01/flood-victims-told-to-leave-emergency-accommodation/100959270. Published April 1, 2022. Accessed September 19, 2022.
- 54. Naylor C. Lismore floods: Nerves fray as enormity of disaster sinks in. *The Sydney Morning Herald*. https://www.smh.com.au/national/nsw/nerves-fray-in-lismore-as-enormity-of-disaster-sinks-in-20220301-p5a0rc.html. Published March 1, 2022. Accessed September 19, 2022.
- 55. Calderwood K. Anger as residents in flooded NSW areas not eligible for disaster payments. *ABC News*. https://www.abc.net.au/news/2022-03-10/some-nsw-residents-not-eligible-for-flood-disaster-payments/100897690. Published March 10, 2022. Accessed September 19, 2022.
- 56. Rennie E. Rahima's house burnt down in the Lismore floods she's seen an opportunity. *ABC News*. https://www.abc.net.au/news/2022-03-11/nsw-lismore-resident-sees-opportunity-amid-devastating-floods/100901758. Published March 11, 2022. Accessed September 19, 2022.
- 57. Visontay E, Tamsin R. Motor homes for flood-affected Lismore residents empty while more temporary housing yet to arrive. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/18/motor-homes-for-flood-affected-lismore-residents-empty-while-more-temporary-housing-yet-to-arrive. Published March 18, 2022. Accessed September 19, 2022.
- 58. Lapham J, Rennie E. "Mini-villages" for thousands left homeless after Northern Rivers floods welcomed but "more is needed." *ABC News*. https://www.abc.net.au/news/2022-04-17/nsw-government-funds-housing-pods-floods-affected-communities/100995910. Published April 17, 2022. Accessed September 19, 2022.
- 59. Kelly C. Pressure grows on Airbnb to permit long-term rentals as NSW floods worsen housing crisis. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/10/pressure-grows-on-airbnb-to-permit-long-term-rentals-as-nsw-floods-worsen-housing-crisis. Published March 10, 2022. Accessed September 19, 2022.
- 60. Farrell P, Xiao A, Robb K. Flood victims say they're crowdfunding for help due to lack of government support. ABC News. https://www.abc.net.au/news/2022-03-08/flood-victims-setting-up-crowdfunding-pages-to-get-help/100892304. Published March 8, 2022. Accessed September 19, 2022.
- 61. Visontay E. Flood-affected Lismore residents with nowhere to go return to homes deemed uninhabitable. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/20/flood-affected-lismore-residents-with-nowhere-to-go-return-to-homes-deemed-uninhabitable. Published March 20, 2022. Accessed September 19, 2022.
- 62. Tatham H. Lismore residents whose homes were covered in oil from Boral asphalt depot after floods left with daunting clean up. *ABC News*. https://www.abc.net.au/news/2022-06-12/lismore-residents-want-answers-oil-bitumen-spill-boral-site/101143576. Published June 11, 2022. Accessed September 19, 2022.
- 63. Chenery S. Snakes in cars, dogs on roofs: the battle to save animals stranded in the NSW floods. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/19/snakes-in-cars-dogs-on-roofs-the-battle-to-save-animals-stranded-in-the-nsw-floods. Published March 19, 2022. Accessed September 19, 2022.

- 64. Kelly C. NSW flood victims desperate for accommodation, with temporary options running out. *The Guardian*. https://www.theguardian.com/australia-news/2022/may/01/nsw-flood-victims-kicked-out-of-caravan-parks-to-make-way-for-tourists. Published April 30, 2022. Accessed May 18, 2022.
- 65. MacKenzie B. Election corflutes and blankets used as makeshift insulation against the cold in flood-ravaged Lismore. *ABC News*. https://www.abc.net.au/news/2022-06-09/election-corflutes-insulation-flood-damaged-cold-lismore-homes/101137744. Published June 9, 2022. Accessed September 19, 2022.
- 66. Hanna C, McGowan M. More than 2,000 premises deemed uninhabitable in NSW region already beset by 'beyond dire' housing crisis. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/07/beyond-dire-how-the-queensland-and-nsw-floods-are-worsening-the-rental-crisis. Published March 6, 2022. Accessed September 19, 2022.
- 67. Dyer N, Young B. Flood devastated Tweed crying out for homeowners to give up holiday properties. *ABC News*. https://www.abc.net.au/news/2022-03-10/nsw-tweed-housing-crisis-floods-bring-tweed-health-cisis/100897710. Published March 10, 2022. Accessed September 19, 2022.
- 68. Knaus C. 'We've run out of options here': NSW flood disaster worsens housing crisis in northern rivers. *The Guardian*. https://www.theguardian.com/australia-news/2022/mar/11/weve-run-out-of-options-here-nsw-flood-disaster-worsens-housing-crisis-in-northern-rivers. Published March 10, 2022. Accessed May 18, 2022.
- 69. Brown M, Parkes-Hupton H. Flood fears for parts of NSW, authorities warn. *ABC News*. https://www.abc.net.au/news/2022-03-07/floods-hit-nsw-authorities-warn/100887384. Published March 6, 2022. Accessed September 19, 2022.
- 70. Clure E. People left homeless by northern NSW floods say they have "fallen through the cracks." *ABC News*. https://www.abc.net.au/news/2022-04-04/people-left-homeless-by-nsw-floods-fallen-through-the-cracks/100964964. Published April 4, 2022. Accessed September 19, 2022.
- 71. Hayman R, Thorpe N. Cabbage Tree Island's Indigenous community displaced by NSW floods "left out" of government's response. *ABC News*. https://www.abc.net.au/news/2022-03-13/nsw-floods-displace-cabbage-tree-island-indigenous-community/100903252. Published March 12, 2022. Accessed September 19, 2022.
- 72. Kozaki D, Rennie E, Hildebrandt C. Commonwealth told to "step up" after declining to pay for half of \$112m NSW flood grants. *ABC News*. https://www.abc.net.au/news/2022-04-04/nsw-northern-rivers-commonwealth-told-step-up/100963232. Published April 3, 2022. Accessed September 19, 2022.
- 73. NSW puts property developer profits before climate action. *The Sydney Morning Herald*. https://www.smh.com.au/politics/nsw/nsw-puts-property-developer-profits-before-climate-action-20220406-p5abd3.html. Published April 6, 2022. Accessed September 19, 2022.
- 74. Rennie E. Land swaps, buybacks and businesses on the golf course: Ideas proposed for Lismore's future. *ABC News*. https://www.abc.net.au/news/2022-05-03/lismore-future-review-discussion-paper-rebuild-options/101032914. Published May 3, 2022. Accessed September 19, 2022.
- 75. MacKenzie B. Council baulks at \$400 million flood retreat bill. *ABC News*. https://www.abc.net.au/news/2022-05-24/lismore-flood-retreat-plan-could-cost-400-million/101095440. Published May 24, 2022. Accessed September 19, 2022.
- 76. Pezet L, Saunders M. More than \$100m in relief as flood-ravaged northern NSW continues to struggle. *ABC News*. https://www.abc.net.au/news/2022-06-03/winter-relief-for-flood-stricken-lismore-northern-nsw/101125062. Published June 3, 2022. Accessed September 19, 2022.
- 77. Ross H. NSW Flood Inquiry gets underway with traumatised residents sharing their stories. *ABC News*. https://www.abc.net.au/news/2022-05-03/nsw-flood-inquiry-gets-underway-in-northern-rivers/101034028. Published May 3, 2022. Accessed September 19, 2022.
- 78. Fuller M, O'Kane M. 2022 Flood Inquiry Volume Two: Full Report. NSW Government; 2022. https://www.nsw.gov.au/sites/default/files/noindex/2022-08/VOLUME_TWO_Full%20report.pdf
- 79. NSW Parliament, Legislative Council. Select Committee on the Response to Major Flooding across New South Wales in 2022. Report No. 1. Parliament of NSW. Legislative Council.; 2022. https://www.parliament.nsw.gov.au/lcdocs/inquiries/2866/Report%20No%201%20-%20Response%20to%20major%20flooding%20across%20New%20South%20Wales%20in%202022.pdf
- 80. NSW Government. 2022 NSW Flood Inquiry. NSW Government. Published August 18, 2022. Accessed September 19, 2022. https://www.nsw.gov.au/nsw-government/projects-and-initiatives/floodinguiry
- 81. NCOSS. NSW Independent Flood Inquiry: NCOSS Submission. Published online 2022. https://www.ncoss.org.au/wp-content/uploads/2022/05/NCOSS-Submission-NSW-Independent-Flood-Inquiry-20-May-FINAL.pdf