Natural Hazards Research Australia

Recovery Capitals – Integration

Consultation workshop

Acknowledgement

We live and work on the unceded lands of the Wurundjeri People of the Kulin nation, and we pay respects to their Elders past and present.

We strive to participate in genuine and respectful collaborations between Indigenous and non-Indigenous people for a more just, healthy and sustainable future together.

Artwork by Frances Belle Parker

Welcome & introductions

Bridget Tehan, Australian Red Cross

Where did it all begin?

Disaster Recovery Capitals

Professor Lisa Gibbs, University of Melbourne
Dr Bhiamie Williamson, Monash University

10 YEARS **BEYOND BUSHFIRES** REPORT

MARCH 2021

THE UNIVERSITY OF MELBOURNE

Contributors:

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the power of humanity | Australian Red Cross | Victoria State Government

Partner organisations:

Phoenix Australia | Social Research Centre

Recovery Capitals (ReCap)

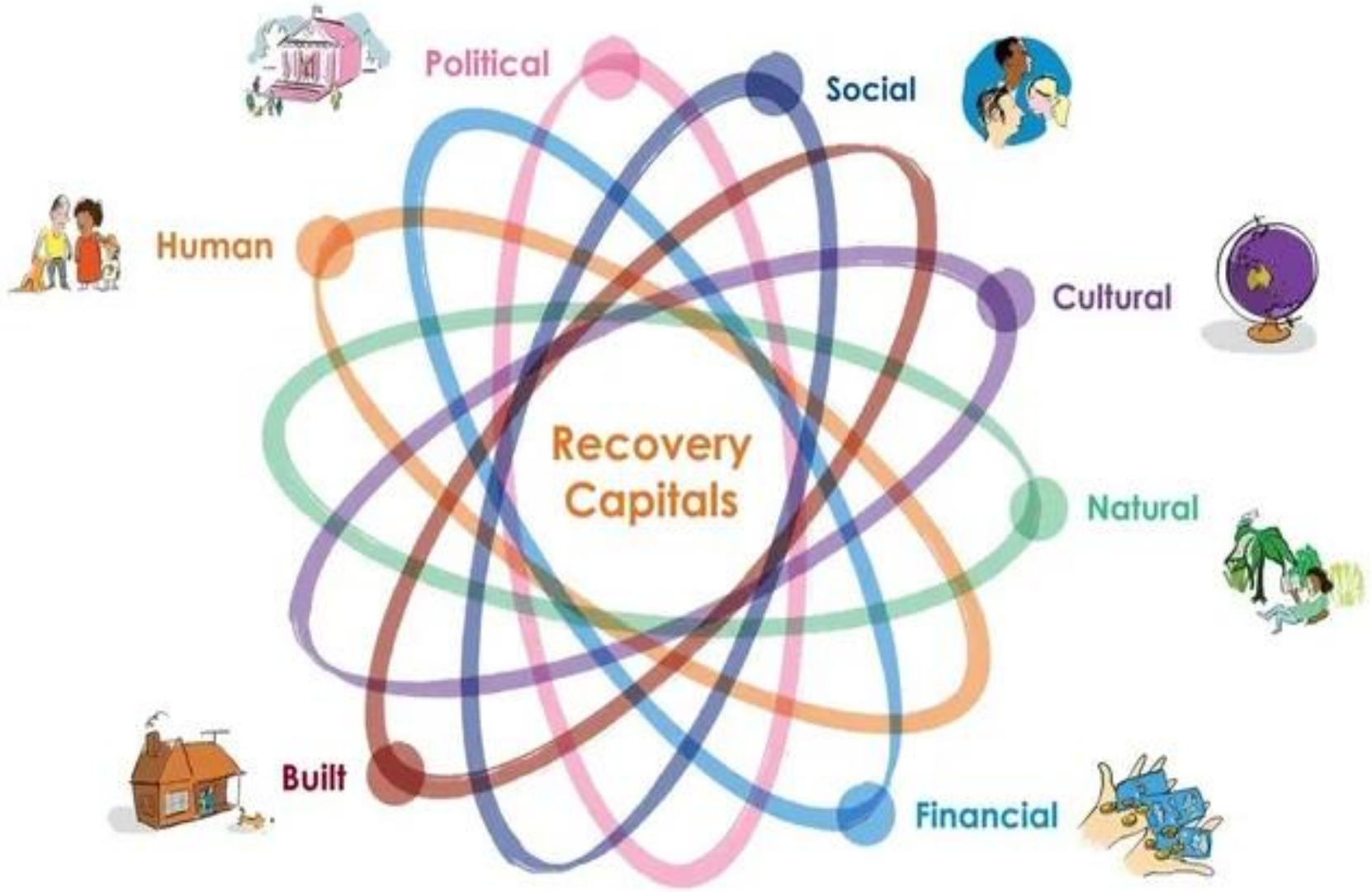
THE UNIVERSITY OF MELBOURNE

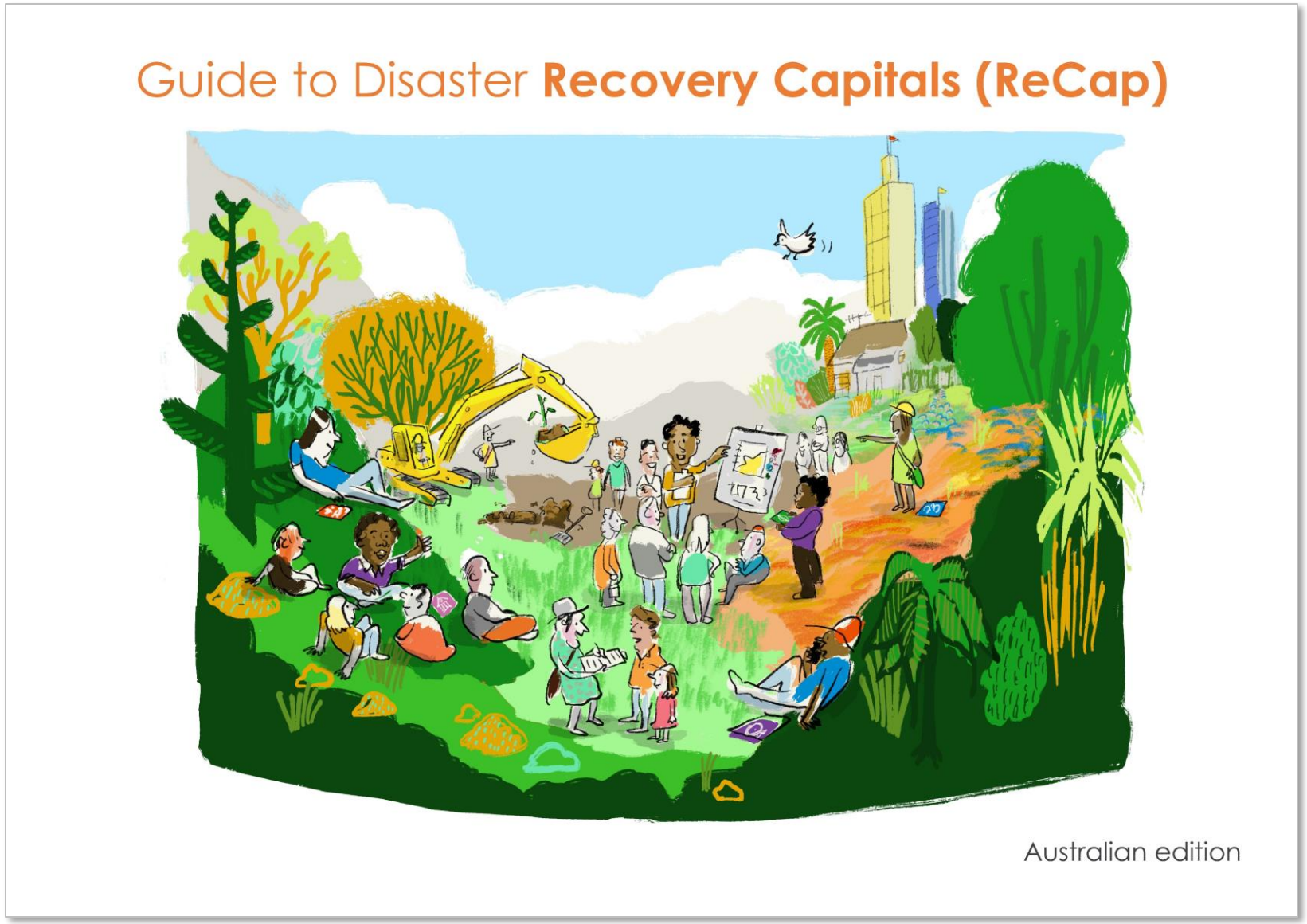
MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

Australian Red Cross

bushfire&natural HAZARDSCRC

Disaster Recovery Capitals Framework





Quinn P, Gibbs L, Blake D, Campbell E, Johnston D, Ireton G. Guide to Post-Disaster Recovery Capitals (ReCap). Melbourne, Australia: Bushfire and Natural Hazards Cooperative Research Centre; May 2021.

recoverycapitals.org.au

Phoebe Quinn, University of Melbourne

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Contributors & end-users

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Academic: Prof Daniel Aldrich (Northeastern University, USA), Prof Louise Harms, Dr Karen Block and Robyn Molyneaux (University of Melbourne); Dr Melissa Parsons (University of New England, Australia), Prof Mehmet Ulubasoglu and Farah Beaini (Deakin University, Australia), Mel Taylor (Macquarie University), Dr H. Colin Gallagher (Swinburne University); Prof Colin MacDougall (Flinders University); Prof Meaghan (Phoenix Australia), Bhiamie Williamson (Australian National University)

Funding: Bushfire and Natural Hazards Cooperative Research Centre.

Human | key considerations

Skills and livelihoods

What we know

Employment sector and status influence how people are affected by disasters. People are more likely to face reduced income if their employment is part-time, low-paying, in particular fields[75], and if they are women[76]. Those working in agriculture, accommodation and food services are generally hit hardest, while income can even increase in some sectors[75]. Community level impacts also vary based on local economies[82].

Consider

- **Who is most likely to lose work or income? How can this be mitigated? Consider supporting people to transfer their skills or retrain for roles in another sector.**
- **Recovery funding and economic initiatives should focus on those that are likely to lose income and on heavily impacted businesses and sectors.**

Recovery workforce

What we know

The recovery workforce must be assembled very quickly following a disaster. The increased demand means that staff and volunteers do not always have the knowledge and skills that they need, which can negatively impact the wellbeing of those in need of support[128].

The wellbeing of service providers themselves is also undermined when demands exceed what they are able to meet[35,129,130]. Disaster recovery support roles can be fulfilling but they can also be challenging and stressful. Workers and volunteers may face increased mental health risks, particularly if they have also been personally impacted by disaster and if training and support are inadequate[131–133]. Planning and coordination by organisations and governments are crucial in meeting these workforce demands, and in all aspects of recovery[58,107].

Consider

- **What additional demands and issues will staff encounter in this recovery context? Are they being provided with appropriate training and support?**
- **What processes and plans does your organisation have in place to prepare for future risks? What is required for activating a rapid response and adapting to changed operating environments?**
- **Explore opportunities to work with local service providers that have existing, trusted relationships with a range of community members.**

Social | key considerations

Decisions: remain, relocate, return

What we know

Social networks and connection to a community can influence people's decisions about relocating or living locally after a disaster. Neighbourhoods with high levels of social capital tend to repopulate more quickly after disasters[24,54]. Following Black Saturday, strong sense of community was a reason people chose to stay locally, while for others damaged sense of community arising from disagreements and changes to the local area led to decisions to relocate[20,39]. After Hurricane Katrina, survivors relied on information about the plans of their neighbours, friends and store owners when deciding whether to return to New Orleans or relocate[24,44].

Decisions about relocation may be further complicated for Aboriginal peoples with connections to Country in the disaster-affected area[4,21]. In addition to the ramifications for social, cultural and political life, these decisions are influenced by the distinctive nature of the formally recognised rights and interests held by Aboriginal peoples – such as native title, which cannot be bought or sold – as compared to non-Indigenous land ownership[4].

People with disabilities may also have less choice regarding relocation due to lack of accessible housing options[55].

Consider

- **Provide information to people facing decisions about rebuilding or relocating about the sorts of stressors and benefits they are likely to face in each scenario.**
- **What local groups, spaces, resources and activities help people connect with each other socially? How can these be supported? Be sure these opportunities are culturally sensitive and accessible to all.**
- **Facilitate ways for people to connect (e.g. through free local events) even if they are unable to meet in person (e.g. community pages on social media).**
- **Are there people who will have less opportunity to decide whether to stay or relocate than others (e.g. those in public housing or in rental homes)? Identify opportunities to help these people to connect and access support.**

Experiences: remain, relocate, return

What we know

Relocating or living locally after a disaster is likely to alter recovery experiences, but the implications for long-term wellbeing are complex and variable. Benefits of staying locally include opportunities for community connection and discussion of shared experiences, although this can be undermined if friends and neighbours choose to leave[20,42,56]. Those who relocate may feel guilt over this and be less socially connected in their new homes, but may benefit from stepping away from the post-disaster disruption[20]. Their mental health may be protected if they have new neighbours who have also relocated from the same area[29].

Negative effects of evacuations and relocation for Aboriginal peoples include an inability to maintain proper relations with Country, disconnection from Country and family, and loss of resources, all of which occurs in the historical context of dispossession and forced relocation under settler colonialism[21,22].

At a community level, repopulation of disaster-affected locations is often an indicator of recovery[54], yet relocation may become necessary if there is a high risk of future disasters[57].

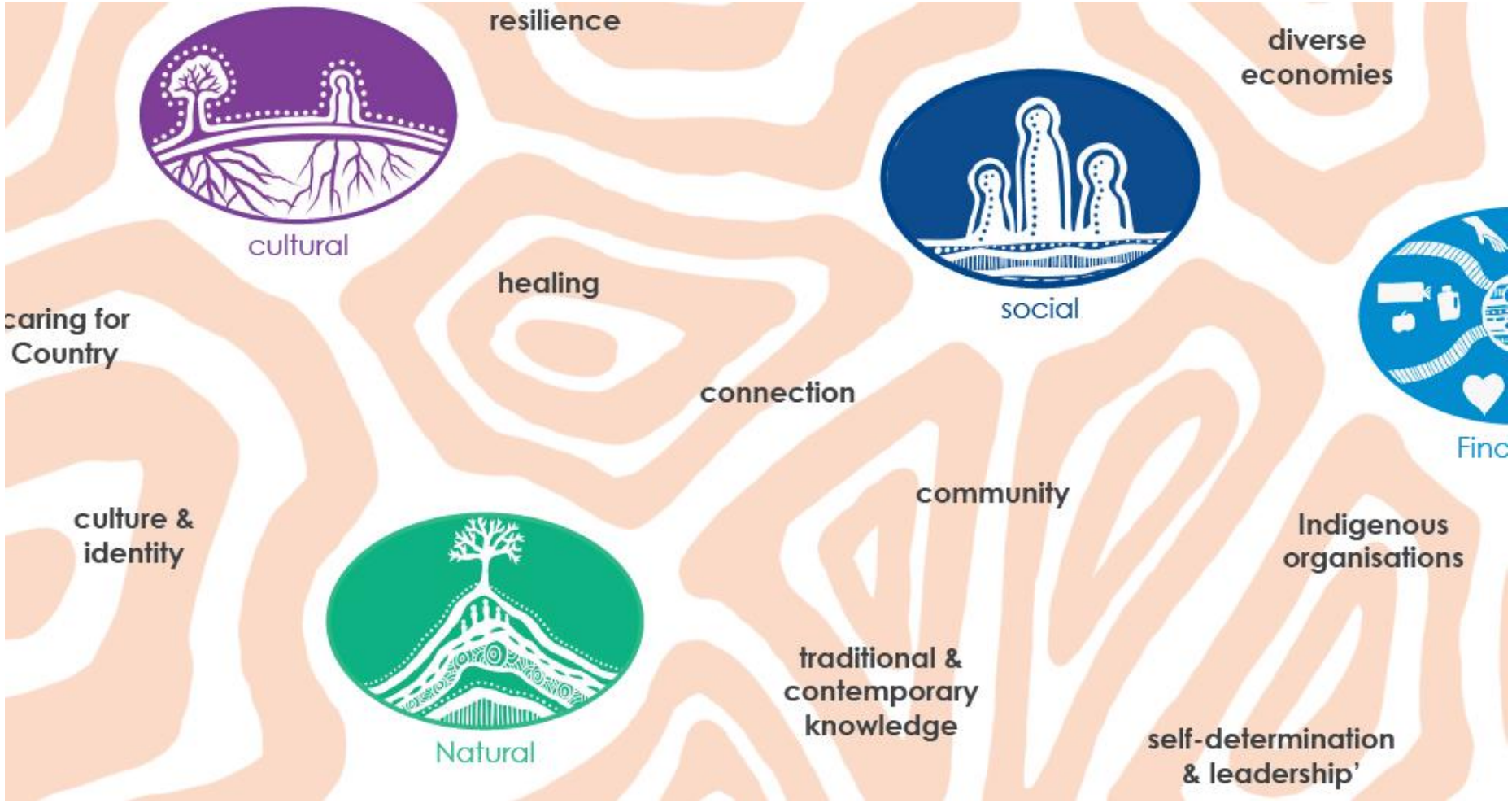
Consider

- **Establish a communications register or online platform so people who have been impacted by disasters can receive information about services, events, grants and research over time if they wish, even if they do not live in affected areas. Consider the needs of culturally and linguistically diverse people, as well as people who do not have access to online technologies.**
- **Recovery support packages (and case support worker approaches) should be tailored to match the stressors that people are likely to face, based on whether they are staying locally or relocating. Planning should include consideration regarding how those who have relocated will be able to access support services and information.**
- **When mass relocation is needed (temporarily or longer-term), enable people from the same area to live near each other when appropriate.**

Guide to Disaster **Recovery Capitals (ReCap)**

Aotearoa New Zealand edition

Indigenous Peoples and Recovery Capitals



Awareness & utilisation

1. Were you aware of the Recovery Capitals resources?

2. Did you contribute to Recovery Capitals development?

3. Is it relevant to your work?

4. Have you used Recovery Capitals in your work?

Where did it go next?

Climate Superpowers

Professor Lisa Gibbs, University of Melbourne

Climate Superpowers **Project Leads**

Dr Katitza Marinkovic Chavez

Phoebe Quinn

HUMAN SUPERPOWERS

SOCIAL SUPERPOWER

NATURAL SUPERPOWER

POLITICAL SUPERPOWER

BUILT SUPERPOWER

CULTURAL SUPERPOWER

FINANCIAL SUPERPOWER

CLIMATESUPERPOWERS.ORG


YOUR CLIMATE SUPERPOWERS
TAKE THE QUIZ
CLIMATE CHANGE SUPERPOWER QUIZ
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Question 1 of 12. Visual bar of completion.
HOW WOULD YOU PREFER TO LEARN ABOUT CLIMATE CHANGE AND CLIMATE ACTION?
Observing and listening to other people's lived experiences.
From scientists and other experts.
Listening to the speakers at the Schools Strikes 4 Climate.

ACTIONS

EVERYDAY LIFE

SELF CARE

LEARNING

TRANSFORMING SOCIETY

Climate Superpowers in the Classroom

Activities / lesson plans

Curriculum alignment resources

Events

Awareness & utilisation

1. Were you aware of the Climate Superpowers resources?

2. Did you contribute to Climate Superpowers development?

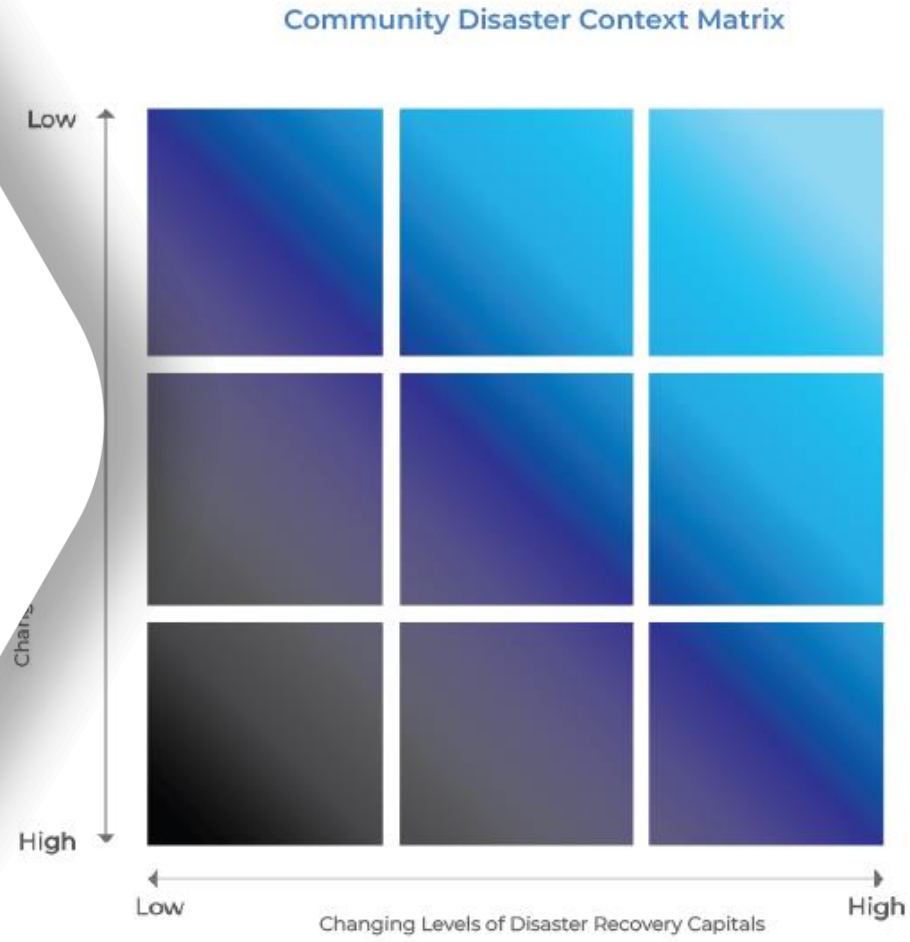
3. Is it relevant to your work?

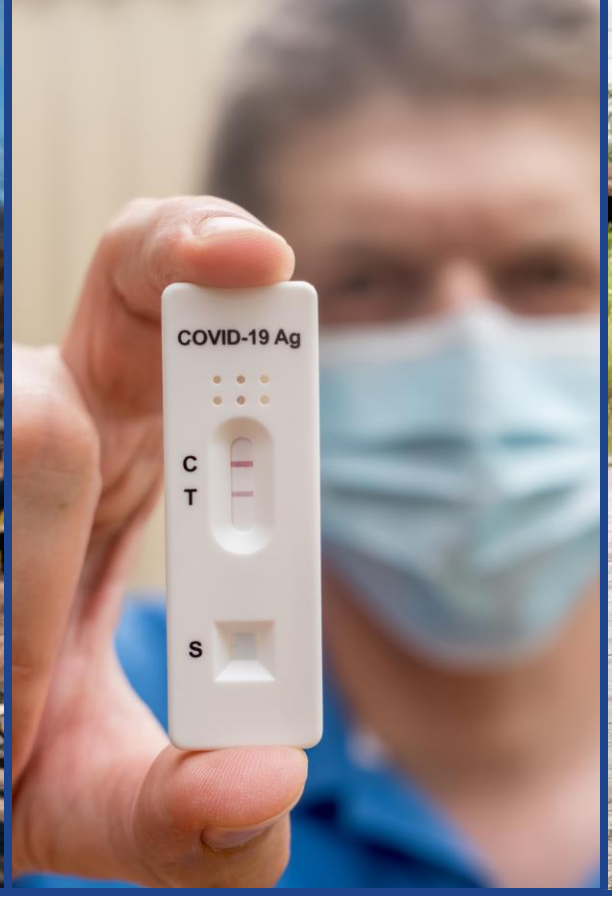
4. Have you used Climate Superpowers in your work?

Where did it go next?

Community Context Matrix

Alexandra Howard, Phoenix Australia
Professor Lisa Gibbs, University of Melbourne

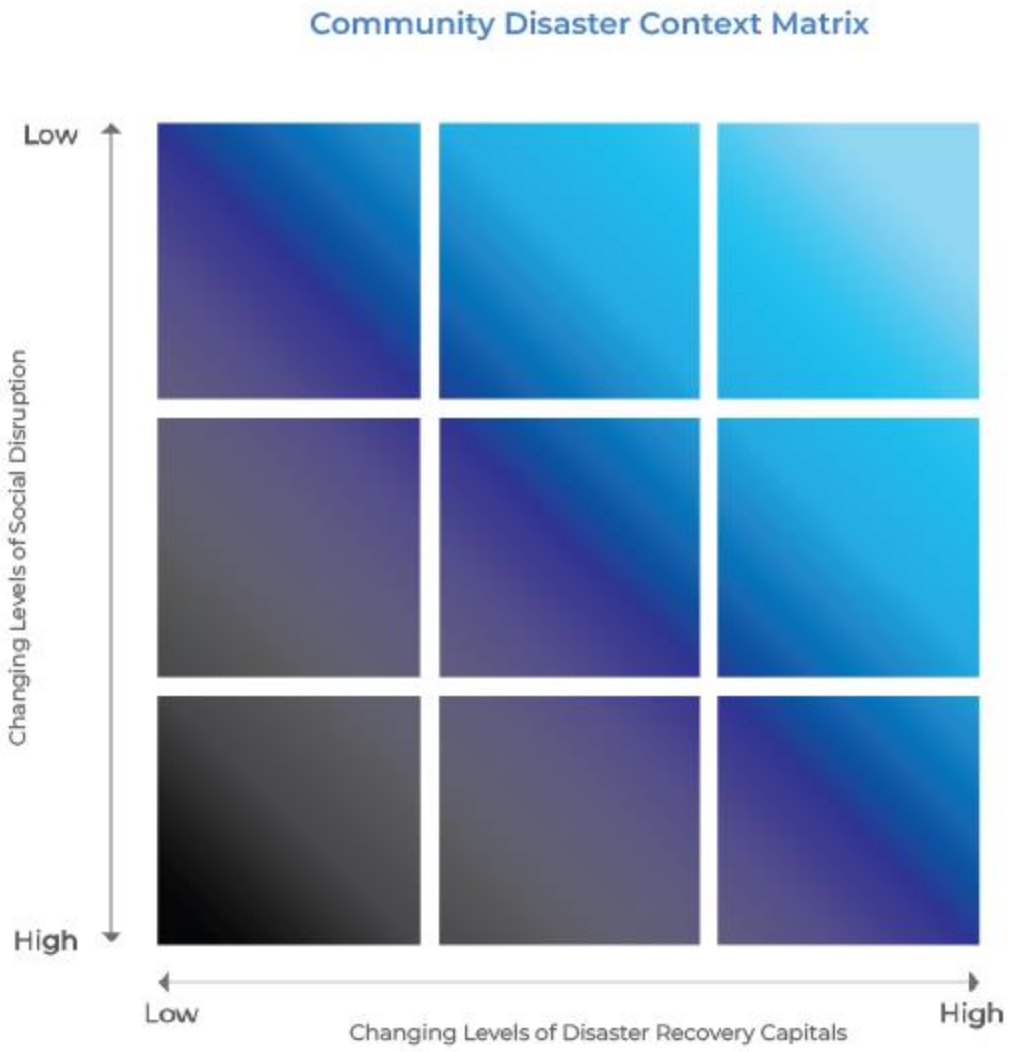




Exposure to **multiple disasters increases risk** of poor physical and mental health

Leppold et al. Public health implications of multiple disaster exposures (2022)
Li, A. & Leppold, C. Long-term mental health trajectories across multiple exposures to climate disasters (2025)

Community disaster context matrix

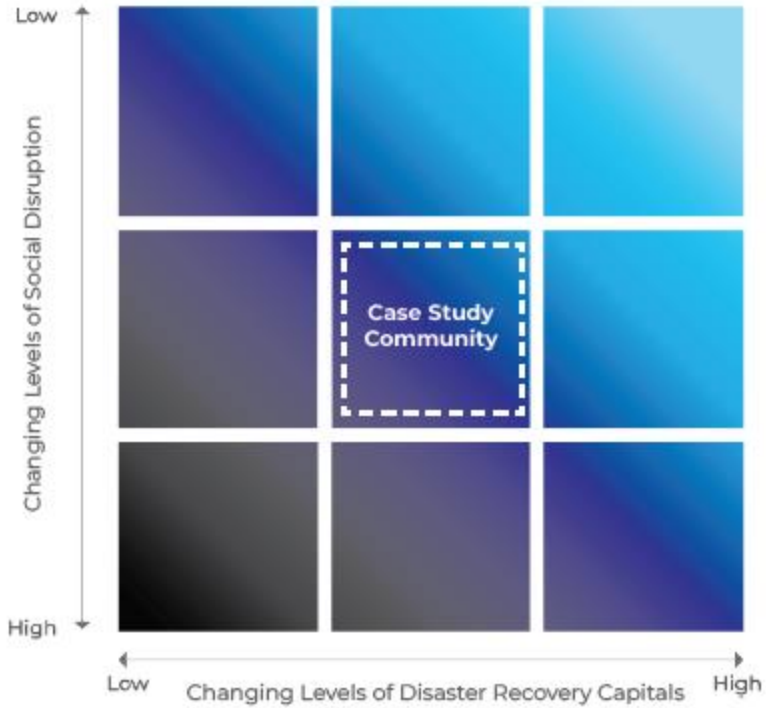


Social disruption indicators

- [ ] Community has recently been impacted by a diaster
- [ ] Multiple major disasters have impacted the community
- [ ] Threat of an imminent disaster
- [ ] Multiple lives lost and severe injuries from disaster event
- [ ] Significant number of homes damaged and destroyed
- [ ] Significant damage to local infrastructure
- [ ] Community-wide difficulties accessing essential supplies & services
- [ ] Widespread loss of income and livelihoods
- [ ] Sustained interruption to daily lives
- [ ] Widespread psychological impacts
- [ ] Significant sense of horror and/or shock caused by event
- [ ] Other indicator of local disruption not covered by previous indicators

Capitals	Community Rating		
	High	Medium	Low
Human Capital			
Social Capital			
Political Capital			
Cultural Capital			
Natural Capital			
Built Capital			
Financial Capital			
Overall Rating	Medium		

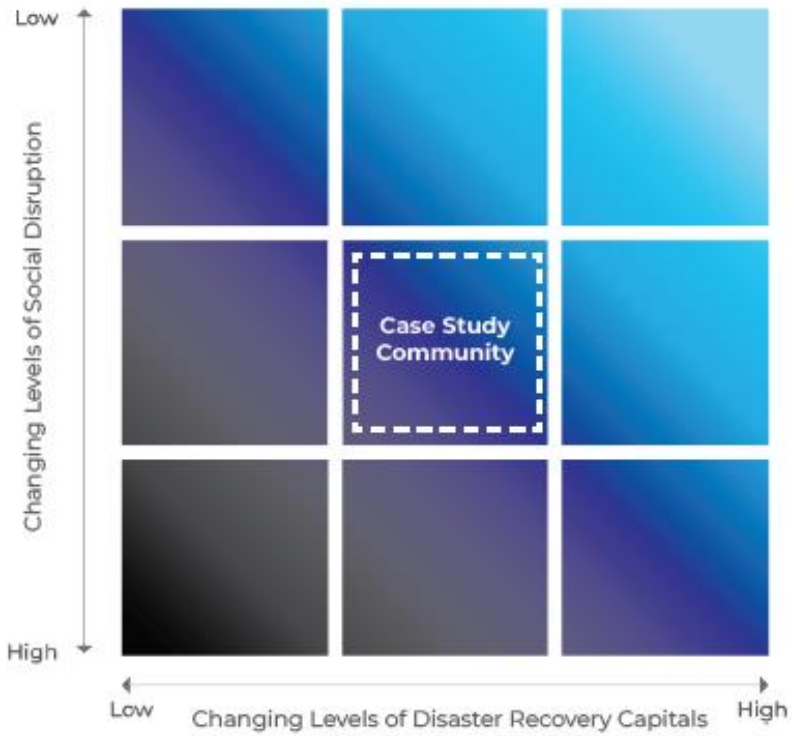
Assess for each type of capital



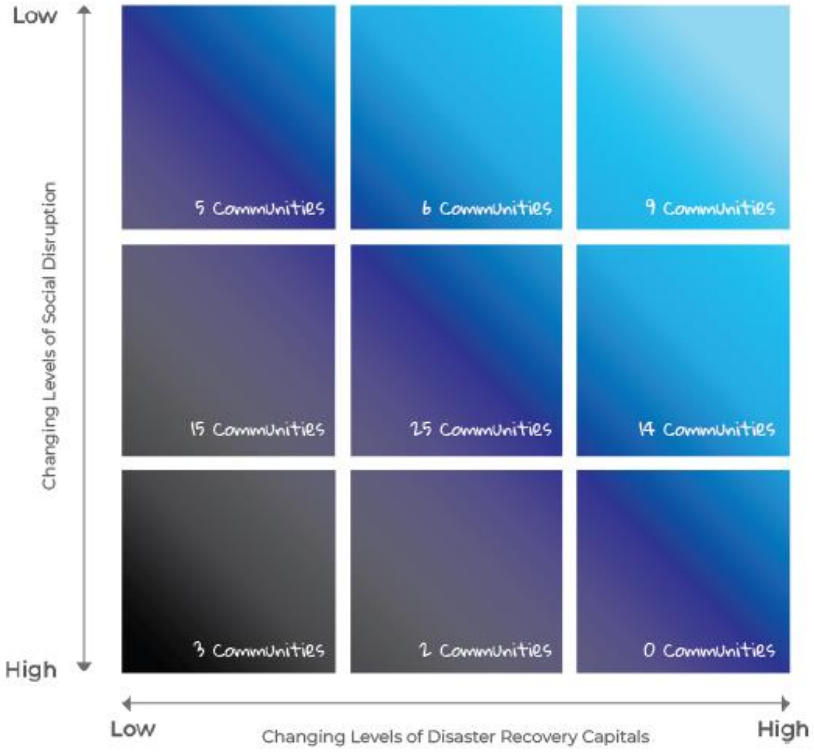
Overall capitals relative to levels of disruption

Assess **with** communities
using a **mix** of
qualitative and quantitative indicators

Match service recommendations to indicator outcomes



Single community assessment



State-wide assessments

Awareness & utilisation

1. Were you aware of the Community Context Matrix?

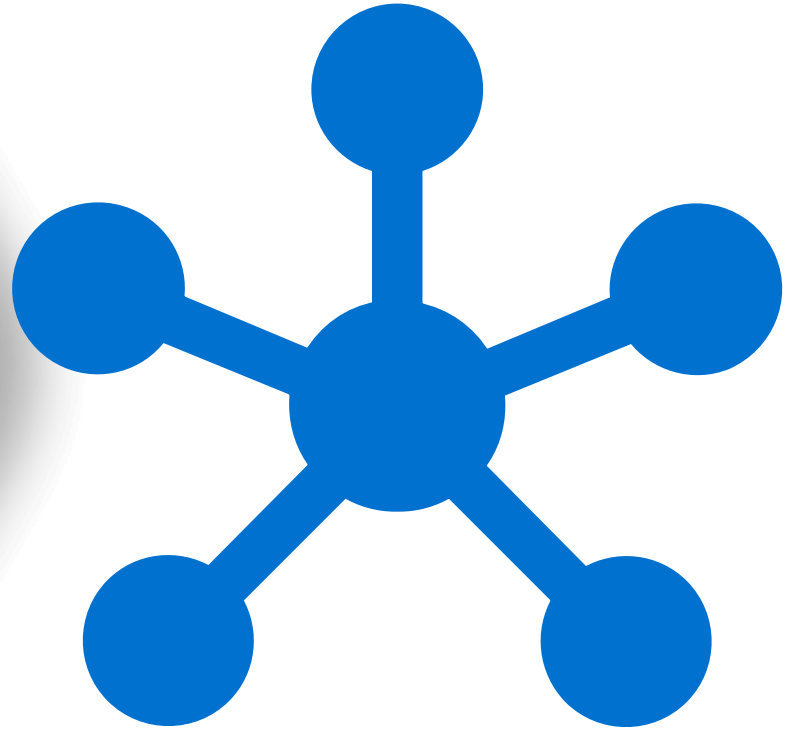
2. Did you contribute to the Community Context Matrix development?

3. Is it relevant to your work?

4. Have you used the Community Context Matrix in your work?

Where are we at now?

Recovery Capitals - Integration



Project aims

This project aims to provide **quantifiable measures and analyses (indicators)** tracking key components of the Community Disaster Context Matrix at **community level and over time**.

The quantitative indicators will be **combined** with more in-depth qualitative assessments conducted in partnership with communities.

The combined findings will **guide service decision making** by aligning different outcomes with recommended targeted service responses.

The indicators will also support an **assessment over time** of the potential mental health benefits of investing in various service options.

Lead end user perspective

Australian Red Cross

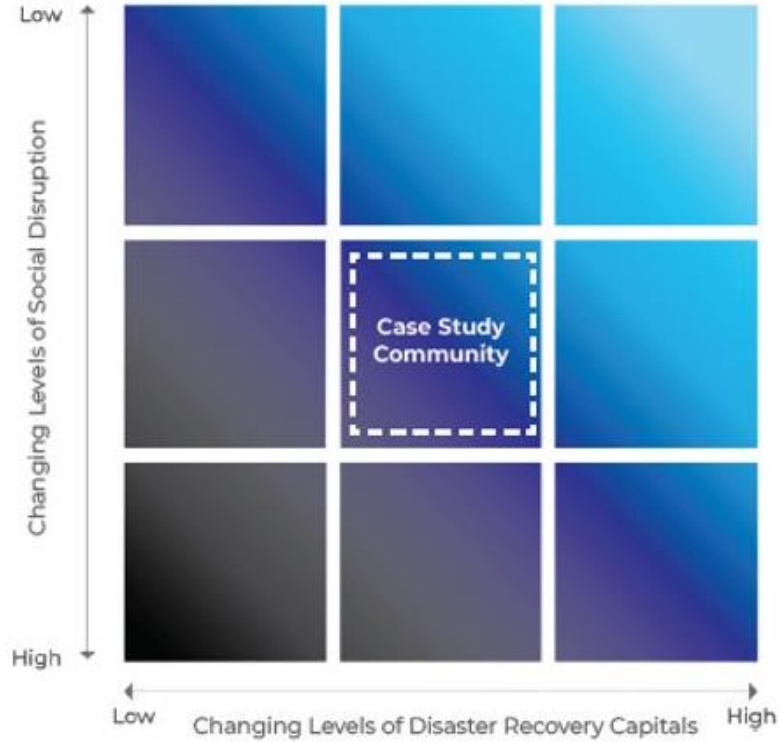
Bridget Tehan, Australian Red Cross

Where are we at now?

Recovery Capitals – Integration Indicators and Analysis

Prof Mehmet Ulubasoglu, Deakin University
Dr Hemant Pullabhotla, Deakin University

Project Objectives: Overview

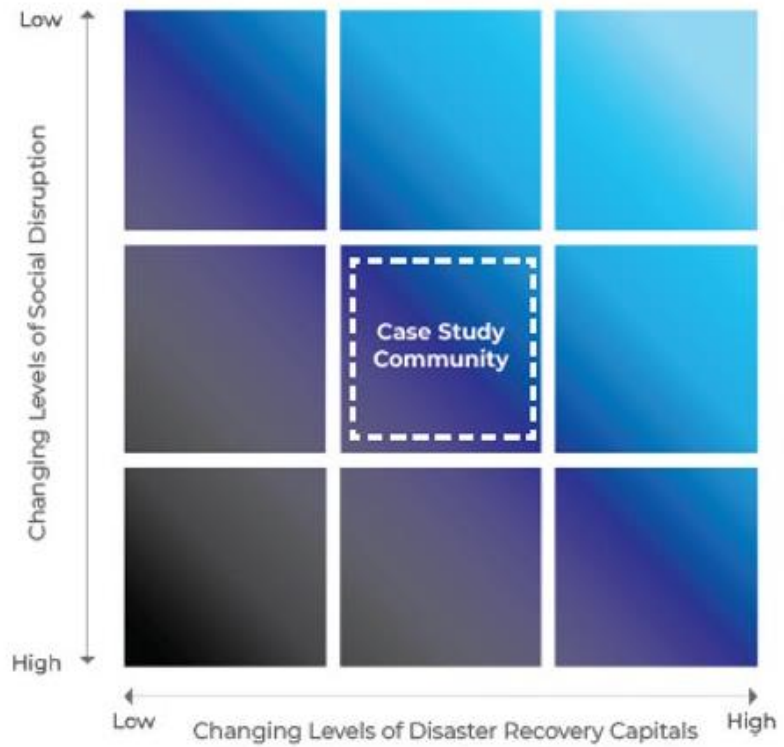


Key features and criteria for indicator inclusion:

- Granularity: Indicators at a localized spatial level (SA-2)
- Track temporal variability: Consistent availability to track changes over time (ideally annually from 2008 – 2020+)

- Quantitative measures to complement more in-depth qualitative assessments at community level
- Track changes in a community's place in the matrix over time

Project Objectives: Overview



Research Component(s):

- **Providing an in-depth profiling** of communities that face increased risk of disruption due to disasters, particularly cascading disasters
- **Identifying trends and patterns** in Recovery Capitals over time
- **Quantifying degree to which Recovery Capitals support community resilience** as measured by the mental health and wellbeing of individuals after disasters

Recovery Capitals

Table 1: Brief description of Disaster Recovery Capitals (adapted from Quinn et al 2022 - p://doi.org/10.1002/hpja.759)

Social Disruption	Bushfire intensity (share of burnt areas), storms
Human Capital	'Human capital' refers to people's skills and capabilities, including the ability to access resources and knowledge. It includes education, physical and mental health, physical ability, knowledge from lived experience and leadership capabilities.
Social Capital	'Social capital' refers to the connections, reciprocity and trust among people and groups. There are three types of social capital: bonding (strong ties between similar people e.g., family and friends), bridging (looser ties between a broader range of people, often cutting across race, gender and class) and linking (ties connecting people with those in power, such as decision-makers).
Natural Capital	'Natural capital' refers to natural resources and beauty, and the overall health of ecosystems. This includes air, land, soil, water, minerals, energy, weather, geographic location, flora, fauna and biodiversity.
Financial Capital	'Financial capital' refers to the availability of and access to resources including savings, income, assets, investments, credit, insurance, grants, donations, loans, consumption and distribution of goods and services, employment and economic activity.
Cultural Capital	'Cultural capital' refers to the way people understand and know the world, and how they act within it. It includes ethnicity, habits, language, stories, traditions, spirituality, heritage, symbols, mannerisms, preferences, attitudes, orientations, identities, norms and values, and the process and end products of cultural and artistic pursuits.
Political Capital	'Political capital' refers to the power to influence decision-making in relation to resource access and distribution, and the ability to engage external entities to achieve local goals. It includes agency, voice, justice, equity, inclusion, legislation, regulation, governance, leadership and policy. It applies within and between groups and exists both formally and informally.
Built Capital	Built capital refers to the design, building and maintenance of physical infrastructure, including its functional and aesthetic value. This includes critical facilities and services, housing, vehicles, equipment, information technology, communications, water and energy infrastructure.

The core of this project will focus on the quantitative indicators drawn from administrative and survey data contributing to the following capitals:

- Human, Social, Financial and Political Capital

- Some indicators from the datasets utilised in this project may also capture elements of cultural, natural and built capital levels within a community – though coverage is likely limited

Project Stages

1. Data Collection and Variable Construction
   a. Identifying appropriate indicators
   b. Aligning indicators with Recovery Capitals components
2. Data Processing, Aggregation and Creation of Indices
   a. Aggregate data to community level
   b. Combine indicators relating to a specific dimension of the Recovery Capitals – e.g., human capital index, a social capital index, financial or economic capital index
3. Economic Analysis and Research Outputs – showcase the value added from the data assembled for this project:
   a. *Trend analysis*: How have Recovery Capitals changed over time and across communities in Australia
   b. *Profiling:* Do Recovery Capitals dimensions vary across sub-groups of the population, with a focus on economically and socially marginalised groups?
   c. *Economic analysis of relationship between Recovery Capitals and Resilience*: How, and to what extent, do Recovery Capitals contribute to recovery in mental health and wellbeing of individuals in communities affected by disruptions?

Stage 1: Data Collection and Variable Construction

Data source/status	Description of dataset(s)	Indicators/ReCap/Notes
Indicators of community level disruptions (STATUS: Processing underway)	➢ Bushfires from state and territory agencies ➢ Storm events from BOM	Deakin team has put together processed data at annual level from 2000 to most recent year (2023/24) for fires and storm events

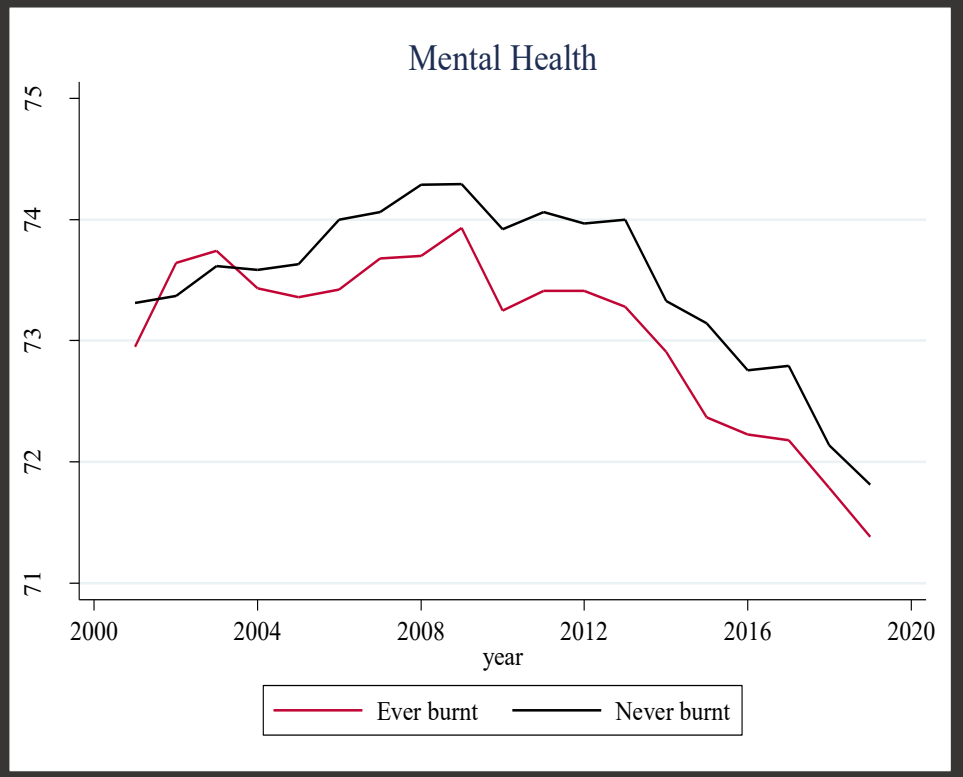
Table 1: Demographics/Human Capital

Demographics/Recap Indicators	Proxies/ sub indicators	Measurement	Data source
Demographic characteristics	Age, sex, migration population, English fluency.	Age composition, % elderly people (>65), % population aged <15; male/female ratio, % migration population, %population who can't speak English.	HILDA
'Human capital' refers to people's skills and capabilities, including the ability to access resources and knowledge. It includes education, physical and mental health, physical ability, knowledge from lived experience and leadership capabilities.	Education: Highest level of educational attainment	% population having 1. postgrad degrees; 2. bachelor, 3. Adv dip, dip, or certificates, 4. Year 12, 5. Year 11 and below	HILDA
	Physical health: (Health and mental health is from SF36 including 36 questions)		
	Physical functioning with various levels of intensities from daily life activities to rigorous activities	% population with physical functioning fall into categories: 1. weak, 2. moderate 3. strong	HILDA
	Self-assessment for physical health: "My health is excellent" 1. True 2. Don't know 3. False	% population falling in each category.	HILDA
	Expenditure for physical health diseases ($)	Mean value of expense in $	PLIDA
	Mental health	1) % population having positive /negative feeling (calm and peaceful, full of life/down, nervous) from a good bit to most of the time; 2) mean value of score for mental health.	HILDA
	Expenditure ($) for mental health related diseases (anxiety, depression, emotional problems)	Mean value of expense in $	PLIDA
	Life satisfaction (8 sub-indicators): how satisfied are you with: your life, employment opportunities, financial situation, amount of free time, home you live, neighbourhood, feeling safe, your health. Score 0. Totally dissatisfied, 10: totally satisfied, 5. neither.	1. Average (mean value of the score); 2. % population having answer falling in each category.	PLIDA

Table 2: Social Capital/Financial Capital

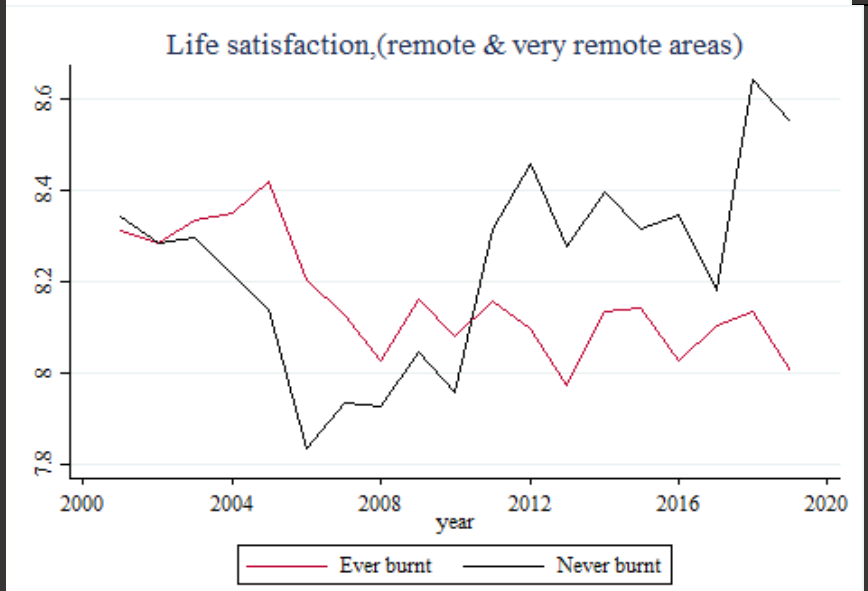
Recap Indicators	Proxies/ sub indicators	Measurement	Data source
'Social capital' refers to the connections, reciprocity and trust among people and groups. There are three types of social capital: bonding (strong ties between similar people e.g., family and friends), bridging (looser ties between a broader range of people, often cutting across race, gender and class) and linking (ties connecting people with those in power, such as decision-makers).	Neighbourliness (12 sub-indicators)	1) neighbour helping each other. 2) 'cognitive social capital' (perceived sense of community and trust in neighbours). Mean value of score for answers for questions related to questions for each indicator.	HILDA
	Personal networks (friends, family)	%population having good relationship with family members, relatives, or close friends.	HILDA
	Community participation (12 sub-indicators): participating community's events, like festivals, voluntary activities, giving donation etc	1)Mean value of frequency (6 categories from never to very often); 2) % population having answers in each category.	HILDA
'Financial capital' refers to the availability of and access to resources including savings, income, assets, investments, credit, insurance, grants, donations, loans, consumption and distribution of goods and services, employment and economic activity.	**Household approach**		
	Wage and salary	Mean value of wage and salary	
	Employment status	% population employed, unemployed, or not in labour force.	HILDA, PLIDA
	Income other than wages (investment income, interest, dividends etc)	1) Mean value of income; 2) % population having investment income.	HILDA, PLIDA
	Wealth and assets: house, stock, super, bank account.	Mean value of total assets and of each category	HILDA
	Housing	% population 1) owing a house outright 2) paying mortgage; 3) renting	HILDA
	Business approach		
	Business density	1) Number of businesses; 2) number of businesses by sector	BLADE
	Business size	1) average businesses turnover; 2) average FTE; 3) % small and micro enterprise	BLADE
	Businesses by sector	1)distribution of businesses by sector; 2) % businesses in agricultural sector	BLADE

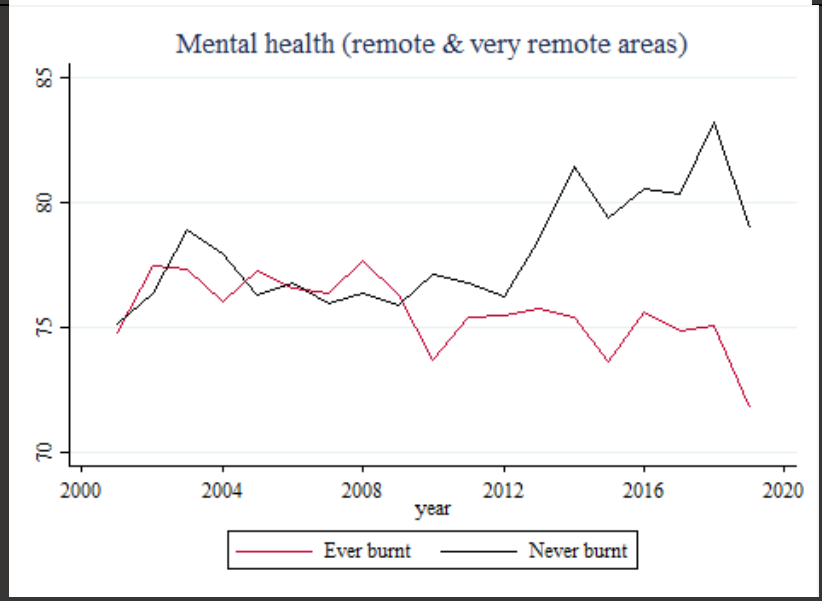
F1: Evolution of mental wellness in never-burnt vs. bushfire-prone SA-2s 2001-2109



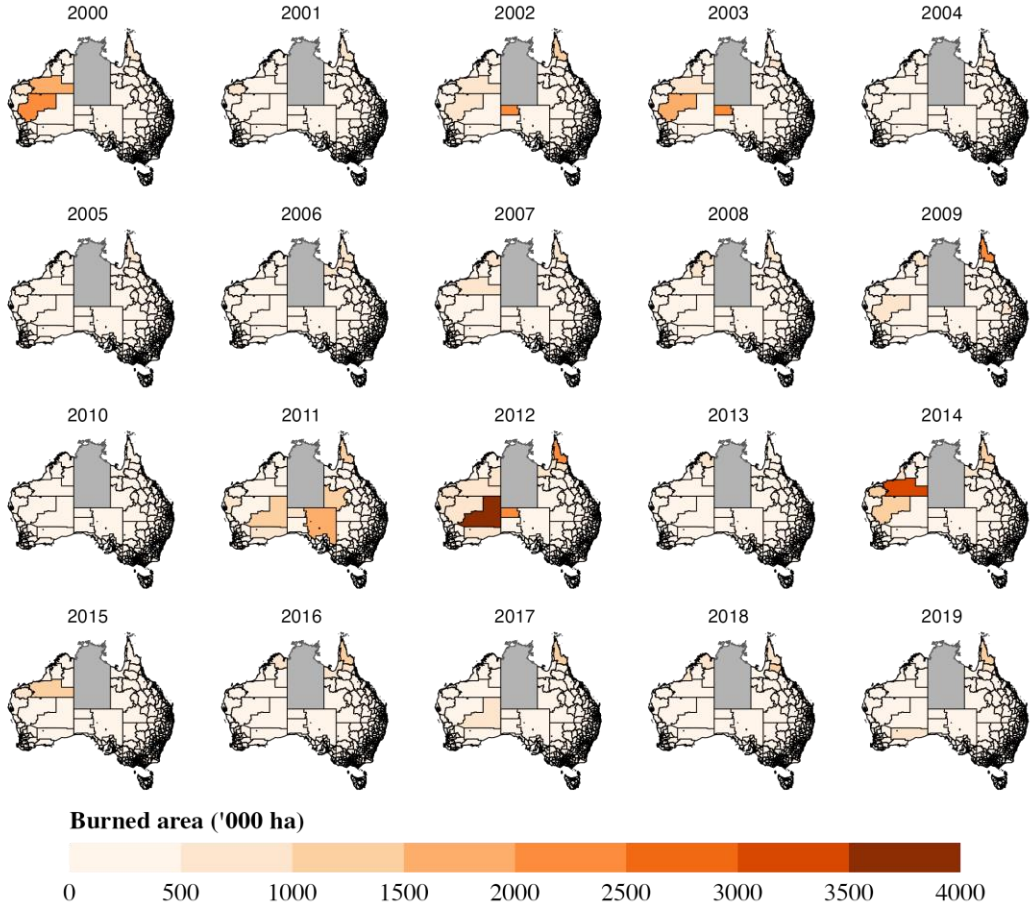
Notes: to facilitate the comparison of trend between ever and never burnt SA-2s, life satisfaction and mental health for ever-burnt areas has been shifted down vertically so that these two lines meet each other at the beginning years.

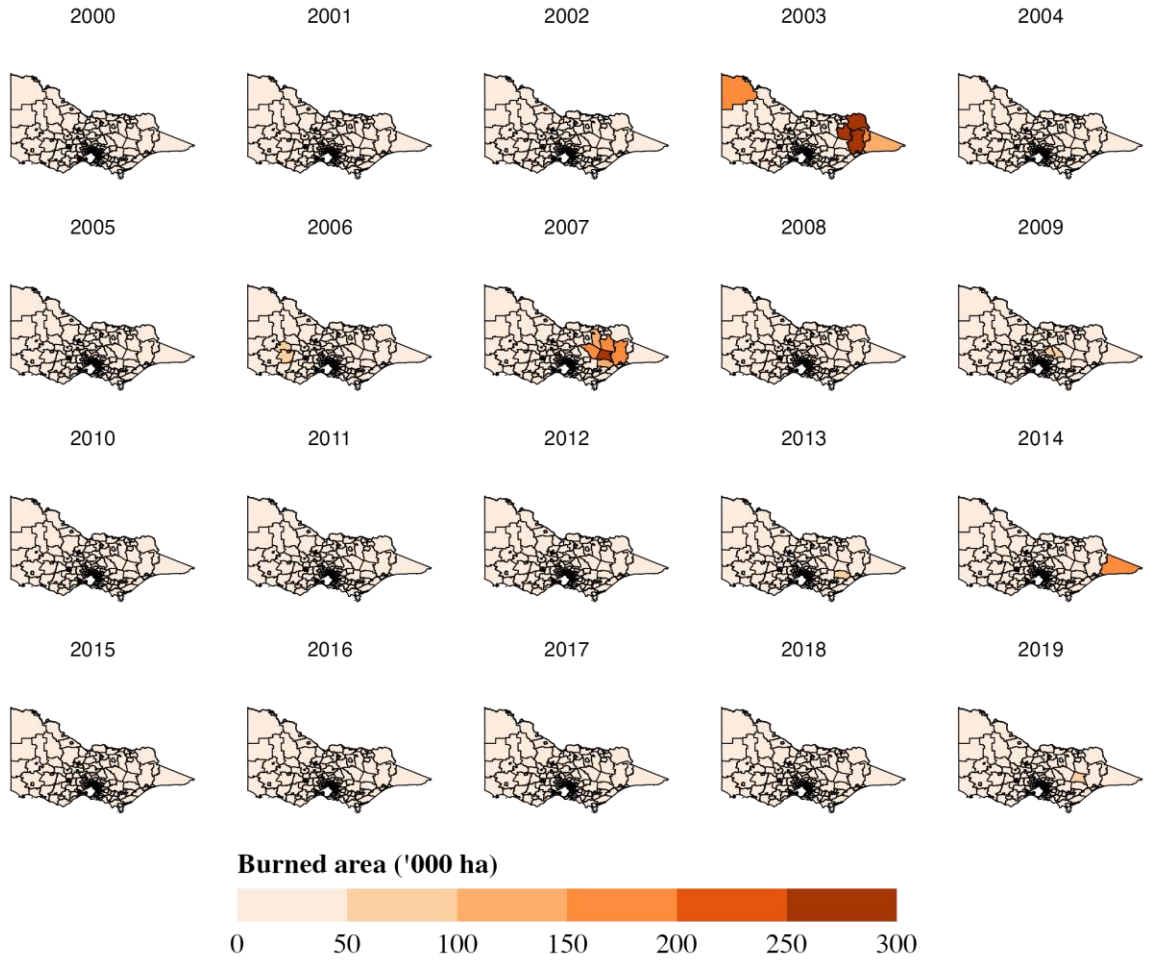
F2: Evolution of mental wellness in never-burnt vs. bushfire-prone SA-2s 2001-2109 for sub-groups





Stage 1: Data Collection and Variable Construction: Example – bushfire hazard





Stage 1: Data Collection and Variable Construction

Data source/status	Description of dataset(s)	Indicators/ReCap/Notes
Indicators of community level disruptions (STATUS: Processing underway)	➢ Bushfires from state and territory agencies ➢ Storm events from BOM ➢ *Extreme heat (from weather station and satellite observations) – under construction* ➢ *Suggestions for other sources of data on disruptions we could include?*	Deakin team has put together processed data at annual level from 2000 to most recent year (2023/24) for fires and storm events ***For discussion: Should we also consider indicators that can track disruptions not due to natural disasters? If so, what could they consist of?***

Stage 1: Data Collection and Variable Construction

Data source/status	Description of dataset(s)	Indicators/Notes	ReCAP
➢ Business Longitudinal Analysis Data Environment (BLADE) (Access granted to "restricted" data; processing underway)	➢ Contains data on all active businesses from 2001-02 to current, sourced from business register, ATO, IP, ASIC etc.	Example indicators include: • Business turnover (revenues) • Employees • Business closures	• Financial
➢ ADRI (initial meeting held to discuss avenues for collaboration)	➢ Australian Disaster Resilience Index (two points in time, SA2 level)	This project complement the ADRI	• Varying degrees of overlap
➢ NEMA	➢ Disaster-affected LGAs	Publicly available (updated up to March 2025)	• Additional indicators for disruptions • Possibly inform investments into ReCap

* Some survey questions not available in all waves

Stage 1: Data Collection and Variable Construction

Data source/status	Description of dataset(s)	Indicators/Notes	ReCAP
➢ Household, Income and Labour Dynamics in Australia (HILDA) Survey (Access granted to "restricted" data; processing underway)	➢ Survey tracks 17,000 individuals over time ➢ Interviewed each year: annual coverage: 2001* – 2023 ➢ Geospatial coverage: SA-2 level	Self-reported measures of: • Income, assets, debt, and other financial and economic variables • Subjective mental and physical health, overall well-being, life satisfaction • Social capital, community networks and connectedness • Exposure to disruptions and unexpected shocks	• Human, Social, Financia, Political
➢ Person Level Integrated Data Asset (PLIDA) from ABS (Access requested; secure data training complete)	➢ Secure data asset combining administrative information on health, education, government payments, income and taxation, employment, and population demographics (including the Census) over time ➢ Geospatial coverage: SA-2 (some at SA-1 level) ➢ Temporal frequency: varies between annual to 5-yearly (Census and other surveys)	Example indicators include: • Centrelink benefits • Medicare and PBS usage/expenses • Income (ATO) • National Health Survey • Indigenous; Immigrant; other demographic groups • Births and deaths (with cause of death)	• Human, Social, Financial, Cultural

* Some survey questions not available in all waves

Feedback and Suggestions

- Open to suggestions on datasets/indicators to inform Recovery Capitals or social disruptions

- Main criteria:
  - Can be linked spatially to communities
  - Ideally want consistent annually reported measures

Suggestions welcome:

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First Nations considerations

Dr Bhiamie Williamson, Monash University

How does Recovery Capitals-Integration complement the Australian Disaster Resilience Index (ADRI)?

Differences between Recap indicators and ADRI

- Two broad data points for ADRI vs Recap provides data for multiple repeated points in time across two decades vs 2 data points for ADRI.
- ADRI covers information on hard infrastructure (emergency services, information access) while ReCap focuses more on intangible infrastructure such as health and mental health, and social capital.
- **Financial capital:**

✓ Household and business approach

✓ Sector specific information (help identify vulnerability i.e. agriculture sector)

✓ Cover income and wealth information

Social capital:

✓ Cover a large array of health, mental health and wellbeing

✓ Data from both subjective source (HILDA) and objective monetary value from admin data (PLIDA).

Human capital:

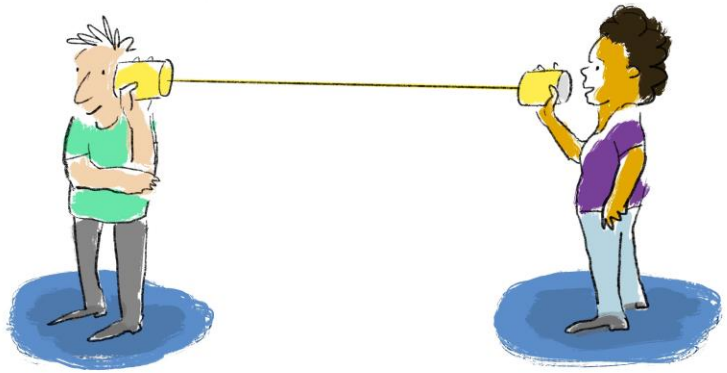
✓ Cover a large array of different types of social capital (neighbor based social capital, personal networks and relationship, social participation)

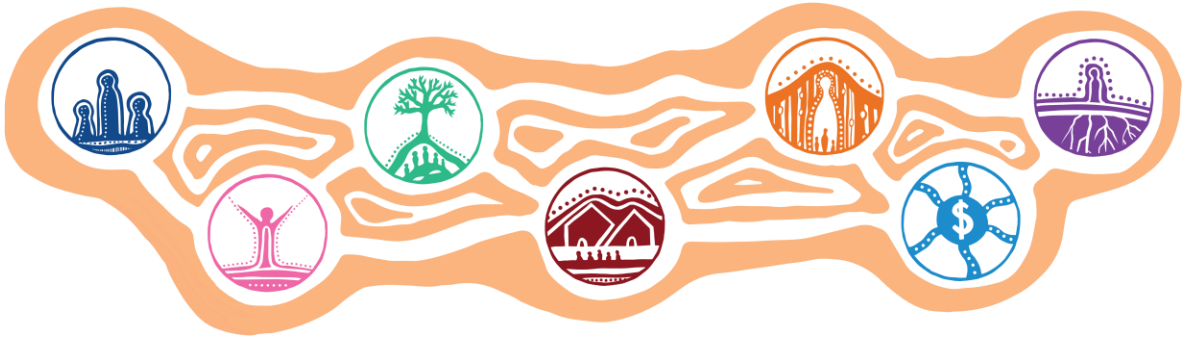
Table Activity

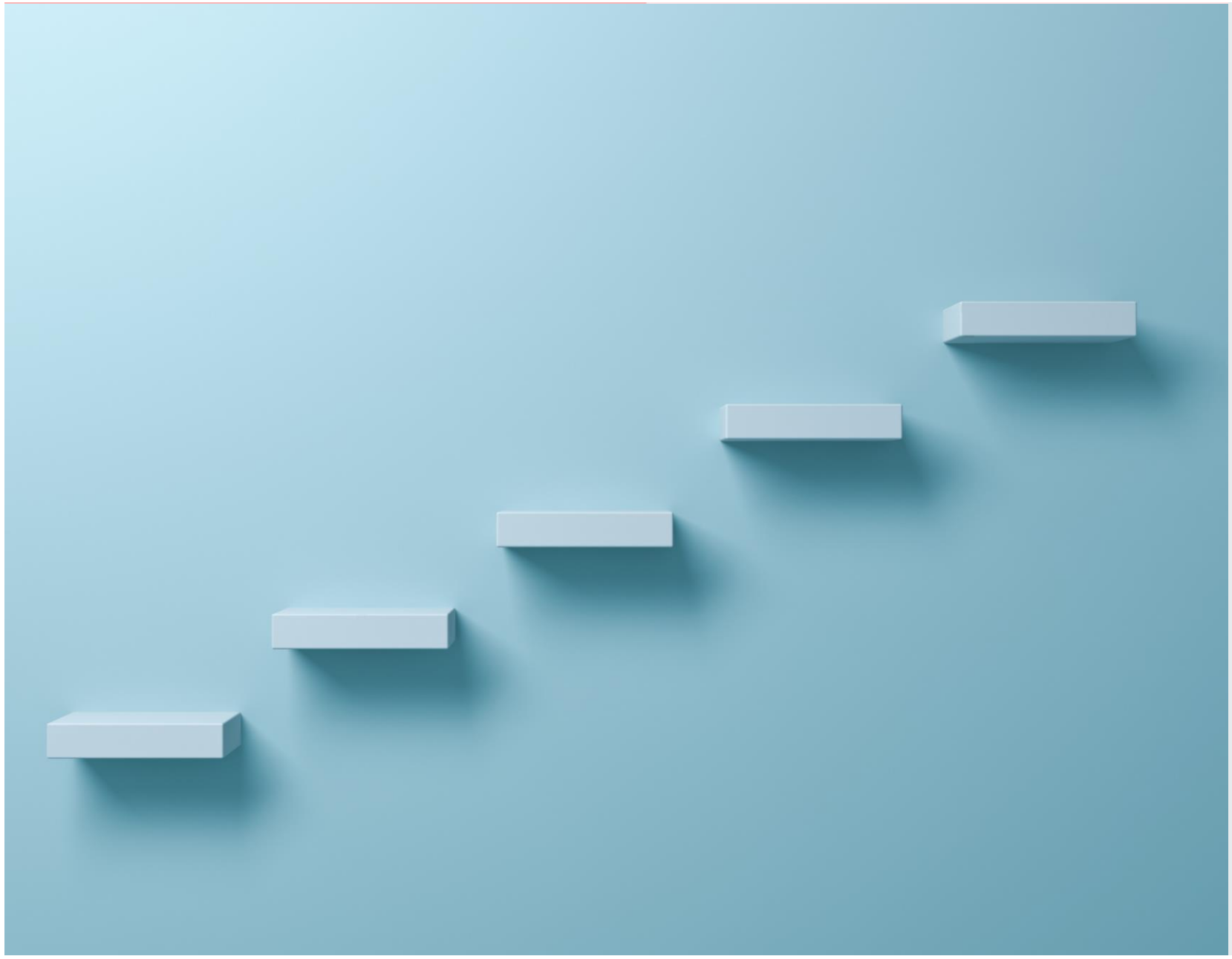
1. How would you use output from the Recovery Capitals – Integration for your work?
2. What do you need included for it to be useful?

Table Activity

1. What do you prefer for format and access to Recovery Capitals-Integration output?
2. Are the current images engaging (i.e. Oslo Davis cartoons, Indigenous images)?







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→ Next steps

Register for updates

Thank you!