



This Photo by Unknown Author is licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

Exploring Climate Resilient Maternal and Child Health - Setting Research Priorities in Australia

Zerina Lokmic-Tomkins
Monash University,
Clayton

29th of July 2025
VCOSS Presentation

Presentation Context and Rationale

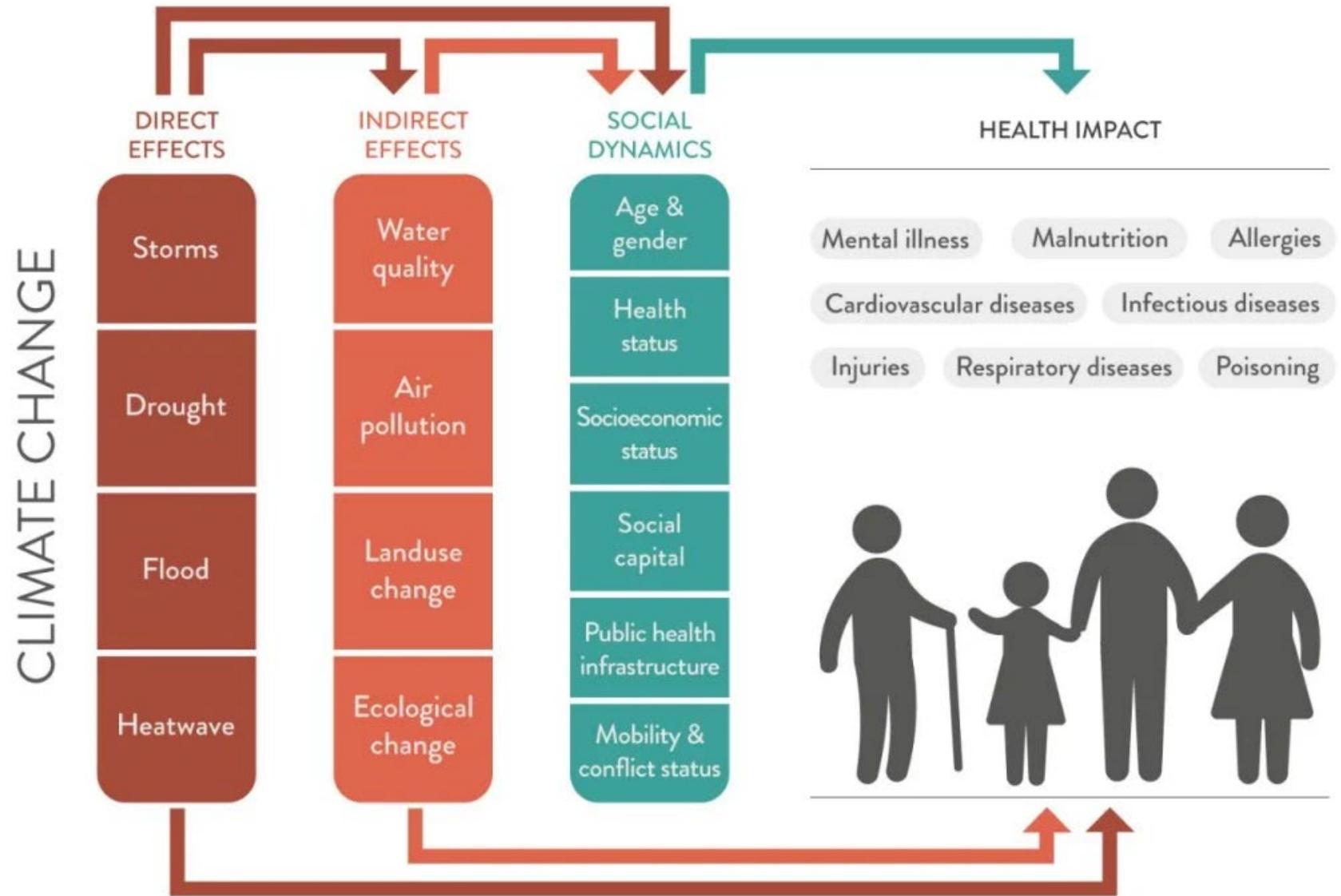
Discussion points	Description
1	Climate change as a risk hazard to maternal and child health
2	What does climate-resilient maternal and child health look like?
3	MCH-CARE – Designing research with communities

Climate change as a risk hazard to maternal and child health

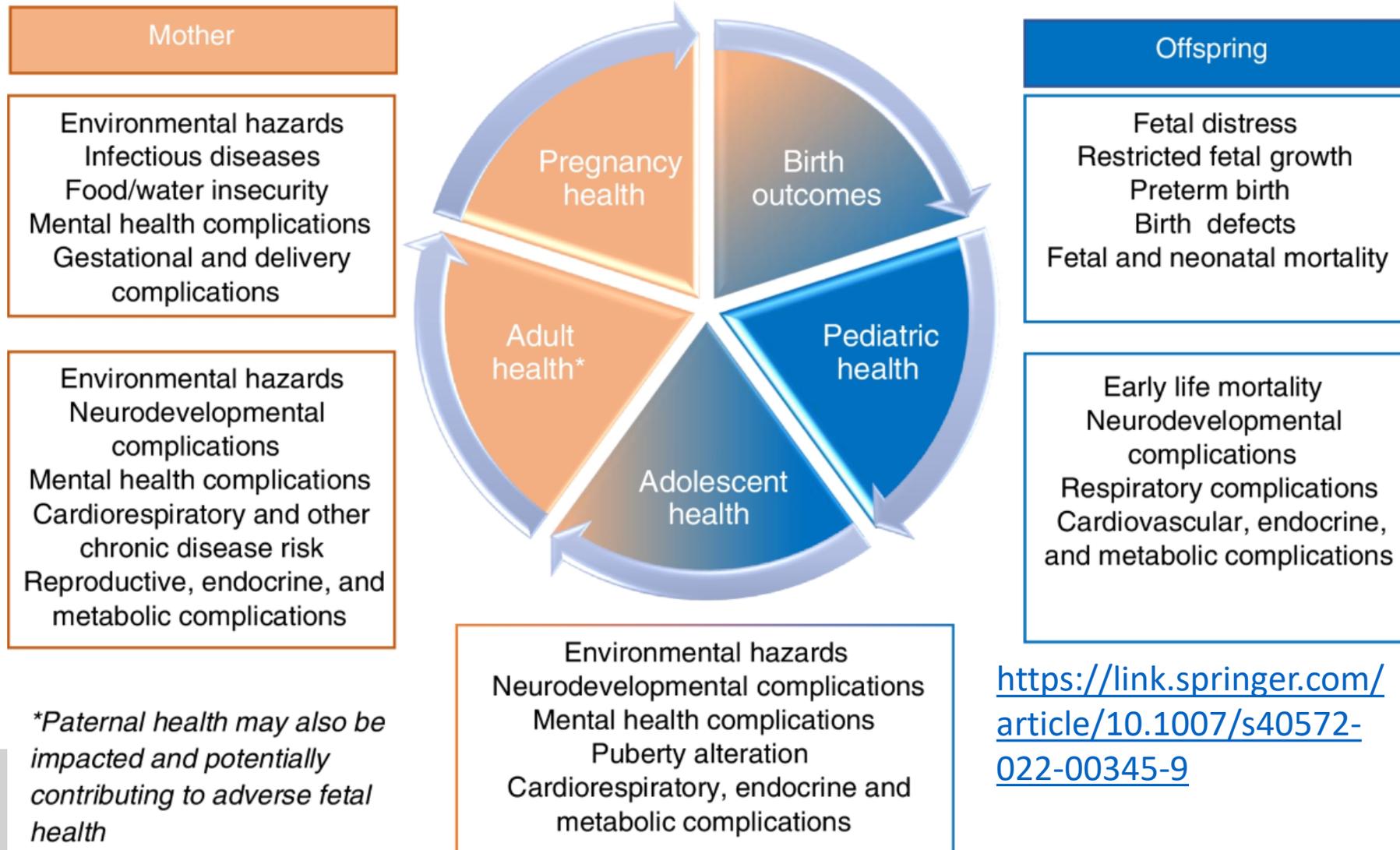
Definitions of maternal and child health for the purposes of our work

- **Maternal health** is defined as the health of women during pregnancy, childbirth and the postnatal period of up to 5 years
- **Child health** ‘as the health of children from conception to under 5 years of age’.

Climate change as a risk hazard



Pregnancy and early childhood are critical windows of vulnerability



What does climate-resilient maternal and child health look like?

What is meant by 'climate-resilient'?

Climate resilience

<https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

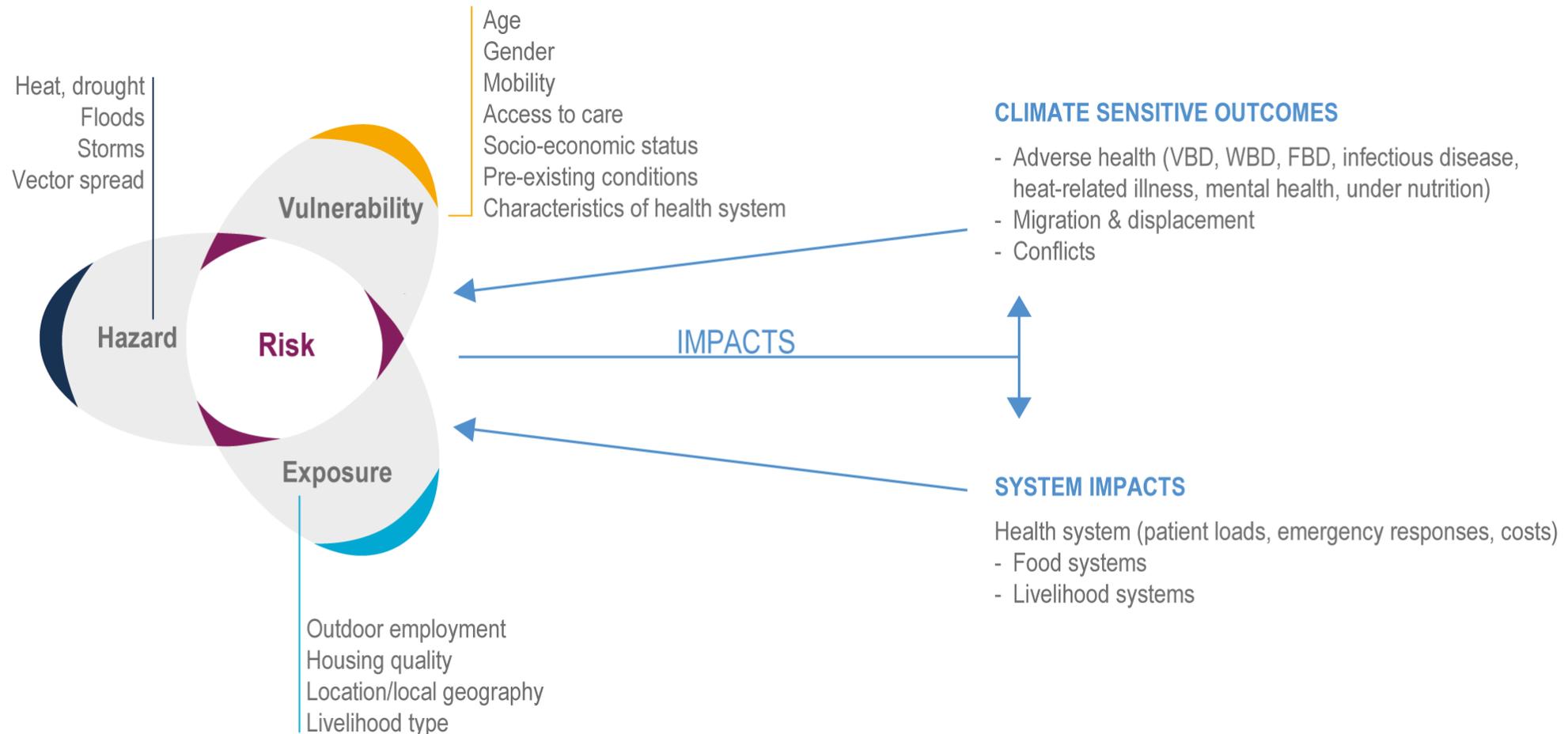
What does climate resilience involve?

- **Adapting:** Protecting against current threats/ preparing for future change
- **Reducing** greenhouse gas emissions
- Protecting and preserving the natural environment
- **Investing in infrastructure:** Building resilient infrastructure and technology
- **Diversifying supply chains:** Making supply chains more flexible to adapt to changing conditions
- **Strengthening natural systems:** Improving the resilience of natural ecosystems
- Requires a holistic approach considering the social, economic, and environmental impacts of climate change through a combination of actions across policy, infrastructure, services, planning, education, and communication

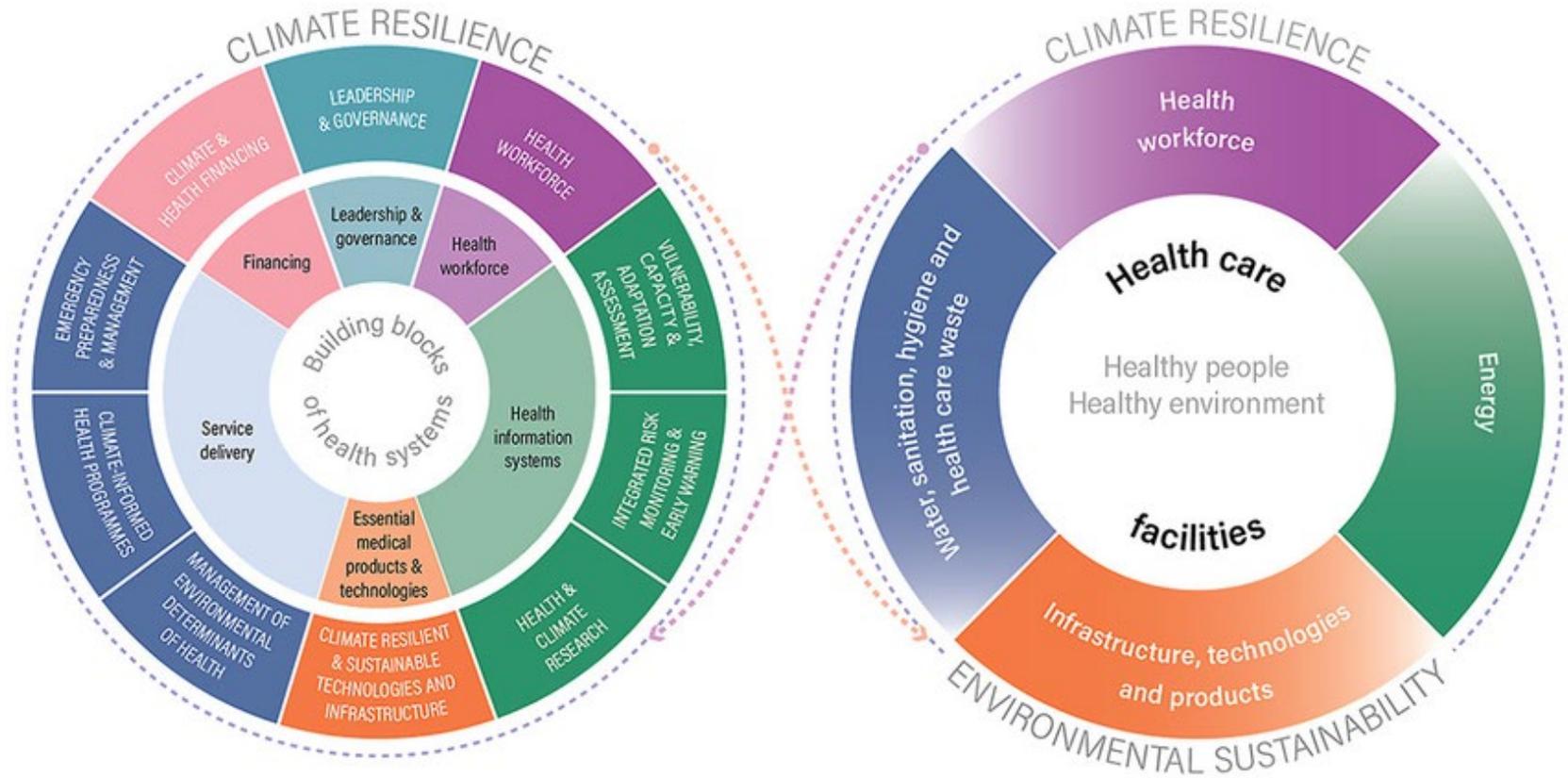
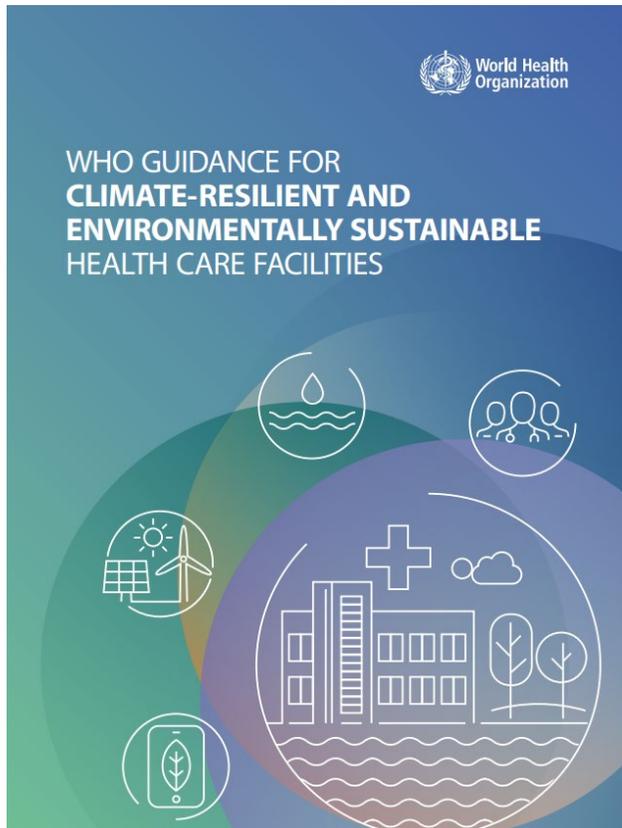


<https://www.who.int/publications/i/item/9789240085350>

Healthcare system vulnerabilities to climate change: interactions between hazard, exposure and vulnerability



Environmentally sustainable, climate resilient healthcare systems



WHO Guidance for Climate-resilient and environmentally sustainable healthcare facilities.

<https://www.who.int/publications/i/item/9789240012226>

- **Resilient health systems** = prepared, responsive, equitable

- **Key features:**

- Robust infrastructure
- Trained and supported workforce
- Accessible services during disasters
- Community-led planning



MCH-CARE Network

Maternal and Child Health Climate Resilience Network

Monash Incubator 2025: Maternal and Child Health Climate Resilience in Indo-Pacific Region

AUSTRALIA (Monash University)



A/P Zerina
Lokmic-Tomkins



Dr Colette
Mortreux



Dr Dinesh
Bhandari



Dr MD. Khalid
Hossain (Bangladesh)

FIJI (Fiji National University)



Padma Prasad
Fiji



Dolores Ashwen Hill
Fiji



Ratu Luke Mudreilagi
Fiji

INDONESIA (Universitas Indonesia)



Suryane Susanti
Indonesia



Rona Cahyantari
Merduaty
Indonesia

MALAYSIA (Monash Malaysia)



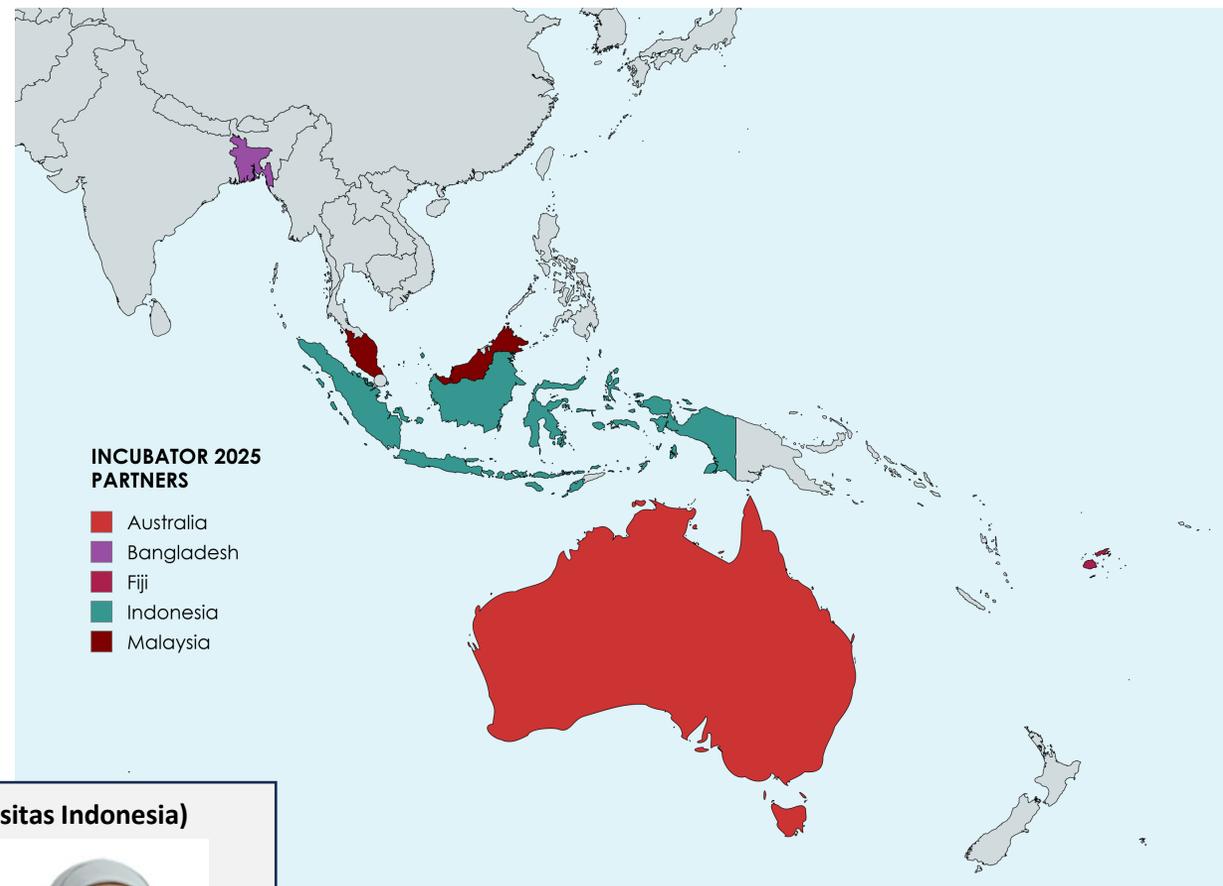
Prof Tin Tin Su
Malaysia



Dr Fatima Ibrahim
Abdulsalam
Malaysia



Dr Syahrul Nellis
Malaysia



Our Vision:

- To create a collaborative network of stakeholders in maternal and child health that promotes climate awareness, drives impactful action, and identifies research priorities and effective interventions through inclusive input, particularly from women and adolescent girls

Protecting maternal, newborn and child health from the impacts of climate change

A call for action



Protecting maternal, newborn and child health from the impacts of climate change : A call for action

Known effects and impacts of climate change on health



- | | |
|----------------------------------|------------------------------------------------------|
| Temperature extremes | Threats to livelihoods and human rights |
| Rising sea levels and salination | Displacement and migration |
| Floods and drought | Weakened health systems and infrastructure |
| Windstorms and wild fires | Impacts on food and water systems |
| Ambient air pollution | Infectious and vector-borne diseases |
| | Exacerbation of social determinants and inequalities |

Address the needs of women, newborns and children in the global climate response

Frame climate change as a health and human rights issue with a human capital approach

Institute robust monitoring frameworks

Accelerate research and share information on the impact of climate change

Strengthen resilient health systems sustainably

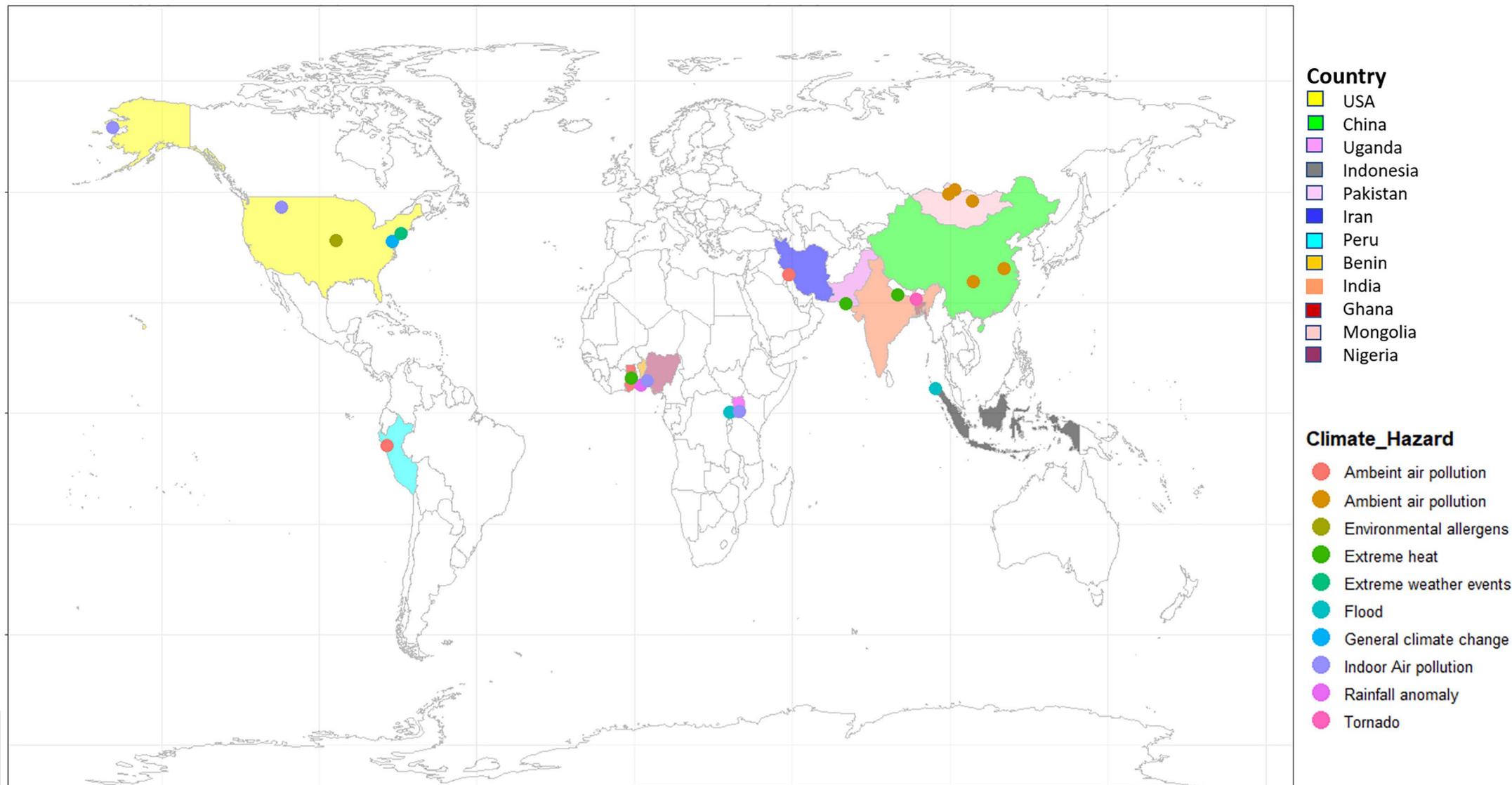
Promote greater collaboration between sectors to jointly define long-term, sustainable policies

Prioritize an "all of society", multisectoral approach

<https://www.who.int/publications/i/item/9789240085350>



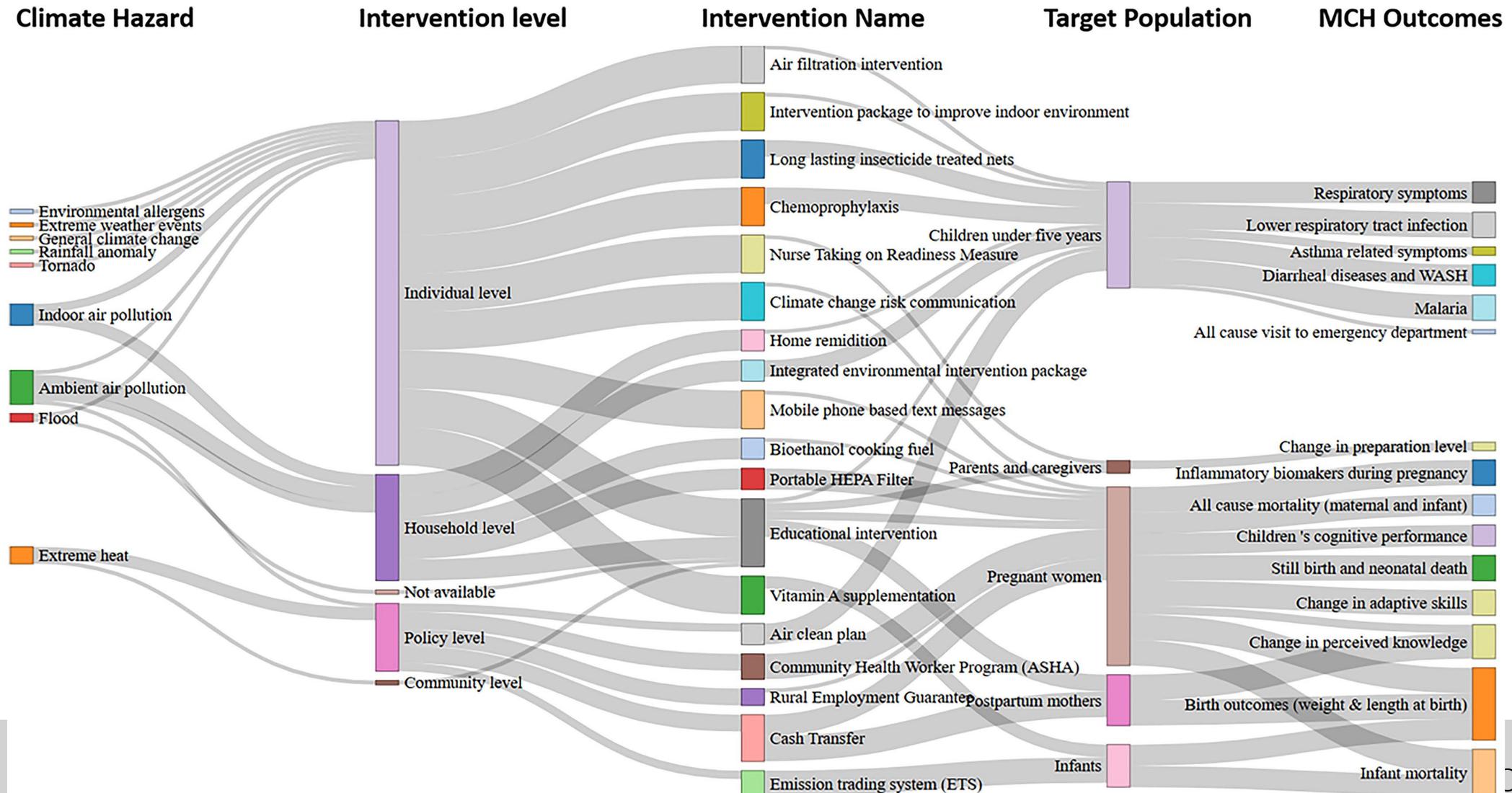
Geographic distribution of studies included in the final evidence synthesis (N = 21)



Heatmap of various adaptation interventions targeted against different climate hazards, identified from the included studies (N = 21)

Home remediation	1	0	0	0	0	0	0	0	0
Educational intervention	2	0	1	0	0	0	1	1	0
Air filtration intervention	1	0	0	0	0	0	0	0	0
Intervention package to improve indoor environment	0	1	0	0	0	0	0	0	0
Nurse Taking on Readiness Measure (N-TORM)	0	0	1	0	0	0	0	0	0
Climate change risk communication	0	0	0	1	0	0	0	0	0
Integrated environmental intervention package	0	0	0	0	1	0	0	0	0
Long lasting insecticide treated nets	0	0	0	0	0	1	0	0	0
Bioethanol cooking fuel	1	0	0	0	0	0	0	0	0
Chemoprophylaxis (Dihydroartemisinin-Piperaquine)	0	0	0	0	0	0	1	0	0
Mobile phone based text messages	0	0	0	0	1	0	0	0	0
Vitamin A supplementation	0	0	0	0	0	0	0	0	1
Emission trading system (ETS)	0	0	0	0	1	0	0	0	0
Air clean plan	0	0	0	0	1	0	0	0	0
Portable HEPA Filter	0	0	0	0	3	0	0	0	0
Cash Transfer	0	0	0	0	0	0	0	1	0
Community Health Worker program (ASHA)	0	0	0	0	0	0	0	1	0
NREGA or Rural employment Guarantee Act	0	0	0	0	0	0	0	1	0
	Indoor air pollution	Environmental allergens	Extreme weather events	General climate change	Ambient air pollution	Rainfall anomaly	Flood	Extreme heat	Tornado

Multilevel adaptation interventions targeted against various climate hazards are linked with population of interest and specific maternal and child health outcomes (N = 21)



25

TOTAL WORKSHOPS

13

COMPLETED

12

UPCOMING

5

COUNTRIES

Asia-Pacific Region

Comprehensive workshop delivery across multiple countries with strong completion rates and engagement

- Bangladesh: 5 workshops completed successfully
- Indonesia: 3 workshops completed
- Fiji: 3 workshops completed

Australia Program Status

Local workshop series progressing well with upcoming milestone session and future planning

- 2 workshops completed to date
- Next workshop scheduled July 24th
- 2 additional workshops planned

Data Analysis

Systematic data processing and analysis underway for publication and comprehensive reporting

- Data analysis for publications in progress
- Comprehensive reports being prepared
- Malaysian workshops planned for September

Early data

Localised data (e.g.,
Victoria-specific risks)

Community-informed
perspectives

Integration across
health, social, and
emergency sectors

Longitudinal research
on early life exposure

Climate-health
surveillance for MCH
outcomes

Co-designed adaptation
strategies with
vulnerable communities

Mental health and
wellbeing of mothers
post-disasters;
child/maternal
ecoanxiety

Integration of climate
resilience into maternal
care models

Role of community
organisations in
continuity of care

Workforce
development in
culturally safe, climate-
informed care

Acknowledgements

Collaborators

Research team



Dr Dinesh Bhandari,
Postdoctoral
Researcher,
Public Health
Epidemiologist
Monash University



Mr Eddie Robinson,
Research Assistant,
Public Mental
Health
Monash University



Ms Dawn Whittall
Research Assistant,
Disaster Nursing
Monash University



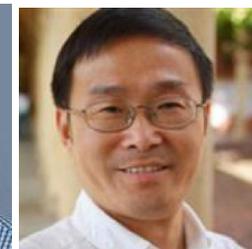
Wendy Pollock
VIC, Australia



Ann Borda
VIC, Australia



Jeffrey Craig
VIC, Australia



Peng Bi
SA, Australia



Lisa Reid
SA, Australia



Lorri J. Block
Canada



Shauna Davies
Canada



Charlene Ronquillo
Canada



Hanna von Gerich
Finland



Laura-Maria Peltonen
Finland



Suryane Susanti
Indonesia



**Rona Cahyantari
Merduaty**
Indonesia



Tin Tin Su
Malaysia



Meghnath Dhimal
Nepal



Kris Ebi
USA



Find an Expert:

<https://www.monash.edu/medicine/nursing/about/staff/zerina-tomkins>

ORCID ID: <https://orcid.org/0000-0003-0266-9536>

Email: zerina.tomkins@monash.edu

