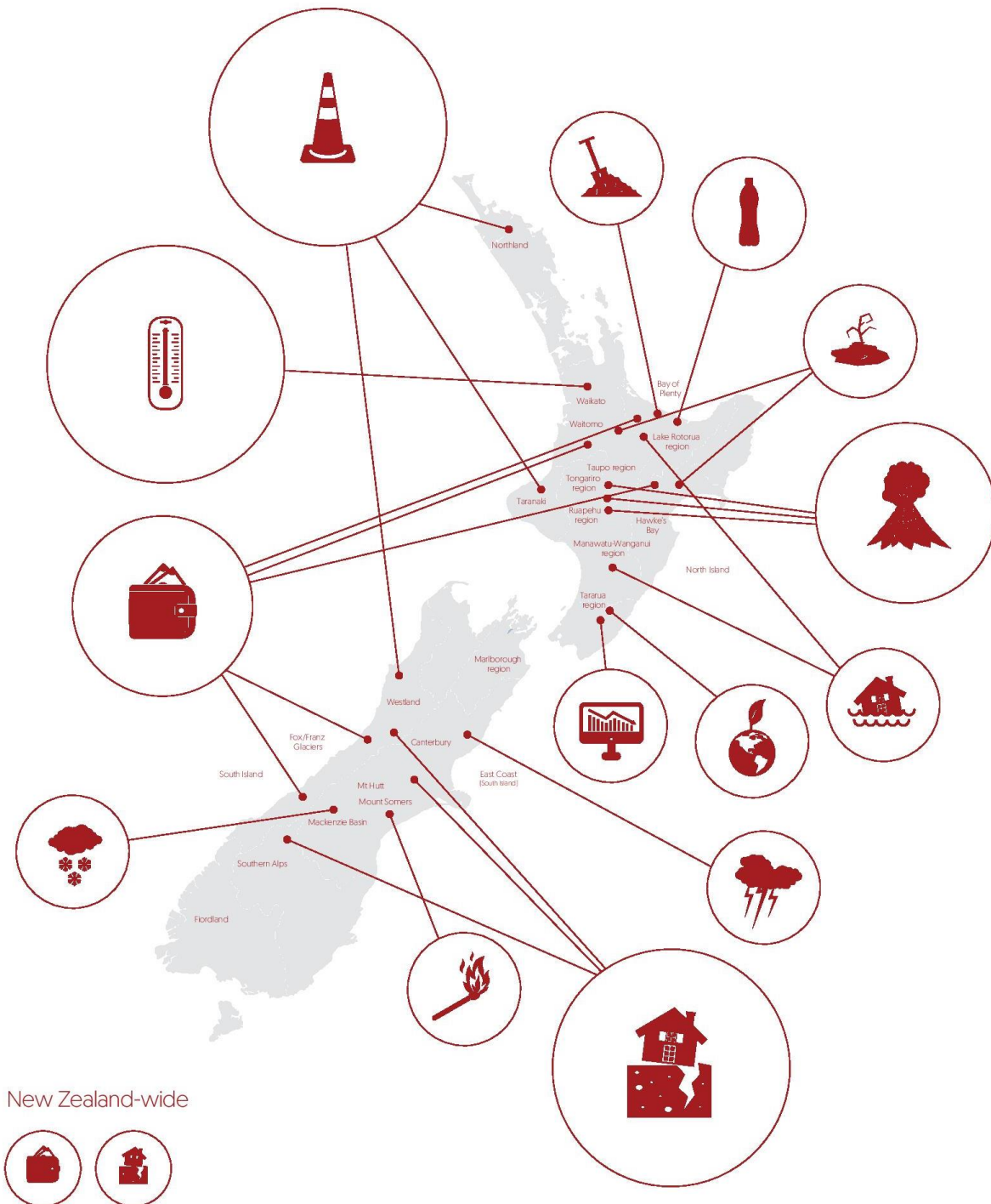


Resilience outcomes for rural New Zealand

Nick Cradock-Henry, MWLR
and RNC Rural





Rural regions face complex challenges

- low-frequency, high-magnitude
- slow-onset, creeping hazards
- geo-climatic, socio-economic

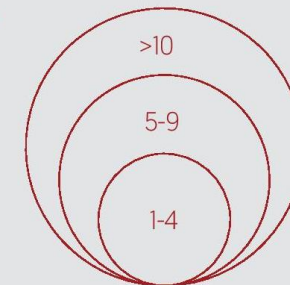
Compounding and cascading effects

Unique risk profiles across scales

Key



Number of Studies



Spector, S., Cradock-Henry, N.A., Beaven, S., Orchiston, C., 2018.

<https://doi.org/10.1007/s10113-018-1418-3>

RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa –
Ngā Ākina o
Te Ao Tūroa

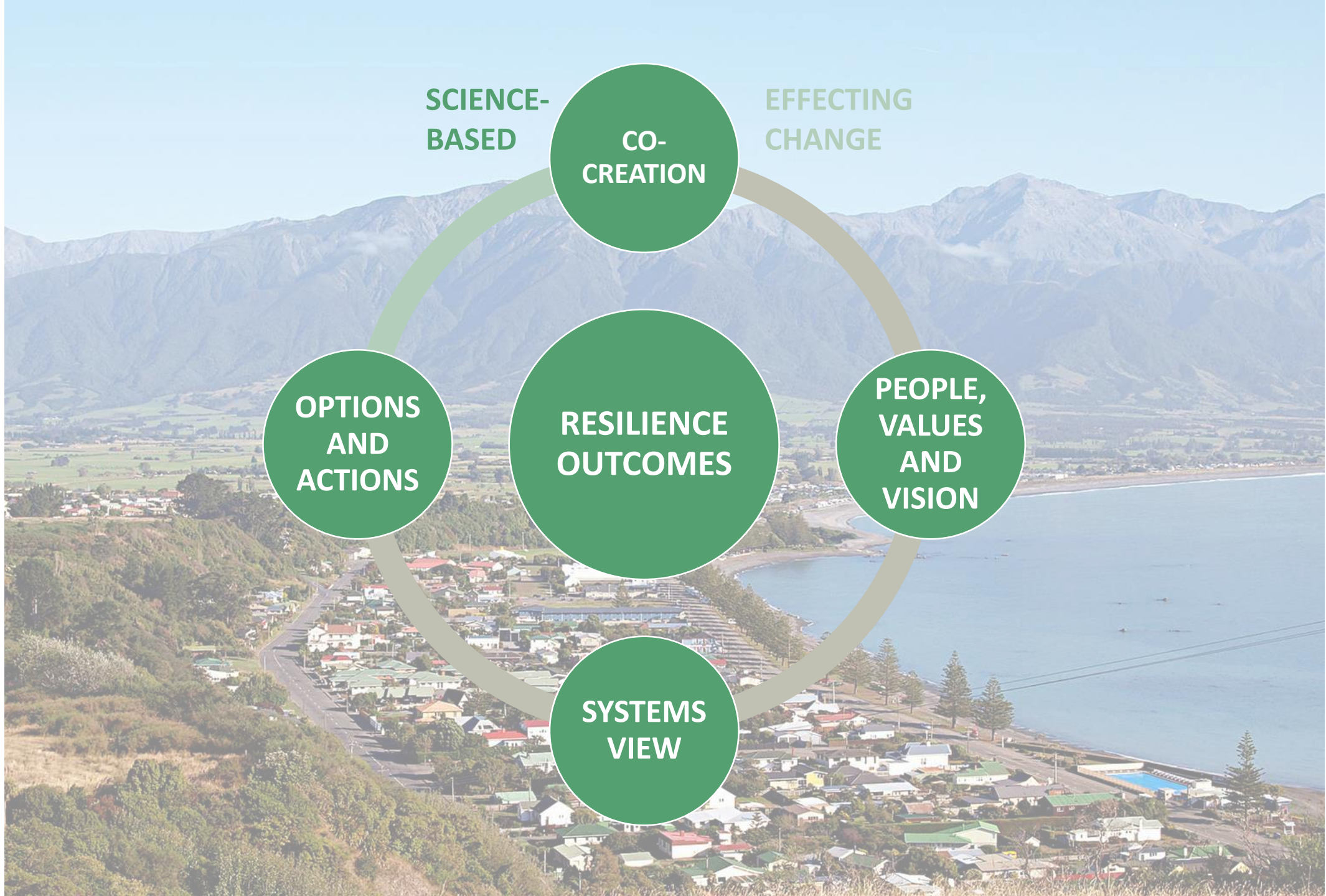


Co-produce and broker innovative solutions for
enhancing the resilience of rural New Zealand



RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa –
Ngā Ākina o
Te Ao Tūroa



SCIENCE-
BASED

CO-
CREATION

EFFECTING
CHANGE

OPTIONS
AND
ACTIONS

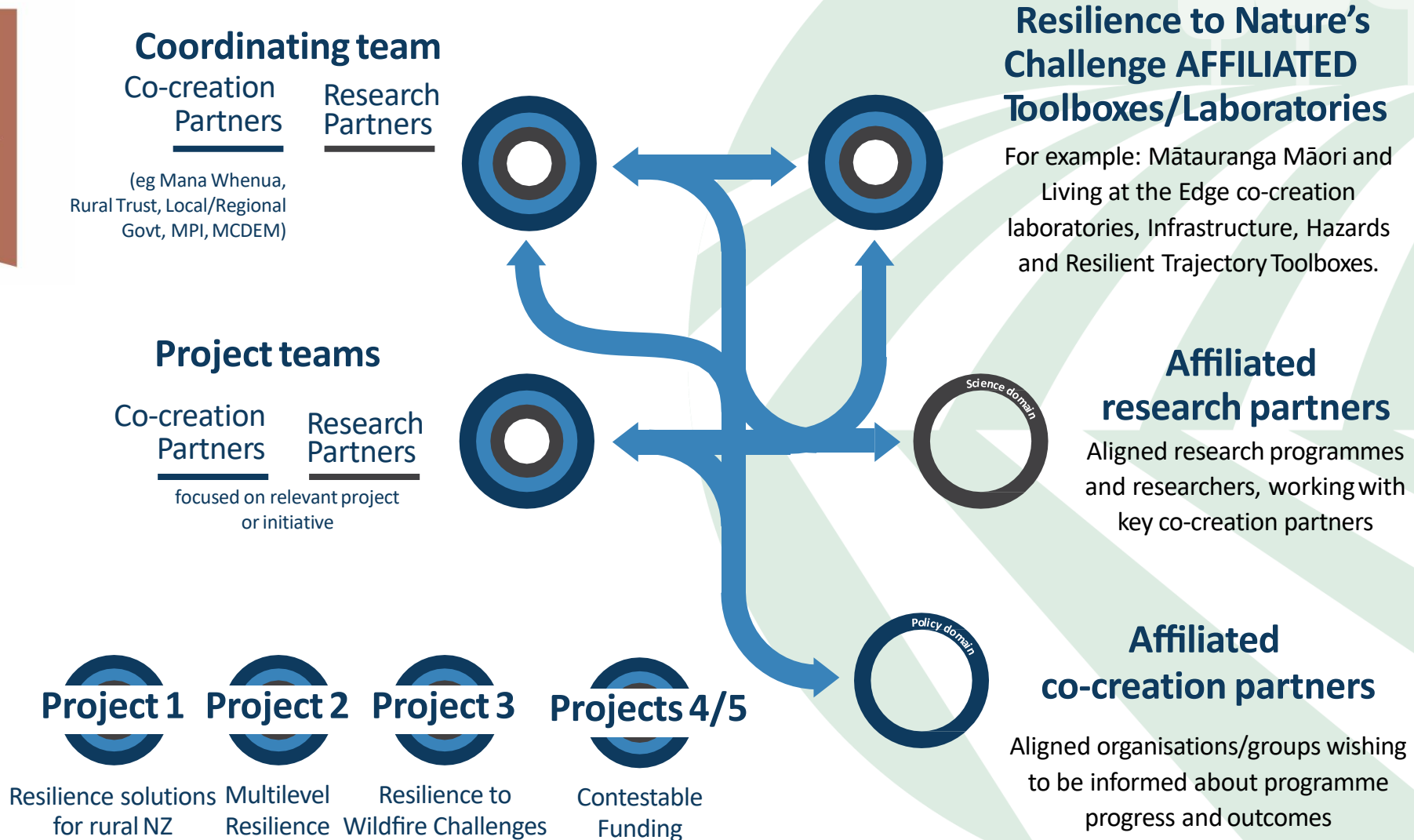
RESILIENCE
OUTCOMES

PEOPLE,
VALUES
AND
VISION

SYSTEMS
VIEW

RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa –
Ngā Ākina o
Te Ao Tūroa



Structure and function: collaborative, inclusive, reconcile science and policy

- **Trusted cooperation**
- **Feedback and reflective learning embedded in design**
- **Flexibility and adaptability while remaining accountable to RNC/MBIE**

Selection Criteria	Queenstown-Lakes	Kaikōura	Marlborough	Selwyn	Hurunui	West Coast
Complex hazardscapes						
Access to stakeholders Ability to inform policy						
Current state of research knowledge						
Inclusive of sectors (agribusiness, tourism)						
Match to team skills, logistics/accessibility						
Vision Māpetauranga and iwi considerations						

July 2016

RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa –
Ngā Ākina o
Te Ao Tūroa

Stakeholders' roles and connections valued

- Transparent stakeholder engagement processes, accountable to ethical criteria (post-disaster settings)
- Systems understanding of social context and stakeholder relationships
- Capacity for exploring logically and creatively about desirable futures, and needed change



Seasonal workers / travelers and
local residents' employment

How much is the community, and
residents hired in rebuild (vs external)

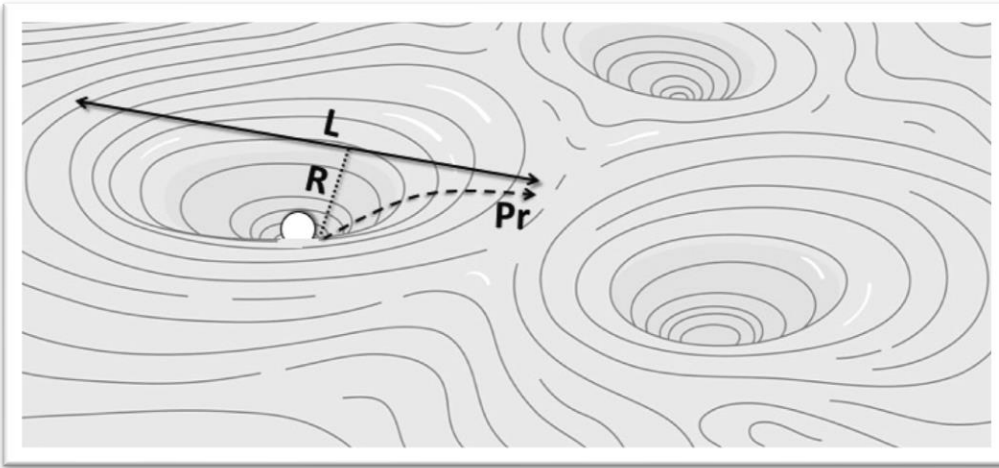
What if no one had intervened?
(self-contained, autonomy of local response)
- CDEM (doesn't understand local
sitn)



Dynamics, thresholds, feedbacks

- Greater appreciation of diverse perspectives (i.e. assumptions about how things work)
- Understanding cause and effect enhanced, how risks and resilience unfold, and where to intervene
- Clarity on where to build resilience – where to intervene – to meet needs and aspirations





Cradock-Henry, N.A., Fountain, J., 2019. <https://doi.org/10.1016/j.envsci.2019.01.015>



Tyler Barton (UC), Rural disaster risk reduction

Permanent residents	Semi-permanent residents	Temporary residents	Transient populations
Intention to remain	6 to 12 months	2 weeks to 6 months	Less than 2 weeks
Long-term residents Māori (turangawaewae) Medium-term residents New residents (NZ) New migrants (overseas)	RSE scheme workers Secondment workers (WHM) Infrastructure workers Holiday home owners	Temporary workers Contract workers WHM Infrastructure workers (Holiday home owners)	Domestic holidaymakers International tourists Travelling workers Emergency response Transiting public

Simmons, D. Wilson, J. 2019. Building resilience in transient rural communities: guidelines for councils, RNC Rural.



Interactions, interventions and uncertainties

- **Trust and confidence in decisions and actions**
- **Changed practices (e.g. what to do in an emergency) and institutions (rules and policies)**
- **Greater resilience, and evidence of progress towards aspirations**



RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa –
Ngā Ākina o
Te Ao Tūroa

YOUR FARM EMERGENCY PLAN

Your Farm Farm Address

NAME	PHONE NUMBERS	HOUSE ADDRESS
NAME	PHONE NUMBERS	HOUSE ADDRESS
NAME	PHONE NUMBERS	HOUSE ADDRESS
NAME	PHONE NUMBERS	HOUSE ADDRESS

Rapid numbers are key in an emergency – these note how far along the road the property or house is which allows emergency services to help on distance travelled rather than gate numbers – Note you are the driver

1 If we can't get home or contact each other we will meet at house or have a message at house/Phone in image of meeting place

CONTACT DETAILS

NAME (owner)

CONTACT DETAILS

NAME (driver)

CONTACT DETAILS

2 The person responsible for collecting the children from school is

NAME

CONTACT DETAILS

3 Emergency Survival Items and Gateway Kit

FOOD, DRINK, WARMTH AND TOOLS

ITEMS WILL BE CHECKED AND REPLENISHED ON

THE OUTSTANDING KIT ARE STORED IN THE

CONTACT WITH ME AND WITH A KEY

BAD WEATHER PLAN

Paddock should have adequate shelter and away from any risk of flooding. Keep track of what feed you have on hand for an emergency, consider having a stockpile of hay or silage for bad weather events

PROVISION

STOCK NUMBER	STOCK NUMBER	STOCK NUMBER
--------------	--------------	--------------

EMERGENCY FEED OPTION 1

EMERGENCY FEED OPTION 2

EMERGENCY FEED OPTION 3

EVACUATION PLAN

First and foremost, your life, your family and your staff are the most important on farm, should you need to evacuate (i.e. volcanic eruption, wild fire, or flooding) you should go to without hesitation.

(Please tick off)

- Take our Gateway Kits (see the Household Emergency Checklist)
- Turn off electricity and water
- Turn off gas only if we suspect a leak and it's safe to do so by the meter
- Take our pets (including farm dogs) with us
- Call your nominated people when you are safe to let them know where you are

POWER SUPPLY

Business continuity will reduce the financial cost to an adverse event, being able to store stock, ensure your vehicle doesn't default or share no planned can make a huge difference to the recovery from an event.

(Please tick off)

- Call the power company to notify them of your outage
- Generator
- Fuel for generator
- Schedule it in neighbourhood scheme

NEIGHBOURS

Friends and neighbours who may need our help or who can help us

NAME	ADDRESS
PHONE	PHONE
NAME	ADDRESS
PHONE	PHONE
NAME	ADDRESS
PHONE	PHONE
NAME	ADDRESS
PHONE	PHONE
NAME	ADDRESS
PHONE	PHONE

BACK COVER

FEDERATED FARMERS 0800 327 848
FMG 0800 386 486
FARMLANDS 0800 200 600

CAUTION
STOCK MAY BE
BEING DRIVEN
ON THIS ROAD

INSIDE PAGES (second view)

BACK COVER

Hamish Rennie (LU) and Louise Gibson (FFNZ), Farm resilience planning



Laura Tilley (UC), Agent-based tsunami evacuation

SUMMARY

- **Targeted research on rural resilience**
- **Process of participating, appreciating, learning**
- **Move beyond recovery**
 - Resilience, adaptation and/or transformation
 - Responding to collective drivers of change
 - Policy performance and flexibility
- **Resilient rural futures***

