
Imagine climate resilient
communities and regions:
Participatory adaptation
planning for building resilience



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Building resilience to climate-related threats (Stanthorpe, Queensland)



Photos: Google images, Stanthorpe High students, H Ross

What is resilience?

Community resilience is an aspirational goal of governments/institutions at all levels, e.g. World Bank, IPCC, Australia, State and local governments.

The concept - evolved over time

- from *ecological* multi-level systems that are able to cope with disturbances, but remain essentially the same system; to
- *socio-psychological* which focus on coping, with an emphasis on individual and community strengths;
- to an *integrated* view (Berkes & Ross 2013, 2016) about interdependency and resilience of people and environment .



Resilience is not about ‘bouncing back’, or returning to some ‘normal’. Climate change is a continuous and cumulative process (due to the ‘lock in’ effect), requiring ongoing adaptation.

It involves coping with and adapting to change.

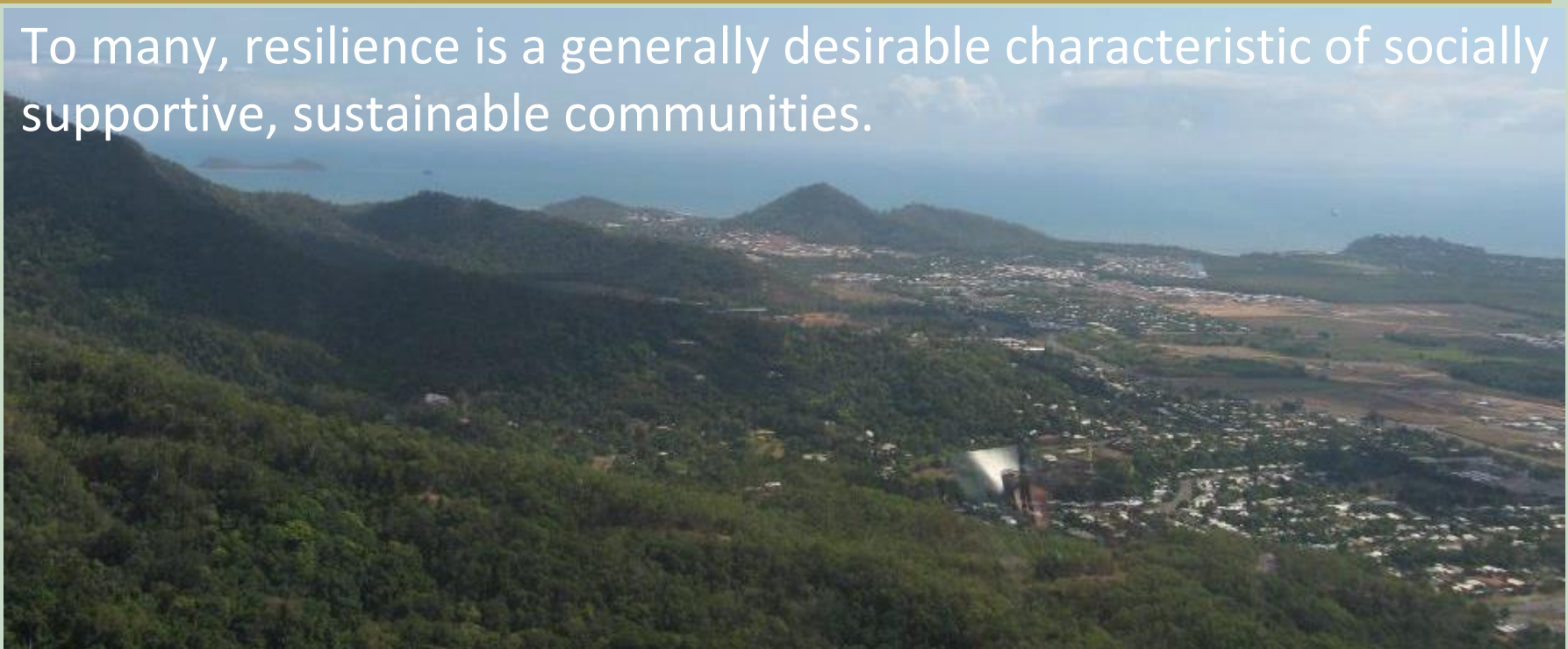
Ability to cope and adjust to stresses caused by social, political and environmental changes, by engaging community resources to overcome adversity and take advantage of opportunities. (Buikstra et al. 2010, Magis 2010, Ross et al. 2010)

Resilience aims to ensure that communities can prepare for and respond effectively to multiple challenges: whether rapid onset disasters, slow incremental changes due to climate change, or other challenges.



So... how can we achieve it? Participatory adaptation planning

To many, resilience is a generally desirable characteristic of socially supportive, sustainable communities.



Current approaches to climate change adaptation take a risk management approach

- a pragmatic way of dealing with uncertainty
- cost-effective, enables priority setting
- relies on climate modelling. Less effort has been on interaction with the social system.



Climate adaptation planning...

- Needs to be collaborative across various types and levels of responsibilities (e.g. different policy arenas), and between governments, communities and other institutions.
- Needs to engage the many, socially complex communities in fair ways (procedural and distributional fairness)
- Needs to connect the social and ecological, and take a nested approach, recognizing the multiple levels in social-ecological systems.
- Needs flexibility and acceptance of diversity, to suit varying environments and societies
 - no 'blueprints', or 'one size fits all'



Vulnerable business owners – Brisbane floods 2012

IPCC refers to both geographic and social vulnerability; Draws attention to social equity.

Rocklea industrial area on Oxley Creek. Located in geographically vulnerable flood prone area.

- More than 12,000 residences and 2,500 commercial properties were flood-affected in the 11-12 January 2011 Brisbane flood.
- Many studies but little attention to severely affected industrial businesses.

Huge environmental, economic, social and health impacts with high levels of industrial contamination in Oxley Creek – almost 2000 hazardous containers



Socially vulnerable?

Individual characteristics of business owners

- hearing impairments, dyslexia, inability to use social media, meant methods of communication to warn about flooding didn't work.

Unable to get accurate information in timely manner.

Late information about seriousness of flooding made it impossible to relocate large expensive industrial machinery or many pieces of equipment (eg forklift trucks, containers)

- by noon warning on 11 Jan one access road was already cut and many workers already sent home



Participatory approaches

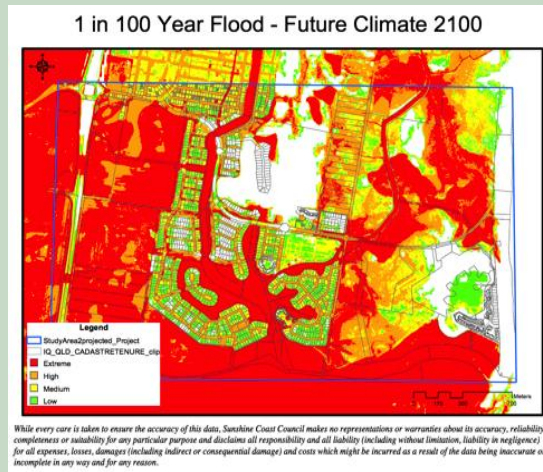
- Provide transparency and accountability of government decision-making – (Aylett, 2010; Kithiia and Dowling, 2010; Rosenzweig et al., 2011; Anguelovski and Carmin, 2011).
- Build trust between stakeholders and with institutions (Pahl-Wostl 2007).
- Build understanding, awareness raising, adaptive capacity (through social learning), identify values and what is important to locals in prioritising options and making trade-offs (Park 2012)
- Increase feeling of individual responsibility (Singer 2011) and reduce feelings of powerlessness (Sanogo 2017)
 - for many of us concerned about the future, there is frustration about wanting to influence proposed non-sustainable activities, in spite of lack of government support

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- Adaptive capacity enables resilience, when stresses and disturbances occur.
 - So it's important to provide procedural justice and support for sometimes difficult choices (Barron 2012)
 - So it's an ongoing process: building and maintaining resilience takes time, always with new circumstances requiring new directions.
 - Capture imagination to create innovative solutions for living.

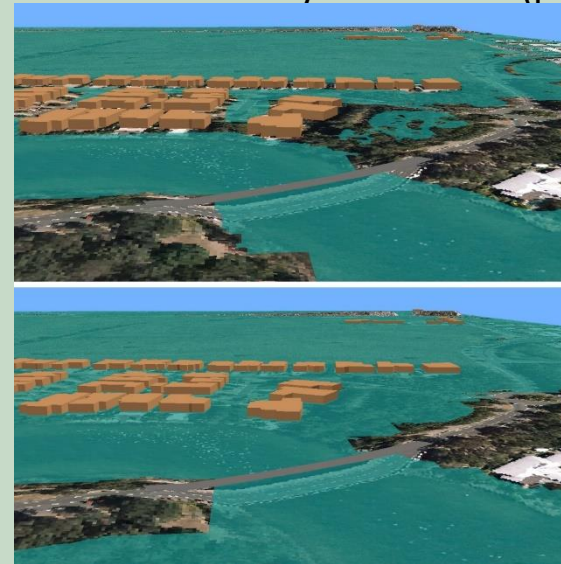
Using innovative visual techniques for imagining



Community identified vulnerable areas; provided photos of vulnerability and values (photovoice); photos mapped on to vulnerable sites



Typical flood mapping of future scenario



Visualisation software to show scenarios
(Grant, Baldwin et al 2014; Lieske et al 2014)

How can science and professional knowledge inform participatory adaptation processes?

Recognise that a diversity of groups act as bridging organisations, and groups at different scales.

We suggest participatory adaptation planning needs to take a 'strengths-based' approach,

- focusing on human agency and capability, using (and building) the resources available;
- anchoring change proposals in culture and place, recognising identity and attachment; while also working across scales; and
- being sensitive to politics and power, opening new opportunities to mobilise transformations. (Brown 2016)



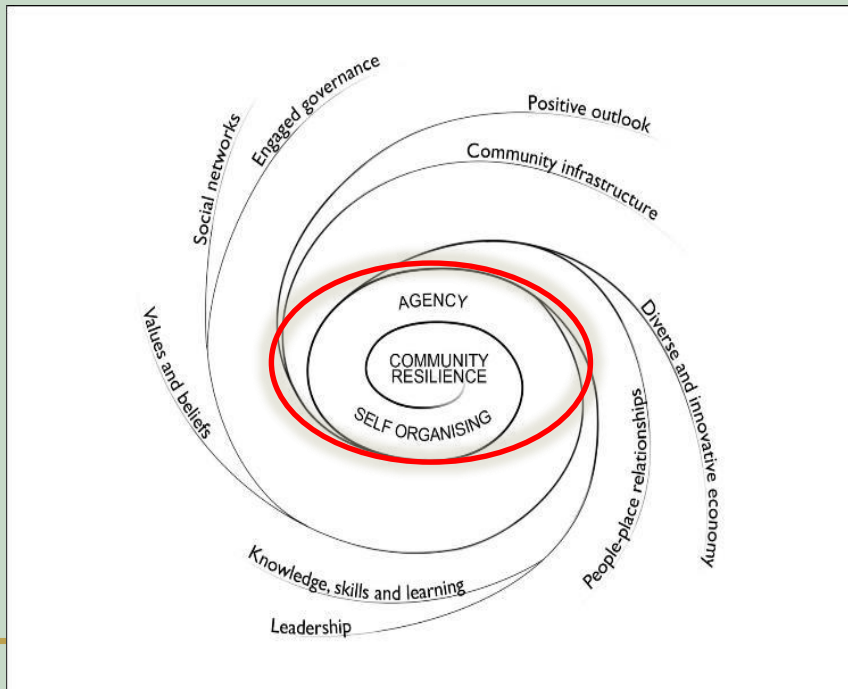
Participatory planning approaches can focus upon specific attributes identified in resilience studies (Maclean, Cuthill, and Ross 2014; Maclean et al. 2013; Ross et al. 2010; Walton et al 2013):

- strategic thinking
- building and making use of knowledge, skills and learning;
- community networks - building meaningful relationships and links within communities as well with governance structures;
- people-place connections.

To empower communities through the participatory approaches, may need skills in community development (Ross & Berkes 2014, Cavaye & Ross in review).

What would a climate resilient community act like?

- Be proactive – think ahead
- Feel connected to and caring towards its environment and community, and seek to build that consciousness among current and new members (bonding and bridging social capital)
- Have strong linkage with social capital – connections with decision-makers (engaged governance)



Berkes & Ross (2013)

Knowledge of the key characteristics of ecological and social resilience is growing, but understanding of how to foster resilience is far more limited.

Contenders are

- Community-based planning (Ross & Berkes 2014, Ross et al. 2015)
- Community development for resilience (Ross & Berkes 2014, Cavaye & Ross in review)

We need to stretch community and stakeholder engagement practice to building decision-maker and community capacity to cope with future uncertainties of a climate changing world that also faces multiple concurrent challenges.



A participatory systems approach to understanding climate adaptation needs, Australia (Ross et al. 2015)



Needs for

effective ways of engaging or activating communities in climate change adaptation.

knowledge, with whole-of-system understandings about climate change and adaptation needs



A participatory process to

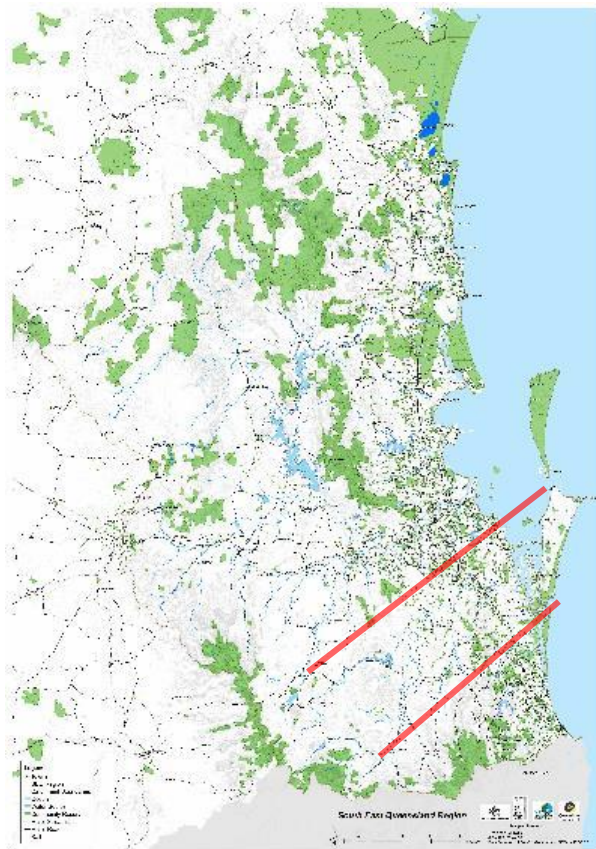
- Connect, empower and mobilise community groups, in adjacent rural, urban and coastal environments (diverse recruitment)
- Combine their knowledge and experience, to address the lack of local information for climate adaptation planning



Context

a SE Queensland transect

Rural – urban – coast – bay - islands



Rural – urban – coast – bay - islands



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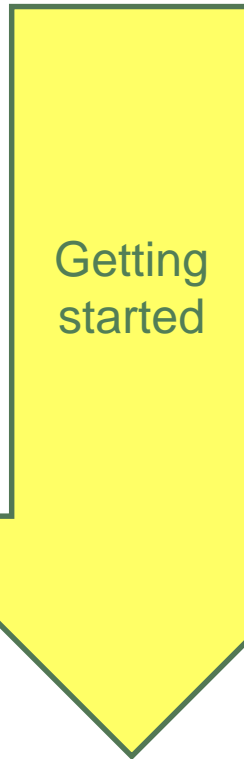
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Process

climate roundtables



Traditional Owner welcome



Introductions and warmup





Recognising and compiling
experience of extreme events

Climate
timeline







Building Influence diagrams



How heat, fire, drought, storms, floods, sea level rise affect each local area and people
- Chains of influence



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Towards
actions

Groups identify key risks,
opportunities and priorities
for adaptation



Diverse, enthusiastic participation + very positive evaluation of the experience

Local people and local knowledge can contribute to developing a comprehensive understanding

Systems approach – across diverse connected landscapes – helps avoid maladaptation

Provides a way for people to become informed, and join together to take action



Fazey et al. work, Scottish borders

Partnership between researchers, 3 councils, their communities

Focus: community resilience to climate change (especially flooding)

and groups most disadvantaged by climate change

Facilitator embedded in the communities (local government areas)

Workshops with communities, governments and NGOs (together)

Specific learning and capacity building activities

Disadvantaged groups

Elderly & people with existing health issues

Limited physical and mental wellbeing interact with visible, immediate impacts from extreme weather and indirect impacts from climate change that influence access to and need for essential aspects of life, such as food, energy and water.



People on low incomes

The consequences on daily life from extreme weather may be more severe and longer lasting if financial resources are limited. In addition less visible climate related challenges may also add further pressure to household budgets and reduce the capacity to adequately meet basic needs, for example to access food, energy and maintain a home.



Local businesses

The ability of local businesses to trade in the short and longer term, support local livelihoods and continue to provide important goods, services and facilities within communities is influenced by the consequences of extreme weather and less direct impacts from climate change, for example relating to energy systems.

Families with young children

Access to essential goods and services can hinder the ability of some families to continue daily life, e.g access childcare and school. Increases in the cost and availability of food and energy can be particularly challenging for families with young children with specific nutritional needs.



Essential infrastructure users

Infrastructure is essential for people's daily lives to access goods, services and maintain livelihoods. The greater the damage, the longer the disruption and the more widespread the consequences may be felt across the community.



Tenants

Tenant's lack power/rights and often resources to take action to improve household level resilience to climate change. The level of action to improve household resilience is also influenced by the behaviour of landlords. Moving locations also reduces their knowledge and likelihood of contributing to wider community resilience activities.

Who is disadvantaged by climate change and why?

Conclusions

Participatory adaptation planning - an important tool to help local governments and communities build adaptive capacity & resilience

It needs to

- engage socially complex communities, in fair and culturally appropriate ways
 - Embrace diversity
- capture imagination to create innovative solutions for living
- be enduring: building and maintaining resilience takes time
- connect the social and ecological
- take a nested approach, recognizing the multiple levels in social-ecological systems
- be collaborative across various types and levels of responsibilities (e.g. policy arenas), and between governments, communities and other institutions



Conclusions cont.

How can science, Indigenous and professional knowledge inform participatory adaptation planning ?

How to welcome and integrate differing cultural and social contexts to foster ecosystem health and community wellbeing?

Can Indigenous and other cultures comprising our contemporary societies open new mechanisms to mainstream the ways forward?



Thank you!

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Photos Hinchinbrook passage Far North Queensland, and Giringun Board meeting, Arturo Izurieta

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