



Australian Government

Department of the Environment and Water Resources



Marine and Tropical Sciences Research Facility

Regional level indicators of social resilience

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Project output:

We are

- working with regional natural resource management and Aboriginal partners
- to develop indicators to measure and enhance regional social resilience,
- with a planning focus.

We take a whole-of-system focus, viewing 'social resilience' as an attribute of 'social-ecological systems'.





Outcomes sought:

- A combined set of 'indicators' to inform planning and enable monitoring by organisations with regional responsibilities (NRM and ultimately broader).
- Enhanced Australian and international understanding of what 'resilience' involves, and hence what qualities can be fostered through appropriate development and environmental management.
- Enhanced international ability to understand the social dimensions of social-ecological systems.
- Sophisticated State of Region report – leading edge in social (and biophysical) respects.





Innovations

- Providing avenue to meaningful social data for NRM and regional development planning and policy.
- Combined set, rather than separate sets for each partner organisation.
- Taking a 'resilience' rather than a well-being (or 'wealth') approach to planning.
- Expanding then acting on concept of 'social resilience' to fill a huge knowledge gap needed for the future (e.g. climate change).





Planned long-term impacts of the research

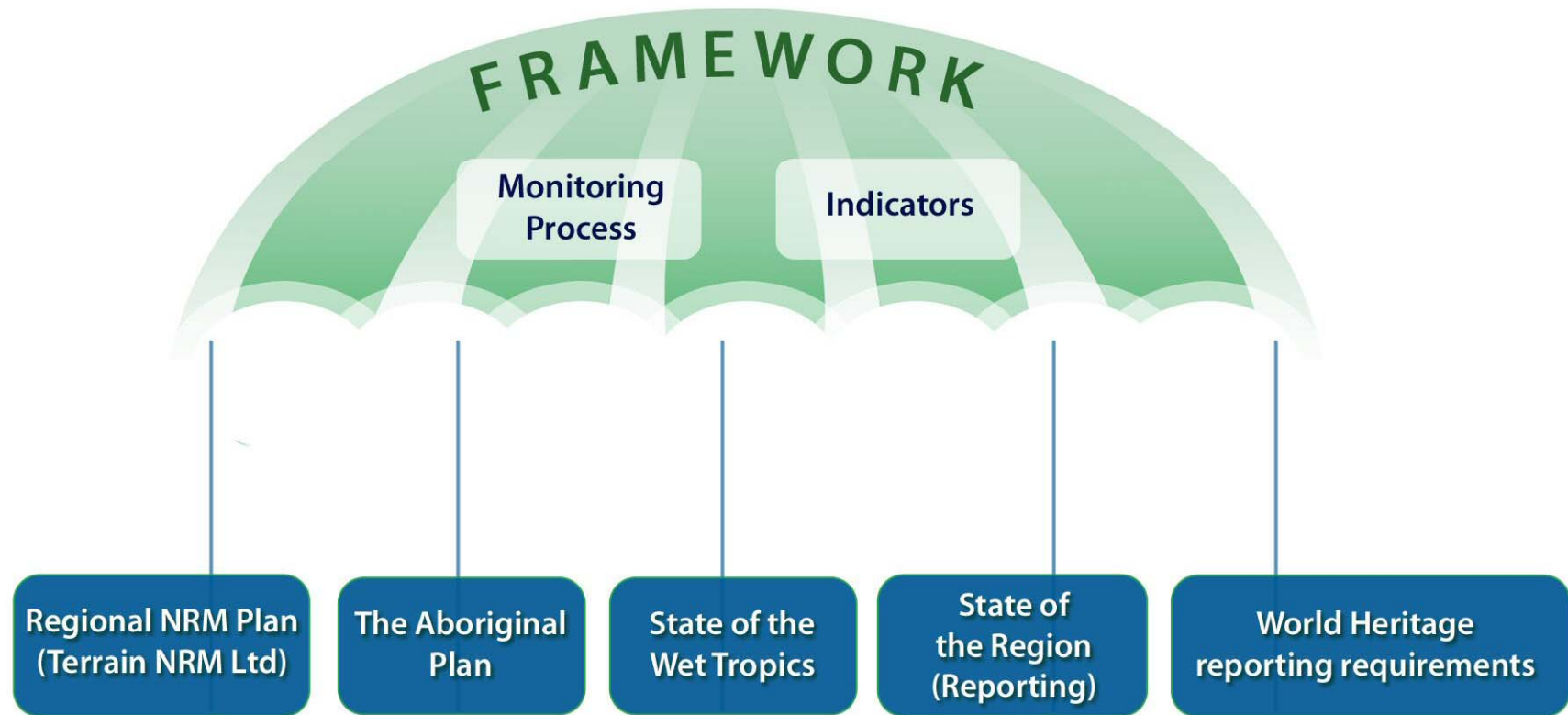
- Ability to manage the region as entire system(s)
e.g. appreciating and managing for
 - contribution of World Heritage Areas to society
 - cumulative human impacts on the natural systems

(turn away from promotion of economic growth as if independent of natural and cultural values).





Role of the project in regional governance and reporting





Resilience requires a system-wide understanding

Social-ecological systems (SES)

- The integrated concept of humans in nature (Berkes & Folke 1998)
 - complex, dynamic (adaptive) systems which exist and function at nested scales
- 'Resilience' represents the system's ability to absorb change (bounce back) without altering fundamentally





Social Resilience Literature - Knowledge gaps

Ecological literature

- + Identified 'social-ecological systems' and their main properties
- + Focuses on very large scales and time frames
- Naïve on social components (mainly institutional, knowledge/learning)

Social literature

- Emphasises tiny scales (individual, sometimes community)
- Neglects, even denies, ecological and economic roles
- + Emphasises social strengths, capacity building, rather than weaknesses (an advance on most social indicators)

Gaps

- o Full set of social dimensions of SES
- o Community and regional scales
- o Australian/North Queensland context





Far North Queensland

Great Barrier Reef
World Heritage Area



- Serious water quality issues for the GBR region
- Climate change as further imperative
- Context of rapid regional change
- Lack of social knowledge to inform policy

Wet Tropics World Heritage





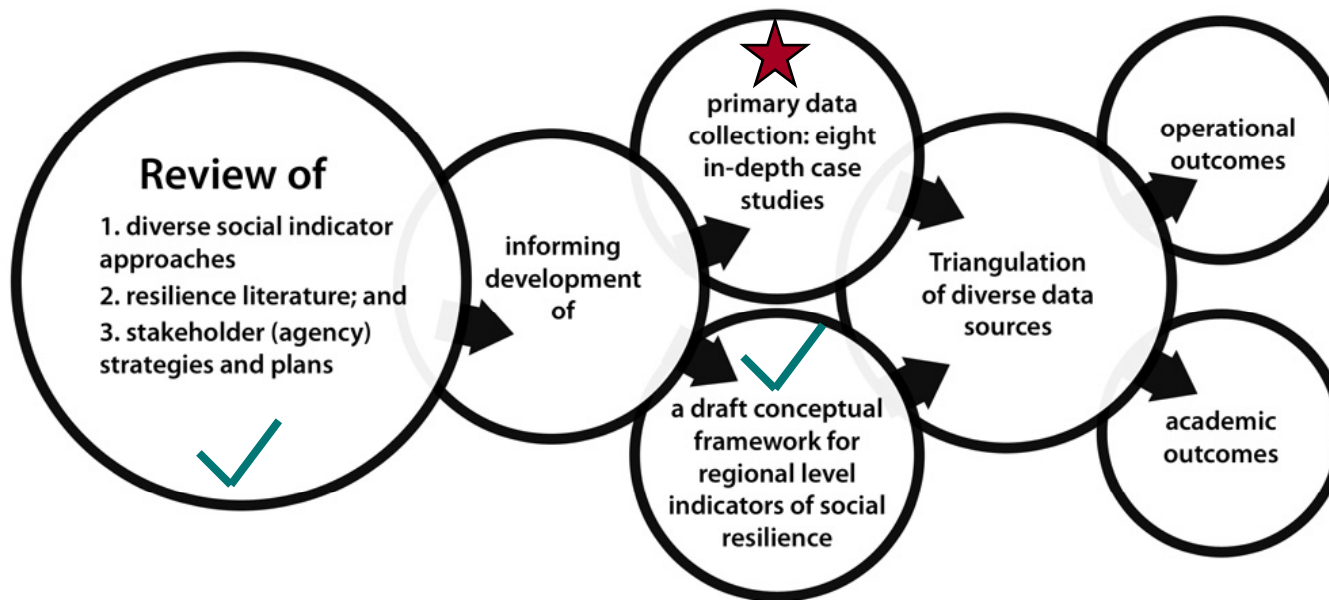
Project approach

- Partnership research with regional decision-makers
 - Participatory process
 - Build relationships, identify joint planning needs, thence indicators
- Sources of information
 - Continuous partner discussion
 - Secondary information (vast literature review)
 - Case studies in region (8 in 2 catchments)



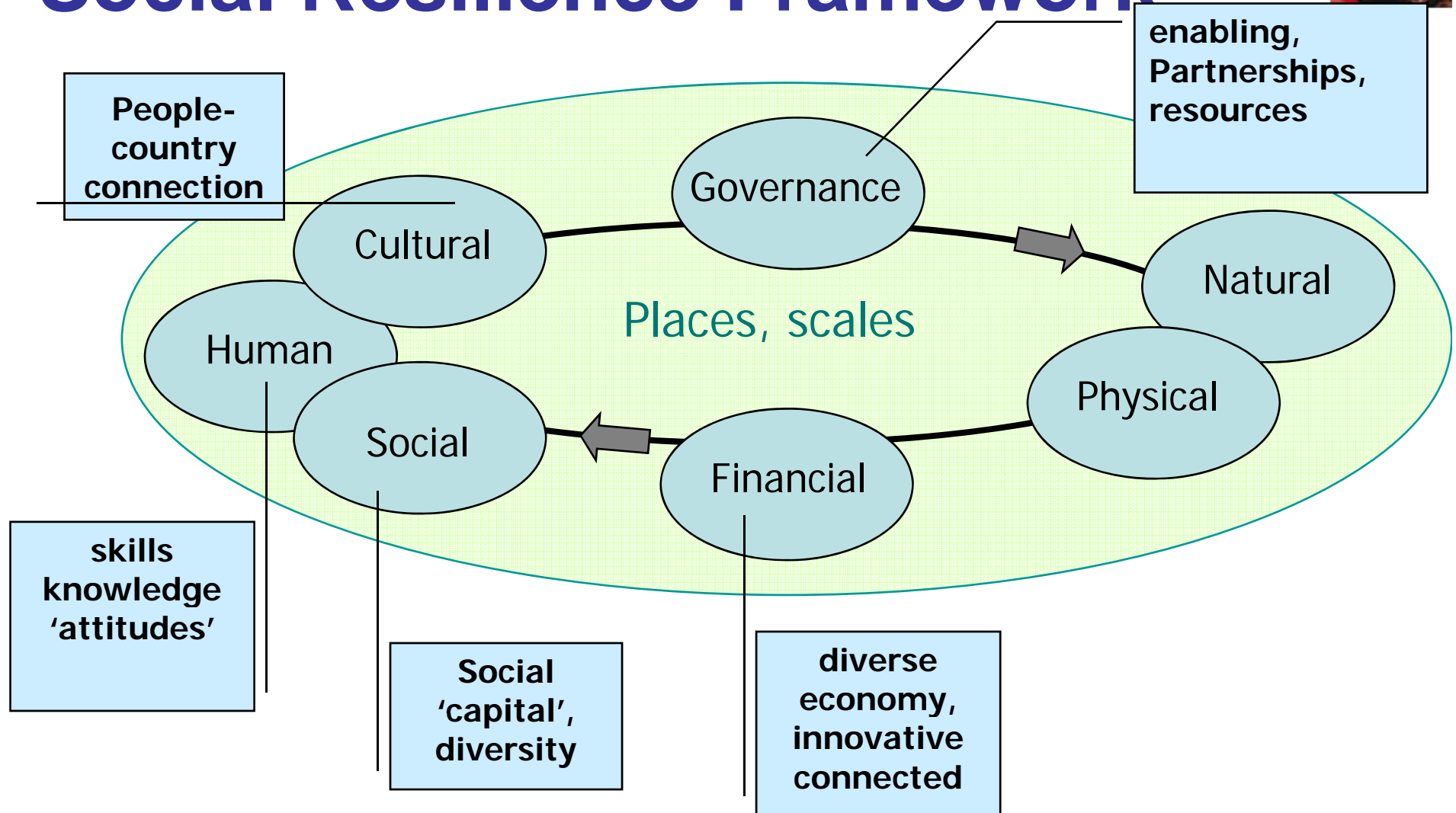


Research Approach





Social Resilience Framework





Initial indicators

(from discussion and secondary data)

Knowledge (access and sharing, leadership)

- The proportion of people who access information from a variety of sources (including internet, library, media, community information networks) to inform their decision making (about NRM) and by type.





Innovation (ESD and business, leadership)

- Percentage (and annual rate of adoption) of land holders using environmentally friendly technologies and practices, by type.

Economic development (perception, employment options)

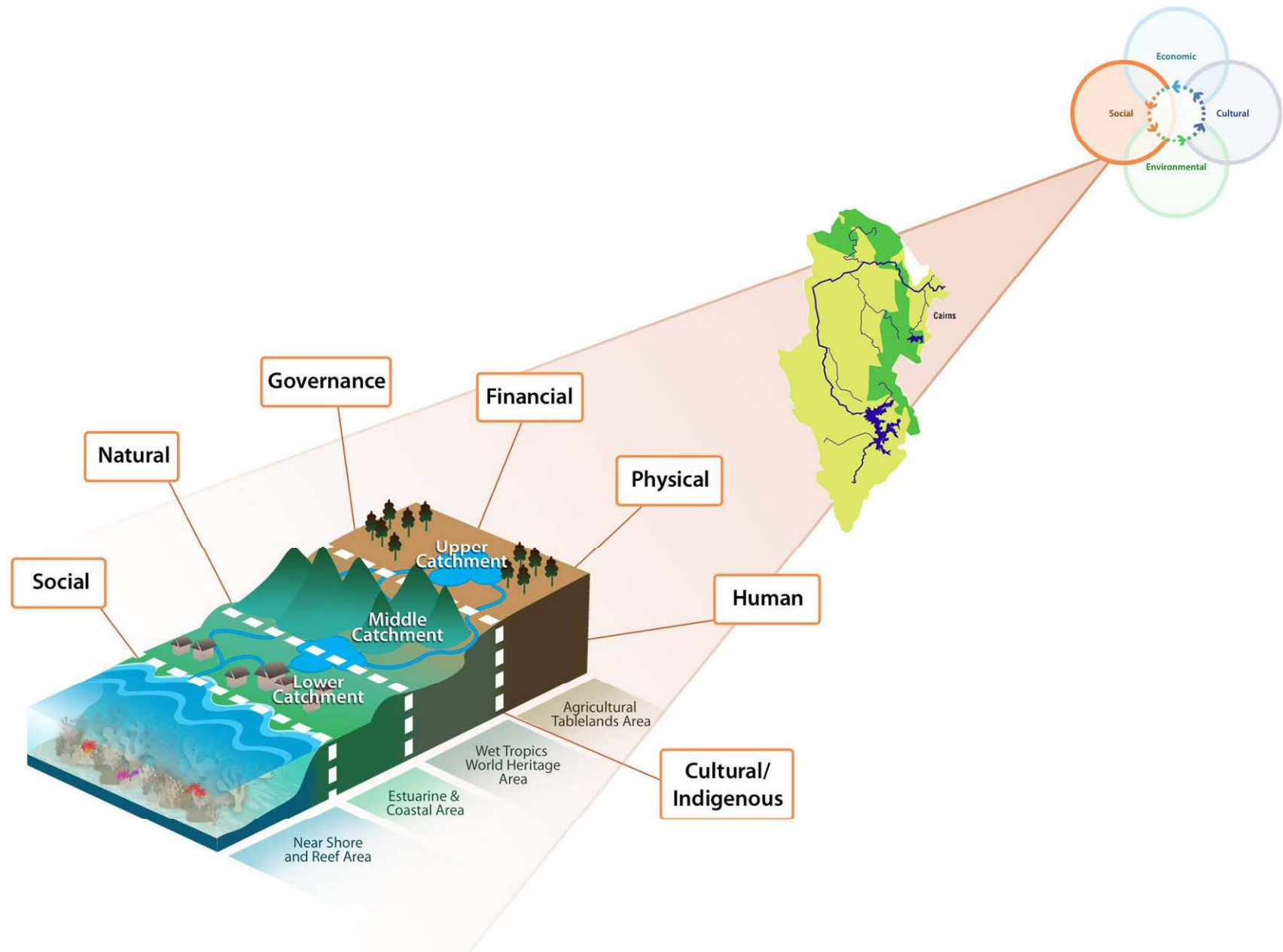
- The percentage of the population who report they feel confident in their current and future employment prospects.

Networks

- The proportion of people who participate in NGO/Civic groups and organisations which comprise different people (ie not mostly the same people).



Case studies – people and water



Sets of social-ecological systems (Barron example)





Marine case study

focus - crown of thorns star fish outbreaks

- Outbreaks and damage coral
- Causes uncertain
- Impacts on tourism (direct, media influenced)
- Roles of governance, science

? How did the parties adapt? What can this teach about resilience?



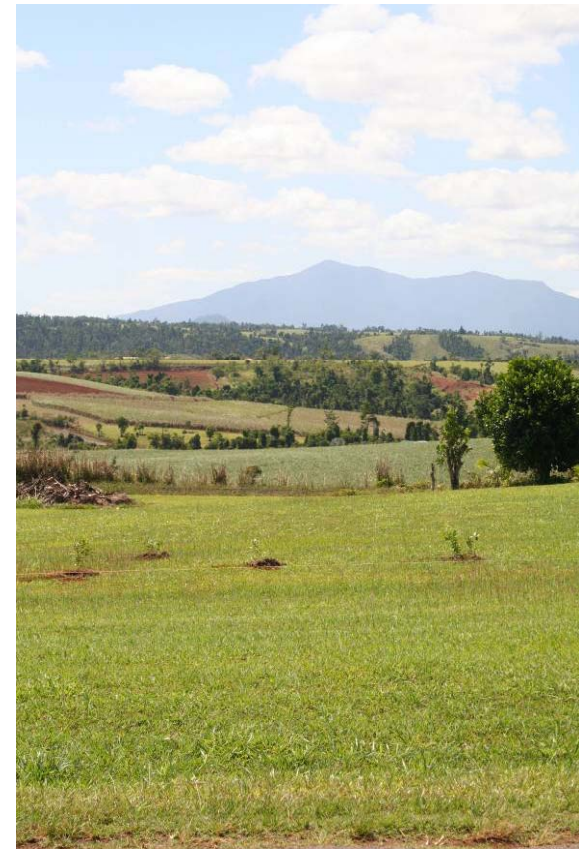
Photos - GBRMPA





Tablelands case study focus - dairy restructuring

- Affected within national restructure to improve competitiveness
 - impacts for farm families, industry and regions
- ? How did the parties, region adapt? What factors assisted resilience?





Resilience factors

(initial analysis from case studies)

Factors are collective and individual, crossing framework domains. They are dynamic.

- Knowledge generation and management
- building awareness
- Communication (related set of factors)
 - inclusive
 - system understanding
 - information as empowering
 - honest



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- Innovation, willingness to change
 - taking ownership
 - taking risks
 - empowerment, fostering change
- Anticipation (financial and otherwise)
 - foreseeing trends, being proactive
- Partnerships
 - innovative, trust-based
- Economic base
 - diverse but with local loyalty





e.g. Financial domain

- Theory
 - diverse, innovative, cooperative economy
- Indicators from literature
 - gross birth rate of new enterprises as a percentage of active enterprises
 - proportion of population who prefer to support local shops and businesses
 - corporate activities in off-site environmental, social and cultural programs
 - attracting new sources of money for natural capital (e.g. eco-tourism)
- Case study insights
 - Foresight and innovation, taking risks; willingness to seek advice; investment strategies; industry roles in partnerships; local 'branding'; new technology and practices.





Refinement Steps

- Continual improvement in design of indicators (what do we all need to measure?)
- Checking data sources and availability
 - from existing sources (e.g. could SEIFA index of disadvantage, show where investment in NRM jobs could help?)
 - collection needs e.g. surveys?
- Use of SMARTT criteria to evaluate potential indicators
 - specific, measurable, achievable, relevant, timelined, talk to other indicator sets





Communication highlights (2008)

- Q150 grant to make DVD with Kuku Nyungkul, on people-water relationships (MTSRF partners)
- RiverSymposium – Sept 08
- International Social Sciences Conference, Italy
MTSRF Conference – April 08
- Continual discussions with partners, case study participants





Some points to consider....

- Resilience is a very new field
 - a coup for MTSRF and partners but needs patience to develop
- Resilience focus enables policy for uncertainty
 - subtle advantages over sustainability and well-being
 - emphasis on enhancing strengths and adaptiveness
- The worth of studying and forming policy for social-ecological systems
 - ...rather than separating these
- Resilience factors may differ for places, systems and times
 - Therefore North Queensland would benefit from its own analysis and indicators

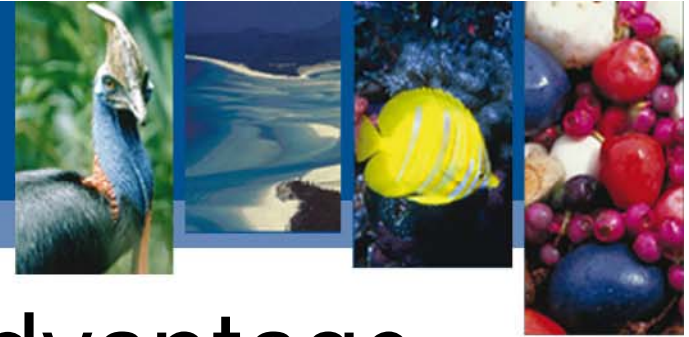




THANK YOU

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Socio-economic disadvantage

Local government area

Overall quintile position

Atherton (S)

3

Cairns (C)

5

Cardwell (S)

2

Eacham (S)

4

Herberton (S)

1

Hinchinbrook (S)

2

Johnstone (S)

2

Thuringowa (C)

4

Townsville (C)

5

Wujal Wujal (S)

1

