

# Measuring resilience in regional economies

Challenge Session 3

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# Today

- Resilience – biophysical and socio-economic
  - Why bother?
- Indicators and proxys
- Outcome
- Helping transformations

# Resilience

- Resilience is defined as the capacity of a system to absorb disturbance and still retain its basic function, structure and feedback loops.
- Disturbance is the norm – the ‘balance of nature’ is not a calm and steady state.
- Long run, external and unstoppable game changers
- Less *retaining function and structure* and more *transforming* into a system better suited to where communities, economies and markets are heading.

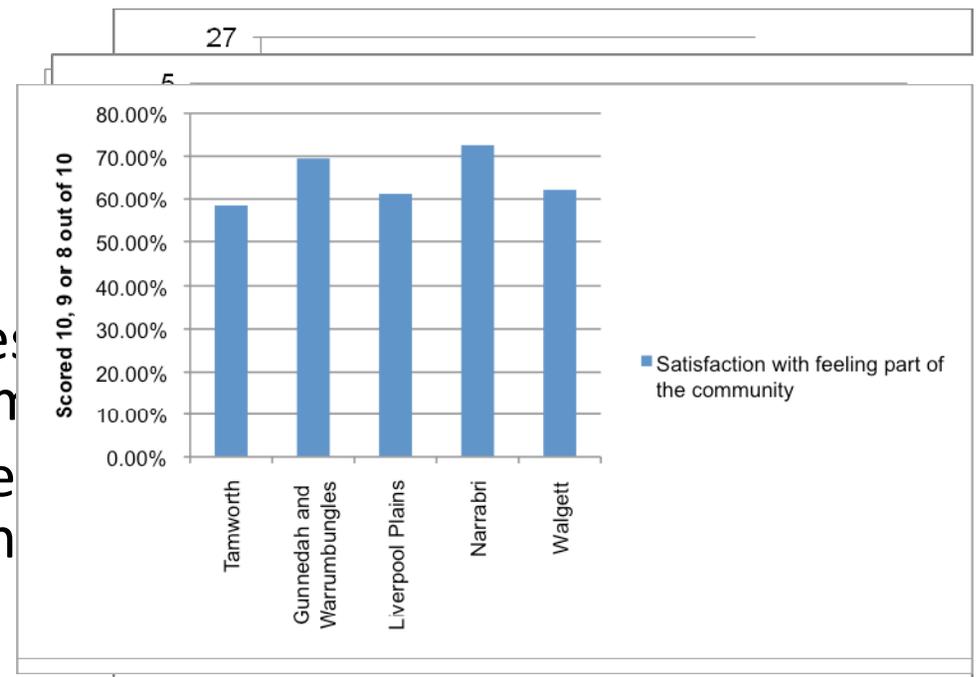
# Biophysical resilience measures

- Diversity
- Feedback, modularity and nestedness
  - Interconnectedness, feedback loops, transmission of shocks
- Reserves
- Openness
- Knowledge
- Leadership, trust and power



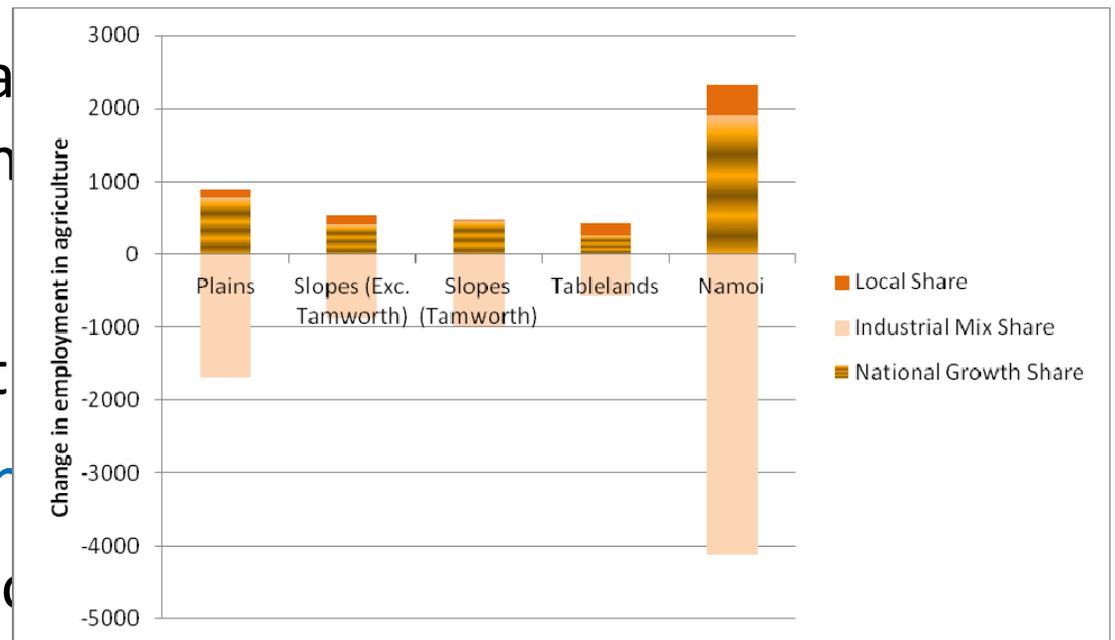
# Socio-economic Indicators

- Diversity
  - Employment, population, ethnicity
- Feedback, modularity and nestedness
  - Economic links: natural resource base and flow-on employment
  - Social feedbacks: dependence ratio, child bearing propensity
- Reserves
  - Volunteering, well-being, mortgage debt, farm debt



# Indicators

- Openness
  - Value of agricultural production, shift-share
- Knowledge
  - Education, ‘innovat
- Leadership, trust and ‘influence?’
  - Managers (pro or co



# Outcome

Resilience Indicator	Namoi Catchment	NSW	Namoi indicator ranking relative to NSW
Employment diversity	28.79	26.86	Lower
Age diversity	24.47	24.68	Similar
Ethnic diversity	12.8%	44.7%	Lower
Flow-on/NRB employment	2.2	4.3	Lower
Age dependency ratio	62.3%	51.5%	Higher
Child bearing propensity	1.2	0.9	Higher
Volunteering	23.6%	16.9%	Higher
Personal well-being (Satisfied with future security)	54.6%	?	?
Mortgage debt	32.3%	40.3%	Lower
Farm debt	?	\$595 686 (Wheat-Sheep Zone)	?
Value of agricultural production per resident	\$14,189	\$1,681	Higher
Shift share in agricultural employment	36% of change due to local factors	31% due of change due to local factors	Moderate outside influence
Tertiary education	17%	33%	Lower
Managers	17.8%	13.3%	Higher

# So what?

- Snapshots, league tables, trends
  - What's useful in which circumstance?
  - Implications for adaptation and transformation
- Good data around
  - RAI [In]Sight 10 x themes and 59 x indicators
  - <http://www.regionalaustralia.org.au/research-policy/insight/>
- Need to measure to monitor
- But also need to act

# Helping transformations

- External drivers and internal resources
  - What role for agriculture?
  - What about broadband?
  - What about our lumpy population profiles?
  - What about our high population ‘churn rate’?
- How much ‘fuel in the tank’ for more change?
- What scenarios are in front of us?
- How can we weigh them up?