

Second Nature

www.secondnature.org



American College & University Presidents' Climate Commitment (ACUPCC)



Alliance for Resilient Campuses





MISSION

Our mission is to proactively build a sustainable and positive global future through *initiating bold commitments*, scaling successful actions, and accelerating innovative solutions among leadership networks in higher education.



The Good:

- Not only climate
- Inclusive of adaptation and mitigation
- Resonates
- Systems approach

The Bad:

- Confused with adaptation (not so bad)
- Too broad to understand
- Political expediency, easy sell
- Actionable?

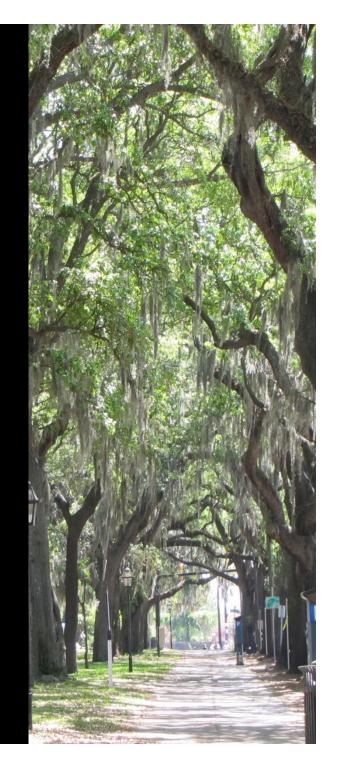
The Ugly:

Means nothing/everything. New buzzword



Resilience and Adaptation

- Resilience is valuable even without climate change
- Provides a foundation of adaptive capacity – savings + investment
- Adaptation involves anticipated climate changes
- Natural allies



Determining (unstable)

Invested (stable)

Existing (unstable)

Vibrant, dynamic

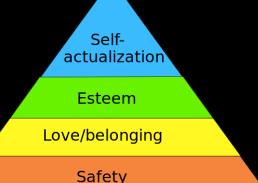
Livable

Tolerable

Survivable

Systemic Failure

Complexity/ adaptability



Physiological

Maslow's Hierarchy of Needs

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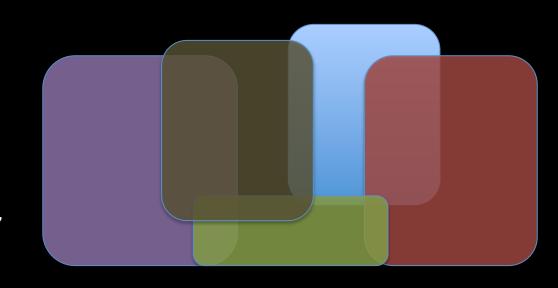
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System 'Map'

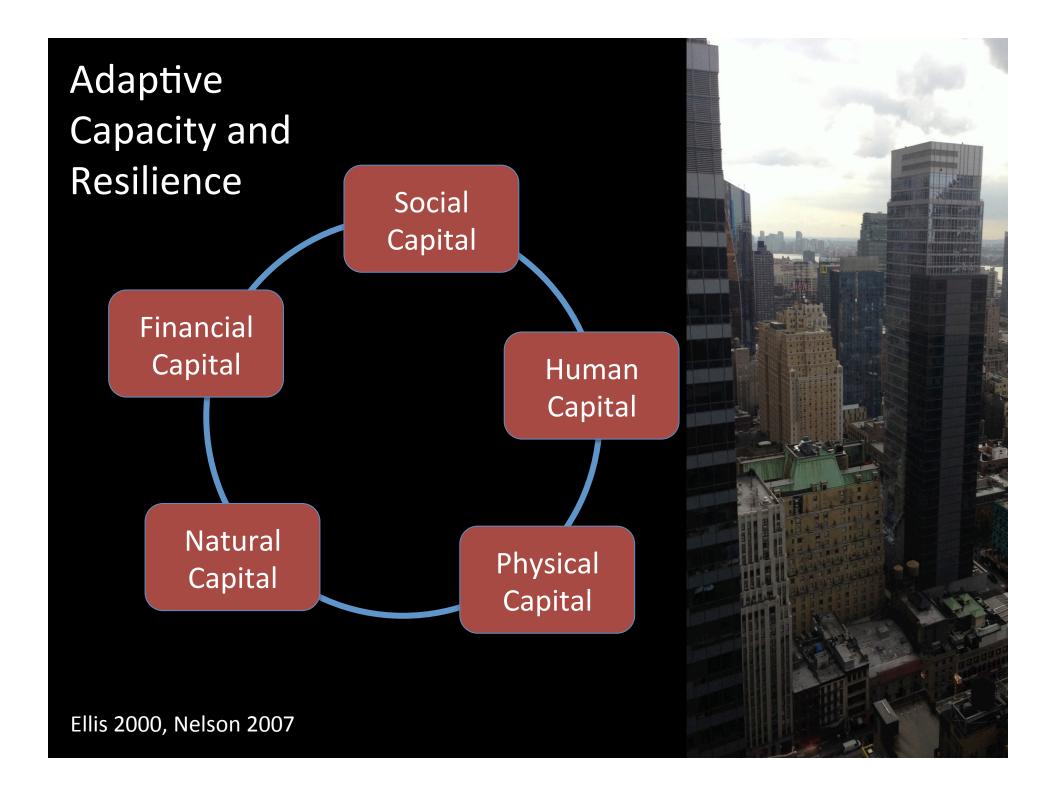


- Vibrant, dynamic
- Livable
- Tolerable
- Survivable
- Systemic Failure



Resilience as Directional Change

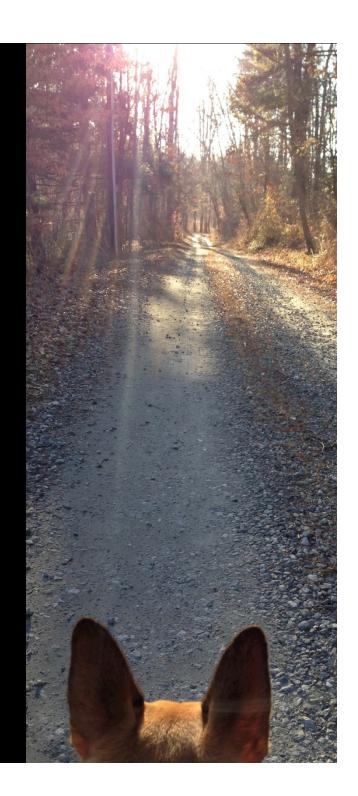
- Not just a return to a prior state
- Drives towards an improved state: system and its components
 - Flexible
 - Diverse



Adaptive Capacity and Resilience

- Social Capital
- Human Capital
- Physical Capital
- Natural Capital
- Financial capital

Basis for flexible but coherent indicators of change and direction



	Indicator	Variable	Rationale
Human	Human and physical health	Self assessed health	Capacity of land managers to undertake NRM based on their health status
		Age/ill health as a constraint to NRM	Limitation of land managers to undertake NRM based on old age or illness
	Education and training	Highest qualification in household	Knowledge that land managers have to manage natural resources
	_	Vocational training (number and type of accredited training)	Skills that land managers have to manage natural resources
	Retaining young people	The proportion of young people in regional populations	Talent available for current and future NRM
		Education levels of young people	Knowledge of future natural resource managers
	Occupation and Industry	Successful industry transition	Ease with which natural resource managers can switch between livelihood options
Social	Bonding	Personal trust	Capacity of family and community networks to support NRM
	Bridging	Generalised trust	Capacity of wider community networks to support NRM
		Participation in government programs	Generalised trust in government programs to support NRM
	Linking	Adoption rates of NRM practices on-farm	Effectiveness of linking with government programs to obtain ideas and resources to support NRM
		Internet use	Collective capacity to undertake NRM through bonding, bridging and linking within communities, particularly remote
			communities, and potential access to NRM information

Natural	Productivity of	Crop yield	Productivity of the land contributing to
	land	Livestock stocking rates	adaptive capacity
		Source of water for agricultural	Potential contribution of water resources to
		production	agricultural productivity
		Irrigation (water use)	agricultural productivity
	Sustaining	Effort expended to manage	Investment in the future productivity of
	productivity	threats to land productivity (area	agricultural land
		and labour)	
	Conservation	Management of riparian zones	Investment in conservation of rivers to
	of ecological		conserve or enhance the future adaptive
1	assets		capacity of agricultural land
		Area of native vegetation	Biodiversity supporting the future adaptive
			capacity of agricultural land
		Concern about environmental	Intent by land managers to conserve the
		issues	future capacity of agricultural land
	Indicator	Variable	Rationale
	On-farm	Structures (sheds, houses, silos	Physical assets contributing to the
		etc)	productivity of agricultural land
		Changes in irrigation practices	Investment in the future adaptive capacity
			of agricultural land by increasing the
II _ I			efficiency of water use
Physical		Dams	Water resources contributing to the adaptive
Iys			capacity of agricultural land
P		Investment in NRM	Investment in NRM to reduced threats of
	D 1 1	Dt	future productivity of agricultural land
	Regional	Remoteness Index	Combined effect of regional infrastructure
		Canital armanditura	on the capacity of rural communities
		Capital expenditure	Changing stocks of physical capital across rural communities
$\mid - \mid$	Income and	Stocks of housing Value of Agricultural	
	capacity to save	Commodities Produced (VACP)	Revenue generated on-farm contributing to adaptive capacity of farm businesses
	cupacity to save	Average income	Incomes contributing to the adaptive
		Average meome	capacity of rural households
		Possible future data: Business	Farm business income in a future adaptive
Financial		Income Tax (BIT) data	capacity index (replace VACP)
	Diversity of	Diversity of the farming	Farmers' ability to switch between
	income sources	activities contributing to VACP	alternative sources of on-farm income
Ŧ		Diversity of regional	Potential diversity of non-farm employment
		employment	opportunities
$\ \ \ $		Possible future data: Business	Farmers' ability to switch between
		Income Tax (BIT) data	alternative sources of on-farm income in a
		, ,	future index (replace VACP)

Planning for Resilience

- Resilience as a foundation
- Levels defining whole system/ community or sub-components
- Applies to external changes and internal decisions
- Five areas of adaptive capacity underpinning resilience
- Implications for indicators

So what does this mean in terms of planning and action?



Planning for Resilience

Decision Options and Actions (moderating vulnerability AND towards preferred future) Assessment of current resilience

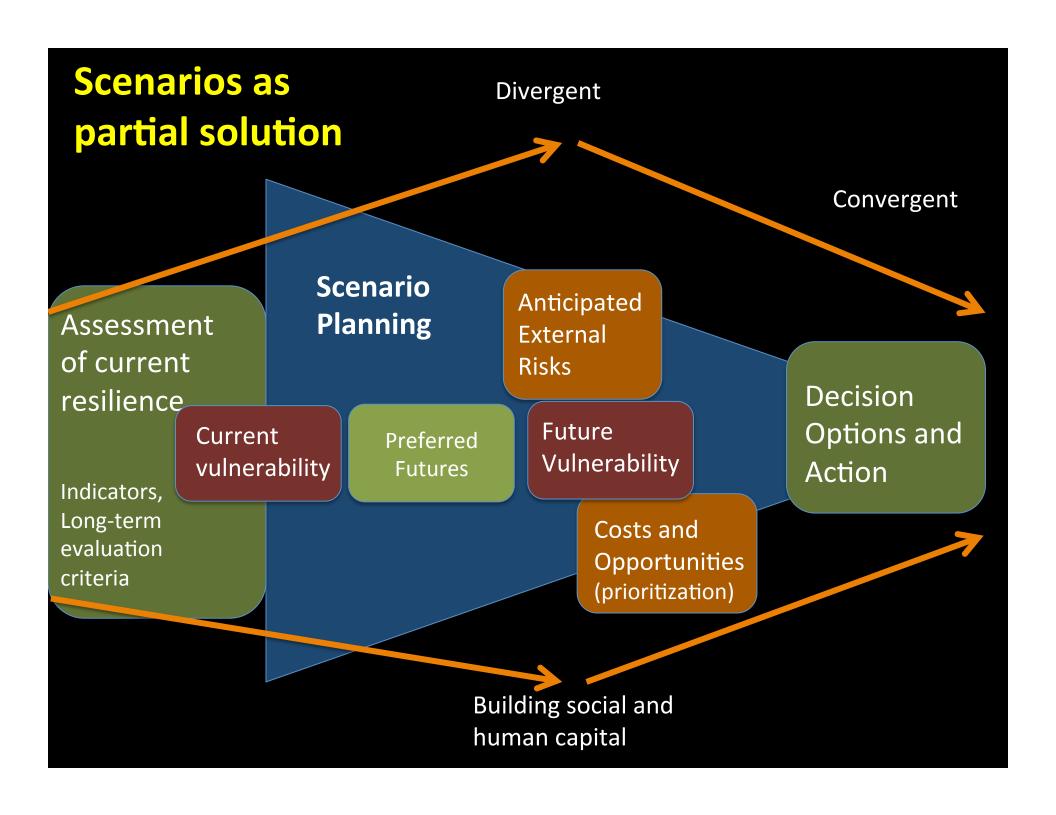
Indicators, Long-term evaluation criteria, vulnerability

Preferred futures
Inclusive process

Costs and Opportunities (prioritization)

Anticipated External Risks

Vulnerability assessment



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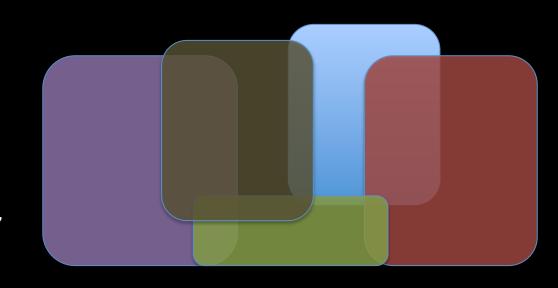
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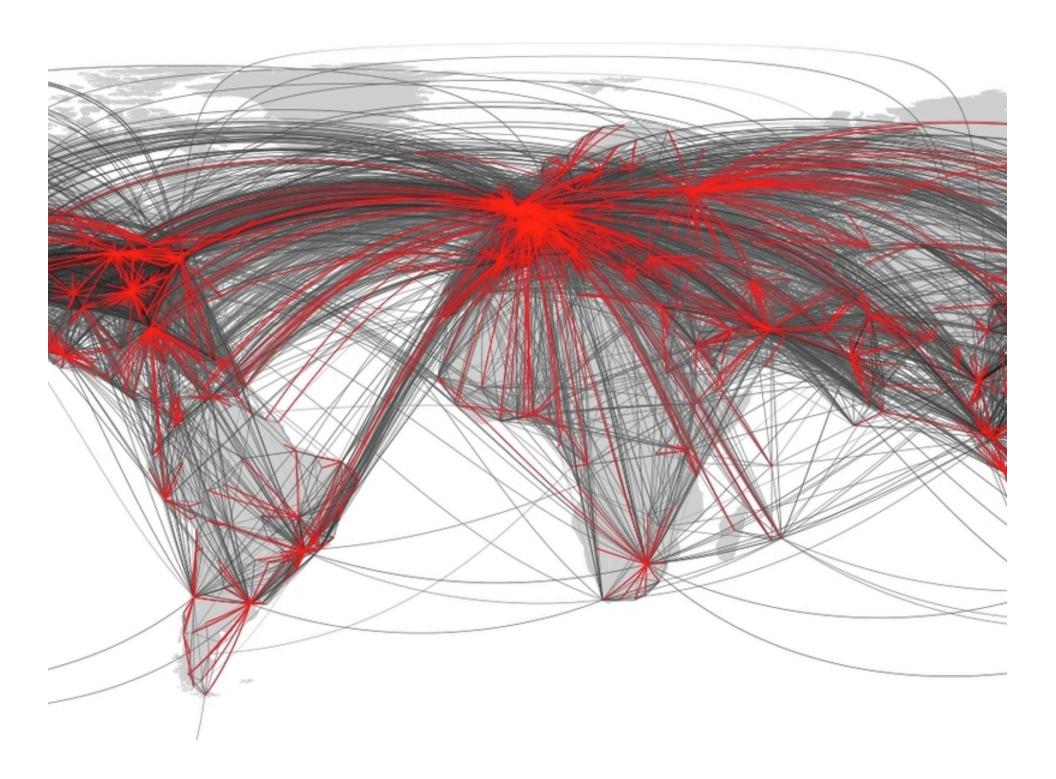
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System 'Map'



The Role of Tech (social)

- Citizen-data
- 'Smart' cities
- Connected
- Challenge and benefit to resilience
- Moving beyond 'reporting' to dynamic assessment



Role of Higher Education

- New kinds of knowledge generation
 - Technology as a tool and opportunity
 - Currently cities out in front
 - Currently limited scaled learning, analysis
- Integration of science and practice formally
- Interdisciplinary opportunities
- Embedding learning, planning, and implementation

Resilience Planning

- Building capacity throughout the process as well as an intended outcome
- Scenarios and indicators as a component of sustained dynamic assessment
- Not just about reducing the future negatives.
 Designing for:
 - Reducing the use of the 'rainy day' fund
 - Appropriate investment portfolio

