



ENABLING CLIMATE RESILIENCE OF COASTAL SOCIAL-ECOLOGICAL SYSTEMS THROUGH LOCAL COASTAL GOVERNANCE

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CICLICO - CITIES & CLIMATE CHANGE IN THE COASTAL WESTERN INDIAN OCEAN

Objective: *Explorer how diverse and often uncoordinated objectives of coastal and marine planning can be implemented to enable better adaptation to climate change.*

Case-study: Algoa Bay, South Africa

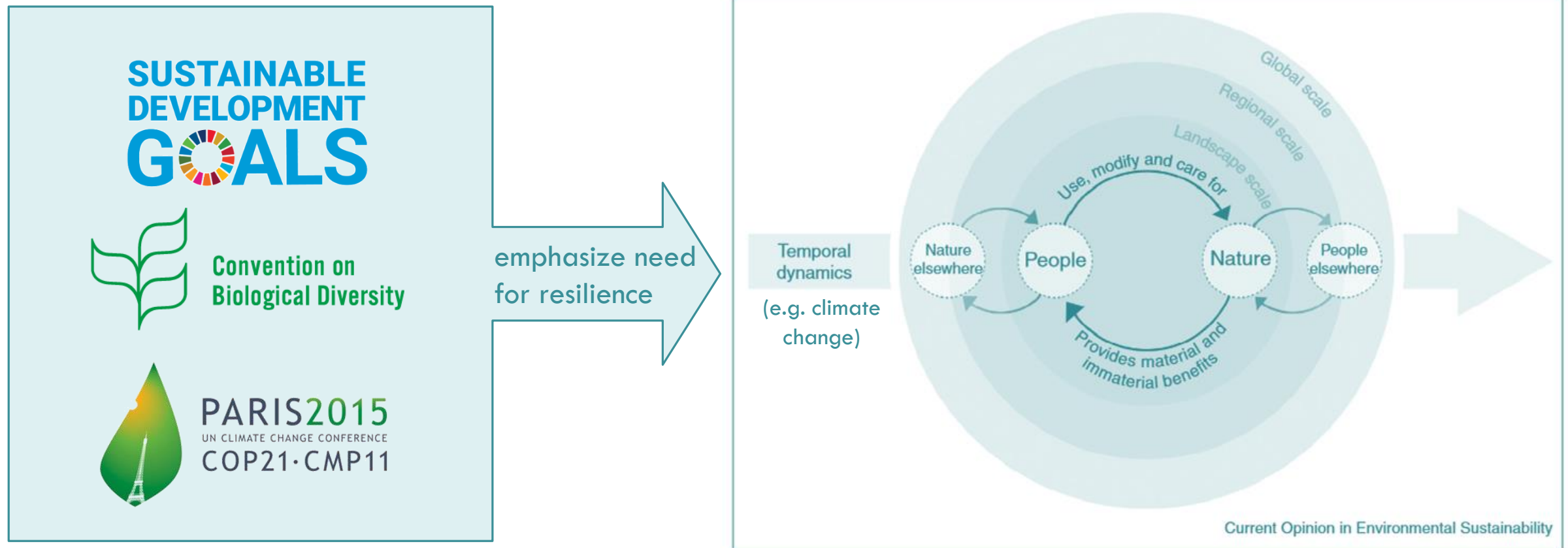
More Info: www.algoabayproject.com/ciclico



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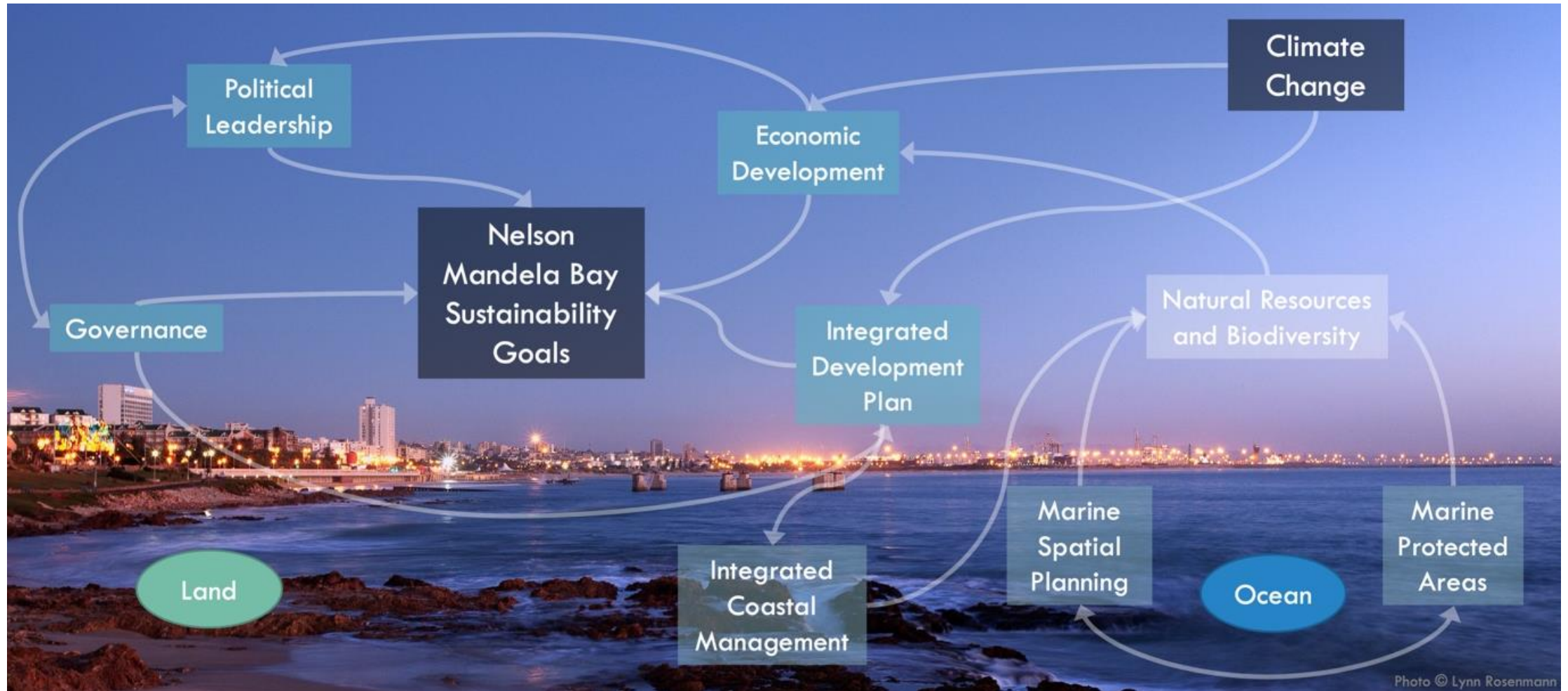


RESILIENCE AND GOVERNANCE OF SOCIAL-ECOLOGICAL SYSTEMS



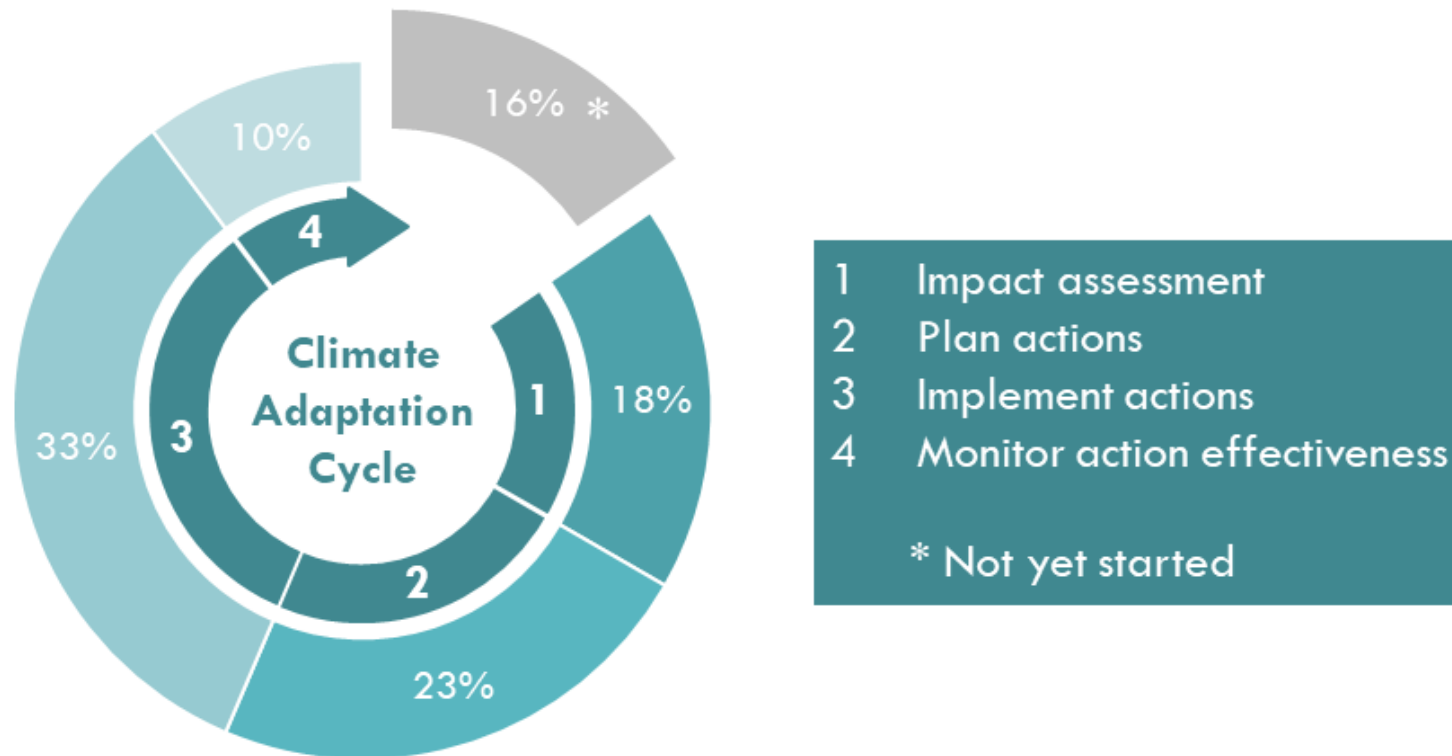
modified from Fischer et al., 2015

ALGOA BAY — A COMPLEX AND INTERTWINED SOCIAL-ECOLOGICAL SYSTEM



URGENCY OF RESPONDING TO CLIMATE CHANGE

Climate change was perceived as a serious to very serious problem by 74% of respondents, with droughts, sea-level rise and coastal erosion being the most cited climate-related threats.



PROBLEM AND OBJECTIVE

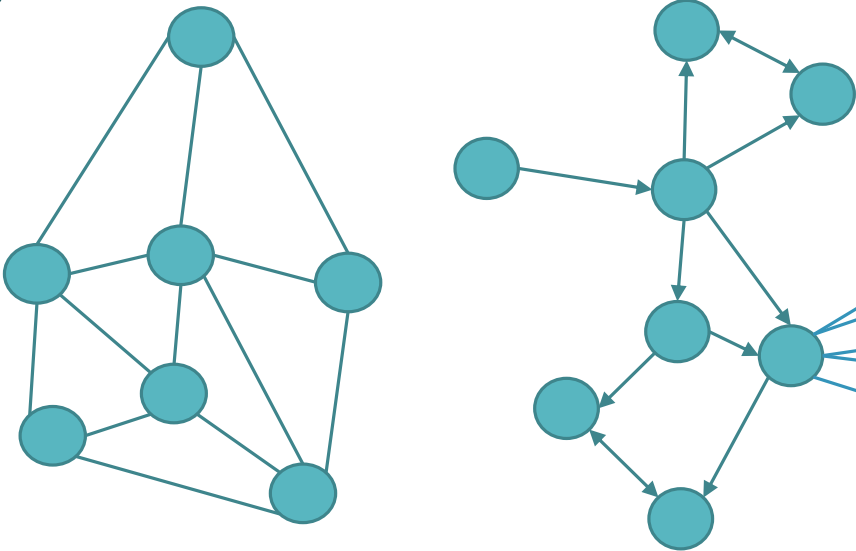
Problem:

- The Bay needs to be managed as an integrated social-ecological system across the land-ocean interface
- Improved coordination between organizations and management approaches is needed to enable better climate change adaptation

Objective:

Develop and test an approach for framing the governance system of the Algoa Bay coastal SES in order to enable climate resilience.

Collaboration & knowledge networks in coastal governance



Stakeholder adaptive capacity



Political

Financial

Human

E1



E3

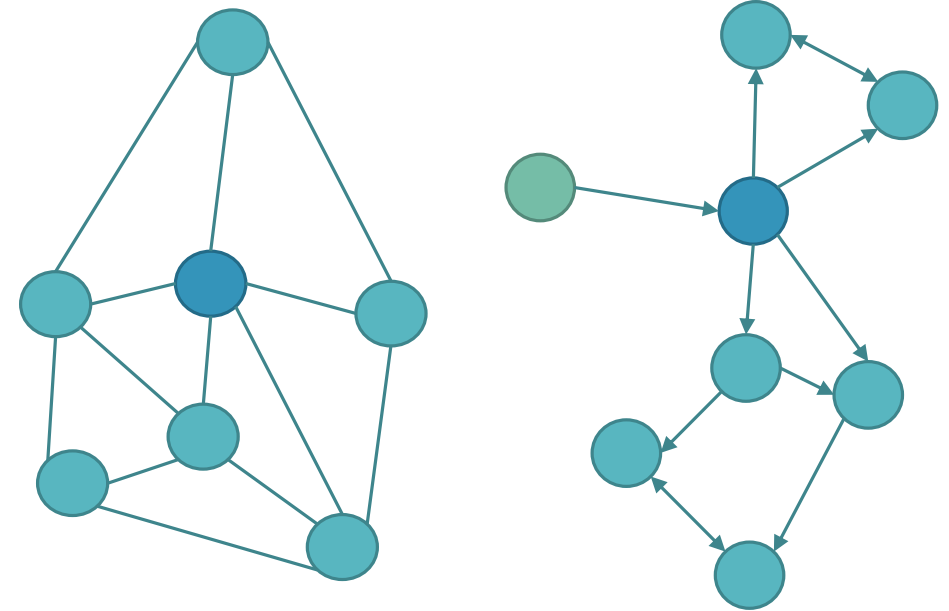
System's emergent adaptive capacity



STAKEHOLDER NETWORK ANALYSIS

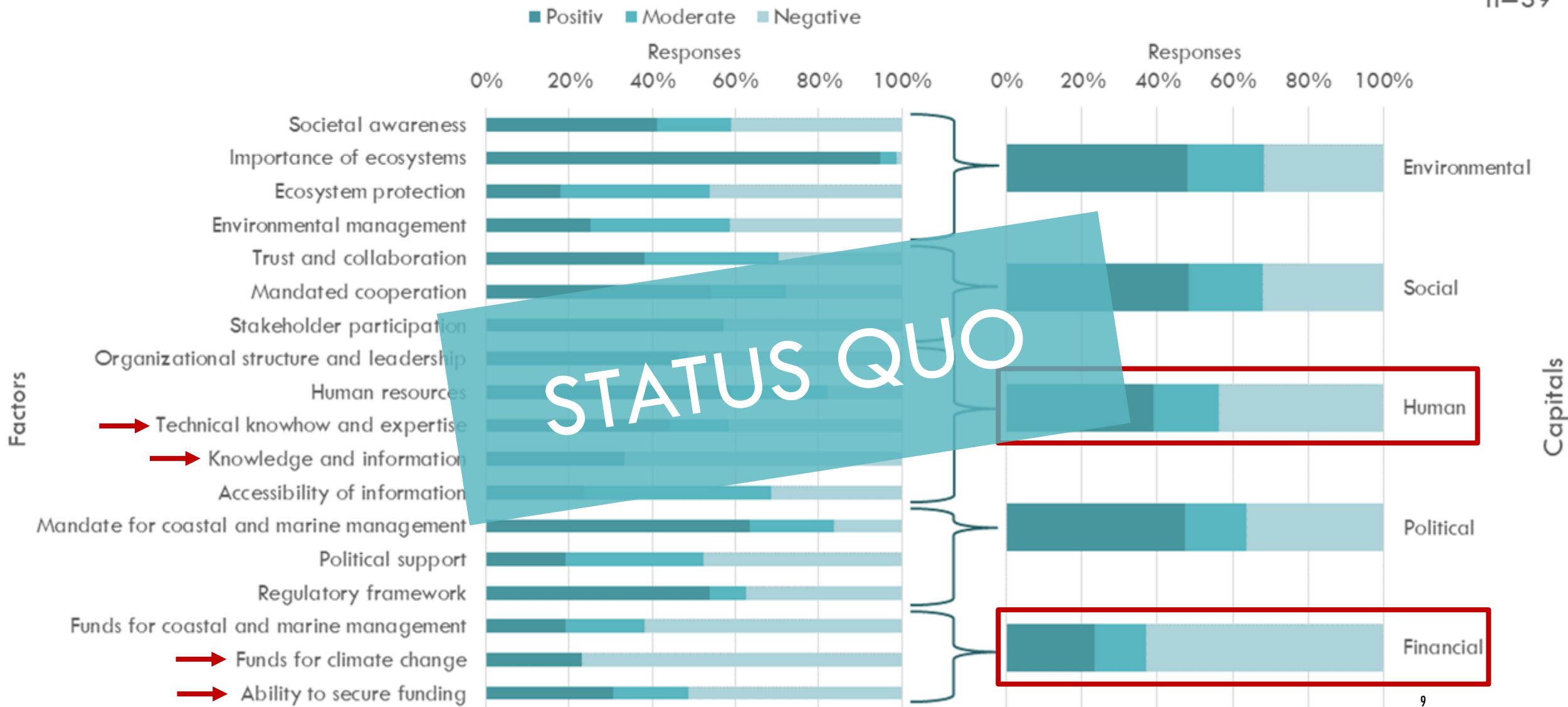
- Identification of key stakeholders that are central to knowledge and collaboration networks
- Analysis of the direction and strength of information flows between stakeholders
- Investigation of overlap of and collaboration between different area-based management approaches (ICZM, MSP, MPA)

Collaboration & knowledge networks in coastal governance



CAPITALS APPROACH FRAMEWORK

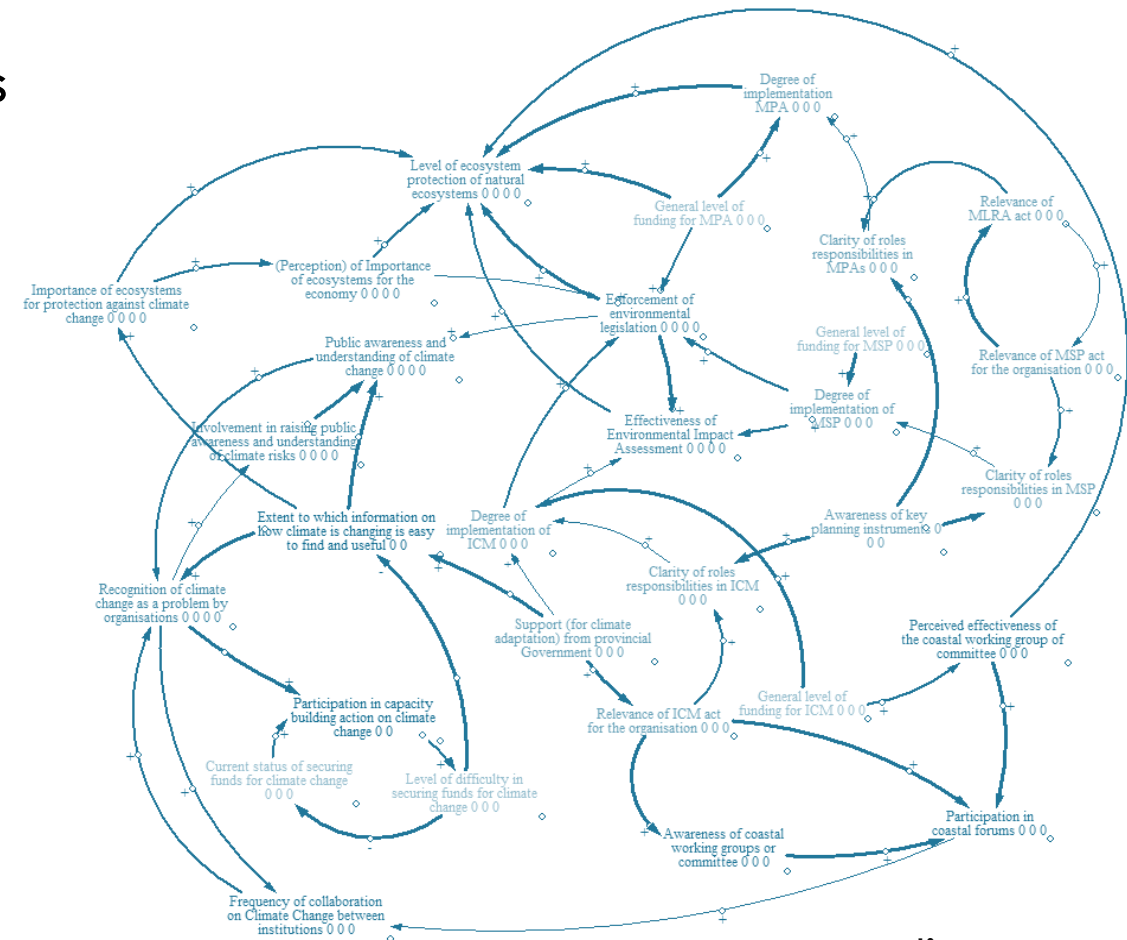
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FUZZY COGNITIVE MAPPING

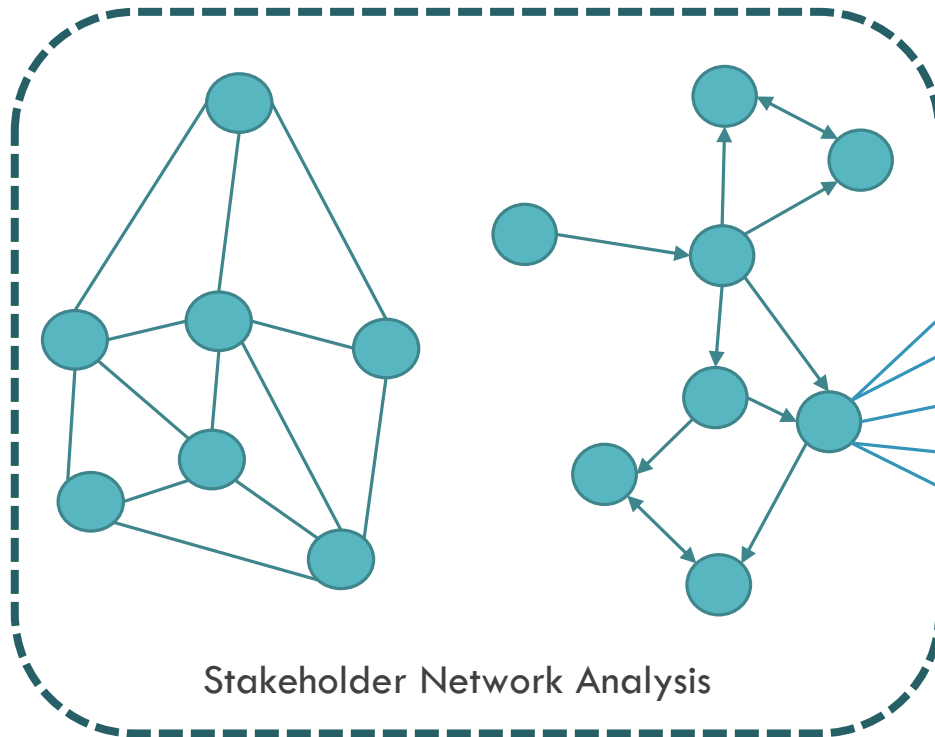
- map key elements of governance capacities
- **Leverage points:** “places in complex systems where a small shift may lead to fundamental changes in the system as a whole” (Abson et al., 2017)
- Model the system’s emergent adaptive capacity

System’s emergent adaptive capacity

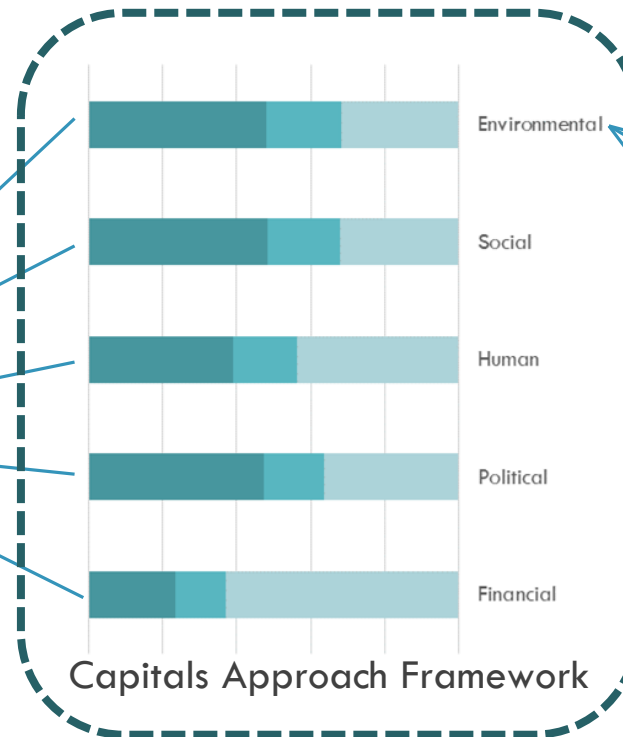


IDENTIFYING LEVERAGE POINTS FOR ENABLING CLIMATE RESILIENCE

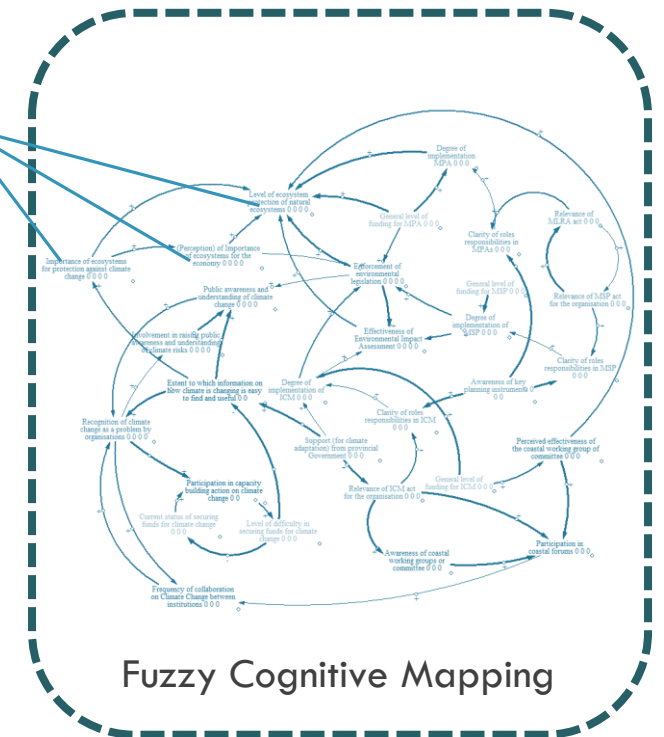
Collaboration & knowledge networks in coastal governance



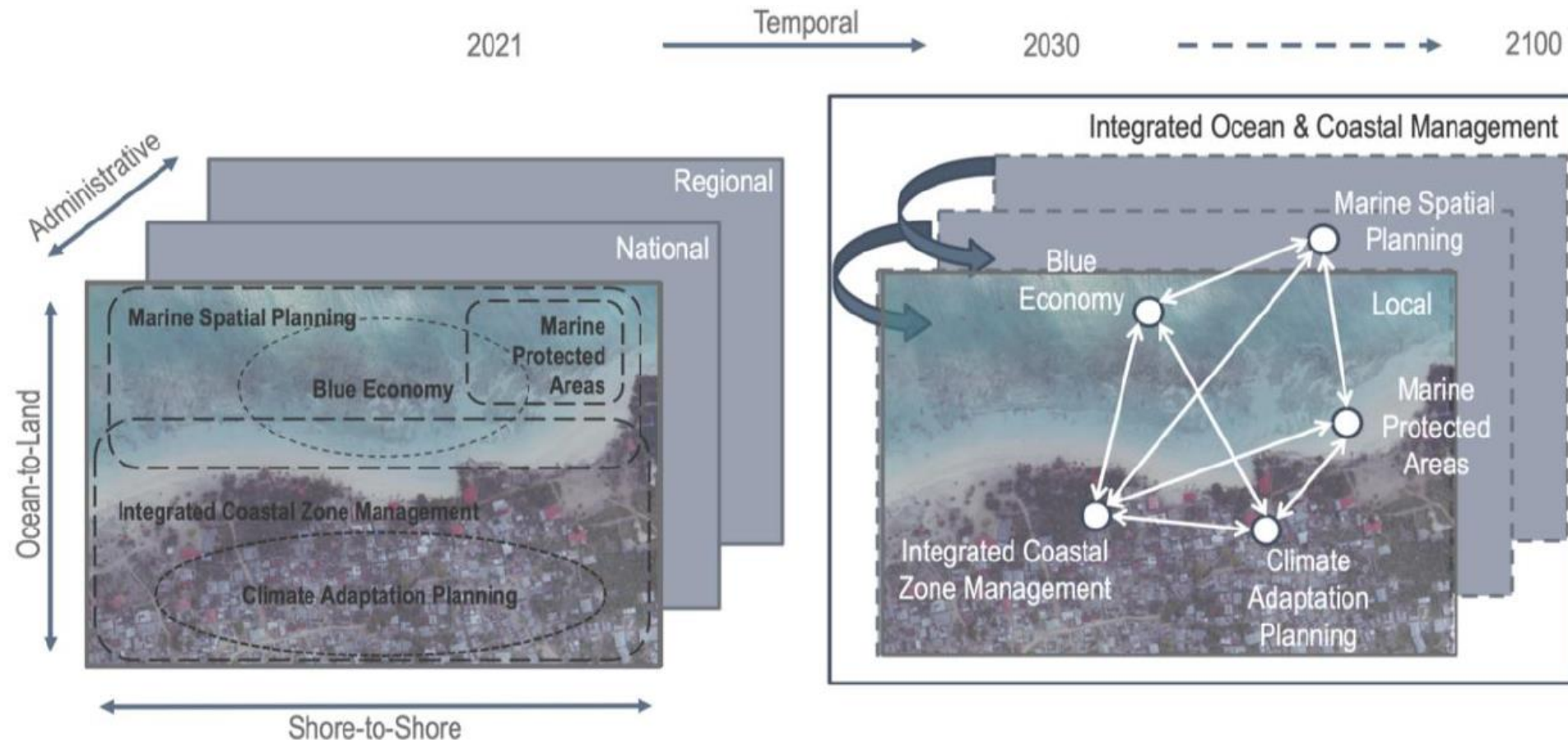
Stakeholder adaptive capacity



System's emergent adaptive capacity



OUTLOOK: INTEGRATED OCEAN & COASTAL MANAGEMENT



(Celliers et al., 2021, Policy Paper: Sans frontières - Ocean and Coastal Sustainability of the Western Indian Ocean)

THANKS FOR YOUR ATTENTION!

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