



National Coastal Adaptation Response Plan (CARP)

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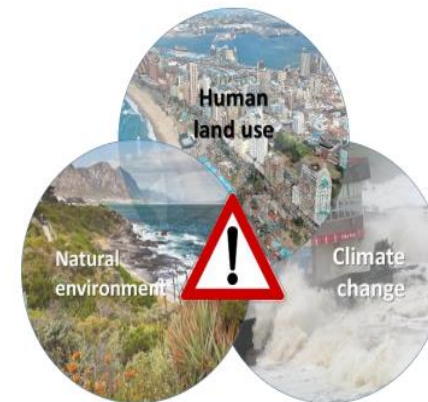
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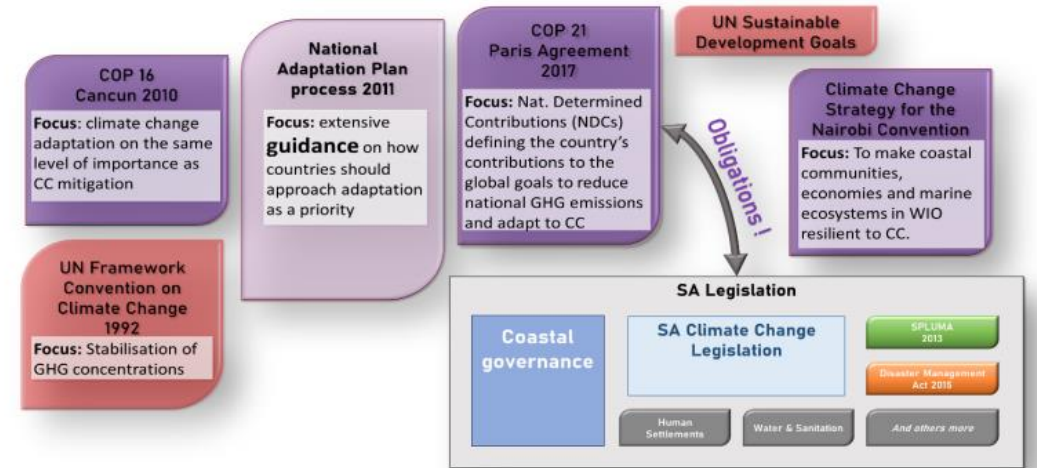
Contextualizing the Climate Change & its Impacts on Coastal Areas

- Coastal spaces have always been a **focal point for human activity**. The wealth of resources is believed to have been a major driver of human development throughout human history (Fagan 2014).
- Coastal areas are crucial for many **livelihoods, including tourism, fishing, and agriculture, and are often densely populated**.
- About 40% of the global population lives within 100 km of the ocean (Millennium Ecosystem Assessment 2005). In the case of South Africa, **about 40% of the population lives within 60 km of the coast**.
- Approximately 60% of the South African economy depends on coastal natural resources and trade infrastructure, such as ports, are extremely important given that more than 95% of South Africa's imports and exports are ocean-facilitated.
- With such a significant portion of the population living close to the coast, South Africa is particularly vulnerable to the **impacts of climate change, including sea level rise, coastal erosion, and extreme weather events**.



Contextualising the Need for the Development of the “CARP”

- The concentration of people and economic activities in these regions means that the effects of climate change can have **far-reaching consequences**,
- **Emphasizing the need for prioritizing coastal resilience and adaptation strategies.**
- This might include improving coastal infrastructure, implementing effective coastal zone management, and enhancing community preparedness to better handle and recover from climate-related events.
- The CARP fills this gap.



To create resilient and thriving coastal population / communities, economies and livelihoods while maintaining the biological diversity, functioning and service provision of coastal ecosystems under changing climate conditions.

Rationale for the Development of “CARP”

- National Climate Change Adaptation Strategy (NCCAS) – *provision of guidance in terms of implementation of national adaptation efforts.*
- **NCCAS** – identified priority sectors e.g., water, agriculture and commercial forestry, health, biodiversity and ecosystems, human settlements (urban, rural and coastal), and disaster management, transportation and infrastructure, energy, mining.
- Notable Omission of the **Oceans And Coast (as it** was previously not defined in the White Paper for Sustainable Coastal Development in South Africa, 2000 as a sector).
- Provided the Rationale for the development of the **National Climate Change Adaptation Response Plan (CARP)**- which specifically defines the elements of the coastal sector.



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Coastal Communities and Climate Change

- Approximately 40% of South Africa's population live within 60 km from the Coast – coastal settlements are projected to grow significantly in future (**particularly KwaZulu-Natal's coastal population is expected to double** by 2050, compared to 2011) (DEA, 2014; CSIR, 2019).
- Coastal communities will face higher risks of climate-related disasters - enhanced disaster preparedness and response strategies needed.
- Exposure of communities to the impacts of climate change are driven by contextual factors (e.g. location, income levels and effectiveness of disaster management). Poor and marginalised communities more likely to experience severe setbacks from impacts of climate change.
- Eastern Cape and Kwa-Zulu Natal have been hit the hardest already by disasters related to drought, floods, storms and wildfires.

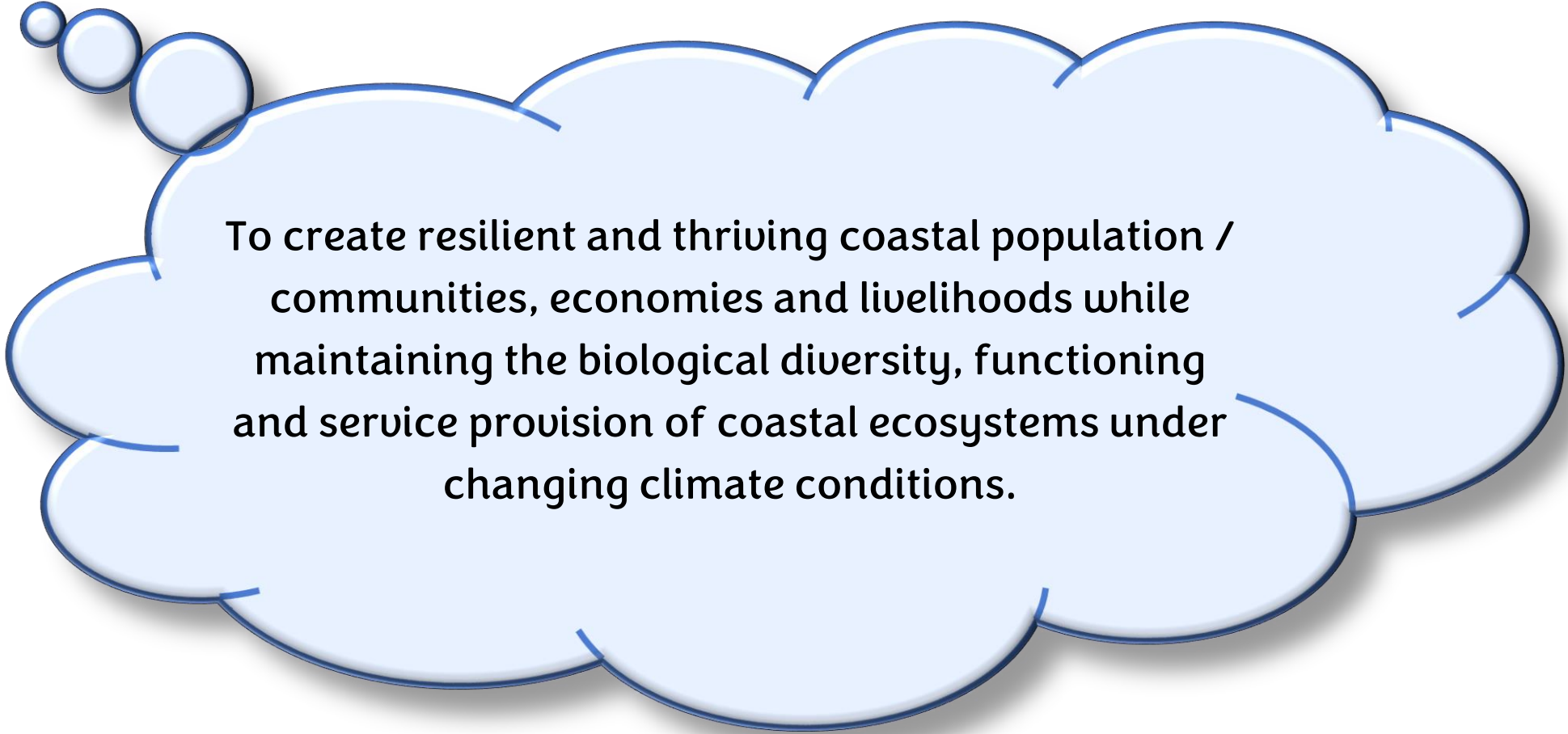
Coastal Area	Examples of projected climate-related hazards
Western Cape and parts of Eastern Cape	Decrease in rainfall, increased drought and wildfire
KwaZulu-Natal and northern parts of Eastern Cape	Increased exposure to extreme rainfall events and flooding, increase in coastal storm intensity and frequency



CSIR, 2019

Source: J. Trickett

Vision of the Coastal Response Plan: Draft



To create resilient and thriving coastal population / communities, economies and livelihoods while maintaining the biological diversity, functioning and service provision of coastal ecosystems under changing climate conditions.

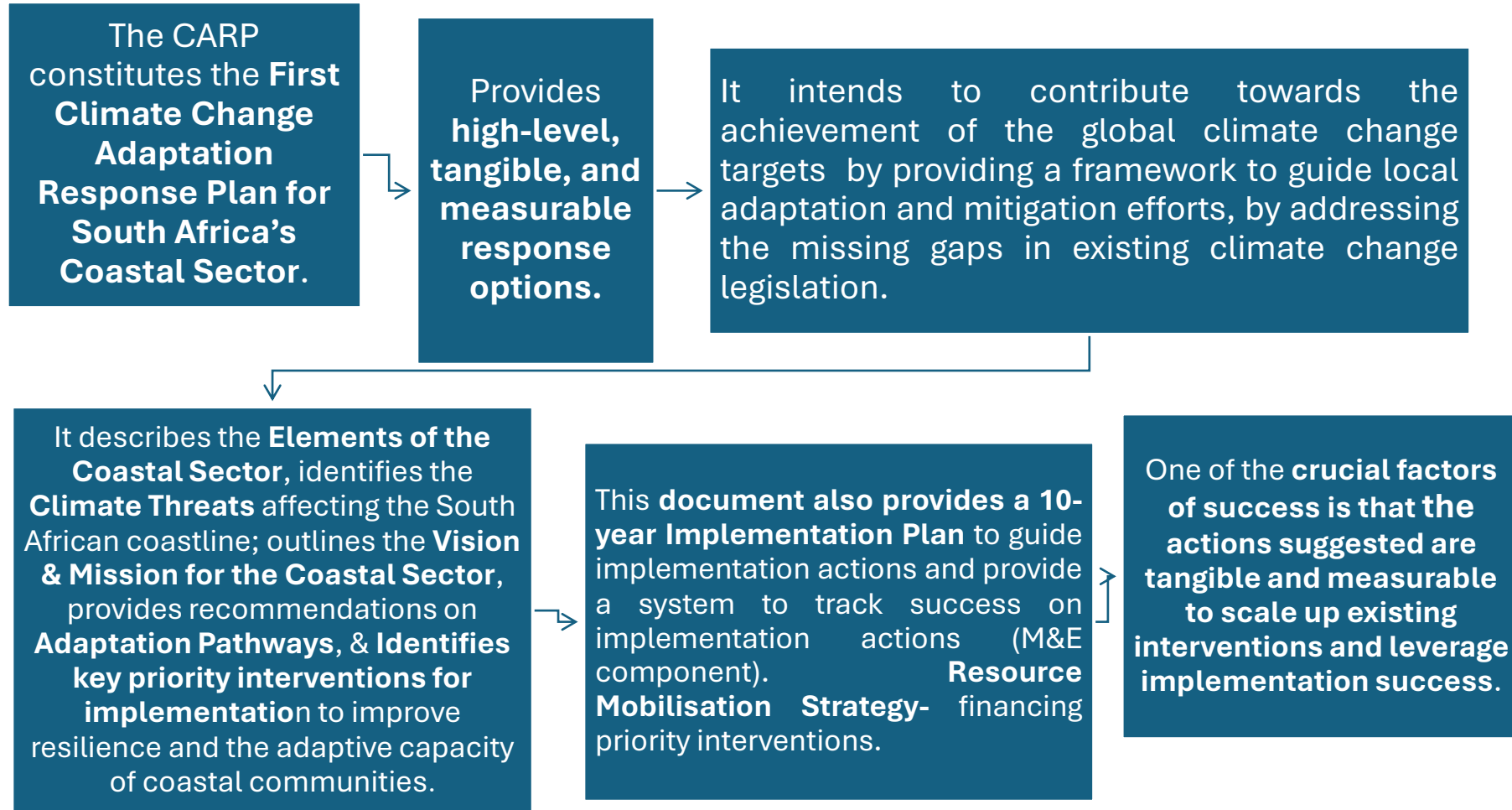
Primary Objective of the Coastal Response Plan

The **primary objective** of the Coastal Adaptation Response Plan (CARP) as a national reference is

- to **provide tangible high-level recommendations** for South Africa's Coastal Sector on how to respond to climate risks on the ground in line with the requirements of the Integrated Coastal Management (ICM) Act, National Climate Change Adaptation Strategy (NCCAS) and the National Climate Change Act.



Towards the Development of the “CARP”



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In line with National Climate Change Adaptation Strategy (NCCAS), aligns with the National Climate Change Act, 2024; developed to complement National Coastal Management Programme (NCMP) and Provincial Coastal Management Programmes (PCMP); Municipal Coastal Management Programmes and complementing environmental policies and legislation.

By doing so, supporting the implementation of specific interventions outlined in national and provincial climate change strategies and **ensuring coherence** between the multitude of climate change policies and legislation.

Builds a solid case for international funding for coastal climate change-related projects.

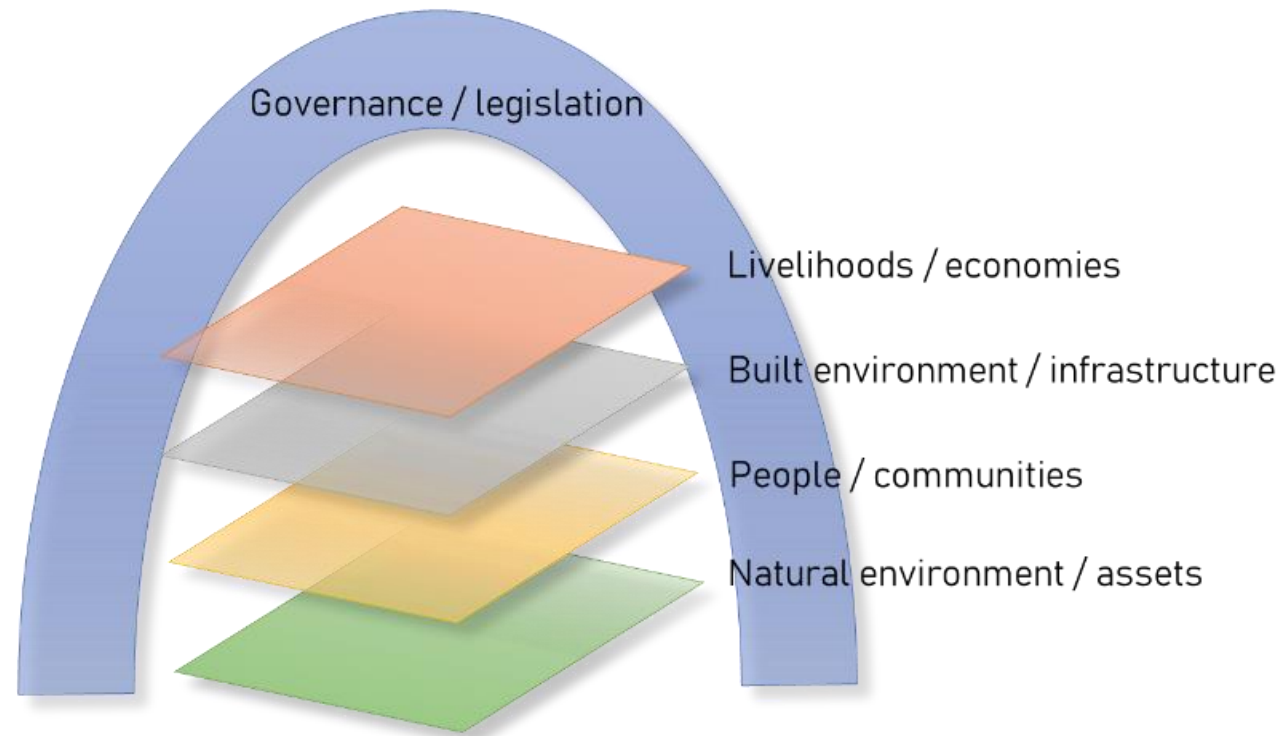


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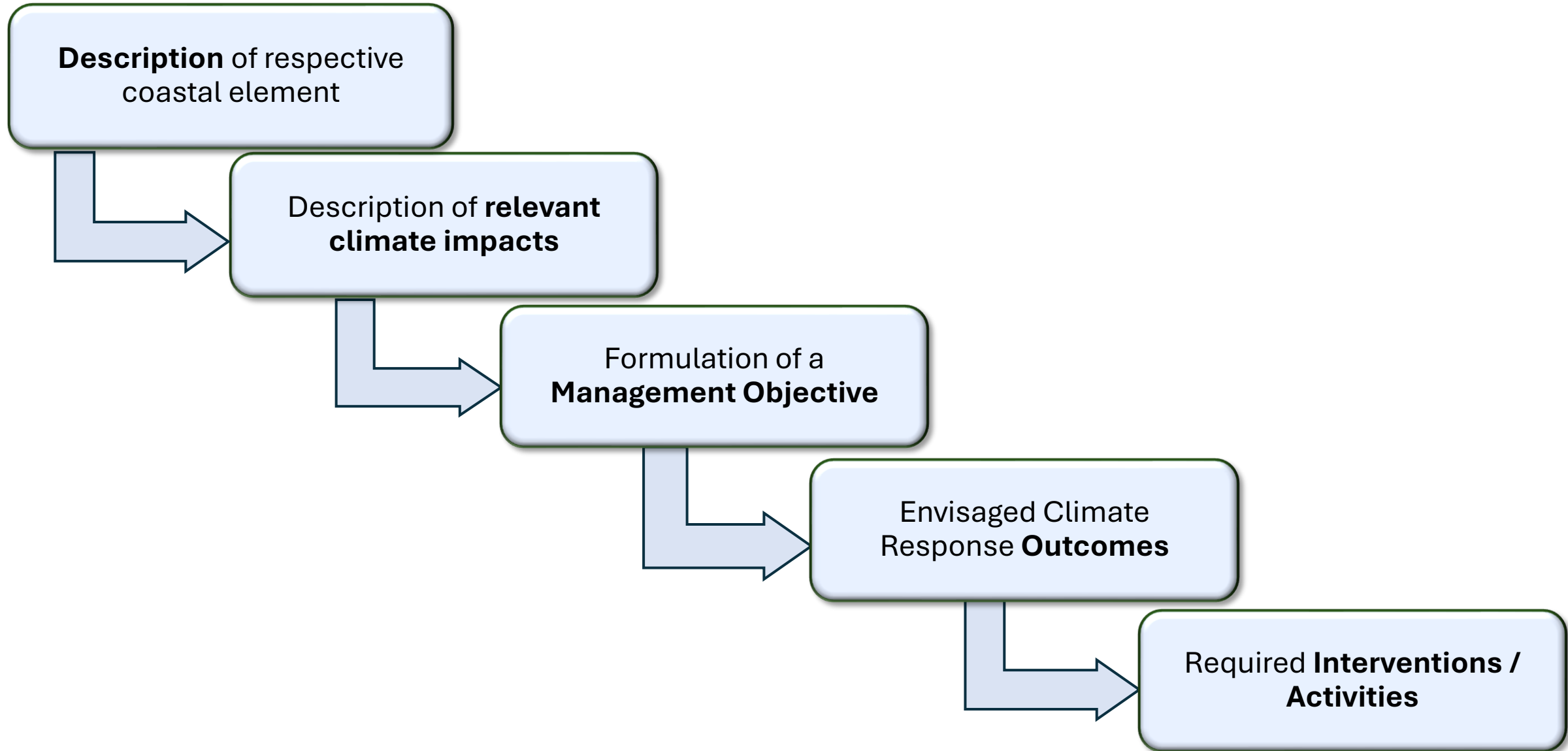


What are the “Coastal Elements”?



Deducted “coastal sector elements” in the draft Coastal Adaptation Response Plan

Structure for each Element Section



Climate Threats to Coastal Population: Examples

Injuries and loss of life

(Davis-Reddy and Vincent, 2017; Dube et al., 2021)

- Storm events and strong winds - can cause buildings, trees, powerlines to fall, risking injuries and fatalities
- Extreme rainfall events increase risk of drowning
- Flooding and wildfires - damage to roads, infrastructure and communication networks can disrupt emergency response efforts
- Wildfires can lead to severe burns, injuries and loss of life

Physical and psychological human health impacts

(World Economic Forum, 2024; Ma et al., 2022)

- Floods and extreme rainfall events could lead to water-borne diseases
- Drought – food insecurity and malnutrition
- Prolonged extreme heat exposure – could cause range of problems from heat exhaustion to heat stroke
- Experience of climate-related disasters can lead to mental health conditions such as post-traumatic stress disorder

Displacement, loss of property and livelihoods

(Davis-Reddy and Vincent, 2017; Willima and Naidoo, 2024)

- Climate-related disasters can force people to leave their homes temporarily/permanently
- Farmers – could lose crops, livestock and arable land
- Fisheries can be affected by rising sea temperatures, ocean acidification etc. - reduced fish stocks.
- Local tourism and small businesses – can be affected by damage to infrastructure and the natural environment, as well as disruption of supply chains
- Local livelihoods – affected through loss of income and disruption of access to resources and services (incl. ecosystem services) – increased risk of food insecurity.

Climate Response Outcomes

- **Outcome 1:** Increased resilience of vulnerable coastal communities to the impacts of climate change, through enhancing their adaptive capacity.
- **Outcome 2:** Increased awareness of coastal communities around the potential impacts of climate change (e.g. flooding) and effective adaptation measures that can be implemented.
- **Outcome 3:** Implementation of effective measures for disaster risk reduction and response within coastal communities



Outcome 1: Increased resilience of vulnerable coastal communities to the impacts of climate change, through enhancing their adaptive capacity

ADAPTATION ACTIONS:

- **Develop targeted adaptation programmes** – prioritize vulnerable communities
- **Engage with community networks** in developing such programmes
- **Ensure equitable and inclusive provision of basic services** and infrastructure to coastal communities
- **Ensure proper resourcing of critical services and facilities** (e.g. fire services and health-care facilities) to enable effective response to climate-related effects
- **Increase awareness of the health impacts** of climate change among communities and health workers



Source: L. Kellerman

Outcome 1: Increased resilience of vulnerable coastal communities to the impacts of climate change, through enhancing their adaptive capacity (cont.)

ADAPTATION ACTIONS (CONT.):

- **Maintain and enhance ecosystems and ecological infrastructure** (e.g. dunes) which protect coastal communities from the impact of climate change and provide ecosystem services (e.g. fertile land, fisheries and water resources) that support livelihoods.
- **Promote urban agriculture/local food production** – decrease reliance on food supply chains that are vulnerable to the impacts of climate change
- **Adopt sustainable land use practices** (e.g. in local farming) to increase resilience (e.g. water reuse)
- **Invest in research and modelling** of the impacts of climate change on coastal communities and the most effective adaptation measures in a variety of socio-economic contexts



Source: L. Kellerman

Outcome 2: Increased awareness of coastal communities around the potential impacts of climate change and effective adaptation measures that can be implemented

ADAPTATION ACTIONS:

- **Empower communities through awareness raising** to adapt – and respond – to climate change
- **Ensure access to accurate, real-time, locally relevant climate information** (climate services), particularly by vulnerable and marginalised communities.
- **Develop a comprehensive public awareness campaign**, adapted to the particular needs of coastal communities
- **Build local capacity** to design, implement and monitor adaptation and mitigation measures, involving the community as far as possible.
- **Use online and social media tools** to disseminate information around climate change and its impacts among coastal communities.



Source: L. Kellerman

Outcome 2: Increase awareness of coastal communities around the potential impacts of climate change and effective adaptation measures that can be implemented (cont.)

ADAPTATION ACTIONS:

- **Support knowledge and capacity building for rural livelihoods**, particularly for women from vulnerable households (e.g. water saving practices)
- **Provide education and training around the use of resources, particularly for vulnerable groups**, providing them with the knowledge of how to gain support from government and other social organisations.
- **Develop and implement training programmes within municipalities** on climate change and its impacts on coastal communities, as well as potential mitigation and adaptation measures.
- **Develop and implement training and awareness programmes among businesses** (including formal and informal) within the coastal zone on the potential impacts of climate change and how to adapt to and/or mitigate these.
- **Ensure the inclusion within the formal education system** of climate change information



Outcome 3: Implement effective measures for disaster risk reduction and response within coastal communities

ADAPTATION ACTIONS:

- **Develop (or adapt) multi-use community centres** that can act as a point of safety and mass care centre during extreme events, as a communication point (e.g. disaster warnings) and place for capacity building around climate change impacts.
- **Apply land use conditions to certain public facilities**, which allow for their multi-purpose use (as described above) in support of disaster risk reduction and response.
- **Identify communities that are particularly vulnerable and located in high-risk areas.** If no other adaptation actions are viable, such communities may need to be relocated. The identification of suitable land for relocation requires **intense consultation with the community and relevant stakeholders**, with a clear long-term vision and understanding. Work through existing community networks to identify and involve climate change adaptation champions within community groups throughout the process. An adaptation pathway approach might be useful in this regard.



Source: L. Kellerman

Outcome 3: Implement effective measures for disaster risk reduction and response within coastal communities (cont.)

ADAPTATION ACTIONS:

- **Identify, with the participation of coastal communities, the disaster response infrastructure and services that are critical** during – or immediately after a disaster – to protect human life and property and reduce impacts on health and safety.
- **Ensure uninterrupted access to critical services** related to health and security
- **Assist communities in preparing for – and responding to – climate-related disasters**, develop and implement effective early warning systems (EWS). Ensure that the systems of communication adopted, respond to the level of access to technology among the various affected communities.
- **Strengthen community networks and organisations** (e.g. community policing forums) that can support effective communication and evacuation during extreme events.



Source: L. Kellerman

Way Forward

- Portfolio of approximately 106 adaptation options included in the CARP for coastal decision-makers to consider – these adaptation options range across the five coastal elements (i.e. natural environment; people and communities; built environment/infrastructure; livelihoods/economies and governance/legislation).
- CARP currently being workshopped with stakeholders for final inputs:
 - Physical workshops: 28 & 29 October in Stellenbosch
 - Virtual workshop 6 Nov. 2024
- Final CARP to be launched in ca. Feb 2025
- CARP is intended to be reviewed 5-yearly



Thank you!

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