

LOTTERY OF CLIMATE CHANGE

TIERRABOMBA ISLAND, CARTAGENA DE INDIAS

PRESENT SCENARIO



Local
knowledge

Community
sites

Biodiversity

Actors

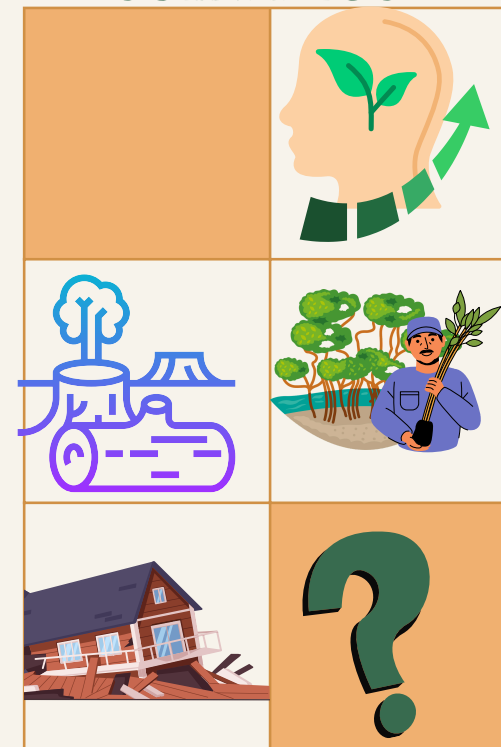
Historic sites

HAZARD



Storm
intensification

FUTURE SCENARIOS



Negative
impacts

Resilient
responses

VALUES-LED APPROACH TO CONSERVATION: PRIORITISES HOLISTIC CONSERVATION BY RECOGNISING THE DIVERSE SIGNIFICANCE AND VALUES OF HERITAGE PLACES AND INVOLVING STAKEHOLDERS AND RIGHTS-HOLDERS IN THEIR IDENTIFICATION

ENGAGEMENT WITH CLIMATE SCIENCE: ADVOCATES FOR INTEGRATING CLIMATE SCIENCE TO ANTICIPATE AND ADDRESS FUTURE CLIMATE-RELATED RISKS AND POTENTIAL IMPACTS

HAZARD-CENTRIC RISK ASSESSMENT: FOCUSES ON EVALUATING HAZARDS AS PRIMARY RISK DRIVERS, EXAMINING ADDITIONAL FACTORS SUCH AS EXPOSURES, VULNERABILITIES, AND RESPONSES FOR EACH HAZARD

MULTIDISCIPLINARY APPROACH TO CLIMATE RISK ASSESSMENT: EMPHASIZES COLLABORATION AMONG DIVERSE GROUPS, INCLUDING LOCAL COMMUNITIES, PROFESSIONALS, AND CLIMATE SCIENTISTS, TO DEVELOP COMPREHENSIVE MITIGATION AND ADAPTATION STRATEGIES

EXPOSURES AND VULNERABILITIES OF HERITAGE PLACES: ACKNOWLEDGES THE IMPORTANCE OF ASSESSING EXPOSURES AND VULNERABILITIES, RECOGNIZING THEIR VARIATION OVER TIME AND AMONG DIFFERENT VALUES.

COMPLEX NATURE OF VULNERABILITIES: RECOGNIZES INTERCONNECTED VULNERABILITIES, SPANNING PHYSICAL, SOCIAL, ECONOMIC, INSTITUTIONAL, AND CULTURAL FACTORS;

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VERSION, 2024



**PRESERVING
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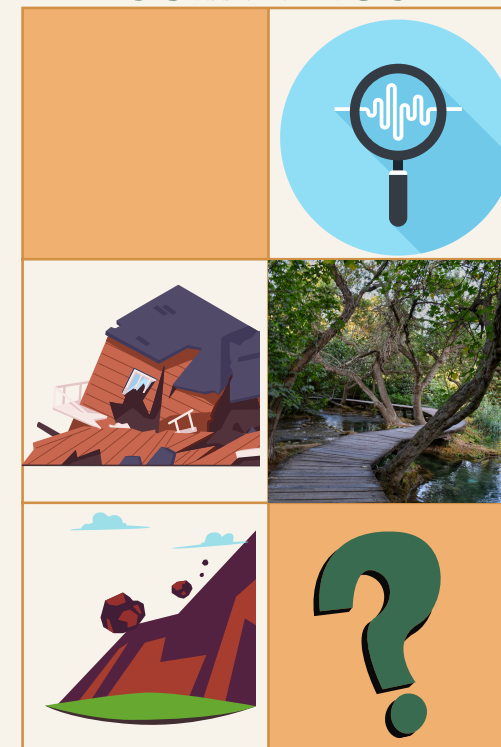
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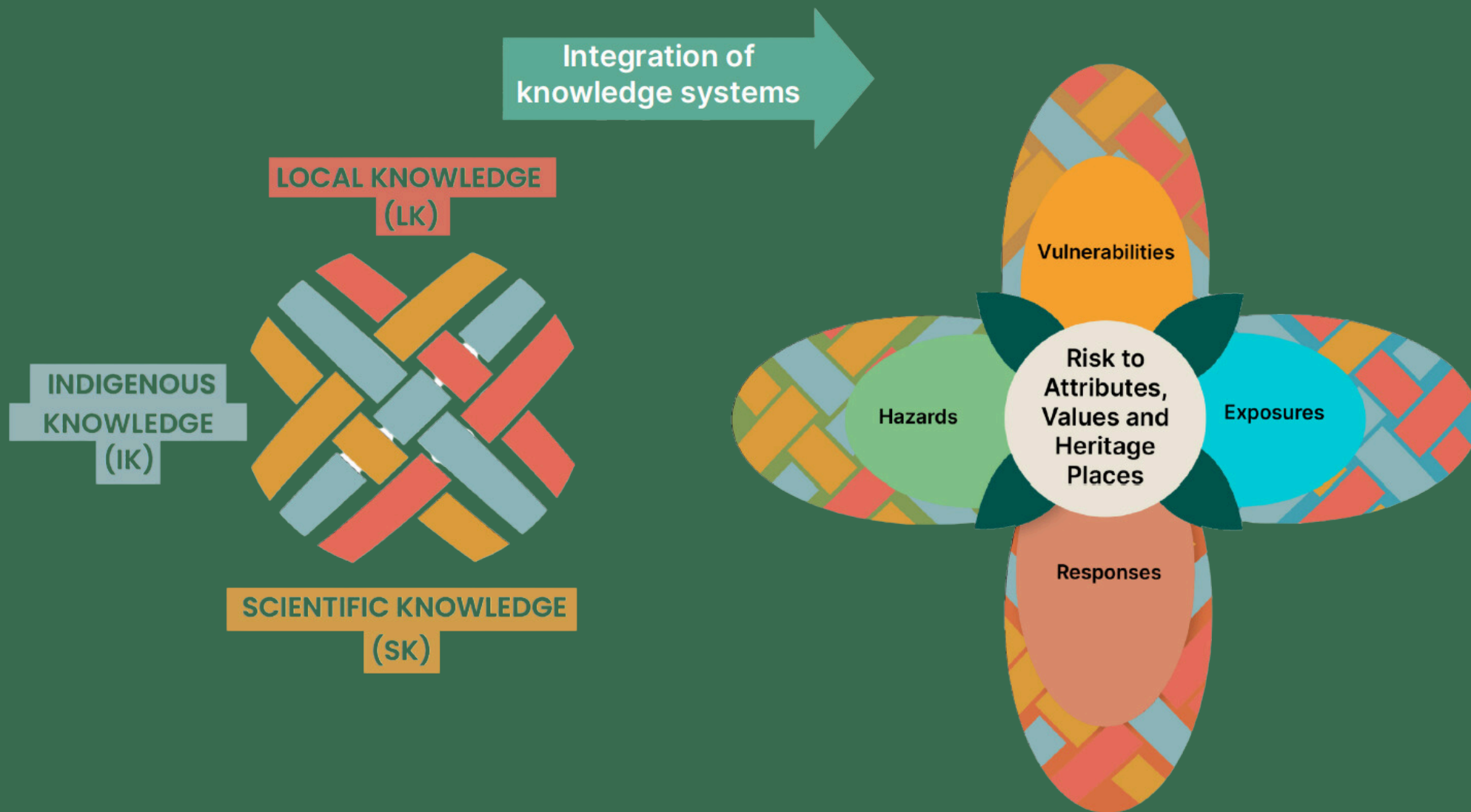
Coastal
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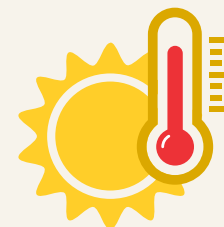
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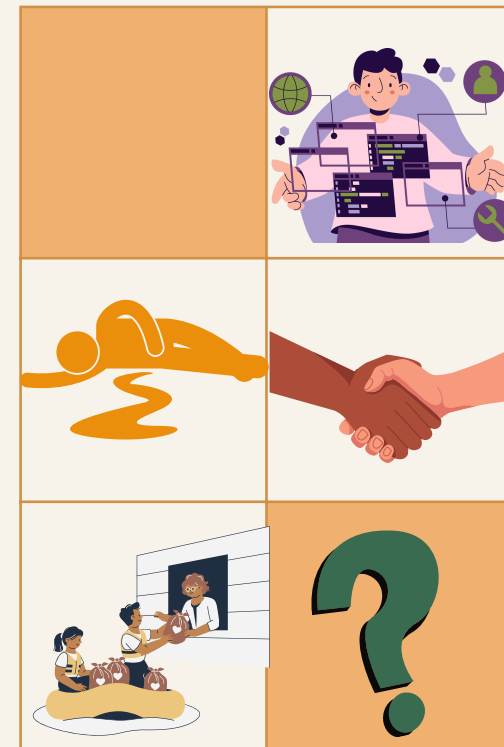
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Heat Waves

FUTURE SCENARIOS



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Hurricanes

Early History:

The first recorded hurricane in Cartagena struck between November 4-6, 1588, marking the beginning of the city's long battle with tropical cyclones.

20th Century:

November 2-5, 1932: A Category 2 hurricane caused damage as it passed 75 miles offshore.

- October 1988: Hurricane Joan, one of the most destructive in Colombian history, severely impacted Cartagena.

21st Century:

November 15-16, 2020: Hurricane Iota caused massive flooding, submerging 70% of Cartagena and worsening the socio-economic impact of the COVID-19 pandemic.



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Flooding

- 1960-1999: flood risk was low.
- 1985-2003: risks increased to medium to high.
- Present: areas like Bocagrande and Castillogrande face extreme submersion risk.
- November 2023: heavy rains affected around 41,088 people across Bolívar, including Cartagena.
- November 2020: hurricane Iota flooded 70% of Cartagena, affecting over 100,000 people.
- September 2023: floods initially impacted 36 participants in a Child Development Center, later rising to 114.



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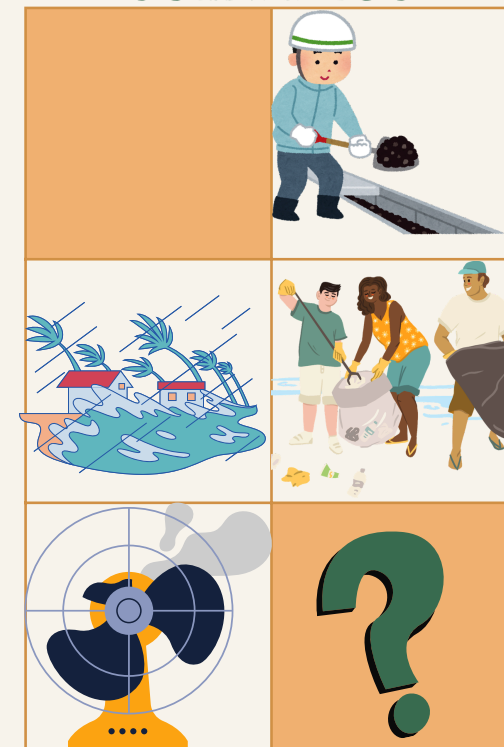
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Sea-Level Rise

Historical Data:

- Between 1992 and 2024, Cartagena's sea level rose by an average of 3.8 mm/year.

Current Trends:

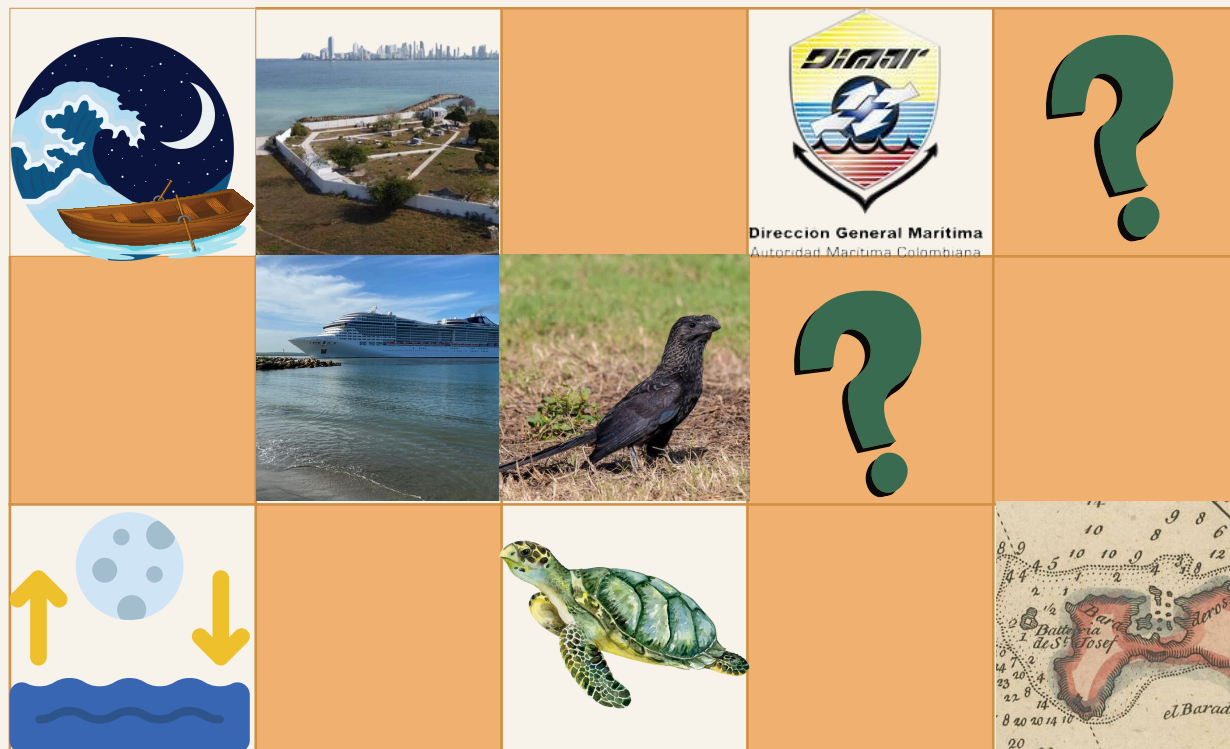
- Long-term rate: 5.98 ± 0.01 mm/year.
- Last two decades: Accelerated to 7.02 ± 0.06 mm/year, higher than the global average.



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1.5°C threshold is a highway speed limit

The 1.5°C limit is sort of like a **highway speed limit**. Backed by plenty of science about the dangers of speeding, we know that every bit of additional speed increases the danger of an accident. There is no single speed below which the risks are zero and above which (within reason) an accident is guaranteed to occur or to be deadly. Still, **we pick a limit beyond which the risks become larger than we are willing to tolerate.**

Source:

<https://www.climate.gov/news-features/features/whats-number-meaning-15-c-climate-threshold>

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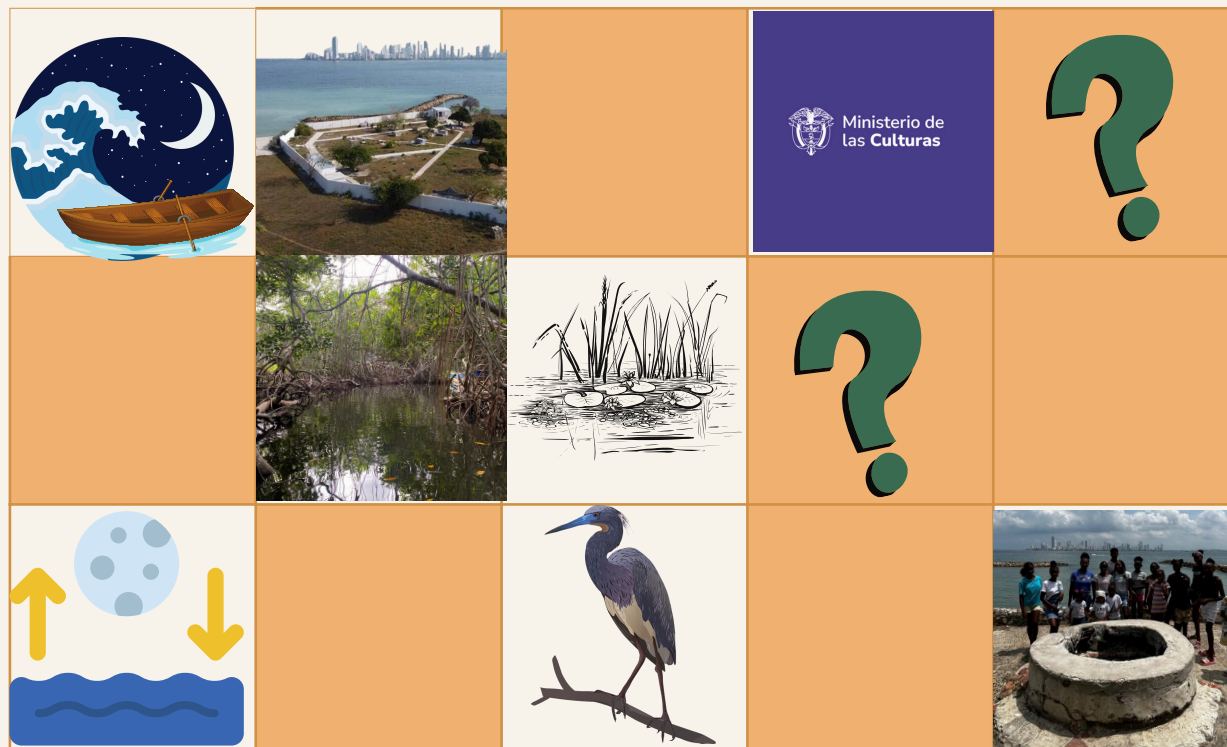


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Risk in the context of climate change potential impacts

Risks result from dynamic interactions between **potential** climate-related **hazards** with the **exposure** and **vulnerability** of the affected human or ecological system to the hazards.



Risk in the context of climate change responses

Risks arise from the **potential for planned responses failing to achieve their intended objectives or causing unintended trade-offs and negative side effects** on other societal goals like the Sustainable Development Goals (SDGs).



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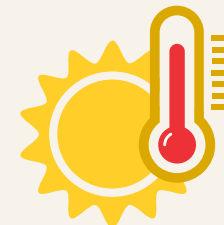
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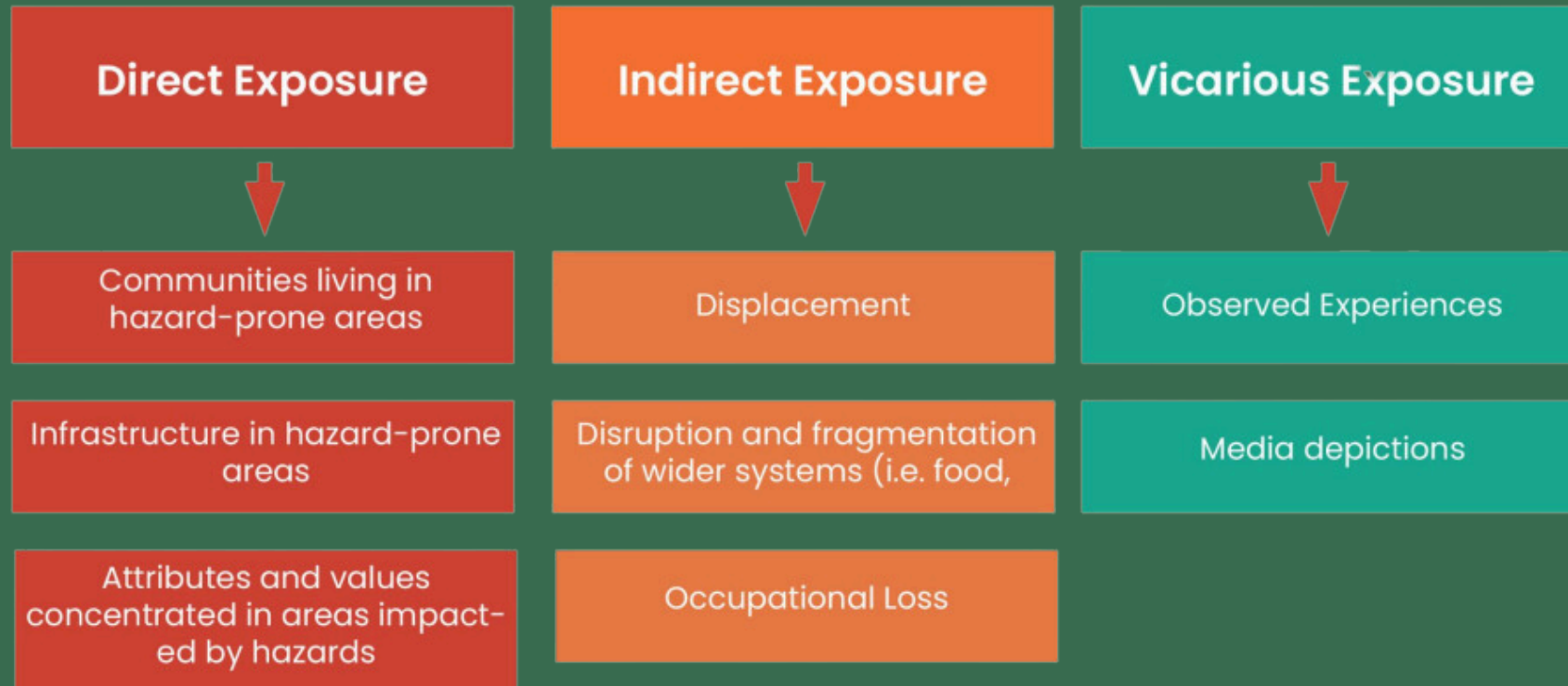
Heat Waves

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Vulnerability



Sensitivity

Degree to which a human system will be **impacted** by changes in climate conditions

Adaptive Capacity

Ability of a system to **adjust** to changes, **manage** damages, take **advantage** of opportunities, or **cope** with consequences

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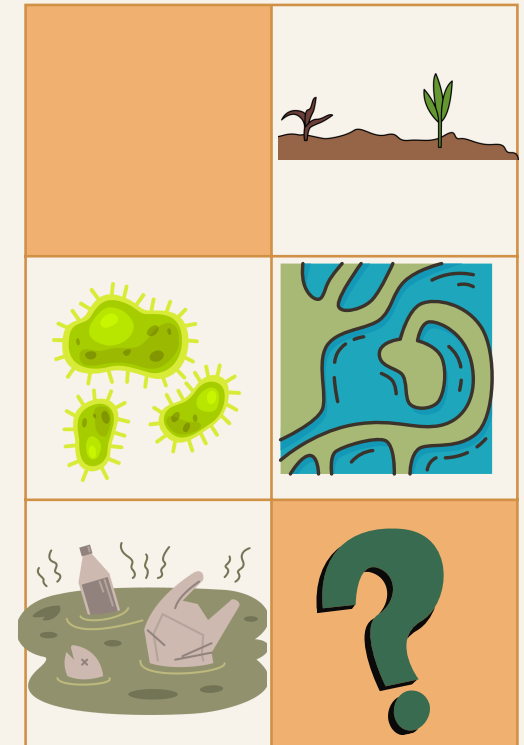
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Flooding

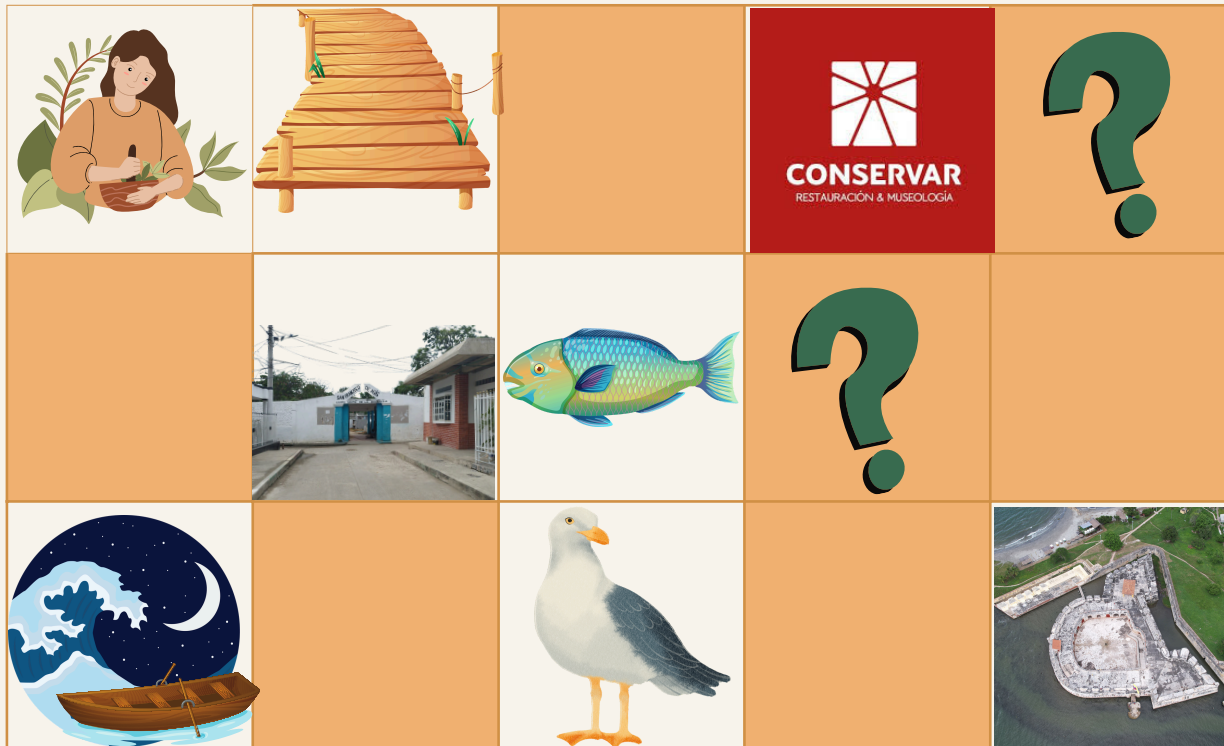
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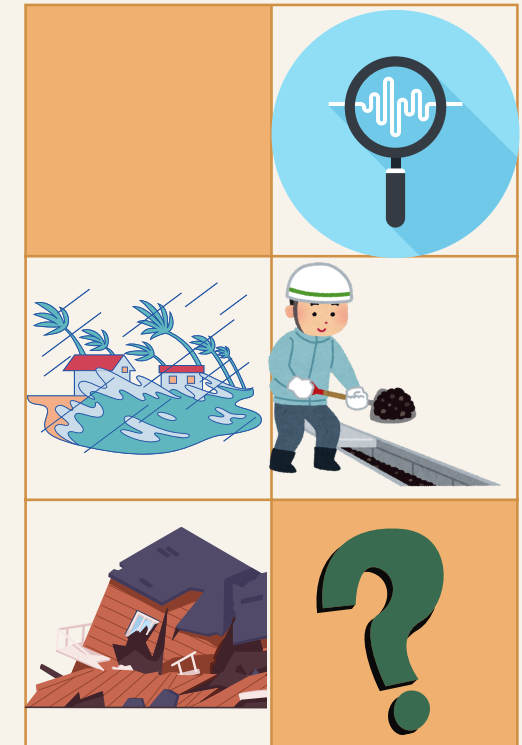
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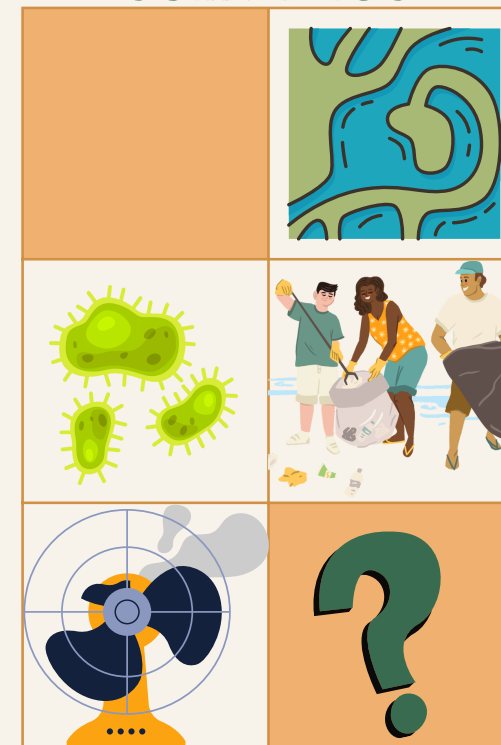
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HAZARD



Coastal
flooding

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Response

Adaptation
and/or
Mitigation
Measures and
policies

Need for *in situ*
response

Successful
in situ
adaptation

Climate Mobility



Informed
Informed
and planned
mobility

Involuntary
immobility

New emerging
New emerging risks
during mobility or at
new destination

Reduce Risk

Avoid Risk

Increase
Risk

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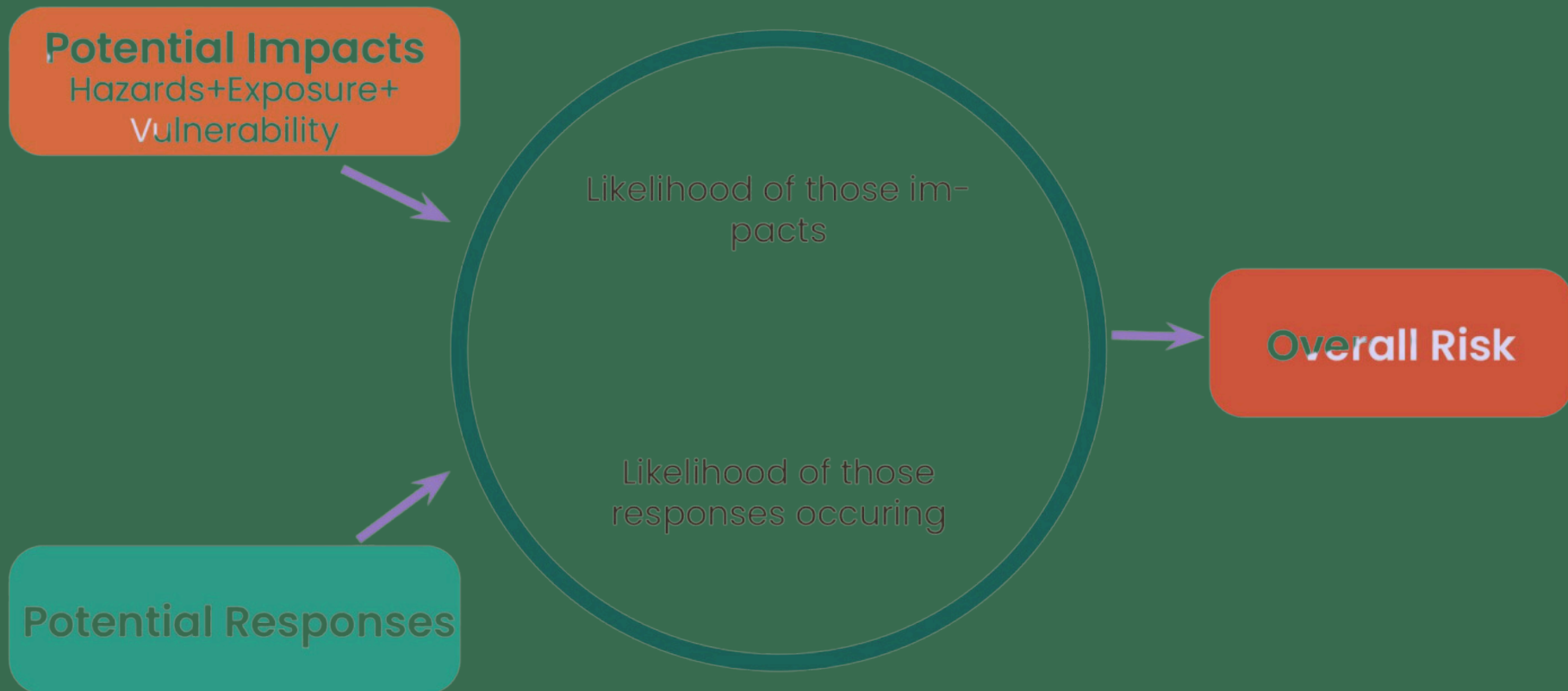
Coastal
erosion

FUTURE SCENARIOS



Negative
impacts

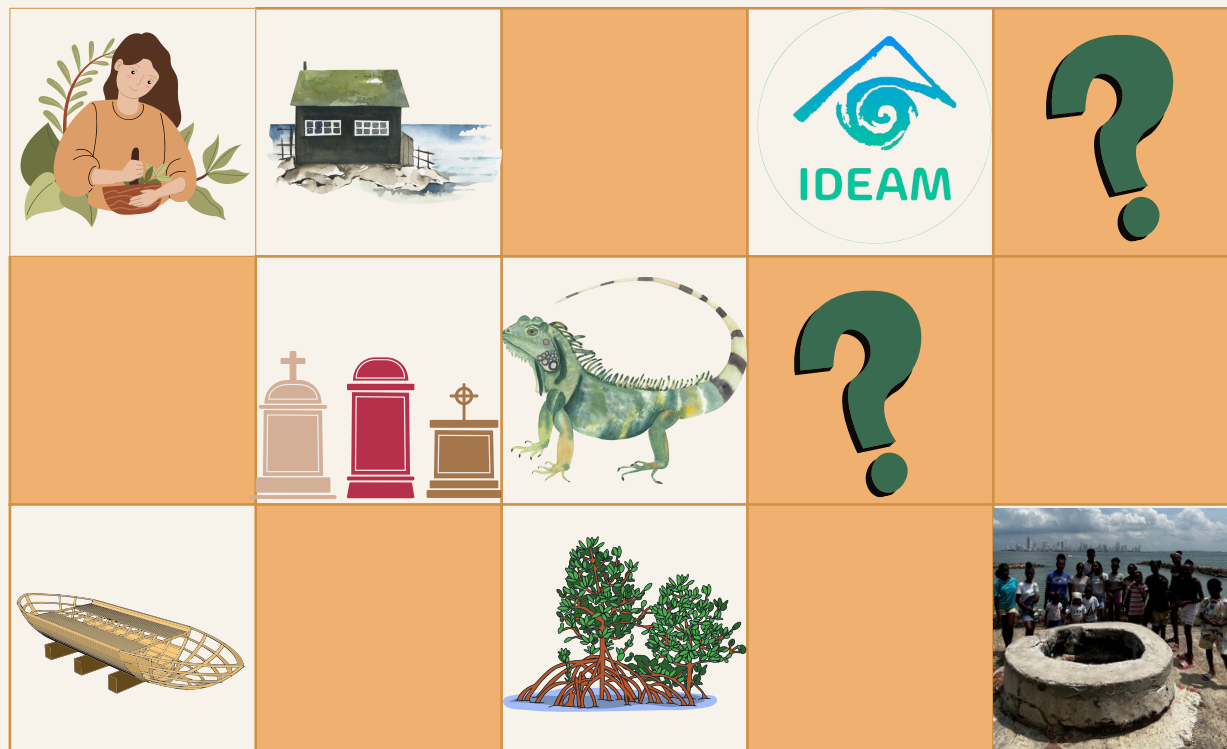
Resilient
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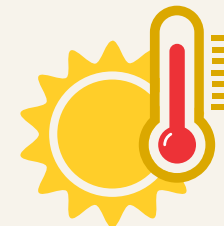
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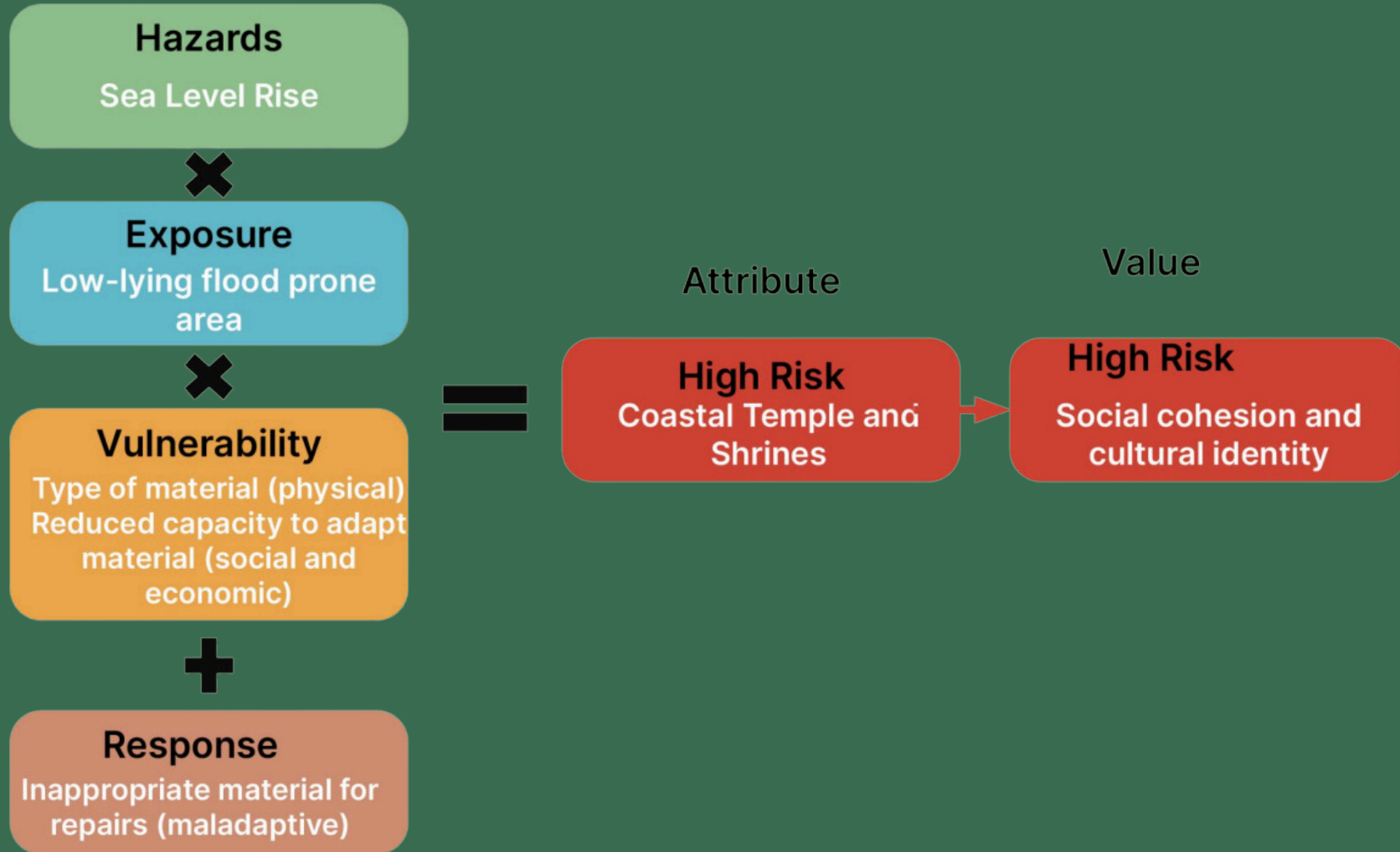
Heat Waves

FUTURE SCENARIOS



Negative
impacts

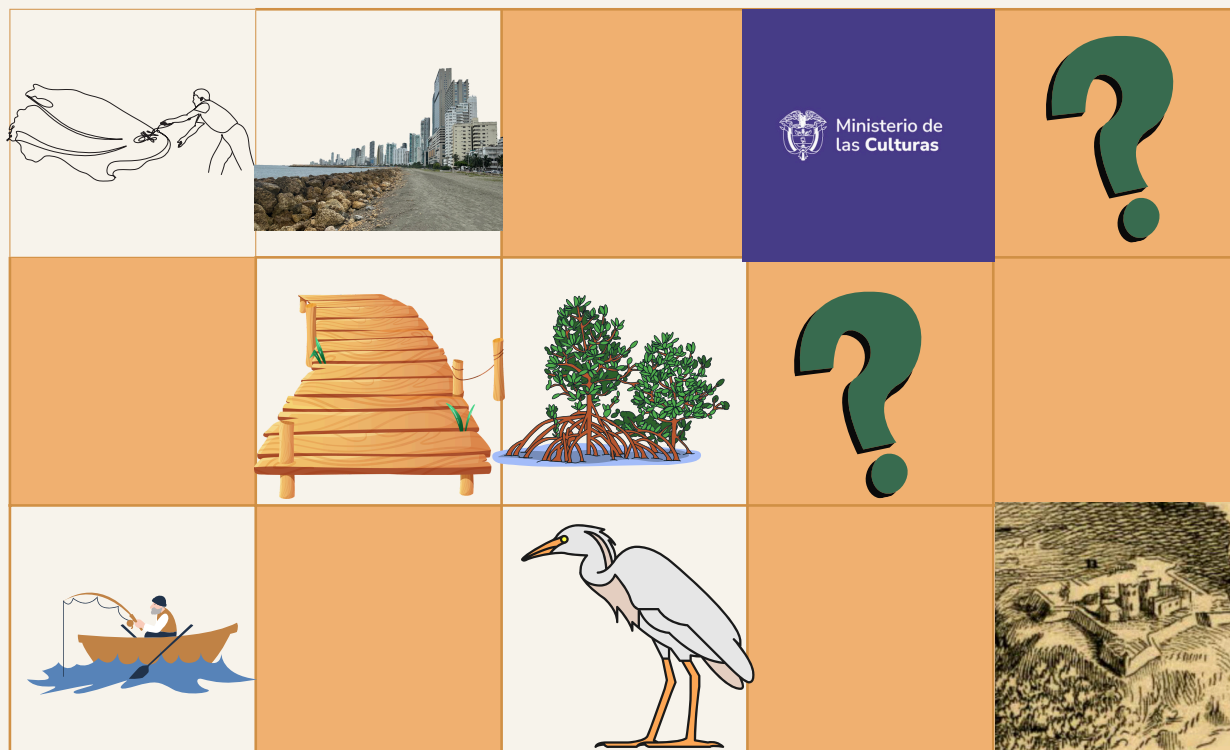
Resilient
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Extreme
precipitation

FUTURE SCENARIOS



Negative
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		Magnitude				
		Negligible 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Likelihood	5 Almost certain	Moderate	High	Extreme	Extreme	Extreme
	4 Likely	Moderate	High	High	Extreme	Extreme
	3 Possible	Low	Moderate	High	High	Extreme
	2 Unlikely	Low	Moderate	Moderate	High	High
	1 Rare	Low	Low	Low	Moderate	Moderate



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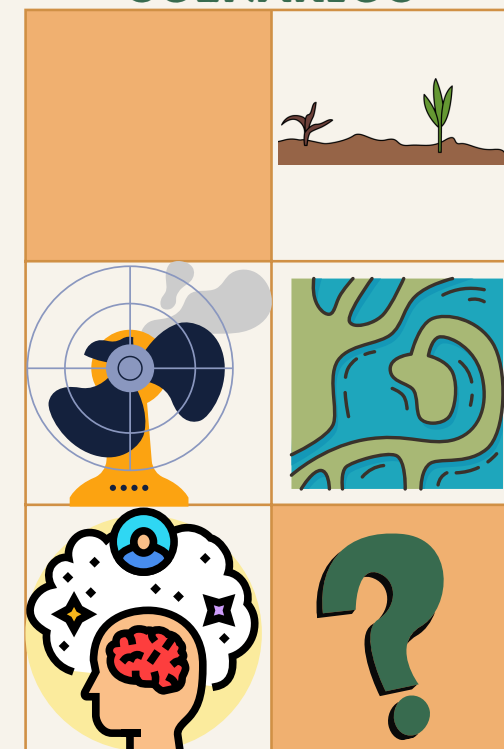
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Heritage application of term	Terminology	IPCC application of term
Used interchangeably with threats, no specific usage	Risk	Specifically defined, measurable with confidence statements of uncertainty
Used interchangeably with threats, no specific usage	Hazard	A determinant of risk
Broad definition used	Exposure	A determinant of risk
Broad definition used	Vulnerability	A determinant of risk
'Loss and Damage' and 'loss and damage' used interchangeably	Loss and damage	Uppercase L&D and lowercase losses and damages define different kinds of loss and damage
Broad use of the term	Mitigation	Wide application unless used in relation to greenhouse gas emissions then strictly defined
Used mostly in the context of the ability of heritage to adapt	Adaptation	Used almost always in the context of human and natural systems



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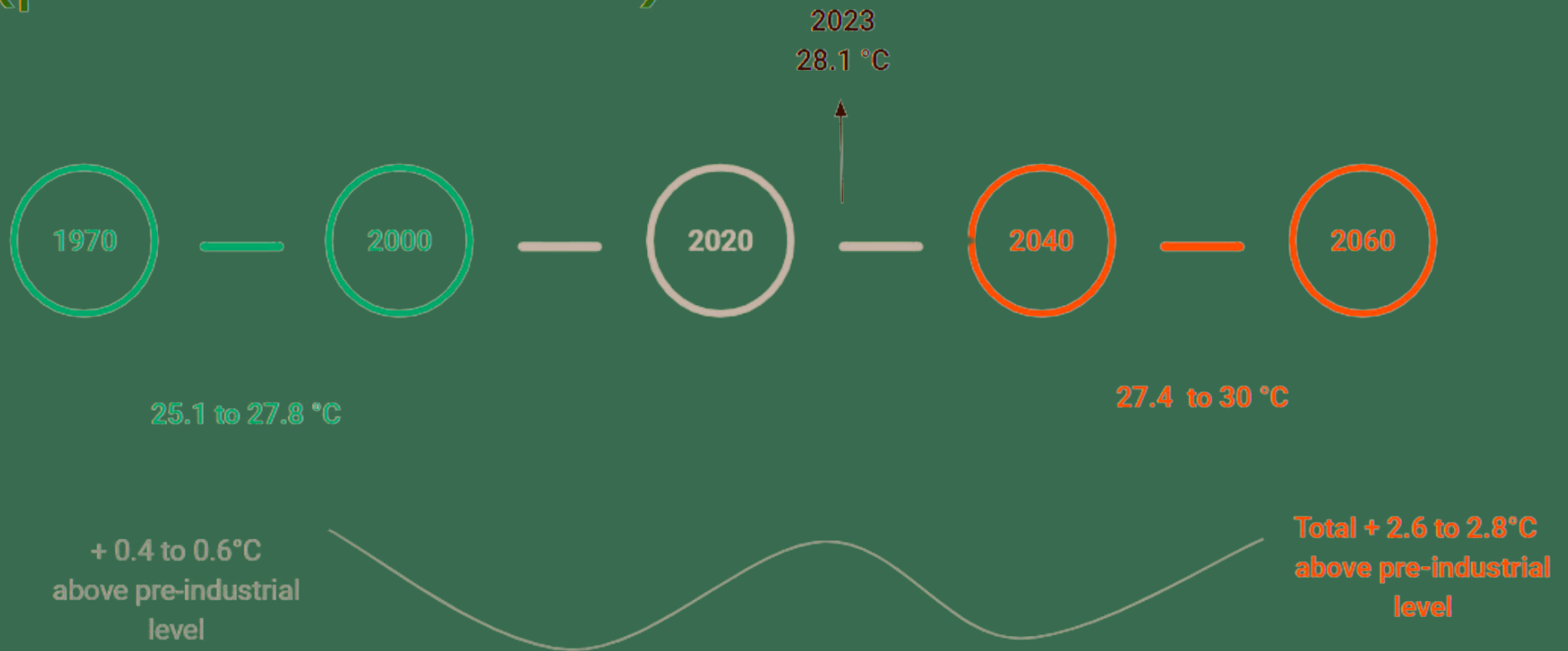
FUTURE SCENARIOS



Negative
impacts

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Mean temperature change: SSP5-RCP8.5 (pessimistic scenario)



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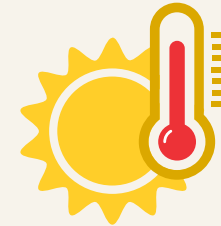
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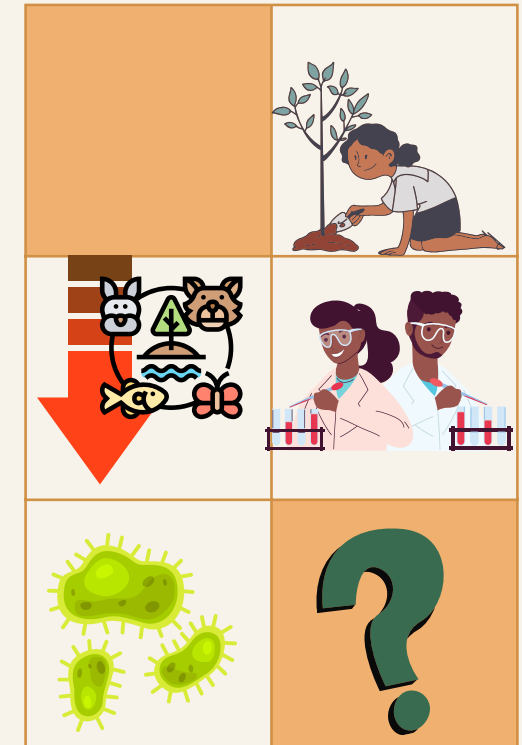
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Acute Events

Chronic Changes

Hazards

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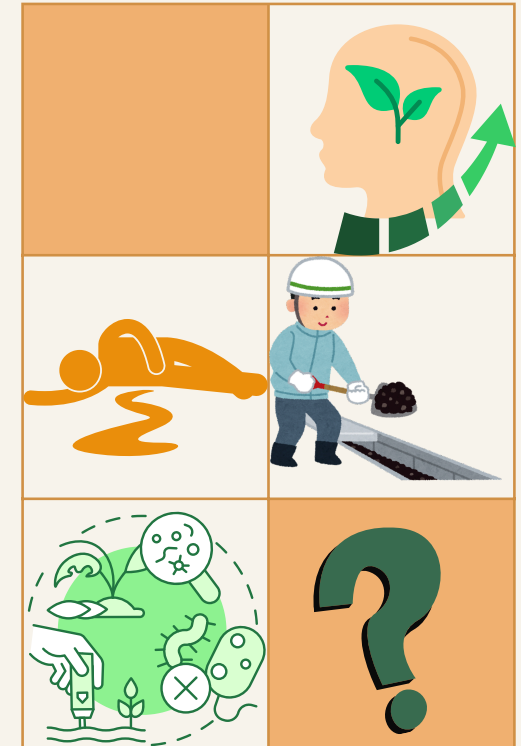
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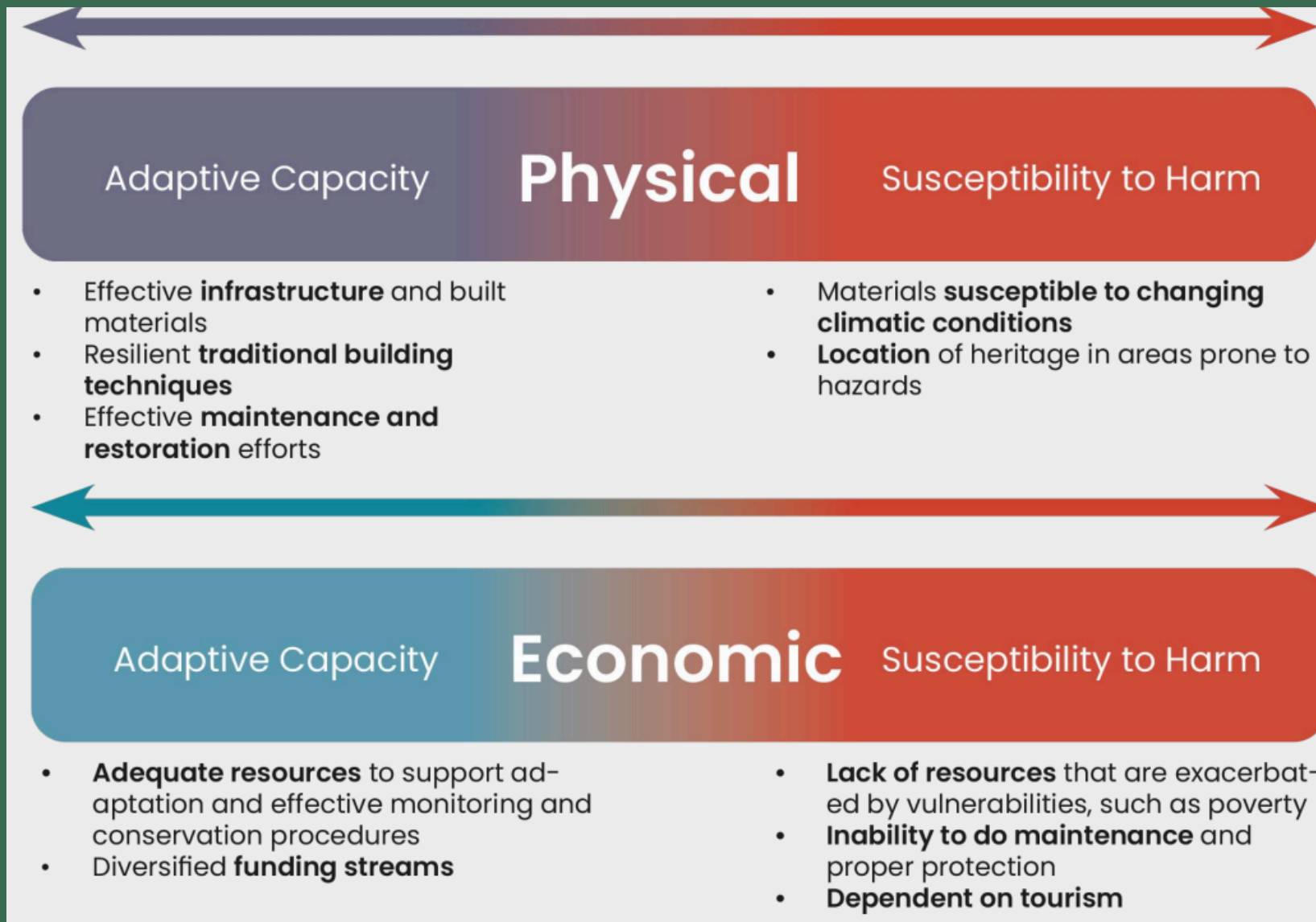
Extreme
precipitation

FUTURE SCENARIOS



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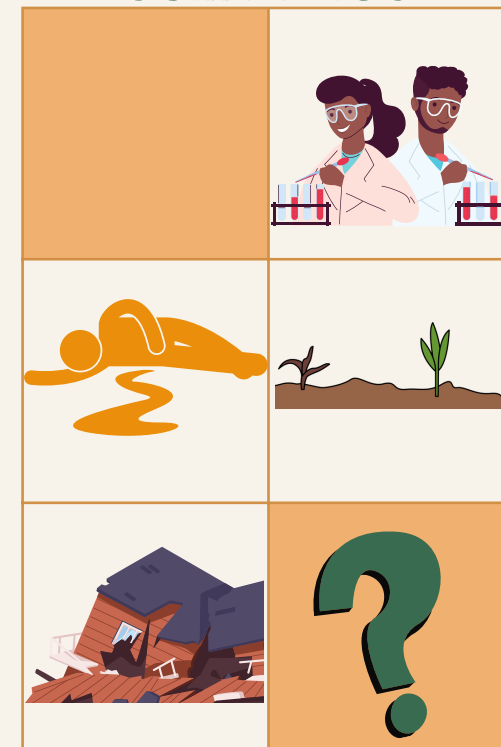
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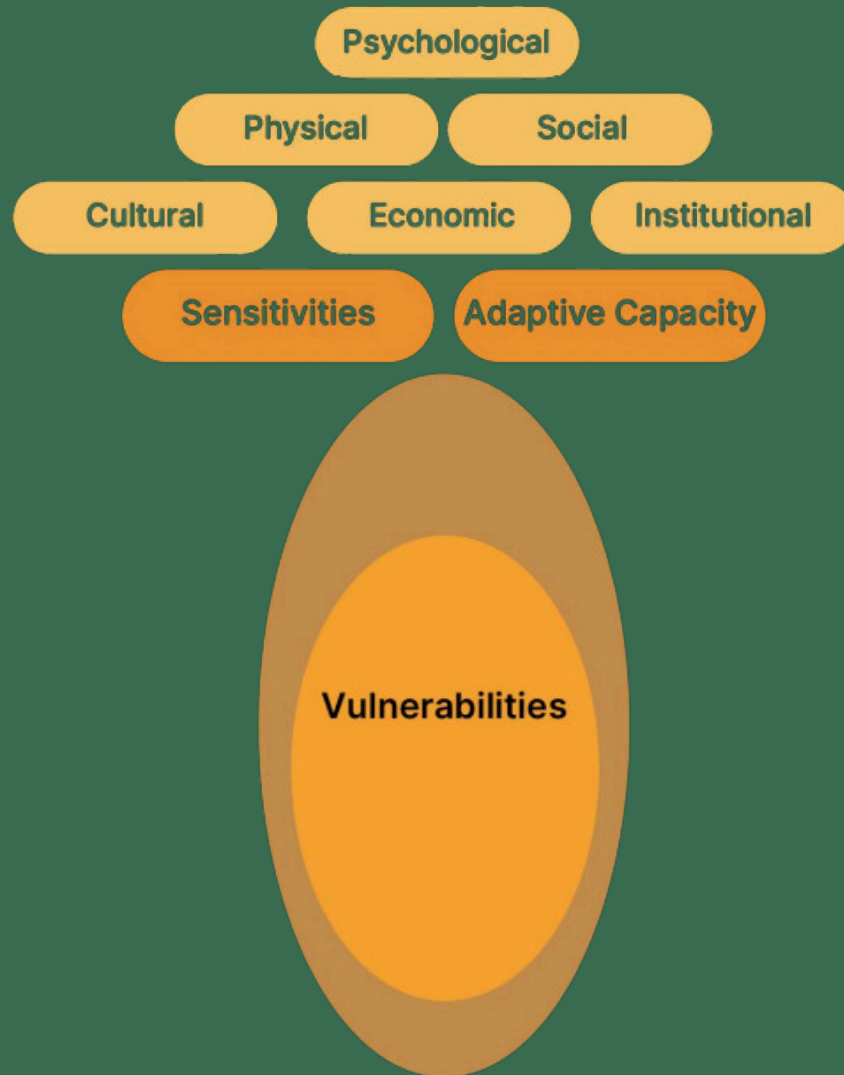
Coastal
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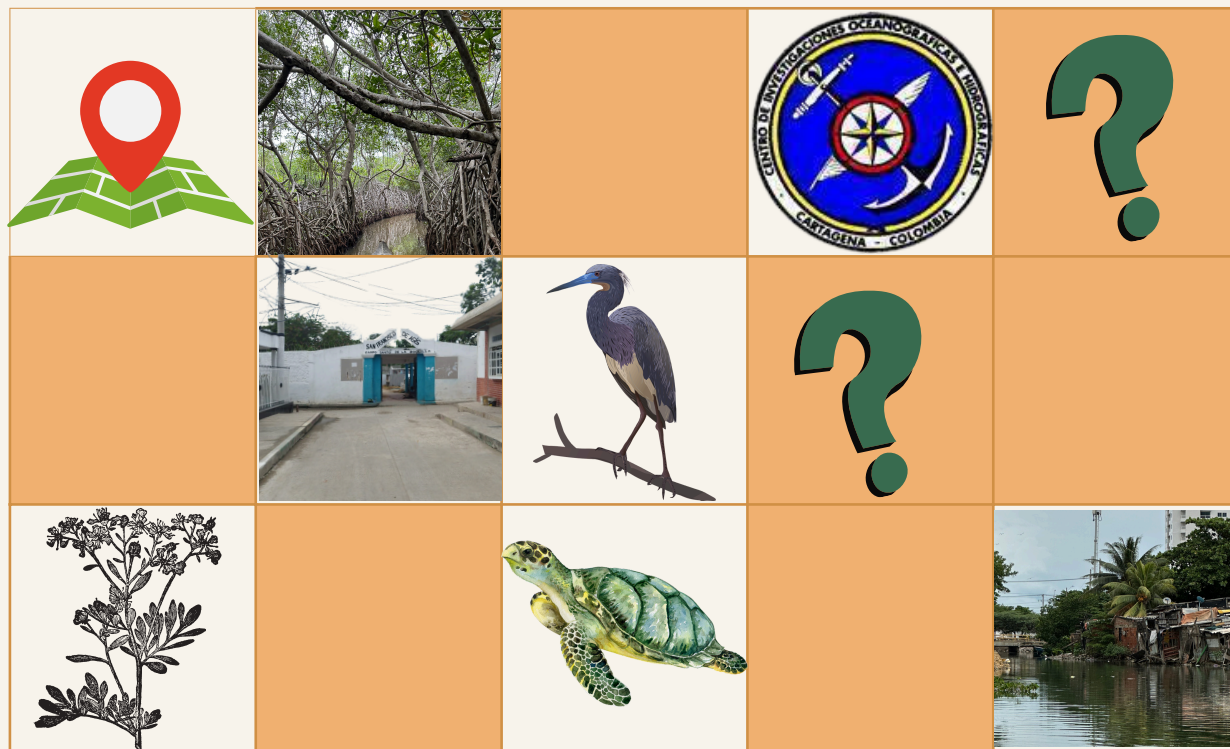


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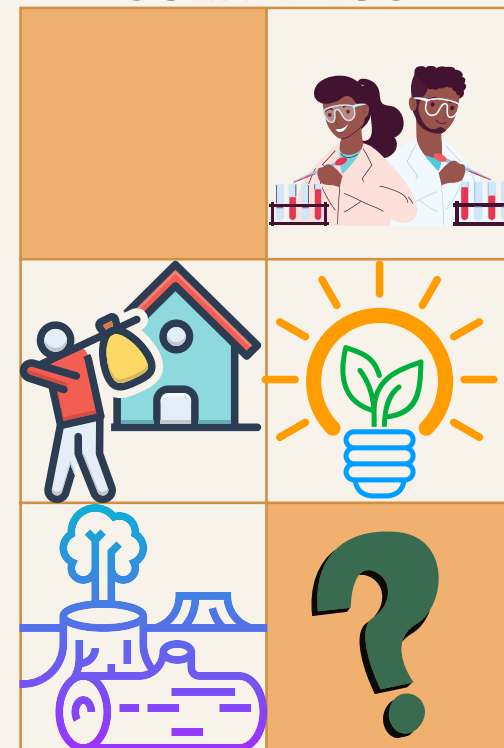
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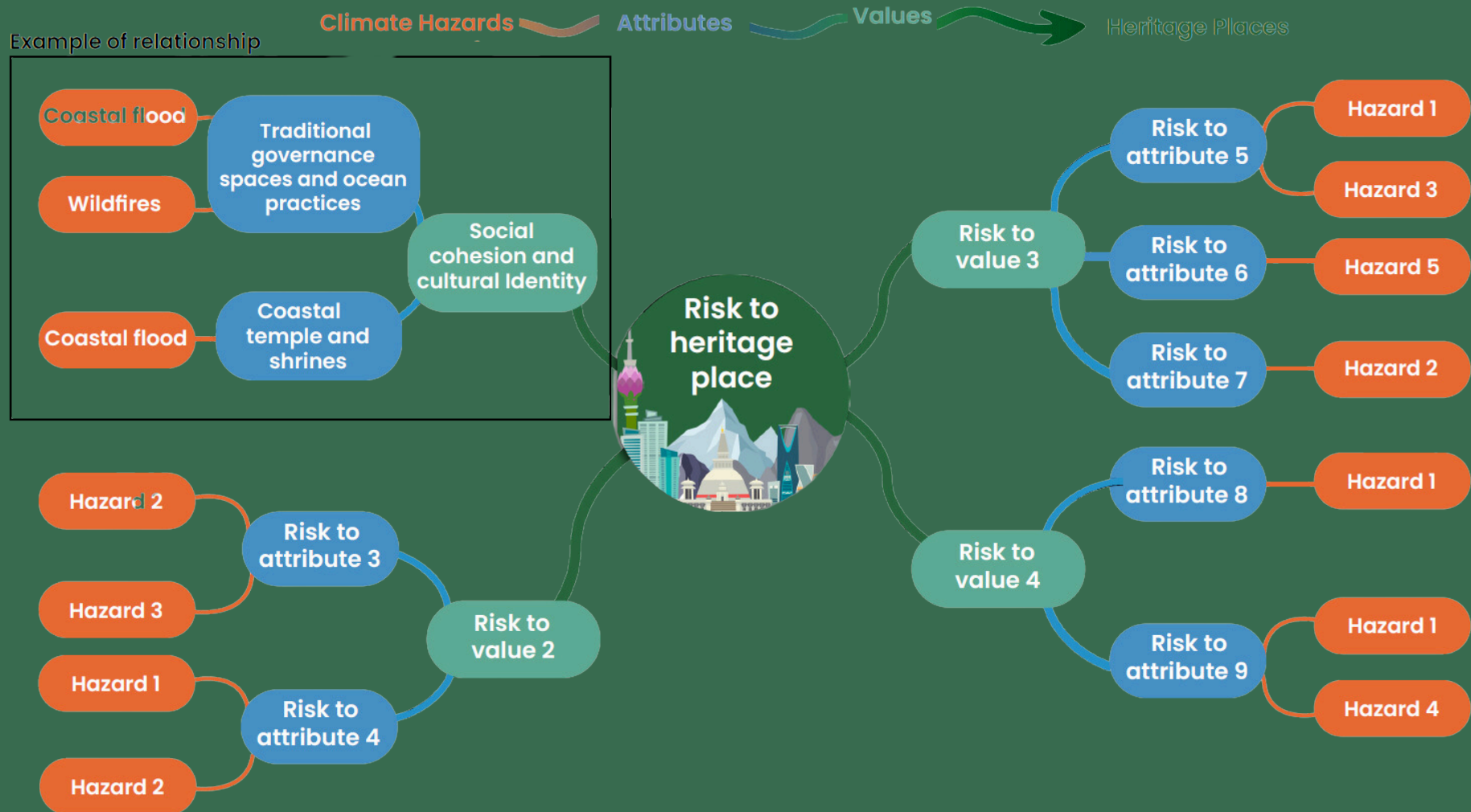
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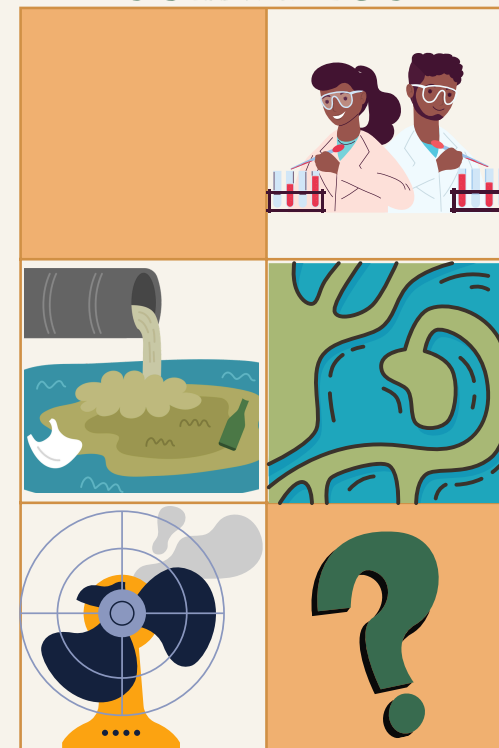
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Extreme
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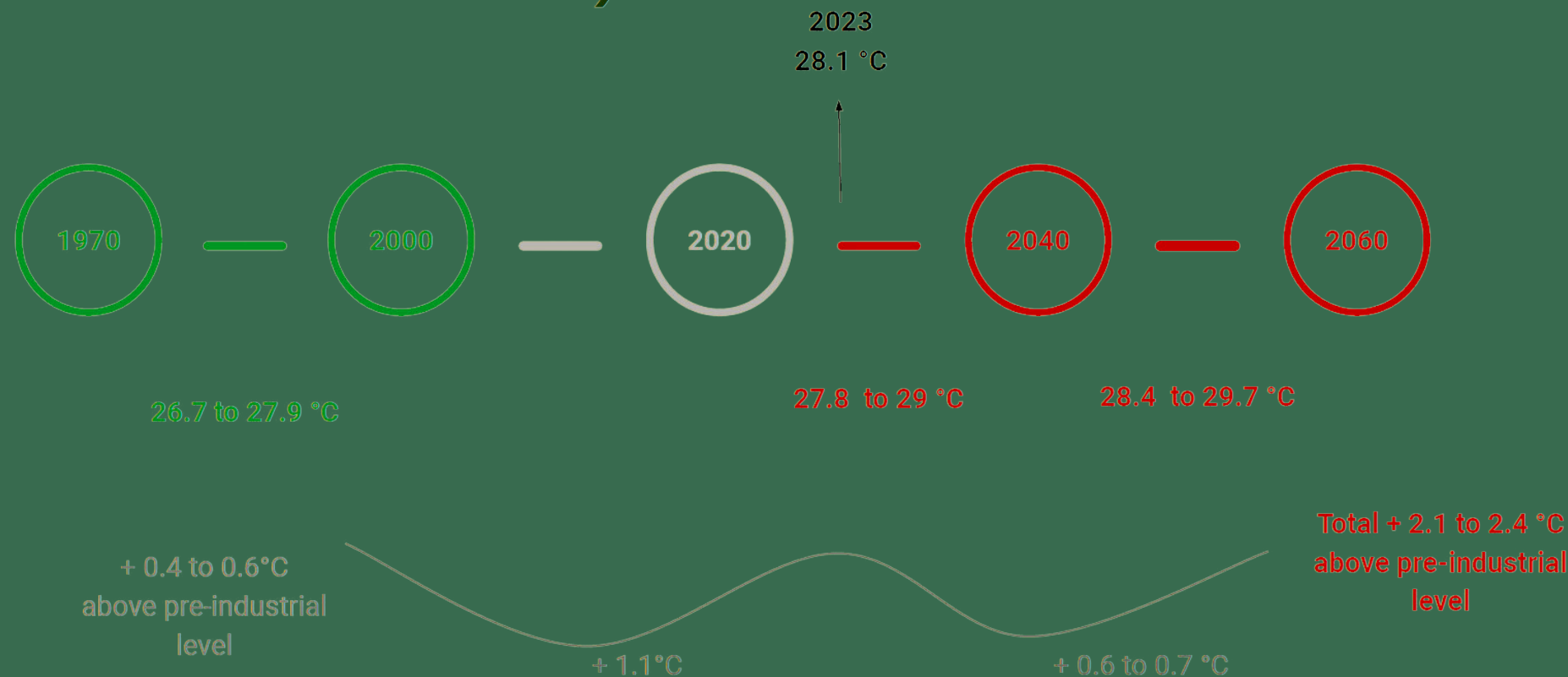
FUTURE SCENARIOS



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Mean temperature change: SSP2-RCP4.5 (middle of the road scenario)



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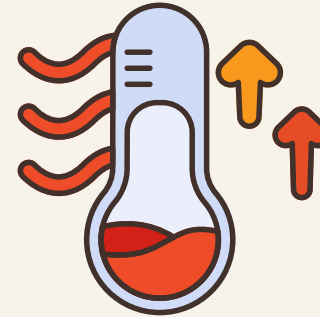
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PRECIPITATION PROJECTIONS



DRIEST MONTH:

PRECIPITATION DURING THE DRIEST MONTH IS PROJECTED TO REMAIN RELATIVELY STABLE, WITH A SLIGHT DECREASE FROM 0-19 MM TO 0-17 MM

SEASONAL CHANGES:

A NOTICEABLE DECREASE IN PRECIPITATION IS EXPECTED DURING THE COLDEST QUARTER, WHICH MAY AFFECT SEASONAL WATER AVAILABILITY



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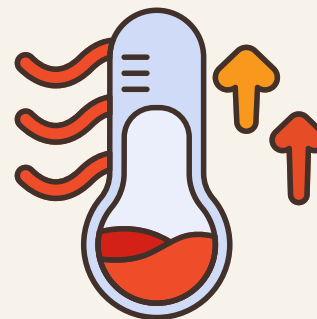
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MAXIMUM TEMPERATURES:
THE MAXIMUM TEMPERATURE OF
THE WARMEST MONTH IS
PROJECTED TO INCREASE FROM
30.9-34°C TO 33.6-35.9°C IN 2060
UNDER THE HIGHEST EMISSIONS
SCENARIO
AN INCREASE OF 1.9-2.7°C.



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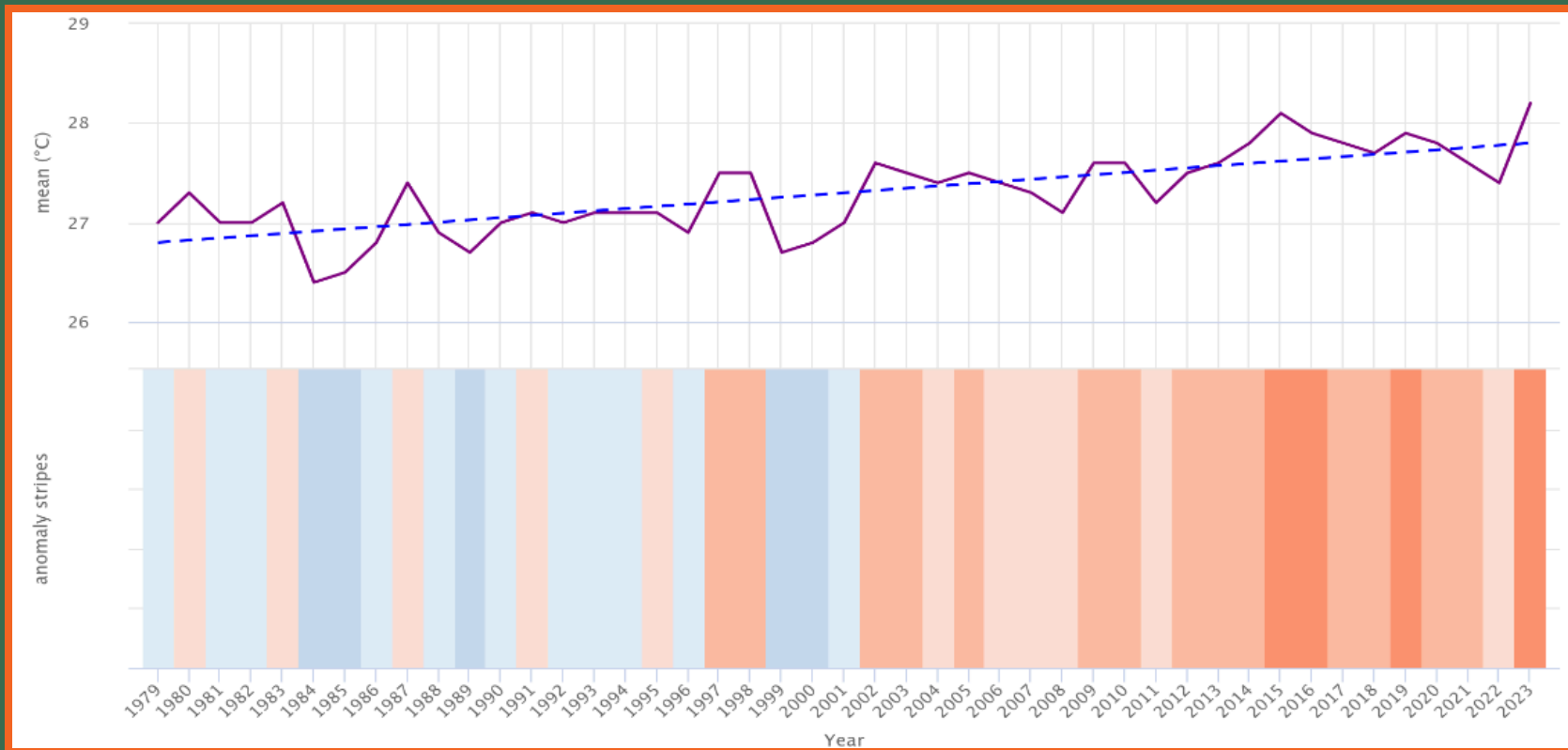
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AVERAGE ANNUAL TEMPERATURE VARIATION IN CARTAGENA (1979-2023)



LOTTERY OF CLIMATE CHANGE
TIERRABOMBA ISLAND, CARTAGENA DE INDIAS

VERSION, 2024

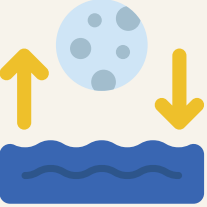
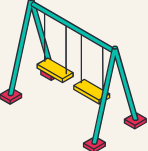


**PRESERVING
LEGACIES**

LOTTERY OF CLIMATE CHANGE

TIERRABOMBA ISLAND, CARTAGENA DE INDIAS

PRESENT SCENARIO

			 Dirección General Marítima Autoridad Marítima Colombiana	
				
				

Local
knowledge

Community
sites

Biodiversity

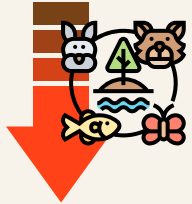
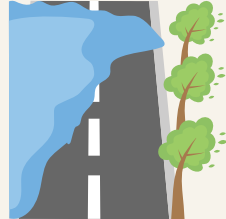
Actors

Historic
sites

HAZARD



FUTURE SCENARIOS

Negative
impacts

Resilient
responses

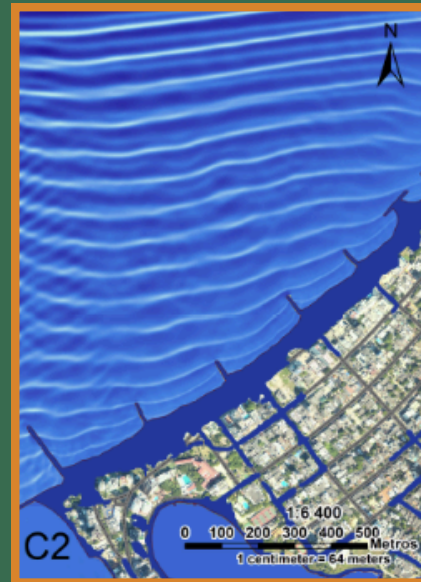
PROJECTED SEA LEVEL RISE IN CARTAGENA DE INDIAS



2025



2050



2075



2100



LOTTERY OF CLIMATE CHANGE
TIERRABOMBA ISLAND, CARTAGENA DE INDIAS

VERSION, 2024



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LEGACIES

LOTTERY OF CLIMATE CHANGE

TIERRABOMBA ISLAND, CARTAGENA DE INDIAS

PRESENT SCENARIO



Local
knowledge

Community
sites

Biodiversity

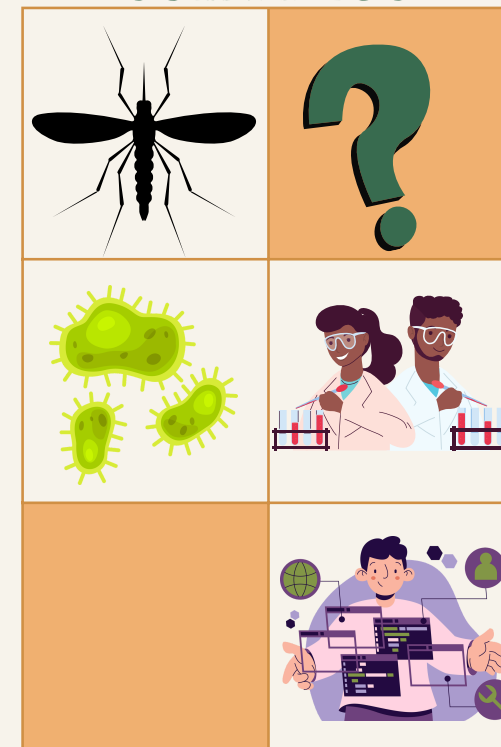
Actors

Historic
sites

HAZARD



FUTURE SCENARIOS



Negative
impacts

Resilient
responses



EXPECTED SEA LEVEL RISE + SUBSIDENCE:

2050 (RCP4.5): 34,3 CM

2100 (RCP4.5): 98,5 CM



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Actors

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sites

HAZARD



FUTURE SCENARIOS



Negative
impacts

Resilient
responses



NOVEMBER 2020

**HURRICANE IOTA FLOODED 70% OF
CARTAGENA DE INDIAS,
AFFECTING MORE THAN 100,000 PEOPLE.**

NOVEMBER 2023

**THE HEAVY RAINS AFFECTED SOME 41,088
PEOPLE
THROUGHOUT BOLIVAR, INCLUDING
CARTAGENA.**

LOTTERY OF CLIMATE CHANGE
TIERRABOMBA ISLAND, CARTAGENA DE INDIAS

VERSION, 2024

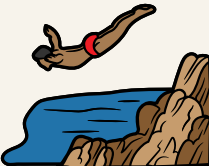


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sites

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FUTURE SCENARIOS

Negative
impacts

Resilient
responses

- **THE FIRST HURRICANE** RECORDED IN CARTAGENA OCCURRED BETWEEN **NOVEMBER 4 AND 6, 1588.**
- **NOVEMBER 1932:** A CATEGORY 2 HURRICANE CAUSED DAMAGE AS IT PASSED 75 MILES OFF THE COAST.
- **OCTOBER 1988:** HURRICANE JOAN, ONE OF THE MOST DESTRUCTIVE HURRICANES IN COLOMBIA'S HISTORY, SEVERELY AFFECTED CARTAGENA.
- **NOVEMBER 2020:** HURRICANE IOTA CAUSED MASSIVE FLOODING, SUBMERGING 70% OF CARTAGENA AND WORSENING THE SOCIOECONOMIC IMPACT OF THE COVID-19 PANDEMIC.



LOTTERY OF CLIMATE CHANGE

TIERRABOMBA ISLAND, CARTAGENA DE INDIAS

PRESENT SCENARIO



Local
knowledge

Community
sites

Biodiversity

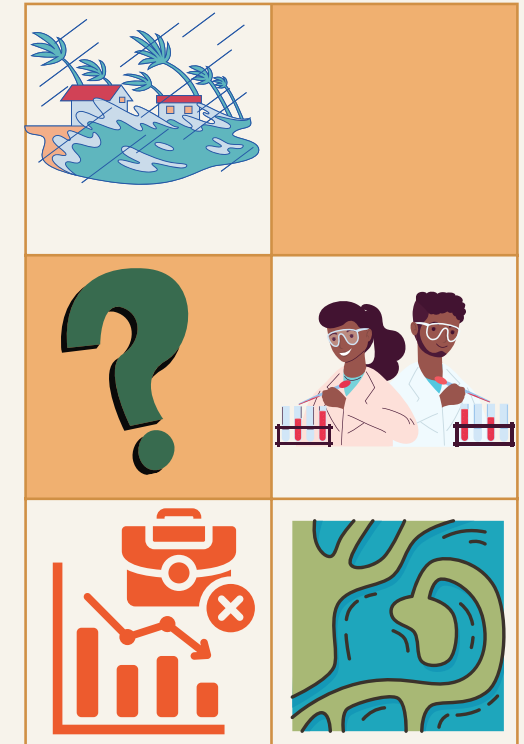
Actors

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sites

HAZARD



FUTURE SCENARIOS

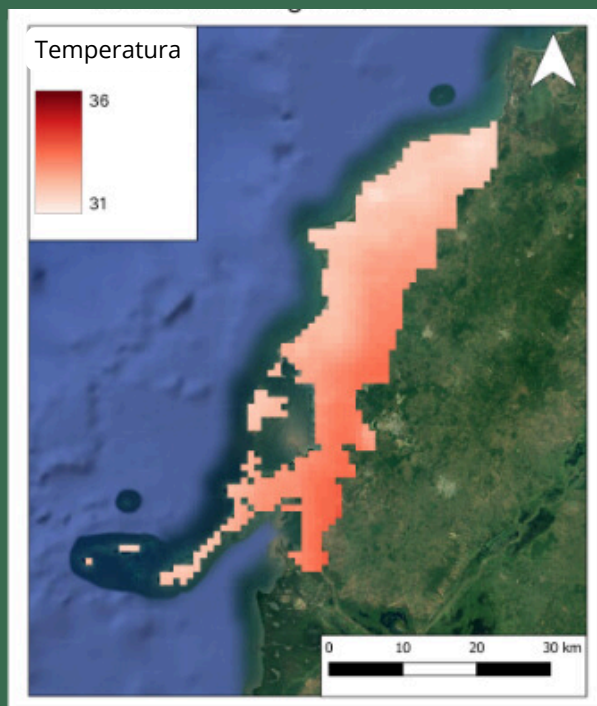


Negative
impacts

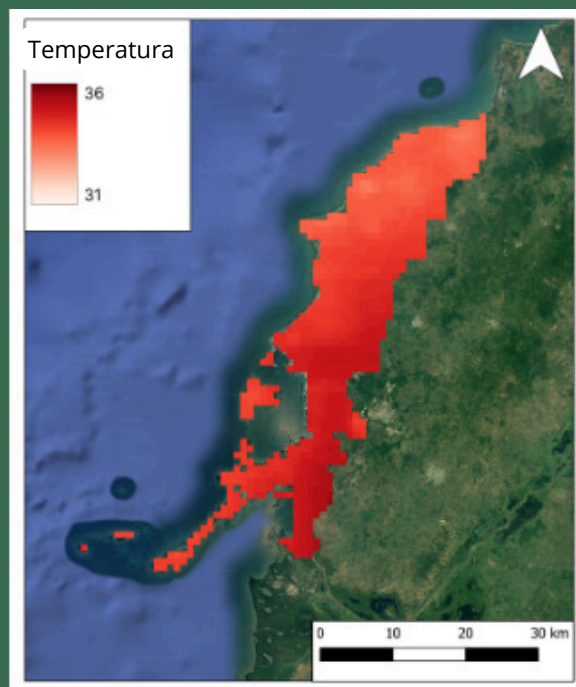
Resilient
responses



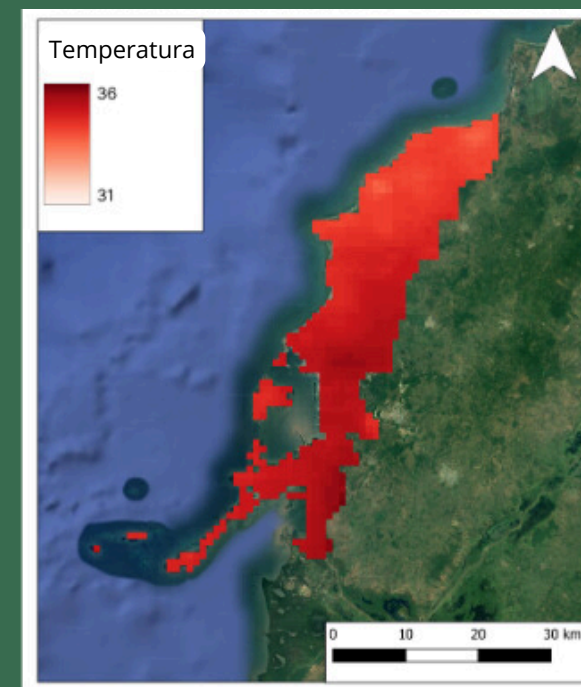
1970-2000



2050



2060



31 DE 3.9 °C

33.1 DE 35.6 °C

33.6 DE 35.9 °C

LOTTERY OF CLIMATE CHANGE
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**PRESERVING
LEGACIES**



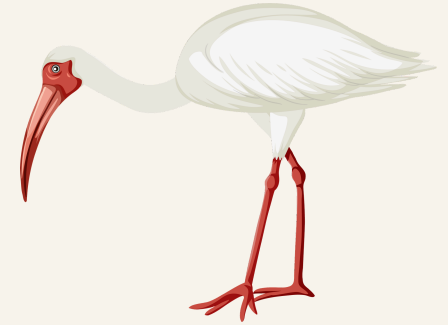
Gull

The Herring Gull is a large seabird that is commonly found along coastlines and inland waterways.



Tricolor heron

The Tricolored Heron is a medium-sized wading bird with a striking appearance. It has a long neck, slender body, and long legs.



White Ibis

The White Ibis is a wading bird known for its long, curved bill and striking white plumage.



Laughing Gull

The Laughing Gull is a medium-sized gull with a distinctive black head during the breeding season and a gray and white body.



Cormorant, Yuyo Duck

Cormorants are large, black seabirds known for their excellent diving ability. They have long necks, slender bodies, and webbed feet, making them adept at swimming underwater to catch fish.



Flamingo

Flamingos are large wading birds known for their long legs, long necks, and distinctive pink coloration.

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Local schools

Local schools attended by children and young people living in coastal maritime areas.



Traditional boats

Small boats, built by islanders and fishermen using traditional techniques.



Cienaga

Environmentally important wetlands help control floods, regulate river flows, retain sediment and purify water.



integration of knowledge

Meeting and dialogue of knowledge (opinions, needs, situations) between different stakeholders.



beach cleaning

Activities to collect garbage and foreign objects from beaches and coasts



In the coastal maritime areas, the air is in motion, always circulating from the areas where the pressure is higher to the areas where it is lower.

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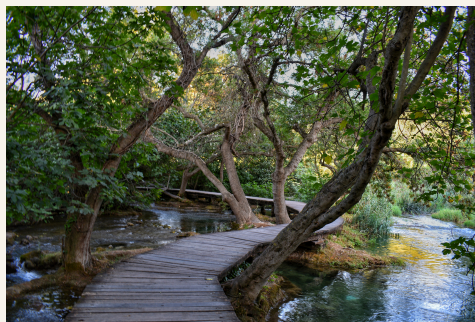
**TIERRABOMBA ISLAND,
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Historic Center of Cartagena de Indias

It is made up of El Centro, San Diego, and Getsemani. There are structures and houses with patrimonial value.



biological corridor

They connect the different points of natural vegetation, to guarantee the genetic viability of wildlife.



Institute of Hydrology, Meteorology and Environmental Studies

Entity in charge of the management of scientific, hydrological, meteorological and environmental information.



Turism

Activities carried out by people during their travels and stays in places other than their usual environment,



Site monitoring

Monitoring and evaluation of the physical and practical condition of specific sites affected by problems such as flooding, erosion, and physical transformations.



Ministry of Culture

State institution in charge of formulating, executing and establishing strategies for cultural promotion and carrying out actions for the conservation and protection of cultural heritage,

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Identification of reference points

The communities know the territory they inhabit, and therefore it is possible for them to locate themselves and their landmarks, structures, and historical sites.



Crop diversification

It consists of alternating plants in the same place during different cycles. This prevents the soil from being exhausted and the adversities that affect one type of plant from diminishing.



Garrapatero

Garrapateros are coal-black birds, with long flexible tails and deep single bills. They are found in tropical lowlands and hillsides.



Loss of cultural knowledge

It consists of the damage or forgetting of traditional knowledge acquired within the community.



Turtles

There are five species of sea turtles in Colombia. They are a species threatened by hunting and pollution in the sea.



Cartagena University

In the coastal maritime areas, the air is in motion, always circulating from the areas where the pressure is higher to the areas where it is lower.

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La Popa

La Popa is the highest point of Cartagena de Indias and offers a panoramic view of the entire city and its bay.



Ciénaga de la Virgen

The Ciénaga de la Virgen is a fundamental ecosystem for the local inhabitants and for the city, as it acts as an urban lung, playing an essential role in the environmental, economic and social development of the region.



La Bocana

This artificial system facilitates the exchange of water between the Caribbean Sea and the swamp, which oxygenates and revitalizes the ecosystem, improving its biological balance.



Juan Angola Channel

The Juan Angola Channel, built approximately in the 17th century, was a vital aquatic system for the inhabitants of Cartagena, facilitating transportation to the Ciénaga de la Virgen.



La Boquilla Cemetery

The tropical dry forest adjacent to the La Boquilla cemetery was a vital transit and meeting space for the local community, acting as a corridor that connected La Boquilla with nearby towns such as Manzanillo del Mar



Castillo San Felipe

The Castillo San Felipe de Barajas, located on the Cerro de San Lázaro in Cartagena de Indias, was built during colonial times to prevent it from being used as an attack point against the city walls.

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Getsemani

During the 17th century, Getsemaní went from being a suburb inhabited by marginalized people to being part of the city's commercial activity.



Clock Tower

The Clock Tower sector in Cartagena de Indias suffers constant flooding due to factors such as rising sea levels, the poor condition of the drainage system and torrential rains.



Candy Portal

The Candy Portal, known for the sale of typical Cartagena sweets, has been a reference in the literature for the purchase of a variety of sweets from the portal's vendors, capturing the atmosphere of the place.



The Vaults

This construction, with 47 arches and 23 vaults, represents the last work of the colonial period within the fortified enclosure.



Santander Avenue

his avenue, along with other areas such as carrera primera in Bocagrande, suffers frequent flooding from both tides and extreme rainfall.



Baluarte San Ignacio

These fortifications were not only viewed as techniques to combat attacks from enemy powers and pirates but also to withstand the constant aggressions of the climate.

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Historic graffiti

Historic graffiti recorded at the Fort of San Fernando de Bocachica includes, in addition to common ship graffiti, religious drawings of Jesus Christ and the Virgin Mary, military scenes, numbers and words, architectural sketches, and other human figures.



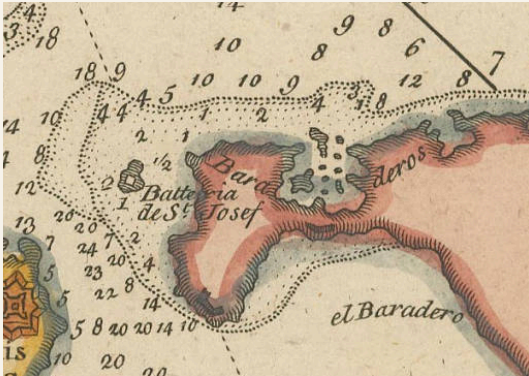
The quarries and lime kilns

The quarries and lime kilns located on the coasts of Cartagena Bay were part of the production centers supplying materials for the construction of the island's fortifications. They provided resources such as tiles, bricks, lime, and limestone for various types of buildings in the city of Cartagena.



Tierra Bomba Cemetery

In the area of the Tierra Bomba cemetery, a spur was built for coastal protection of the island. However, the inhabitants of the sector claim that this structure was poorly built and therefore affected the area in various ways.



Abanico Island

Abanico Island, which in 1735 occupied 42 hectares and played a crucial role in defending the bay, has been drastically reduced to a mangrove fringe of only 3.09 hectares, due to the interruption of sediment flow after the construction of the Bocachica channel and the increase in waves caused by boat traffic.



Bocachica Mangrove

This mangrove area, known by the local community as Cienegueta, is composed of red, white, and black mangroves, but its development is limited and affected by human intervention, such as indiscriminate logging and the accumulation of solid waste.



Bocachica Beach

Bocachica beach located near the San Fernando forts and the archaeological remains of the San Luis de Bocachica Castle, is a favorite meeting point for members of the Afro-descendant community living in the area.

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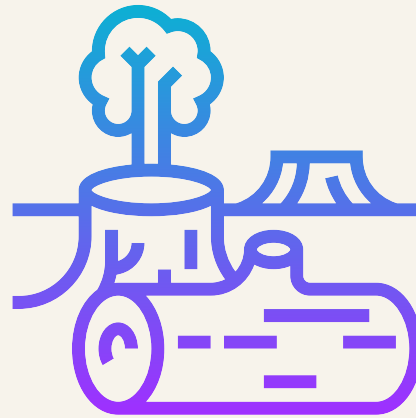
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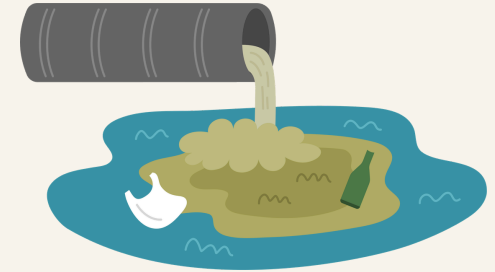
Infrastructure damage:

Bridges, roads, and buildings may sustain significant damage from strong winds and water



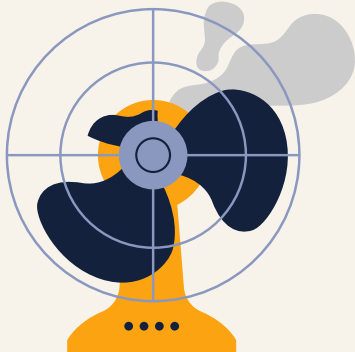
Desolation and Loss

Images of homes and lands devastated, memories floating in murky waters, represent the loss of possessions and security.



Water contamination

Overflowing sewage can contaminate drinking water sources.



Power supply interruptions:

Severe storms can cause power outages and damage to electrical networks.



Community displacement:

Families may be forced to leave their homes due to flooding or damage.



Increase in diseases:

Stagnant water can create mosquito breeding grounds, leading to outbreaks like dengue

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Extreme rainfall

Meteorological phenomena characterized by intense rainfall that can cause floods and natural disasters.



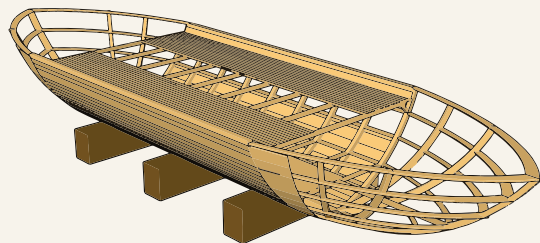
Cam sea

Phenomenon that occurs when a strong swell is generated offshore due to a storm, and those waves propagate far from that place reaching the coast.



Unemployment

A situation in which a person or a group of people are not gainfully employed, despite being available for work.



Shipbuilding

Activity dedicated to the design and manufacture of vessels such as ships, submarines and other maritime vehicles.



Divers

People trained to dive in bodies of water, either for recreational or professional purposes, such as exploration or rescue.



Contamination

Process by which harmful substances are introduced into the environment, affecting the health of ecosystems and living beings.

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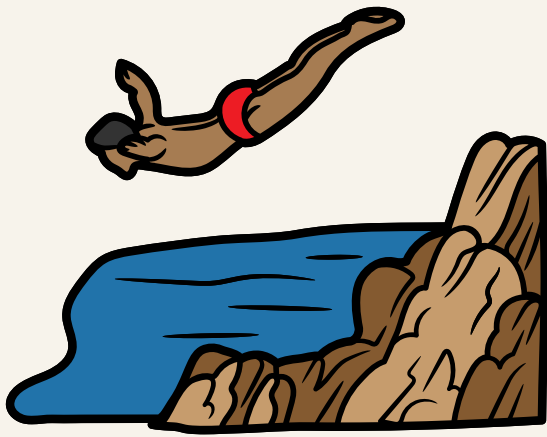
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Underwater exploration

Physical activity that consists of moving in the water and can be practiced recreationally.



Mero

Large reef-dwelling species sought after by fishermen and divers alike.



Iguana

A warm-weather reptile that lives mainly in tropical areas, known for its scaly skin and its ability to climb trees.



Medicinal Plants

Vegetables or herbs traditionally used for their healing properties and health benefits.



PRESERVING LEGACIES

Preserving Legacies

Initiative or action aimed at maintaining and protecting cultural traditions, historical heritage or the environment for future generations.



CIOH

Centro de Investigaciones Oceanográficas e Hidrográficas de Colombia, responsible for marine and environmental studies in the country.

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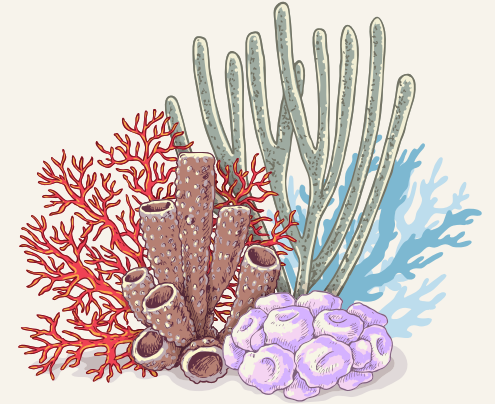
Fishing

Activity involving the capture of fish, either for personal or commercial consumption.



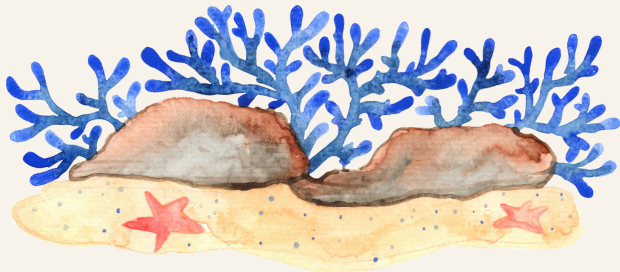
Landslides

Earth movements that may occur in sloping areas due to heavy rains or human activity.



Corals

Corals are small marine animals that live in colonies and have hard calcium carbonate skeletons. They are a vital part of marine ecosystems.



Reefs

Coral reefs are some of the most diverse and productive ecosystems in the world, providing shelter, food and breeding grounds for thousands of marine species.



Environmental awareness

Knowledge and understanding of the importance of protecting the environment.



Technological development

Advances in the creation and application of technologies to improve life and solve problems.

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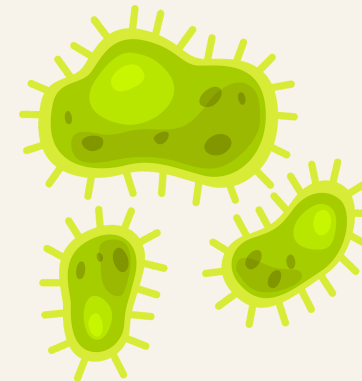
Lethal victims

People who have lost their lives as a result of natural disasters or other tragic circumstances.



Mosquitoes

Flying insects that can transmit diseases such as dengue or malaria through their bites.



New diseases

Emerging pathologies that affect the population, often as a result of environmental changes or human interactions.



Colombian Institute of Anthropology and History, an entity in charge of research, protection and diffusion of the country's cultural and archeological heritage.



Improved Drainage Infrastructure:

Building and maintaining more efficient drainage systems, such as storm drains and sewage networks, to quickly divert water and prevent accumulation in urban areas.



Reforestation:

Planting trees that help absorb water and stabilize the soil

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Night navigation

Technique of guiding through the sea at night, often using the stars or modern technologies.



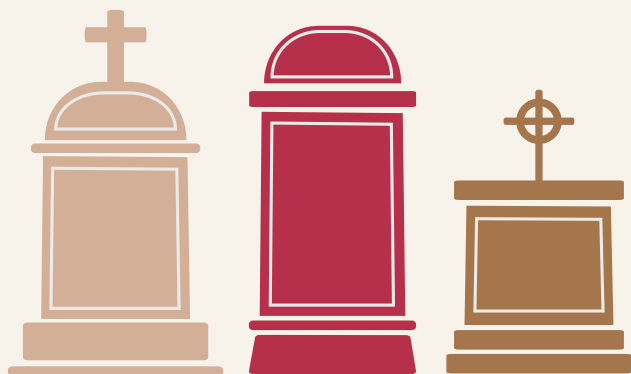
Coconut tree

Coconut palm, characteristic of tropical climates.



Butterfly

Insect with large, colorful wings, commonly associated with beauty and transformation.



Cemetery

Place destined to bury the dead, generally with tombstones marking each grave.



Alcaldía Mayor de Cartagena de Indias

Mayor's Office of Cartagena de Indias

Governmental institution in charge of the public administration of Cartagena, Colombia, managing services, infrastructure and the welfare of its citizens.



Naval Museum of the Caribbean

This museum covers the naval history of Colombia through exhibits on submarines, shipbuilding and cartography, divided into Colonial and Republican areas.

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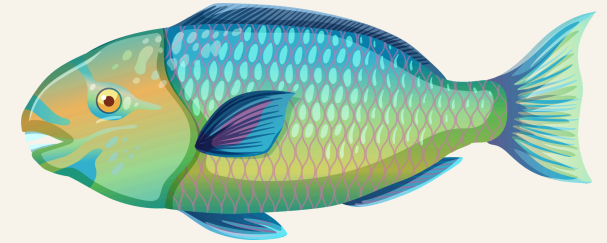
Traditional medicine

Traditional medicine is based on ancestral practices, beliefs and knowledge that uses natural methods to prevent and treat diseases.



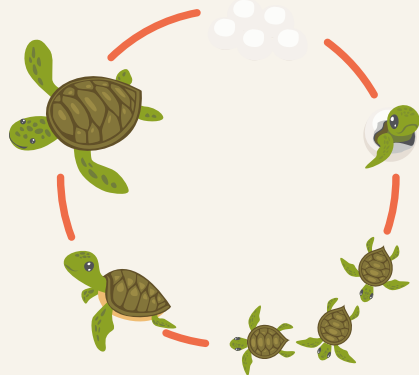
The pier

The pier is a structure on the shore of a body of water that allows the docking of boats and offers panoramic views of the marine environment.



Parrotfish

Colorful fish known for its strong parrot-like beak, which it uses to scrape algae from corals.



Species life cycle

A diverse process that is adapted to oceanic conditions and the characteristics of each species, and includes reproduction, development, sexual maturity and death.



Home

Place where a family resides and feels safe. It includes the emotional and social environment that is created in the space where identity and personal interactions are also developed.



White heron

Elegant and large aquatic bird, easily recognizable by its pure white plumage and long neck.

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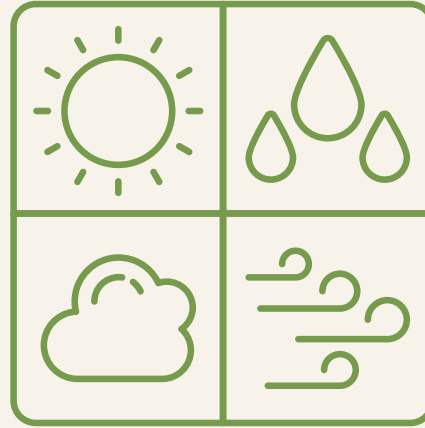
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Children

They are the future of society and require care, protection and support to reach their full potential.



Weather Forecasts

The understanding and ability to predict atmospheric conditions at a specific time, such as temperature, rainfall, winds, etc.



Blue crab

The blue crab, easily identified by its bright blue shell, is an important fishery resource, valued for its sweet meat and its role as a predator of mollusks and crustaceans in the ecosystem.



Older adults

They are bearers of valuable traditions and cultural knowledge that enrich their communities.



Planting trees

Trees beautify the landscape, improve the quality of life by providing shade and recreation, and help combat climate change by regulating temperature and creating microclimates.



Sustainable energies

Sustainable energies are those energy sources that are obtained from renewable natural resources, such as the sun, wind and water. They are environmentally friendly as they do not generate polluting emissions or deplete resources.

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Heat stroke

A serious medical condition that occurs when the body overheats, usually due to prolonged exposure to high temperatures and humidity.



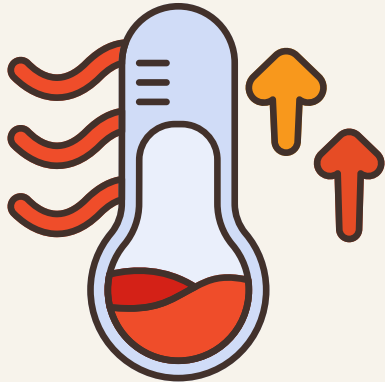
Population displacement

Forced movement of people due to effects such as rising sea levels, droughts, floods and extreme weather events.



More desert areas

Regions with low rainfall, extreme temperatures and little vegetation.



Temperature increase

Rising global temperatures caused by factors such as greenhouse gas emissions, deforestation and industrial activities



San Felipe shipwreck

The ship participated in the 1741 battle for the control of the Port of Cartagena de Indias. It was part of the maritime defense of the bay and was sunk to stop the enemy advance.



San Fernando de Bocachica Fort

Built with the ruins of the San Luis Castle, it is located parallel to Fort San José, protects the access to the Bocachica Channel and was designed to attack foreign fleets.

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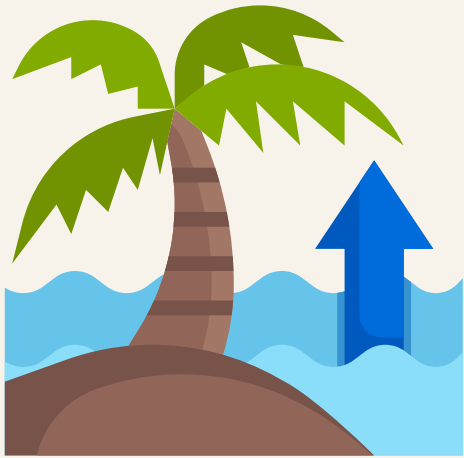
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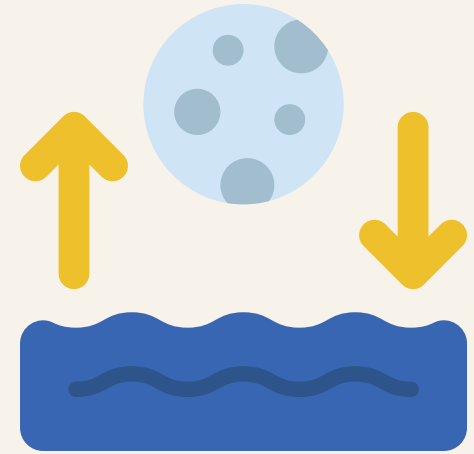
Sea level rise

Gradual rise of water levels in the oceans, causing coastal flooding and land loss.



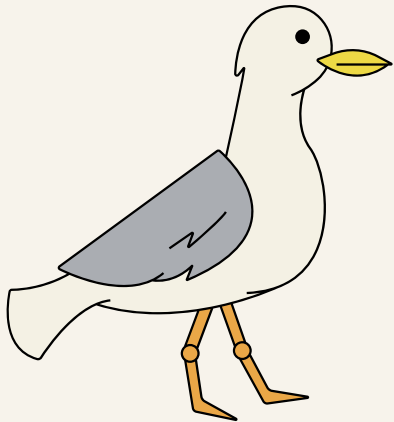
Music

Art of organizing sounds and silences to produce a harmonic, melodic or rhythmic composition.



Tide times

The natural cycles of rising and falling water levels in the ocean due to the gravitational pull of the moon.



Seagull

It is a medium-sized bird, with gray and white plumage, black head, dark eyes and bright red beak, noted for its noisy behavior and its life in colonies.



Beach

An extension of sand along the seashore, commonly used for recreational activities.



San José de Bocachica Fort

The San José fort, built between 1759 and 1778 in front of the San Fernando to defend the Bocachica pass, has seven bomb-proof vaults and two batteries, restored in 1968 after a long abandonment.

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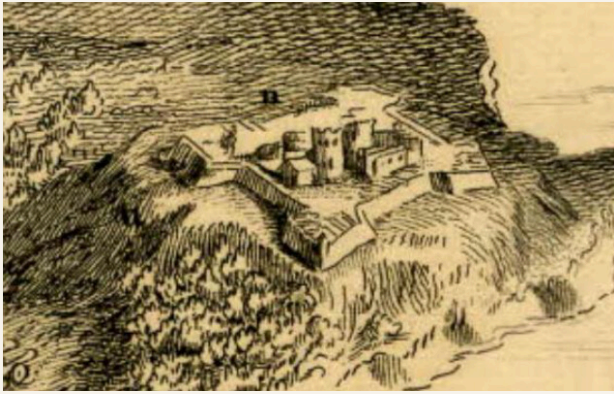
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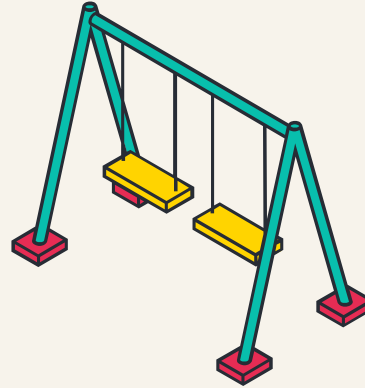
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San Luis Castle

The San Luis Castle, located on Tierra Bomba Island, was destroyed by the English in 1741, and the San Fernando de Bocachica Fort was built on its ruins in 1753.



Park

Area intended for public recreation, often located near urban or natural areas.



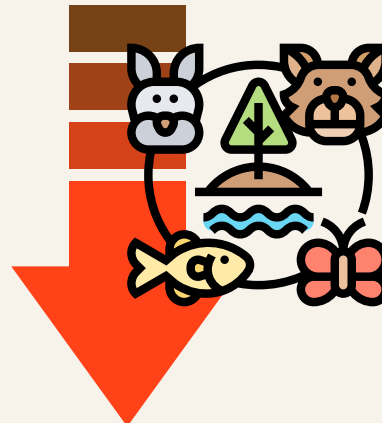
Water scarcity:

Droughts are becoming more frequent and prolonged, affecting access to clean water for many populations.



Flooding of roads

Accumulation of water on roads due to heavy rains or sea level rise, which interrupts traffic



Decrease in ecosystems

Biodiversity reduction and deterioration of natural habitats due to environmental or human factors.



Loss of coastal housing

Destruction or displacement of homes located near the sea due to erosion or flooding.

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Mangrove reforestation

Action to replant mangrove trees to restore affected ecosystems.



Adequate channeling

The process of guiding water from the sea or streams in a controlled manner to prevent flooding.



Promotion of scientific research

Promotion of scientific studies and analysis to improve knowledge and solutions to local problems.



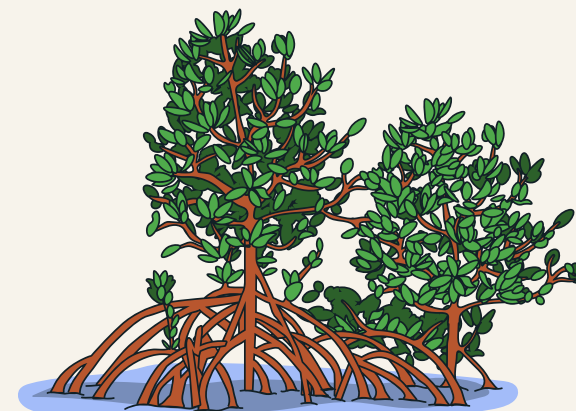
School

Educational institutions in Cartagena play a crucial role in the formation of young people, fostering education and awareness of the city's cultural heritage and history.



Local stores

Small businesses that serve communities by offering nearby products and services.



Mangrove

Ecosystem located in tropical regions, at the mouth of rivers and streams. Its trees improve water quality.

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Traditional fishing methods

Ancestral fishing techniques using hand cast nets to catch fish.



Dirección General Marítima
Autoridad Marítima Colombiana

Dirección General Marítima

The government entity responsible for regulating and supervising maritime activities in Colombia, with the objective of protecting marine resources and the marine environment.



FUNDACIÓN VIGÍAS DE CAREX
De la mano siempre con nuestros BIC

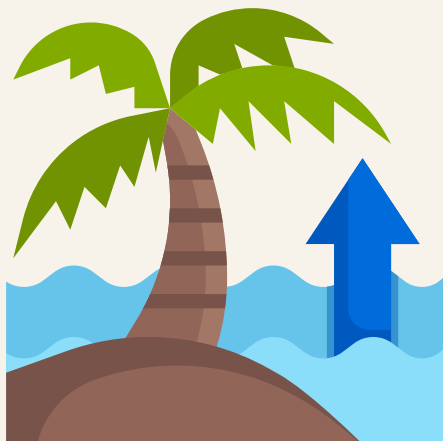
Carex Vigías Foundation

A non-profit organization that works on social and cultural development projects in Cartagena, focusing on the promotion of historical memory and community empowerment.



Perico

A small, brightly colored parrot, common in tropical regions.



Sea level rise

Gradual rise of water levels in the oceans, causing coastal flooding and land loss.



Storms

A thunderstorm is a meteorological phenomenon with strong winds, heavy rain, thunder and lightning. It is formed by the interaction of different air masses. It can last from a few minutes to several hours and cause damage depending on its intensity.

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Extreme precipitation

Extreme precipitation refers to events of heavy rainfall that can cause flash floods, landslides, and significant damage to infrastructure and the environment.



Coastal flooding

Coastal flooding occurs when seawater inundates land areas, often as a result of storms, high tides, or rising sea levels, posing risks to communities and coastal ecosystems.



Heat Waves

Heatwaves are dangerous conditions caused by high temperatures that affect human health, especially in warm climates and during extreme heat events.



Coastal erosion

Coastal erosion is the wearing away of shorelines due to wave action and currents, which can result in the loss of land and habitats



Storm intensification

The intensification of storms refers to the strengthening of weather systems, such as hurricanes or tropical storms, characterized by increased wind speeds, heavier rainfall, and greater potential for damage.



Our institution is dedicated to the conservation of cultural heritage and natural resources,

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Values

Military Architecture

Historical Center
Constructive knowledge
Military engineering



Values

Global Trade

America, Asia and Europe
Forts, shipping channel, shipwrecks



Values

Ecological

Mangroves, Shorelines, Historic sites



Values

Aesthetics

Graffiti, Fortifications, military architecture



Values

Community

Ancestral link with the territory
Africa and America



Values

Technological-scientific

Capacity for technological adaptation and
innovation.
Shipbuilding, fishing

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Values

Commemorative

Urban context, missing places, historical events, battles, independence



Values

Education

Traditional arts and crafts, thus ensuring the continuity of this knowledge.



Values

Ecological

Mangroves, Shorelines, Historic sites



Values

Aesthetics

Graffiti, Fortifications, military architecture



Tejar de San Bernabé

Archaeological site located on Tierrabomba Island, Cartagena, with ceramic remains and colonial structures of great historical value.



Solidarity and Resilience:

Community members or rescuers forming human chains to save lives show solidarity and strength in times of crisis

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