CLIMATE ACTION REGIONAL OFFICE
ATLANTIC SEABOARD NORTH

PRESENTATION TO SEC WORKSHOP (GALWAY)

LOCAL AUTHORITY CLIMATE ADAPTATION STRATEGIES

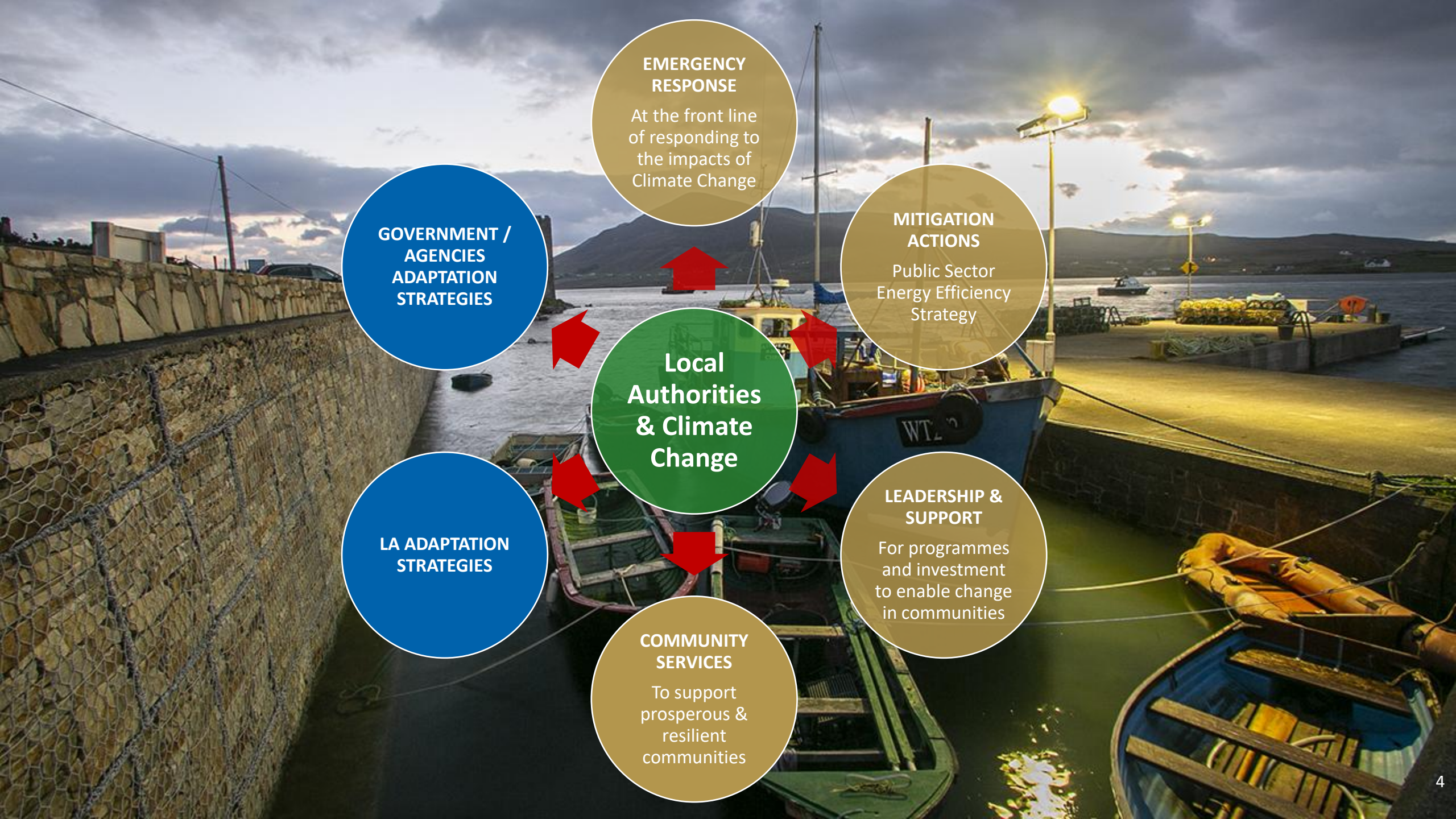
MAY 2019

Local Authorities & Climate Change

Climate Action Regional Offices

Local Authority Climate Adaptation Strategies

Local Authorities & Climate Change

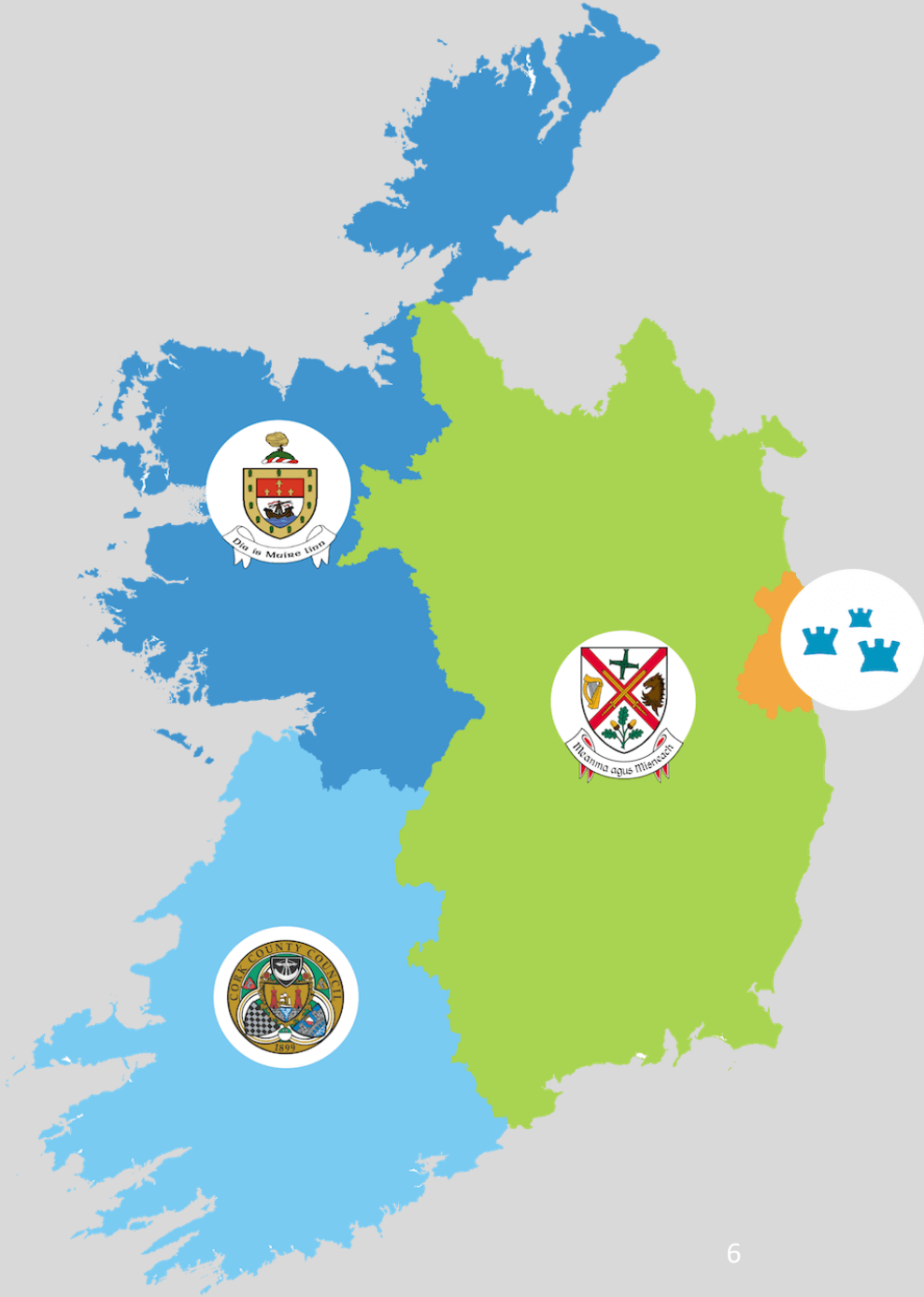

EMERGENCY RESPONSE
At the front line of responding to the impacts of Climate Change
GOVERNMENT / AGENCIES ADAPTATION STRATEGIES
MITIGATION ACTIONS
Public Sector Energy Efficiency Strategy
Local Authorities & Climate Change
LA ADAPTATION STRATEGIES
LEADERSHIP & SUPPORT
For programmes and investment to enable change in communities
COMMUNITY SERVICES
To support prosperous & resilient communities

Climate Action Regional Offices

CARO

CLIMATE ACTION REGIONAL OFFICE

- January 2018, DCCAE announced the establishment of LA Climate Action Regional Offices
  - Atlantic Seaboard North
  - Atlantic Seaboard South
  - Eastern & Midlands
  - Dublin Metropolitan
- Grouping based upon shared climate change risks.
  - Storm & Coastal Flooding
  - Fluvial Flooding
  - City & Urban Risks



CARO ROLES & OBJECTIVES

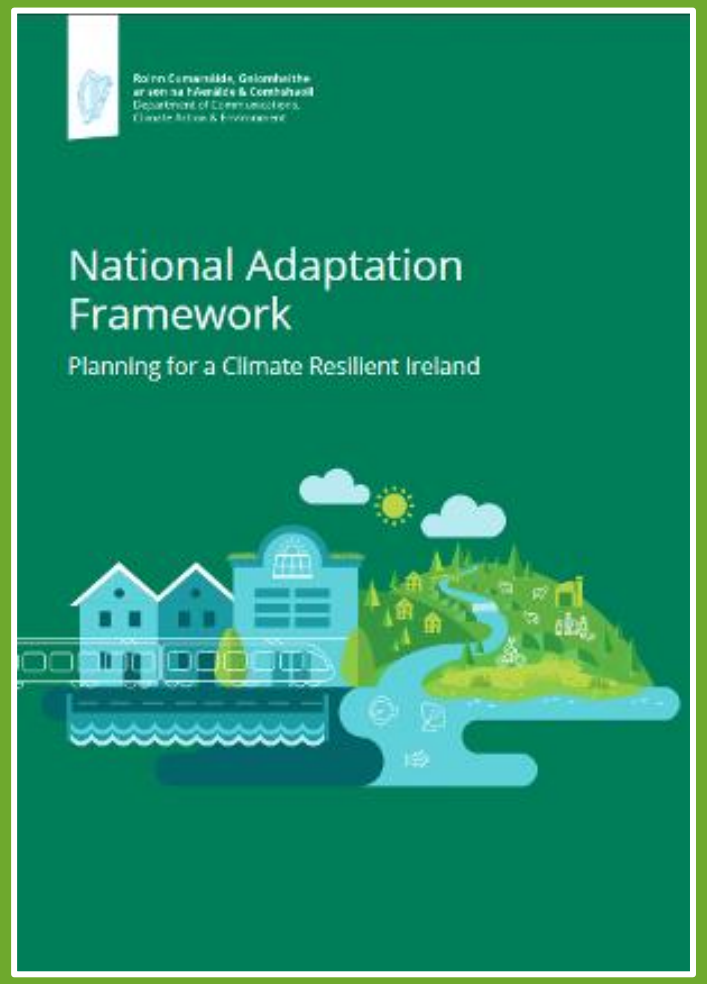
- Provide **expertise and capacity at local/regional level** to contribute effectively to the national transition to a low carbon and climate resilient economy.
- Ensure **efficient use of resources** in risk assessment, option assessment and adaptation strategy and action development.
- Enable a more **co-ordinated approach** for how Local Government liaises centrally with relevant Government Departments/Regional Assemblies/Agencies on climate related matters and with sectors in the preparation of Sectoral Adaptation Strategies under the NAF.
- **Centres of Expertise** with Academic Partnerships
- Develop common public **education and awareness initiatives**.
- Contribute to the **National Dialogue** on Climate Action on a local and regional basis

Local Authority Climate Adaptation Strategies

Why do LA's need to Adapt to Climate Change?

- Damage to critical infrastructure
  - Roads & bridges
  - Surface water drainage
  - Sewers / watermains (SLA – IW)
  - Local Authority buildings and housing stock
- Flooding and water quality
- Disruption to local communities
- Disruption and changes to local heritage and biodiversity
- Disruption to services provided by the LA

NATIONAL CLIMATE CHANGE POLICY



- **Low Carbon and Climate Action Act (2015)**
  - National Mitigation Plan
  - **National Adaptation Framework (NAF)**
  - National Climate Change Advisory Council

Under the Climate Action and Low Carbon Development Act 2015, Local Authorities have statutory responsibilities to ensure that climate change adaptation plans are in place.

NATIONAL ADAPTATION FRAMEWORK

- Under the Framework, seven Government Departments (or Agencies, where appropriate) with responsibility for twelve priority sectors are required to prepare sectoral adaptation plans
- Sectoral plans to be submitted to Government for approval by 30 September 2019
- Local Authorities to prepare Local Adaptation Strategies also by 30 September 2019

Theme	Sector Level	Lead Department for Sectoral Adaptation Plans
Natural and Cultural Capital	Seafood	Department of Agriculture, Food and the Marine
	Agriculture	
	Forestry	
	Biodiversity	Department of Culture, Heritage and the Gaeltacht
	Built and Archaeological Heritage	
Critical Infrastructure	Transport infrastructure	Department of Transport, Tourism and Sport
	Electricity and Gas Networks	Department of Communications, Climate Action and Environment
	Communications networks	
Water Resource and Flood Risk Management	Flood Risk Management	Office of Public Works
	Water Quality	Department of Housing, Planning and Local Government
	Water Services Infrastructure	
Public Health	Health	Department of Health

Mayo County Council

Draft Climate Adaptation Strategy

April 2019

Climate Change Adaptation Strategy

Step 1 Preparing the Ground

Internal Workshop 1 - Dec 2018

Adaptation Team

- Critical Buildings and Infrastructure
- Natural and Cultural Capital
- Water Resources and Flood Risk Management
- Health & Well Being and Services

Step 2 Assessing the Current Baseline on Past Events

Internal Workshop 2 - Jan 2019

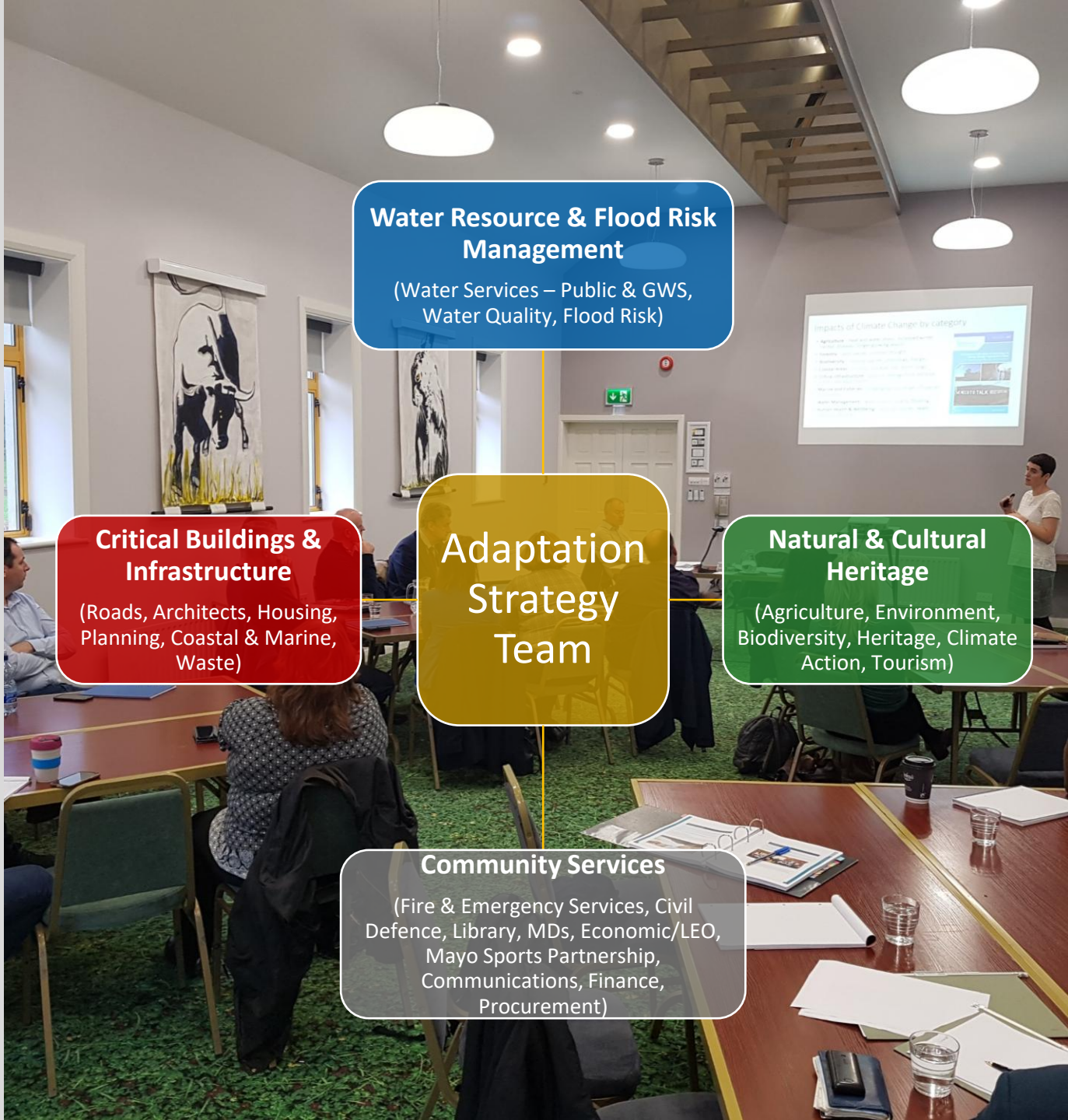
- Extreme Cold Weather & Low Temperatures
- High Temperature & Low Rainfall
- Sea Level Rise & Coastal Flooding
- Strong Winds
- Extreme Rainfall

Step 3 Identifying Future Climate Impacts, Vulnerabilities & Risk

Internal Workshop 3 - Mar 2019

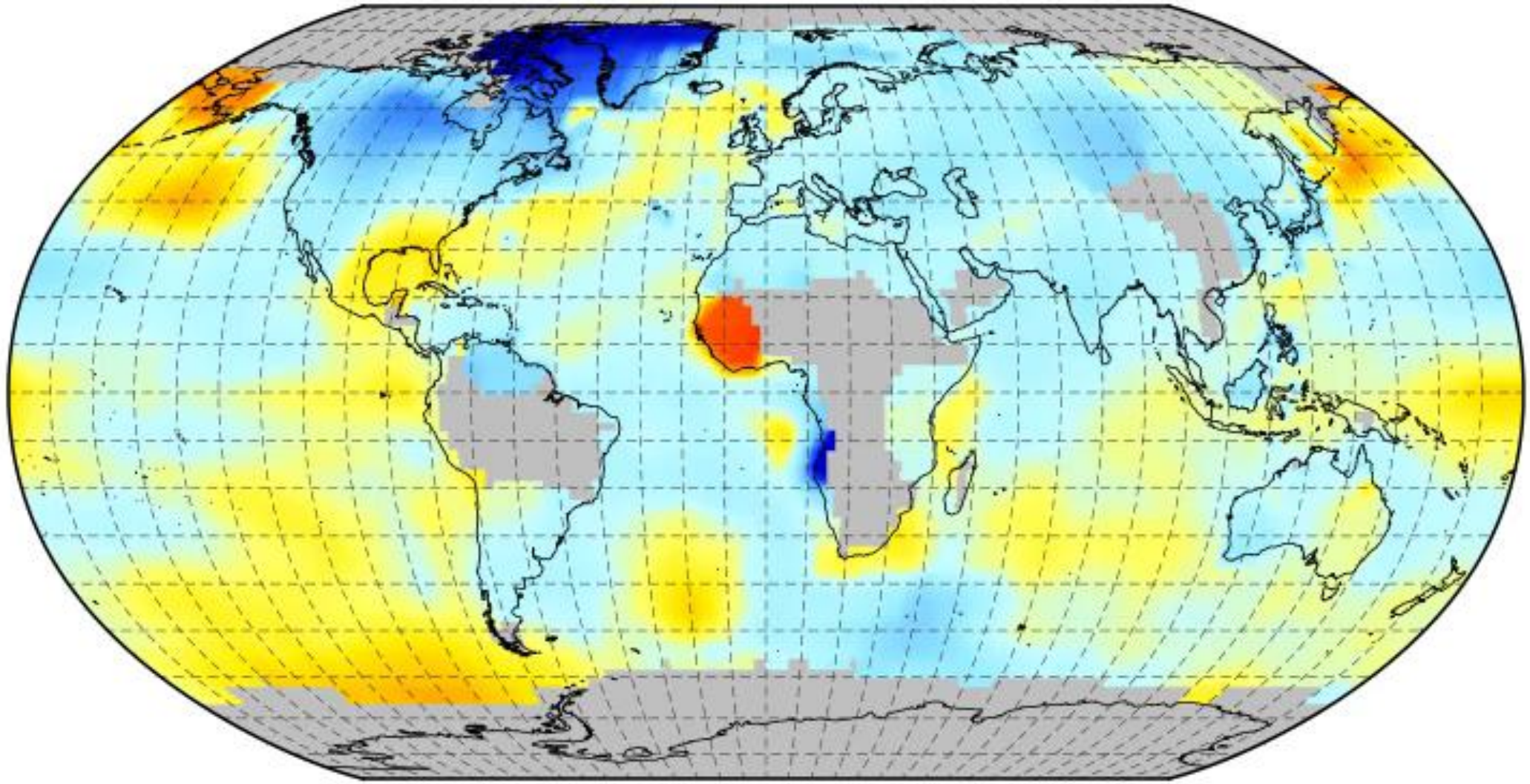
Step 4 Identifying, Assessing and Prioritising Adaptaion Actions

Step 5 Drafting, Implementing and Monitoring Strategy



Annual Surface Temperature Anomaly base 1951-1980

1880-1884



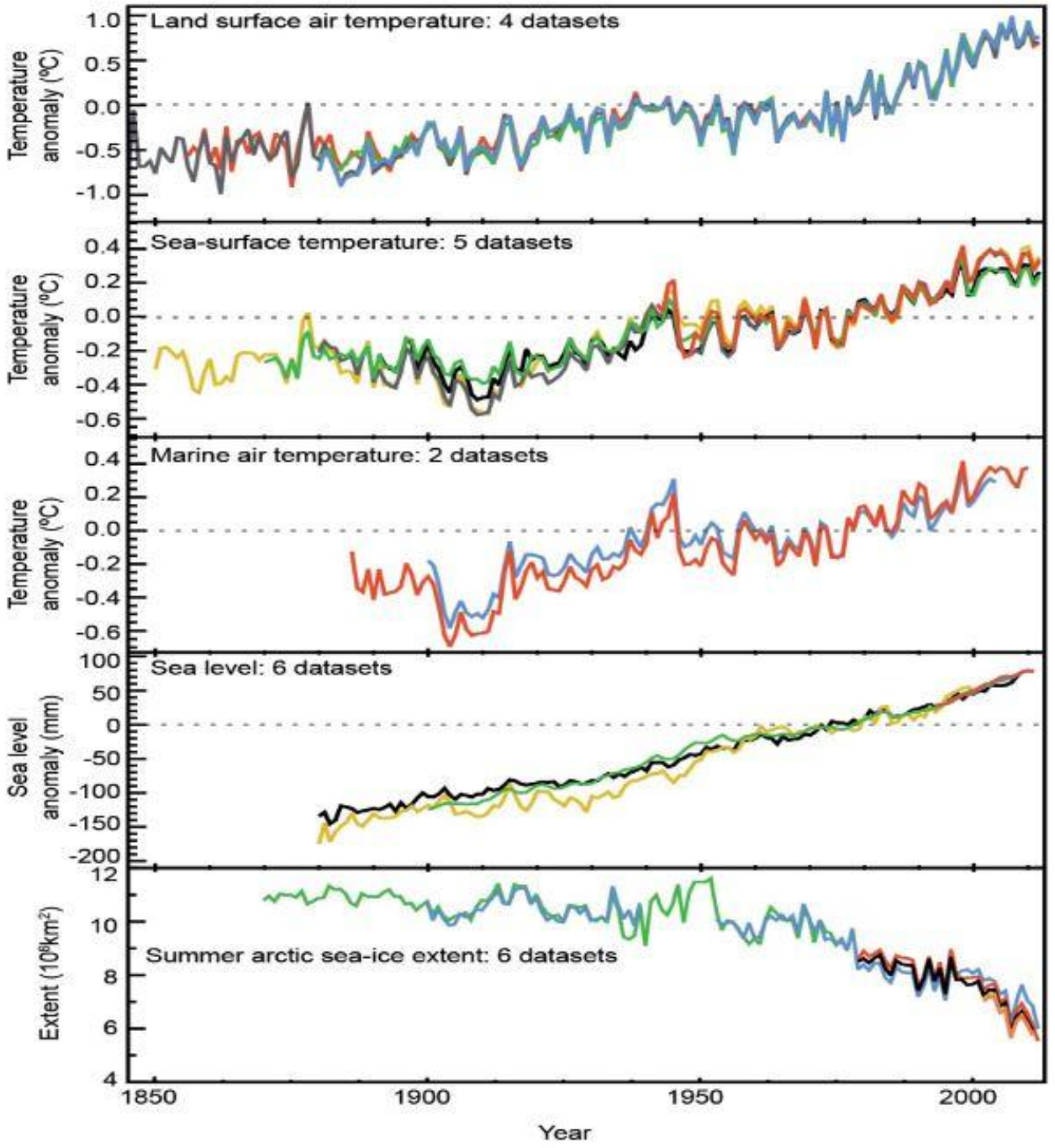
Temperature (K)

-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0

Data Min = -3.5, Max = 1.8, Mean = -0.2

Changes are occurring across the Earth System

- Record high surface **air temperatures**
- Increased average number of **hot days** per year
- Decreased average number of **cold days** per year
- Increasing intensity and frequency of **extreme events** changing rainfall patterns
- Increasing sea surface temperatures and **rising sea levels**
- Increasing ocean heat content and **ocean acidification**
- **Melting ice caps**, glaciers and decreasing Arctic sea ice



Historic Climate Events in Mayo

Prolonged, heavy rainfall Nov 1980

Thunderstorms July 1985

Storms / heavy rain Feb 1990

Flooding June 1993

Severe flooding Nov 2000

Severe cold spell Nov/Dec 2010

Winter storms / storm surges Winter 2013/14

Fastnet Storm Aug 1976

Storm Jan 1976

Severe storm Jan 1974

Heavy snowfall Jan 1987

Storm force winds Feb 1988

Warmest summer on record / drought Summer 1995

Hurricane force winds Dec 1998

Severe flooding Nov 2002

Warmest summer on record Summer 2006

Heavy rain and flooding Summer 2008

Wettest Jan in 20 years Jan 2016

Unseasonably dry weather Spring/summer 2017

Storm Ophelia Oct 2017

Heatwave / drought Summer 2018

1970 1980 1990 2000 2010 2020

Dry period / drought 1974-1976

Floods Nov 1973

Heavy rainfall Oct 1989

Flooding Oct 1987

Hurricane Charley Aug 1986

Heavy snowfall Jan 1982

Flooding Dec 1998

Windstorm Dec 1997

Extensive flooding Aug 1997

Tornado Mar 1995

Windstorm Jan 1991

Severe flooding Nov 2009

Regional droughts 2007

Flooding / landslide Sep 2003

Storm surge / coastal flooding Feb 2002

Storm Ali Sept 2018

Heavy rain Aug 2017

Storm Emma Mar 2018

Driest winter in 25 years Winter 2016/17

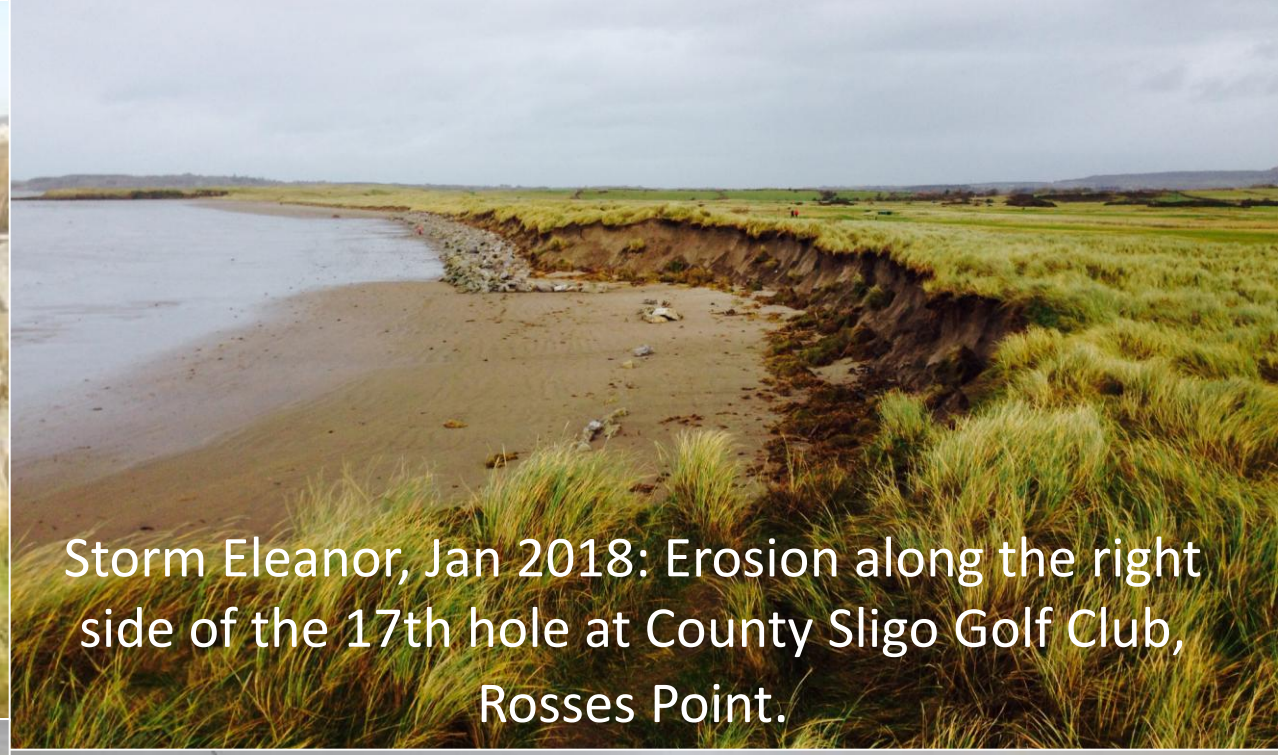
Storm Darwin Feb 2014

Heavy rainfall Summer 2012

Heavy rainfall Oct 2011

Coldest winter in c. 50 years Winter 2009/10

Winter Storms 2013/2014: After standing for over a hundred years, the bridge that linked Rosmoney and Westport in Co Mayo was brought down by the waves and winds



Storm Eleanor, Jan 2018: Erosion along the right side of the 17th hole at County Sligo Golf Club, Rosses Point.

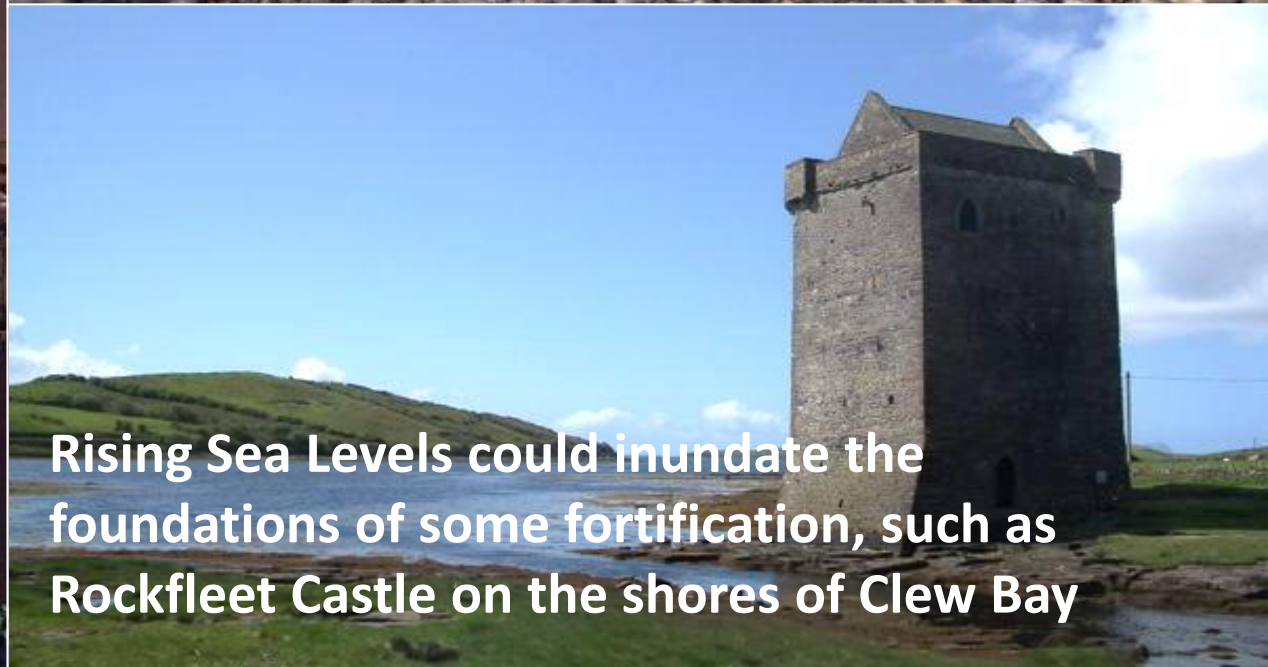
Winter Storms 2013/2014Dooagh Village in Achill suffered coastal damage due to high tides and storms

Storm Eleanor Jan 2018: Road Closures in Strandhill, Sligo

Storm Ophelia – October 2017

Part of a 20ft rudder from one of the Spanish Armada vessels

Storm Eleanor, Jan 2018: Flooding at the docks in Galway City



Rising Sea Levels could inundate the foundations of some fortification, such as Rockfleet Castle on the shores of Clew Bay

Storm Ali – September 2018

Some opportunities too

- Drier and warmer weather will see an increase in beach tourism and marine activities enhancing the blue economy.
- Infrastructure needs to adapt

Key Long-term Climate Change Trends for Ireland

Temperature: continue to **increase everywhere and across all seasons**, with increases in the frequency and intensity of summer heat waves, extreme temperatures and drought;

Precipitation: decreases projected for spring and summer and **increases for winter**. An increase in the occurrence of **extreme rainfall events** is likely.

Wind: little change in average wind speed and direction. However, **frequency of extreme wind conditions** are expected to increase, particularly during winter;

Sea Levels: continue to **increase** and by up to 0.81m by 2100, with increases in the frequency and intensity of coastal inundation and erosion.

Impacts of Climate Change

- **Biodiversity** – invasive species, phenology changes
- **Coastal Areas** – erosion, sea level rise, storm surge
- **Critical Infrastructure** – physical damage from extreme events, sea level rise etc.
- **Marine and Fisheries** – biogeographical ranges of species distribution
- **Agriculture** – heat and water stress, increased winter rainfall, diseases, longer growing season
- **Forestry** – pest species, summer drought
- **Water Management** – water supply, quality, flooding
- **Human Health & Wellbeing** – physical injuries, death, infectious diseases

Our Vision for a Climate Ready Mayo

A county that understands how climate change will affect the region, our businesses and communities, and actively working together to reduce our exposure to climate risks and to capture new opportunities.

A Climate Ready Mayo

A county that understands how climate change will affect the region, our businesses and communities, and actively working together to reduce our exposure to climate risks and to capture new opportunities

Goal 1

Increase the resilience of Critical Infrastructure & Buildings to climate change by planning and implementing appropriate adaptation measure

Goal 2

Increase the resilience of our Natural & Cultural Capital to climate change by planning and implementing appropriate adaptation measure

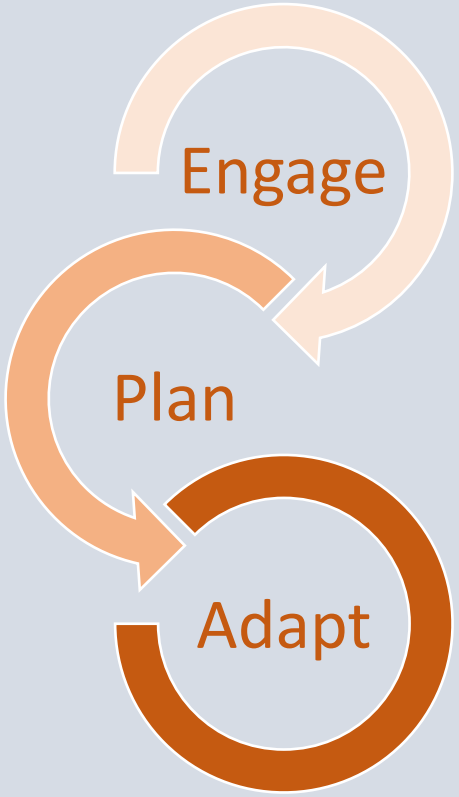
Goal 3

Increase the resilience of our Water Resources and Flood Management to climate change by planning and implementing appropriate adaptation measures

Goal 4

Increase the resilience of our Community Services to climate change by planning and implement appropriate adaptation measures and supporting opportunities

Objectives to Meeting the Adaptation Goals



Engage

Improve education, awareness-raising and capacity on climate change, adaptation (and mitigation), impact reduction and early warning across the Local Authority departments, businesses, communities and individuals

Plan

Integrate climate change measures into policies, strategies and planning, as well as the identification of areas at risk to inform planning and decision-making

Adapt

Strengthen resilience and adaptive capacity, and develop and implement co-ordinated responses to climate risk where needed

Adaptation Actions

Action Timeframes

The Adaptation Actions will be implemented in the Short (5 years or less), Medium (greater 5 and less than 10 year) and Long term (greater than 10 years).

Many of the early Actions are centred around awareness, training and updating policies, procedures and plans to take account of climate projections and impacts.

What Happens Next?

April | May | June | July | August | September

- Draft to Elected Members
- Graphic Design Work
- AA/SEA Screening

- Public Consultation (5-6 weeks)
- Statutory Consultation of AA/SEA Screening
- Assessment of Submissions
- Input from Sectoral Adaptation Plans
- Revisions to the Strategy

- Presentation to new Council
- Adoption of Strategy, or Any necessary changes to the draft Strategy

- Adoption of Strategy

Malin Head, County Donegal

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