



Co-funded by the  
European Union

# Celtic Seas 2050: Developing Scenarios for the SIMCelt Project

Lynne McGowan

Department of Geography and Planning, University of Liverpool



# Future Spatial Demands and Scenarios

## ***Objective:***

- To investigate current and future spatial demands of key maritime sectors, with reference to cross-border issues

## ***This will involve:***

- Analysis of existing spatial constraints, demands and expectations for growth of key sectors
- Considering information that appears critical to informing decisions in relation to future demands, e.g. economic and social evaluations
- *Stakeholder input*

# Future Spatial Demands and Scenarios

- Limiting scope – 5 maritime sectors chosen for analysis
  - Ports and shipping
  - Offshore wind energy
  - Wave and tidal energy
  - Aquaculture
  - Marine conservation

All either a) have a distinct transboundary dimension, or b) growing spatial footprint

- *We won't forget other sectors!*

# Types of Scenario

## Normative

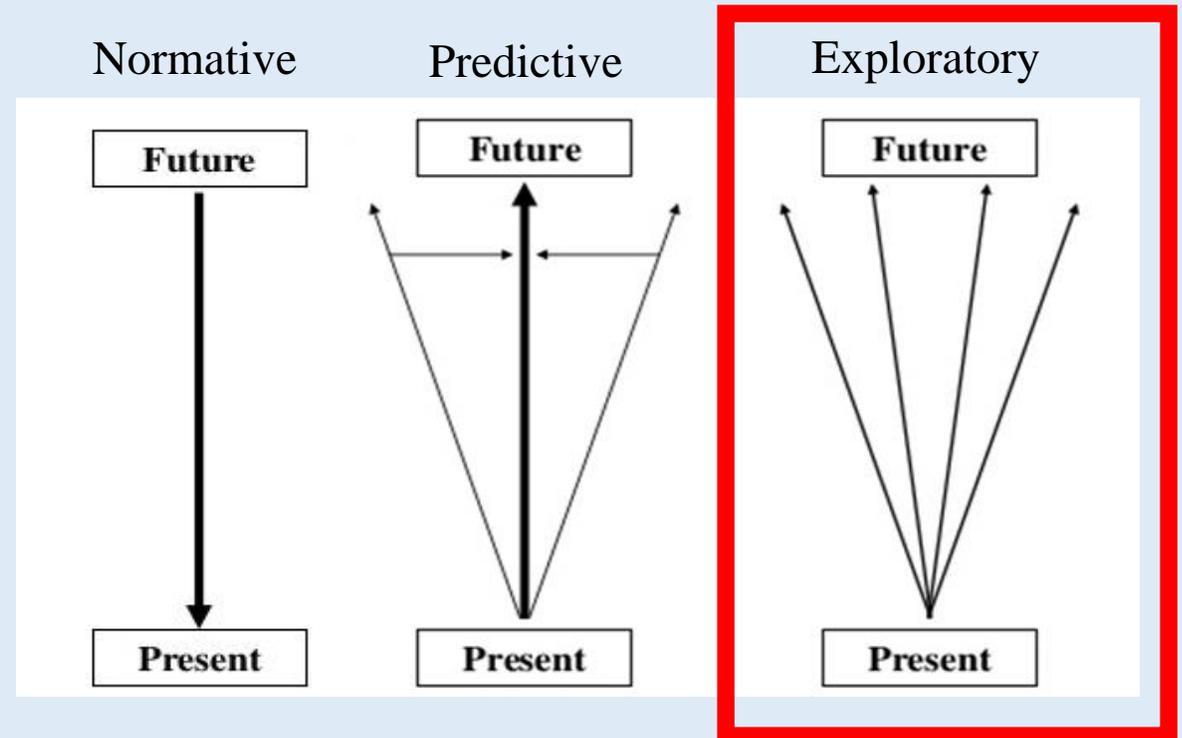
*How can a specific target be reached?*

## Predictive

*What will happen?*

## Exploratory

*What might happen?*



# Issues for Developing SIMCelt Scenarios

- Other examples of scenarios for the marine/coastal environment  
(e.g. CEFAS Alternative Future Scenarios for Marine Ecosystems, UK National Ecosystem Assessment, Celtic Seas Partnership Future Trends work)
- Understanding stages of economic development for individual maritime sectors
- Who are the right stakeholders to involve?
- No longer economy vs. environment
- Brexit – this is happening for the UK, but France and Ireland will still be in the EU



# The SIMCelt Approach

- Briefing notes to draw together information on chosen sectors, ambitions for growth, responsible agencies/actors
- Also consider compatibility of uses and environmental impacts
- Issues for cross-border marine planning
- Outlines key drivers for change in each sector



# Initial Issues

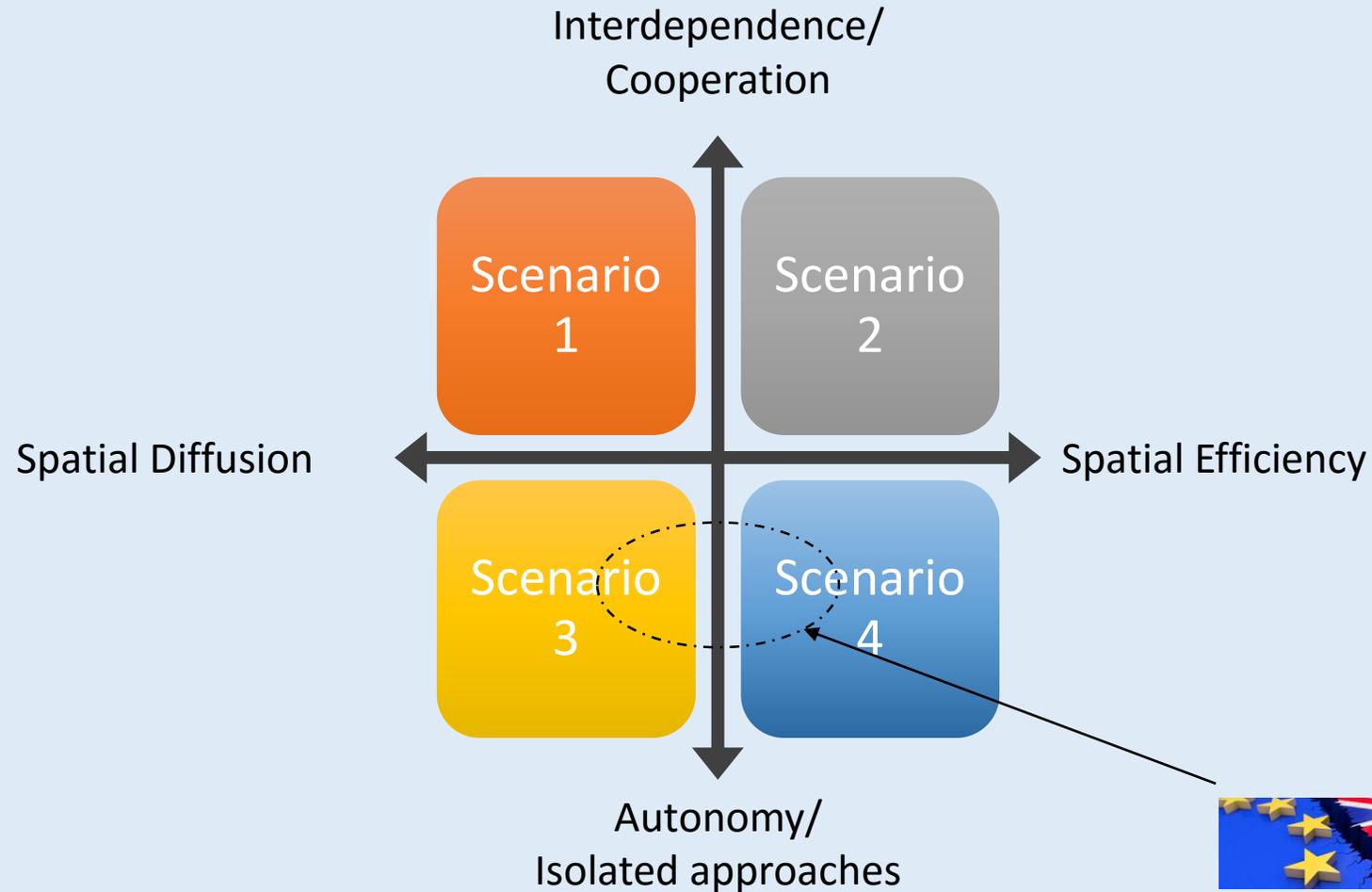
## Implications of Brexit

- Shipping – economic climate, customs and tariffs
- Offshore wind energy – interconnectors and wind farms built for exporting energy

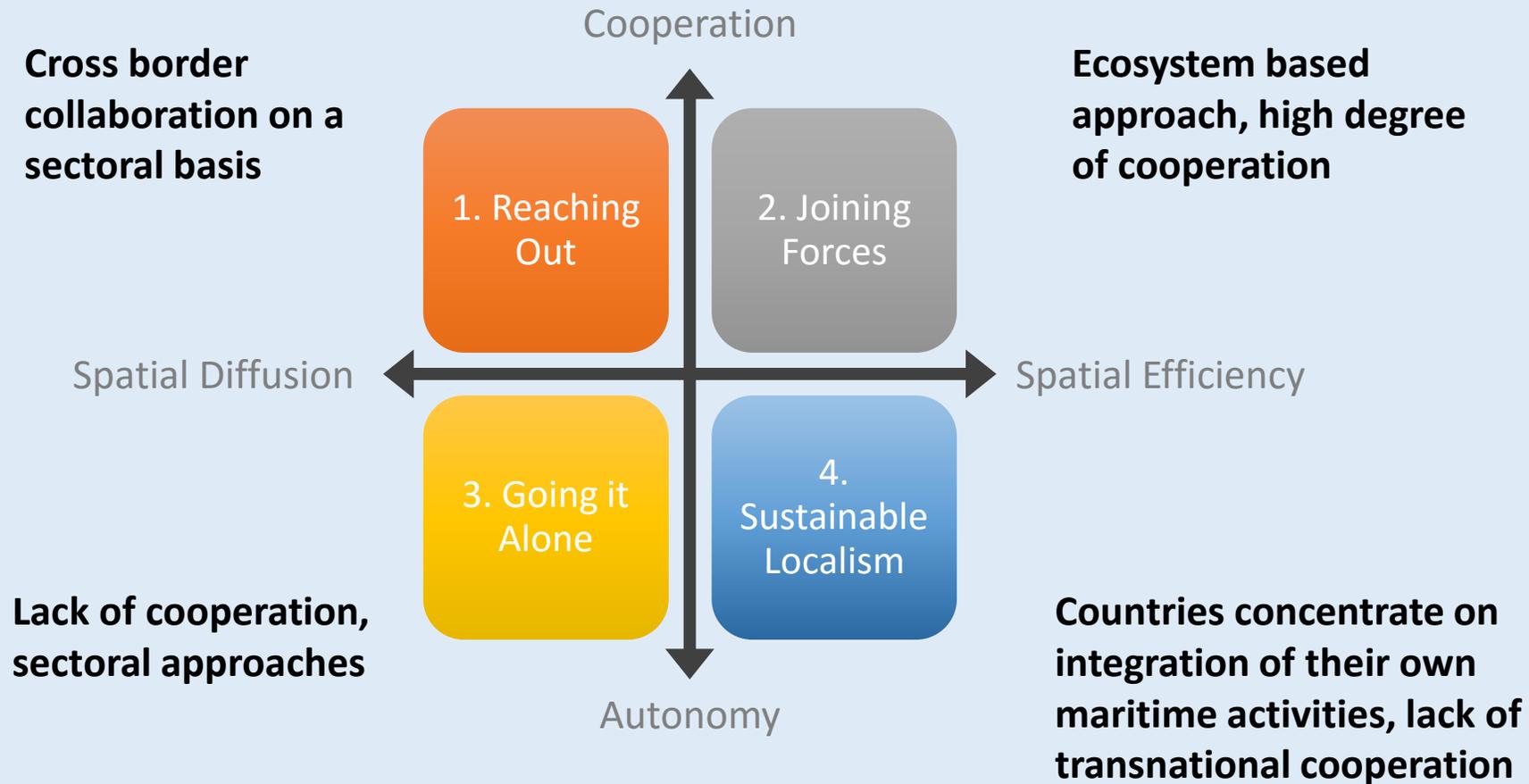
## Drivers of Change (Examples)

- Floating wind turbines in deeper waters (closer to borders)
- Controls on pollution from shipping – Emissions Control Areas
- Tidal energy (lagoons) and changes to tidal range

# Scenario Building



# SIMCelt Scenarios





# Scenario 1: Reaching Out

## Key features: Cross border collaboration on a sectoral basis

International and national climate change targets and pollution controls are key drivers of change.

These lead to countries making greater efforts to deploy **marine renewables** in coastal areas and further offshore. More areas are zoned for the primary purpose of renewable energy growth both in coastal areas and further out to sea, creating competition for space between energy interests and other sea users such as aquaculture and shipping and increasing cumulative impacts.

Transnational energy infrastructure is put in place to support the distribution of green energy.

Sharing of **information** within sectors is seen as a way to increase coordination, e.g. E-navigation, maritime service portfolios and development of the Common Information Sharing Environment for shipping.

Within the **shipping** sector international agreements on pollution are also key drivers of change, with more Emission Control Areas being designated and a much greater number of ships using LNG fuels. The seasonal opening up of Arctic sea routes takes place but is dependent on high levels of international cooperation to maintain safety and security. Motorways of the Sea continue to develop along key routes and into more remote areas to connect with Arctic routes and growing renewable energy zones.

Ambitions for **aquaculture** production remain high across Celtic Seas countries as consumer demand for aquaculture product increases. As aquaculture moves further offshore this creates greater competition with other sea users. Climate change impacts such as increases in sea water temperature and increasing storminess also make large-scale production more challenging.

Increased sharing of data regarding **MPA** designations and collaboration on environmental monitoring takes place, e.g. through the use of satellite data and UAVs to monitor marine habitats and species movements.



# Scenario 2: Joining Forces

## Key features: Ecosystem based approach, high degree of governmental cooperation

This scenario affords the highest level of protection to the **marine environment**, with regards to international requirements such as CBD and MSFD. Countries cooperate on decisions about new MPAs, including some in international waters. At the national level, there is greater clarity and direction in the way that MPAs are designated and managed.

Tight environmental constraints mean that countries think more strategically about the location of maritime activities and there is a strong drive towards **colocation** of marine renewables with activities such as coastal defences, tourism, fisheries and aquaculture.

International **shipping** activity continues to increase, with larger ships being used to take advantage of economies of scale. In EU Member State waters, reduced customs formalities increase the efficiency and volume of goods moved through ports. Upgrades to port facilities and connectivity to ports hinterlands are implemented to take advantage of both international and local shipping movements. In areas where multiple marine users are active, protection of navigational safety is considered a priority.

**Aquaculture** growth is managed through the allocation of space in maritime spatial plans. Continued financial support from the EU and other institutions helps to deliver new operations that use innovative methods such as multi-use platforms shared with offshore wave energy and monitoring stations.

As well as developing colocation with aquaculture, fisheries and environmental monitoring, **renewable energy** continues to grow in two main areas. **Offshore wind** energy moves further out to sea, as technology for deeper waters (including floating platforms) becomes more viable both technologically and financially. A limited number of **tidal lagoons** are built, primarily for energy generation, but also supporting new leisure and tourism activities.



# Scenario 3: Going it Alone

## Key features: Minimal cooperation, expanding sectoral approaches

Under this scenario, countries work independently to pursue their own **Blue Growth** targets, expanding and maximising exploitation of their maritime resources across marine territories. Coordination and cooperation on MSP is minimal. Competition within maritime sectors becomes fiercer, leading to distinct winners and losers, for example bigger **ports** using economies of scale and their connectivity to capture more shipping trade compared to smaller ports.

Efforts to protect the **marine environment** are limited as countries seek greater levels of economic exploitation, e.g. using waters more intensively for aquaculture, fishing and producing energy.

In terms of **aquaculture**, increasing demand for farmed products and the need to combat impacts of climate change such as increased seawater temperatures lead to the use of genetically modified alternatives to fishmeal, and GM species that grow faster.

To ensure security of energy supplies, existing sources of hydrocarbons continue to be extracted whilst new sources are explored. **Offshore wind, wave and tidal energy** continue to expand, with devices deployed in coastal waters and further offshore. Large tidal lagoons and barrages are built where these do not interfere with key navigational routes, resulting in some loss of habitats.



# Scenario 4: Sustainable Localism

**Key features: Countries concentrate on developing their own maritime activities but there is a lack of transnational cooperation.**

Under this scenario economic growth in traditional industries is slow but there is accelerated growth in green and high tech sectors. Smart **specialisation** within the maritime sector helps regions to develop unique strengths and capacities. New technologies also help to integrate different sectors using the same space as shared platforms monitoring systems and less polluting ways of doing things are found.

**Conservation** and environmental objectives focus on the reinforcement of existing management and regulation measures. Where new MPAs are considered for designation, there is a strong emphasis on additional socioeconomic benefits that can be provided through designation.

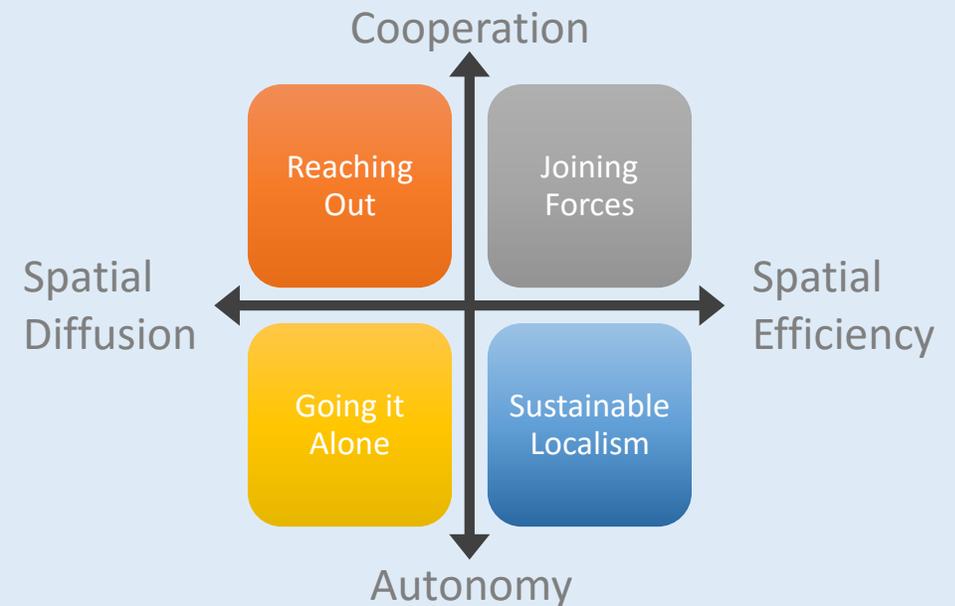
In order to use space more effectively, the **aquaculture** sector adopts a polyculture approach and multi-trophic species. High quality, niche aquaculture products with greater added value and traceability throughout supply chains are developed for local markets.

Diversification occurs within the **port** sector due to the slow growth of international trade, for example specialised shipbuilding services and innovations in logistics through greater use of IT and real time tracking of cargos. Facilities servicing the offshore energy industries are adopted by some ports in order to compensate for the decrease in international cargos. In other ports, **short sea shipping** experiences a modest increase for specialised cargos such as liquid bulk.

**Wave and tidal energy** is increasingly favoured over offshore wind as technologies improve and both small and large scale projects become more financially viable. Tidal lagoons are built in locations for the dual purposes of energy generation and protecting areas vulnerable to flood risk.

# Testing the Scenarios

- Are these scenarios plausible?
- Where (on the matrix) do participants expect each sector to be by 2050?
- What are the implications of this for other sectors/sea users?
- Do these issues have a transnational dimension?
- If so, is there a planning response? What is it?



# Today's Activities:

## 1. Where are we going? Sectoral Ambitions

- Recap the scenarios in groups
- Discussion: Are these scenarios feasible? What other drivers might lead to change?
- For the sector you have been allocated: Where will it be by 2050?

# Today's Activities:

## 2. Where are we going? Sectoral Interactions

- Look at the other sectors – where will they be by 2050?
- What does this mean for the sector you have been allocated?
- Are there likely to be particular conflicts?
- Can these sectors work together?

# Today's Activities:

## 3. Promoting Cross-Border Cooperation

Having identified key issues from Activity 2:

- Do these issues have a transnational dimension?
- How can the issue be resolved?
- What kind of intervention is needed?
- Who needs to be involved?



# Maritime Spatial Planning: Transboundary Cooperation in the Celtic Seas

## SIMCelt Closing Conference

28-29 November 2017

Bluecoat, Liverpool's Centre for the Contemporary Arts



This conference is for stakeholders, practitioners, researchers and anyone involved in Maritime Spatial Planning (MSP) in the Celtic Seas and beyond. SIMCelt's project team plus other scientific, policy, user and industry perspectives will address key transboundary issues relating to MSP.

Featuring interactive workshops and sessions on topics including:

### Results from the SIMCelt project

- SIMCelt data portal
- Stakeholder engagement techniques
- Future development scenarios in the Celtic Seas
- Using an ecosystem based approach and how to consider cumulative impacts

### Insights from other initiatives

- MSP education
- Land-Sea interactions
- Blue Growth and social inclusivity
- Other European regional projects and approaches

**SIMCelt: Supporting Implementation of Maritime Spatial Planning in the Celtic Seas** is a project involving MSP authorities and other partners from France, Ireland and the UK working together to facilitate Member States' MSP processes.

See our website for upcoming draft programme and further information on the project outcomes:  
<http://www.simcelt.eu/events/project-closing-event/>  
@SIMCelt

The conference is free to attend. You can find out more and register your interest in attending here:  
<https://tinyurl.com/CelticSeasMSP>



# Next Steps:

- Briefing Notes to be finalised
- Workshop notes to be written up
- Discussion of Activity 2 and 3 outcomes with Marine Planning Authorities
- Write final report on scenarios (by end December)



Co-funded by the  
European Union

# Thank You

