

# MSP Winter series; Best Practice Case Study on Managing Land Sea Interactions

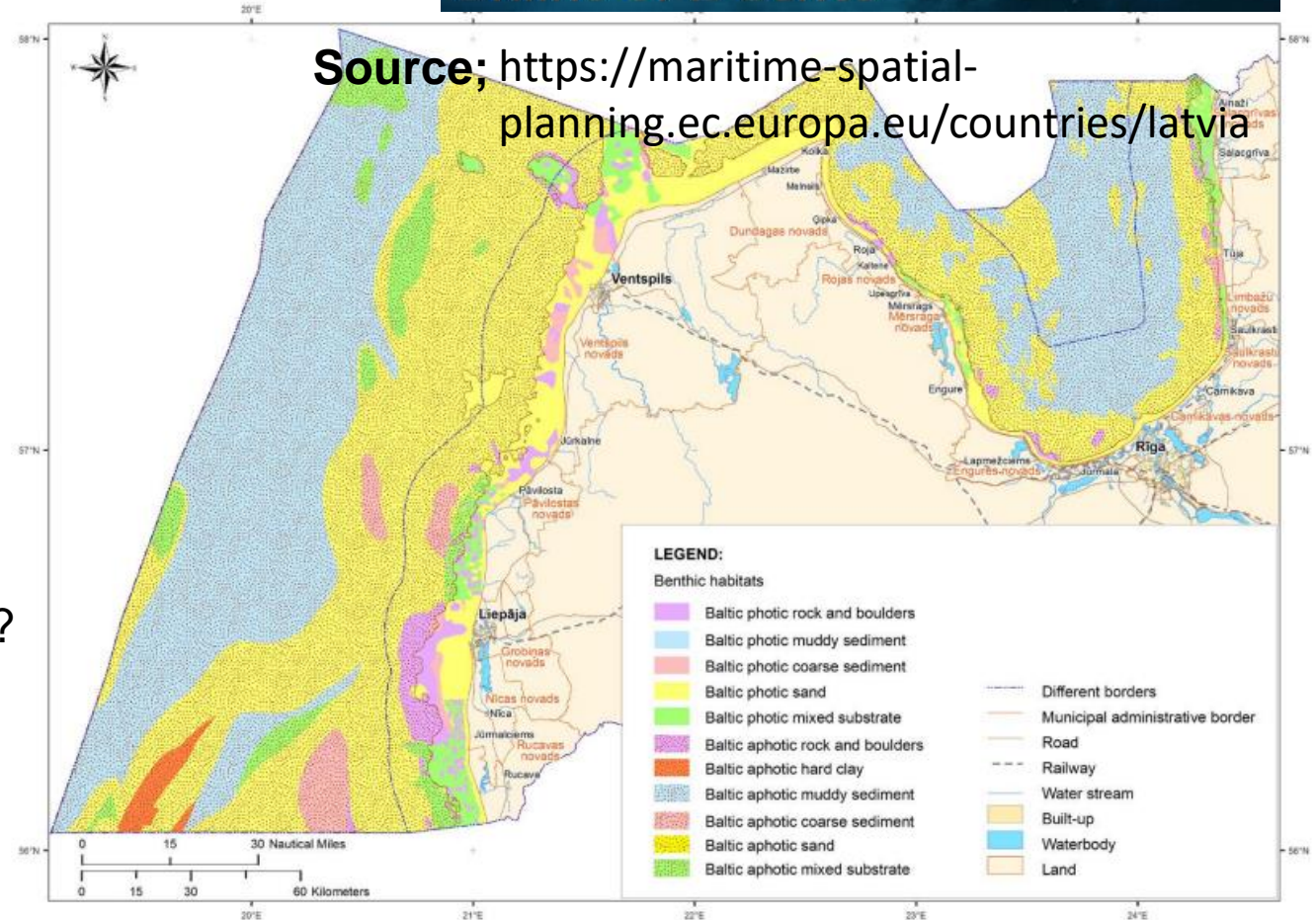
## Sequence of Talk

Introduction / Different Terms / Context  
Importance of the Coastal Zone  
Managing Fragile Coastal Areas  
Identifying Impact Chains in Coastal Areas  
Managing Land Sea connections  
COST Network – exploring different coastal governance systems  
Best Practice Case Study of the Thau Lagoon, France  
What were the challenges in the Thau Lagoon?  
The Governance Structure  
What did they do? 5 Step Process  
What were the outcomes?  
Negatives & Positives  
Sources

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**Source;** <https://maritime-spatial-planning.ec.europa.eu/countries/latvia>



## Different Terms re. Marine Spatial Planning

There are different variations of Marine Spatial Planning term which can hinder its understanding and cause confusion. Marine Spatial Planning (MSP) has also been referred to as;

- Maritime Spatial Planning (term used in the EU)
- Marine Planning
- Marine Spatial Management

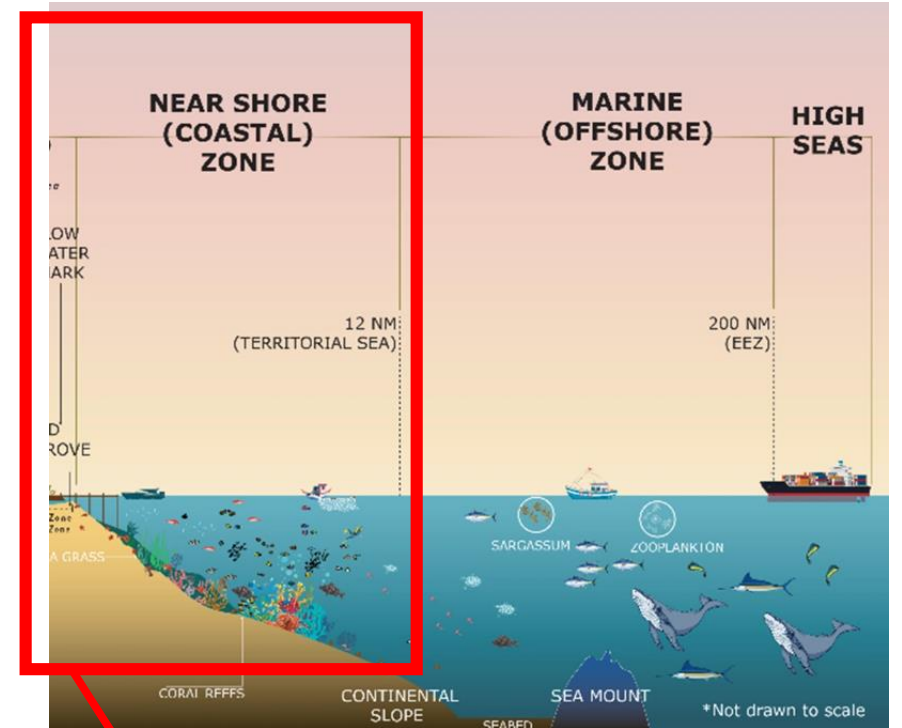
All above refer to Marine Spatial Planning

### Marine Spatial Planning also includes the coastal zone..

While this is debatable (as the coastal zone also has numerous definitions and undefined boundaries), it is proposed to use the definition accepted by the European Environmental Agency;

*‘the part of the land affected by its proximity to the sea, and that part of the sea affected by its proximity to the land as the extent to which man's land-based activities have a measurable influence on water chemistry and marine ecology’.*

(US Commission on Marine Science, Engineering and Resources, 1969)



This lecture focuses on the coastal zone

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## The importance of the Coastal Zone

Coastal zones occupy the interface between marine and terrestrial areas and they have been described as '*highly diverse and truly unique multifunctional natural areas that are critical habitats for endangered species* (O'Connor, M. C. et al, 2009, p. 923) which provide *significant ecosystem services* (Ramesh, R et al, 2015, p. 85 – 86)'. While the environmental sensitivity and crucial ecological role of coastlines is now recognised, pressures on them are both intense and growing due to;

- Expanding human populations (*they accommodate more than 60% of the worlds population* (O'Connor, M. C. et al, 2009, p. 923)
- Numerous and diverse economic activities on the landward side

They also face pressures from the seaward side due to climate induced changes such as sea level rise, higher sea temperatures and more frequent and intense weather events on the seaward side (ibid, p. 85 – 86).



## Impact chains on fragile coastal areas....

As coastal seas function as a sediment and nutrient sink for the land, attention is needed on the diverse **impact chains** arising on land that generate negative impacts on water quality and habitat integrity of the marine environment – thereby undermining its ecological health. Thus, managing land sea interactions is a key part of MSP.

The intense pressures that coastal areas face combined with (what have traditionally been) ineffective management systems has led commentators to conclude that coastal zones are *‘arguably the most transformed and imperilled social ecological system on earth (which) are characterised by pervasive unsustainable practices’* (Ramesh, 2014, p. 86). Therefore, good effective governance systems are needed for them but designing these systems is challenging – mainly due to the fact that the management systems for sustainable ocean and coastal governance must have the capacity to deal with the ‘interconnectedness’ of land and sea to ensure that land sea interactions can be controlled.





## Managing Land Sea Connections...

According to Kidd et al, particular attention is needed on managing the diverse 'impact chains' that frequently arise on land and go on to generate negative impacts on the ecological health of the marine and coastal environment (Kidd et al, 2017, page 253).

EU Member States who are committed to achieving Good Environmental Status under the Marine Strategy Framework Directive (MSFD) have acknowledged the problems with managing LSI and there's an appreciation that effective governance systems are needed. But the limited experience on coastal governance in the EU and elsewhere (when compared to land-based \ terrestrial areas) represents a barrier. MSFD implementation has brought this issue into sharp focus and as there is a diversity of terrestrial and marine planning systems throughout the EU, how land sea interactions are handled in the marine and coastal management regimes in European Countries was undertaken as part of the Ocean and Coastal Governance COST (Research) Network between 2016 and 2020.

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# COST Network - Exploring different coastal governance systems



With representatives from all EU Member States, the researchers in the Cost Network were well placed to investigate how different EU countries were approaching and dealing with the issues surrounding coastal and marine governance. The research work undertaken revealed some interesting findings;

- All EU members states faced similar problems (such as fragmentation of marine responsibilities), Integrated Coastal Zone Management (ICZM) approaches were popular and the countries who adopted ICZM approaches in 2002 are now furthest ahead (such as France, Spain and Germany) as their governance systems have been evolving and progressing.
- A 2 speed Europe (for MSP) is emerging with some countries leading the way by preparing area based plans (backed up by comprehensive data sets) while others remain further behind with high (national) level aspirational plans that are difficult to implement.

The research also revealed a best practice case study on how to effectively manage LSI - in the Thau Lagoon in France



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## Best Practice Case Study of Managing LSI is from the Thau Lagoon in South Western France

**Area Profile;** The Thau Lagoon is located on the Mediterranean close to Montpellier in France. The case study considers coastal and marine governance at a sub national level (i.e. at a local level) in the Thau Lagoon in Languedoc-Roussillon region. The coastal marine area is a stream-fed semi enclosed karstic lagoon that is connected to the Mediterranean Sea by two small inlets.

There are a range of economic activities that place both in the lagoon (oyster farming and fishing) and the area surrounding the lagoon (particularly agricultural activities such as viticulture (grape cultivation), horticulture and livestock farming) while tourism also has an influence. Urbanization of the surrounding area is also understood to have an increasingly negative impact on the environmental quality of the lagoon and it believed to be substituting agricultural pressures from the area.



Source; Googlemaps

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## What were the challenges in the Thau Lagoon?

There were a range of challenges in the Thau Lagoon. The problem that focussed all stakeholders attention was the worrying quality of the lagoon waters. It was believed that nutrient rich surface water and ground water arising on the land was being discharged into the lagoon where the natural conditions (particularly its enclosed nature which reduced the dilution effect from the surrounding waters) led to elevated levels of nutrients. The nitrate rich waters then posed a threat to oyster farming – which was a traditional (and important) lagoon activity. Higher nitrate levels also threatened other functions such as fishing and tourism. There was also a fear that the usability of the beach (and its use by tourists and surrounding residents) could be threatened by declining water quality.



Source; <https://www.smbt.fr/>

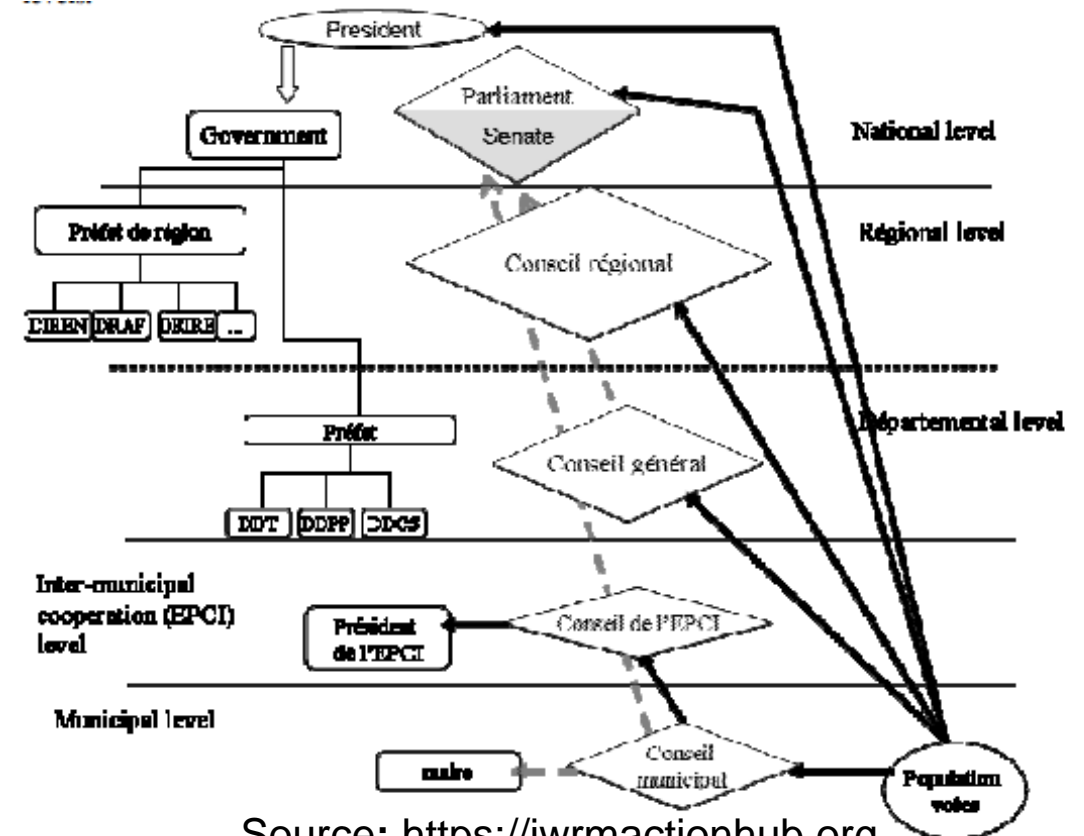
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## The Governance Structure in the Thau Lagoon and Surrounding Region

The governance structure in the Thau Lagoon and the surrounding region is hierarchial, comprehensive and multi scalar with stakeholders at all levels - from community organisations at the bottom, to local municipalities in the centre and regional and state / national bodies at the top. However, these governance arrangements led to responsibilities for key issues (such as water quality) being spread across many organisations and stakeholders. To complicate matters further, different government departments, municipal authorities and other organisations all used different mechanisms to monitor and deliver on key environmental criteria. This feature of governance had led to fragmented responsibilities which were being discharged without integration and common purpose. Not surprisingly, optimum governance outcomes (such as better environmental quality) were not being delivered.

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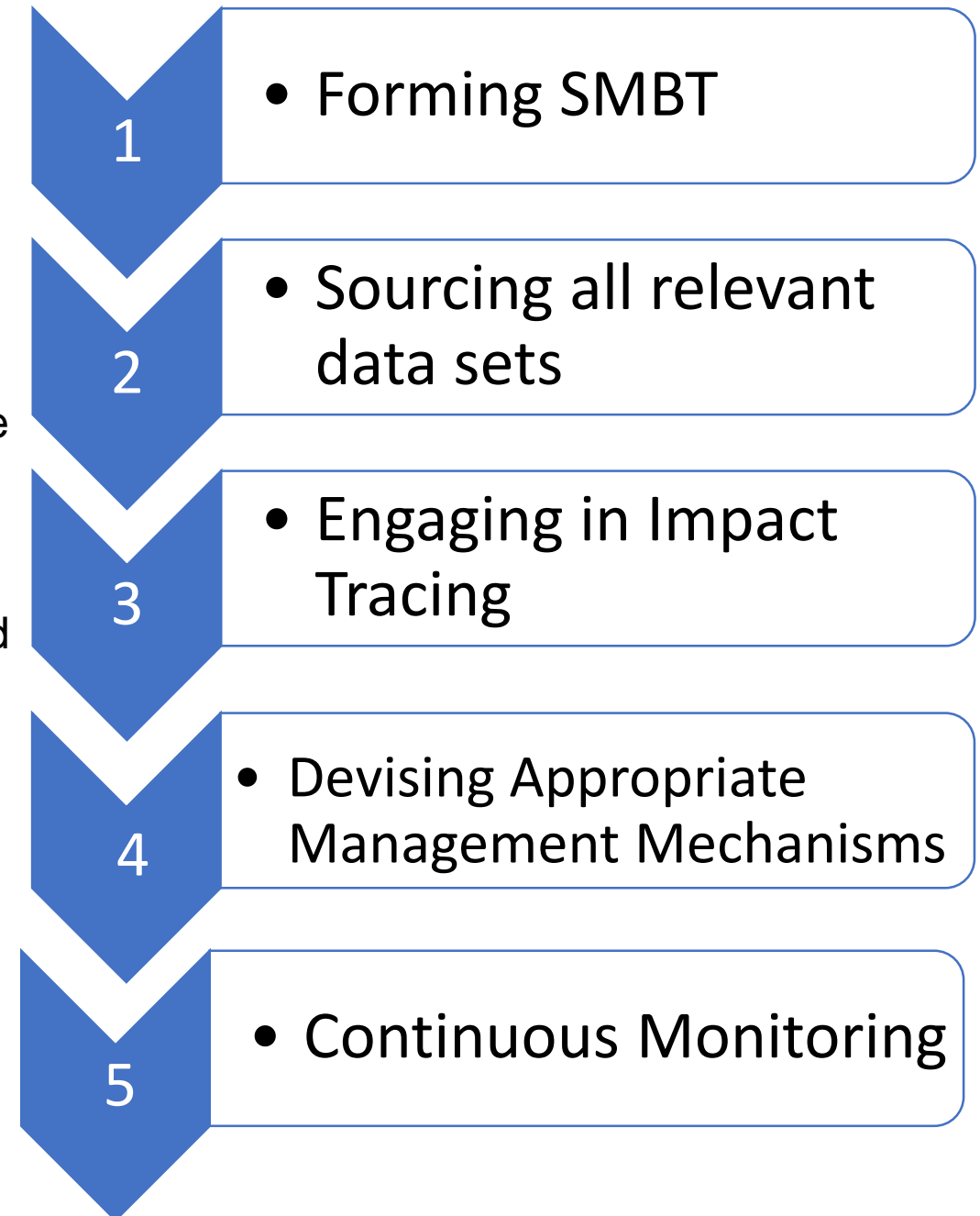
Source; <https://iwrmapactionhub.org>

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## So what did they do? 5 step process..

The approach is described as innovative. They set up a brokerage agency called the SMBT (Syndicate Mixte du Bassin de Thau) whose job was to devise coastal and marine environmental management solutions for the lagoon and to ensure that all of the stakeholders with governance responsibilities adopted an integrated approach to managing the lagoon. The process followed by SMBT can be divided into 5 steps (shown in diagram) with each step is considered in turn.

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# 1

## • Forming SMBT

As the new government agency was set up to design and implement the new management process, it had a number of features that enabled it to complete each of the tasks in the 5 step process.

- Firstly; the employees of the agency had a wide breadth of management experience – in order to enable them to understand the existing environmental management process in the Thau Lagoon and adjoining region.
- Secondly, a high proportion of the staff had technical (rather than administrative qualifications) – and many technical staff had decision making roles.
- Thirdly, the agency was multi-disciplinary – with a wide range of highly skilled (PhD) level staff members. This meant that SMBT was comfortable with data.



<https://www.smbt.fr/>

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## • Sourcing Relevant Data Sets

A key function of the new Agency was to ensure that better environmental outcomes could be achieved to enable all coastal and marine activities (such as oyster farming) to be undertaken in the lagoon. As a result, extensive data sets on key environmental indicators such as water quality, soil composition, fish / shell fish stocks, etc all had to be gathered from the lagoon.

In addition, data sets on the major influences on the environmental indicators were also necessary. As a result, all land uses in the watershed (i.e. the basin that surrounds and adjoins the lagoon) had to be recorded and mapped (such as agriculture and viticulture). In addition, all of the inputs that were used in the land (fertiliser, pesticides, etc) needed to be identified. The end result of this was – one of the most studied areas in France!

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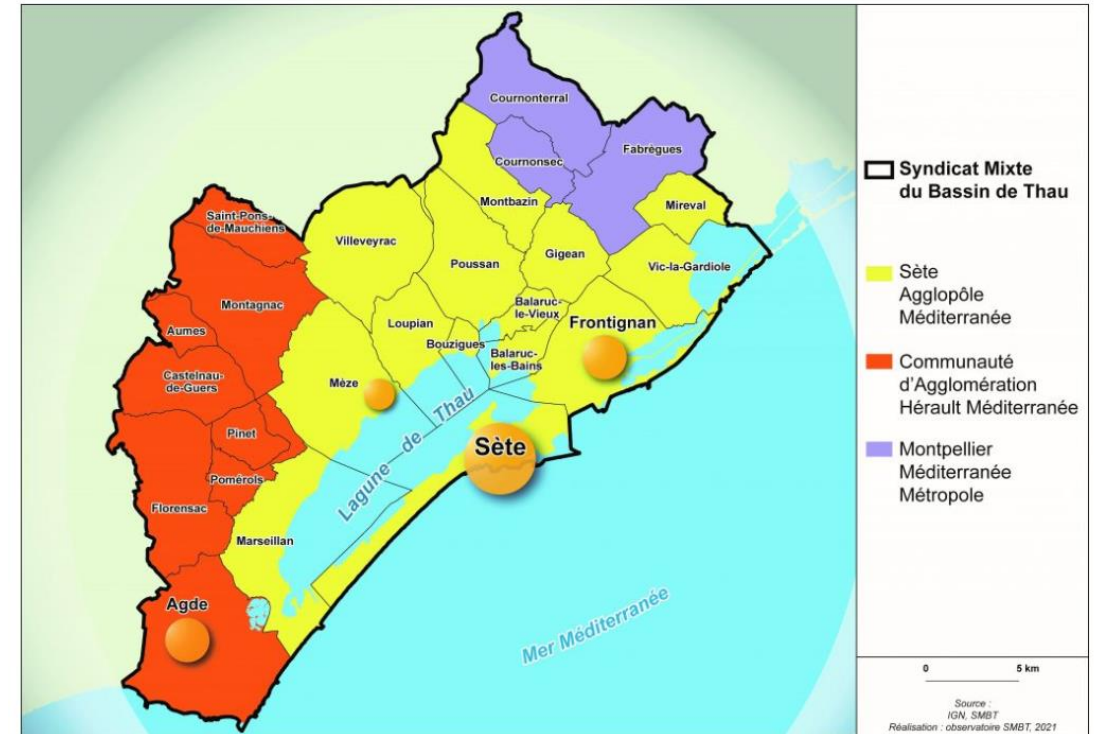
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## • Engaging in Impact Tracing

Once the collection of data sets was completed, it was possible to trace the impact chains – in other words to identify the sources of the nutrients that were leading to higher nitrate loads in the lagoon. This step would not have been possible without compiling the data sets in step 2.

This step also involved SMBT staff members adopting ‘a participatory management approach’ which involved meeting farmers, wine growers and other land users in the adjoining areas in order to find out how land was being used (which then influenced the choice of environmental indicators in the lagoon). The purpose of this step was to establish the land use management process so that appropriate management solutions could be agreed.



The Syndicat mixte du bassin de Thau can intervene in all the communes of the watersheds\* of Thau and Ingril. Namely: Agde, Aumes, Balaruc-le-Vieux, Balaruc-les-Bains, Bouzigues, Castelnaud-de-Guers, Courmonsec, Courmonterral, Fabrigues, Florensac, Frontignan, Gigan, Loupian, Marseillan, Méze, Mireval, Montbazin, Pinet, Pomérols, Poussan, Saint-Pons-de-Mauchien, Sète, Vic-la-Gardiole, Villeveyrac.

Source; <https://www.smbt.fr/>

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- **Devising Appropriate Management Mechanisms**

An area based action strategy (with multiple layers) was drawn up which provided maps of the basin adjacent to the lagoon and it indicated the land uses that took place in it. Management approaches for managing the land uses (which included issues like agreeing time intervals during which fertilisers / pesticides could be added to lands (and what type of fertilisers / pesticides) as they was seen as a key determinant of the water quality in the lagoon.



Source; <https://www.smbt.fr/>

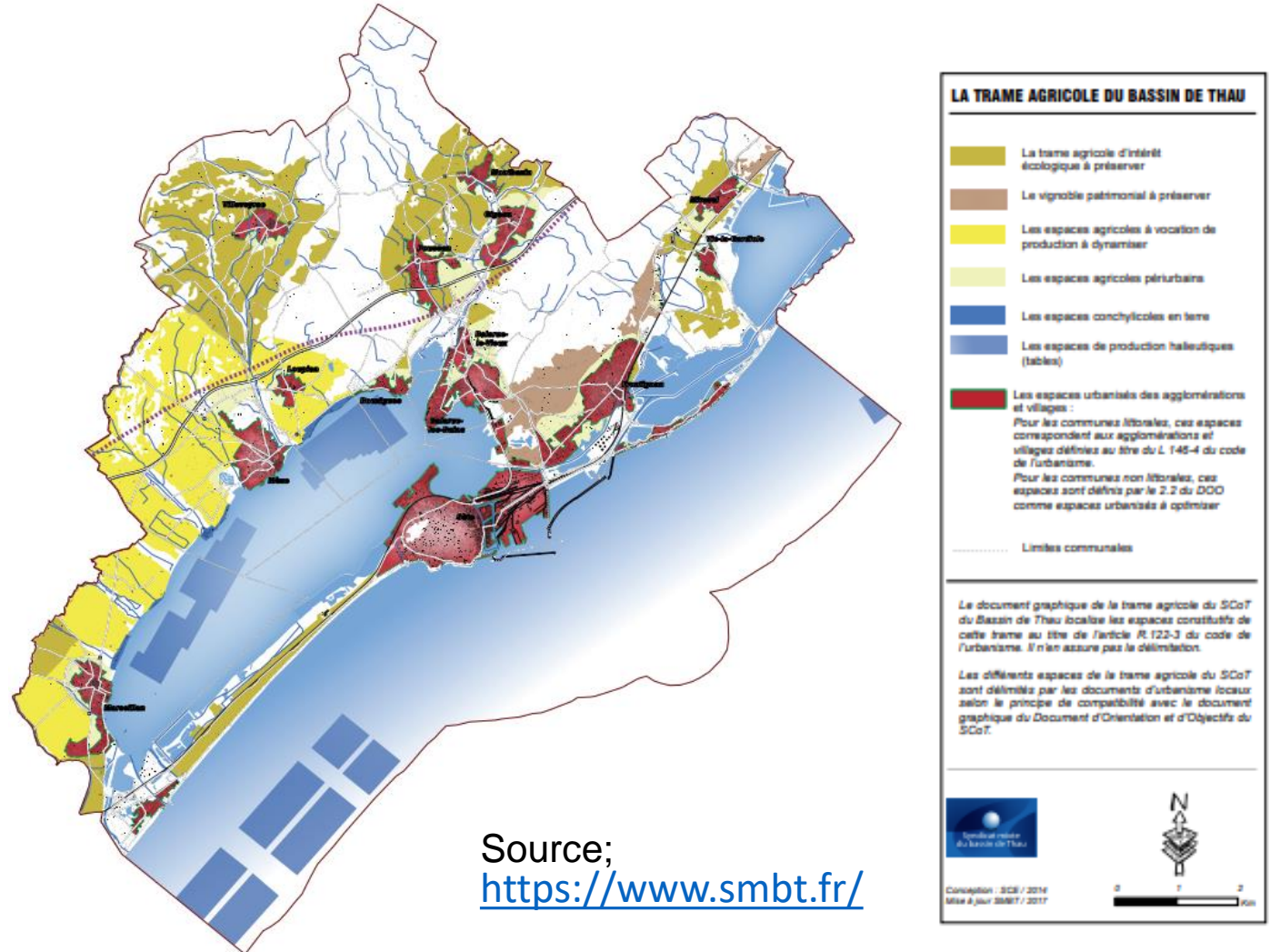
In addition to prescribing the land management approaches, agreements called Integrated Management Contracts ('Contrat de Gestion Intégrée') was signed with stakeholders while terms of use were agreed with respect to water management in the basin. Therefore, very significant controls were put in place to ensure appropriate land management practices.



## • Devising Appropriate Management Mechanisms (Cont'd)

The highly specific local data sets that had been gathered enabled performance criteria to be developed which set out prescribed standards for key environmental indicators at specific times of the year – this was particularly important for water quality. As the water quality was known (and the major influences on it has been established), it was now possible to continuously monitor the water (and other environmental indicators) to ensure consistent standards.

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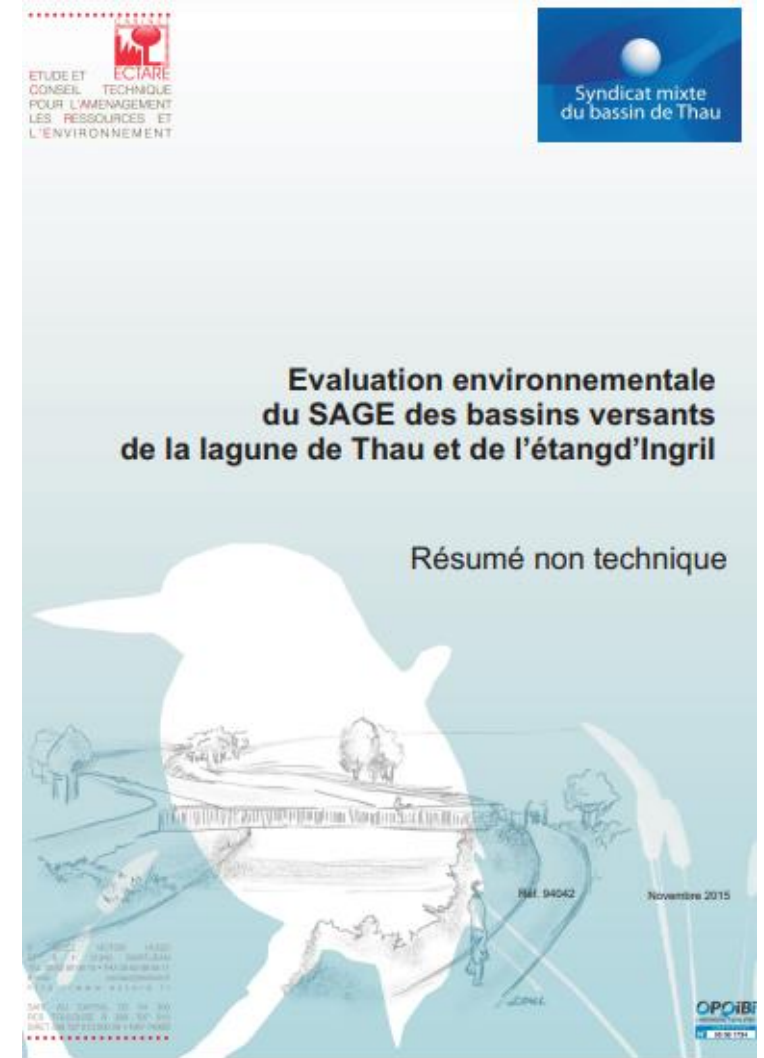
## • Continuous Monitoring

The SMBT adopted a participatory approach to management centred around;

- An area based action plan
- An integrated Management Contract
- Performance criteria for key environmental indicators

They ensured that all of the governance actors and stakeholders in land and lagoon management understood their roles and responsibilities in the governance system. It is important to note that all stakeholders were given management roles – including the voluntary / representative groups (such as the oyster farmers) who had a role in monitoring water quality (known as co-management of the marine resource).

This is consistent with a participatory management approach – and it perhaps explains why the SMBT did not engage in reform or streamlining, which may have threatened some of the stakeholders.



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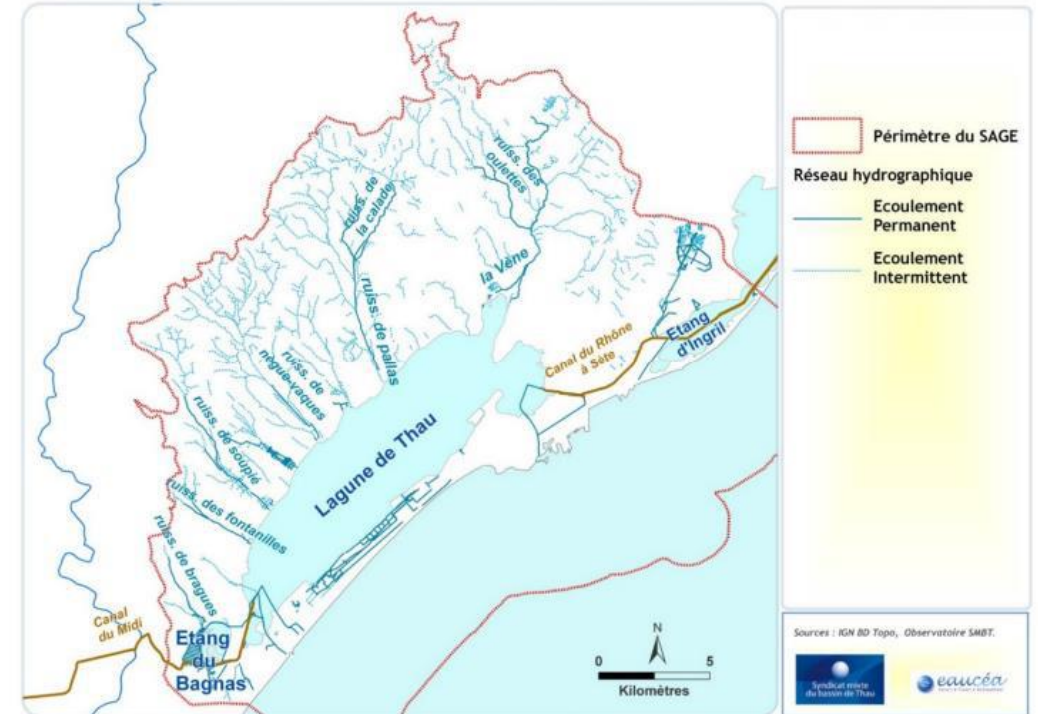
## What were the Outcomes?

The indepth and integrated management process is understood to have led to an improvement in key environmental indicators in the Thau Lagoon and enabled the many activities in the area to continue without creating harm to the marine resource.

In addition, the approach adopted by the SMBT was deemed to be very successful and the organisation was considered to be very effective in carrying out its tasks. In the recent past, SMBT was allocated new (additional) functions such as flood and biodiversity management – as both of these issues were believed to be suited to the SMBT approach.

## Negatives & Positives of the Thau Approach

There is no doubt that the approach has its drawbacks – such as;



Source: <https://www.smbt.fr/>

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## Negatives (Cont'd)

The approach requires huge resources in terms of;

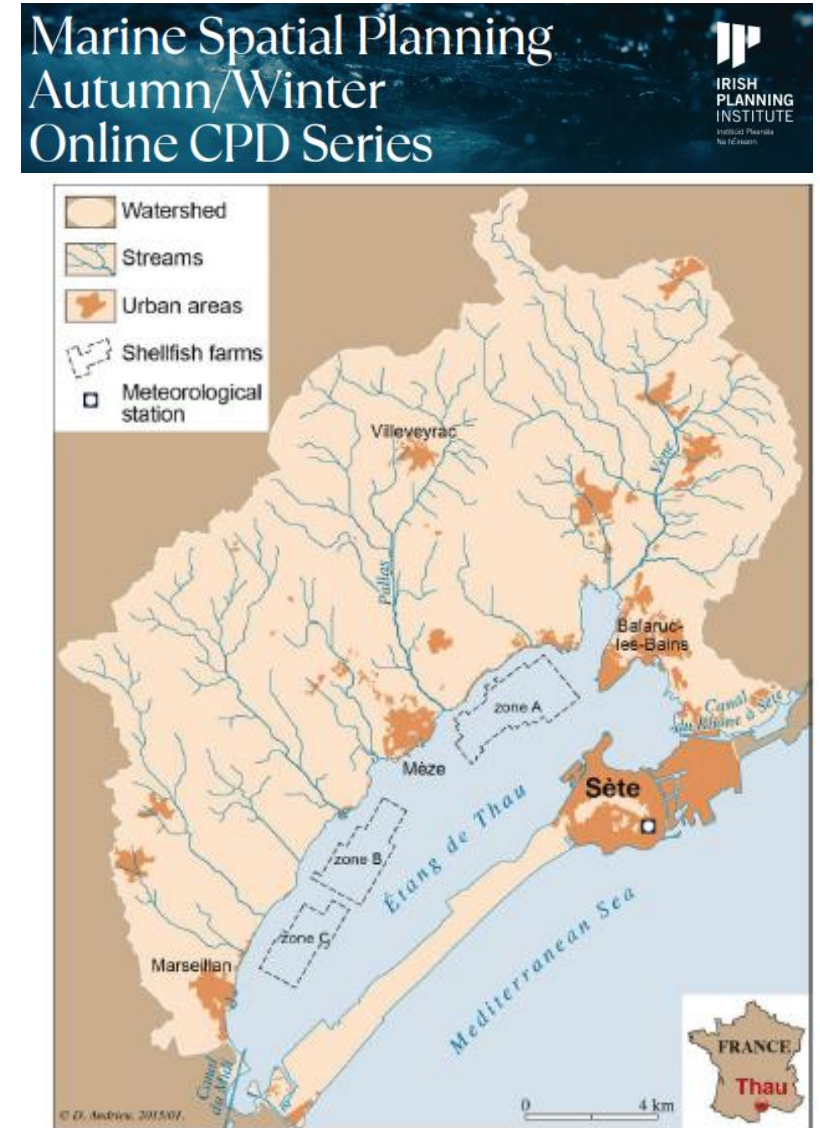
- The highly skilled, multi disciplinary staff complement
- Its reliance on extensive (and locally specific) data sets on key environmental indicators
- Its requirement for labour intensive participatory management approaches
- The need for continuous monitoring (and the resources to undertaken this)

The above requirements may mean that the approach is not suitable (or could not be justified) for all areas but it may be an option in areas that require higher levels of monitoring.

## Positives?

It worked! It provides one of the few examples of where a management approach to a marine / coastal area has delivered improvements to the marine environment. It was also recognised in the COST network as a best practice example.

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Source; HAL Id: hal-01244258  
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