



# **Addressing conflicting spatial demands in MSP**

Considerations for MSP planners

Final Technical Study

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# EXECUTIVE SUMMARY

This report presents the key findings of a study that was carried out in 2018 to explore the range of spatial conflicts experienced in MSP in Europe. The aim was to provide an overview of common types of spatial conflicts and solutions that have been found in various EU Member States, with particular focus on spatial conflict prevention and mitigation. This report looks at the different conflict potential of sectors, conflicting issues and stakeholder contexts, as well as different types of solutions and conditions for applying them.

The study drew on conflicts described in the literature (e.g. past MSP projects) and input from planners and experts describing real-life examples of spatial conflicts. Its focus was on single cross-sectoral conflicts, bearing in mind that the term “conflict” may be contentious and that the respective sectors are not always in spatial conflict with each other. Various conflict cases between offshore wind farming, commercial fisheries, area-based maritime conservation, aquaculture, maritime tourism, maritime transport, defence, and cables and pipelines were identified for detailed consideration, either as likely to play a greater role in the future or to be faced by most countries at some stage of MSP. Detailed results are presented in nine conflict fiches available on [www-msp-platform.eu](http://www-msp-platform.eu).

## **Sectors have different conflict potential**

All of the sectors analysed in the study are forecast to grow, placing increasing pressure on marine space. At the same time, sectors use marine space differently. “Hard” sectors are those requiring fixed infrastructure in the sea; they tend to be in place for a long time, expensive to install and difficult to move. “Soft” sectors tend to be more mobile and fleeting. Spatial conflict prevention is particularly important in the case of “hard” uses as changing a situation after the fact is usually difficult.

While all sectors look for ideal locations for their activities, some are more constrained in their choices than others. Sectors also differ with respect to their political and socio-economic importance, with nearshore conflicts often involving local communities and different stakeholders than offshore conflicts. Early knowledge of locational needs and constraints, as well as the stakeholders involved, can point to limits of spatial adaptability and potential restrictions on workable solutions (e.g. it may not be possible to spatially separate two activities, so co-location solutions need to be found).

## **Specifying the conflicting issue(s)**

Spatial conflicts arise from direct competition over limited space (two sectors interested in the same location) or one sector negatively impacting on the other, which may or may not be in the same location. A compatibility matrix is a useful tool to provide a first indication of spatial management needs.

The spatial conflict potential of sectors can vary significantly, depending on the activities involved and which sector or activity is at the receiving end. The impacts of sectors on each other are not symmetrical: One may significantly affect the other but not vice versa; the issues may be different for the two sides (e.g. safety issues for one, access issues for the other), and the impacts may be considered more or less severe. This means there are different levels of risk and urgencies associated with conflicting issues (e.g. one sector requiring immediate action). Specifying the conflicting issues as precisely as possible and mapping out the respective context (levels of risk, stakeholder needs) is therefore essential in working towards a solution.

Suitable means must then be found to successfully address each conflicting issue. These will also depend on the spatial scale of the conflict (national vs. transnational). Short of deciding not to go ahead with an activity, no single management measure can tackle every conflicting issue. While some conflicting issues can be addressed by spatial

management measures, others – in particular those affecting the environment – may require additional non-spatial solutions.

### **Dealing with spatial conflicts at different stages of MSP**

Spatial conflict resolution is an issue for all maritime countries, irrespective of where they are in the MSP cycle. During the planning stage, the task is to set out strategic choices for the sea. Here, MSP must prevent conflicts between sectors already present in the sea, and plan ahead for those that might arise through new and emerging blue sectors. Spatial conflict resolution during the planning phase is mostly anticipatory. Strategic choices (prioritising uses) create a certain degree of path dependency and can be difficult to revoke, even when political priorities change. This makes conflict anticipation and the negotiation of acceptable solutions all the more important at this stage.

The implementation phase then plays within these strategic rules. Ideally, fundamental choices will now have been made (e.g. separating two activities spatially), but spatial conflicts can still arise at the project level. Some solutions may therefore merely soften a particular situation rather than fully resolve a spatial issue. These solutions do not question that an activity can take place, but might curtail it slightly to accommodate another use (e.g. altering the configuration of a wind farm to leave room for a transport corridor).

### **Prevention and mitigation as fundamental options**

There are two basic options for addressing spatial conflicts in MSP: Conflict prevention is action that seeks to avert spatial competition, usually by ensuring that incompatible activities do not occur in the same space or negatively affect each other. Conflict mitigation is action that seeks to soften the impacts of spatial competition, e.g. by means of compensatory measures negotiated between the sectors affected. While conflict prevention requires a degree of foresight, mitigation becomes relevant for unavoidable conflicts – e.g. because siting decisions have already been taken. Learning from mitigation can pave the way for future prevention, and some solutions can be preventative, mitigating or corrective depending on the circumstances and how they are applied.

### **Spatial and non-spatial MSP solutions**

Conflicting issues may require different types of MSP solutions, not all of which may be spatial. Spatial MSP solutions are understood as regulatory solutions (such as zoning) that are put forward as part of an MSP plan. Non-spatial MSP solutions are those that may be negotiated as part of an MSP process (which may lead to a spatial regulation in the future).

### **MSP and non-MSP solutions**

Another distinction is made between MSP solutions and non-MSP solutions. The former are those that are in the hands of planners, i.e. within the statutory remit of the MSP authority. They commonly include forms of spatial management, but preparatory and anticipatory action such as spatial analysis can also be an MSP-based solution. Non-MSP solutions are those that might be negotiated as part of the MSP process, but which are not for planners to implement. Other bodies (authorities, ministries, international organisations) will usually be required in support to ensure such solutions are implemented.

MSP and non-MSP solutions, as well as spatial and non-spatial solutions, can be preventative or mitigating: Compensation schemes (financial, spatial, benefits to local communities) are typical non-spatial mitigating solutions; minimum distances, zoning schemes or corridors are typical preventative spatial solutions, and design guides are typical non-MSP mitigating solutions, to name but a few.

Some preventative solutions such as information gathering, generic zoning solutions, or non-spatial solutions such as strategic monitoring can be applied in a wide range of spatial conflicts. Differences mostly arise when the conflicting issues are very specific, or where particular technical solutions can come into play. Each solution also comes with specific advantages and disadvantages, such as being directly in the hands of planners, or being expensive or time-consuming. Examples of various types of solutions applied and conflict stories are provided in the conflict fiches.

### **Definitions of success**

Even when adequately addressed, conflicts can recur or re-surface due to changing circumstances. Conflicts may therefore never be fully "resolved". A definition of success is whether the solution is acceptable to the stakeholders involved, meaning further escalation is avoided. This in turn depends on stakeholder involvement, and acceptance of the available knowledge base and levels of uncertainty. Some solutions are not universal in that they work well in one particular case, but not necessarily in another. This particularly applies to mitigation at the local level, or measures such as voluntary agreements.

### **Is there a universal solution?**

The study makes clear there are no simple or universal solutions for addressing spatial conflicts in MSP. Sectors, their activities, and settings are diverse, and so are the resulting conflicts and solutions, although large-scale, hard and fixed uses are generally more likely to trigger spatial conflicts than the more fleeting soft uses.

EU Member States have found a wide range of solutions to deal with acute or projected spatial conflicts. These depend on the stage of the MSP process, the sectors involved, the resources and time available, the technical maturity of the sectors involved, the presence/absence of escalation factors, and the spatial scale of conflict. Addressing spatial conflicts, much like MSP itself, is ultimately a cyclical endeavour and a learning process, where lessons from one country can be applied in another but where much depends on the specific situation and conflict perception.

# 1. BACKGROUND

The ability to deal with conflicts of use constructively and effectively is a key requirement for successful maritime spatial planning (MSP). As a forward-looking and strategic process of managing human activities in the marine environment, MSP must address conflicts in a proactive and ideally pre-emptive way, avoiding blockages in the MSP process and fostering coexistence and synergies between different marine users. Finding acceptable solutions to spatial conflicts is therefore an essential part of the MSP process.

Spatial allocation is a central tool for MSP in addressing conflicts of use. It can encourage or restrict certain activities in certain areas, or actively promote synergies between spatial uses, e.g. by allocating priority areas, enabling co-use or pointing to future 'development areas' in sea space<sup>1</sup>. At the same time, the MSP process as such plays an important role in dealing with conflicts, initially by identifying issues and bringing them to the table and then by jointly working towards a solution. The MSP process is also essential for identifying and recommending additional, supporting measures that could help resolve a conflict but are outside the remit of planners - such as technical measures, or measures related to licensing.

This report presents a study that was carried out in 2018 to explore the range of spatial conflicts experienced in MSP. Focusing on European seas, and conceived against the background of implementing the EU's Maritime Spatial Planning Directive, the study was built on two basic premises:

- a) The purpose of MSP is to allocate marine space in an anticipatory manner. A plan sets future priorities for maritime space for both existing and potential future uses, meaning conflicts are no longer resolved case by case, but prevented by means of a strategic solution encapsulated in the MSP plan.
- b) MSP never starts with a blank canvas. Especially first MSP plans must deal with legacy effects such as existing licenses, which may prevent strategic solutions to be implemented at every location. Solutions therefore need to be found that mitigate such 'legacy conflicts'.

The study drew on conflicts described in the literature (e.g. past MSP projects) and input from planners and experts describing real-life examples of conflicts that have occurred in statutory MSP processes or have been identified within MSP projects in Europe. It should be made clear that the study was not a 'count' of conflicts, or a comprehensive analysis of the many types of non-spatial conflict that can arise in MSP. Nor does it imply that sectors are always in conflict with each other, or that conflicts always escalate. The study also recognised that 'conflict' can be a difficult term because of its negative connotations; alternative terms in common use include disagreements or incompatibilities. Conflicts can even be considered opportunities - an opportunity for defining synergies or options for co-location for example.

Although spatial conflicts rarely occur in isolation, the study focused on cross-sectoral maritime conflicts rather than multiple or cumulative conflicts such as conflicts between several sectors. It essentially considers eight sectors that are variously in conflict with each other (Table 1). These conflicts were considered particularly relevant by the Member State Expert Group for Maritime Spatial Planning<sup>2</sup> as likely to play a greater role in the future or to be faced by most countries at some stage of MSP<sup>3</sup>.

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<sup>1</sup> See Zaucha, J. (2019) Can we apply classical location theory to sea space? In: Maritime Spatial Planning – past, present, future, ed. Jacek Zaucha and Kira Gee. Springer, 2019.

<sup>2</sup> This is a sub-group of the MSEG for Integrated Maritime Policy (IMP). The MSEG MSP meets regularly to discuss issues related to the implementation of the EU's MSP Directive.

<sup>3</sup> Nine conflict fiches describe the selected conflicts in more detail and offer practical solutions. They can be downloaded from [www.msp-platform.eu/sectors](http://www.msp-platform.eu/sectors)

Table 1: Cross-sectoral spatial conflicts considered

	Maritime tourism	Offshore wind	Cables and pipelines	Defence*	Maritime transport	Commercial fisheries	Aquaculture	Area-based marine conservation
Maritime tourism		x					x	
Offshore wind	x				x			x
Cables and pipelines					x	x		
Defence*								
Maritime transport		x	x					x
Commercial fisheries			x					x
Aquaculture	x							
Area-based marine conservation					x	x		

\* Defence was considered at a general level and not specifically in relation to any other sector

## 2. THIS REPORT

This report presents the key findings of the study with a view to future MSP planning. It should be read as a hands-on guide that provides an overview of common types of spatial conflicts and solutions that have been found in various Member States, with particular focus on spatial conflict prevention and mitigation.

The report was developed based on 52 specific conflicts identified in the literature, 37 of which were subsequently studied in greater depth by means of 29 interviews with planners and experts. 27 specific experiences were translated into “conflict stories” describing either a conflict in greater detail or how it was resolved. Please see the nine conflict fiches developed as part of this study, available at [www.msp-platform.eu/sectors](http://www.msp-platform.eu/sectors).

As the report concerns the European Union, it addresses all Member States, including those that are not currently experiencing any acute conflicts in maritime space. As MSP is about allocating space for future developments, such conflicts often only emerge during the preparation of an MSP plan - a process many countries have only recently embarked on. It may also be useful in situations where MSP is driven less by conflict, but by the desire to pro-actively develop and use maritime space in a balanced and sustainable way.

The structure of the report is as follows:

- Section 3 considers the conflict potential of sectors and drivers of conflict.
- Section 4 considers how sectors can be in conflict and what this implies for conflict resolution.
- Section 5 deals with the role of stakeholders and power relations in the conflicts.

- Section 6 outlines escalation factors for conflicts.
- Section 7 considers conflict prevention and mitigation. This outlines the specific role of MSP in resolving different types of spatial conflicts, and the role of other tools that can or need to act in support in order to achieve the desired outcomes.

## 3. THE CONFLICT POTENTIAL OF SECTORS

### 3.1 Maritime sectors are forecast to grow

The maritime sectors currently utilising marine space in Europe are diverse, ranging from global international sectors (such as maritime transport) to more regional sectors (such as aquaculture and maritime tourism). Sectors are more or less developed in different countries and of varying importance to national and regional economies. While offshore wind farming is a highly developed and important sector in North Sea countries, for example, it is only beginning to gain ground in the Mediterranean. Aquaculture is an important sector in the Mediterranean but less prominent in the North Sea and Baltic. Coastal tourism is a significant sector in all countries but is particularly important in contributing to the local economy in the Mediterranean. Defence is of growing importance in all regions.

All of the eight sectors listed above are set to expand in response to policy targets or economic opportunities (see Box 1). These growing demands will need to be accommodated by MSP. The scarcer space becomes, the more it will act as a driver of conflict.

→ MSP will increasingly need to push for conflict mitigation through co-location.

#### Box 1: Current growth forecasts for selected maritime sectors

##### Offshore Wind

By 2020, offshore wind in Europe is projected to grow to a total installed capacity of 25 GW. It is estimated that ocean energy could reach an installed capacity of 100 GW and meet 10 % of EU demand for power by 2050<sup>4</sup>.

##### Aquaculture

The total volume of fish and shellfish produced in aquaculture in the EU is predicted to rise by 56 percent to 772,000 MT, from 2010 to 2030. For coldwater marine species, production is predicted to more than double by 2030. This equates to an average 4 percent growth per year over the period.<sup>5</sup>

##### Coastal and Maritime Tourism

Coastal tourism accounted for 40 % of the gross value added, 61 % of the jobs and 42 % of the profits of the total EU blue economy in 2016 and is expected to grow by 2-3% by 2020<sup>6</sup>.

##### Maritime transport

Figures indicate annual growth. The sector is responsible for over 80% of the world trade<sup>7</sup>; within the EU, 74% of goods enter or leave by sea<sup>8</sup>. The maritime transport sector directly employs 640.000 people and has a direct gross value added contribution to GDP of €57 billion<sup>9</sup>.

##### Fisheries

Fewer ships are now operational than a decade ago, but ships have also become more efficient<sup>10</sup>. Possibly due to healthier stocks, the EU fleet is currently showing improved gross profit and net profit margins<sup>11</sup>.

4 EU 2018: The 2018 annual economic report on the EU blue economy. Available at <https://publications.europa.eu/en/publication-detail/-/publication/79299d10-8a35-11e8-ac6a-01aa75ed71a1>

5 EU 2014: COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Strategic Guidelines for the sustainable development of EU aquaculture /\* COM/2013/0229 final, download from <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1477555805378&uri=CELEX:52013DC0229>

6 EU 2018: The 2018 annual economic report on the EU blue economy. Available at <https://publications.europa.eu/en/publication-detail/-/publication/79299d10-8a35-11e8-ac6a-01aa75ed71a1>

7 UNCTAD. (2017). United Nations Conference on Trade and Development . Retrieved from Review of Maritime Transport 2015: [http://unctad.org/en/PublicationsLibrary/rmt2017\\_en.pdf](http://unctad.org/en/PublicationsLibrary/rmt2017_en.pdf).

8 EU 2018: The 2018 annual economic report on the EU blue economy. Available at <https://publications.europa.eu/en/publication-detail/-/publication/79299d10-8a35-11e8-ac6a-01aa75ed71a1>

9 Oxford Economics, 2017: The economic value of the EU shipping industry, 2017 update. A report for the European Community Shipowners' Associations (ECSA). [https://www.ecsa.eu/images/NEW\\_Position\\_Papers/2017-02-27-Oxford-Economics-Update-2017---FINAL.pdf](https://www.ecsa.eu/images/NEW_Position_Papers/2017-02-27-Oxford-Economics-Update-2017---FINAL.pdf)

### **Area-based marine conservation**

Unlike the other maritime sectors, area-based marine conservation is not driven by economic gain; nonetheless it is an important priority in MSP that is growing in importance (e.g. in the face of climate change).

### **Defence**

Defence is also not driven by economic gain; it is still a strategic sector that is increasingly important nationally and internationally.

### **3.2 Maritime sectors use space in different ways**

“Hard” and “soft”, or “fixed” and “fleeting” are typical ways of differentiating between the sectors. Hard sectors are those requiring fixed infrastructure in the sea, such as oil platforms, aquaculture installations or offshore wind farms. Structures such as these tend to be in place for a long time; they are expensive to install and once they have been established they cannot easily be moved. Among the hard uses, offshore wind farming is a special case because it requires exceptionally large areas and is most capital intensive. Aquaculture installations are growing in size and can also take up considerable areas.

Soft sectors are those that do not use fixed infrastructure, such as tourism and fishing; they tend to be more fleeting and less fixed in terms of space. Fishing is probably the most fleeting use of all in that it needs to respond to changing environmental conditions and a mobile resource; it therefore mostly takes place relatively freely across large areas. Shipping is another fleeting use, although it is more linear than fishing and regulated spatially by means of shipping lanes. Tourism is best described as in-between, in that it is fleeting but place-bound in the sense of preferred tourist destinations. Once again, defence plays a special role as it relies on both hard infrastructure and fleeting use of the sea; there are added requirements (such as underwater uses) that are not immediately apparent.

Hard uses tend to be more capital-intensive and industrial, while soft uses are often undertaken at a smaller scale in coastal or nearshore areas.

- Differentiating between types of use is important in terms of planning ahead: Once hard infrastructure is in place, this is difficult to change in response to a spatial conflict. Preventative measures are therefore particularly important in such cases, especially when competing uses are also finding it difficult to adapt.

### **3.3 Sectors look for ideal locations**

Irrespective of whether they are hard and fixed or soft and fleeting, sectors usually look for ideal sites that offer the best conditions for the respective activity. Preferred locations usually result from a combination of environmental, economic and technological factors; these can include the availability of a key resource, physical aspects such as suitable water depth, or distance to the shore. For linear uses such as shipping or cables, economic efficiency usually means using the shortest route between two points. Offshore wind farming generally prefers shallow banks as a location and used to prefer sites nearer the shore; offshore sites have now become more feasible although they are still more expensive. Aquaculture requires sheltered conditions nearer the coast, and maritime tourism depends on clean water and attractive surroundings.

Sectors are more or less constrained in their locational choices. Those that depend on specific and/or rare environments are most constrained, which is most often the case for marine habitat or species conservation. Others may be more flexible with respect to their operational environment, but are constrained because of technology (such as aquaculture

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10 EU 2018: The 2018 annual economic report on the EU blue economy. Available at <https://publications.europa.eu/en/publication-detail/-/publication/79299d10-8a35-11e8-ac6a-01aa75ed71a1>

11 EU 2018: The 2018 annual economic report on the EU blue economy. Available at <https://publications.europa.eu/en/publication-detail/-/publication/79299d10-8a35-11e8-ac6a-01aa75ed71a1>

requiring onshore infrastructure). Still others may also have wide spatial scope but are most constrained by economics (such as inshore fishing). The potential for a sector to consider less than ideal locations thus depends on the inherent flexibility of its operations and having the necessary financial and technological means of occupying a less than ideal site.

- Early knowledge of locational needs and constraints can point to limits of spatial adaptability, which may restrict the range of workable solutions (e.g. it may not be possible to spatially separate two activities).

In terms of preferred locations, nearshore and offshore can also be a useful distinction. Classic nearshore sectors include marine tourism, although some tourist activities such as sailing can reach a long way out to sea. Aquaculture also tends to take place nearer the coast because of its requirement for sheltered locations; new cage technologies may enable locations further offshore in the future. Offshore wind farming is increasingly expanding into locations further offshore due to more affordable and efficient technology (e.g. current conversion). Out of all the nine sectors considered, all can be said to have at least some nearshore dimensions, be it in the way of cable connections to the mainland, ports or other onshore facilities or in terms of preferred locational choices (tourism, inshore fishing). Nearshore conflicts are therefore more common, visible and varied than strictly offshore conflicts.

Marine conservation is a special case in that even its consideration on a par with other sectors is contentious. While it is true that environmental concerns are much more fundamental than cross-sectoral conflicts, there are occasions where spatial competition does come into play, e.g. with respect to MPAs or other protected habitats or species (such as nursery grounds for fish, breeding areas for marine mammals or birds). In terms of spatial conflicts with other sectors, impacts on protected areas and species are particularly relevant.

Conflicts related to defence are usually related to onshore installations and military exercise areas, which may be nearshore or offshore and more or less spatially constrained. Some conflicts related to defence are not unlike environmental conflicts, as other sectors can have impacts on military operations across considerable distances; these are difficult to constrain spatially.

### 3.4 Are some sectors more conflict-prone than others?

It is difficult to generalise which maritime sectors are most "conflict prone". All sectors can come into conflict with another sector, and conflicts can arise between traditional sectors (such as maritime transport and area-based marine conservation), traditional sectors and newcomers (such as fisheries and offshore wind farming), and newcomers (such as aquaculture and offshore wind farming).

Although there is no type of sea use that is inherently most conflict prone, study results<sup>12</sup> indicate that offshore wind farming almost inevitably leads to spatial conflicts. It has effectively acted as a trigger for MSP particularly in North Sea countries (Germany, the Netherlands, Belgium), although it should be noted that these were busy sea areas even before the arrival of offshore wind. Maritime tourism, defence and area-based marine conservation are also conflict-prone in that they have many ways in which they can be affected by other activities, ranging from direct physical impacts to visual impacts, pollution and access issues. Cables and pipelines are possibly least conflict-prone as direct impacts on them are rare; if an impact occurs, however, the consequences can be severe (e.g. expensive and time-consuming repairs). The four sectors most frequently in conflict with each other in various constellations are offshore wind farming, maritime transport, area-based marine conservation and fishing. Aquaculture is an emerging sector particularly in Mediterranean countries that is also increasingly prone to conflicts, as are conflicts related to tourism.

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<sup>12</sup> A survey of 29 European MSP planners and experts in 2018

Nearshore conflicts are different from offshore conflicts in that they have an added dimension with respect to local communities. They therefore tend to be more immediate and tangible. They often also carry emotional dimensions, which can make them difficult to deal with. Some offshore conflicts such as those between offshore wind and maritime transport can be said to be more specialised and only involve the respective sectors; they almost play out of sight of local communities. Other offshore conflicts can draw considerable attention because of a special interest; most often this is nature conservation or fisheries-related.

At the same time, the activity itself is only one side of the coin. The actual risks associated with activities are context-dependent and therefore variable. Put simply, the risk of a ship colliding with an offshore wind turbine is different to the risk of an offshore wind farm visually affecting a tourist resort, although both may be equally severe. The severity of risks is a matter of perception and might differ depending on the scale: What may be perceived as negligible at a national level may be very important locally. Different levels and perceptions of risk thus affect the type of solutions MSP can offer. Factors that also come into play with respect to risk are the level of use in a sea area (the busier and the more other activities, the higher the risk of spatial conflicts), the spatial compatibility/flexibility of the uses concerned, and the political and economic risks associated with impeding a specific use.

- ➔ The greater the risk associated with an unresolved conflict, the greater the urgency with which it must be addressed.
- ➔ The consequences of a risk (such as ships colliding with offshore wind farms) also determine how “fail safe” a solution needs to be (e.g. leaving room for more experimental or softer solutions, requiring strict regulation).

### 3.5 Maritime sectors are not alike: The importance of national priorities

It is fair to say that all sectors are interested in operating as efficiently as possible. Locational choice is one way of achieving this. At the same time, MSP may mean deciding which sector should be given preference in terms of locational choices and why – meaning not every sector may end up with ideal locations.

How these decisions are taken will depend on the political power of the sectors involved. The political “weight” of sectors is usually derived from national policy priorities and may differ from country to country. A national priority sector may be given “first pick” in the sense that MSP must ensure that their strategic objectives can be met. Other activities are then accommodated around them.

This is most obvious in the case of defence. Defence interests are a national priority in most countries; in the absence of other options (such as relocating military training areas), defence interests override all other sectoral interests. Marine conservation also has a strong position in all countries due to national and international policy frameworks; rules related to conservation are in place that might prevent certain locational choices from being made. In Germany, offshore wind farming is a sector that benefits from a favourable national policy environment: Renewable energy targets provided the initial push; technological developments and investment opportunities have provided added impetus for growth. National policy is also an important driver for aquaculture and coastal tourism, both of which (along with ocean energy) have also been identified as focus areas of the EU Blue Growth Strategy<sup>13</sup>.

- ➔ National priority sectors have a strong political standing and are likely to be most relevant in the development of future solutions (see section 5).

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<sup>13</sup> EU Commission (2012) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Blue Growth opportunities for marine and maritime sustainable growth. COM/2012/0494 final

## 4. HOW ARE SECTORS IN CONFLICT WITH EACH OTHER?

### 4.1 Sectors versus activities

When considering spatial compatibilities, it is important to differentiate between the sectors per se (such as offshore wind) and their activities in maritime space (such as constructing and operating an offshore wind farm). Spatially speaking, it is the activities that come into conflict with each other, although the conflicts themselves are often described as sectoral conflicts.

### 4.2 Spatial compatibilities of activities and their implications

Cross-sectoral spatial conflicts arise from direct competition over limited space (such as two sectors interested in the same location) or one sector negatively impacting on the other, which may or may not be in the same location. When dealing with conflicts, a useful first step is to determine the scope for two sectors to be in conflict with each other. This can be done in sea space generally and in specific locations.

The best known tool for this purpose is a compatibility matrix (Figure 1). Usually, a distinction is made between activities that are spatially incompatible (marked red in this example), compatible under certain conditions (yellow) and compatible (green). Military training areas are usually incompatible with offshore wind farms, implying that a choice would need to be made if both laid claim to the same sea area. Coastal fishery could be compatible with military training areas in some instances, implying that management measures can be taken to enable their coexistence (e.g. temporary exclusion of fishing during military exercises). Shipping would usually be compatible with underwater cables as these activities do not interfere with each other - as long as the cable is buried and there is no potential for damage by anchoring. Although all activities have an impact on the marine environment, there are compatibilities and even synergies between area-based marine conservation (such as species and habitat conservation) and activities such as low impact tourism. Impacts that may be felt a long way from their source are a special case in that they cannot always be entirely avoided, therefore making them examples of conditionally compatible. A case in point would be underwater noise which can interfere with marine mammals but also certain military operations taking place a long way from the actual location of the source. A spatial compatibility analysis can therefore give a first indication of the kind of conflict management that may be needed.

- ➔ Red/incompatible activities: spatial separation is required. In these cases, fundamental questions need to be asked, depending also on the space available. Can one of the activities be relocated? Does the activity need to take place in the sea at all?
- ➔ Yellow = incompatible to a degree. Some form of co-location may still be possible, but mitigation may be required for the sector (or both) that is at a disadvantage. The choice of options may also be a financial issue, in that some solutions may be possible but expensive.
- ➔ Green = spatially compatible. Compatible activities may not require any spatial management at all, or could even be encouraged if this creates synergies and spatial efficiency as a result.

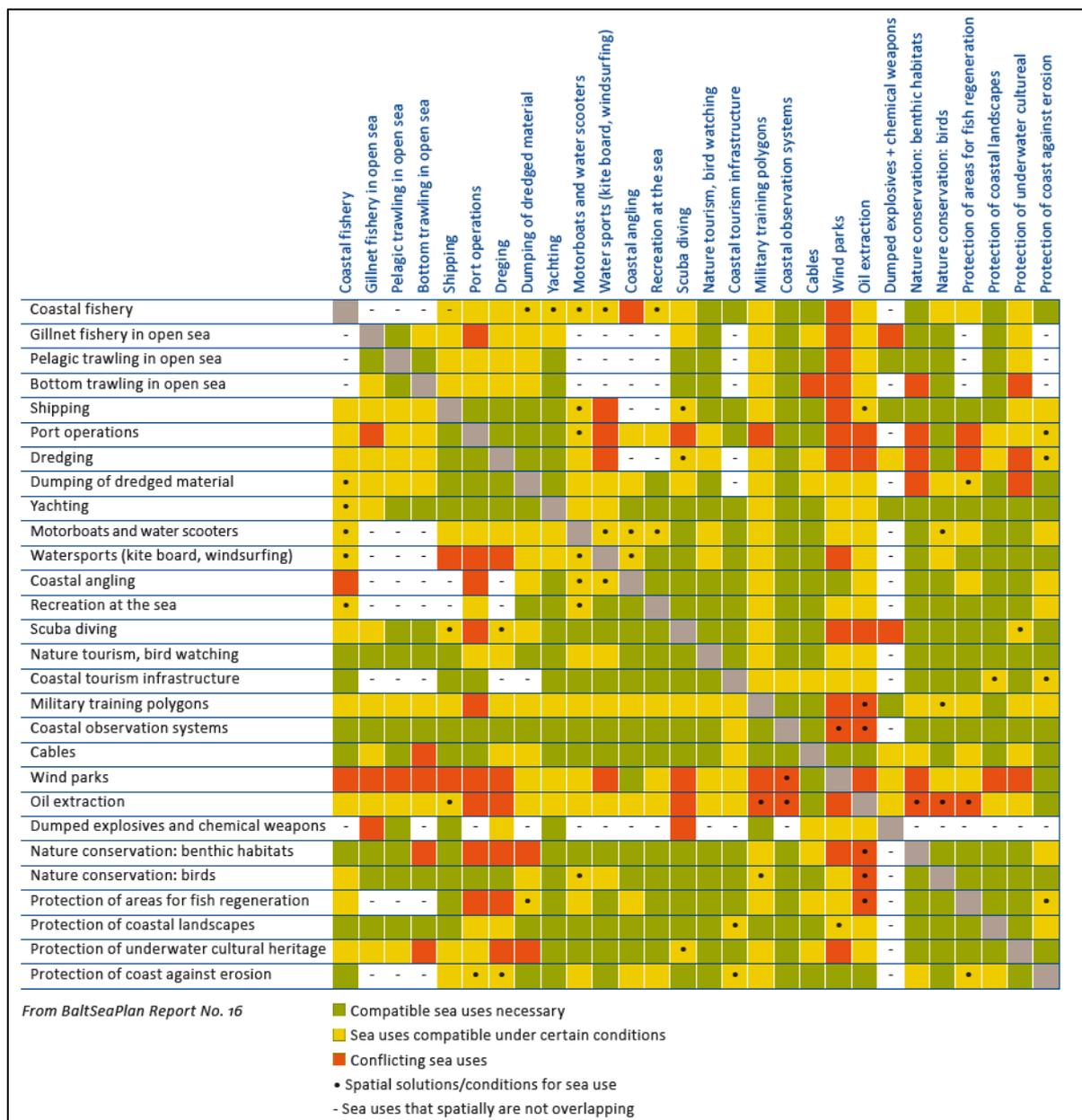


Figure 1: Conflict analysis (BaltSeaPlan Report 16 (2011), download from [www.baltseaplan.eu](http://www.baltseaplan.eu)).

### 4.3 Specifying the conflicting issues

In the context of managing spatial conflicts, it is important to come to a precise understanding of the conflicting issues, in other words, what specific activities or elements of activities are actually in conflict.

Analysis reveals that the spatial conflict potential of a sector can differ significantly depending on which activity is on the other side. Offshore wind farming, for example, has different conflicting issues with shipping than with environmental conservation or fishing. Table 3 gives some examples of conflicting issues, although the list is not exhaustive. For cables/pipelines and offshore wind farming, conflicts with fishery mainly relate to accidental damage to cables and infrastructure. Vice versa, fishers often feel pushed out of fishing areas by offshore wind or affected by no-fishing zones around cables and pipelines, leading e.g. to economic consequences for fisheries. For offshore wind farming and maritime tourism, the conflicting issues are mostly perception-related and related to the potential visual impacts of offshore wind farms; there is also the potential barrier effect of large-scale wind farms for recreational activities such as sailing. For offshore

wind farming and area-based marine conservation<sup>14</sup>, the issues are mainly related to the impacts of noise and construction on marine habitats and species, as well as direct collision risks.

A differentiated analysis of conflicting issues shows that the impacts of sectors on each other are not symmetrical: One sector may significantly affect the other but not vice versa; each side may be affected by different impacts (e.g. safety issues vs. access issues), and the impacts may be considered very severe on one side but not on the other. Different levels of risk may thus be associated with different experiences of conflicting issues, leading to different views on how urgently the conflict needs to be addressed.

**Table 3: Conflicting issues between sectors with a spatial dimension (examples)**

<p><b>Fisheries</b></p> 	<p><b>Cables &amp; pipelines</b></p> <ul style="list-style-type: none"> <li>• Fishing vessels hooking a cable/pipeline</li> <li>• Vessels stranding on a cable/pipeline</li> <li>• Anchors being dropped on the cable/pipeline</li> </ul>	<p><b>Offshore wind</b></p> <ul style="list-style-type: none"> <li>• Accidental damage, including to subsea cables</li> <li>• Socio-cultural conflicts</li> </ul>
<ul style="list-style-type: none"> <li>• Spatial restrictions to fisheries</li> <li>• Economic consequences of spatial exclusion</li> </ul>		
<p><b>Offshore wind farming</b></p> 	<p><b>Marine tourism</b></p> <ul style="list-style-type: none"> <li>• Fears of visual impacts</li> <li>• Economic losses as a result</li> <li>• Barrier effects for recreational users</li> </ul>	<p><b>Area-based marine conservation</b></p> <ul style="list-style-type: none"> <li>• Noise pollution during the construction phase</li> <li>• Noise pollution during the operational phase</li> <li>• Collision</li> <li>• Other impacts on birds</li> <li>• Ecological damage to the sea floor</li> </ul>
<p><b>Maritime transport</b></p> 	<p><b>Area-based marine conservation</b></p> <ul style="list-style-type: none"> <li>• Noise pollution</li> <li>• Collision risks</li> <li>• Accidental oil spills</li> <li>• Discharge of hazardous waste and contribution to invasive species</li> <li>• Exhaust emissions</li> <li>• Physical damage to habitats</li> <li>• Port expansion</li> </ul>	<p><b>Offshore wind farming</b></p> <ul style="list-style-type: none"> <li>• Risk of accidents</li> </ul>
<ul style="list-style-type: none"> <li>• Risk of accidents</li> <li>• Diversion</li> </ul>		

<sup>14</sup> Understood here as protected species and habitats

This holds a number of important lessons:

- ➔ A detailed conflict analysis is essential: Which activities or impacts of one sector come into conflict with which activities of another?
- ➔ Spatial conflicts are not equal in their direction of impact. Some may be mutual in that both sectors affect each other to a similar degree. Others may be more one-sided, in that only one affects the other and not vice versa.
- ➔ The number of conflicting issues alone is not an indication of the (potential) severity or urgency of a spatial conflict. Different conflicting issues may come to the fore in different contexts, and some issues may be very severe in one location but not in another.
- ➔ Different means must be employed to successfully address each conflicting issue. Short of deciding not to go ahead with an activity, no single management measure can tackle them all.
- ➔ Some conflicting issues can be addressed by spatial management measures, others – in particular those affecting the environment – may require additional non-spatial solutions.

#### **4.4 Different geographical scales of conflict**

Spatial conflicts occur at different spatial scales – sometimes even concurrently so. Nevertheless, some sectors are more relevant regionally, while others always have a transnational dimension.

Conflicts involving tourism and aquaculture are often local or regional, occurring at particular coastal locations or attractive holiday destinations. All conflicts involving local communities are also generally local or regional, as these tend to be tied to particular places or local/regional economies. Other spatial conflicts play out at the national or international level, most often involving international activities such as maritime transport. Conflicts related to protected species and habitats are also often transnational.

Reading the literature on past MSP projects can give the impression that transnational conflicts are the most important type. This is not the case for actual planning practice<sup>15</sup>. To MSP planners, most of the conflicts currently experienced are relevant at the national or regional level. Only a third were considered relevant at the transboundary level, with about one fifth relevant at all three scales.

- ➔ Different types of solutions are likely to come into play at different spatial scales, with different types ideally complementing each other for multi-level solutions (e.g. national spatial arrangements and transnational agreements)

#### **4.5 Conflicts pre- and post-MSP**

Whichever situation a country is in, MSP never starts with a blank canvas. Mitigation is required for 'legacy conflicts' that are simply given at the start of MSP. The aspiration is that the MSP plan will prevent such conflicts from arising in the future. In setting out strategic choices for the sea, MSP will need to prevent conflicts between sectors already present in the sea, as well as those that might arise through new and emerging blue sectors.

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<sup>15</sup> Survey of 29 EU MSP planners and experts

## The planning phase: The bigger picture

During the planning phase, the MSP process leads to the “bigger picture” for the sea for the years to come. It sets out general rules for spatial allocation and prioritises uses or combinations of use in some spaces. The plan becomes the means of conflict resolution – in the sense that sectors know what to expect and have a reliable framework for development.

- ➔ Conflict resolution during the planning phase is anticipatory. Its methods of choice are spatial MSP solutions (such as zoning), non-spatial MSP solutions (such as agreements between sectors), or non-MSP solutions as supporting measures. Mitigation (alleviating the consequences of planning decisions for existing situations – e.g. relocating planned developments) can also be negotiated at this stage.

During the planning phase, a key role of MSP is to bring conflicts to the table. In Poland for example, the MSP process was essential for engaging with fishers: Understanding their specific concerns has resulted in planning proposals that tackle their specific spatial issues such as access to fishing grounds<sup>16</sup>. In Spain, the MSP process is expected to lead to a first comprehensive map of spatial conflicts in the sea, including some previously unknown conflicts. At the same time, an open platform for debate may also give the impression that conflicts are worse than they are, as stakeholders will attempt to defend their stakes as long as possible and by different means.

It is worth remembering that strategic choices for maritime development (prioritising uses, the desire to provide sectors with greater investment certainty) create a certain degree of path dependency. Once made, fundamental decisions (such as the type of priority areas or built infrastructure in the sea) are difficult to revoke, even when political priorities change. This makes conflict anticipation and the negotiation of acceptable solutions all the more important at this stage.

## The implementation phase: playing within the rules

A plan is no guarantee that conflicts will no longer arise. Plans are generally high level and anticipate conflicts at a general level – such as stipulating safety distances alongside shipping lanes, or assigning priority areas for uses over large areas.

Project-related conflicts will continue to arise irrespective of the existence of such general rules. This is because most plans do not go as far as defining exact locations or design guides, delegating siting decisions to the level of Environmental Impact Assessment (EIA) or licensing.

- ➔ Mitigation can come into play where MSP plans make fundamental choices (such as prioritising certain activities over others in certain areas), but where conflict resolution is still required at the project level. Mitigation does not question that an activity can take place, but might curtail it slightly to accommodate another use (e.g. altering the configuration of a wind farm to leave room for a transport corridor). Relocating projects or activities in response to conflicts is also an option.

## How conflicts can arise during the implementation phase

Conflicts during the implementation phase can occur because plans do not fully consider the impacts of some spatial uses. One example is the designation of search areas for offshore wind. While this can resolve certain issues, such as spatially separating offshore wind farming and shipping lanes, zoning for offshore wind does not automatically deal with cable connections to the mainland. If the designation of search areas is not accompanied by an offshore grid plan, for example, added effort is required during the

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<sup>16</sup> Ciolek et al., 2018: The perspective of Polish fishermen on maritime spatial planning. *Ocean & Coastal Management* 166, 113-124

project stage as each connection will need to be considered separately – leading to new conflicts in the process.

→ If a new conflict arises that is more fundamental in nature (such as a new use claiming space), it can be delegated to the next planning phase.

Apart from conflicts, changing policy priorities or perceptions can also lead to new solutions. In the Netherlands, spatial policies with respect to offshore wind farms were very restrictive initially, allowing no vessels to pass through wind farms at all. A push for more renewables has led to more areas designated for offshore wind farming, and a need to relax some of the access rules in order to generate acceptance for the new plans (story 4/conflict fiche 5).

Last not least, conflicts are often recurring, in the sense that they have been resolved for a period but re-surface if the situation changes. In Germany/Mecklenburg Vorpommern, the first maritime spatial plan addressed a conflict between offshore wind farming and local communities by means of a zoning scheme. In a sense, the conflict was therefore resolved. However, it resurfaced when the plan was revised, leading to considerable discussion before another zoning solution was found (story 3/conflict fiche 1). Especially conflicts with a strong emotional component are likely to re-surface as MSP solutions often cannot deal with the underlying issues and therefore only achieve a temporary solution.

Conflicts that arise over a technical issue (such as safety) are easier to address by means of technical solutions that may be more readily accepted.

## 5. THE ROLE OF STAKEHOLDERS IN ADDRESSING CONFLICTS

Stakeholders – understood as sector stakeholders, public stakeholders and local communities – play many roles in spatial conflict resolution. Conflicts are always in the eye of the beholder: Some are strongly stakeholder driven and perception-related (such as those related to tourism and coastal communities), while others are more obviously related to technical risks (such as the risk of shipping accidents or the risk of damage to infrastructure). Conflicts are also down to how such risks are then evaluated.

Stakeholders can be crucial for bringing conflicts to the table, especially in the case of smaller or less prominent sectors. They are also essential as conflict managers and designers of solutions. Stakeholder acceptance is crucial for the implementation of solutions, especially on the side of mitigation where many solutions will depend on the voluntary commitment of stakeholders.

Much has been written elsewhere on what constitutes good stakeholder engagement in MSP. The MSP process plays an essential role in identifying, anticipating, evaluating and resolving spatial conflicts, in bringing together different sectors and views, and importantly also in ensuring that sectors understand each other and are aware of each other's needs. An MSP process that involves stakeholders early and continuously is thus a useful platform that can contribute much to conflict prevention and mitigation.

An important aspect is that no two sectors are the same. Some are fragmented and underfunded, others are well organised and financially powerful. Some have strong high level policy support, others have strong support within society; some are an important sector locally, others more at the national level. Sectors therefore have different power to influence the MSP process, and with this the power to influence how conflicts are addressed.

→ MSP must ensure that powerful sectors do not dominate the process at the detriment of smaller, less vociferous sectors.

It is important for planners to be aware of the statutory power of sectors. Sectors representing national interests will need to be given particular consideration in the MSP process. At the same time, sectors can also be of particular importance regionally, which is of strong relevance in the case of sub-national plans.

Statutory power is only one way in which sectors influence the MSP process. Another is the power of stakeholder groups to play to the media, which may lead to the escalation of a conflict to such a degree that it must be given special consideration in the MSP process (see below, also stories 1 and 2/conflict fiche 1). Last not least, even very small minority interests can bring an MSP process to a halt, e.g. by taking their concerns to court, as recently occurred in Estonia (story 3/conflict fiche 1).

→ Different sectors have different powers in the MSP process and can force a solution that is in their favour in different ways.

MSP must ensure it is backed by the appropriate political level. Decisions that cannot be resolved at the planning level (e.g. priorities between statutory sectors) need to be delegated to the level that has the power to make such trade-offs.

## 6. ESCALATION FACTORS

Spatial conflicts in the sea can escalate for a number of reasons. A conflict that has lain dormant may suddenly become acute as a result of changing policy for example, or simply because there is an opportunity to bring it to the table (such as the revision of an MSP plan). A conflict that was considered resolved can resurface due to new spatial pressures. A conflict may suddenly reach a broader audience as a result of a successful media campaign.

The conflict stories and experiences reported by MSP planners give some insights into typical escalating factors.<sup>17</sup>

- **Political priorities.** Despite the best of intentions, MSP may be powerless to address a pre-existing issue (such as existing licenses) or change a political priority. The fact that defence has a higher political priority than offshore wind farming, for example, may need to be accepted as a given. This makes it all the more important to find appropriate mitigation solutions – ideally together with the stakeholders concerned.
- **Stakeholder perceptions and lack of understanding** – of conflicting issues but also of each other. Lack of understanding of how a sector works can impede a constructive discussion: It can also prevent solutions from being found if mutual needs and the reasons for those needs are not made clear. In the Netherlands and Belgium, a joint consultation group was instigated to address a conflict between shipping and offshore wind farming; one of the first tasks for the group was to ensure that the sectors got to know each other and how they work (story 1/conflict fiche 7).
- **Intransparency** of a decision-making process. Providing stakeholders with incomplete information is risky as this might lead to questions or suspicions; in worst case scenarios the process can become derailed or at least delayed because of a breakdown in trust. This was the case in the Netherlands in the context of offshore wind farming (story 1/conflict fiche 1).
- **Spatial constraints** can restrict spatial management options such as relocation. If a conflict cannot be resolved by means of spatial re-allocation, mitigation options need to be explored – which may lead to a longer process and difficulties for one or both of the sectors concerned.
- **Media exposure** can help to bring a conflict to the table, but can also escalate a conflict that might have found a solution otherwise. Use of the media for political gain can also escalate conflicts.
- **Lack of knowledge or contested knowledge** on the impacts of activities can be a significant escalating factor, in particular where environmental impacts are concerned. Uncertainties can be difficult to deal with in decision-making processes, and knowledge is sometimes hotly contested (story 1/conflict fiche 8).
- **Lack of resources**, time, and clear responsibilities act as general constraints for MSP processes and can also contribute to conflict escalation, for example if there is insufficient stakeholder consultation or engagement early on in the process.
- **Lack of acceptance of a proposed solution.** Some conflicts escalate because a small group of stakeholders is unwilling to accept the solution. This has occurred in Estonia in the case of offshore wind farming, where a local conflict went all the way to the Estonian supreme court (story 2/conflict fiche 1)

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<sup>17</sup> The stories and conflict fiches referenced in this section can be found at [www.msp-platform.eu/sectors](http://www.msp-platform.eu/sectors)

## 7. ADDRESSING SPATIAL CONFLICTS IN MSP

### 7.1 Basic options

#### Conflict prevention and mitigation

Generally speaking, MSP has two options for addressing spatial conflicts.

- **Conflict prevention** is action that seeks to avert spatial competition – usually by ensuring that incompatible activities do not occur in the same space or negatively affect each other. Conflict prevention takes place before the conflict occurs and is anticipatory in nature.
- **Conflict mitigation** is action that seeks to soften the impacts of spatial competition. It becomes relevant for unavoidable conflicts – e.g. because siting decisions have already been taken, or because certain spatial options may no longer be available, e.g. in sea spaces that are already very busy. The main purpose of mitigation is to soften the impacts of spatial competition, e.g. by means of compensatory measures negotiated between the sectors affected.

Both expect to resolve the conflict, or at least address it in such a way that it is no longer acute.

Conflict prevention requires some degree of foresight, including:

- awareness of trends in sectors,
- awareness of future spatial pressures,
- awareness of the degree of spatial compatibility of the sectors,
- awareness of the specific conflicting issues,
- awareness of sector views
- awareness of the expected scale of the conflict.

There is a cyclical element inherent in these, in that learning from mitigation can pave the way for future prevention. It is also helpful to consider where in the MSP cycle particular solutions might come into play, e.g. at the very beginning in terms of conflict analysis or later during implementation.

The categories also overlap, as solutions can either be preventative or mitigating depending on the circumstances and how they are applied.

### 7.2 Types of solutions

#### Spatial and non-spatial MSP solutions

For both prevention and mitigation, spatial and non-spatial concepts are conceivable, such as allocating space in a certain way, or using MSP as a platform for developing joint solutions. Spatial MSP solutions are understood as regulatory solutions (such as zoning) that are put forward as part of an MSP plan. Non-spatial MSP solutions are those that may be negotiated as part of an MSP process. The two are close related in that a non-spatial solution may pave the way for a spatial regulation in the future. The applicability and success of non-spatial solutions in turn is closely related to the power of MSP to bring together sectors and engage them in a constructive debate.

- ➔ **Non-spatial solutions underline the importance of the MSP process as a platform for engaging with sectors. This might be an ideal way to arrive at a preventative solution, i.e. ensuring the conflict does not materialise at all.**

## MSP and non-MSP solutions

Another useful distinction is that between MSP and non-MSP solutions, which again may be preventative and mitigating. MSP solutions are those that are in the hands of planners, in other words, those that fall within the statutory remit of the MSP authority. They commonly include all forms of spatial management, but preparatory and anticipatory action such as spatial analysis or ways of organising the MSP process is also an MSP-based solution. Non-MSP solutions are understood as solutions that might be negotiated or encouraged as part of the MSP process, but which are not for planners to implement. Other bodies (authorities, ministries, international organisations) will usually be required in support to ensure such solutions are implemented.

Table 4 lists a range of preventative and mitigation solutions, differentiating between spatial, MSP and non-MSP solutions.

**Table 4 : General types of solutions for spatial conflicts in the sea**

	<b>Preventative solutions</b>	<b>Mitigation solutions</b>
<b>Non-spatial MSP solutions = solutions relevant during the MSP the process</b>	<ul style="list-style-type: none"> <li>• Encouraging mutual understanding of sectors and conflicting issues (e.g. through sectoral liaison groups)</li> <li>• Identify conflicts in a collaborative way</li> <li>• Encourage the co-design of solutions</li> <li>• Assessing the potential for co-location</li> <li>• Acknowledge the special status of some sectoral groups (e.g. coastal fishers)</li> <li>• In transboundary cases, encourage coherence and understanding of terminology</li> <li>• Collect and map data and knowledge from stakeholders</li> <li>• Carry out risk assessments for proposed spatial management options (e.g. as part of the SEA)</li> <li>• Assess the socio-economic effects of proposed measures</li> </ul>	<ul style="list-style-type: none"> <li>• Voluntary codes of conduct for sectors</li> <li>• Compensation schemes (financial, spatial, benefits to local communities)</li> <li>• Agreements between states in the case of transboundary conflicts</li> <li>• Cross-sectoral agreements negotiated as part of MSP</li> <li>• Communication and awareness-raising of spatial needs</li> <li>• Technical solutions to local conflicts, such as obstacle markers for underwater installations</li> </ul>
<b>Spatial MSP solutions = solutions put forward in the plan</b>	<ul style="list-style-type: none"> <li>• MSP plans</li> <li>• Zoning schemes (designating priority zones, suitable zones, prohibited zones etc.)</li> <li>• Minimum distances and safety zones</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of multi-use concepts</li> <li>• Designate no travel/access zones in some locations</li> <li>• Temporary closures/restrictions</li> <li>• Allowing transit or access of</li> </ul>

	<ul style="list-style-type: none"> <li>• Corridors for particular uses</li> <li>• Sectoral master plans</li> <li>• Actively requiring synergies and co-existence in the MSP plan</li> <li>• Relocation of activities (e.g. moving a shipping lane)</li> </ul>	restricted areas under some conditions
<b>Non-MSP solutions (e.g. licensing solutions, policy solutions) = supporting action</b>	<ul style="list-style-type: none"> <li>• Consider the seasonality of activities when permitting other activities (e.g. construction)</li> <li>• Require temporary stops of activities (e.g. military)</li> <li>• Use and promote design guides, e.g. for the layout and placing of offshore wind farms</li> <li>• Employ PSSAs or other sectoral designations for MSP purposes</li> <li>• Set speed restrictions for shipping</li> </ul>	<ul style="list-style-type: none"> <li>• Technical solutions, such as alternative fishing methods, cable burial, specialised software to avoid ship collisions</li> <li>• Government incentives for sectors</li> <li>• Monitoring and surveying</li> <li>• Strategic research</li> <li>• Innovation in sectors</li> <li>• Existing documented experiences and guiding documents</li> <li>• Design guides</li> <li>• Clear national policy directions</li> </ul>

### 7.3 Specific solutions for specific cross-sectoral conflicts

It is readily apparent that most of the above can be applied to many different cross-sectoral conflicts. This particularly applies to preventative solutions (such as information gathering), generic zoning solutions, or non-spatial solutions such as strategic monitoring, innovation, or the promotion of multi-use concepts.

Differences mostly arise when the conflicting issues are very specific, or where particular technical solutions can come into play. Table 5 lists examples for specific solutions that have been applied in different conflict cases (for more examples and details see the respective conflict fiches).

Table 5: Specific preventative and mitigation solutions by sectors

	Preventative solutions	Mitigation solutions
vs	<b>Offshore wind farming</b>	
<b>Area-based marine conservation</b>	<ol style="list-style-type: none"> <li>1. Temporarily stop pile driving activities</li> <li>2. Reduce the noise of pile driving</li> <li>3. Choose other technical solutions to prevent harm to fauna or reduce noise emissions</li> </ol>	<ol style="list-style-type: none"> <li>1. Establish multi-use of MPAs and offshore wind</li> <li>2. Develop a strategic ecological research programme</li> <li>3. Use low cost survey techniques for underwater noise</li> </ol>
<b>Tourism</b>	<ol style="list-style-type: none"> <li>1. Zoning to minimise the visual impact of offshore wind farms</li> </ol>	<ol style="list-style-type: none"> <li>3. Allow access to offshore wind farms to recreational vessels</li> <li>4. Use the MSP process for clear</li> </ol>

	<ol style="list-style-type: none"> <li>2. Develop a Tourism Impact Statement and possibly include this as a standard in the SEA or EIA</li> </ol>	<p>and transparent communication on the visibility of the offshore wind farm</p> <ol style="list-style-type: none"> <li>5. Stimulate and facilitate innovation in the OWF sector to decrease potential conflicts with tourism</li> </ol>
<b>Maritime transport</b>	<ol style="list-style-type: none"> <li>1. Use existing design guides for the layout and placing of offshore wind farms</li> <li>2. Consider the seasonality of shipping when planning offshore wind farm installations</li> </ol>	<ol style="list-style-type: none"> <li>3. Use technical means of increasing safety within wind farms</li> <li>4. Foresee safe crossings for specialised vessels</li> <li>5. Early application of a navigation risk assessment during the MSP process</li> </ol>
<b>Commercial fisheries</b>	<ol style="list-style-type: none"> <li>1. Acknowledge the special status of fishers in the MSP planning process</li> <li>2. Set up a liaison group for MSP early on</li> </ol>	<ol style="list-style-type: none"> <li>3. Allow some types of fishing in offshore wind farms under certain conditions</li> <li>4. Allow fishing vessels to transit offshore wind farms</li> <li>5. Align construction phases with fisheries seasons</li> </ol>
<b>Area-based marine conservation</b>		
<b>Maritime transport</b>	<ol style="list-style-type: none"> <li>1. Use Particularly Sensitive Sea Areas (PSSAs) for broader marine areas</li> <li>2. Develop investigation areas for shipping</li> </ol>	<ol style="list-style-type: none"> <li>3. Impose ship speed restrictions within certain areas</li> <li>4. Use the MSP process to promote ship-quieting technologies</li> </ol>
<b>Commercial fisheries</b>	<ol style="list-style-type: none"> <li>1. In transboundary areas, encourage coherence and understanding of terminology and technical requirements for implementing policy</li> </ol>	<ol style="list-style-type: none"> <li>2. Communicate the value of MPAs to fishers</li> <li>3. Estimate of the bio-economic effects of closure(s), in particular for purposes other than fisheries conservation</li> </ol>
<b>Aquaculture</b>		
<b>Tourism</b>	<ol style="list-style-type: none"> <li>1. A Regional Master Plan for coastal aquaculture</li> <li>2. Promoting <i>Acquiturismo</i> as synergy between the sectors</li> </ol>	<ol style="list-style-type: none"> <li>3. Support tourist activities in sea gardens</li> <li>4. Stimulate aquaculture developments with less visual impacts</li> <li>5. Use obstacle markers</li> </ol>
<b>Commercial fisheries</b>		
<b>Cables</b>	<ol style="list-style-type: none"> <li>1. Develop corridors for cables and pipelines as part of an offshore grid</li> </ol>	<ol style="list-style-type: none"> <li>2. Require cable and pipeline companies to use appropriate burial methods</li> </ol>

	plan	3. Require cable to be crossed at right angles
<b>Area-based marine conservation</b>	1. In transboundary areas, encourage coherence and understanding of terminology and technical requirements for implementing policy	2. Communicate the value of MPAs to fishers 3. Estimate of the bio-economic effects of closure
<b>Offshore wind farming</b>	1. Acknowledge the special status of fishers in the MSP planning process 2. Draw on fishers' knowledge to create an evidence base	3. Allow fishing vessels to transit offshore wind farms 4. Align construction phases with fisheries seasons
<b>Military</b>		
<b>Other uses</b>	1. Identify military areas of importance during MSP stocktaking 2. Set out concrete rules for military areas 3. Relocate some national defence and security sites	4. Use temporary restrictions in areas important for national defence 5. Inform developers of the interests of national defence 6. Make use of synergies

#### 7.4 Advantages and disadvantages of different solutions

The solutions outlined in tables 4 and 5 have various advantages and disadvantages associated with them that might influence their applicability. Whether a solution is suitable and realistic in a given context depends on various factors, including:

- Does the solution need to be quick to implement, i.e. address an urgent acute conflict? In this case, it may be better to choose a solution that is directly in the hands of planners, rather than wait for other supporting measures or technical solutions to materialise.
- Is the best solution expensive, and therefore possibly unattainable at a given time?
- Is the best solution from a planning perspective to a disadvantage of a strategic sector, and can this sector block the proposed solution? In which case alternatives may need to be found.

Table 6 outlines some examples of the advantages and disadvantages of typical solutions.

**Table 6: Advantages and disadvantages of selected solutions - examples**

	<b>Advantages</b>	<b>Disadvantages</b>
<b>Non-spatial MSP solutions</b>		
<b>Assessing the potential for co-location</b>	<ul style="list-style-type: none"> <li>• Can be organised by planners as part of the MSP process</li> </ul>	<ul style="list-style-type: none"> <li>• Requires the active involvement of relevant sectors</li> <li>• Requires a sound information base</li> <li>• May require expert input</li> </ul>

<b>Voluntary codes of conduct</b>	<ul style="list-style-type: none"> <li>• Higher motivation of sectors to implement</li> </ul>	<ul style="list-style-type: none"> <li>• No statutory power</li> <li>• Can be difficult to monitor</li> <li>• Not in the hands of MSP</li> </ul>
<b>Communication and awareness-raising</b>	<ul style="list-style-type: none"> <li>• Can be organised by planners as part of the MSP process</li> <li>• Many different options available</li> </ul>	<ul style="list-style-type: none"> <li>• Can be time-consuming</li> <li>• Needs to be ongoing and adaptive</li> <li>• Can be expensive (e.g. if travel costs are involved)</li> <li>• Requires time commitment on the part of planners</li> <li>• May require expert input</li> </ul>
<b>Spatial MSP solutions</b>		
<b>General zoning rules (e.g. priority/reservation areas)</b>	<ul style="list-style-type: none"> <li>• Directly in the hands of planners</li> <li>• Gives a clear strategic framework</li> <li>• Anticipatory</li> </ul>	<ul style="list-style-type: none"> <li>• May be contentious to negotiate</li> <li>• Reduces flexibility of MSP to respond to specific circumstances</li> <li>• May cause sectors to push for maximum interests, leading to conflict escalation</li> </ul>
<b>Relocation of activities</b>	<ul style="list-style-type: none"> <li>• Resolves existing conflict</li> </ul>	<ul style="list-style-type: none"> <li>• May not be possible in some cases</li> <li>• May be very time-consuming (e.g. relocating a shipping lane)</li> <li>• May not be in the hands of planners (e.g. IMO responsibility)</li> <li>• May be expensive if compensation has to be paid</li> </ul>
<b>Temporary closures</b>	<ul style="list-style-type: none"> <li>• Flexible</li> </ul>	<ul style="list-style-type: none"> <li>• May lead to pressures shifting elsewhere</li> </ul>
<b>Non-MSP solutions</b>		
<b>Use of technical solutions, design guides, innovation in sectors</b>	<ul style="list-style-type: none"> <li>• May be a more effective solution compared to zoning</li> <li>• May remove the conflict altogether</li> </ul>	<ul style="list-style-type: none"> <li>• Not in the hands of planners</li> <li>• Requires the active support of sectors</li> <li>• May be very expensive</li> <li>• Innovation is a long-term solution</li> </ul>

Whether a solution is workable or not also depends on the setup of MSP in a country. For example, countries with an interministerial group to guide MSP have the option of directly addressing some conflicts at the ministerial level, directing MSP from the beginning.

In MSP processes that are more environmentally led, greater focus may be placed on conflicts related to the environment. This could be conflicts with natural values in principle, or specific conflicts between sectors and the environment. In economy-led MSPs, the environment may be more readily treated as a sector. Both may require different type of conflict resolution.

### **7.5 “Solving” conflicts in MSP: Definitions of success**

Although the term “solution” is used, it is important to note that conflicts may never be fully “resolved” by MSP. MSP may find it more difficult to deal with the underlying interests and attitudes that are causing a conflict, especially if conflicts are “felt” to exist rather than based on hard fact. Mecklenburg-Vorpommern provides a good case in point. During the last planning process, a pre-existing conflict between offshore wind farming and recreation/tourism suddenly became prominent again, with strong resistance to the draft plan and provisions for the expansion of offshore wind farming from local residents and tourism operators. Although the revision of the draft plan took account of this, the conflict has merely been minimised so that it is no longer actively expressed (e.g. through active resistance from local residents). Truly resolving this conflict would require a long-term and probably informal approach of change management, which is a long-term process outside the scope of MSP. Nevertheless, MSP is also a platform for voicing and discussing conflicts, so that the process of drawing up and implementing a maritime spatial plan can be seen to have an educational or at least awareness-raising dimension.

A definition of success is whether the solution is to the satisfaction – or at least acceptance – of the stakeholders involved, meaning further escalation is avoided. This in turn depends on stakeholder involvement, acceptance of the available knowledge base and levels of uncertainty.

Some solutions are not universal in that they work well in one particular case, but not necessarily in another. This particularly applies to mitigation at the local level, or measures such as voluntary agreements.

Common reasons for not resolving spatial conflicts successfully include:

- Lack of understanding of the sectors involved,
- Lack of information and knowledge,
- Lack of spatial alternatives,
- Legal and technical issues,
- Lack of clear policy directions,
- Lack of stakeholder involvement.

A reason for not successfully resolving a conflict is also the limited scope of MSP with respect to national policy priorities. “Ideal” solutions may simply not be possible because of specific spatial demands that MSP cannot question.

## **8. CONCLUSION: IS THERE A UNIVERSAL SOLUTION?**

The study makes clear there are no simple or universal solutions for addressing spatial conflicts in MSP. Sectors, their activities, and settings are diverse, and so are the resulting conflicts and solutions, although large-scale, hard and fixed uses are generally more likely to trigger spatial conflicts than the more fleeting soft uses.

EU Member States have found a wide range of solutions to deal with acute or projected spatial conflicts. These depend on the stage of the MSP process, the sectors involved, the resources and time available, the technical maturity of the sectors involved, the presence / absence of escalation factors, and the spatial scale of conflict. Addressing spatial conflicts, much like MSP itself, is ultimately a cyclical endeavour and a learning process, where lessons from one country can be applied in another but where much depends on the specific situation and conflict perception.

# 9. COMING TO A SOLUTION: DECISION CRITERIA

## Steps in spatial conflict resolution

### Anticipation

Compatibility matrix:

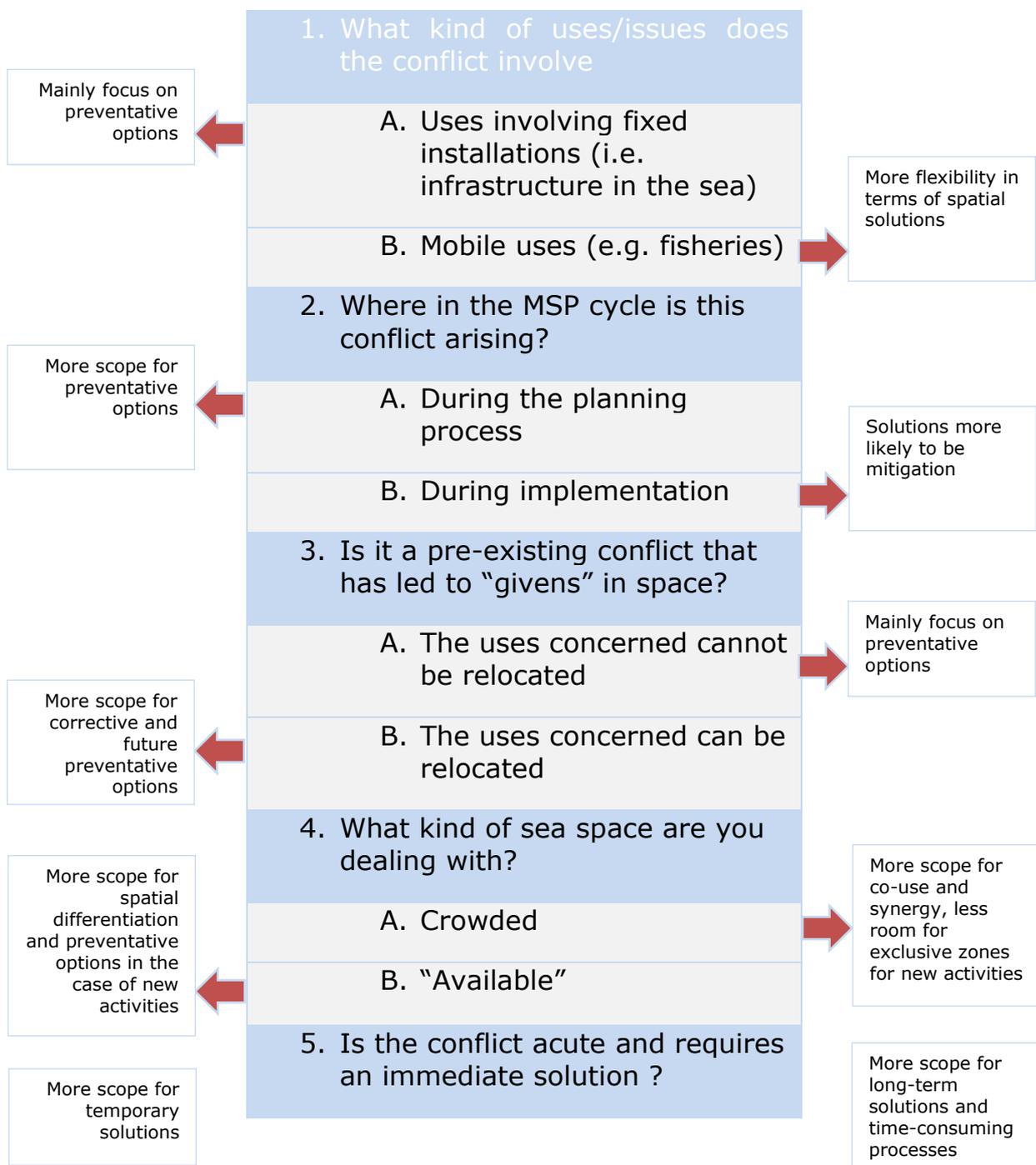
What sectors/activities are spatially compatible?

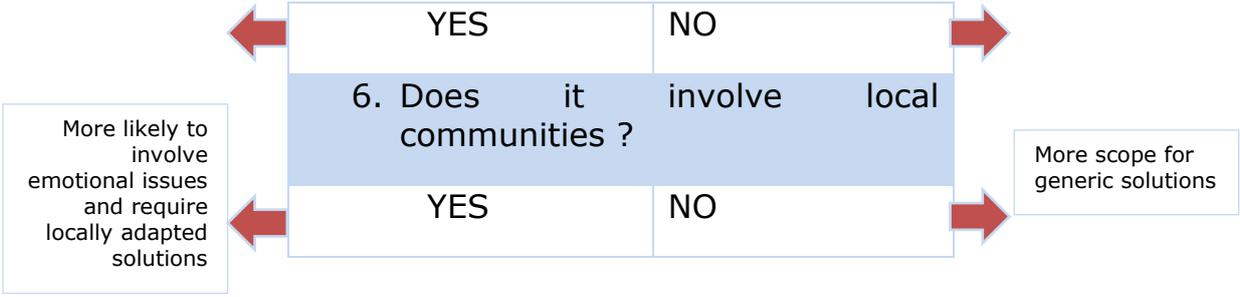
**AND/OR**

Mapping activities in space:

What overlaps with what? Where are pre-existing uses?

**Once the conflict is identified, use the following checklist to come to the list of applicable solutions**





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