

CROSSING THE LINE FOR NATURE:

CROSS BORDER PLANNING COLLABORATION FOR EFFECTIVE ECOSYSTEM-BASED ADAPTATION

REFLECTION CHAPTER

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13. REFLECTION

13.1. RESULTS AND EFFECTIVENESS OF THE APPROACH:

The research of this thesis led me to the question "How can EbA play a role in the sustainable development of the Western Scheldt, and how can cross-border collaboration in planning be adjusted to facilitate the implementation of EbA strategies?"

I believe that throughout the project I was able to come up with an answer to this question.

The first part required me to reveal what are the potentialities of using ecosystems to maintain and improve the functions of flood safety, ecology and port accessibility. Also, in which ways they can be cost-effective, an addition to existing infrastructure and adaptable to changing conditions.

To do so, the systems approach was used in the assessment part of the research. It was sometimes difficult to make this division, especially because the systems are interdependent and many of their components are shared. For example, dredging is an activity directly related to port accessibility. But dredging also creates turbidity, affecting the biodiversity and influences the wave intensity and dike stability. Despite this "categorization" challenge, the systems approach helped me to show what how ecosystems are capable to help to these main functions and the overall sustainable development of the Western Scheldt. It also showed some key aspect that guided the design strategies.

The field trip just provided perspective on the current state of things in the area. It appears to be an acceptable level of coexistence between human activity and nature and the willingness to plan for more environmentally friendly interventions. It doesn't really tell about the loss of nature over the past centuries or decades or what are the future risks for the Western Scheldt as a system. It provided some insight on the governance of the area. For example, learning that planning in Antwerp is divided between city and port planning department, which shows the importance of port authorities as stakeholders in the spatial development. Also, I could see that no spatial differences were apparent while crossing borders in several areas, not in nature or even on the built environment.

In order to define what kind of planning and governance arrangements could facilitate the implementation of EbA strategies in this cross-border context I used scenario planning. This helped me to limit the big uncertainties of climate change and politics in the future of the Western Scheldt. Scenarios allowed me to identify the potential risks of current practices with limited collaboration between the 3 main functions and how they will not be sustainable with accelerated climate change. These include for example mudflats being permanently flooded, more invasive dredging, siltation of marshes in the higher part of the Western Scheldt, etc. On the other hand, a high collaboration scenario revealed how can the driving influence of ports be used at the same time to develop ecosystem management strategies for a EbA. In this case, the scenario makes the assumption that stakeholders are very willing to collaborate in these governance networks, but highlighting the benefits for each stakeholder sector should increase their support.

The design proposal was heavily informed by research on the biophysical conditions and behaviour, related projects that intervene the ecosystems' capacities and the understanding of the position and interests of different stakeholders in the region. Sand modelling could have helped me to get a general estimation of changes in sediment transport in the coastline with the port expansion and island development, but existing computer models (Vries, 2016) of these dynamics were available and more precise to inform the design.

13.2. MENTOR'S FEEDBACK:

The research involved many complex topics, uncertainties, overlapping concepts and interrelated systems. This challenged me to structure the report and explain the relation between all of these variables clearly. My mentors were extremely helpful in this part and have constantly pushed me to redefine the structure so it can be well understood. They have also helped me in the editing process to separate the core aspects and complementary information.

My mentors have indicated the importance of assigning measures to my proposals, for example how much sand will be dumped in the island, how many people and functions will be displaced with depoldering. This help me to define timelines for both the natural cycles (and their proper management) and some milestones to reach implementation or adaptation pathway. The definition of roles, rights and responsibilities of key stakeholders was also mentioned to then explain governance arrangements in a clearer way and to establish the correspondent policies and recommendations related to the project.

13.3. WHAT I HAVE LEARNED FROM MY WORK:

While working on the research and design of the project, I have learned about the relevance of the research question on this moment in time. The very recent merging of port of Ghent and ports of Zeeland in 2017, the research on collaboration between port of Antwerp and Port of Zeebrugge developed between 2017 and 2019, the "Flanders port area" branding, the morphological dredging studies after the last channel enlargement and the recent pilot Building with Nature projects in the last decade show that the Western Scheldt is at a defining moment to take collaboration pathways that can influence implementation of EbA. This means that willingness to collaborate is already there and could soon influence decision-making and the intervention on natural processes. This also made me more aware that nature depends heavily on politics.

While I was developing the project, I realized how much knowledge has already been produced on the area about the biophysical conditions and how they react to impacts. I also found a lot of information about the governance structures that are involved in the Western Scheldt. Because of the amount of information available, it was challenging leave things out and identify how can I contribute to the knowledge in such an advanced case study. This also helped with my information filtering skills.

Other skills that I developed through the research process included the extraction of layers of information from maps with digital image tracing tools and the improvement of my Dutch while revising policy documents, papers, reports, etc.

13.4. FUTURE STEPS OF THE RESEARCH:

As it was mentioned in the conclusion, there are 3 main directions for future research related to this report:

- The research and project was focused on the main 3 functions defined in the Long-Term vision for the sustainable development of the Western Scheldt, however other functions may also have an important influence on the biophysical conditions and could be considered in these collaborative networks for governance.

- The research developed 2 "extreme" scenarios to compare the impacts of collaboration, however there could be different outcomes in a medium collaboration scenario. Both scenarios considered accelerated climate change projections to emphasize the urgency to develop plans in the region, but other timeframes and opportunities may appear if climate change was considered to be moderate or limited.

- The ideas related to an "adaptive and flexible governance" that reacts to ecosystems performance could be studied in other regions. As it was mentioned before, ecosystems and the products and services they provide are specific to the context. This means, that the strategy I propose for the case study will probably not be applicable in other areas. In fact, it will be nearly impossible to find a universal answer to operationalize EbA in spatial planning. The research approach can however be applicable in other contexts, because the analysis of the specific ecosystem dynamics, urban dynamics and governance structures is a required step to propose a custom planning coordination strategy.

13.5. RELATION BETWEEN THE PROJECT'S TOPIC, THE STUDIO TOPIC AND THE MASTER TRACK:

The project explores the evolution of a territory, the mutual influence of natural and urban dynamics and how can we create better synergies between them. These are very relevant topics for the transitional territories studio, specially this year that the theme is centred on the North Sea and the idea of coexistence. The project will be developed around the Western Scheldt, which is part of the Rhine-Meuse-Scheldt delta that is directly connected and influenced by the North Sea. With the project, I will test alternatives of regional strategies and the capacity of small scale projects to contribute to large scale dynamics. It will also deal with the issue of governance and policy that could facilitate the implementation of these EbA strategies. More importantly, the project studies the relation between site-specific, project-specific and adaptable governance and the capacity to properly manage the territorial scale at which ecosystems operate.

I learned a lot while developing the project, but also realized how much knowledge already exists and how advanced the discussion for planning is in the North Sea region. I would like for the studio to encourage more the research on other parts of the world, and use the knowledge of this area as an example for development. At some point, North Sea study becomes background information for the individual project so it does not necessarily need to be developed there.

13.6. SOCIETAL RELEVANCE:

The projects highlight the value of working with and not against nature to become more resilient towards the effects of climate change. It increases environmental consciousness of society so they can be more involved in the process of support and maintain the conditions of their local ecosystems. Well preserved ecosystems can then operate and provide the wide range of products and services needed by society. This societal engagement with Ecosystem-based adaptation is also part of the local level management strategies.

In the case of the Western Scheldt, the quality of the ecosystems plays a vital role in the intensity of risks related to climate change. If human intervention continues to deteriorate them, flood risks will increase faster in the area. Part of the value of the project is coordinating the need to maintain ecological quality with the need to keep land safe and aligned with the ambitions of port economic development. This aims to optimize resources and increase stakeholder's engagement with nature conservation goals.

As the project proposes a more site-based, project-based, inclusive and coordinated governance, it is possible that some groups of society may be important to consider in the process of decision-making. That way, society is better informed about what is at stake for them and for everyone, how are they influencing natural dynamics and how can they contribute to the sustainable development of the region.

13.7. SCIENTIFIC RELEVANCE:

Planning coordination is fundamental to develop effective plans to manage ecosystems, including Ecosystem-based adaptation strategies. The main reason is that the extension of ecosystems frequently does not align with the traditional administrative divisions of governance.

Large scales and time frames of natural processes require new arrangements of governance that recognize the site-specific conditions, defines the optimal scales to operate and includes the corresponding stakeholders in the process of decision-making. This flexibility should also facilitate the exchange of perspectives, knowledge and resources within the scope of each project in order to make well-informed decisions and reduce trade-offs.

Planning coordination can then facilitate operatizing ecosystem management via small-scale projects and interventions that can also contribute to a long-term vision and the improvement of the natural systems at their territorial dimension.

Natural dynamics change at a slow paste, but can provide many benefits and be cost-effective. For this reason, we have to find ways to incorporate them in planning not only as a goal, but how to make it possible. When properly managed, Ecosystem-based adaptation can increase the resiliency of the built environment against climate change, which is major threat that will become more problematic in the future.

Transferability of the project to "reality" appears to be high, mostly because there is already discussion on how to balance port development and the safety and nature conservation. The Rhine-Meuse-Scheldt delta (Including the Western Scheldt) is a worldwide leading area in research and exploration on how to develop human activities, reduce risks and consider the value of nature. The applicability goes beyond the Western Scheldt, as it proves such approach to be feasible and other parts of the world can learn about how can planning and governance allow it to happen.

13.8. ETHICAL CONSIDERATIONS:

In terms of the research and design of the project, a very important aspect is the high amount of information available on the Western Scheldt. Some components of the strategies that are being proposed in the project already come from other discussed and modelled projects, which prove their effectiveness. Authorship of that knowledge needs to be recognized during the design stage of the project.

It's important to emphasize that the contribution of this projects relies on finding ways to facilitate the implementation of such strategies. What kind of collaborations, synergies and arrangements can be introduced to increase resources, understanding and support for such complex and multipurpose strategies.

On the report, there is a tendency to present the ports of the region as "the bad guy" of the Western Scheldt. It is important to acknowledge that they also contribute positively to nature and safety in some cases and their involvement in collaboration has improved over time. The point of using port development as a key element of the strategy is based on the influence of these stakeholders in the region and what it could mean if they took their responsibility for ecosystem management further.

The main consideration of this project in practice relies on equity. One of the aims it to reduce the distance between the ones who know, the ones who decide and the ones that win/lose from changes in ecosystem management. It is difficult to provide a win/win response when land and water space is limited and interests are conflictive. However, the projects aim to consider a wide range of stakeholders and what can they get from ecosystems in order to increase their willingness to collaborate.

For example, proposing to relocate the small settlement of Emmadorp may be considered a sensitive issue. The proposal also includes to relocate them only 2 km away, but on higher, safer grounds with a 25-year time of implementation and empowered with innovative economies based on salty crops. In relation to this subject, it also worth mentioning that the port expansion in Antwerp involves demolishing of the village of Doel, a bigger and older settlement. In this case the compensation is only economic.