SCENARIO BUILDING FOR BALANCED USE OF LAND-SEA RESOURCES AT THE COAST OF SOUTHWESTERN KURZEME, LATVIA

1. Challenge/problem addressed

The national interest in developing offshore wind energy development to achieve climate and energy independence objectives is conflicting with the interested of coastal communities and tourism sector, which would like to preserve an intact seascape. Offshore wind farms are also likely to have negative impacts on benthic habitats and bird migration. Concerns have been expressed also by fisherman. Therefore, decisions on allocation of the sea space for offshore wind energy developments should consider the trade-offs and various interests from local to national level.

2. Main scale of governance involved: local / regional / national / international

Local

3. Description of what and where was done

The case study (part of Land-Sea-Act Interreg project) aimed to support the sustainable coastal development by balancing national interests of renewable (wind) energy production at sea with local interests in development of coastal tourism, preservation of landscape value and environmental quality. The optimum solutions for locating offshore wind parks and tourism development within the case study area were developed, including the following steps:

- Mapping and assessment of the coastal landscapes and ecosystem services,
- Stakeholder engagement in formulating coastal development challenges, values, interests of local communities, as well as in participatory scenario building,
- Assessing impact of the proposed scenarios to coastal ecosystems, services and land/seascape.

The participatory scenario building was carried out during an interactive face-to-face workshop by applying target-seeking scenario method to explore alternative pathways for achievement of the national policy objectives of renewable energy and coastal tourism development. The area necessary for wind park development was calculated based on the estimated capacity for offshore wind energy production in Latvian marine waters by 2050, which was 2.9 GW according to the report from Wind Europe (2019). Participants were divided in four groups and each tasked to seek for suitable locations for the offshore

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wind parks with total capacity of 2.9 GW, also considering the limitations and priorities for the sea use defined in the national MSP of Latvia and possible impacts on marine ecosystem and landscape. Each also discussed scenarios for sustainable tourism development in the coastal area of the Southwestern Kurzeme. Information on marine and coastal ecosystem features and services, sea uses and thresholds of offshore wind park visibility from the coast were presented to stakeholders within an online map explorer developed using ArGIS Online Experience Builder platform. The four alternatives proposed by the stakeholders for the offshore wind park locations were later assessed by experts, calculating the impacts to marine ecosystem components, coastal landscape qualities, ecosystem service supply and human well-being. Based on the assessment results, the experts proposed optimum solutions for offshore wind energy development by 2030 and 2050 and elaborated proposals for targeting tourism development. Solutions for sustainable tourism were elaborated by clustering of the inland landscape units by the dominant landscape qualities. Recommendations were proposed for adjusting/targeting tourism development to site specific values/landscape qualities.

The case study demonstrated a valuable practice for integrating landscape and ecosystems service assessment as well as stakeholders' engagement methods in analysis of the coastal development trade-offs and elaboration of sustainable solutions.

4. What sectors were involved?

- Local municipality – coastal planning and public services
- Energy – offshore wind park development
- Tourism – coastal tourism development
- Nature Conservation – marine and coastal areas
- Meetings were also attended by representatives of ports, fishery ad forestry sectors, researchers, environmental NGOs and local community organisations

5. Which target/interest groups / stakeholders were reached?

National and regional authorities, local municipalities, offshore wind park developers, tourism entrepreneurs, local community representatives

6. What methods were applied?

Reviewing existing relevant plans and strategies: identification of the relevant policy objectives, targets, tasks, etc.

Biophysical mapping and assessment of ecosystem services and landscape qualities: carried out at the scale of land(sea)scape areas – relatively homogeneous units, identified by the project experts based on the spatial distribution of ecosystem structures and/or land use patterns. Ecosystem service and landscape qualities were assessed at each land(sea)scape area on a scale of 1–5 using a list of indicators and available spatial data (e.g. land cover, forestry data, tourism data etc.), as well as the results of the field survey (in case of landscape qualities). Ecosystem service assessment of seascape areas was based on the results of the BONUS BASMATI project. Results are available at the Land-Sea-Act map explorer.

Public surveys:

- Participatory GIS survey to collect public's opinion on the most important places for tourism and recreation in the case study area (n=80);
- Online survey of stakeholders to formulate the case study objectives (n=31);
- Public survey on contribution of the coastal ecosystems in the case study area to human well-being (n=1000, nationally representative sample).

Interactive stakeholder workshops: 3 face-to-face workshops about landscape as resource for coastal development were organised in the case study area, involving all relevant stakeholder groups (ca 30–40 participants at each). Various engagement methods and online tools were used to collect stakeholder input:

- 1st workshop – moderated discussion about land-sea related development challenges and group work on assessing landscape qualities in the case study area by using specially developed ArcGIS web application;
- 2nd workshop – group work on scenario building for offshore wind energy and tourism development by using target-seeking scenario method (see detailed description above) and Land-Sea-Act map explorer;
- 3rd workshop – group work to discuss the proposed planning solutions and governance models for their implementation.

Assessment of scenario impacts: proposed offshore wind park locations were assessed with regard to their impact to marine ecosystem by calculating the area of the impacted benthic habitats and relating that to loss of ecosystem functions and services provided by the habitat. Impacts to coastal landscape were calculated based on visibility assessment of the proposed wind park location as well as landscape quality assessment of the shoreline. Scenario impact assessment results were used in development of the optimum solutions for offshore wind energy development in the case study area.

7. Lessons learned

Land-sea interface forms a distinctive space that links different ecosystems – marine, coastal and terrestrial, often crossing administrative planning boundaries, from local to regional to national. Therefore, setting an appropriate planning framework at the scoping stage – both for content and process – is essential to structure the work.

Ecosystem service mapping can facilitate integration of multiple economic, social and ecological values in complex decision-making situations, such as planning coastal areas.

Online GIS platforms like Land-Sea-Act map explorer can support interactive collaboration between planners and stakeholders.

Stakeholder engagement in trade-off analysis and development of solutions (e.g. through participatory scenario building) enables integration of local knowledge as well as creates feeling of ownership and acceptance of the planning solutions among stakeholders. At the same time, if jointly developed solutions are not translated into policy, this can lead to disappointment and mistrust in the planning process.

The established methodology and gained experience were used in formulating guidelines for thematic planning to support land-sea integration, although not directly fed into policy implementation. However, the uptake of the results and transfer of the methodology is expected for implementation of the Baltic Sea2Land project pilot studies – regional level Coastal Thematic Plan for the Kurzeme Planning Region and national level Coastal Thematic Plan for Latvia.

8. To which Multi-level Governance steps this valuable practice contributes?

- Scoping, stocktaking
- Stakeholder involvement
- Development of solutions

The case study did not include Setting up governance structures and Creating a governance lead team.

9. Links to further information about the practice/case

Land Sea Act project web site: https://land-sea.eu/trade-offs-and-balanced-use-of-land-sea-resources-latvian-case

Case study report: https://land-sea.eu/wp-content/uploads/2022/01/LSA_Case_Study_Latvia.pdf

Land Sea Act map explorer:
https://experience.arcgis.com/experience/2447e76e306a4e68bf82323e33b72b26/

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Other sources:

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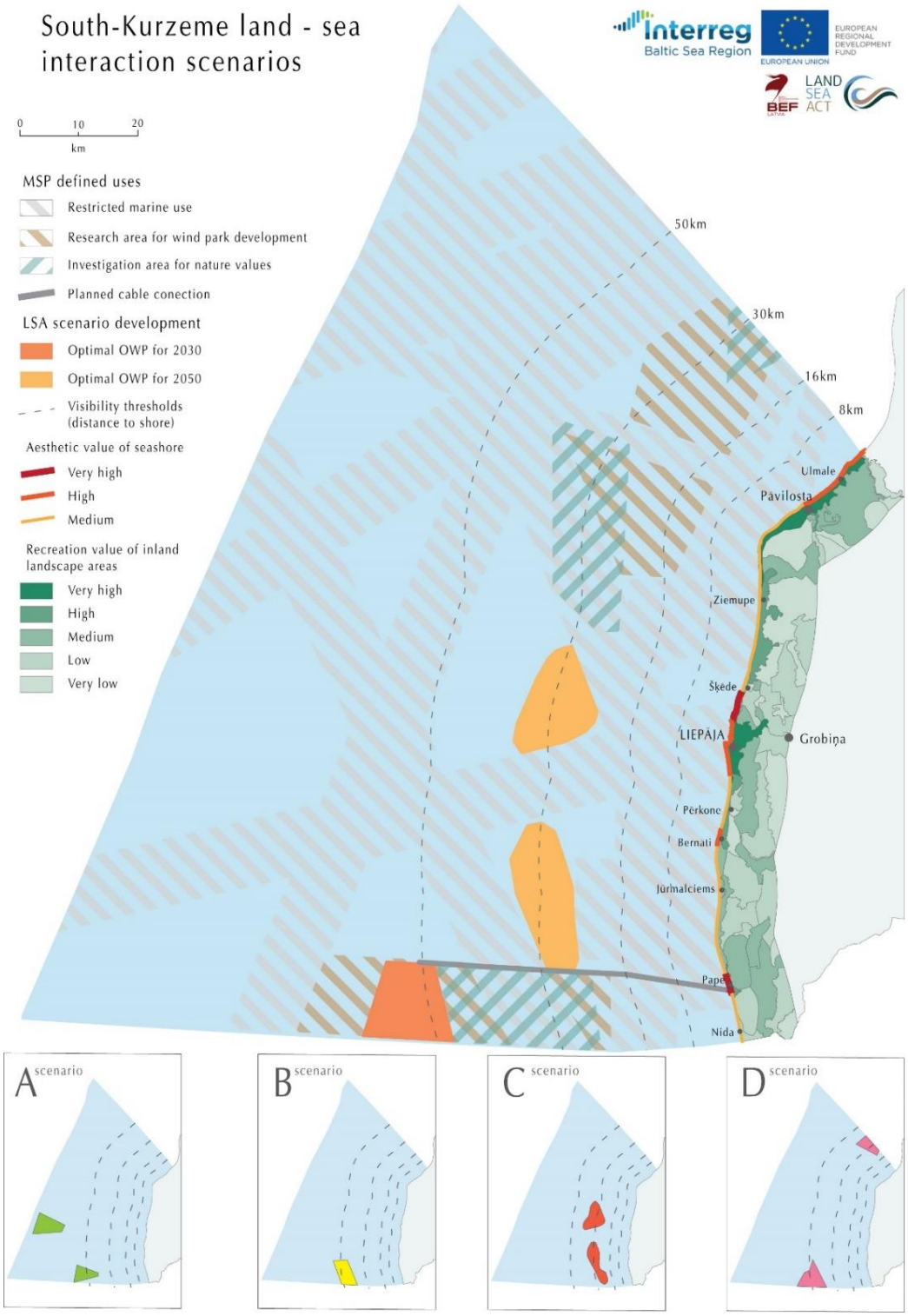
Ruskule A., Veidemane K. 2021: Baltic Sea cross-border case study on operationalising the green infrastructure concept and addressing land-sea interactions in MSP: Final Case Study Report. In: Study on Integrating an Ecosystem-based Approach into Maritime Spatial Planning. European Commission. Available at: https://op.europa.eu/en/publication-detail/-/publication/707ddfe7-353c-11ec-bd8e-01aa75ed71a1/language-en/format-PDF/source-238648827.


South-Kurzeme land - sea interaction scenarios
Interreg
Baltic Sea Region
EUROPEAN REGIONAL DEVELOPMENT FUND
EUROPEAN UNION
BEF LATVIA
LAND SEA ACT
0 10 20
km
MSP defined uses
Restricted marine use
Research area for wind park development
Investigation area for nature values
Planned cable conection
LSA scenario development
Optimal OWP for 2030
Optimal OWP for 2050
Visibility thresholds (distance to shore)
Aesthetic value of seashore
Very high
High
Medium
Recreation value of inland landscape areas
Very high
High
Medium
Low
Very low
50km
30km
16km
8km
Ulmale
Pāvilosta
Ziemupe
Šķēde
LIEPĀJA
Grobiņa
Pērkone
Bernati
Jūrmalciems
Papē
Nida
A scenario
B scenario
C scenario
D scenario