EURODELTA SPATIAL SYNERGIES

WATER AND TIMBER AS KEY RESOURCES IN A CIRCULAR SYNERGY SYSTEM

The Eurodelta region, one of the **most important megaregion** in Europe, aligns closely with EU climate goals, such as the green deal, which promotes circular transformation. Cities like Rotterdam andAmsterdam are spearheading circular built environment projects.This includes **material reuse, minimizing waste and creating circular spaces**.
The Netherlands, in particular, has set ambitious targets to achieve a **fully circular economy by 2050**.
Currently the country is 24,5% ciruclar (Circularity Gap Report, 2025)

Gaps of water and timber in Eurodeltas circular economy
Water:
There is a lack of sustainable approaches to the protection and efficient use of resources. Biotic raw materials such as wood are insufficiently integrated into recycling plans. Industrial activities e.g. along the Scheldt and in the Rhine/Ruhr area have a considerable impact on water quality. In addition, competing demands from agriculture, nature conservation and other areas lead to further conflicts (Langsdorf and Duin, 2021).The connection to rural areas is also not particularly good in some regions.

Timber:
There is a lack of new areas for sustainable timber production, forestry and strategies to promote wood as a key material in circular construction. Overexploitation in regions e.g such as the Eifel-Ardennes, Veluwe and West Flanders and insufficient reforestation intensify the problem (Langsdorf and Duin, 2021).
More is being built from timber, but where is it all produced and how does it get there?
Materials like timber and water are central to achieving the CE goals, emphasizing the need for a clear spatial strategy.
SO A CLEAR SPATIAL STRATEGY IS ESSENTIAL.

Develop a spatial infrastructure

Create a synergetic system

Transform spaces by design

CORE PRINCIPLES AND RESEACH QUESTIONS

Core principles

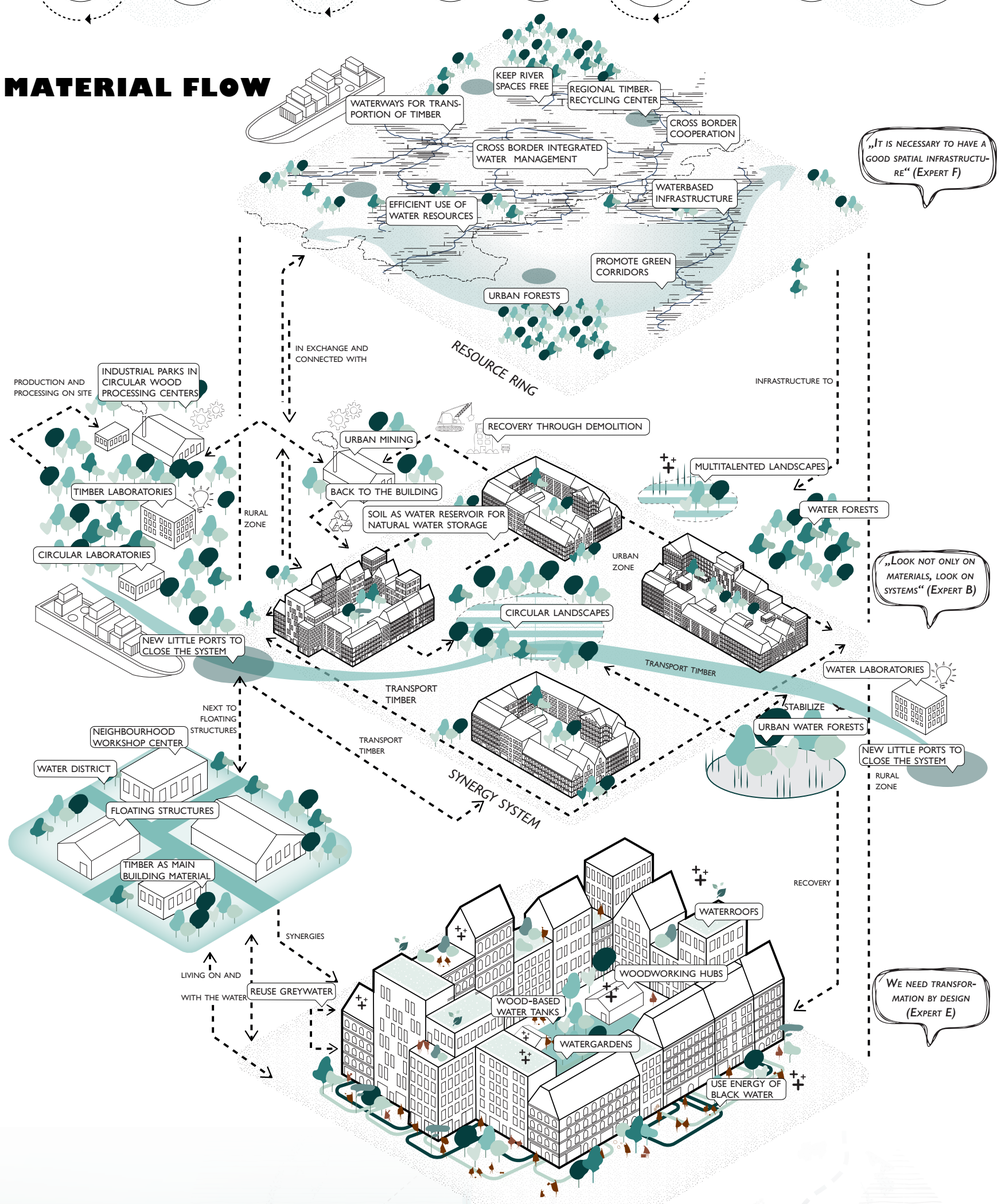
1. In the Eurodelta, cities and landscapes are being developed with synergies between different ecosystems that form an infrastructure of waterways for forests.
2. In the Eurodelta, new systemic spaces for circular construction, sustainable timber production and integrated water management are being created through innovation labs and material hubs .
3. In the Eurodelta, water and timber cycles design a resilient, circular and urban-rural networked future.

Research questions

- How can water and timber (forests) create interconnected spaces and infrastructures that support each other and connect with other cities?
- How can water and timber develop synergy systems in cities to make landscapes and urban areas circular and place-based?
- How can circular systems with water and wood be designed in neighborhoods to promote sustainable urban living, community engagement and awareness, and to rethink life with and on water?

METHODOLOGY

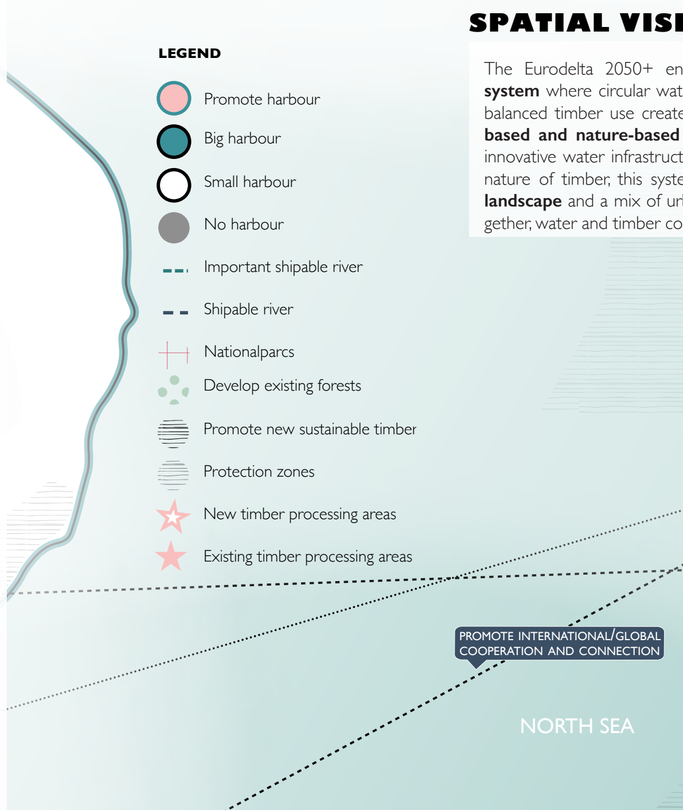
MATERIAL FLOW



SWOT ANALYSIS

SPATIAL VISION

The Eurodelta 2050+ envisions an **integrated system** where circular water use and circular and balanced timber use create a **connected, place-based and nature-based region.** By combining innovative water infrastructure and the renewable nature of timber, this system fosters a **balanced landscape** and a mix of urban and rural areas. Together, water and timber contribute to resilient and circular ecosystems that define the Eurodelta's future.The Eurodelta in 2050+ will be a **harmonious interplay of cities, landscapes, and ecosystems** where circularity defines the **reuse of water and timber**. Urban and rural areas blend seamlessly into one another, creating a network of resilient, self-sustaining systems:



In place-based region, water is used as a **natural reservoir** to enable **regional and global material transportation via waterways**. Black water is used locally for energy and heat production. The **protection and reforestation** of national parks is just as important as the **creation of local timber production** sites. Wood is established as a c**entral building material** for circular, built neighborhoods. Synergies are created through the local production of wood in **forests near rivers** and the adjacent wood processing industry, creating direct transportation routes.

EURODELTA IS PLACE-BASED

In a circular region, water is used efficiently by **establishing water laboratories** and **reusing gray water** as process water in the cycle. **Black water generates energy** and heat on site. **Regional wood recycling centers** and **forestry and agricultural laboratories** promote urban mining. **Waste wood is recycled** and used for new furniture and products. Synergies are created through the use of wood materials for flood protection and the creation of **circular laboratory** and landscape systems. In addition, **floating wooden structures** are designed on water to create sustainable habitats.

EURODELTA IS CIRCULAR

LONDON

In a connected region, **cross-border water management** is integrated and complemented by **small new harbors** to **complete the system**. Water community gardens promote awareness and networking. **Cooperation** between forestry and forest production areas creates a **system of ecosystem hubs and laboratories**. Community wood workshops promote circular use through collaboration. **Synergies are created through the use of waterways** for timber transportation. Landscapes are connected as an integrated system, while neighborhood centers for workshops promote local collaboration and innovation.

EURODELTA IS CONNECTING

In a nature-based region, the **river area is kept free** of development and **floodplains are renaturalized**. Water-based agriculture is developed and **urban life with water** is normalized. **Urban forests** are created near cities, while protected areas for forests are expanded and cooperatively maintained. Synergies are created through **green corridors** along waterways and urban water forests that contribute to the reforestation of urban water areas. **Wood architecture** recycles wastewater, promotes ecological awareness and reduces CO^2

EURODELTA IS NATURE-BASED

EURODELTA SYSTEM IS SYNERGETIC