

"Unfolding and exploring uncertainties for possible and desired futures offshore through co-created scenarios for the development of offshore wind farms"

university of groningen

Laura Gusatu PostDoc ECOAMARE, Faculty of Spatial Sciences, Planning Department, University of Groningen

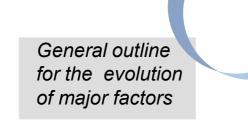
STEP 1: LITERATURE REVIEW

(from global - IPCC; to regional/local - EU, EEA)



Selected global narratives (SSP)

developments and trends

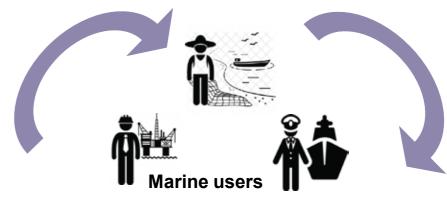




Convergence of **possible trajectories** of evolution for socio-economic, technological and governance variables into possible sustainable scenario storylines (EU)

STEP2: STAKEHOLDER ENGAGEMENT

(focus grups; workshops; interviews)



Participative / inclusive policy - making Supportive legal frameworks and plans Reduced institutional fragmentation







TECH-ONOMY

KEY FOCUS: ECONOMIC GROWTH under TECHNOLOGICAL **INNOVATIONS**







DRIVERS

EFFECTIVE but **LIMITED** GOVERNMENTAL TITLE

TECHNO-INTERVENTION INNOVATION UPSCALE

CONTINUATION of current **CONSUMPTION** PATTERNS :

GROWTH of the **PRIVATE SECTOR**

CAUSE-EFFECT CHAINS

TECHNO-ECONOMIC SOLUTIONS to social and environmental issues (TECHNO-FIX)

GROWTH Of BLUE ECONOMY SECTORS

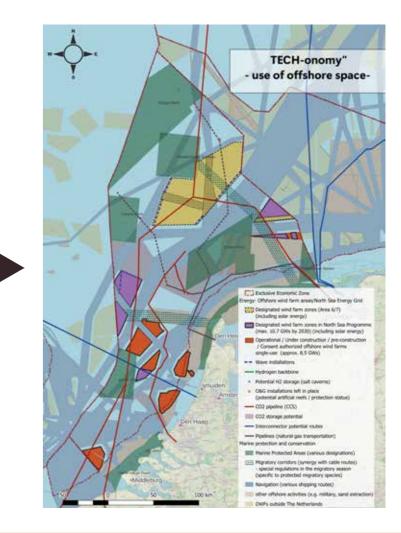
HIGH DENSITY of **OFFSHORE** activities

ASSUMPTIONS

INTER-SECTORAL collaboration **CO-USE** of facilities **MULTI-use** of SPACE (mari-parks; hybrid parks) Multi-gear vessels

mainly **MONITORING** and **COMPENSATION** for negative ecosystem impacts **Nature Inclusive Designs**

ENERGY SECTOR connected to other markets **70 GWs** ENERGY TARGETS OWFs + SOLAR + H2 + GAS(CCS) system integration



NETHERLANDS FIRST

KEY FOCUS:

NATIONAL RESOURCES (FOOD and ENERGY)







HARMONISATION WITH EU

LOWER RELIANCE /

RELIANCE ON LOCAL RESOURCES FIRST and LOCAL MANUFACTURING (high energy demand)

PRIORITISATION of the local **OFFSHORE FOOD PRODUCTION**

RELIANCE ON LOCAL ENERGY RESOURCES (including gas)

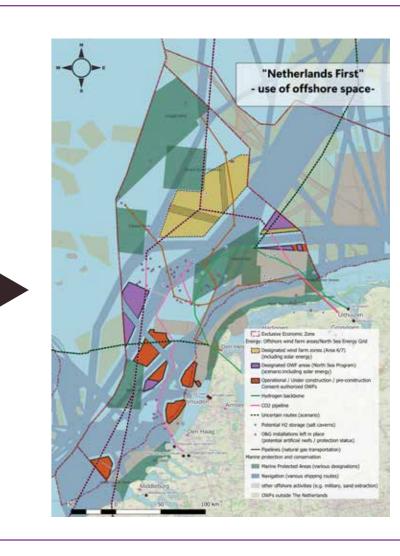
NATURE is valued for the SERVICES PROVIDED to the society

HIGH COVERAGE of FISHERIES **TYPES** (partly sustainable) AQUACULTURE increase close to the shore

RE-PURPOSING and **RE-USE OF OFFSHORE O&G assets** (for gas transportation)

OWF park design to faciloitate fisheries (pass-through corridors) **ELECTRIFICATION of O&G** platforms

70 GWs ENERGY TARGETS GAS (CCS) + OWFs + SOLAR + H2



ECO-SEA

KEY FOCUS: NATURE PROTECTION AND RESTORATION











European Uunion: INWARD-LOOKING

SOCIETY EMPOWERED + CLIMATE AWARE BOLD / SUSTAINABLE SOCIO-POLITICAL and ECONOMIC SHIFTS



away from:

1) profit maximisation 2) intense economic

competition 3) consumerit lifestyles

towards:



1)SUFFICIENCY

2) COOPERATION 3) RESPOINSABILITY

for NATURE

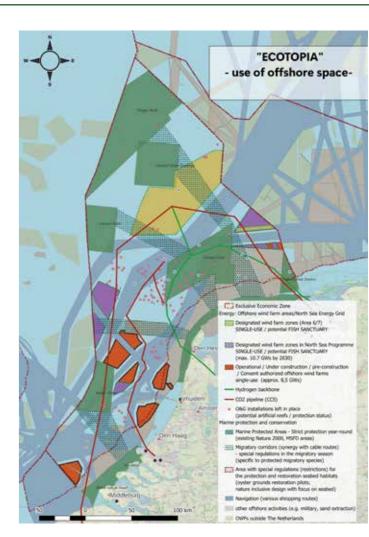
70 GWs in the NORTH Sea mostly OWFs + SOLAR + H2

LOWER ENERGY DEMAND OWFs as de-facto MPAs

REDUCE IMPACTS of HUMANS on NATURE (less shipping, no trawling)

LEAST HARM to nature (in-situ decommissioning)

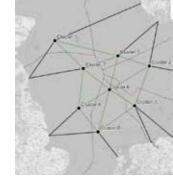
PROTECT / RESTORE species and habitats (more MPAs)



EUROPE TOGETHER

KEY CONCEPT:

NORTH SEA OFFSHORE GRID (NSOG)





ENVIRONMENTA GEOPOLITICAL, **FINANCIAL SHOCKS**

European Uunion: STRONG, TOP-DOWN CENTRAL GOVERNANCE

NORTH SEA BASIN GOVERNMENTAL ENTITY (REGIONAL LEGISLATIVE ENTITY with a **COMMON VISION** for the **NORTH SEA**)

SETS BOUNDARIES for ECONOMIC GROWTH under **HEALTHY ECOLOGICAL BOUNDARIES**

LOWER GHG EMISSIONS and SUSTAINABILITY

BASIN SCALE COLLABORATION

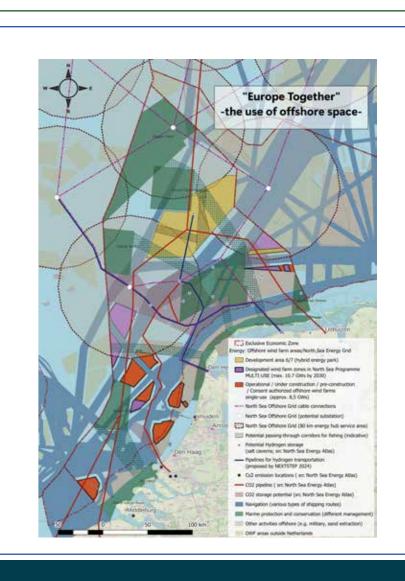
REDUCED CONFLICTS FACILITATES SYNERGIES between sectors / users

> **CLEAR LEGAL GUIDELINES CROSS-SECTOR DIALOGUES**

SHARED OWNERSHIP of **BENEFITS and RISKS**

PREVENTION of BASIN SCALE negative cumulative impacts

300 GWs at the BASIN SCALE system integration (NSOG)



ECOAMARE Consorttium: (NWA project: Offshore Wind)















