



COASTAL

Collaborative Land-Sea
Integration Platform

COLLABORATIVE LAND-SEA INTEGRATION PLATFORM

Multi-Actor Lab 3 – Norrström Basin, Baltic Coast, Sweden

Georgia (Gia) Destouni

Stockholm University

Guillaume Vigouroux (SU), Anna Scaini (SU)



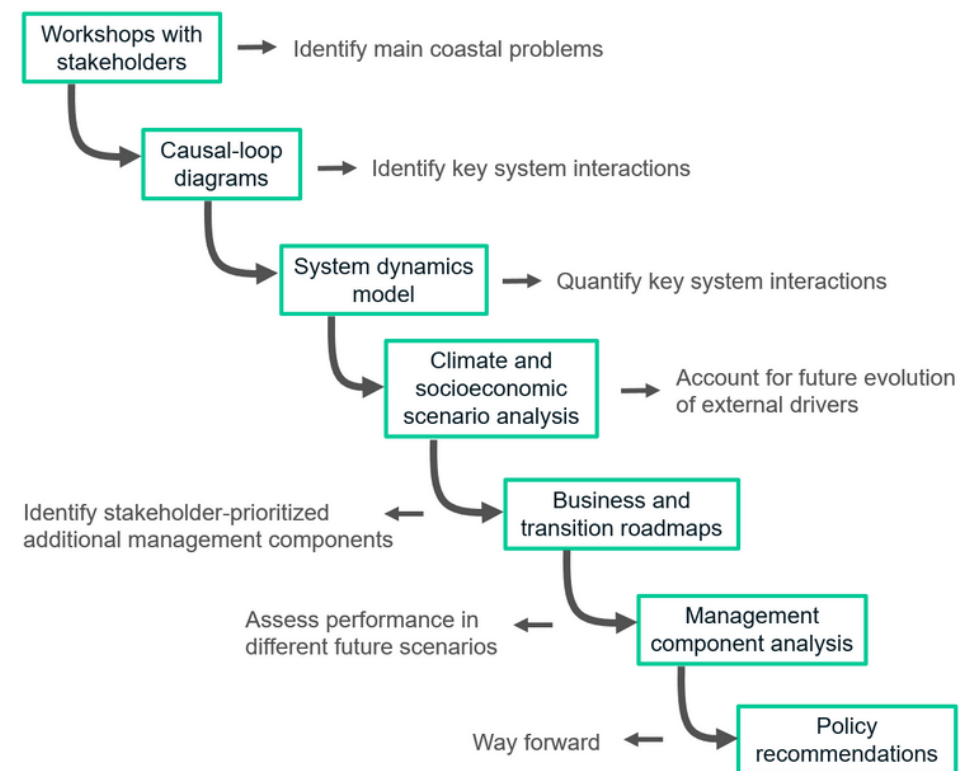
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.



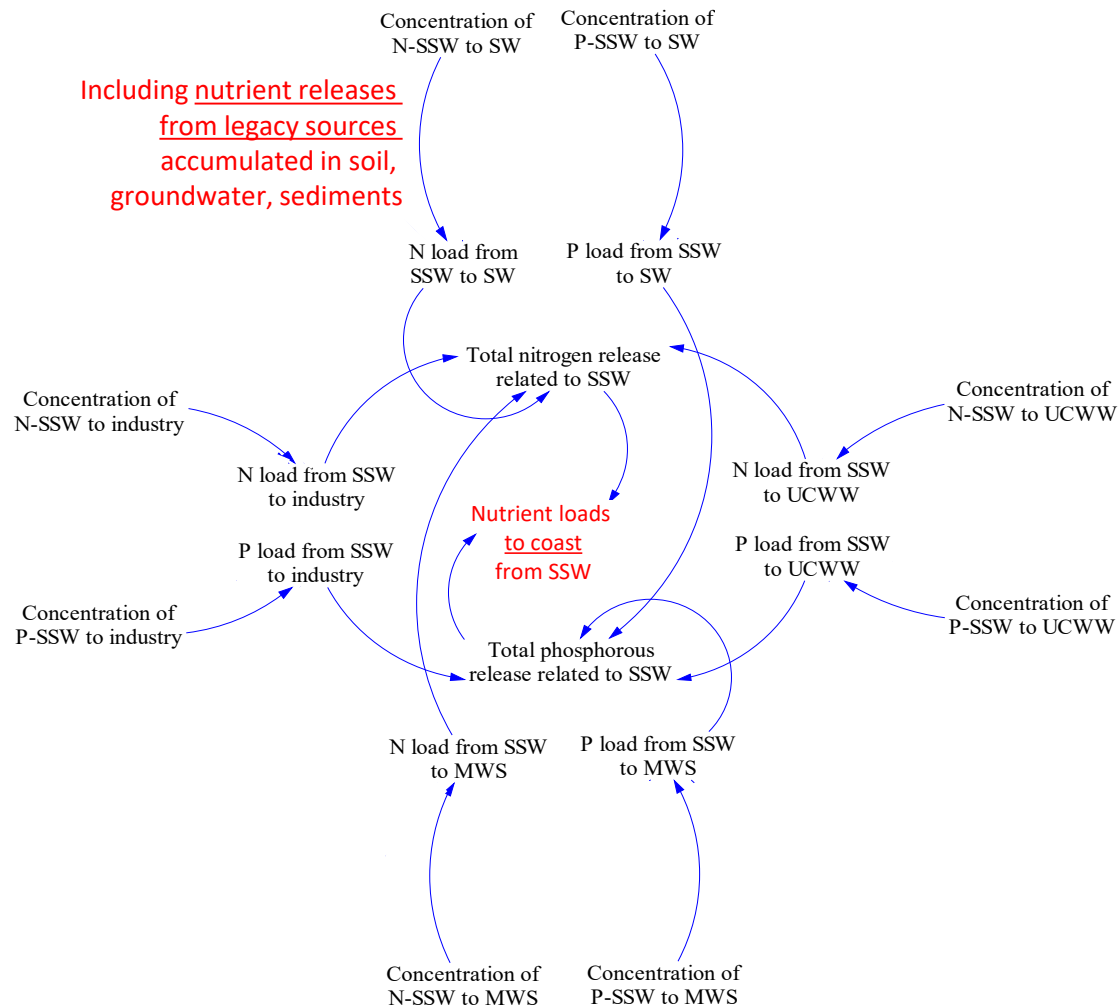


Challenges:

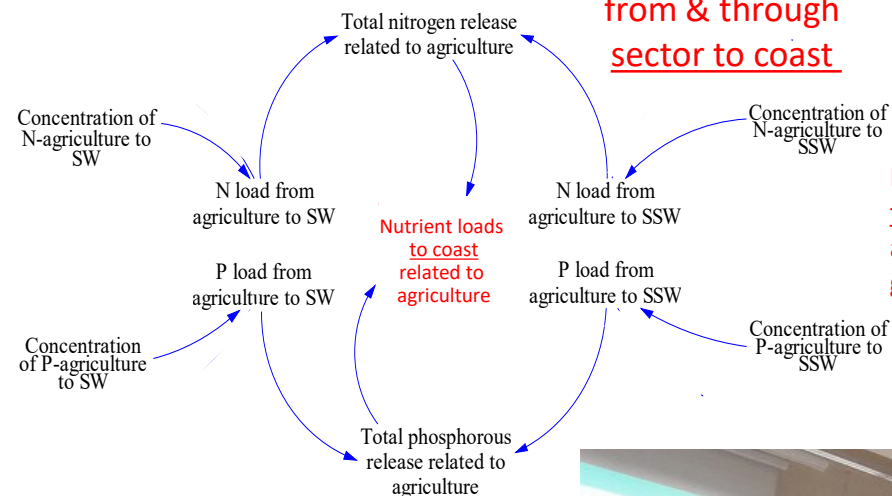
- Water Quantity
- Water Quality
- Co-creation Process



Including nutrient releases from legacy sources accumulated in soil, groundwater, sediments



Tracing nutrients from & through sector to coast

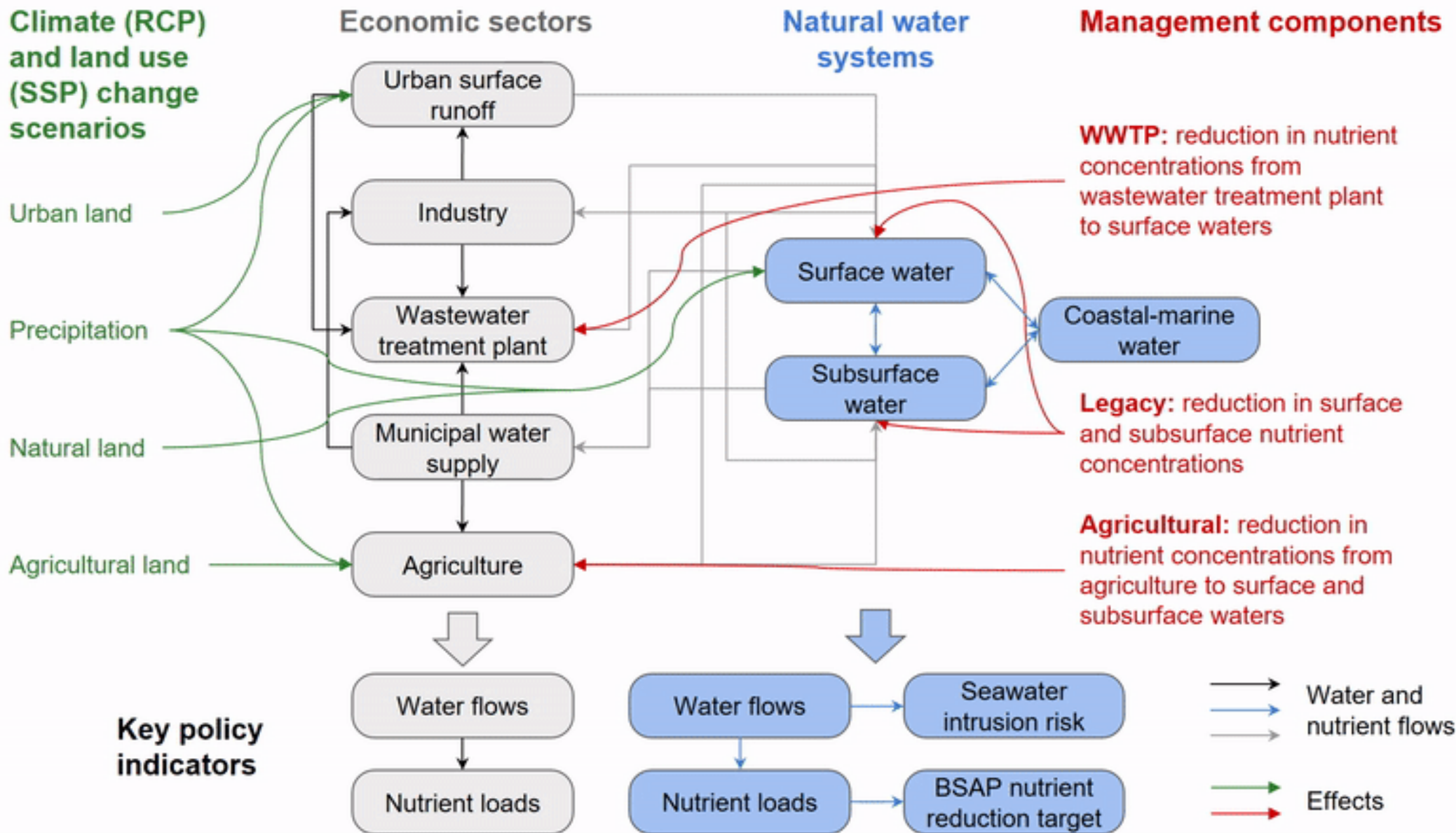


Including nutrient releases from legacy sources accumulated in soil, groundwater, sediments

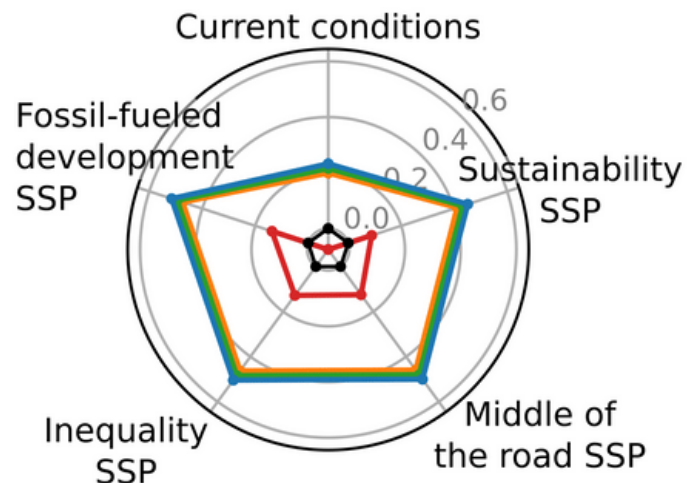
Tracing nutrients from & through the subsurface water system to coast



System Dynamics Model



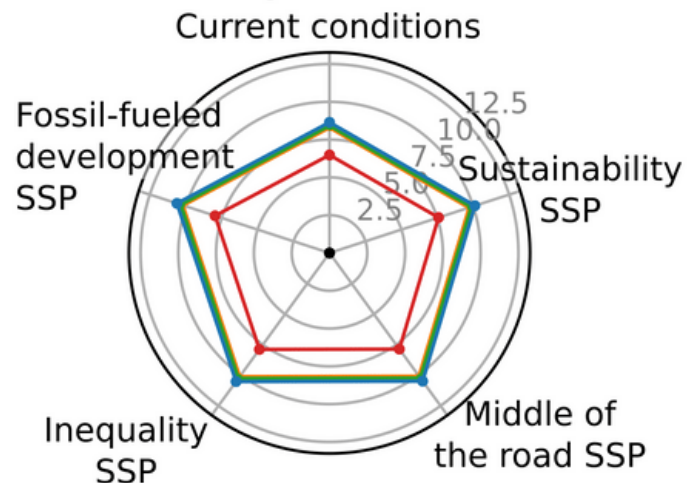
Nitrogen



Baltic Sea Action Plan (BSAP) load reduction targets are not met under current management conditions.

Even considerable decrease of currently active agricultural and WWTP nutrient sources is insufficient for meeting BSAP nitrogen and phosphorous load reduction targets.

Phosphorus



Only reduction of nutrient releases from legacy sources can considerably decrease current nutrient loads to the coast.

Even the legacy source reductions are insufficient for meeting BSAP targets under future scenarios, due to the increase of the water flows that carry the nutrient loads.



WAY FORWARD

Reductions needed

We need combined, synergistic strategies that focus on water quality, aiming at reduction of nutrient loads from both active and legacy sources.

Time frames of sustainability

Examples of measures for reaching the needed reductions:

- For legacy sources: enhancement of downstream retention/attenuation of their nutrient releases (e.g., by well-placed constructed/restored wetlands, reactive barriers with nano-particle injection for retention enhancement)
- Recycling and reuse of nutrients
- More adaptive nutrient management under uncertainty (considering future scenario, source and load evolutions, and their modelling)

Flipbook by Anna Scaini, Guillaume Vigouroux and Georgia Destouni, in collaboration with the



MAL3 COASTAL PARTNERS

SWEDISH MAL
COORDINATION:



Stockholm
University

LOCAL PARTNERS:



NIRÅS



GLOBAL UTMANING 

