

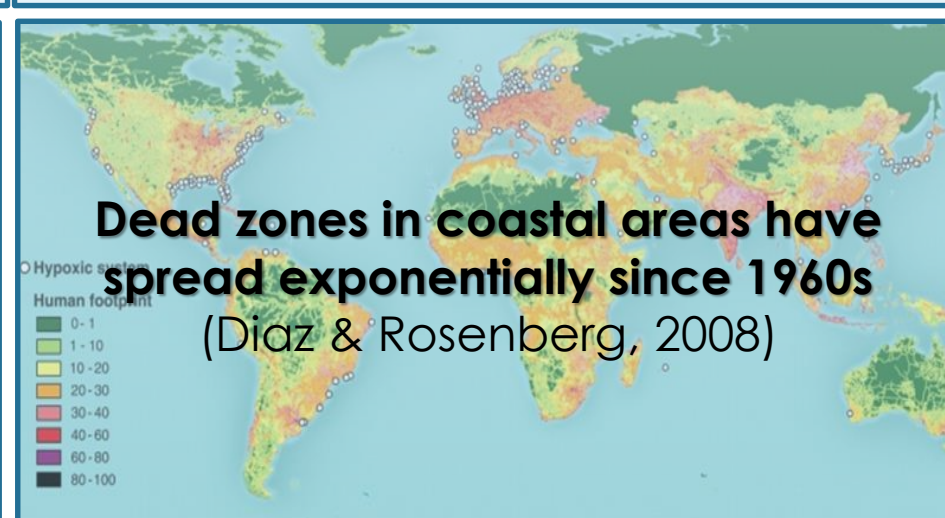
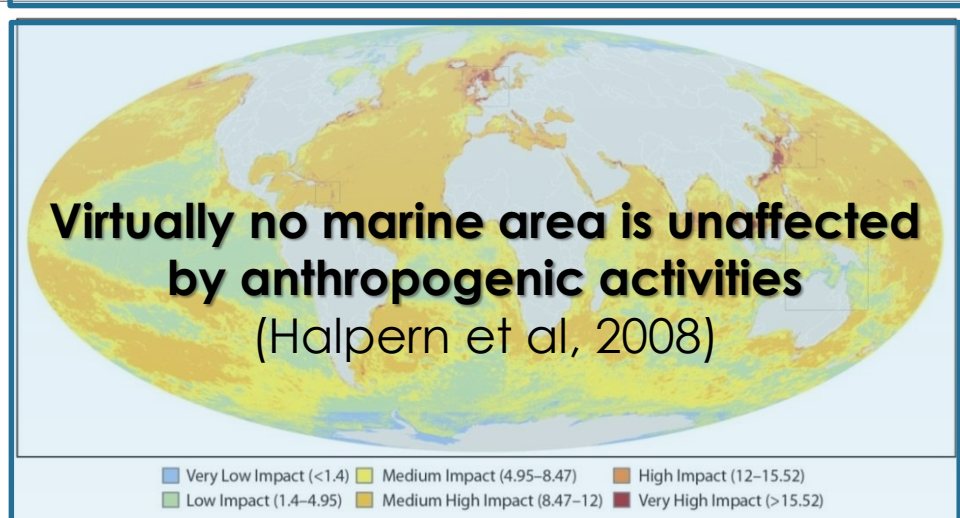
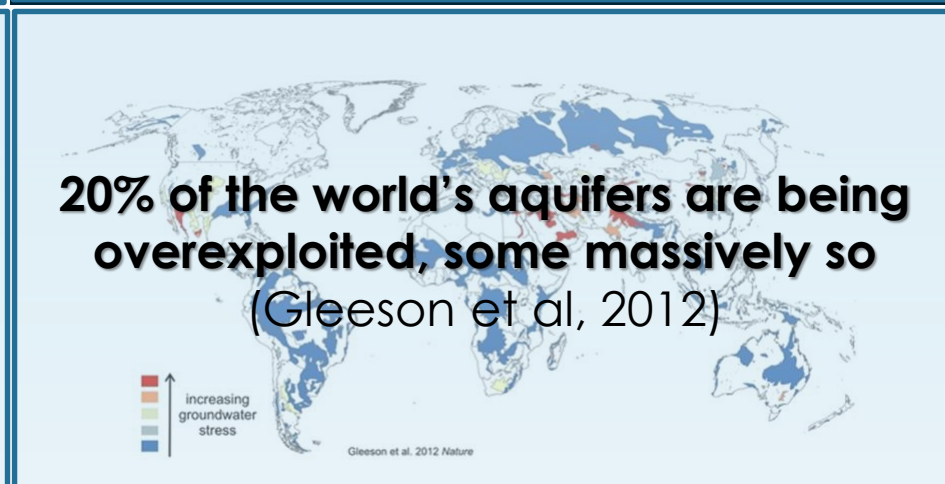
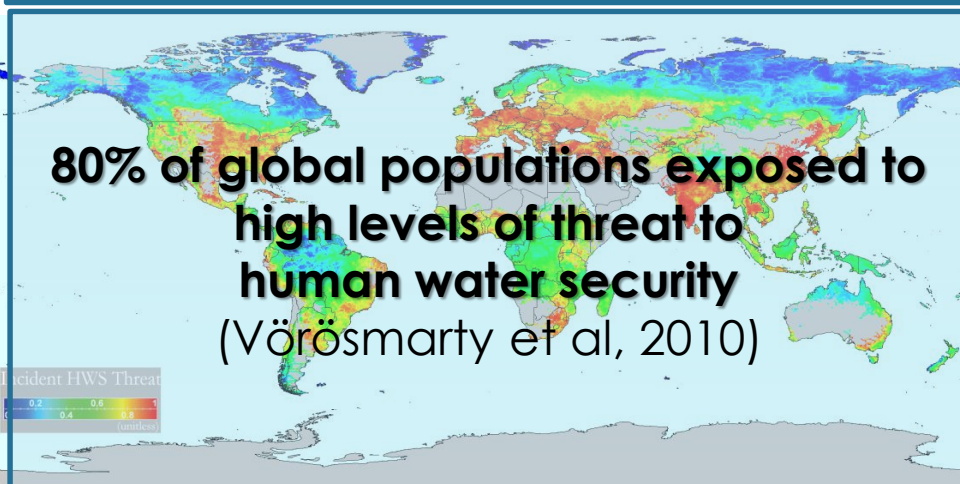
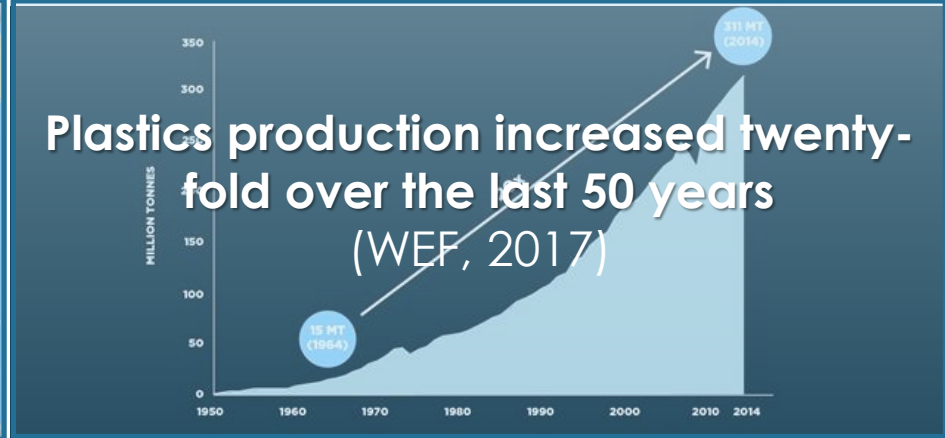
# Source-to-sea – the issue, the concept and the platform

Birgitta Liss Lymer

Director, Water Governance

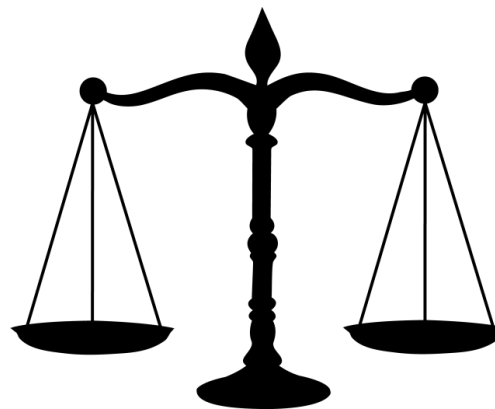
Coordinator of the S2S Platform Secretariat

Stockholm International Water Institute (SIWI)





**Economic growth**  
**Resource use**



**Social and environmental**  
**sustainability**

# Worlds apart?



## Fresh

- Rivers, lakes and aquifers
- Hydrologists
- Water supply engineers
- Freshwater as resource
- Drinking water quality
- IWRM
- Water allocation
- Floods and droughts
- SDG goal 6
- UN Watercourses and transboundary rivers conventions
- GWP, WWC, UN-Water

## Salty

- Coastal and marine waters
- Marine scientists
- Coastal and port engineers
- Fish – and land - as resource
- Eutrophication, acidification, litter
- ICM
- Marine spatial planning
- Shore protection
- SDG goal 14
- UNCLOS, MARPOL, London and Regional Seas Conventions,..
- IOC, NOAA, UN-Oceans



# Necessity = the mother of progress



## The new normal



**Climate change**

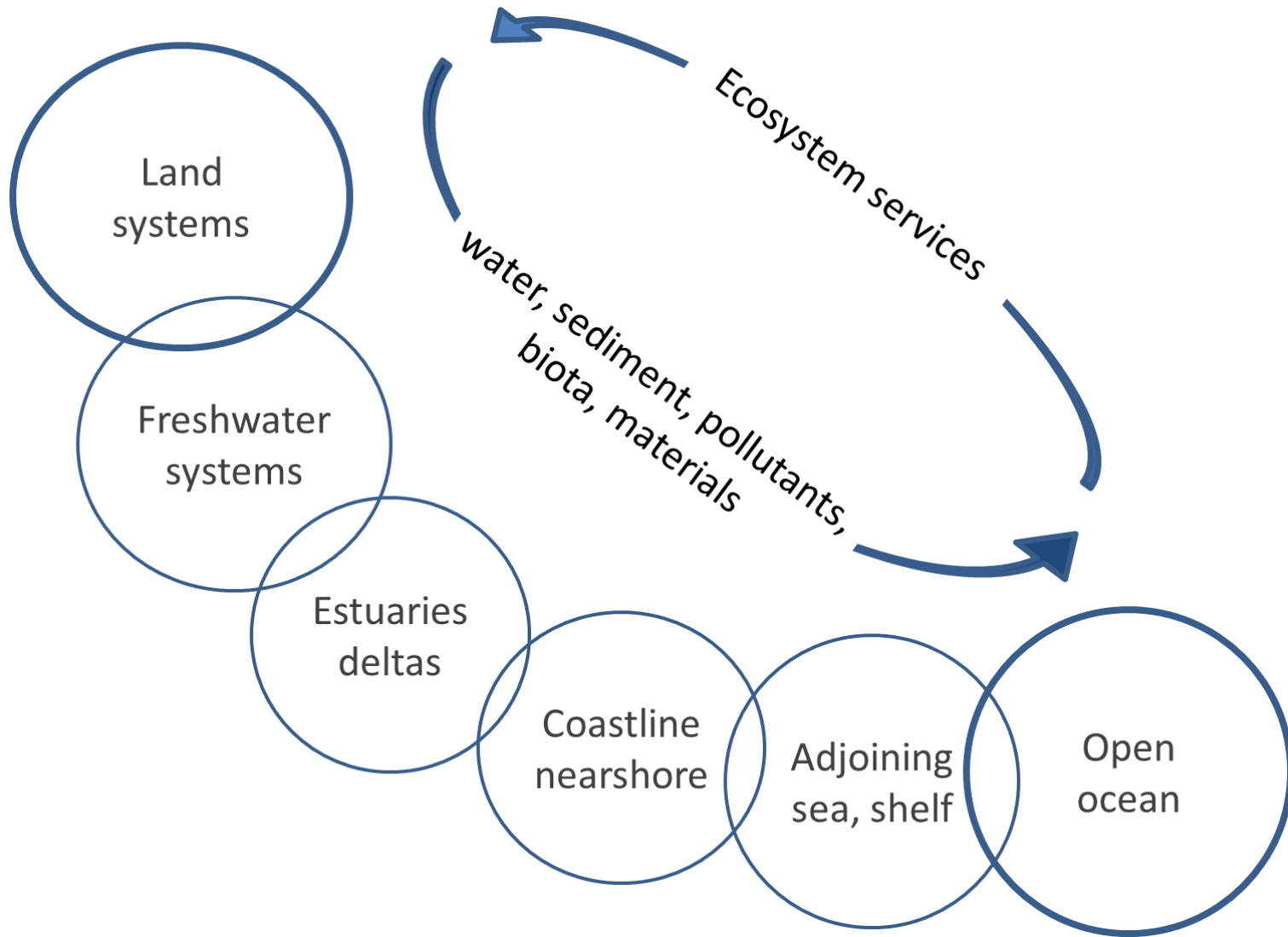


**Population growth/  
urbanization**



**Increasing  
consumption/  
production**

# Land and oceans are connected by key flows



# Water and sediment flows - too much or too little?

**Too much** Flood risk, smothering of coastal habitats, land slides,..

**Too little** Delta starvation, erosion,..

Eg. Colorado river & delta, Yellow river & Bo Hai sea, Nile river & Mediterranean, Orange river & Benguela

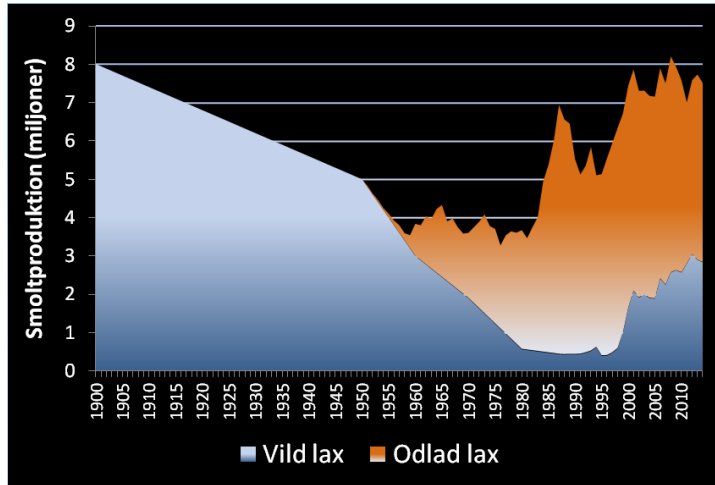


*Yellow river delta 1989 (NASA, Landsat)*



*Yellow river delta 2009 (NASA, Landsat)*

# Biota flows in source-to-sea systems



- Exploitation of rivers
- High fishing pressure
- Low survival, salmon fry disease M74



- Restoration of rivers
- Lower fishing pressure
- Higher survival of salmon fry disease M74



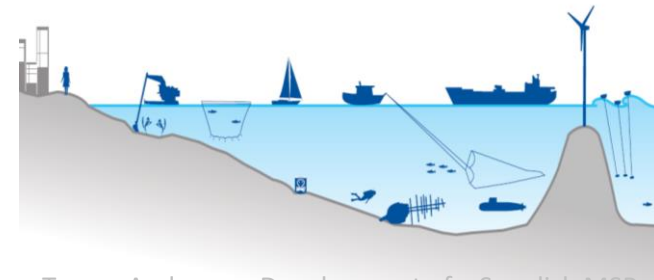
# Pollution flows to oceans

- 4-13 million ton plastics enter the oceans every year  
~80-90% of the marine debris originates from land based sources
- Globally ~80 % of sewage water is untreated – (including industrial wastewater)
- Diffuse sources of pollution / runoff still a major challenge in most countries
- Ocean acidification: 30-40% of carbon dioxide released from human activity dissolves into oceans, rivers and lakes



# Material flows moving from land to the coast and sea

- Demand for land for housing, industry & recreation along the coasts is growing
  - Land reclamation
  - Artificial islands, expansion of sea ports and terminals
  - Aquaculture
- Technology development, new opportunities for exploitation of marine space
  - Cheaper dredging technologies
  - Large-scale infrastructure development projects
  - Natural gas pipelines, submarine power cables, off-shore windfarms, seabed mining
- Action regarding land use and marine spatial planning



Tomas Andersson Development of a Swedish MSP

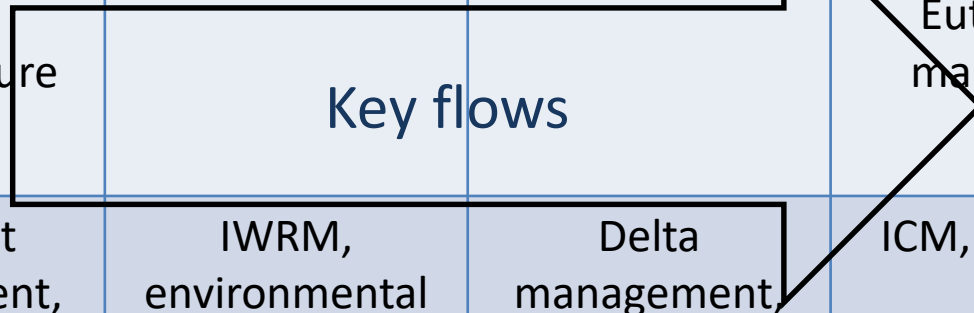
# Ecosystem service flows

“More than two-thirds of the gross marine product depends on healthy ocean assets” (WWF, 2015)



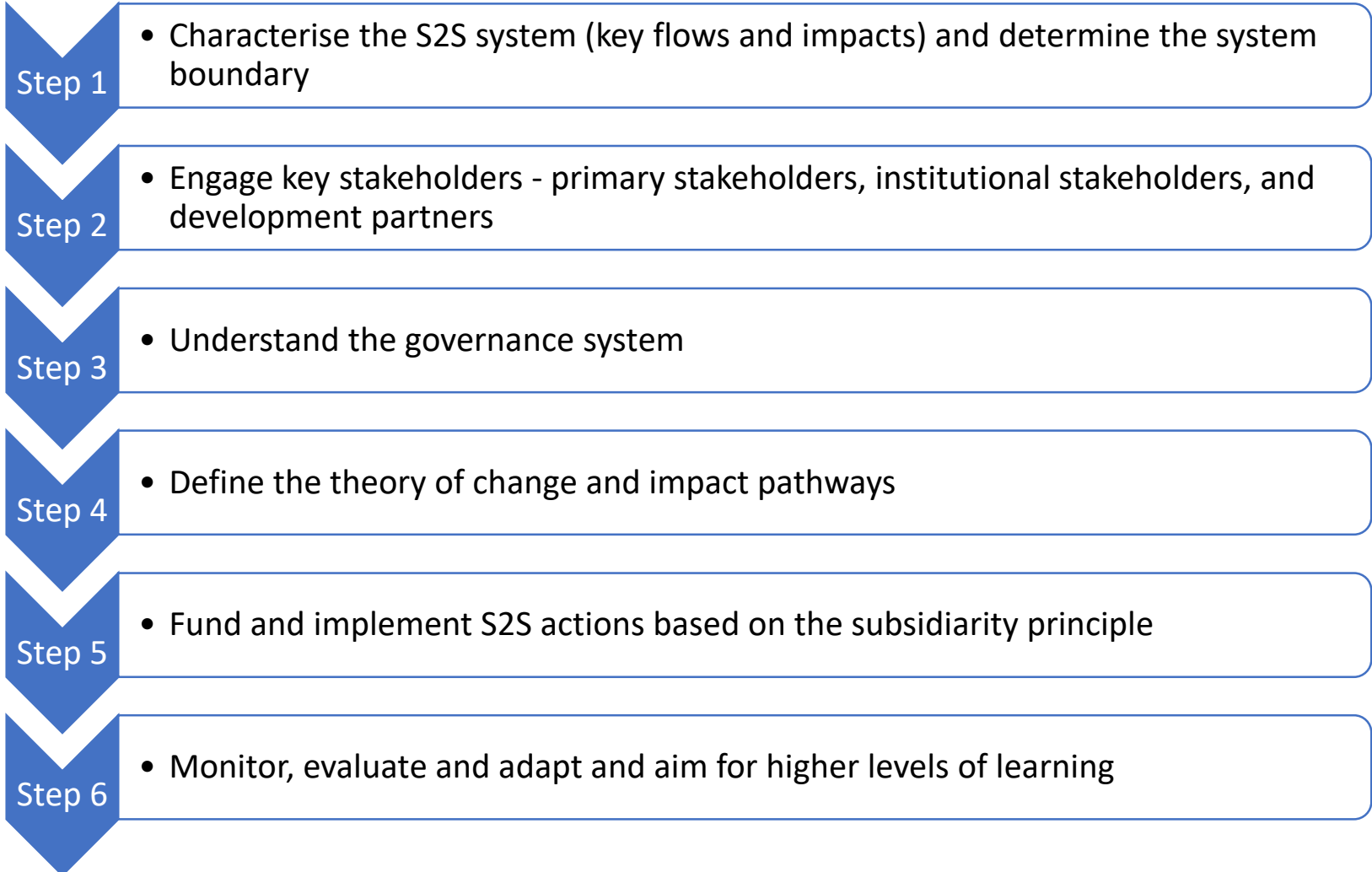
# Integrating approaches progressing, but challenges with sectoral management in the S2S continuum persist

	Land/ terrestrial	Freshwater systems	Deltas/ estuaries	Nearshore coast/Adjoining sea /Open ocean
Common goals	Sustainable use and long-term productivity of ecosystems			
Different areas of focus	Increased productivity (e.g. food), housing, infrastructure	Water allocation Drinking water quality	Flood risk Eutrophication Salinisation	Allocation of uses of coastal/marine space Fisheries Eutrophication/ marine pollution
Different management tools	Land/forest management, urban and land use planning	IWRM, environmental flows	Delta management, IWRM, ICM, MSP	ICM, Marine Spatial Planning





# Steps to operationalize a source-to-sea approach



# Global “legal” S2S framework

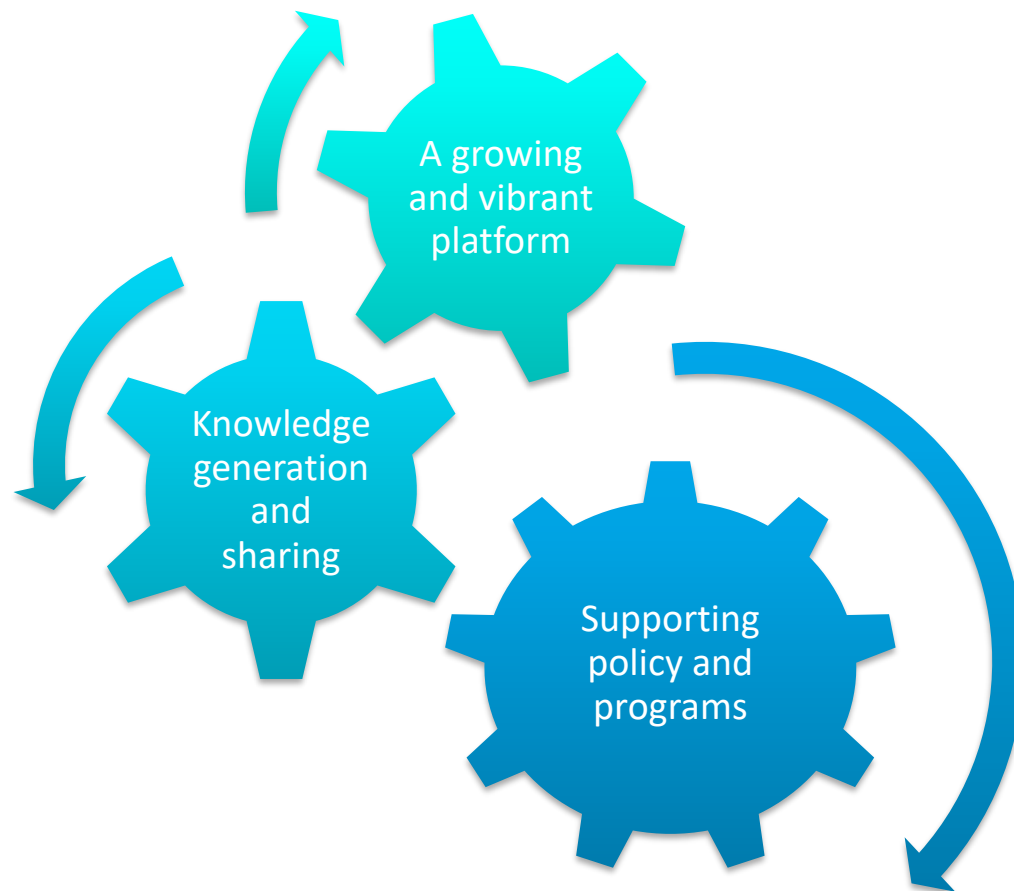


- SDGs – S2S links could be stronger
- GPA – the only “S2S” intergovernmental mechanism
- MEAs on specific pollutants: POPs, Mercury, etc
- UN Watercourses Convention / UNECE Water Convention: Principle of causing “no significant harm”

## **Regional:**

- Regional Seas Conventions,
  - EU SBSR/HELCOM BSAP
  - EU WFD / MSFD / etc
- Transboundary river conventions

# Action Platform for Source to Sea Management – stimulating partnership and catalyzing action

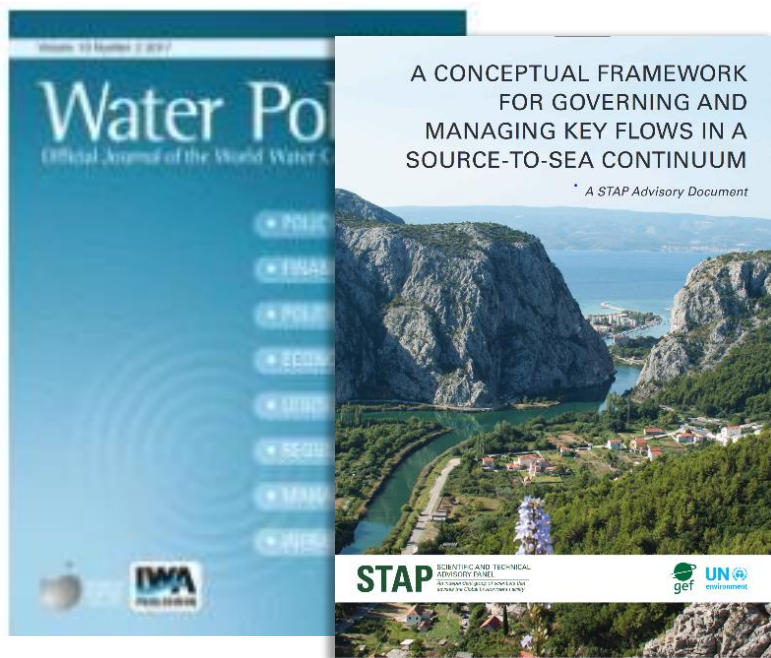


# A growing and vibrant platform





# Knowledge generation and sharing



A conceptual framework for governing and managing key flows in a source-to-sea continuum (2017)



Source to Sea – Linkages in the 2030 Agenda for Sustainable Development (2016)

Swedish Agency  
for Marine and  
Water Management

Source-to-sea Webinars:

<http://www.unepdhi.org/webinars/s2s-webinars>

# Supporting policy and programs



Factors contributing to "S2S blind" development:	Need for:
Political priorities & power dynamics between (up- and downstream)	Awareness, incentives, stronger global policy consensus & frameworks
Limited technical capacity to assess and address S2S priorities	Technical support Knowledge exchange, help-desk functions to support implementation, methodology development, capacity building
Staying in the "comfort zone" - jurisdiction and stakeholders	Demonstrate benefit of local cooperation, issue-focus
Available financing tends to be sectoral	Funding streams prioritizing S2S measures – "ocean" funding should reach upstream