

Linking water and ecosystem-based management for sustainable development from source to sea

Birgitta Liss Lymer

Director, Water Governance

Coordinator of the S2S Platform Secretariat

Stockholm International Water Institute (SIWI)

80% of global populations exposed to high levels of threat to human water security
 (Vörösmarty et al, 2010)



20% of the world's aquifers are being overexploited, some massively so
 (Gleeson et al, 2012)

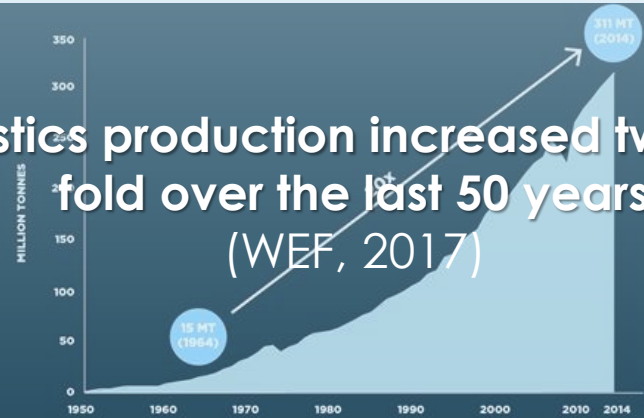


Gleeson et al. 2012 Nature

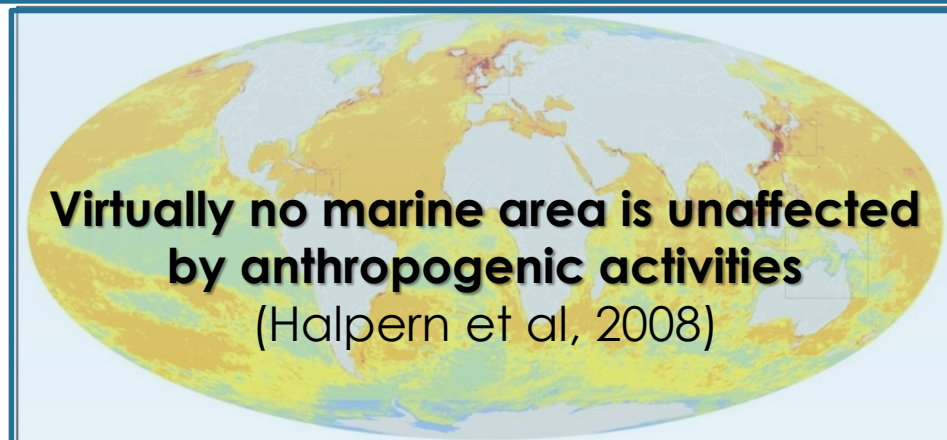
Water quality severely affected in more than 80% of the world's transboundary river systems
 (UNEP and UNEP-DHI, 2016)



Plastics production increased twenty-fold over the last 50 years
 (WEF, 2017)

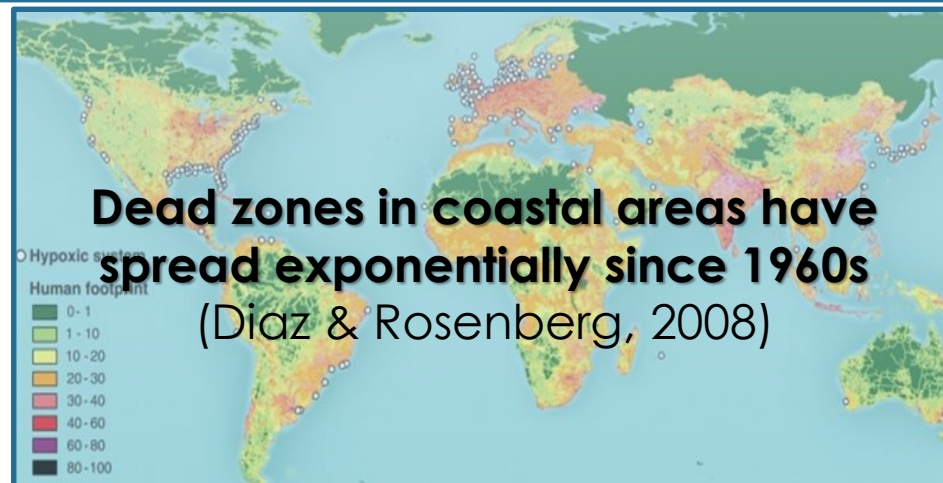


Virtually no marine area is unaffected by anthropogenic activities
 (Halpern et al, 2008)



Very Low Impact (<1.4) Medium Impact (4.95-8.47) High Impact (12-15.52)
 Low Impact (1.4-4.95) Medium High Impact (8.47-12) Very High Impact (>15.52)

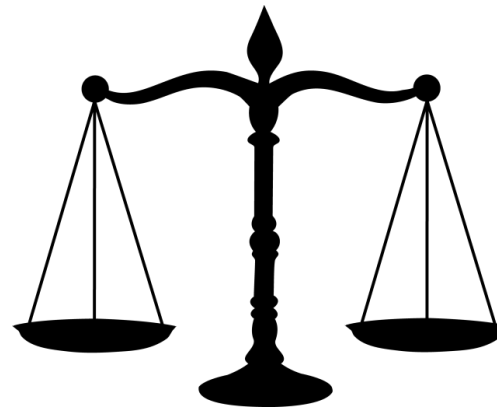
Dead zones in coastal areas have spread exponentially since 1960s
 (Diaz & Rosenberg, 2008)



Hypoxic systems
 Human footprint
 0-1
 1-10
 10-20
 20-30
 30-40
 40-60
 60-80
 80-100

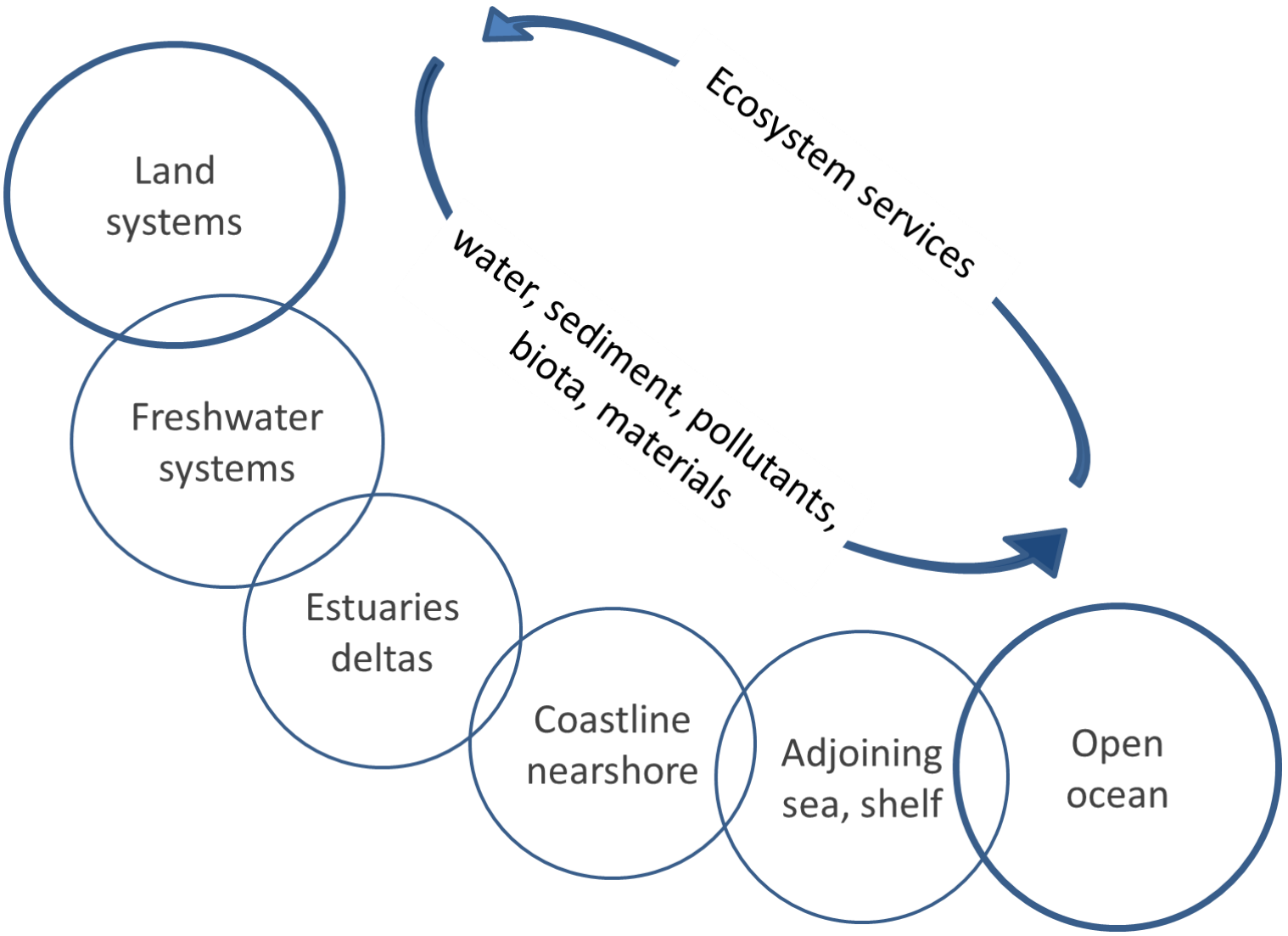


Economic growth
Resource use

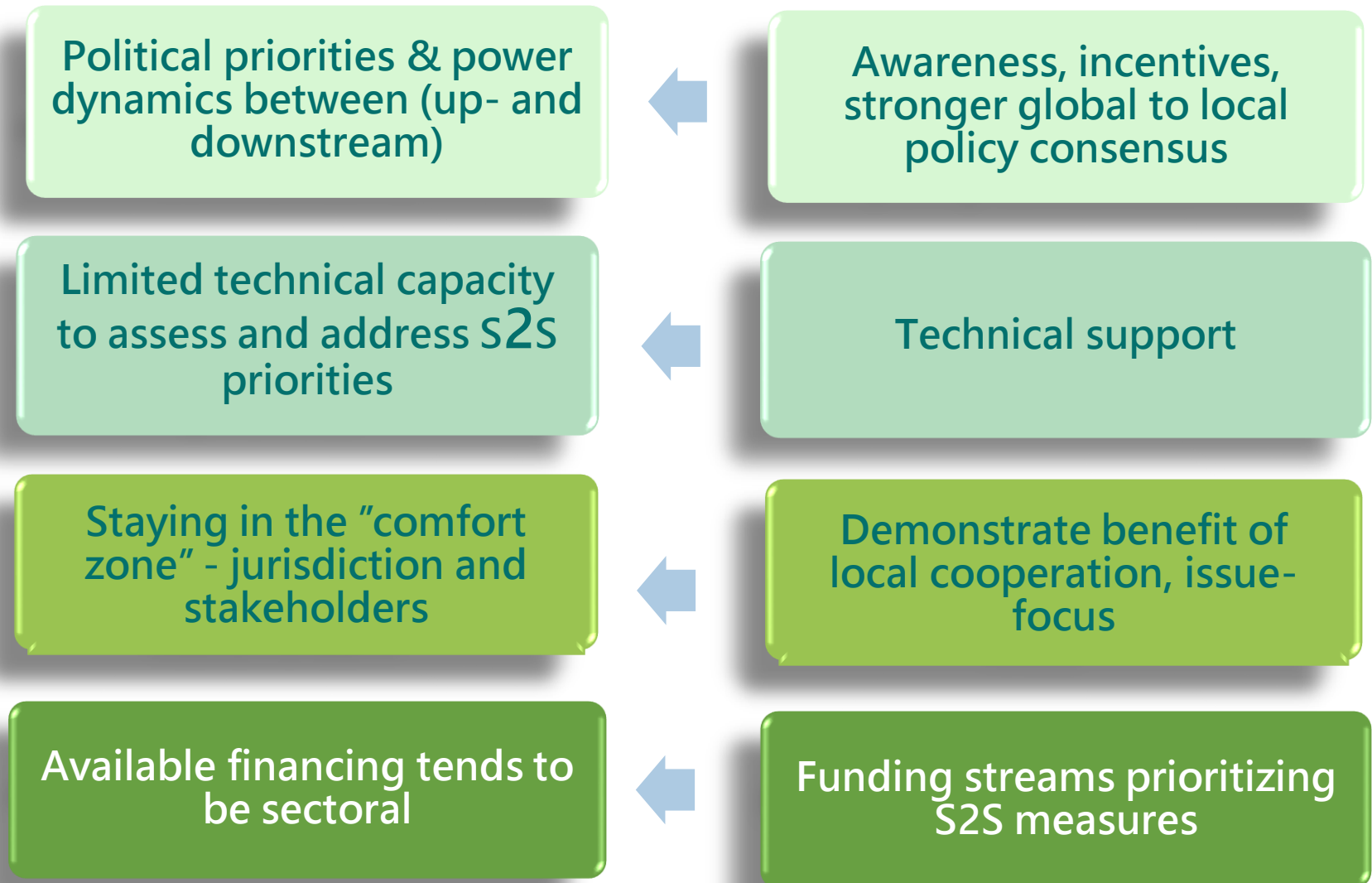


Social and environmental
sustainability

Land and oceans are connected by key flows



Factors contributing to "source-to-sea" blind development



Necessity = the mother of progress



The new normal



Climate change



**Population growth/
urbanization**

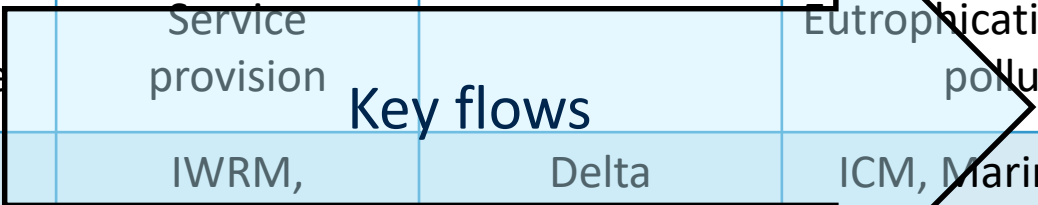


**Increasing
consumption/
production**

Integration – segment by segment



	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 Service provision	Flood risk Eutrophication Salinisation	Allocation of uses of coastal/marine space Fisheries Eutrophication/ marine pollution
Different management approaches	Integrated land/forest/waste mgmt, urban and land use planning	IWRM, environmental flows	Delta management, IWRM, ICM, Marine Spatial Planning	ICM, Marine Spatial Planning, Ecosystem Approach to Fisheries Management



Lessons learned from IWRM and ICM

Links to national policy and legal system	Necessary for effective implementation, but often missing
Funding	Often short-term, project-based May not extend over planning phase
Boundary definition	River basin/coastal zone vs. municipality/district for example
Institutional restructuring	Often pre-requisite for effective implementation – but a huge task
Strong focus on process and procedural integration	At the expense of outcomes?
How to evaluate success?	Few accepted evaluation frameworks
Gap between river basin and coastal management	Still prevailing

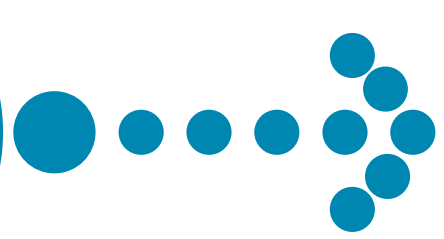
Resource use & management

Environmental protection

Development policies

Segment or sector governance

Negotiated agreements & multi-stakeholder groups



Practices that alter S2S flows

Mathres, Tengberg, Liss Lymer, Sjodin.
In progress. S2S Practitioners Guide.

Base interventions on local context

- **Holistic** – includes both upstream and downstream linkages, considers cumulative impacts
- **Participatory** – engage stakeholders from different segments, sectors
- **Context-dependent** – responsive to the local situation
- **Collaborative** – embed into existing institutions, established methods and on-going processes
- **Focused** – prioritise flows to address in the project or programme
- **Results oriented** – achieve intermediate outcomes
- **Adaptive** – learning by doing through pragmatic implementation

Mathres, Tengberg, Liss Lymer, Sjodin. In progress. S2S Practitioners Guide.

Guiding principles for a source-to-sea approach

Thanks to: S2S Platform

