



Introduction to LandSeaLot

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26 March 2024, LandSeaLot Kick-off Meeting and 1st General Assembly, Deltares, Delft



Funded by
the European Union

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LandSeaLot: Land-Sea interface: Let's observe together!

**HORIZON-CL6-2023-GOVERNANCE-01-11: Reducing
observation gaps in the land-sea interface area**

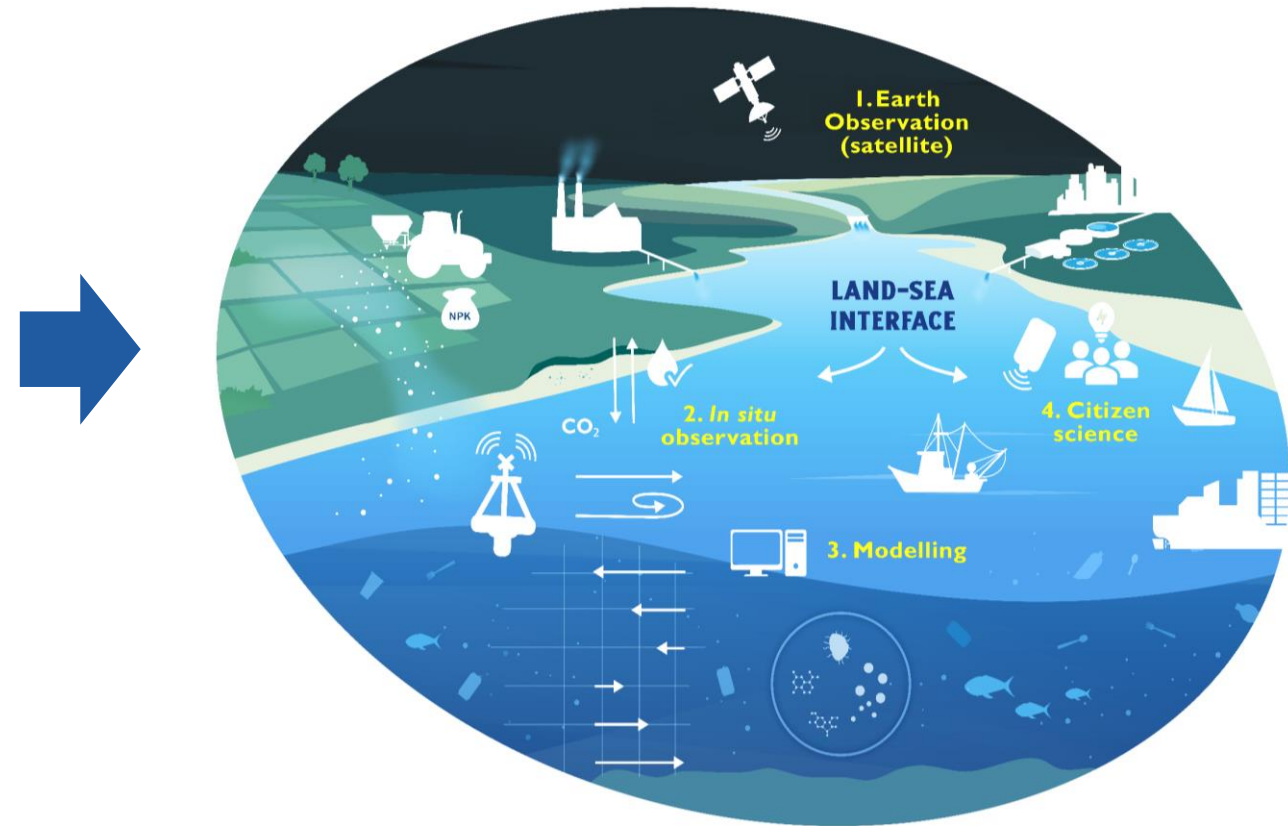
Powered by:

 <p>DANUBIUS-RI</p>	<p>International Centre for Advanced Studies on River-Sea Systems</p>	 <p>JERICORI SCIENCE - SERVICES - SUSTAINABILITY</p>	<p>ICOS</p>	<p>•••• Integrated Carbon Observation System</p>
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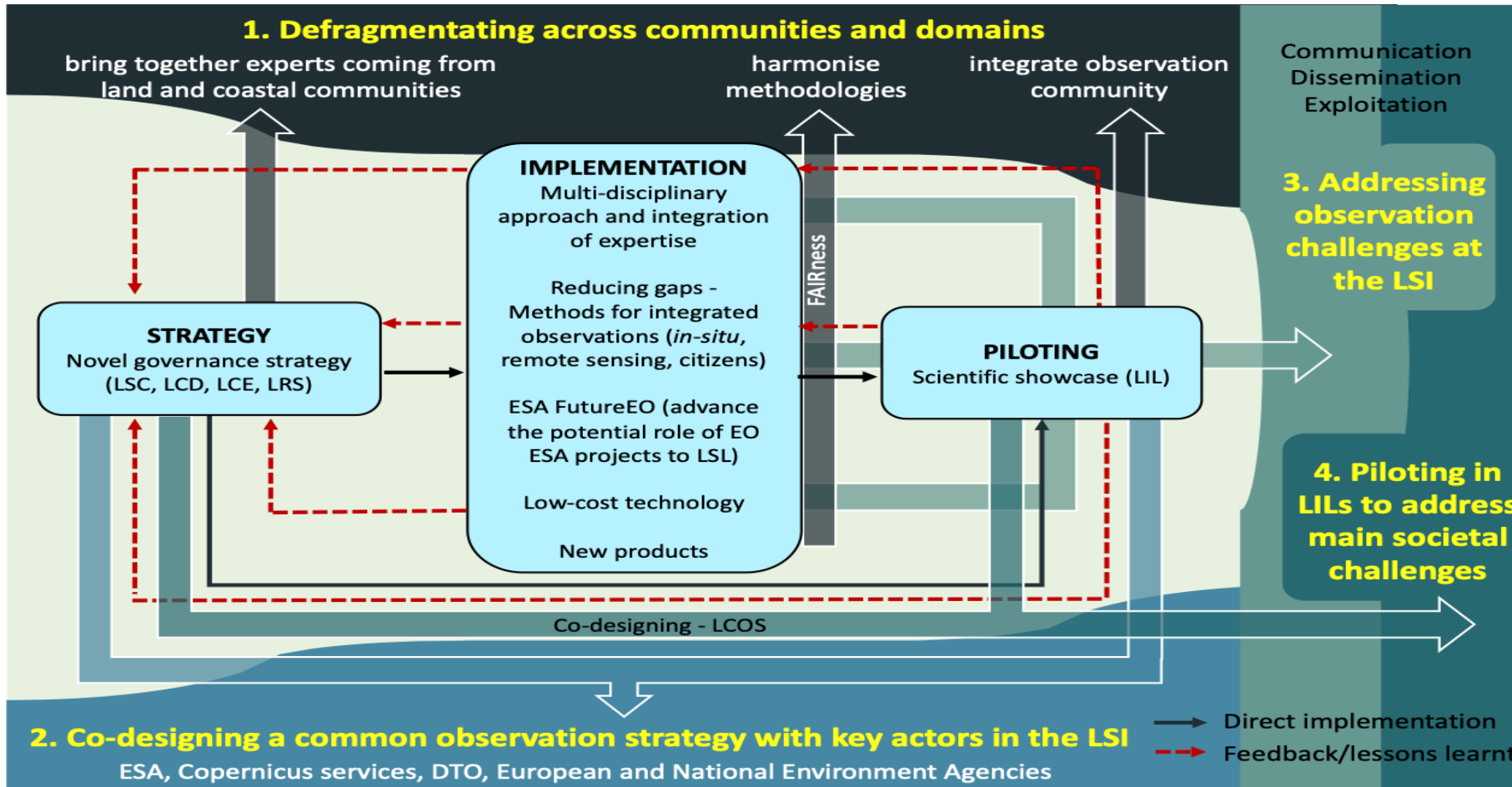
Objective: bring together interdisciplinary capabilities to study the Land Sea Interface (LSI)



- link together the best existing **scientific expertise** in various domains to co-design a strategy on how to observe the LSI
- involvement of all relevant **stakeholders**
- better integration and collaboration between **communities** working in the LSI: *in situ* observations and citizen science with satellite observations and models
- expand the number of *in situ* observations using also **low-cost observation technology**
- observational data and integrated information products **FAIR** through EMODnet, Copernicus and DTO



Overall concept



- **DTO:** Digital Twin Ocean
- **EO:** Earth Observation
- **ESA:** European Space Agency
- **FAIR:** Findable, Accessible, Interoperable, Reusable
- **LCD:** LandSeaLot Co-Designer forum
- **LCE:** LandSeaLot Citizen Empowerment forum
- **LCOS:** LandSeaLot Common Observing Strategy
- **LIL:** LandSeaLot Integration Lab
- **LSC:** LandSeaLot Science Community forum
- **LSI:** Land-sea interface
- **LRS:** LandSeaLot Regional Stakeholders

Co-creation!

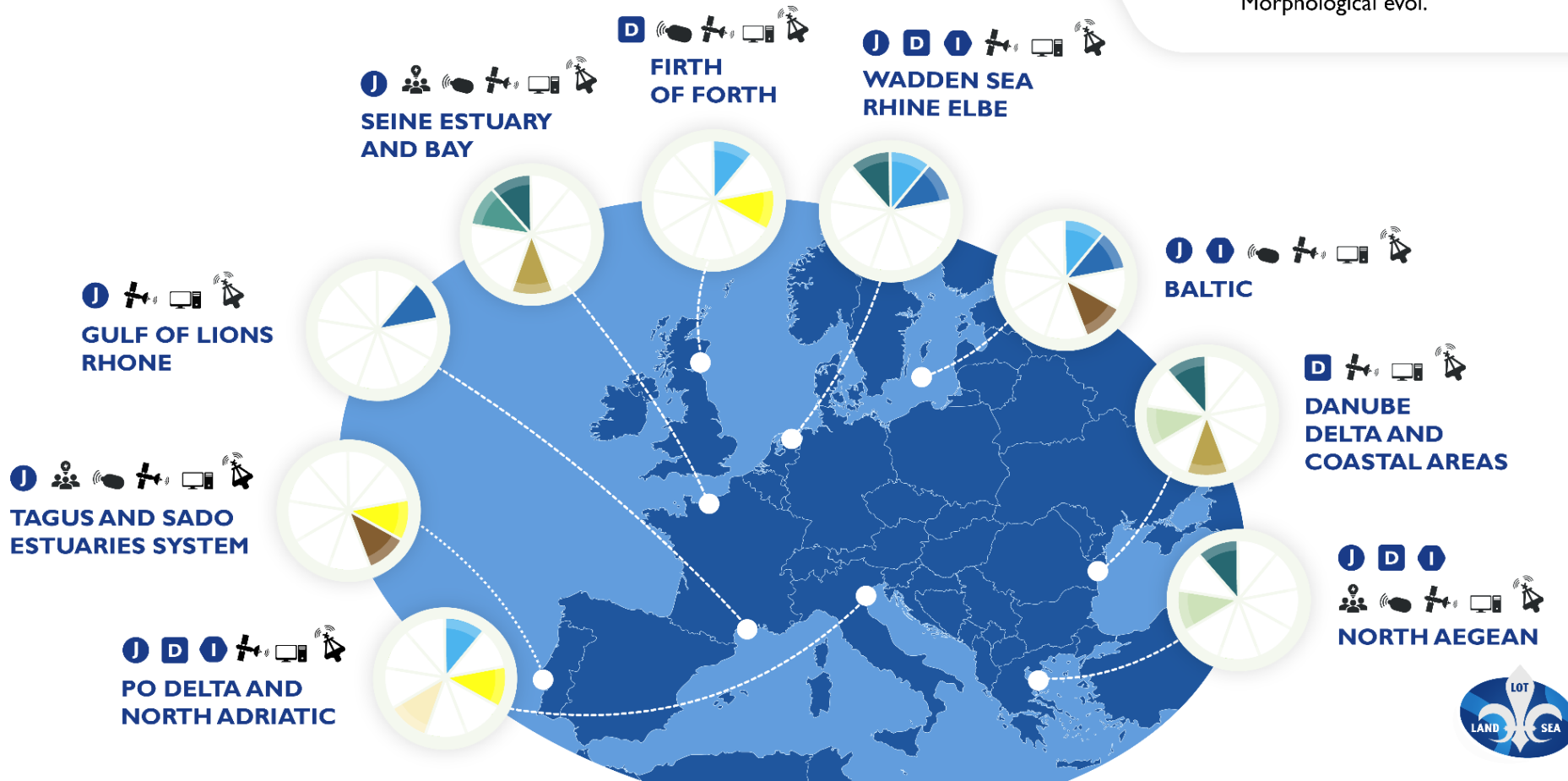
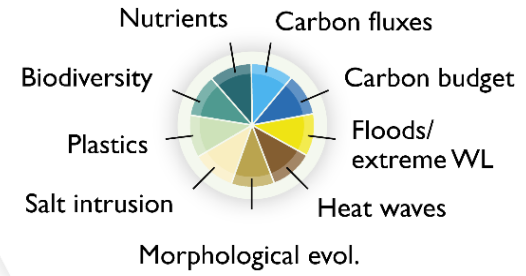
LandSeaLot Integration Labs (LILs)



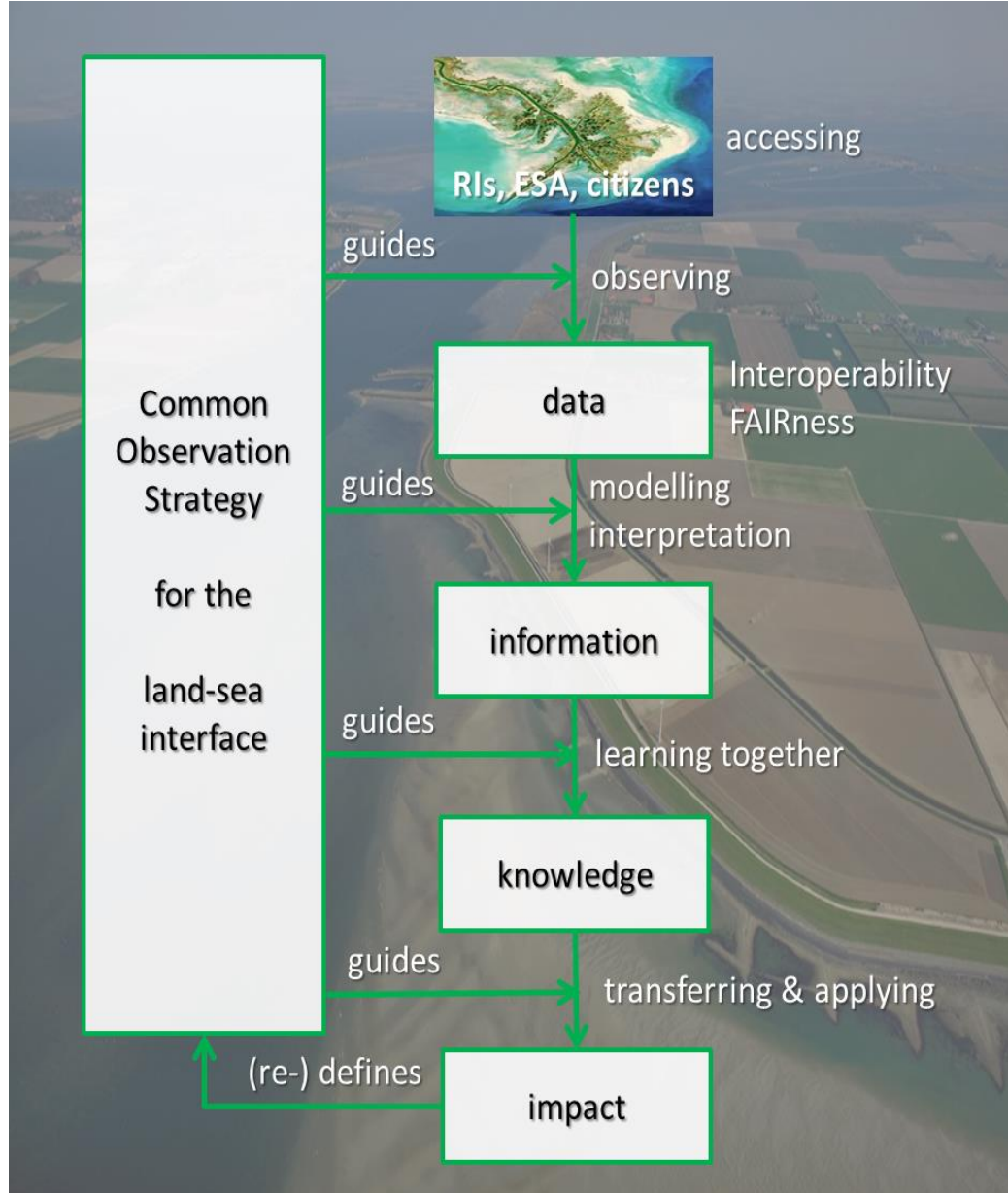
INTEGRATION LABS

LEGEND

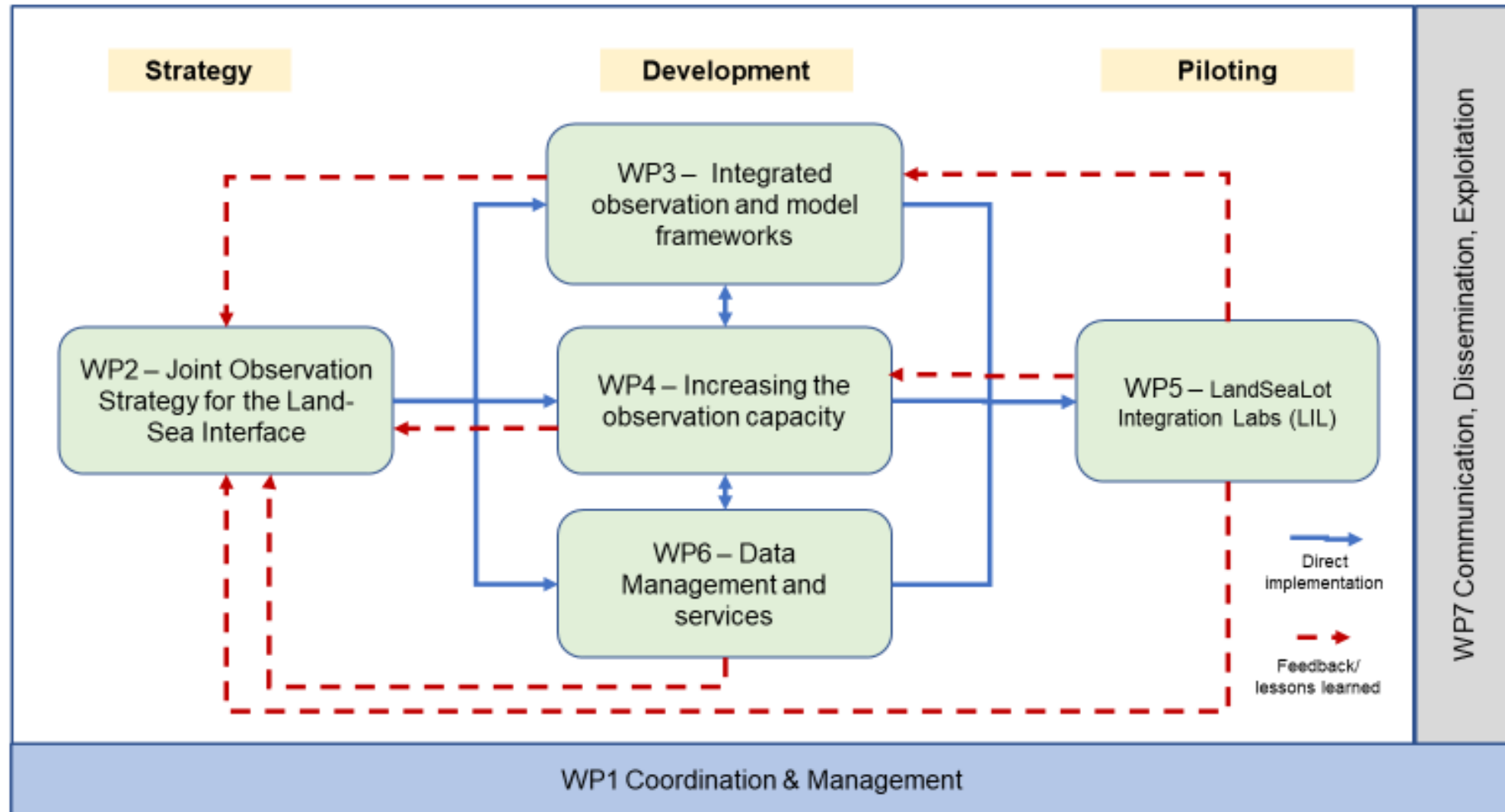
- J** JERICO-RI **D** DANUBIUS-RI **I** ICOS-ERIC
- Citizen science Low-cost sensors Earth observation
- Numerical modelling In situ observation



Pathway towards impact






Work packages



WP co-leads & Project Coordination Group (PCG) = Steering Committee (SC)



Work package No	Work Package Title	(co-)Lead Participant Short Name	Person-Months
1	Coordination & Management	DLT	43,0
2	Joint Observation Strategy for the Land-Sea interface	COV / GEM	64,4
3	Integrated observation and model frameworks	HEREON / USTIR	108,7
4	Increasing the observation capacity	SMHI / IFR	59,5
5	LandSeaLot Integration Labs (LIL)	CNR / IFR	351,0
6	Data Management and services	MARIS / DLT	67,6
7	Communication, Dissemination, Exploitation	SSBE	71,5

- 
 Jos Brils, Anouk Blauw, Anna Spinoza, Frank Lamé
- 
 Dominique Durand / Adrian Stanica
 
- 
 Yoana Voynova / Andrew Tyler
 
- 
 Emilie Breviere / Lucie Cocquempot
 
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Participants



coordinator

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Participant's role and expertise



Participant's role in project and their matching experience and expertise	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	DLT NL	HEREON DE	IFR FR	GEM RO	COV** NO	USTIR UK	MARIS** NL	SMHI SE	CNR IT	HCMR GR	NORCE NO	ULI BE	TEM FR	+ATL PT	SSBE** BE	PML** UK	ETT IT	BC** DE	SYKE FI	CNRS FR
Role in project	1	3	4	2	2	3	6	4	5						7					
(co-)lead WP:	6		5																	
(co-)lead WP:																				
Lead Task:	2.1	3.1	2.4	2.3	2.2	3.4	6.3	4.1	5.3						7.1		4.5	3.2		
Lead Task:	3.3		4.4	2.5	7.4			4.2							7.2					
Lead Task:	6.2		5.1					4.3												
Lead Task:			5.2					6.1												
Lead Task:								7.3												
(Co-)Lead Integration Lab:***	H	H	F	A		G		C		B				E					I	D
Contributor to specific tasks:	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Percentage of total budget:	14	8	8	5	5	6	5	6	5	4	3	1	3	4	8	2	6	3	3	5
Of which for coordination:	5																			
Experience																				
Engaging in DANUBIUS-RI	x	x		x		x			x	x						x				
Engaging in JERICO-RI	x	x	x		x		x	x	x	x									x	x
Engaging in ICOS-ERIC	x	x							x		x									x
Member EuroGOOS	x	x	x					x	x	x										
ESA OSC projects		x		x					x					x		x		x	x	
Copernicus Marine Service		x	x	x				x	x	x						x	x	x	x	
Copernicus Land Service						x		x								x		x	x	
Copernicus Emergency Service								x										x	x	
Copernicus Climate Service	x							x	x					x		x		x		
GEOSS - EuroGEOSS				x						x						x				
GOOS - EuroGOOS	x	x	x	x				x	x	x				x		x	x		x	
EDITO Model Lab	x	x												x						x
EMODnet key/project partner			x	x			x	x	x	x				x	x		x			
Expertise																				
Earth observation (satellite)	x			x	x	x			x			x		x		x		x	x	x
In situ observation	x	x	x	x	x	x		x	x	x	x	x		x		x	x		x	x
Low-cost observation technology	x		x					x		x				x		x				
Forecasting and modelling	x	x	x	x	x	x		x	x	x		x		x					x	x
Digital Twinning		x	x	x	x	x	x	x		x				x			x			
Data management	x		x	x		x	x	x		x		x		x		x	x	x	x	
Pollution (incl. nutrients)*	x	x	x	x		x			x	x						x			x	
Biodiversity*	x	x	x	x														x	x	x
Erosion (sediment & land)*	x	x	x			x										x		x		x
Heatwaves*										x		x		x					x	
Acidification*		x							x	x									x	
Storm surges*	x			x		x			x	x				x						
Floods*	x	x				x			x					x					x	
Salinization*	x								x											
Carbon fluxes & stocks*	x	x				x			x	x	x								x	x
Citizen Science	x		x		x	x	x	x		x				x		x	x		x	
Stakeholder engagement	x	x	x		x	x	x	x		x			x	x	x	x	x	x	x	
Science-policy interfacing	x		x		x	x	x	x			x		x	x	x				x	
Dissemination, Exploitation & Comm.	x	x	x		x	x	x	x			x		x	x	x		x	x	x	x

What's in for the participants?



INDIVIDUAL EXPLOITATION PLANS OF LANDSEA LOT CONSORTIUM PARTICIPANTS

Advancing the EU Green Deal | Transforming the EU's economy for sustainable future - Mobilising research & fostering innovation



+Observatories & data nodes

- Stronger skills in *in-situ* & satellite observation and in numerical modelling of water continuum
- Improved capacity to feed FAIR data flows into RIs (Danubius-RI, JERICO-RI, ICOS-RI) and observation systems (regional GOOS)



+Science & applied research

- Improved understanding of lateral carbon fluxes and marine carbon stocks.
- Enhanced forecasting & simulation capabilities to anticipate the effects of pollution and climate change



+(Big) Data management, modelling & visualisation



- Advanced capabilities on AI, ML and Big Data analytics to support Digital Twins
- Improved FAIR data flows into European aggregators (Copernicus, EMODnet)



+Market solutions



- Extended portfolio of Earth Observation products covering estuaries and rivers
- Potential of multi-sensor products unlocked



+Business intelligence



- Innovative approaches to sustainability challenges in the land-sea interface
- Market intelligence on low-cost technologies that enable citizen science observations



+Community & citizen action



Stronger links to local networks in key regions actioning land-sea interface observation initiatives



+Governance and bridging the Science-to-Policy interface



- Experience in testing innovative land-sea governance models in coastal areas
- Insight into scientific developments shaping integrated land-sea observation to inform policy



+European leadership in international frameworks



- Visibility feeding international best practices into UNESCO-IOC programs (e.g., OBPS)
- Informing developments (e.g., via G7 FSOI, IOCCP) and aligning with international initiatives (e.g., GOOS-GEOSS, UN Ocean Decade, UN Decade of Ecosystem Restoration)



Expressions of interest received



- “We look forward to the output of LandSeaLot in terms of improved process understanding, monitoring and prediction capabilities for a wide range of phenomena impacting coastal populations” (**ESA**);
- “We would welcome the possibility to collaborate with actions to close this important knowledge gap.” (**JRC Soil Observatory**);
- “We can provide recommendations on how to reduce the observations gaps in the land-sea interface area to build a fit-for-purpose European Ocean Observation System” (**EuroGOOS**);
- “Observations within LandSeaLot would certainly enable us to concentrate on assessments rather than handling information” (**OSPAR & HELCOM**);
- “LandSeaLot will help define how the land-sea interface can be better observed and how the new observations will be easily integrated as new inputs into our suite of models” (**EDITO Model Lab**)

Expressions of interest received (continued)



- “The proposal is in line with our mission and, when funded, it will be further discussed and connected to other projects to ensure synergies” (**ENVRI/BEERi**);
- “Interested in any global or regional projects that your proposal might address in inland or coastal waters” (**GeoAqua Watch**);
- “Welcome to send us key outcomes of the project and we will try to incorporate as much as possible in our policy and advocacy work” (**WWF**);
- “Any monitoring model or service that may strengthen knowledge-based decision-making support could be of interest” (**European Aquaculture Technology & Innovation Platform**).

See their and some other EoI's later Today!

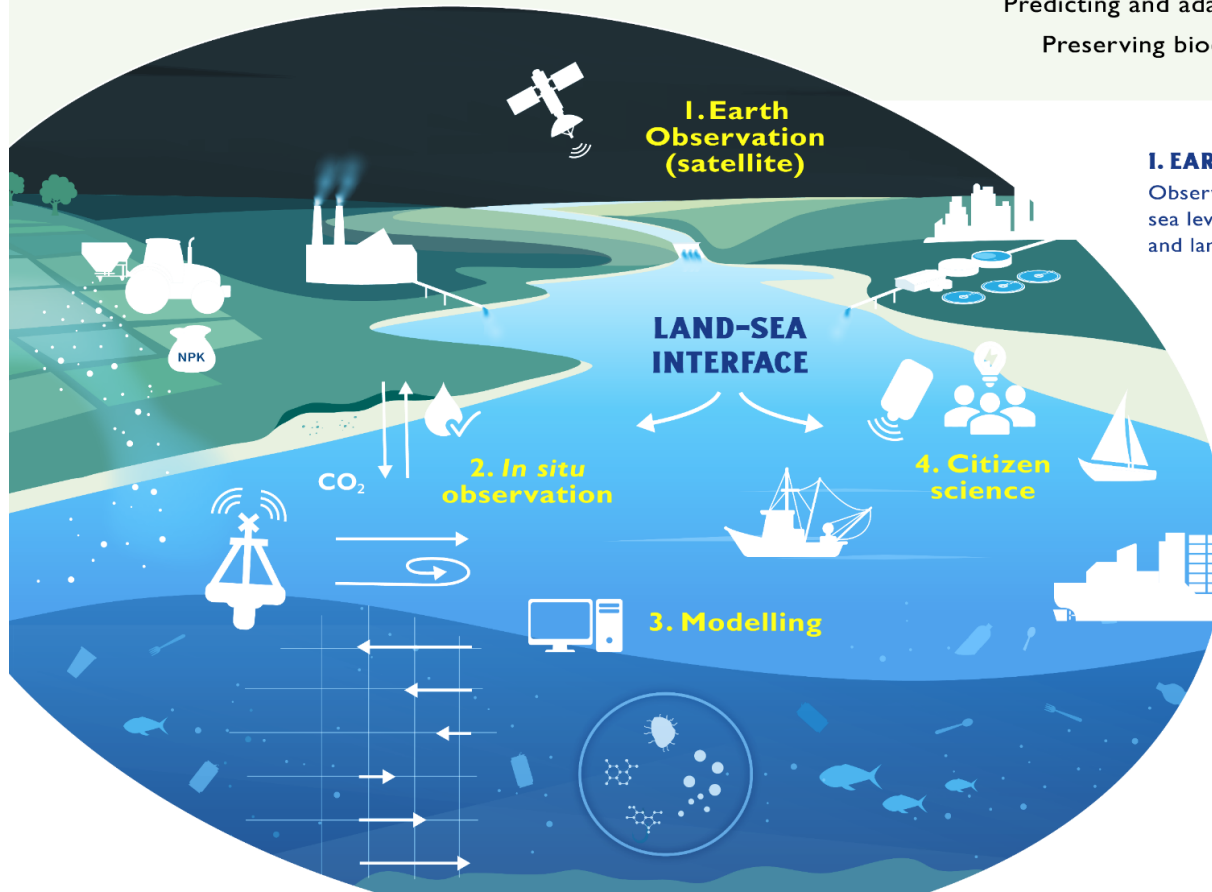
LandSeaLot in one info graphic



REDUCING GAPS IN ENVIRONMENTAL OBSERVATIONS AT THE LAND-SEA INTERFACE TO PREDICT SYSTEM BEHAVIOR AND INFORM SCIENCE-BASED MANAGEMENT AND POLICY RESPONSE



Testing the benefits of integrated land-sea observations: Understanding lateral carbon fluxes and marine carbon stocks
Predicting and adapting to climate change threats
Preserving biodiversity and reducing pollution



1. EARTH OBSERVATION (SATELLITE)

Observing change in e.g., coastal erosion, sea level rise, turbidity and chlorophyll and land use patterns

2. IN SITU OBSERVATION

Observing change through fixed and mobile platforms in e.g., water quality, coastal erosion and morphological changes, carbon fluxes and nutrients

3. MODELLING

Predicting change in e.g., water temperature, sea level, wave patterns, carbon fluxes, plastic pathways, morphological changes, salt intrusion, water quality, habitats for biodiversity

4. CITIZEN SCIENCE

Gathering data from a wider range of locations and perspectives on e.g., temperature, water level, and plastics

Let's observe together!

Visit landsealot.eu

Be part of the conversation in   



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