The SUBMARINER Network a facilitator for sustainable & innovative blue growth cooperation

Better of Blue Workshop 5: Marine Litter

4 May 2021

Susanne Altvater

SUBMARINER Network members

- SME
- University
- Research Insititute
- Science & Technology Park
- Government
- Regional cluster

- Sweden
- Germany
- Denmark
- Poland
- Lithuania
- Finland
- Latvia
- Estonia
- Norway

Bio-based Industries Consortium

BIOMARINE Community

SEAWEED for EUROPE

eurocean

EU STRATEGY FOR THE BALTIC SEA REGION FLAGSHIP

Marine Litter

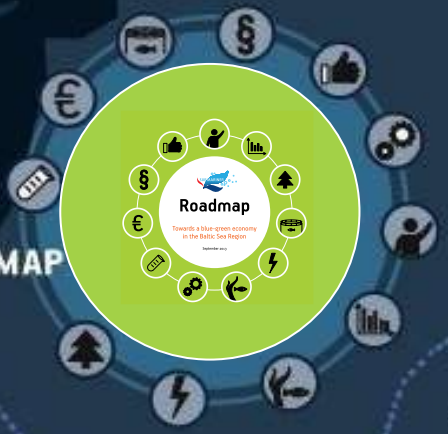
Innovation, Bioeconomy,
Spatial Planning, Nutri, Tourism,
Culture, Energy, Ship

SUBMARINER NETWORK

SUB MARINER

Since its founding in 2014, the SUBMARINER Network family has been continuously growing. It currently has 24 network members, representing all Baltic Sea Region countries. The network includes both public and private sector organisations and reaches out to many more actors both within and beyond our project partnerships.

ROADMAP 2013



THE IDEA 2010

The project SUBMARINER (2010–2013) assessed, for the first time, the potential for innovative and sustainable uses of Baltic marine resources. It developed the idea for the network.

COMPENDIUM 2012

Combination with Offshore Wind Parks

Sustainable Fish Aquaculture

Macroalgae Harvesting and Cultivation

Mussel Cultivation

Blue Biotechnology

Reed Harvesting

Large-scale Microalgae Cultivation

NETWORK 2014

Foundation of the SUBMARINER Network for Blue Growth EEIG

FLAGSHIP

EU STRATEGY FOR THE BALTIC SEA REGION

2017 SUBNET CONFERENCE DECLARATION

The 2nd SUBMARINER Conference 'Better off Blue', hosted in Berlin on 27th–28th September 2017, marks another milestone.

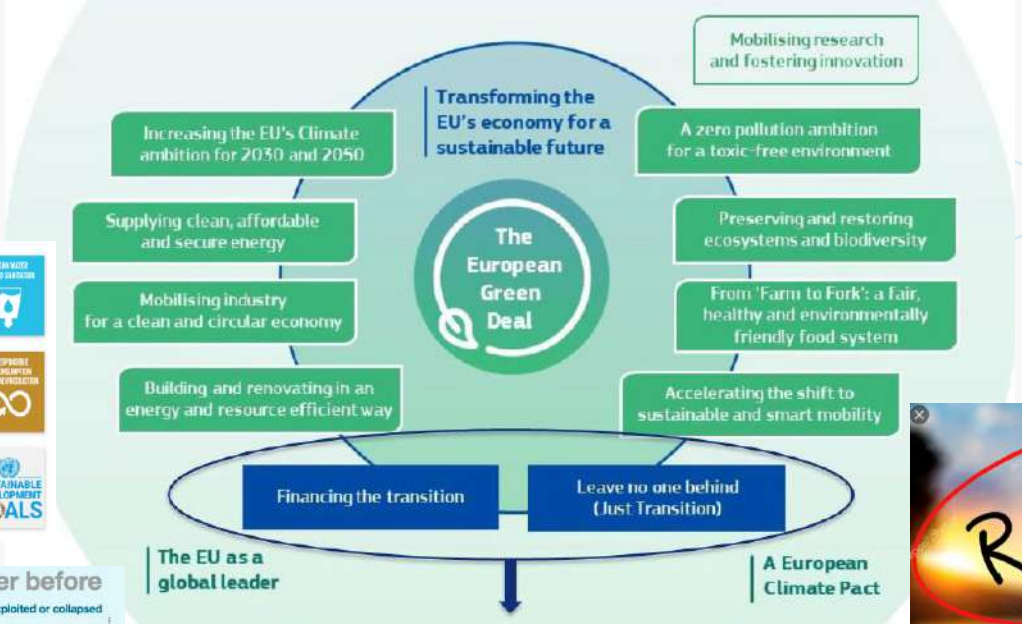
ROADMAP 2021-2027

The Baltic Sea Region – a bio-based innovation showcase

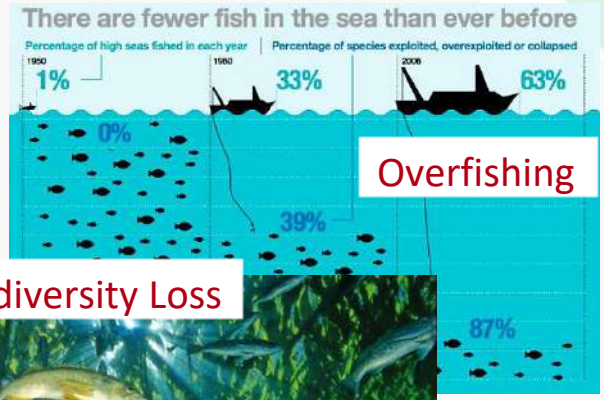
2016 ROADMAP STATUS REPORT

Marine Litter

Our ambitions



Competitiveness



Overfishing

Plastic Pollution

Eutrophication

Biodiversity Loss

Climate Change

Demographic Change

ER topics

- Macroalgae harvesting , cultivation & processing
- Mussel Cultivation & Processing
- Reed Beach Cast Macro-Halophytes
- Cultural Heritage / EcoTourism
- Blue Bio-technology Microalgae
- Marine Litter Valorization of Waste
- Side Streams New Species Aquaculture
- Smart Combinations on- and offshore

ction Fields

- Actors & Match-Making
- Digitalisation Data & Tools
- Sub-regional solutions
- Access to Pilot sites & Large scale Demonstrations
- Training & Capacity Raising
- Technology Development & Transfer
- Finance & Funding
- Regulation & Licensing
- Awareness &Marketing

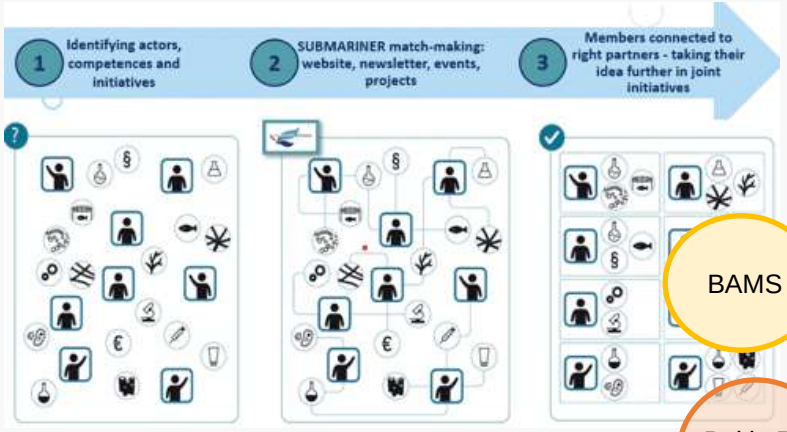
nd Sector Approach

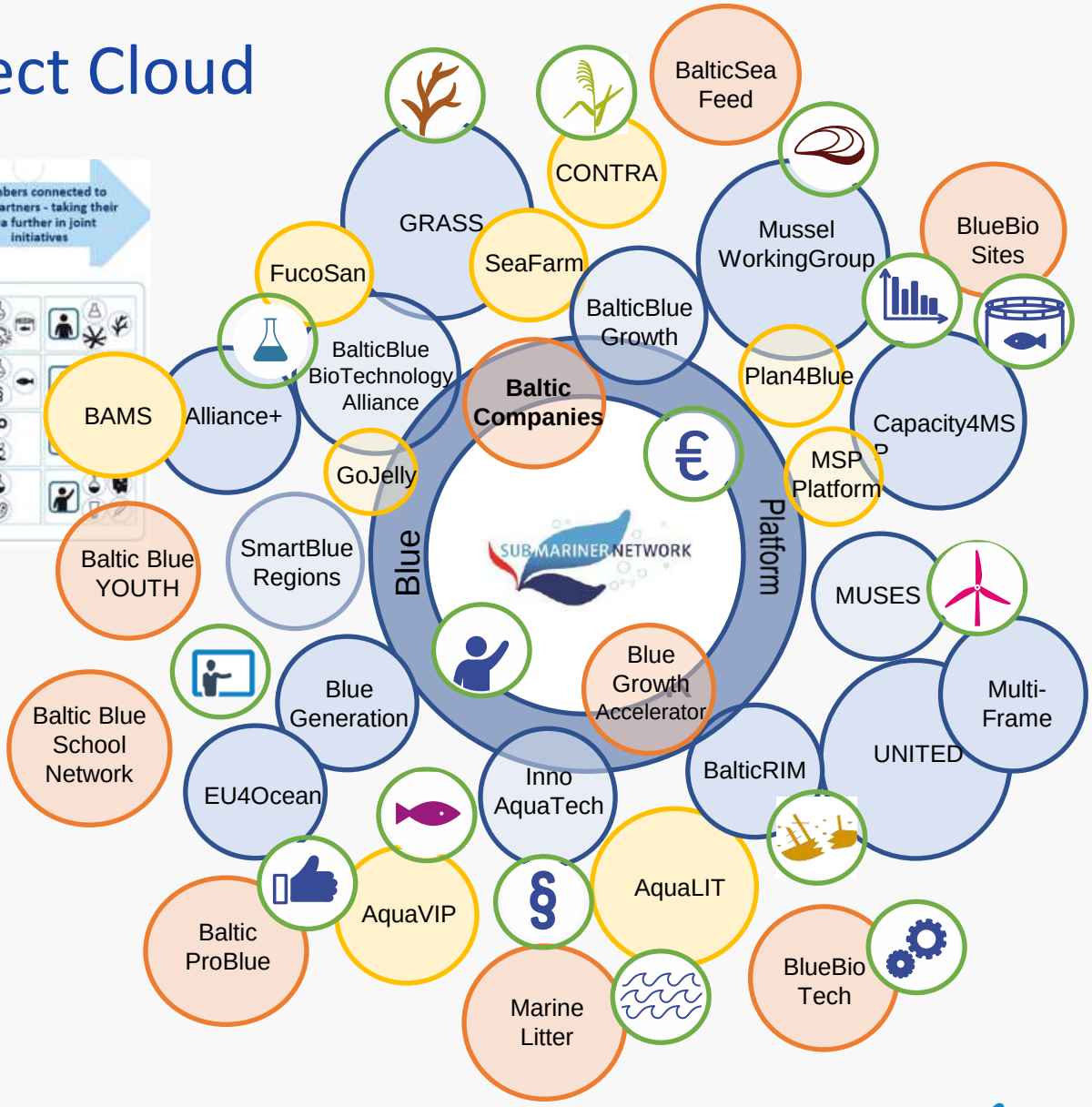
Companies, Research, Authorities, Civil Society

Natural and Social Science, Informatics, Creative Arts, Economics

- Contribute to decrease of GHG emissions
- Ecosystem Restoration Increase Biodiversity
- A smart, resilient Baltic Sea Region based on local, circular economy
- Improve human well-being
- Promote bio-based innovations

SUBMARINER Project Cloud





€ 300.000 membership fees

20 transnational projects

€ 41 million total

€ 30 million Baltic

150 partners

SUBMARINER NETWORK

From projects to working group & vice versa

Completed projects (2014-2019)

Baltic Blue Biotech Alliance
Advancing marine bio-based product development

InnoAquaTech
Cross-border development & transfer of innovative and sustainable aquaculture technologies

Baltic Blue Growth
Initiating full scale mussel farming in the Baltic Sea

Baltic RIM
Baltic Sea Region Integrated Maritime Cultural Heritage Management

Smart Blue Regions
Smart Specialisation and Blue Growth in the Baltic Sea Region

MUSES
Exploring opportunities for Multi-Use in European Seas

Current projects (2019-2021)

Mussel & Aquaculture working group

CONTRA

SEAFARM
Testing macroalgae cultivation in Sweden

EU4Ocean
Focal Point for Ocean Literacy Actors across the Baltic

Blue Platform
Capitalization on transnational blue bio economy project findings and capacity building

SUSCULT

GRASS
Capacity building of public authorities on supporting macroalgae production and use

Blue Generation
Inspire and engage with young people to pursue a sustainable career within Blue economy sectors

AquaVIP

FUCOSAN

GoJelly

SUBMARINER Accelerator for Blue Growth

SEA4U

Alliance+
Expanding the mentors network for Blue Bioeconomy Start-ups & SMEs

Capacity4MSP
Strengthening the capacity of MSP stakeholders and decision makers

UNITED
Demonstrating Multi-Use in Atlantic, North and Baltic Sea

Multi-Frame
Developing a tool to assess multi-use potential and benefits

BELMONT FORUM

AquaLIT

BlueBioTech - SEED
Technology development and transfer for a thriving Blue Bioeconomy in the Baltic Sea Region

BlueBioSites - SEED
Data, information and tools to identify and monitor optimal sites for the Blue Bioeconomy in the Baltic Sea Region

BalticSeaFeed - SEED
Develop sustainable feed from Baltic Marine Resources

Next GEN SUBMARINER projects (submitted)

Blue Bio Company Catalogue

& Innovation Cluster
Promote and support Blue Bio Product & Service Companies through matchmaking, marketing, innovation projects

And more to come .....

Ecosystem restoration
Restore biodiversity in coastal & marine areas

Sea2Fork
Promote uptake of healthy & sustainable blue food throughout EU

Algarithm
Map evidence supporting low-trophic aquaculture potential in Europe

Ocean Literacy
Enable citizens to act on climate change through environmental protection

HARMO-LITT
Support monitoring of marine litter under MFSD new cycle

Proposals submitted

Permanent Working Groups

- Low Tropic: Mussel and Algae
- Fish & Shrimp Aquaculture
- Blue Growth Accelerator
- Beach Wrack / Halophytes
- EU4 Ocean Literacy Platform
- Marine Litter

Purpose of todays workshop

- Create joint understanding of strengths/expertise of the BSR community related to the Marine Litter topic
- Align interests among members of the SUBMARINER Network and connect with other activities
- Get a joint understanding of what is needed in the future
- Who should and wants to be involved?
- The workshop serves as a pre-meeting of the SUBMARINER Marine Litter Working Group

Agenda

09:40	**What is the Blue Bioeconomy in the Baltic Sea Region?** SUBMARINER Status Quo Report and Roadmap 2021+ Angela Schultz-Zehden – Managing Director SUBMARINER Network
09:55	**BlueBioSites State of Play Report -The 'space' needed for the Blue Bioeconomy: does it show in BSR MSPs?** Anda Ikauniece, Latvian Institute of AquaTic Ecology (LIAE)
10:10	**What do we need to know to allocate optimal sites - so that we know the environmental balance?** Andreas Michael Holbach, Aarhus University
10:25	**The ODSS – a systematic approach to identifying optimal sites for algae and mussel cultivations** Jonne Kotta, University of Tartu
10:40	**Beach Cast / Floating Aquatic Plants – which data do we need?** Tiia Möller, CONTRA Project, University of Tartu Prof. Dr. Arturas Razinkovas-Baziukas, LiveLagoons, Klaipeda University
11:00	Time for all to answer Sli.Do polls / Comfort Break
11:15	**Feedback / Panel discussion with MSP and Licensing Authorities, Blue Bioeconomy Actors, Researchers** Triin Lepland (Ministry of Finance, Republic of Estonia), Riku Varjopuro (SYKE, Finland), Florent Nicolas (HELCOM), Magdalena Matczak/Jacek Zaucha (Gdansk Maritime University, Poland), Solvita Strāķe (LIAE, Latvia), Michaela von Thenen (IOW, Germany), Carl Dahlberg (Bohuskust och gränsbygd, Sweden)
12:00	End of workshop

slido

Join at

slido.com

#BalticLitter

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Marine Litter in the BSR

Holistic Assessment of HELCOM:

- 50 - 300 litter items/100 of Baltic Sea beaches.
- Approximately 70 % of these items are plastic.
- Land-based activities main source:
  - Beach litter items due to eating, drinking or smoking (e.g. food wrappings, bottles or lids)
  - Derelict fishing gear
  - Wastewater treatment plants

Marine Litter – actions and actors

International Level: UNCLOS, IMO, G7/G20, FAO, CBD, Research projects

EU Level: Technical Group on Marine Litter

EU Level: *DG Researc*h: Horizon; Blue Med Initiative;
DG Mare: plastic in gear; EU OL; *DG Move*: PRF-D
DG Env: implementation of the SUP-D;

Regional Level: HELCOM Expert Network Marine Litter/ Marine Litter Action Plan

National Level:
(varies among countries)

- Working Group on Marine Litter on MSFD
- Working Group on Marine Litter (related to aquatic systems)
- Round table, other expert rounds

HELCOM Expert Network on Marine Litter

- NEWS (19/04/2021) Marine litter and underwater noise top the agenda of HELCOM WG PRESSURE 14-2021
- NEWS (11/02/2021) HELCOM joins UN initiative on marine litter
- NEWS (04/02/2021) HELCOM launches BLUES project to support attaining good environmental status in the Baltic Sea

- PUBLICATION (27/01/2021) HELCOM Policy Brief on End-of-Life Boats
  PUBLICATION (30/10/2020) Best Practices to reduce marine litter from net cuttings waste
- PUBLICATION (10/02/2020) Review of existing policies and research related to microplastics – Summary for Policy Makers

- RECOMMENDATION (11/03/2015) 36-1 Regional Action Plan on Marine Litter (RAP ML)

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HELCOM Expert Network on Marine Litter

- HELCOM is currently working on an indicator on microlitter in the water column at the regional level

- Currently there is no coordinated monitoring of microlitter in the region, however, some national monitoring programmes in certain Baltic Sea countries already address microlitter in the surface water or sediments, or both

- More information during the next meeting in this group!

- HELCOM is partner in the BSR Interreg project on microplastics, FanpLesstic-sea (see presentation).

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Projects in the BSR - selection

Project Title / Actor	Duration / Funder
Plastic Free Baltic / Coalition Clean Baltic	2017 / Interreg BSR
Plastic Free Ocean / Coalition Clean Baltic	2019 / Interreg BSR
Keep Sweden Tidy / KTH (SE), Uni Gothenburg (SE)	2015-2020 / national
Plastic Engineering Day 2020 / Aarhus University	2020 / national
BLASTIC / Turku (Fi); Södertälje (SE) Tallinn (EE)	2020-2023 / Interreg Central
Cooperative Projects / Research institutes	Ministry for Research (DE)
MareLitt / WWF, Keep Sweden Tidy	2016-2019/ Interreg BSR
Fishing for Litter / KIMO International / NABU	National funding, on-going
Study: Incentives for collection and treatment of derelict fishing gear / s.Pro (DE)	National funding, 2018
AquaLIT / EU consortium with VLIZ, IEO, s.Pro	EMFF, 2018-2020
GoJelly / SDU (lead), GEOMAR, CAU Kiel, CRM	H2020 2019-2021
FanpLESStic-Sea / Sweden Water Research, LIAE, LUKE	Interreg BSR, 2019-2021

SUBMARINER NETWORK

Projects in the BSR - selection

Project Title / Actor	Duration / Funder
ERA Net RUS Baltic Litter / Klaipeda University	see presentation
ESMIC / Klaipeda University	see presentation
PLASTISEA / GEOMAR, CAU, RWTH etc. – New and innovative biotechnological strategies	BMBF (national ministry for research) funding scheme, 2020-2023; https://www.geomar.de/forschen/fb3/fb3-ms/projekte/plastisea
BONUS MicroPoll / NMFRI / Klaipeda University	see presentation
Support of the German National Round Table on ML / Ökopol, Fraunhofer Umsicht, s.Pro – Support of the implementation of the PoMs (MSFD), e.g. modification of plastic products, impact of additives on the marine environment	National funding, 2020-2022
CAPonLITTER – Capitalizing good coastal practices and improving policies to prevent marine litter; German case: Water sports to clean German Waters	Interreg Europe, 2020-2022 https://www.interregeurope.eu/caponlitter/

Funding opportunities for the BSR - selection

Name	Focus	Geographical scope	Link
The Baltic Sea Conservation Foundation	Protection of the sea, including pollution/ML	Baltic Sea	https://baltcf.org/
Interreg BSR	Innovation/Natural Resources/Seed Money	Baltic Sea/EU sea basins	https://www.interreg-baltic.eu/about-the-programme/priorities.html
Horizon Europe 2021-2022	Prevention, circular economy, substitues, microlitter, zeropollution	Baltic Sea/EU sea basins and abroad	https://www.interregeurope.eu/about-us/2021-2027/
EMFF	Marine litter and fisheries/aquaculture	Baltic Sea/EU sea basins	https://ec.europa.eu/oceans-and-fisheries/funding/european-maritime-and-fisheries-fund-emff_en
Ostseestiftung	Projects on sustainable use of the ocean	Baltic Sea	http://www.ostseestiftung.de/
Forschungsstiftung Ostsee	Sustainable use of the sea, including aquaculture	Baltic Sea	https://www.deutsches-meeresmuseum.de/forschungsstiftung-ostsee/stiftung/
ZIM	Innovation and sustainable use of terrestrial and marine resources	Germany	https://www.beratung-zim.de/zim-fördermittelprogramm/
ZUG	Practical approaches to reduce ML	Germany and EU partners	https://www.z-u-g.org/en/responsibilities-and-tasks/grant-programme-against-marine-litter/

SUBMARINER Roadmap – ML– Conclusions

- Studies: fostered adaptation of national law to EU framework legislation and strategies
- Blastic/AquaLIT informed about monitoring gaps and new monitoring / assessment approaches
- Plastic Free Oceans/Marelitt raised awareness and build capacities in regions and municipalities, which serve as models for other regional cooperation between fishermen and recyclers
- Cooperation projects promoted sustainable production, establishing research-company networks
- GoJelly and other innovative projects show opportunity of new applications for start-ups and well-established companies, in close cooperation with research.

Actions suggested in Roadmap

SUBMARINER should become an important driver of Marine Litter activities in the BSR supporting Member States

- to meet their obligation under the MSFD;
- to develop & implement national Programmes of Measures;

- to coordinate and participate in research and promote clusters of circular economy initiatives

- to find solutions related to land- and sea-based marine litter.

Actions suggested in Roadmap

Land-based Measures

- Find ways to reduce the input of plastic waste into the marine environment,
- Support measures to prevent and reduce microplastic,
- Foster efforts to substitute and modify plastic products,
- Reduce the amount of plastic waste through municipal targets,
- Promote citizen awareness

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Actions suggested in Roadmap

Sea-based Measures

- Foster knowledge about the sources of marine litter and microplastics
- Support removal of already existing marine litter in the marine ecosystems of the BSR,
- Foster waste-related measures for fishing nets and gear (including aquaculture)
- Support the structural establishment of the Fishing-for-Litter concept
- Analyse and improve waste management on ships and in ports
- Support the establishment of standardization of fishing gear

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Next steps suggested in Roadmap

- Map marine litter / plastic waste actors
- Map expertise and interests
- Create a SUBMARINER Marine Litter Working Group

How can get this organised?
Who is on board?

SUB MARINER NETWORK

www.submariner-network.eu

@submnet

submariner-network-for-blue-growth-eeig

Fanplesstic-sea

Fanplesstic-sea

Interreg
Baltic Sea Region

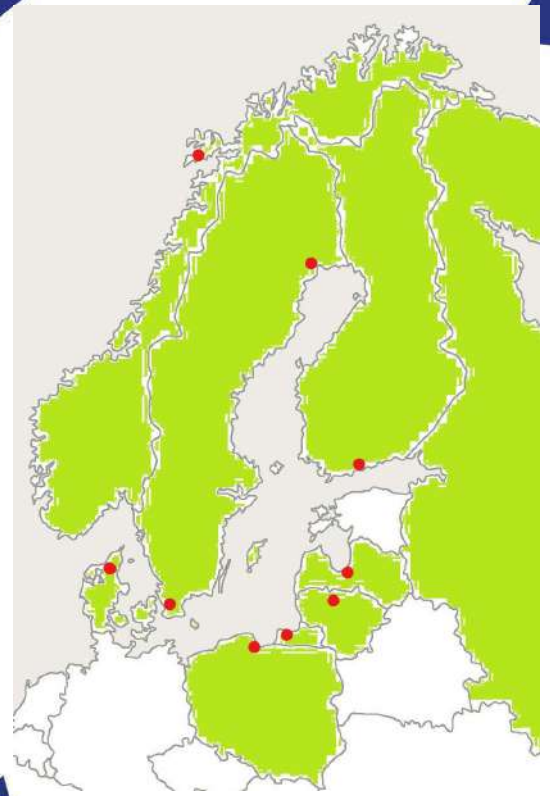
EUROPEAN UNION

EUROPEAN
REGIONAL
DEVELOPMENT
FUND

2019-2021

11 partners

- Research institutes and academia
- Utilities
- Public organisations
- Businesses



Fanplesstic-sea

Fanplesstic-sea

Interreg
Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

Review of Existing Policies and Research

Sampling – Mapping of Pathways

SALT - Lofoten

GIWK – DWTP, Gdansk

LTU – Roof-top, Luleå

SALT - Trøndelag

SWR - Ellinge

GW – Gdansk

LIAE – Riga

LIAE – Riga

GIWK – WWTP, Gdansk

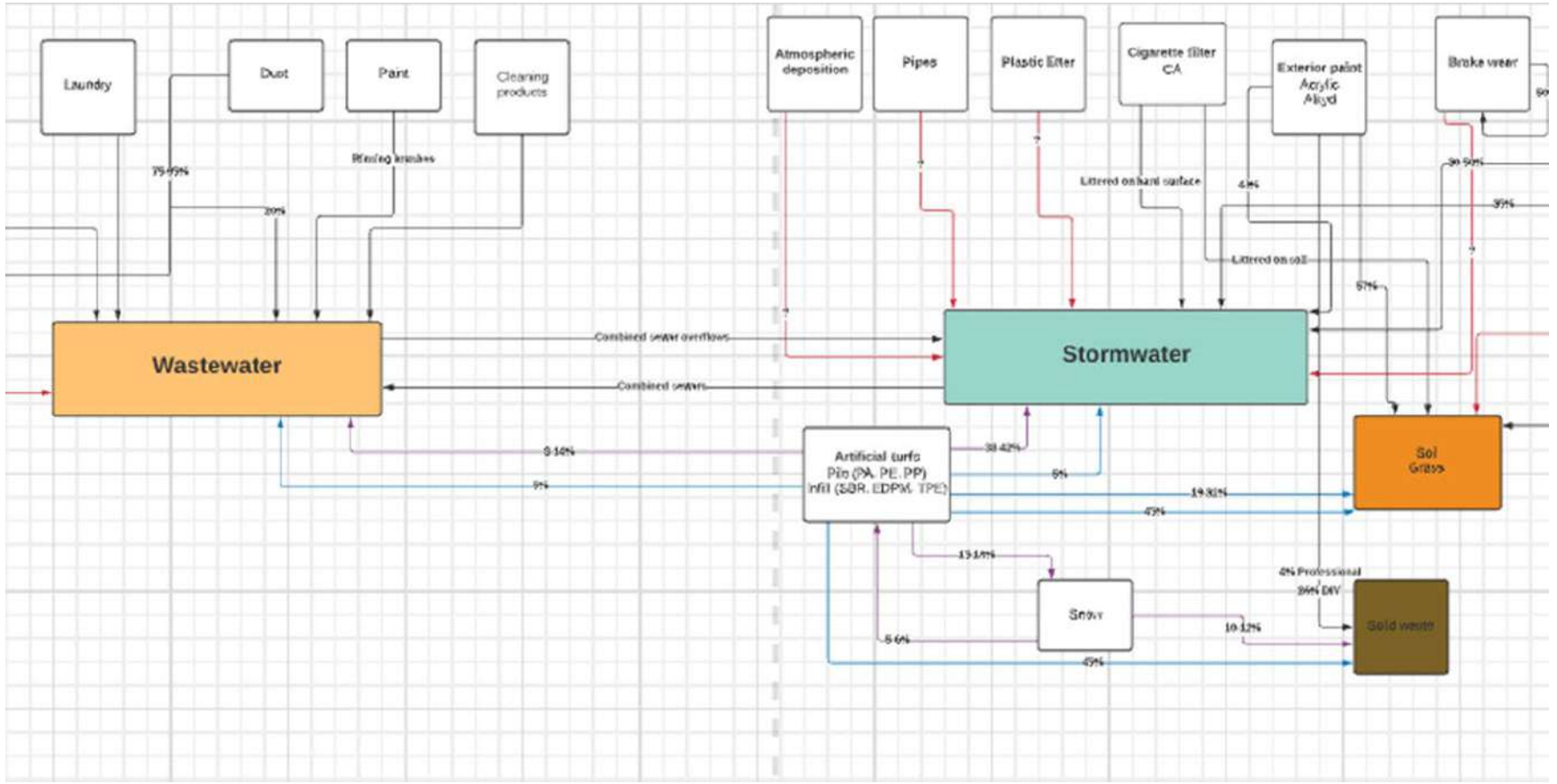
SCCIC/LIAE

LTU – Highway, Luleå

Mapping of Flows

PhD student, using results from samplings etc.

Focus on wastewater and stormwater



Pilots

Microplastics removal from stormwater and wastewater

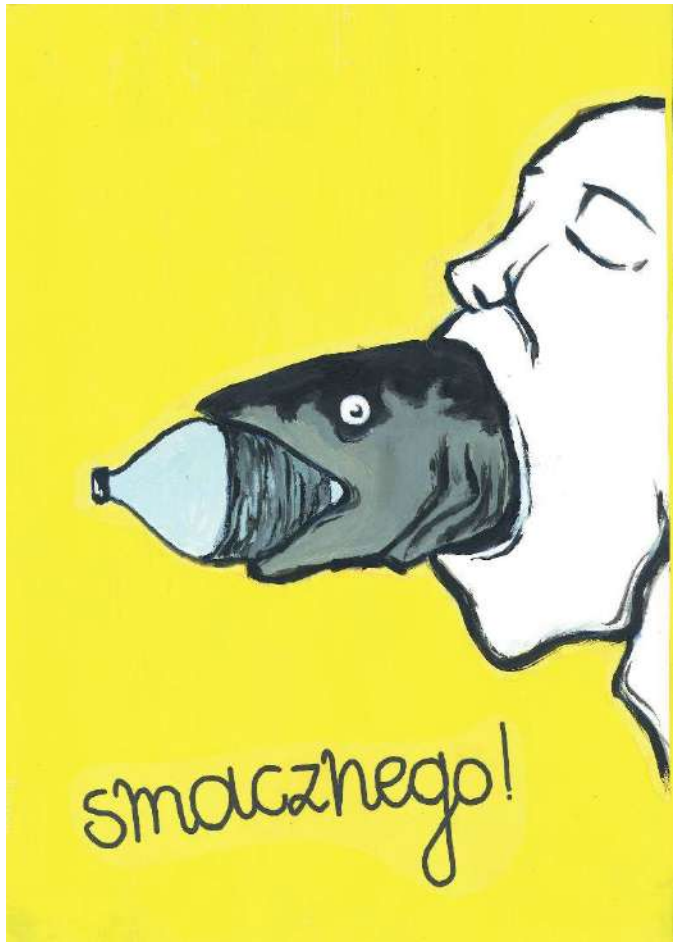
Sampling before and after

Assessment of Removal Technologies

Feasibility studies of different removal technologies.

LCA Studies

Public Awareness Raising



Thank You!

fanplesstic.com

Jesper König
Sweden Water Research

Fanplesstic-sea

Fanplesstic-sea

Interreg
Baltic Sea Region

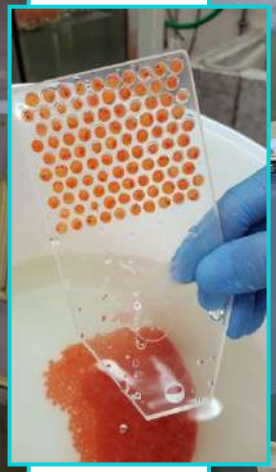
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

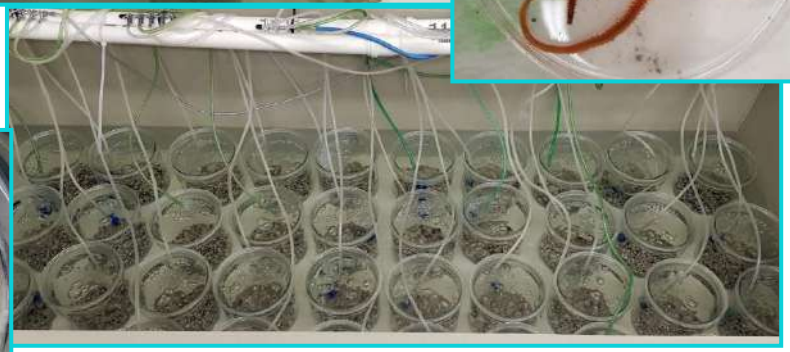
Marine litter - past and ongoing experimental research

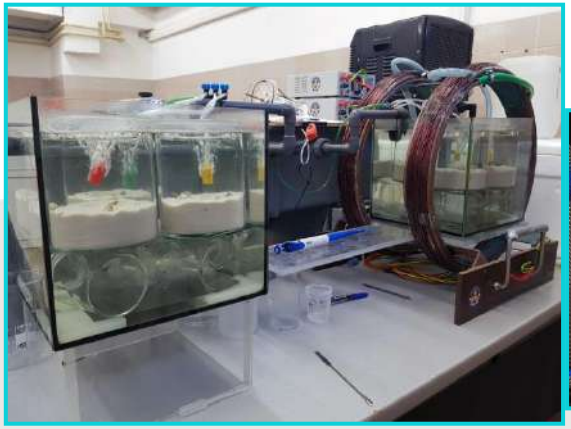
Magdalena Jakubowska, Barbara Urban-Malinga, Marcin Białowąs, Karolina Jonko-Sobuś

National Marine Fisheries Research Institute
Kołłątaja 1, 81-332 Gdynia, Poland

The experimental infrastructure

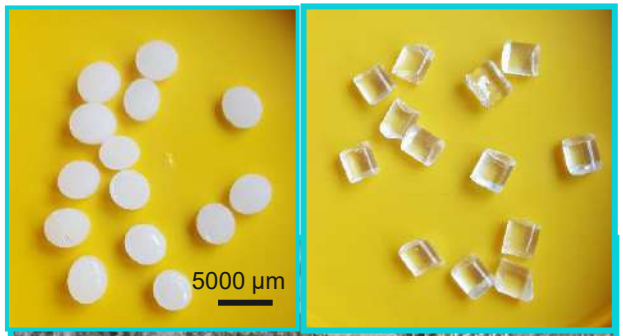


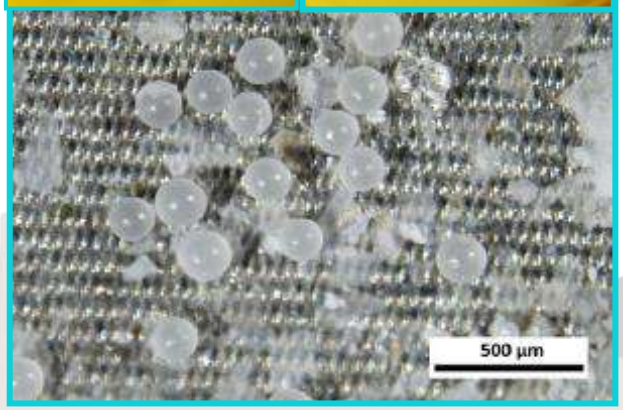




BONUS MICROPOLL: experiments performed

- Exposure to microplastics of various: polymers, sizes, shapes, concentrations
- Organisms: fish early life stages (*Salmo trutta*, *Oncorhynchus mykiss*), invertebrates (*Cerastoderma glaucum* and *Limecola balthica*, *Hediste diversicolor*)
- Processes and parameters investigated: survival, hatching, growth and development, condition, energy reserves, respiration, stress hormones, biomarkers of oxidative stress, geno- and cytotoxicity, behaviour
- Cooperation: Medical University of Gdańsk (Poland), Nature Research Centre (Lithuania)





Ongoing research

Preparation of microplastics

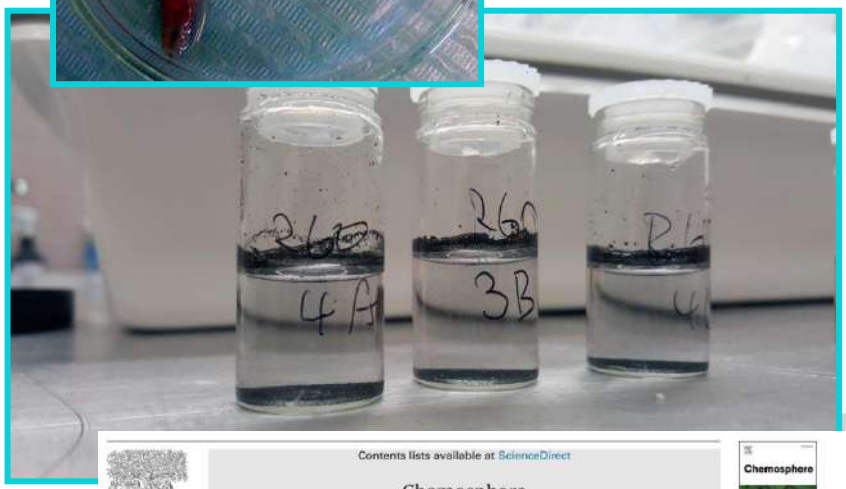
Exposure to environmental conditions/ polluted areas

Exposure of organisms

Chemical analysis (PBDEs, HBCDs, PAHs, PCBs)

Ongoing research

- Exposure to graphene and other carbon nanomaterials
- Organisms: fish early life stages (*Oncorhynchus mykiss*), invertebrates (*Hediste diversicolor*)
- Cooperation: University of Warsaw (Poland), Medical University of Gdańsk (Poland)




Contents lists available at ScienceDirect

Chemosphere

journal homepage: www.elsevier.com/locate/chemosphere

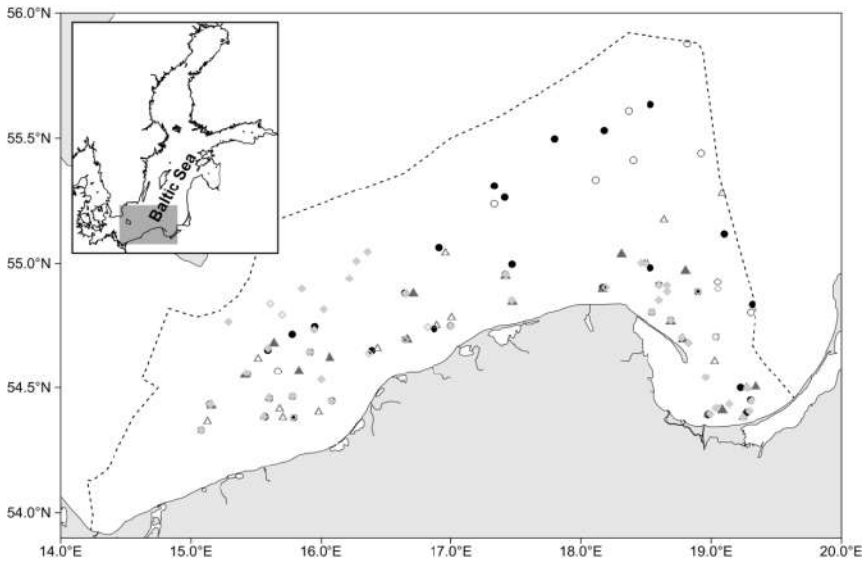
ELSEVIER

Do the graphene nanoflakes pose a potential threat to the polychaete *Hediste diversicolor*?

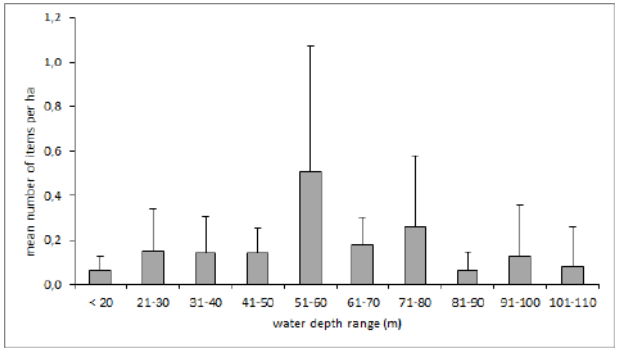
Barbara Urban-Malinga [a], Magdalena Jakubowska [a], Anna Hallmann [b], Agnieszka Dąbrowska [c,d,*]

Marine litter research in the National Marine Fisheries Research Institute in Gdynia

Litter on the seafloor



Baltic International Trawl Surveys data submitted to the ICES database DATRAS



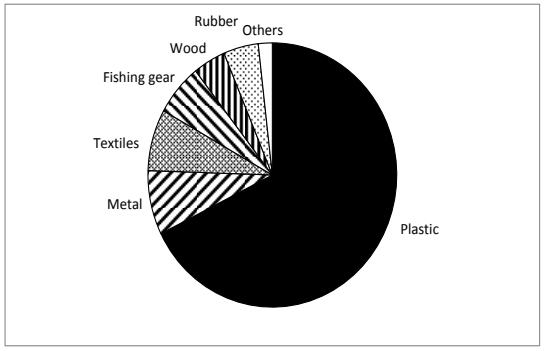


photo : Włodzimierz Grygiel

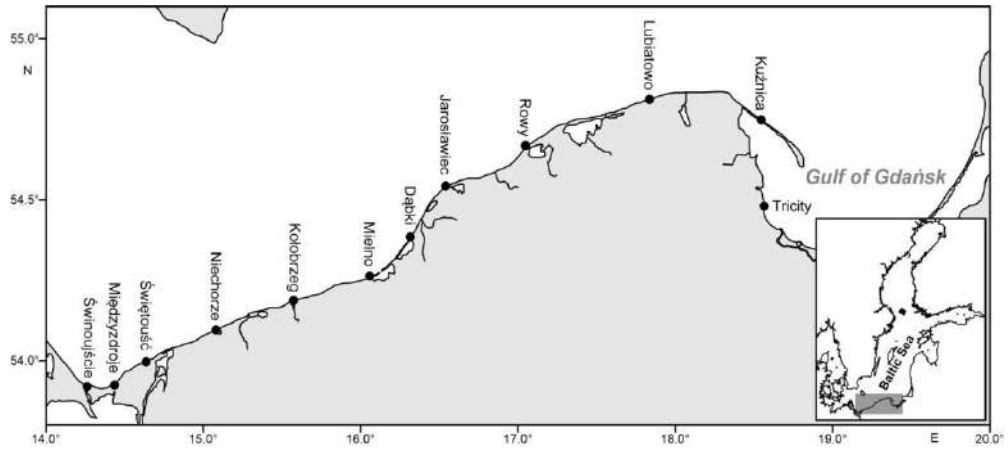
photo : Martyna Greszkiewicz

Barbara Urban-Malinga, Tycjan Wodzinowski, Bartosz Witalis, Mariusz Zalewski, Krzysztof Radtke, Wodzimierz Grygiel, 2018. Marine litter on the sea floor of the southern Baltic. Mar Poll Bull., 127: 612-617

(Micro)Litter on beaches

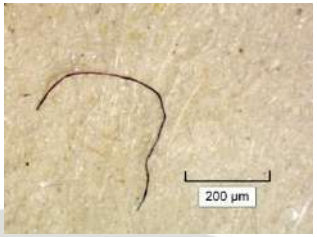
photo : Adam Woźniczka

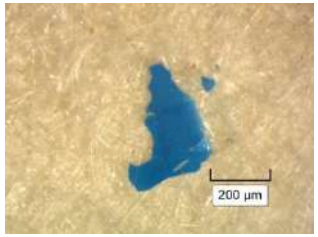
photo : Adam Woźniczka

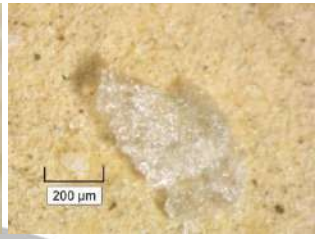


13 study sites differing in terms of anthropogenic pressure

photo : Tycjan Wodzinowski



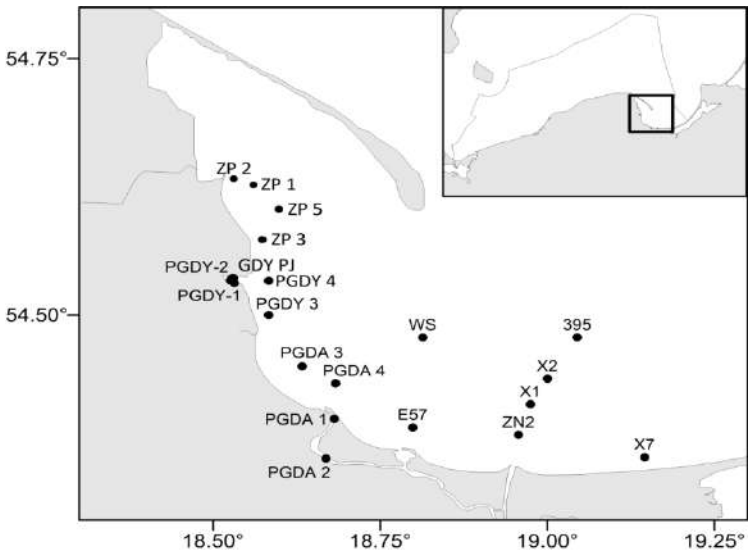




Urban-Malinga, B., Zalewski, M., Jakubowska, A., Wodzinowski, T., Malinga, M., Pałys, B., & Dąbrowska, A. (2020). Microplastics on sandy beaches of the southern Baltic Sea., Marine Pollution Bulletin, *155*, 111170

Tycjan Wodzinowski*, Mariusz Zalewski, Bartosz Witalis, Adam Woźniczka, Agnieszka Szkudlarek-Pawełczyk, Aneta Jakubowska and Barbara Urban-Malinga. Litter on beaches of the southern Baltic Sea (in progress)

Microplastics in sediments of the Gulf of Gdańsk



- 20 study sites (different in terms of exposure to various anthropogenic pressures);
- sampling sites in two large harbors in Gdynia and Gdańsk, and in the Gdynia yacht harbor
- water depths 14 - 66 m

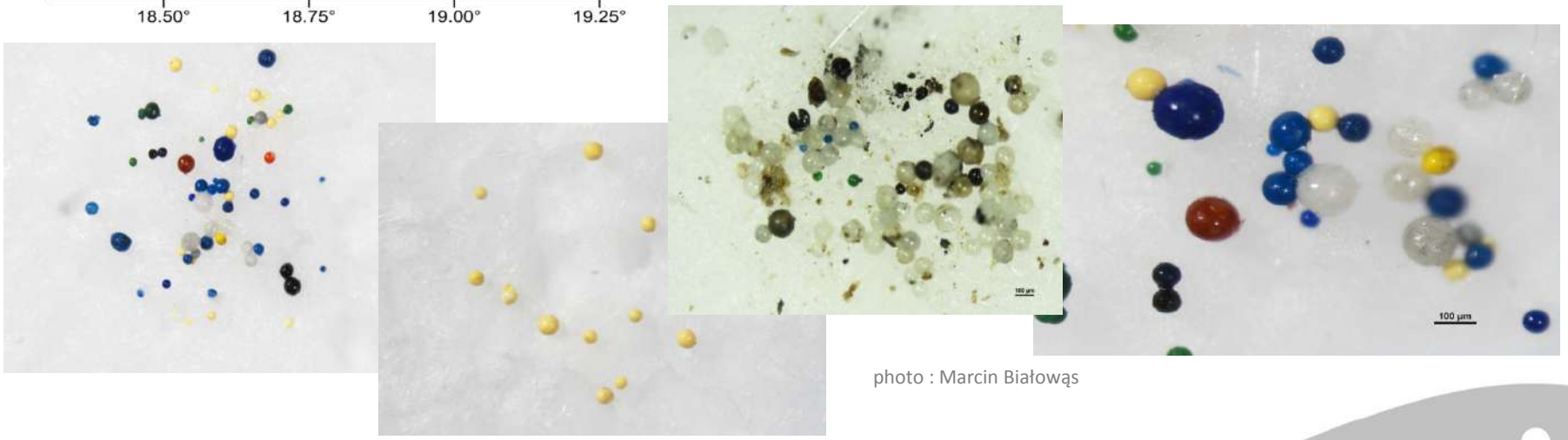


photo : Marcin Białowąs

Urban-Malinga B., Zalewski M., Jakubowska A., Witalis B., Wodzinowski T., Białowąs M. Microplastic occurrence in various benthic environments of the Gulf of Gdańsk (southern Baltic Sea) (in progress)

Litter ingestion by fish from the southern Baltic

in total >1500 fish analysed during NMFRI monitoring programmes since 2015 (*Gadus morhua*, *Platichthys flesus*, *Merlangius merlangus*, *Clupea harengus*, *Sprattus sprattus*)

Photo: M. Pachur, and J. Pawlak

- Stomach contents;
- Detailed morphometric analyses;
- Body condition factor (Fulton's condition factor K)

Pachur M., Pawlak J, Białowąs M. and Urban-Malinga B (in progress)

BONUS Blue Baltic

MICROPOLL – Multilevel assessment of microplastics and associated pollutants in the Baltic Sea

- Leibniz Institute for Baltic Sea Research Warnemuende (IOW), Germany - coordinator
- Leibniz Institute of Polymer Research Dresden, Germany
- Stockholm University, Sweden
- Klaipeda University, Lithuania
- Environmental Research Institute, Sweden
- Tallinn University of Technology, Estonia
- National Marine Fisheries Research Institute, Poland

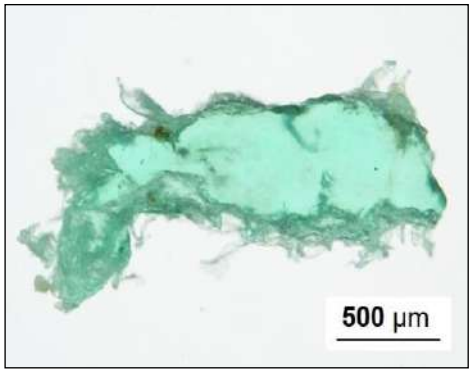
Topics:

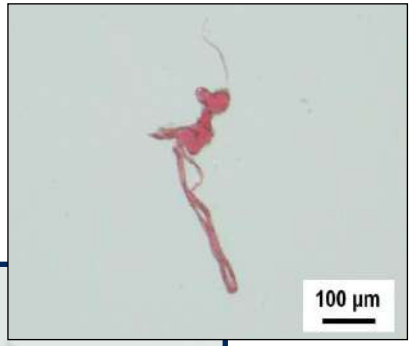
- Marine litter on beaches;
- Development of methods of sample purification, MPs extraction and effective methods of polymer identification;
- Identification of MPs sources;
- MPs emmissions from WWTPs to the Baltic Sea;
- Role of microbial biofilm in plastic degradation in the marine environment;
- Adsorption of pollutants on MPs;
- Effects of MPs on Baltic biota;
- Conclusions about successfull mitigation of MPs input

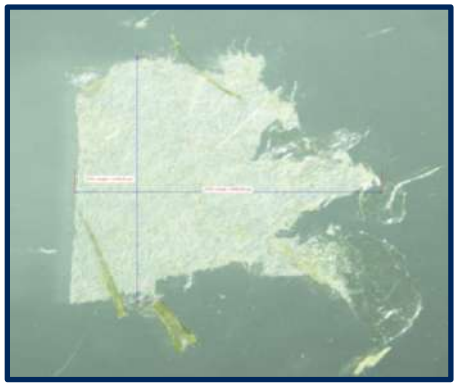
Microplastic ingestion by fish

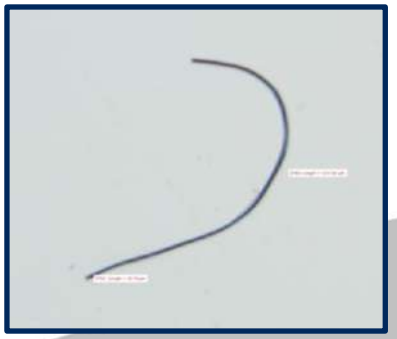
photo :M. Wyszyński

- almost 200 fish analysed : cod (*Gadus morhua)* and herring (*Clupea harengus*);
- detailed morphometric analysis, body condition assessment;
- fat content;
- POPs and heavy metals concentrations in muscles







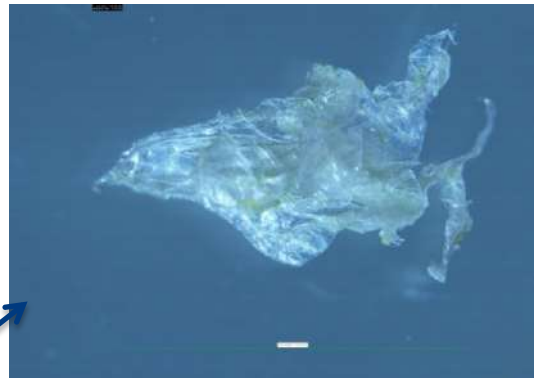


Photos: M. Białowąs

· Białowąs M. et al. (in progress)

Transport of microplastics to the Baltic Sea with the Vistula river

- Sampling every month for a period of one year;
- Water surface and water column;
  - Manta net 300 µm



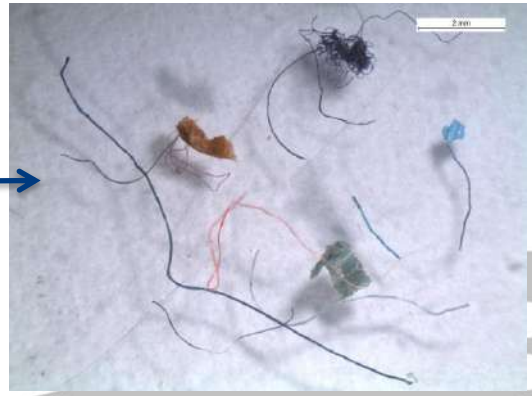


photo :B. Urban-Malinga, B. Witalis, M. Białowąs

Urban-Malinga et al. (in progress)


Thank you for your attention !!

Projects, competences, capacities and interests - Latvian Institute of Aquatic Ecology and (micro)plastic/marine (micro)litter

LATVIJAS HIDROEKOLOĢIJAS INSTITŪTS

Workshop “Baltic Marine Litter”

Better Off Blue Online Event Series

4 May 2021

Implemented Projects

- **2017-2020** -> Program ERA.Net RUS Plus **EI-GEO - Environmental impact of geosynthetics in aquatic systems.** Results published as Scholz et al. *Materials*. 2021;

- **2020** Latvian Environmental Protection Fund project – methods to assess microplastic pollution in freshwater

On-going projects I

- **2017-2022** -> Contract with Ministry of Environmental Protection and Regional Development project No. IL/106/2017 financed by EU "**Improvement of knowledge of the state of the marine environment in the marine waters under the jurisdiction of Latvia**"
- **2019-2021** European Regional Development **Fund Post-doctoral project** No.1.1.1.2/VIAA/2/18/359 "A paleo-ecotoxicology approach to detect the impact of plastic particles on functional and structural diversity of the keystone microcrustacean group Cladocera in freshwaters"

LATVIJAS HIDROEKOLOĢIJAS INSTITŪTS

Valsts izglītības attīstības aģentūra

NACIONĀLAIS ATTĪSTĪBAS PLĀNS 2020

EIROPAS SAVIENĪBA
Eiropas Reģionālās attīstības fonds

IEGULDĪJUMS TAVĀ NĀKOTNĒ

- **2019-2021** EU INTERREG Baltic Sea Region project **FanpLESStic-sea** "**Initiatiatives to remove microplastics before they enter the sea"** (total budget – 2.97 M; 11 PP)

Fanplesstic-sea

Interreg
Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

On-going projects II

- **2020-2022** -> Interreg V-A Latvia – Lithuania Programme 2014-2020 project **ESMIC (LLI-525 Estimation, monitoring and reduction of plastic pollutants in Latvian-Lithuanian coastal area via innovative tools and awareness raising)** (total budget – 0.5 M, 4 PP) **-** Project aims to develop a sustainable, cost-effective framework for plastic litter detection, monitoring and managem

- **2021-2022** EU financed project **HELCOM BLUES (HELCOM biodiversity, litter, underwater noise and effective regional measures for the Baltic Sea) (14 PP) -** project will support the development of new and regionally coordinated measures addressing pressures affecting the sea.

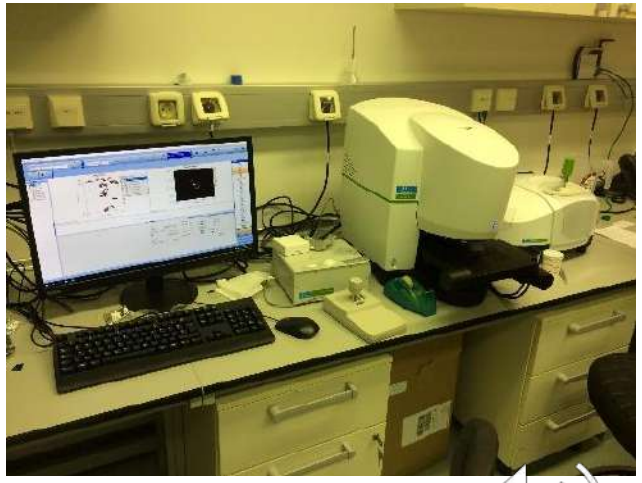
BLUES

Co-funded by th
European Un

Capacities and Competences

- **Specially adapted laboratory for MP research**
- **Sampling** in marine and freshwaters in different matrixes
- **Sample preparation** of MP samples down to 10 mkm, experienced in:
  - freshwaters and marine waters
  - sediments
  - treated and untreated wastewaters
  - drinking water
  - digestive tract of fish

- MP sample analysis for particles **bigger than 300 mkm** (including polymer analysis)



Thank you!

LATVIJAS
HIDROEKOLOĢIJAS
INSTITŪTS

Klaipeda University
Marine Research Institute

Klaipeda University

Marine Research Institute

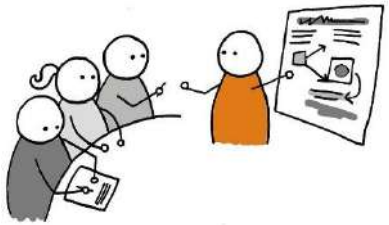
Coastal and Marine Management Research Group

Marine litter subgroup

Field work

Laboratory analysis

National and local stakeholder interaction



Klaipeda University
Marine Research Institute

Past and Present Projects

BONUS MicroPoll "Multilevel assessment of microplastics and associated pollutants in the Baltic Sea"	Finished (role: Project Partner)
ERA.Net RUS BalticLitter "Litter rim of the Baltic Sea coast: monitoring, impact, and remediation"	At the end (unofficial participation)
ESMIC „Estimation, monitoring and reduction of plastic pollutants in Latvian-Lithuanian coastal area via innovative tools and awareness raising"	Active (Lead Partner)
Several national project together with Environment protection Agency under the Ministry of environment in Lithuania	Active (Lead Partner)

Klaipeda University
Marine Research Institute

Thank You

Contact e-mail:

Arunas.balciunas@apc.ku.lt

Marine Litter in Belgium

From knowledge gaps to collaborative innovation

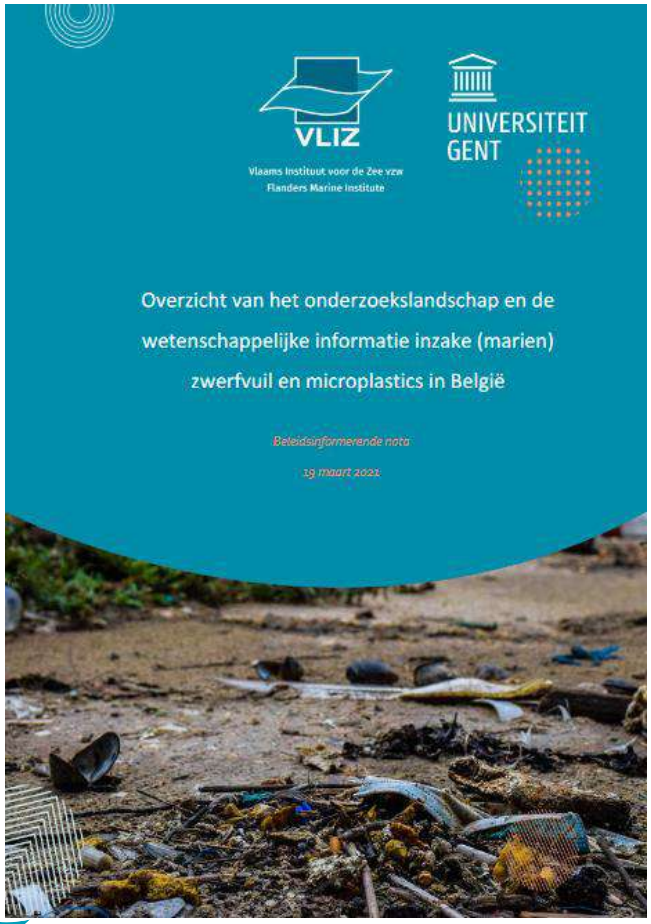
Vlaams Instituut voor de Zee vzw
Flanders Marine Institute

Devriese Lisa
Lisa.Devriese@vliz.be

4 May 2021 – Better off Blue event

Samen sterk voor groei

Knowledge gaps



Policy informing briefs

e.g. Annual update: research landscape and scientific knowledge on marine litter and microplastics in BE

Overview of the knowledge gaps & research needs

Critical knowledge gap about the whereabouts of plastics in our waterways and about their flux towards the marine environment

Knowledge gap

Policy Context in Belgium & Flanders

Marine Litter

Federal/National level

Minister for the North Sea: action plan to tackle marine litter (2017)

National Marine Litter Working Group (FPS, since 2016)

Minister for the North Sea: Policy Statement (2020)

Flanders

Public Waste Agency of Flanders (OVAM): Flemish action plan marine litter (2017)

Flemish Steering Group on Marine Litter (OVAM, since 2019)

Implementation plan Plastics 2019-2024 + Consultation Platform (2020)

Coalition Agreement of the Government of Flanders (2019-2024)

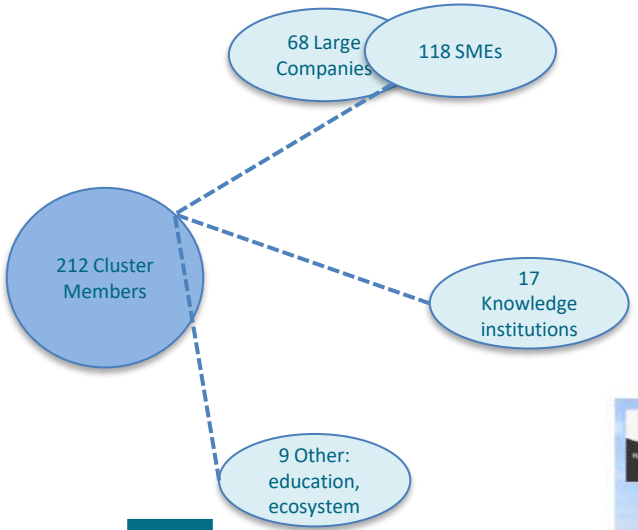
*The objective no. 9 of the Flemish Action Plan for Marine Litter (OVAM) states that "**by 2025, the influx of litter from Flanders into the marine environment will have been reduced by 75%**".*

Target

PLUXIN *project*

The Blue Cluster (since 2018)

Blue Cluster is a Flemish spearhead cluster aimed at developing and promoting economic activities **linked to the sea**



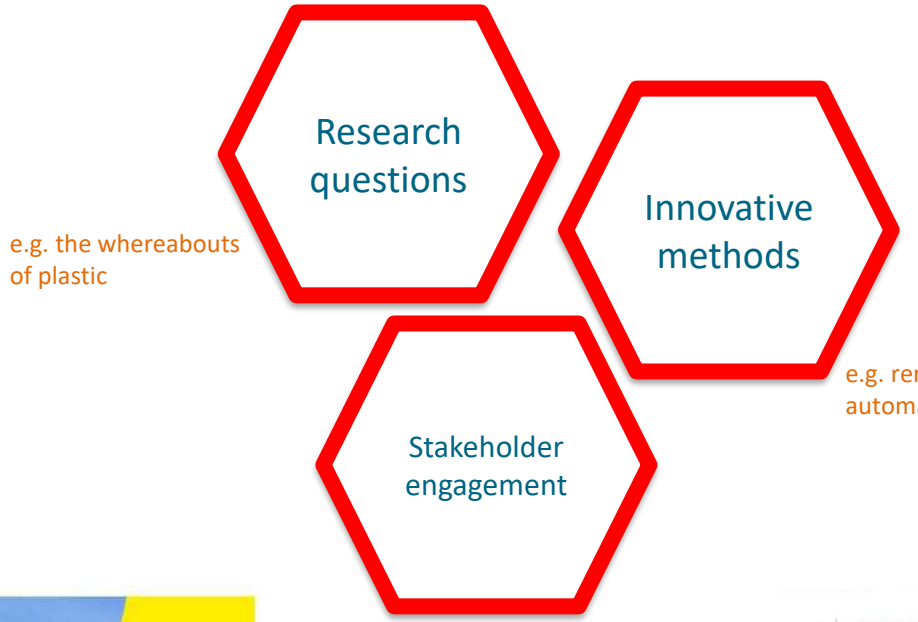
VLIZ

Vlaams Instituut voor de Zee vzw
Flanders Marine Institute

https://www.vliz.be/en/news?p=show&id=8699

The PLUXIN project (2020 – 2023)

Plastic Flux for Innovation and Business Opportunities in Flanders



e.g. the whereabouts of plastic

e.g. remote sensing, automated detection

AGENTSCHAP INNOVEREN & ONDERNEMEN
BLAUWE CLUSTER
Samen sterk voor groei

KU LEUVEN

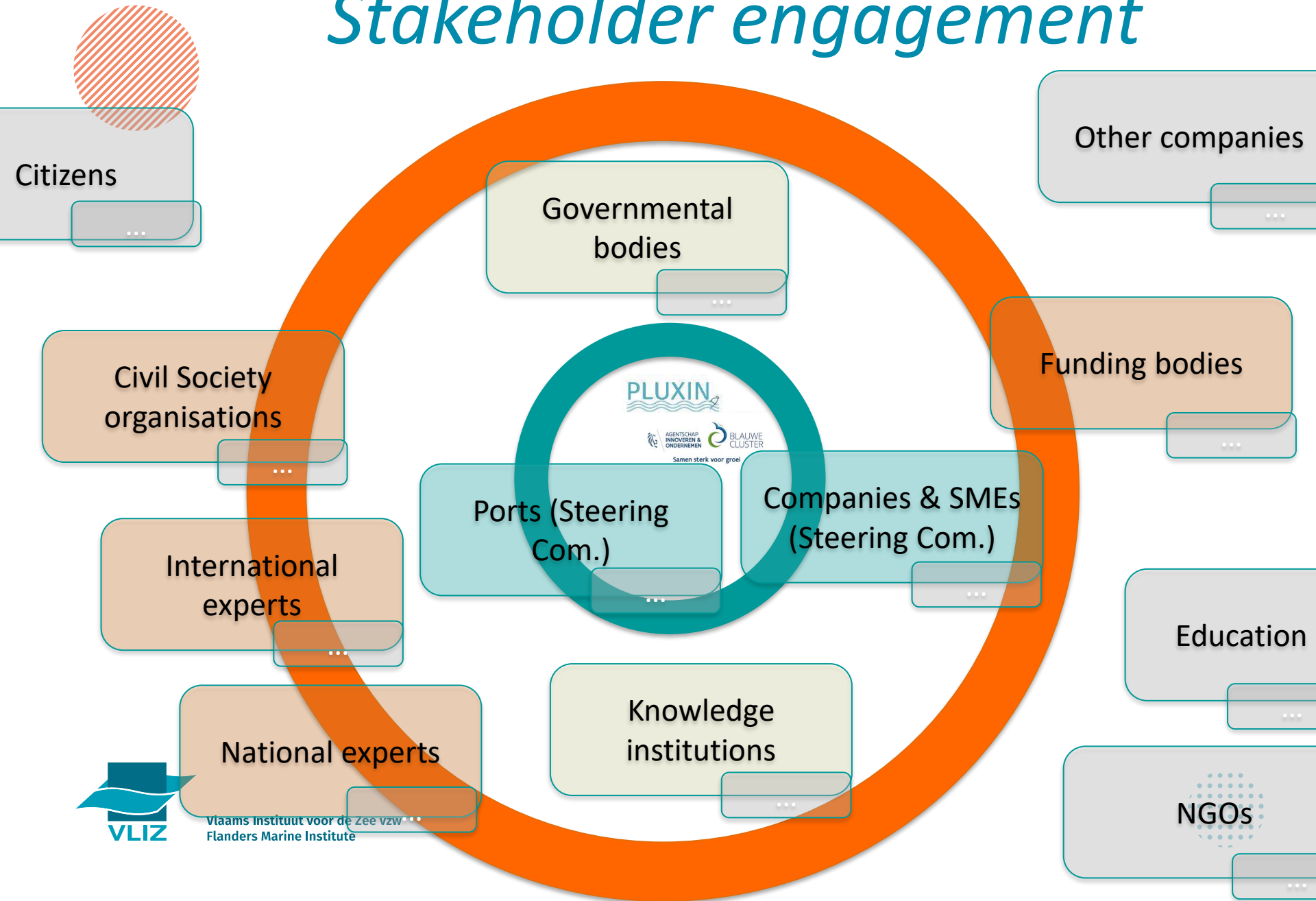
Ecosystem Management Research Group (Ecobe)
University of Antwerp

GhEnToxLab
Environmental Toxicology

vito
remote sensing

VLIZ

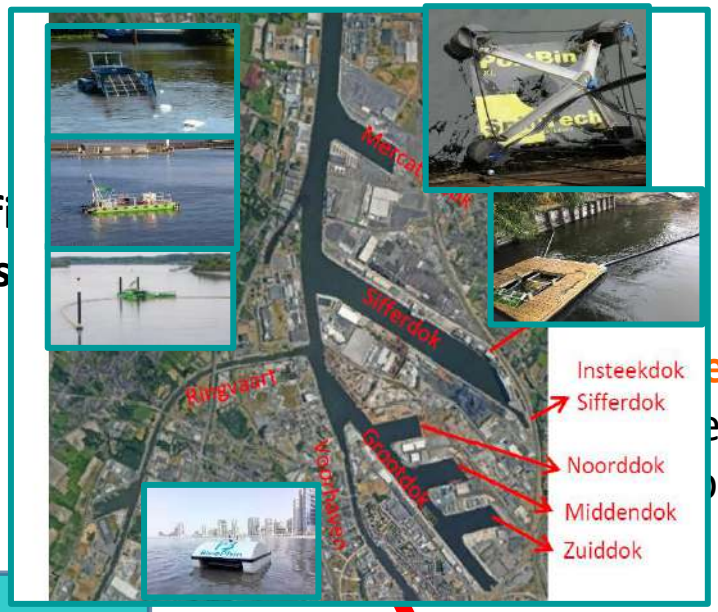
Stakeholder engagement



Design research, thinking and collaborative innovation

Design Research - Interviews

Bilateral consultations, stakeholder meetings, polls, etc. **to identify the fi**
of interest, obstacles, needs and wis
of the stakeholders.



eme

e for which there is
pport.

Collaborative stakeholder workshop

Launch of case study (2021)

Validation of knowledge for new initiatives

Collaborative approach

Key topic

Example: **plastic removal/ collection technologies**.

Overview of Plastic Catchers

Policy information brief

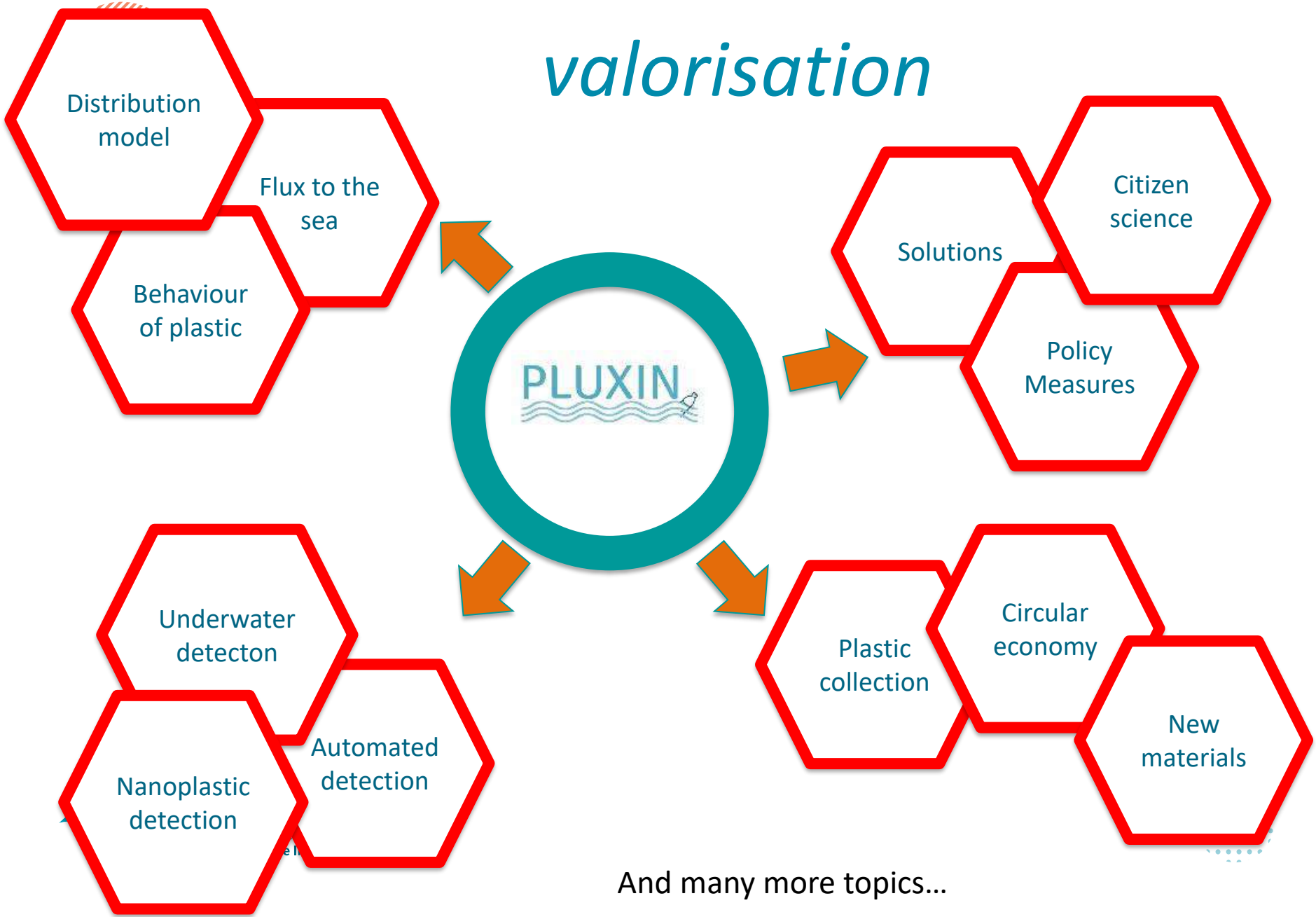
Usable knowledge base

Informing & engaging stakeholders

Knowledge gap

Stakeholders: Knowledge on (removal efficiency of) existing plastic remediation technologies/ installations.

International collaboration and valorisation



And many more topics…

Baltic & North Sea Region

BONUS
SCIENCE FOR A BETTER FUTURE OF THE BALTIC SEA REGION

BANOS
Baltic and North Sea Coordination and Support Action

The Baltic and North Sea Strategic Research and Innovation Agenda (BANOS SRIA)

A DRAFT version, 28 February 2020

VLIZ
Vlaams Instituut voor de Zee vzw
Flanders Marine Institute

BANOS CSA project

The **Baltic and North Sea Coordination and Support Action** (BANOS CSA) 'Towards a Baltic and North Sea Research and Innovation Programme' runs from November 2018 until autumn 2021.

BANOS SRIA

The leading research and innovation funders from **13 Baltic and North Sea countries** (BE, DK, EE, FI, FR, DE, LV, LT, NL, NO, PL, SE, UK) prepare a framework for a joint Baltic and North Sea R&I Programme.

Including: marine litter

BANOS SRIA

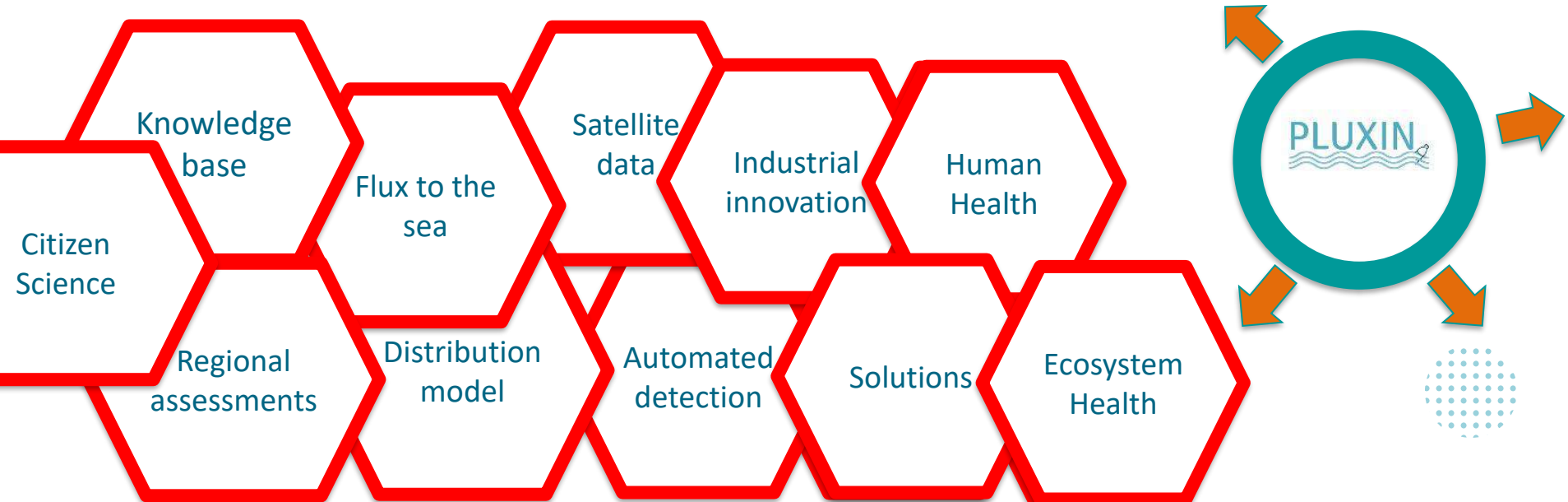
The Baltic and North Sea Strategic Research and Innovation Agenda (BANOS SRIA)

A DRAFT version, 28 February 2020

Strategic Objective A: Healthy Seas and Coasts

Specific objective A.4: Efficient techniques and approaches for environmental monitoring and assessment.....

Monitoring and long-term solutions for micro and macro debris in aquatic environments



Thank you!

Marine litter - From knowledge gaps to collaborative innovation

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4 May 2021 – Better off Blue event

SUBMARINER NETWORK