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3RD
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Environmental Success of Youth in the European Macro Regions

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Rivers connect us - Water and the European Macro Regions

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Water management cooperation among the EU macro regions

- EUSDR Priority Area 4 Water Quality (**EUSDR PA4**) established first **the co-operation among the priority areas of the 4 EU MRS in water related issues**
- In April 2018 the “**1st EU Macro-regional strategies’ workshop on water**” was held in Budapest together with Interact.
- A **background study** was commissioned and **laid down the possible objectives**, professional **areas** and approaches **of co-operation** and **defined the steps** for the establishment **of a formalised co-operation**
- „Building common cross-MRS collaboration platform on water” - a **second workshop for MRS coordinators** held **in November 2019**.





Water management cooperation among the EU macro regions

- The objectives of a future co-operation can be
 - 1): Increase influence on **EU level strategy formulation and programming**,
 - 2): **Share knowledge** and experience on water related issues among professionals
 - 3): **Develop standard and EU-wide solutions** for water related issues.
- These objectives can be achieved through the activities of **initiating common projects**, developing common standards, **creating/developing** the common professional **databases**, developing common policy papers, **organising events** for the public, professionals and decision makers.
- The increased **EU level influence** can be selected as the objective **with the highest potential impacts**

Initiating key projects in some “hot” topics, such as plastics or pharmaceuticals in waters, can give a good impetus for the processes and serve as pilot projects of cross-EU regional co-operation

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Plastic pollution of waters from a global perspective

- **Plastics are the** largest, most harmful and most persistent fraction of marine litter, **accounting for at least 85 per cent of total marine waste** (UNEP data).
- **Emissions of plastic waste into aquatic ecosystems are projected to nearly triple** from some 9-14 million tons per year in 2016 to a projected 23-37 million tons per year **by 2040 without meaningful action** (UNEP estimation)
- Over **74% of emissions occurring between May and October**. The **top 20 polluting rivers mostly located in Asia** (Lebreton et al. 2017).
- Recent model approach (Meijer et al. 2021) estimate that **more than 1000 rivers account for 80% of the global riverine annual plastic emissions into the ocean**.
- **Plastic recycling rates are less than 10 per cent** and plastics-related greenhouse gas emissions are significant. At the same time, the estimated **global cost of municipal solid waste management is set to increase** from US\$ 38 billion in 2019 to US\$ 61 billion in 2040.



Plastic pollution of waters from an EU perspective

- There is **currently no EU law in place applying to microplastics in a comprehensive manner**. There are **several specific laws** with partial objectives **to reduce plastic leakage** and pollution, as well as to convert to a circular economy:
 - ❑ The **Marine Strategy Framework Directive** tackling marine litter explicitly and directly, “marine litter” is one of the 11 indicators of good environmental status
 - ❑ **Water Framework Directive** aims to achieve good ecological status of waters.
 - ❑ **Urban Wastewater Treatment Directive** defines threshold values for a set of compounds, which currently excludes microplastics.
- **Several EU laws affect the production of microplastics, or their direct/indirect release** into the environment, among others:
 - ❑ Fertilising Products Regulation
 - ❑ Ecodesign Directive
 - ❑ Industrial Emissions Directive
 - ❑ Sewage Sludge Directive
 - ❑ Waste Framework Directive
 - ❑ REACH proposal to restrict intentionally added microplastics

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Plastic pollution of waters from an EU perspective

- The EU Action Plan for the Circular Economy from 2015 and the European strategy for Plastics in a Circular Economy, as part of the Circular Economy Package from 2018 make the management of plastic streams a priority.

The **European Commission public consultation** is open until 17th of May on **how best to reduce the amount of unintentionally released microplastics into the environment**. This public consultation will support the European Commission's initiative on **Microplastics pollution – measures to reduce impacts on the environment**.



Plastic pollution of waters from an EU MRS perspective

- 20–31 tonnes flows into the North Sea every year from the **Rhine River** (Van der Wal et al. 2015)
- In the Italian **Po River**, sampled concentrations differed by one order of magnitude between winter and spring, emphasising **seasonality of freshwater contamination** in rivers (Vianello et al. 2015).
- The average litter density for beaches was found by the **DeFishGear project** to be 0.67 items/m²; for coastal **Adriatic waters** 332 ± 749 items/km² and for the seafloor 510 ± 517 items/km².



Map of EU macroregions

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Plastic pollution of waters from an EU MRS perspective

- The **BLASTIC project** (2016-18), an **EUSBSR Flagship** under Policy Area Hazards, aimed to reduce plastic waste and thereby, the inflow of hazardous substances into the Baltic Sea by mapping and monitoring the amounts of litter in the aquatic environment.
- Once a PE/PP microplastic particle enters the **Baltic Sea**, it stays in average about **14 days in the water column** before it is washed ashore. Microplastics from urban sources cause average concentrations of 1.4 PE/PP particles/m² sea surface (20–500 µm size range) and 4 particles/m² sediment surface of PET at the sea floor are during summer. **Accumulation at the shoreline is the major sink for microplastics** (Schernewski et al. 2020).



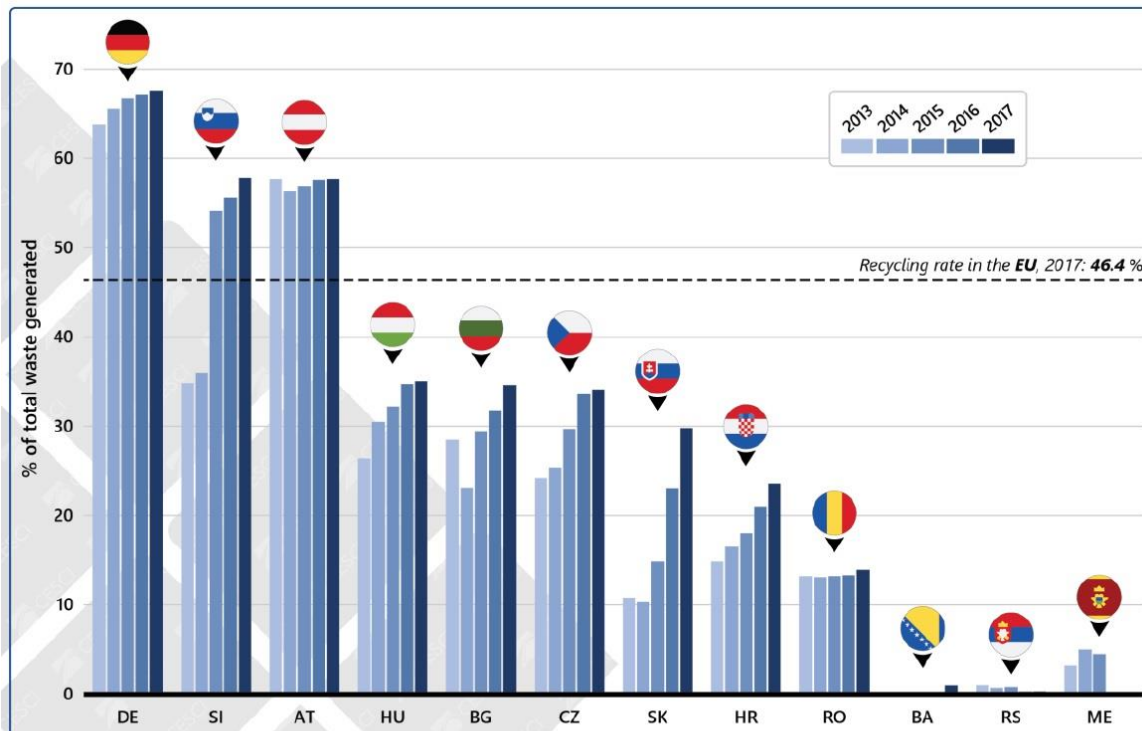
Map of EU macroregions

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The Danube Region perspective

- 9 EU countries
- 5 non-EU member states

Different levels of waste and wastewater management



Communal waste recycling in the DRB 2013-2017 (CESCI)

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source: Eurostat, data submitted by the members © Central European Service for Cross-border Initiatives

In case of Germany data represents the whole country not just the regions affected by the Danube Region. In case of Moldova and Ukraine data is missing.



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The Danube Region perspective

- Since 2004 the Hungarian Water Directorates are measuring the communal waste pollution intensity of the Upper-Tisza River entering Hungary from Ukraine and Romania
- The first documented study dealing with the plastic pollution of the Danube took place in 2010-12 at the Austrian part of the river, downstream Vienna and found mean plastic abundance of more than 17 pieces/m³
- It was estimated that the Danube River releases 530–1,500 tonnes of plastic into the Black Sea annually (Lechner et al. 2014)
- In 2018 the Regional Action Plan on Marine Litter in the Black Sea was adopted by the Black Sea Convention and tasked to further elaborate on Marine Litter Monitoring Guidelines.



Plastic pollution of the Tisza River (Photo by FETIVIZIG)



The Danube Region perspective

- **Tiny Plastic Puzzle project** by Wessling Hungary Ltd. measured 45 particles/m³ microplastic upstream from Budapest and 55 particles/m³ downstream
- The SK-AT CBC financed **PlasticFreeDanube project** measured the macroplastic pollution composition along the Danube from Vienna to Gabčíkovo between 2017-2021
- The **ICPDR Joint Danube Survey 4** was performed in 2019 and comprised **the first ever comprehensive screening of microplastics along the whole Danube**. The JDS4 outcomes were used for the 2021 update of the Danube River Basin Management Plan.

Microplastics in mussels along the Danube
 (Source: ICPDR JDS4)

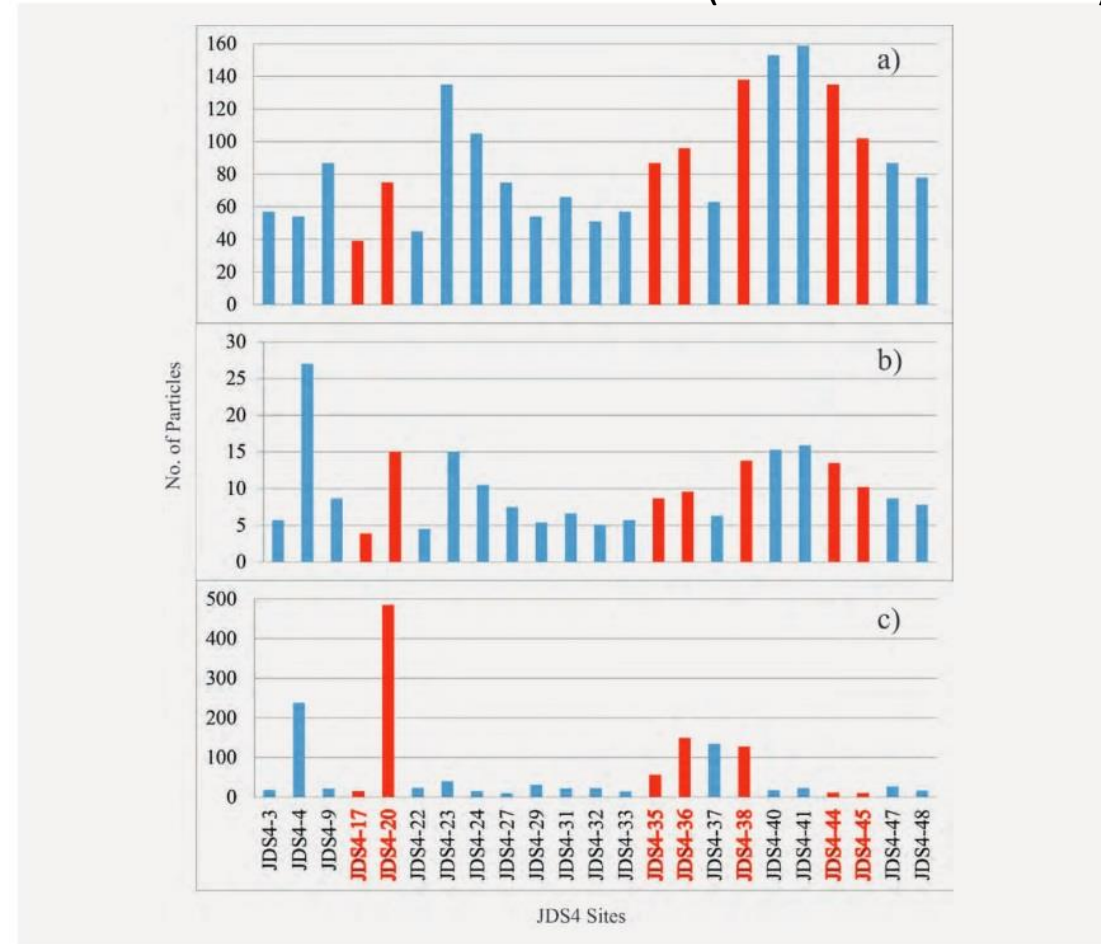


Figure 4: Total number of particles per site, mean No. of particles per individual and mean No. of particles per biomass (g wet weight); sites on tributaries and side arms are presented in red colour.



EUSDR related projects in the Danube region

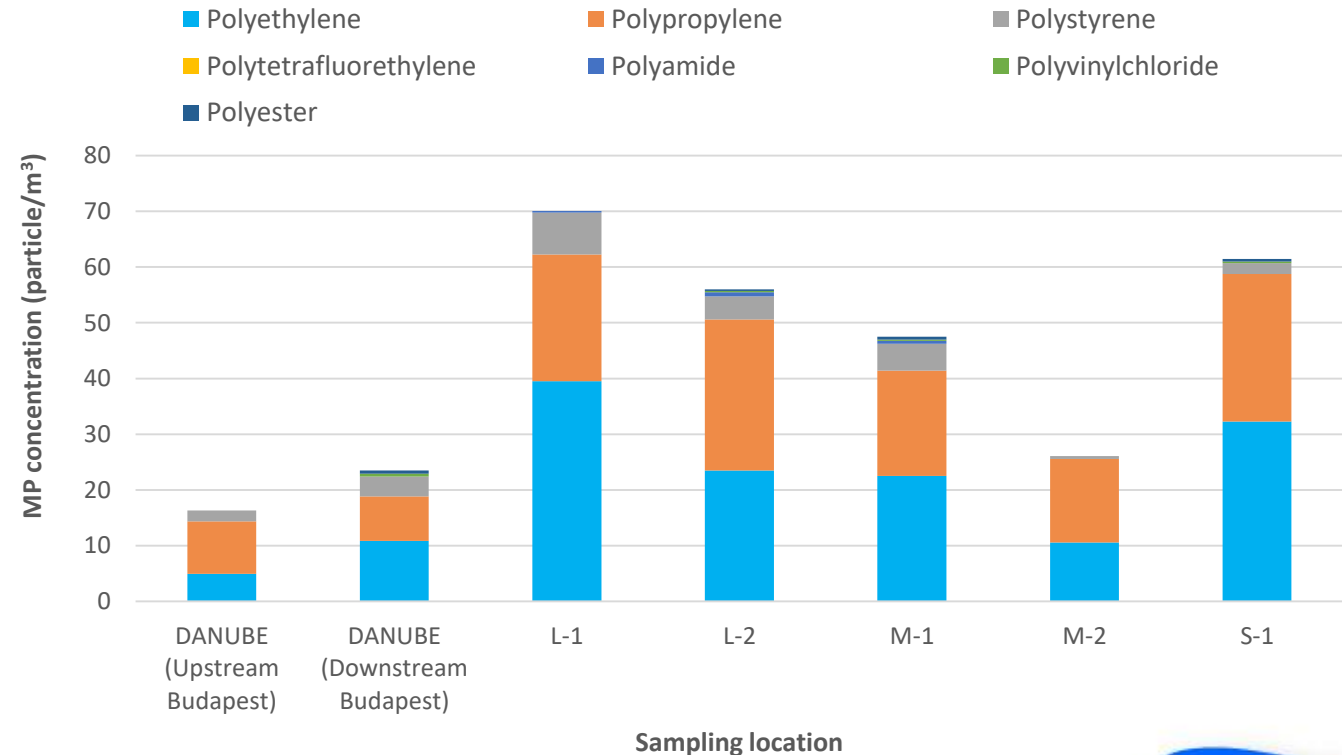
- In 2018 EUSDR PA4 organized an international **roundtable discussion on plastic pollution** in Budapest
- „**Plastic Pollution of rivers in the Danube Region**” brochure was published by EUSDR PA4
- EUSDR PA4-5 arranged the first international **boat and won the 6th PET Cup cleanup action in 2018** thanks to the **JOINTISZA** project - connecting 13 experts of the crew from 8 countries of 4 continents
- The EUSDR PA4 transnational flagship project - **Tid(y)Up** is under implementation (2020-2022) to map & measure the plastic waste along the Tisza and Danube and create an integrated action plan from Interreg DTP funding





EUSDR related projects in the Danube region

- In 2021 an EUSDR HU investigation on the microplastic elimination **effectiveness of 5 UWWTPs** along the Hungarian Section of the Danube
- UWWTPs reduce the microplastic content of the influent raw wastewater significantly, but the treated effluent wastewater that is released to the environment is still containing more microplastics, than the receiver river water.



Average microplastic concentration in WWTP effluent and Danube River samples





Some current funding/project cooperation possibilities

- 5 **EU Missions** including „**Restore our Oceans and Waters**” – Horizon Europe calls are open until 12th April 2022.
 - ❑ **Baltic and North Sea Basin Lighthouse**
 - ❑ **Danube River Basin Lighthouse** – restoration of fresh and transitional water ecosystems
 - ❑ **Mediterranean Sea Basin Lighthouse** - actions to prevent, minimise and remediate litter and plastic pollution
- **Europeanisation of Plastic Pirates Citizen Science Initiative** should support the scale and rollout of the Plastic Pirates – Go Europe! initiative launched by the Trio-Presidency of Germany, Portugal and Slovenia (Grant awarded without call for proposals)
- **Interreg Central Europe 1st Call was closed** in February – out of the **280 submitted projects 78 related to circular economy and environmental protection**
- **Interreg Danube Region Program** 1st Call is expected this summer, sustainable water management will be adressed



Hungarian perspective on water cooperation

- Hungary is **determined to water cooperation** globally and regionally
- The Government of Hungary organized the global event series of **Budapest Water Summit (BWS) in 2013, 2016 and 2019** to contribute to the implementation of SDG 6. and **served as a platform for the voice of youth**, followed by Youth statements
- Last time the high level event of the **Planet Budapest 2021 Sustainability Expo and Summit** was arranged in December. The „**Heroes of Future**” amusement programme together with the Your Planet interactive exhibition was **visited by approx. 4600 youth people**.



Source: <https://tamasiaroniskola.hu/>

We are ready to contribute to the environmental success of Youth!



Thank you!

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