

Input to the ICPDR public consultation on the draft Danube River Basin Management Plan 2021 update

Danube-Tisa river basin, September 29, 2021

On behalf of the DTP Interreg Tid(y)Up consortium, hereby, we submit our comments and inputs to the draft of the Danube River Basin Management Plan 2021 update (DRBMP).

The Tid(y)Up project aims to reduce the plastic pollution in one of Europe's most heavily contaminated rivers, the Tisza, and investigates plastic pollution and its effect on the Danube and the Black Sea. Currently there are no standard methods and consistent data available on plastic pollution of rivers in the Danube Basin that would help harmonized actions of water management authorities and allow cooperation with other sectors. In Tid(y)Up, project partners develop and launch a set of integrated actions, consult and provide tools for relevant stakeholders and initiate long term transboundary and intersectoral cooperation with the aim of monitoring and eliminating the plastic pollution. The partnership of Tid(y)Up will carry out field trips, expeditions, pilot actions to identify and restore polluted areas, as well as education and awareness raising actions for prevention. The focus is to gather all necessary information, raise awareness of the relevant actors and provide them with practical tools to create active, cooperating communities in the fight against the plastic waste contamination and contribute to the work of water authorities to improve water quality by providing input for the upcoming revision of DRBMP. Project co-funded by European Union funds (ERDF, IPA, ENI).

Partners of the project are:

- Filmjungle.eu Society (Lead partner), Hungary
- Association of Environmental Enterprises (ERDF partner), Hungary
- Institute of Oceanology – Bulgarian Academy of Science (ERDF partner), Bulgaria
- Multisalva Association (ERDF partner), Romania
- University of Life Sciences and Natural Resources, Vienna (ERDF partner), Austria
- Agency for the Support of Regional Development Košice n.o. (ERDF partner), Slovakia
- General Directorate of Water Management (ERDF partner), Hungary
- Faculty of Technical Sciences Novi Sad (IPA partner), Serbia
- For the nature- and environmental protection – PAPILIO (ENI-UA partner), Ukraine
- Agency of Regional Development Cross Border Cooperation “Transcarpathia” of Zakarpatska Oblast Council (ENI-UA partner), Ukraine

The partnership offers its best knowledge for the solving of the plastic flooding. Geographically we cover the whole Tisa basin, probably the most polluted river system of the Danube river system, and beyond where we all are committed to save our rivers.

In general, the partners welcome the dedicated chapter 2.1.9.3 of the draft DRBMP on the plastic pollution issue and recognize that the thereby mentioned topics and knowledge gaps are well aligned with the activities of the project. Hence, in the followings we detail how our experiences and the project outcomes contribute to tackling this serious environmental issue.

As ICPDR is an important associated partner of the project, we will keep informing Mr Ádám Kovács, our contact point about future project events (some of them also mentioned below) with the hope of welcoming the experts of ICPDR also in the frontline of the fight against plastic pollution.

In this section we detail our specific work and contribution in relation to the below topics as mentioned explicitly in the aforementioned chapter. The partnership is keen to provide further details upon request about any of the items detailed below in case the ICPDR is interested to learn more and/or to integrate any of the below suggestions into the next version of the DRBMP.

Topic #1

Scarce is also information about the occurrence of microplastics in the Danube River Basin

An increasing number of investigations on microplastic pollution in Danube and Tisa river system have been carried out recently. However, there is a lack of general and, above all, comparable data. Different, not standardised sampling methods as well as sample preparation and analysis procedures make a comparison of the results difficult.

Within the Tid(y)Up project 3 sampling methods are tested under varying boundary conditions:

- Multiple depths net-method: simultaneous net sampling with mesh sizes of 500 μm and 250 μm in three different depths of the water column. Advantages are that within short timeframes huge amounts of water can be investigated in parallel in 3 depths ($\approx 3,000 \text{ m}^3$ of water per net and $15,000 \text{ m}^3$ per sampling point within approximately 45 minutes). Disadvantages are mainly the need of a bridge or a vessel for sampling and the heterogenous sample composition which greatly increases the effort for sample preparation for analysis.
- Pump-method: sampling with a 1 mm pre-filter with subsequent cascade filtration down to 300 μm , 100 μm and 50 μm ; applicable in varying depths of water column, sample volume 1000-2000 litres depending on suspended solids.
- Sedimentation-box: sampling close to water surface for approximately 2 weeks; it was also used within the Joint-Danube-Survey.

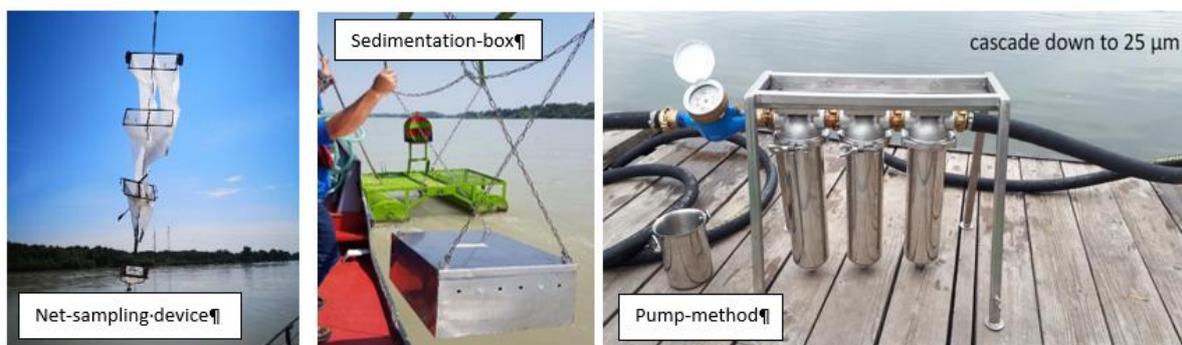


Figure 1 – Devices of the 3 sampling methods applied and compared within the Tid(y)Up project

The suitability of these methods in field application, ease of use, error-proneness and cost-efficiency is investigated. This is because future and regular monitoring of microplastics

requires a move away from sophisticated scientific methods towards easily applicable and reproducible results. Also, the potential to generate meaningful information about microplastic-pollution will be assessed. It seems that none of the method itself meets the requirements of representative sampling. Ideally, therefore, several test methods are used in parallel, whose individual advantages compensate for the disadvantages of the respective other method.

Inspired by the JDS4 sampling sites, microplastics measurements were performed in Danube river in Hainburg (AT), Budapest (HU), Bezdán (RS), Pancevo (RS), Ruse (RO/BG), Tutrakan (RO/BG) as well as in the Tisa river (upper course, Kisköre, HU) and close to the estuary (Titel, RS) from March to July 2021. Primary objective of the sampling campaign was to compare the different methods and to get a rough picture of the microplastics pollution situation in the Danube and Tisa rivers. According to previous studies, the content of microplastics in flowing waters can vary greatly depending on flow velocity or discharge, water depth and positioning in the transverse profile of the river (influence of groyne fields, etc.). To consider the depth variance and spatial distribution of microplastics, sampling was performed across the river cross-section and at different depths.

As samples taken with above described sampling methods differ in terms of number and size of captured plastic particles, content and size of organic and inorganic impurities, sampled water volume, sample time and sample depth, different further sample treatment is required. Practicable and user-friendly sample preparation and analysis protocols that allow inter-laboratory comparisons are therefore now being developed for each sample type and applied within project to roughly assess microplastic pollution situation along Danube and Tisa rivers. The different significance of the results obtained with the protocols should always be considered and in future the right procedure should be selected for particular questionings.

While our research focuses on finding the optimal sampling and measurement methods for microplastics, it is also crucial to setup a unified, regular monitoring system of microplastics emitters, including wastewater and surface waters sources, too. It is essential to localise the main sources of pollution: highways, wastewater treatment plans, factories, and rainwater drainages. Once localised, research is needed which Selective Filtration Technology is the best for further development to filter out oil and microplastic contamination before entering living water bodies.

Topic #2

The level of awareness of the riverine litter varies between the Danube countries but in majority of the countries, it is considered as a topic of growing importance

Recognizing the importance of awareness raising, the Tid(y)Up project also develops and operates with a variety of tools to reach different target groups and catalyse further actions. Hereby, we detail two tools for awareness raising, however, this does not exclude other important tools for awareness raising such as short movies and social media activities which are regularly carried out when organizing project and cleanup activities.

For the stakeholder community of the river basin, the periodic roundtable meetings serve as an open exchange of experiences and for the coordination of their river protection activities. Within the project multiple round table meetings will be organized in all participating countries involving the respective stakeholders with capability to act for cleaner rivers.

The invited target groups are:

- representatives of the national and regional bodies and authorities responsible for water quality and/or waste management in the countries concerned,
- public and non-governmental organizations which organize and carry out river cleaning in practice,
- waste collection and treatment service providers.

Usually, participants present their water protection, river management, waste collection and treatment activities and the results achieved. Knowledge sharing and cooperation are also beneficial in terms of saving and harmonizing human and financial resources and make river protection efforts more effective through coordinated action. Discussion topics and special facilitation is provided for the event to ease active involvement of participants and collect ideas. This format is suitable to find partners and discuss actions aiming to tackle plastic pollution, such as to coordinate flood prevention and post-flood cleanup tasks, and to standardize detection and measurement techniques for sources and components of pollutants, and ultimately to link individual sub-basin management plans. Later, the organizations cooperating here can apply together for financing much more easily or solve cross-border challenges and tasks. For example, the Plastic Cup found sponsors for some of its activities on these occasions.

In relation to the project, the first round table meeting already took place on 13th of September 2021, in Tokaj, Hungary as a follow-up of the 2nd Plastic Cup on Bodrog river. Emphasizing the role of international cooperation in solving the plastic pollution issue, participants also joined from Ukraine and Romania who also presented their efforts to stop the pollution. To keep to participants updated, after the event they usually receive a summary description about the topics covered and outcomes. This also happened after the first round table meeting.



Figure 2 – Plenary presentation on the first round table meeting of the Tid(y)Up project, 13th September 2021 in Tokaj, Hungary

As proven to be a good tool to catalyze cooperation for the complex problem of plastic pollution, similar international consultations are suggested to hold in the Danube River Basin on a regular basis, semi-annually or every year in a different country or region. It is important that this takes place in a non-governmental organization, so that the organization is faster, looser, and the event can be less formal, but can be a useful complement to cross-border negotiations.

The Tid(y)Up project also targets the general public, including kids in order to raise awareness about transnational river pollution and initiate change in consumption habits, home waste management and generating closer links to the rivers. The main outcome of this type of activities is the Floating Exhibition which is going to visit at least 5 countries in the Danube basin. The multilingual exhibition, built of mostly recycled and reclaimed materials will be travelling on a renewed ferry boat. Videos, installations on the origin, magnitude, distribution of plastic floods will introduce the problem to the public, along with possible resolutions such as innovative recycling. In general, it is essential to target the public and younger generation, to tackle to roots of the problem with minimizing waste generation and promoting selective collection.

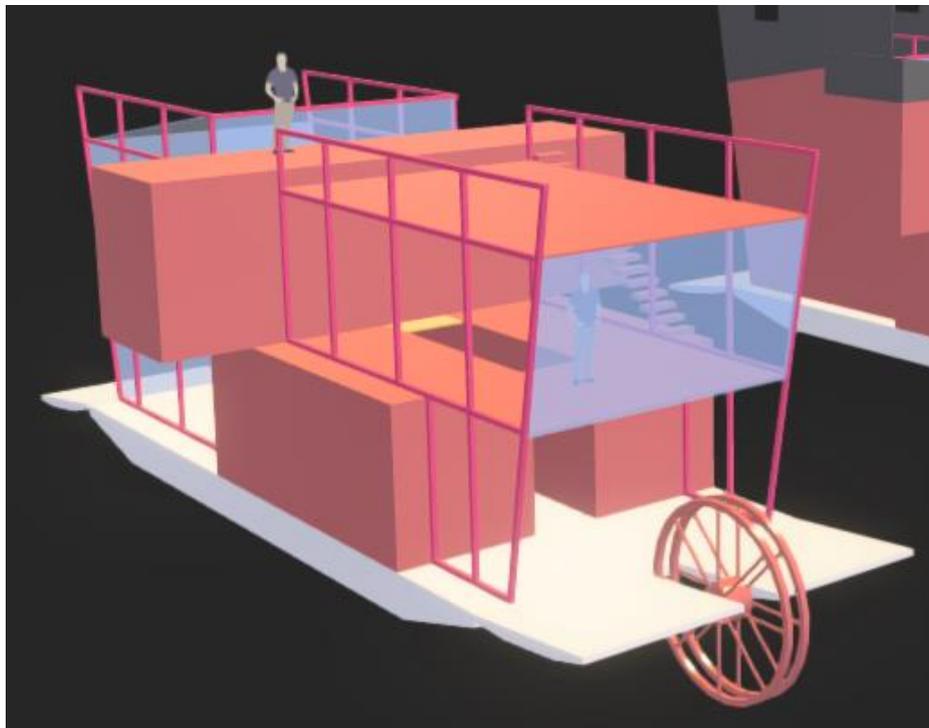


Figure 3 – Concept design of the Floating Exhibition

Apart from the Floating Exhibition, Plastic Cup already has a large scale awareness raising infrastructure. This is the container based and moveable Plastic Lab where schoolchildren can observe and experience the magical transformation of plastic waste into different object (such as pen, carabiner, ruler, etc.). The Plastic Lab has been on the route since its finalization of May 2021 and then reached many pupils in Hungary and in Transcarpathia. More information about it available at (in Hungarian) https://petkupa.hu/hu_HU/muanvagmuhely.



Figure 4 – The Plastic Lab in action showing pupils the magical transformation of plastic waste

Topic #3

It is also necessary to mention that in several Danube countries, the riverine litter management is not addressed as a selfstanding topic, but it is covered by a national strategy for waste management.

In the Tid(y)Up project, the partnership carried out a comprehensive assessment of the legal situation of all pieces of legislation which prevent, affect, and tackle the plastic pollution of waters. This work includes the aspects of waste management and water management, too. Based on the analysis, in some cases, the legislation already mentions the complex issue of plastic pollution. For example, we can mention the Hungarian “Climate and Nature Protection Action Plan” issued in 2020, the objectives of which include protecting our rivers from waste, eliminating illegal landfills, making the beverage packaging take-back system mandatory and restricting and banning the use of disposable plastic products. From a regulatory point of view, the measures to achieve these are set out in the Waste Act and its implementing rules.

Based on the assessment we compiled a set of recommendations to improve the legal environment in favour of tackling plastic pollution in the Danube Region. Those recommendations are presented here according to the waste hierarchy. The main aim of the legal situation analysis and below recommendations is to enforce laws for the more effective actions on prevention of illegal waste disposal, as well as measures to help the collection, removal and disposal of riverine waste with considering also the potential environmental impacts of the intervention. River basin management plans are an important tool for transnational implementation of some of the below suggestions, therefore the partnership is happy to engage into more detailed discussion upon request.

Prevention measures

1. Compliance with the existing laws focused on prevention of macro- and microplastics emissions into the environment with particular focus on transposition of the Directive (EU) 2019/904 (Directive on single-use plastics) into national legislation (e.g. expansion of plastic collection and recycling rates, extension of producer responsibility

and further obligations in product design, bans of plastic products, strengthening of reusable quotas, heavier penalties for improper disposal, etc.). Update and improvement of sectoral policies to prohibit single plastics use and introduction of a deposit scheme for PET beverage bottles to fulfil the EU 90% collection target by 2029. Mandatory marking of the material type of plastic products for helping the separated collection and recycling.

2. Establishment of legal framework for environmental violations, as well as sanctioning mechanisms and instruments to be introduced along with identification, sanctioning and prevention of illegal dumpsites. Restrictions on the emission of microplastics and examination of the use of biodegradable plastics for product segments where the release into the environment cannot be avoided.

Removal of pollution and restoration of natural habitats

3. Considering environmental impacts of planned cleanup activities instead of establishing permanent, large scale concrete structures affecting the river flow and ecosystem. Instead of those structures, it is suggested to examine the possibility of modular temporary structures to be applied in rivers only when the plastic flood comes helping cleanup activities. Before implementation of physical barriers to trap plastic pollution it is suggested to conduct cost-benefit and environmental impact assessment.
4. In relation to that, it is necessary to disseminate existing best practices for litter trapping and cleanups to involve more and more stakeholders. Promotion of good practices for cooperation between different organizations in operating such infrastructures is also crucial as no one alone can tackle this problem. On one of the most polluted affluent river of the Danube, the Tisa river, special waste management points were established in cooperation between water authorities, NGOs and companies. These points start operating in a quick response to the approaching plastic floods and able to remove hundreds of tonnes of organic and inorganic riverine waste. The Water Authorities, along with NGOs like the Plastic Cup initiative, target also the plastic deposits along the shorelines
5. Establishment of a harmonized monitoring system for macro- and microplastic pollution (including unifying definitions and standardizing sampling, testing and evaluation procedures).
6. In case of construction of new and modernization of existing wastewater treatment plant it is important to ensure reliable, secure disposal and appropriate treatment of wastewater, including micro- and macro-plastics removal and treatment.

Legal consequences

7. Establishment of legal enforcement plan and transboundary monitoring system (early warning system) of riverine pollution (plastic, communal, hazardous, etc.).
8. The water bodies (rivers, big lakes) need have a type of joint protection and representation, legal entity, as some believe that granting legal status to water bodies might help the better enforcement of environmental protection. For granting rights to a river, the Whanganui River of New Zealand is a good example which act is based on 140-year-old mauri traditions.

9. It is crucial to define better the responsibility for elimination of water pollution and the handling of the collected waste. Who is responsible for the removal, the recycling or disposal? And who bears the costs? The collector of the waste, the Water Directorate, the municipality, or the waste management service providers? Budget and resources need to be ensured for eliminating pollutions and handling of the waste.

Awareness-raising and dissemination

10. Enhancement of awareness-raising, education, and communication campaigns with involvement of stakeholders (decision-makers, manufacturers, general public, NGOs, etc.) are necessary with also effort to disseminating the methods and results. For details on awareness raising outcomes of the project please refer to the respective topic.

Topic #4

Some knowledge regarding quantities (and/or types) of litter in national riverine systems is available in DE, AT, HU and SI while the knowledge on sources and pathways of litter into national riverine systems is rare and is subject of ongoing or intended research activities

GPS-tagged floating items offer a good opportunity to gain new insights into the transport processes of macro plastics or to validate transport simulation models as well. Already two partners of the Tid(y)Up project have experiences with this type of tracking. The experiences include knowledge on technology selection, development, and shortcomings, as well as movement of the plastic pollution on rivers. These tools can help to better understand the plastic flood and identify areas with great risk of deposit.

Colleagues of the University of Natural Resources and Life Sciences (Vienna, Austria) performed a series of field tests using GPS-tagged floating items (e.g. plastic bottle, XPS-panel, shoe, tennis ball) in course of the “PlasticFreeDanube” project¹. The results showed that macro plastics tend to stay on the river bank where they enter the river system. It was found that particles introduced on both the right and left river banks tended to run mostly parallel to the shore without switching to the opposite bank. As almost all of the tributaries in the project area western from Vienna (e.g. Danube Canal, Schwechat, Fischa) enter the Danube on the right side after flowing through densely populated areas, it is very likely that macro plastics from these sources end up on the right bank of the Danube.

With 40%, most strandings were found on fixed banks followed by groyne fields (37 %). This is due to the fact that between Vienna and Bratislava about 70% of the river banks are characterized by fixed embankments with riprap stones. In addition, the frequently encountered groyne fields on both banks of the Danube lead to flow deflections in the direction of the shoreline and thus to stranding.

The first findings revealed travel distances with respect to the used item ranged between 7.1 km to 15.7 km with an average value of 10.4 km per stranding. At higher discharges, a higher stranding probability was observed due to the stronger interaction between the main channel and groyne fields.

¹ <https://plasticfreeconnected.com/>

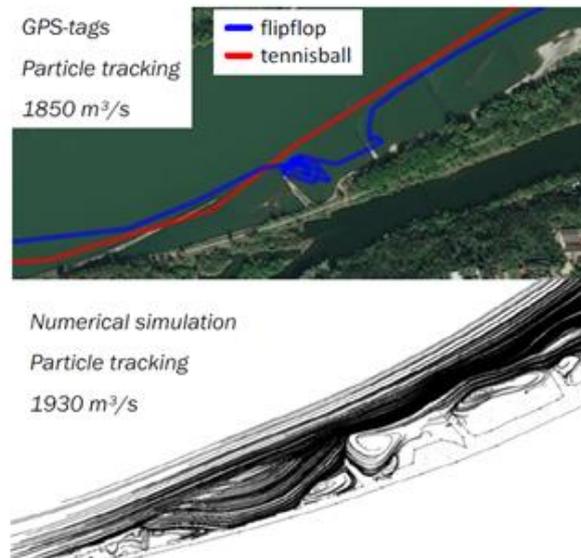


Figure 5 – Comparison of particle tracks derived from field survey (up) and numerical simulations (bottom)

As shown in Figure 5, also good correlation between simulated particle tracks and detected flow paths during the field survey was obtained. Tagged macro plastic items were found to strand in zones detected as accumulations zones in the numerical model. Accumulation zones found in GPS-tag stranding areas.

A second tracer study was conducted in the end of December 2020 with the aim to estimate the retention potential of a hydropower plant (HPPs) in Freudenu, Vienna. For discharges below 3000 m³/s, floating macro plastic seems to concentrate at the right river bank directly at the screen of the HPP (Figure 6), also illustrated within the green path in Figure 7. At this point (indicated by blue cross), larger plastics such as drink bottles, parts of insulation panels or shipping waste, etc. are removed through mechanical screen cleaning (“gondola”) or a separate gripper/crane. Plastic items smaller than the inside width of screen, e.g. foils and fragments flow through the turbines. Above 3000 m³/s, however, the weirs of the HPP are overflowed. This leads to a deflection of the floating items in the direction of the weirs. As the tracer test has shown, macro plastics can pass the HPP in this way. To counteract the litter overflows of weirs, floating booms could be a possible solution (yellow line) described e.g. by AlphaMERS Ltd. (2020), Plastic Fischer (2020) or The Litterboom Project (2020). Another option would be to position floating barriers already on tributaries to prevent macroplastics from entering the watershed.

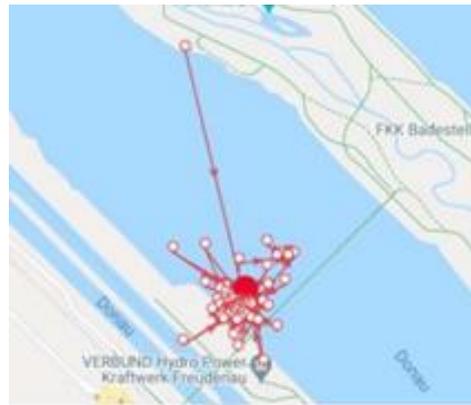


Figure 6 - Positions tracked with GPS- tagged floating macro plastic items

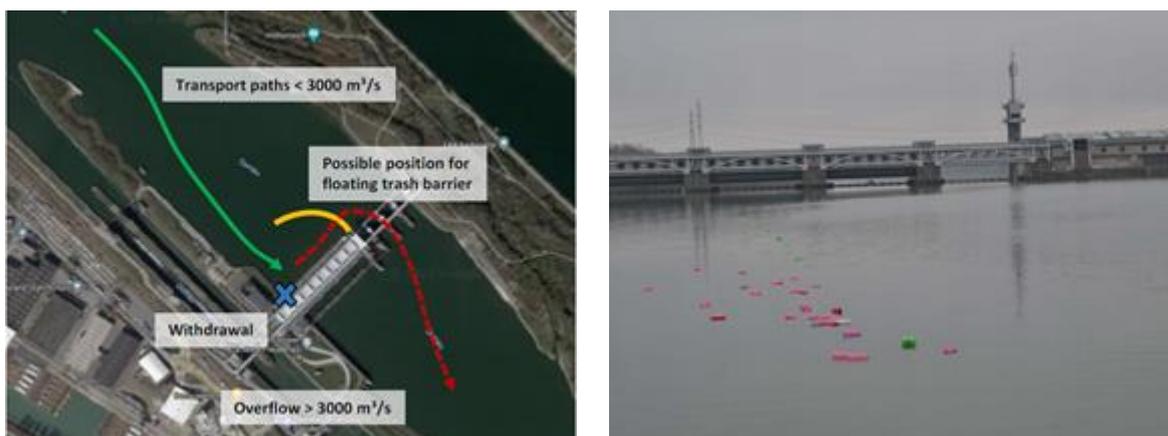


Figure 7 - Sketch describing a possible positioning of a floating macro plastic barrier at the HPP (left); Tracer study with GPS-tagged floating items (right) in front of the HPP Freudenau, Vienna (right)

The lead partner of the Tid(y)Up project, Filmjungle.eu Society, also the organizer of Plastic Cup has started earlier to develop and experiment with GPS tracking. The inspiration was the classic “message in a bottle” model – handwritten letters floating in a glass bottle – that showed us that an object can move hundreds of kilometres within a year. In the spring of 2019, the volunteers of Plastic Cup let go a classic bottle message – symbolically in a half litre Ukrainian vodka bottle – with a message that was found the same year at the Kisköre hydropower dam. Today it is already known that this water facility protects the lower parts of the river from a vast amount of trash.

With technology development and a combination of GPS tracking and mobile data transfer a new chapter of mapping the waste situation of our rivers has arrived. As a part of the research and development programme of Plastic Cup, researchers have released three bottles with GPS trackers, that forward real time data with showing on map their locations. With this experiment, experts are anxious to determine how far and how fast the large amount of waste delivered by rivers can move, whether they get stuck in floodplains, if they start moving again, and whether they can eventually reach the seas. This is the first known experiment where anyone can follow the journeys of plastic bottles on a public map.

These GPS bottles were developed by Waterscope Inc, innovator in domestic water-management, and collaborator of Plastic Cup for many years in water quality assessment and knowledge sharing. With current technology, the GPS tracker in the bottle signals every 15

minutes and defines the geographical coordinates. If the dislocation is more than 200 meters, the new position of the bottle will appear on the tracking map. The goal of Plastic Cup's research is to prove once and for all: the pollution of seas and oceans is a serious environmental protection case; one that should be a common responsibility, and one that affects the landlocked nations as much as the coastal ones. Our hypothesis is that some of the bottles travel all the way from inland sources to the estuaries and so forth to the oceans.

Perhaps the greatest result of the current development is that anyone can use the public map to see where the bottles are (Figure 8). With this, we can present another exciting result for our volunteers, supporters, and for the enthusiastic members of public. Analysing and using the data helps to get rid of pollution in the long term.

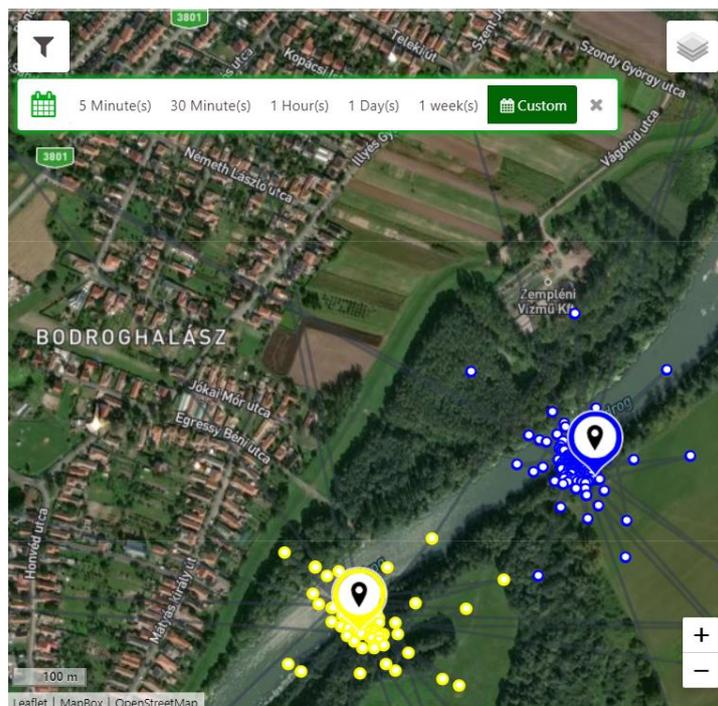


Figure 8 – Part of the public map to follow the route of the GPS bottles showing two bottles stuck in a large deposit area near Sárospatak, on Bodrog river

Currently, the GPS bottle is in the midst of a research and development process at Plastic Cup, thus experiences so far let us to conclude the followings:

- The tracking allows us to identify large deposits of riverine waste in the floodplains without personal monitoring. Based on our trials, where the GPS bottles stuck, we can expect actual plastic mines or at least hydrological and terrain conditions ideal for trapping of the waste in the floodplain in case of high water levels.
- The GPS track and routes of the bottles make it possible to compare the actual, real life data with our pollution spread hydrological model. This way the GPS records can be used to validate models.
- Observed technical shortcomings of the GPS bottles during the trials are fed back into the development process, thus by software update and better energy management those challenges will be overcome in the next version.

Experts of Plastic Cup have been also investigating the possible use of remote sensing technologies to monitor polluted areas along the river. There are promising but very early phase results with application of satellite images. This could help to find illegal landfills but as source and deposits of the plastic pollution. Until this technology does not work, walking along the river and in the floodplain is the only solution to get a complete map of the pollution. This practice has been carried out regularly by volunteers of the Plastic Cup. By using this method and based on internationally recognized smart phone application Trashout an online responsive pollution map was created on the Tisza and its affluent rivers under the domain of www.tisztatiszaterkep.hu. The special feature of the map that within 1 hour of the new entry in the database of Trashout, the polluted area appears on the map, helping river cleanup actions in a lot of ways.

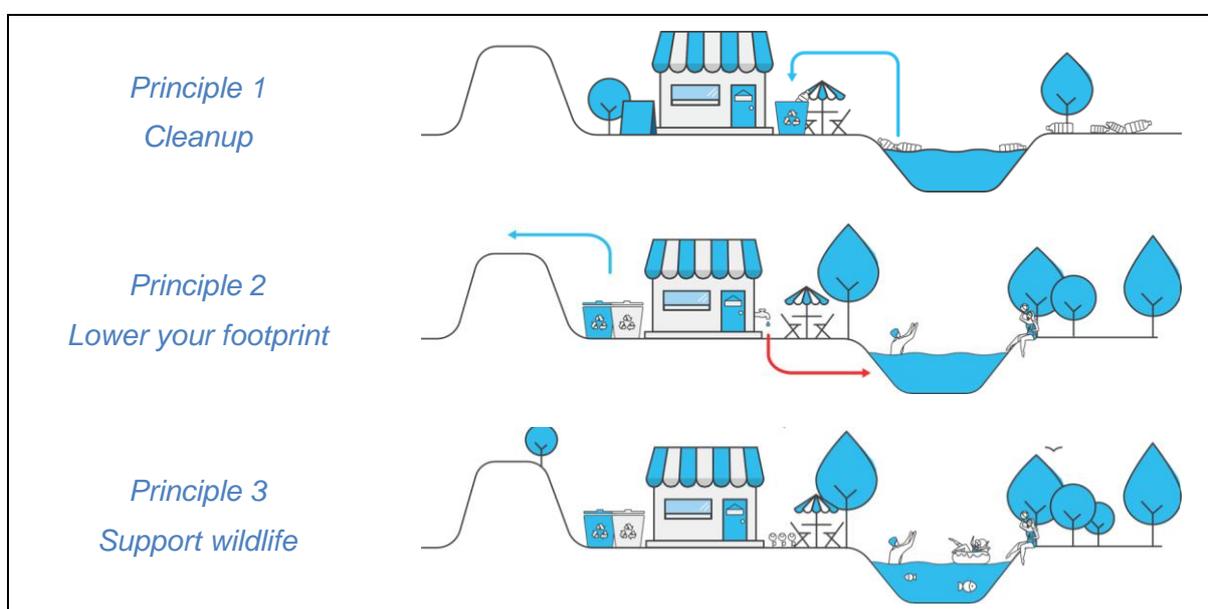
Topic #5

In general, good waste management infrastructure including separate collection systems and landfill bans

The partners of the Tid(y)Up project have been developing a Waste Reduction Toolkit that helps local municipalities, schools, inhabitants and entrepreneurs to get hints and tips about waste prevention and learning how they can spare money and other resources with wise waste handling. Free posters and infographics will help them to disseminate the best practices.

As part of this toolkit a River Friendly and River Saver qualification system for restaurants and buffets along waterways will be developed and promoted that can help in transferring to a more sustainable catering and operation. According to field experience, shoreline buffets and restaurants can be a direct source of riverine plastic pollution. Qualifying some of these buffets and restaurants as 'River Friendly' and 'River Saver' can provide a possible solution for this problem. aims and tools of river friendly catering.

This catering scheme is based on three principles and the connected measures implemented by the restaurant or buffet.



Currently, the scheme is in concept state which will further developed during the project and involve pilot restaurants to trial real world implementation of the qualification scheme.

Plastic Cup also has an expanded partnership including organizations and individuals in Transcarpathia, the main source of the pollution, that are working on selective collection and recycling. Through its network and lobby, Plastic Cup has been supporting those initiatives in order to manage the root of the problem and prevent the pollution itself.

Topic #6

Public “Cleaning days”, such initiatives not only prevent litter from entering the environment/ivers, they also raise public awareness

General cleanups can help in cleaning our environment clean and preventing waste to get into waterways, there is a special type of cleanups targeting riverine waste and deposited riverine waste in the floodplains. The project is dedicated to providing guide and promote these kind of cleanups as a key intervention in tackling the plastic pollution.

The Transnational River Cleanup handguide written and published within the framework of Tid(y)Up project is to provide guidelines for everyone about to organize river cleanups. From the smallest, local actions to large scale international interventions, there are a wide variety of challenges and difficulties to deal with. The handbook provides practical advice, hints, and tips on how to carry out such actions and helps to manage the collected waste. To present the practical implementation of river cleanups, 4 transnational pilot cleanups are organized within the Tid(y)Up project.

The first one took place in the start of September, between Zemplin, Slovakia and Sárospatak, Hungary on the Bodrog river. Attracting more than 100 volunteers from Eastern Slovakia and Hungary, the three-days action collected 3.7 tonnes of waste from the Bodrog river and its surrounding floodplain forests and more importantly showed the importance of involvement of local actors. With the contribution of local people, water authority staff and schoolchildren the action was a great success and contributed not only to a cleaner river but awareness raising, too. This event was probably the biggest cleanup action ever organized in Slovakia.



Figure 9 – Snapshots of the first pilot cleanup action of the project on river Bodrog – part of the fleet of the cleanup with canoes and the supporting motorboat that carried the collected waste; on the board of the motorboat; and the process of sorting

The collected waste was sorted every day into separate fractions of PET bottles, metal, glass, polyethylene, municipal waste and caps from PET bottles aligned with the practice of the waste management utility for increased recycling ratio. The largest piece of waste was a couch set, which the volunteers managed to catch out of the water. The project partners organized the Slovak part in cooperation with the Slovak Water Management Company – Bodrog river management (associated partner of the project) and river rafting Agency Splavujeme.sk, while for the Hungarian part, the North-Hungarian Water Directorate (associated partner of the project) and Zöld Kör association, a local NGO were the cooperating parties. The involvement of the local water authority staff was of crucial importance on both sides of the border.

The partners will organize three further transnational cleanups: one in Transcarpathia, Ukraine, then one at the Bega river, Romania-Serbia and finally one on the lower Danube in Bulgaria-Romania. In due time, we will invite the associated partners of the project, including ICPDR. The special methodology for organizing transnational, river cleanups is definitely an asset of the project which is applicable in multiple settings within the Danube Region and beyond. Danube Region countries may all join and organise parallel cleanup and awareness raising actions in the frame of the following successful international campaigns reoccurring every year on the next dates:

- 01.02. Tisza Wildlife Remembrance Day
- 02.02. World Wetlands Day
- 03.03 World Wildlife Day
- 18.03. Global Recycling Day
- 21.03. International Day of Forests
- 22.03. World Water Day
- 22.04. Earth Day
- 10.05. Birds and Trees Day
- 15.05. World Climate Change Day
- 22.05. International Day for Biological Diversity
- 05.06. World Environment Day
- 08.06. World Oceans Day
- 29.06. International Danube Day
- 03.07. International Plastic Bag Free day
- 01-09.08. Upper Tisza Plastic Cup
- Third Saturday of September, World Clean-up Day
- 16-22.09. European Mobility Week
- 30.09. Package free day
- 10.10. Day of Composting
- Last week of November: European Week for Waste Reduction
- 12.29. International Day for Biological Diversity

The main background for the development of methodology for transnational river cleanups is the Plastic Cup initiative started and organized by lead project partner Filmjungle.eu Society. This initiative has been running since 2013. The Hungarian environmental initiative Plastic Cup can be a good example of how local communities and different target groups can be involved in actual river cleanup actions. This long distance boat race has become a tradition in the Tisza river basin attracting visitors from 4 continents. The Plastic Cup proved to be successful not only as a cleanup event collecting tonnes of plastic each event, but also shows promising results in recycling the collected waste, and in awareness raising on an international

level. As initiated by a nationally and internationally acclaimed nature film making NGO for its multi-award winning nature and environmentalist films, every important step is documented and shared with the public in form of movies. As of this, a short summary movie of Plastic Cup (Everything about the Plastic Cup) is available at <https://www.youtube.com/watch?v=cHGup-x1pas>.

Topic #7

Implementation of the Directive (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment (Single-Use Plastics Directive, SUP)

The legal situation analysis of the project includes a brief presentation of the SUP Directive, but details of the implementation by national regulators are not yet clear in every aspect, as measures had to be taken to implement it by 3 July 2021. However, a call to the partners for proper implementation in time is being included into the recommendations.

As an example, the Hungarian regulations ordered bans on placing on the market under the SUP from 1 July 2021, extending them to light plastic carrier bags with a wall thickness of more than 15 microns and from 1 July 2023 to single use plastic cups. The consumption reduction action plans will appear in the National Waste Management Plan under negotiation for the period 2021-2027. The rules for products to be covered by the extended producer responsibility (EPR) scheme under the Directive will be laid down in a separate regulation.

It is an interesting and useful practice to track how national implementing regulations are developing and their impact, in particular regarding the implementing obligations (for example marketing ban, development of a consumption reduction plan) already approved once they enter into force.

For all countries it is an urgent task that they have to enter into force the following regulations: EPR system, deposit fee, reuse and refill systems, separate waste (and waste-water) collection from ships in harbours. In Slovakia the Act no. 302/2019 Coll. on Disposable Beverage Packaging will enter into force on 01.01.2022, which deals with the backup of disposable packaging for beverages and waste from these packaging (including cans). The amount of the deposit will be uniform for PET bottles and cans, 15 eurocents. We hope this will help not to have PET bottles and cans in nature.