

III. ROUNDTABLE FOR ...



... A
**CLEANER
TISZA**

**18-19, OCTOBER
2018
VISK**

THE EVENT WAS ORGANISED WITH THE SUPPORT OF
BETHLEN GÁBOR ALAPKEZELŐ ZRT.

III. ROUNDTABLE FOR A CLEANER TISZA

PROFESSIONAL SUMMARY

On 18 October 2018, another roundtable was held by organizers of the PLASTIC Cup at town hall of Vyshkovo, Transcarpathia. The Program was supported by the Bethlen Gábor Fund. The aim of the Program is to enable Ukrainian and Hungarian decision makers, authorities responsible for waste and water management, member companies of Hungarian Association of Environmental Enterprises, environmental protection laboratories, researchers, environment and nature conservation NGOs, competent state administration bodies to consult and discuss about solutions and future cooperation opportunities.

The top priority of the Program is the Ukrainian Waste Management Strategy until 2030, which was published at the end of 2017 ([please visit our website](#)). The Strategy aims to change and improve the presently critical waste management practices. Knowledge transfer, practical steps of this Strategy and establish of the cooperation are also supported by the Roundtable. Our expert attended at Waste Management Expo in Kiev on 2-3 October, 2018 to get new informations and to be informed about the actual status of the Strategy. He [held a presentation about waste pollution of River Tisza](#), as well as spoke at the plenary session to urge implementation of the strategy and highlighted importance of the preservation and use of small pilot projects, “best practices” at the start.



All relevant stakeholder were present at the conference in Kiev: Ministry of Ecology and Natural Resources; Ministry for Regional Development, Building and Housing; National Council of Public Services and Energy Legislation; regional councils, state administration bodies, local governments, professional associations, international experts, investment banks and waste treatment companies. There were intense debates among the participants in the board consultation. Everybody urged practical steps to be taken and decision makers called attention to the complexity of the problem and financial difficulties. It's a fundamental difficulty that provision of public service is the task of local governments who cannot develop and operate in all region because of low waste treatment prices. In addition, landfills are owned by enterprises, thus disposal fees differ in some cases.

In connection with the above, Alexai Atudorei (ISWA Board Member, waste management consultant) said that modern waste management is a “luxury” and many people could not pay it.

Romania: 60-70 dollars/household/year

Hungary: approx. 80-100 dollars/year

Ukraine: 20-30 dollars/household/year

Table 5.4 Waste Management User Fees by Region

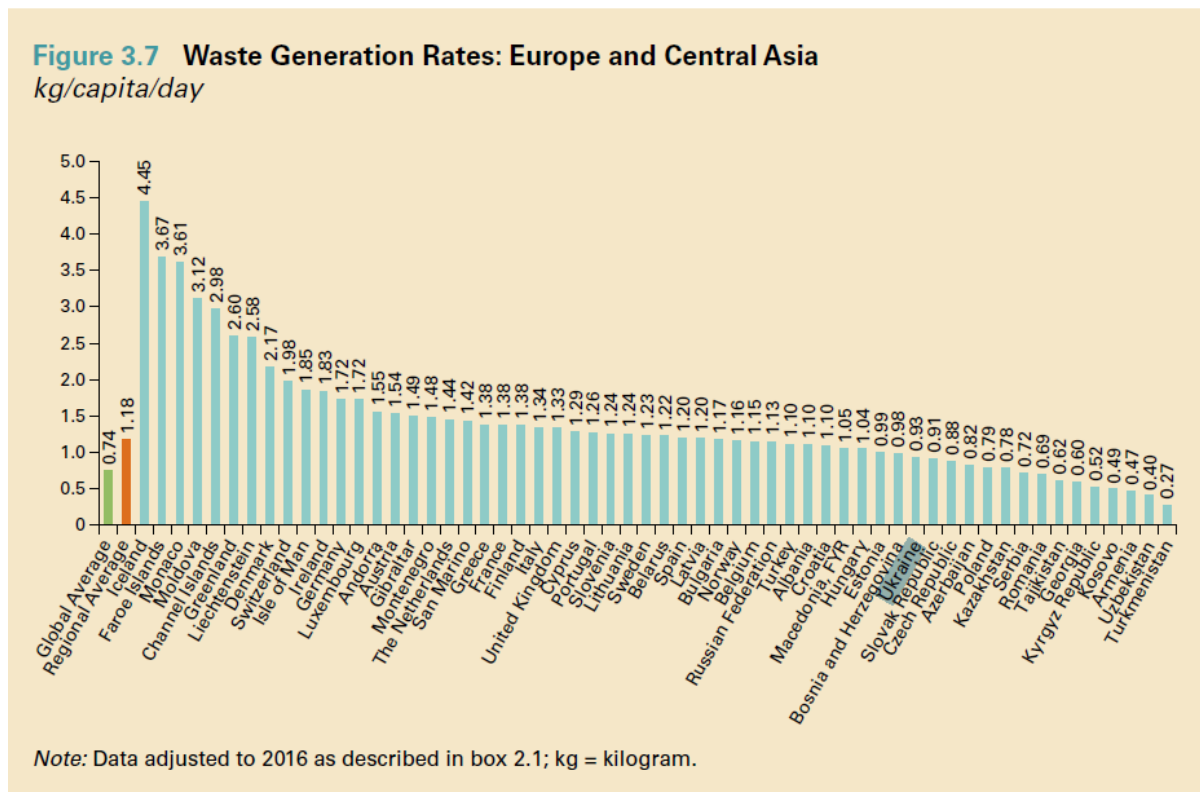
Region	Average user fee in selected cities (US\$/year, as reported in data)
East Asia and Pacific	46
Europe and Central Asia	83
Latin America and the Caribbean	80
Middle East and North Africa	55
South Asia	34
Sub-Saharan Africa	10–40 (based on World Bank estimates)

Source: „[What a Waste 2.0](#)”

There are approx. 5470 landfills in Ukraine (2016). However, the administration is uncertain, because it has been found during field-survey that one official landfill actually means two, even three dump sites at the same place. Ukraine plans to establish 300 controlled and sealed landfills instead of established practice, but financing problems arise from their recultivation and construction costs. A large part of the produced waste – 94% of the municipal waste – still ends up in landfills. 305 of those landfills (5.6%) are overladen, and 1646 (30%) do not meet with the national requirements. Expert analyses show that 90% of the Ukrainian landfills fall short of the European standards. Rate of reprocessing and recycling is around 5%.

The strategy says that lack of a separate household waste collecting and recovering system means losing millions of tons of secondary raw material every year. Development is crucial for the effective use of natural resources and for converting to a sustainable economy. The document is of utmost importance to reaching Ukraine’s environmental and economic goals, or as it is stated in the Strategy: “it is the most current strategic objective also for the national policy”.

Although the population of the country has been continuously decreasing for twenty years, the amount of household waste keeps increasing (1% per annum). In 2016, it reached 49 million cubic meters (250-300 kg/head/year). Existing capacities are not sufficient for proper waste treatment. Some settlements are difficult to reach (expensive logistics), which needs local and alternative solutions.



Source: „[What a Waste 2.0](#)”

The provisions will be gradually introduced starting from 2019: separated collection in 5000 settlements, 240 trash sorting facilities, 735 recycling plants, 19 waste incinerators, 50 modern landfills, and closing and recultivating all inadequate landfills. The implementation will be covered by the yearly budget of central and governmental bodies, as well as by entrepreneurs and the finance of investment banks.

The same attention should be paid to local and preventive solutions.

Quote from „[What a Waste 2.0](#)” , report of The World Bank:

“It is a frequent misconception that technology is the solution to the problem of unmanaged and increasing waste. Technology is not a panacea and is usually only one factor to consider when managing solid waste. Countries that advance from open dumping and other rudimentary waste management methods are more likely to succeed when they select locally appropriate solutions.”

Hungary also applies alternative solutions, such as [waste collection by horse-drawn carriage in Nagyvázsony](#), or [glass waste collection in Hajdúság](#) (geographical region). There are other preventive solutions, such as local composting, using of refillable packaging, limiting of single-use plastic packaging and skipping unnecessary plastic products.

Both prevention and technological investments would have many other advantages, including clean environment:

- economic recovery, economic stability,
- attracting investors and economic operators into the region,
- retaining people in the region by job creation,
- changing always generates innovations and start-ups,
- clean environment boosts tourism, which has great opportunities in Ukraine and Transcarpathia as well.

A Government Decision No 1519/2018. (X. 17.) have been published almost at the same time professional conference in Vyshkovo. In this Decision, Hungarian government agrees with the preparation of investments to remove municipal waste in the Upper-Tisza, supports its implementation and designates government bodies responsible for prepare and implement the investments. Hungarian government has also decided to examine legal options of claim for compensation for Ukraine and Romania.

Roundtable participants highly welcomed the fact that decision makers in Hungary consider of paramount importance the problem of plastic pollution in Tisza. Organizers and several experts assured the audience that they are ready for a full and comprehensive sharing of their professional knowledge required for the solution and cooperation in implementation.

At the same time, the organizers of the Roundtable consider that Hungarian initiative to submit a claim for compensation is counterproductive. They do not consider it advisable for Hungary to initiate sanctions against upper countries, because the solution basically depends on the willingness of the parties to cooperate. Damage assessment and quantification are important, because they show the size of problem. However, solution can be the promotion of mutual funds related to the necessary waste management developments, in which Hungarian companies are able to participate. Against Romania, Hungary has not succeeded in claiming compensation even after the more severe environment damages (e.g. cyanid spill in

2000). In case of plastic pollution, environmental impacts have an indirect, often long-lasting effect, and verification of those polluters is more difficult, than in the case of cyan pollution.

Roundtable participants draw attention to the fact, that dialog and common thinking are necessary in case of Tisza, in order to this cross-border river become a cleaner habitat. Meanwhile in Hungary and across Europe, a number of actions have appeared, which will move the economy and consumption towards a more rational use of plastic. Application of these good examples would greatly help to solve waste problem in Transcarpathian region. Therefore, Hungary must sets a good example with these useful practises and leads by examples. Ukraine has an opportunity to skip turns that Western European countries or Hungary have already done in field of waste management. Learning from this negative examples, e.g. eliminating of unnecessary plastic products and packages, Ukraine would takes great steps towards a better environmental quality and more sustainable waste management system. **Continuous rise in living standards in Ukraine, the country should not has to go through the consumption and waste production curve that Western European countries have been gone so far, because we are already experiencing its cost and long-term unsustainability, and it is difficult to reduce quantities.**

SUMMARY OF THE PRESENTATIONS AND THE TEAM WORKS



Location of the event was the town hall of Vyshkovo. At the beginning, Mayor Yaroslav Hajovich welcomed the participants.

GREETING OF TRANSCARPATHIA DEPUTY GOVERNOR, VIKTOR MIKULIN, DEPUTY OF HENNADIY HENNADIYOVYCH MOSKAL

An excerpt from the greeting

Tourism play an important role in Transcarpathia. That's why environmental problems play a key role as well. Unfortunately, in the past 26 years, Ukraine has not been given much attention to this matter since the its independence. Local governments cannot treat the waste problem, state has a great responsibility. They trust in EU funds, which can be a solution if pre-accession funds become available. The willingness to invest is still low.

There are a dozens of legal landfills, the others are illegal, while the most of the region's settlements locate in the flood area of Tisza.

It's hard to solve the problem without authority. This was the reason why the roundtable was held in Kiev with decision makers, legislators, majors, civilians and waste treatment companies. 600 million hryvnias (approx. 6 billion forints) were allocated for the current strategy plan, but there is no progress.

This is why NGOs play a major role, which may advance the process.

In addition, major problem is 1.5 million m³ trees they cut down. This amount means approx. 1 million m³ organic waste a year, which is also carried by the flood (not to mention the amount of eroded soil by felling!). Recycling of these timbers is unsolved due to complex bureaucracy. Additionally, significant intervention affecting Tisza is illegal gravel extraction, which can drastically transform the river basin, thereby increasing risks and damages of flooding.

Another problem is the lack of safe drinking water: most of drinking water wells is sold by the local governments, so they do not have control over them. However, quality assurance of drinking water supply would have a positive impact on waste situation, because bottled mineral water is not needed if high-quality drinking water is available.



Deputy Governor expressed his gratitude to Természetfilm.hu Association and Hungarian Association of Environmental Enterprises, because these organizations raise up this important environmental issue to appropriate level and he hopes that roundtable will have practical benefit.

He considers environmental education of population is an another important issue, and he suggest to involve Slovakian colleagues to this process as well, not only Hungarian and Ukrainian colleague.

NATIONAL WASTE MANAGEMENT STRATEGY IN UKRAINE UNTIL 2030: CHALLENGES AND OPPORTUNITIES” – MAKOVETSKA YULIA, PHD IN ECONOMICS, SENIOR RESEARCHER, INSTITUTE OF ENVIRONMENTAL ECONOMICS AND SUSTAINABLE DEVELOPMENT OF THE NATIONAL ACADEMY OF SCIENCES OF UKRAINE

The Ukrainian law draft has been made since 2011. Taking into account EU directives as well, responsibility of producer, prevention and environmental education play an important role. Stakeholders could to comment the law draft until September this year. After revision of the draft, it is competence of Ministry of Ecology and Natural Resources. A number of conditions are missing for practical application. Therefore, new enterprises will be involved in waste collection and treatment processes, and the counties will be obligated to active participation and implementation of regional action plans.

The law draft has been revised five or six times, but it has still not been finally accepted. Long-term goal is the realization of extended producer responsibility (EPR).

Working committees have been set up around the strategy planned until 2030. However, ministries currently do not have enough apparatus to coordinate waste management, so different external institutes need to be involved in implementing the strategy.



Education: The first step is education and change of attitude to generate less waste. This process will reduce the size of the problem to be treated. Children, adults, factories and entrepreneurs must be involved; counties must be obligated to have regional waste management plans.

State cases, power issues and politics override the issue of environmental protection, therefore they could not move forward over the past years. This year, they also agreed on obligation of recollection of plastic producers, on the basis of “polluter pays principle”.

Transfer of EU’s waste directives (industrial waste, accumulator and battery, packaging waste etc.) has been taken in Association Document.

Until 2030, separated collection should be introduced in 850 settlements, and all legal and institutional systems should be established for implementation.

Task of the county: preparation of regional waste management plans are required with real infrastructure. A plan is for 10 years, quality assurance of review should be provided.

DESPRO project is working on preparation of regional waste management plans with Swiss support.

Law proposal about municipal waste management is not published yet.

In addition, a major environmental problem is issue of wastewater treatment, which is unsolved in most settlements as well. Infrastructure development, pre-treatment and wastewater treatment plants are also required.

Reliability of Ukrainian statistical informations about waste management are not complete.

State Statistic Service collects and publishes general informations: <http://www.ukrstat.gov.ua>.

Based on its data, main data can be summarized briefly (1. and 2. tables). There are more detailed informations on the State Statistic Service of Ukraine’s website, but the translation is not entirely correct. I would like to make the following comments on this:

1. From 2014, data do not contain the temporarily occupied territories of the Autonomous Republic of Crimea, the city of Sevastopol and a part of temporarily occupied territories in the Donetsk and Luhansk regions.
2. In Ukraine, the incineration operation is not harmonized with Directive 2008/98/EC on energy efficiency indicators (Annex II. “Recovery operations”). So it is hard to identify that a utilization or disposal operation is involved.
3. Municipal waste is translated as “domestic and similar waste”.
4. Domestic and similar wastes distribute incineration for energy recovery and incineration without energy recovery. However, in case of energy recovery, it is not determined that it is energy efficient or not.
5. Composting data are available only under title “domestic and similar waste”.

Informations about **municipal waste** are collected and presented by Ministry for Regional Development, Construction, Housing and Communal Economy (3. table). These data are not equals with data of State Statistics Service of Ukraine.

Waste management data¹, (thsd. tons)

Waste management data	2016	2017
Generated	295,870.1	366,054
Energy recovery	84,630.3	100,056.3
Incineration	1,106.1	1,064.3
Deposition	157,379.3	169,801.6

Source: State Statistics Service of Ukraine (<http://www.ukrstat.gov.ua/>)

Household and similar wastes (1.) management², (thsd. tons)

	2011	2012	2013	2014	2015	2016	2017
Collected	10,356.5	13,878	14,501	10,748	11,491.8	11,562.6	11,271.2
Removed	7,030	9,362.7	9,504.4	5,893.8	6,233	6,089.5	6,469
incl. to specially equipped dump	4,321.5	5,175.1	5,178.5	3,397.9	4,194.3	4,208.1	4,417.5
Incinerated for energy recovery	154	149.9	147.6	149	254.3	257.3	244.4
Incinerated without energy recovery	98.5	78.6	2.9	3.8	2.1	2	1.2
Utilized	74.5	57.4	9.4	3.8	4	6.5	16.5
Composted	3.7	0	0.4	0	8.2

Source: State Statistics Service of Ukraine (<http://www.ukrstat.gov.ua/>)

Municipal waste³

	2016		2017	
	m ³	t	m ³	t
Collected	49,308,053.9	10,795,340	52,048,874.9	9,906,649.7
Removed	46,475,344.1	10,283,126.8	48,585,164.9	9,252,934.1
Incinerated	1,342,729.1	256,744.3	1,289,884.8	246,722.7
Utilized	1,499,274.8	263,781.1	2,173,723.2	407,056.9
Composted	-	-	3,750.2	973.8

Source: Ministry for Regional Development, Construction, Housing and Communal Economy (<http://www.minregion.gov.ua/napryamki-diyalnosti/zkhk/terretory/stan-sferi-povodzhennya-z-pobutovimi-vidhodami-v-ukrayini-aza-2017-rik/>)

¹ 1. Household and similar wastes - wastes produced in the process of people activity in the inhabited and uninhabited buildings and that are not used in the place of their accumulation. Household and similar wastes refer to the waste category 10.1 of the European Wastes Statistical Classification (EWC-Stat).

² Excluding the temporarily occupied territories of the Autonomous Republic of Crimea, the city of Sevastopol and a part of temporarily occupied territories in the Donetsk and Luhansk regions.

³ Without incineration

INTER-MUNICIPAL COOPERATION IN THE FIELD OF MSW MANAGEMENT IN UKRAINE ENVIRONMENTAL PROTECTION IN CONTEXT OF COMMUNAL WASTE MANAGEMENT - MAKOVETSKA YULIA

She kept her presentation entitled “Inter-municipal cooperation in the field of MSW management in Ukraine. Environmental protection in context of communal waste management.”, in the absence of Tatyana Omelianenko, Coordinator of the ISWA Young Professionals Group in Ukraine.

There are few environmental protection and waste management specialist, so foreign experts are also involved in strategy making and implementation. The government also has to intervene and hold together the different regional plans.

More local government join together, the cheaper service fee will be provided, but the cooperation has some difficulties...

Self-finance is not possible, investors are needed. But Ukrainian legal and economic environment are not so attractive.

She suggested steps to establish an investment-friendly, economic-legal environment:

- *Appropriate legislative framework (implementation and enforcement of EU legislations, acts according to specific standards),*
- *Prepare a national strategy and action plan,*
- *Capacity building to increase expertise,*
- *Waste management system planning based on statistical data,*
- *Business-friendly conditions, frameworks to increase investments,*
- *Effective financing actions, e.g. extended producer responsibility (EPR), landfill tax, contributions,*
- *Motivating consumers to attract attention.*

Alexei listed another 5 risk factors which could be the main impediment of investments. List of risks: 1. Political stability and willingness; 2. Regulatory environment; 3.

Institutional system; 4. Infrastructure; 5. Financial risk; 5. Financial solvency of people for services...

Yulai added, in her opinion, small regions have to think in clusters for the efficient operation. Cluster size must be around 100,000 inhabitant/region. Local governments, political authorities and companies must work together to achieve this goal.

It needs control, but its institutional system is always changing, which does not help transparency.

Regional clusters have been created from a tender (DESPRO project) to select sites for landfills and establish subregional waste management plans. In 13 regions, the plans have been developed for 15 years. Why did not is come to life!? The plan was made in 2012, it should be only reviewed and started!

In view of the shortage of specialists, formation of [ISWA Group](#) with young experts in Ukraine has begun. Their first session was at the Waste Management Expo in Kiev.

Quote from Denis Obarcanin's (Operations Officer at INTERNATIONAL FINANCE CORPORATION, World Bank Group) presentation: IFC already finances the following projects in Ukraine. Among the possibilities of expanding investments, he also pointed out the reduction of above mentioned 5 risk factors.

- Lviv – Feasibility study for implementation of projects for treatment and processing of municipal waste.
- Vinnytsia region – Development of integrated waste management plan
- Khmelnytskyi – Landfill expansion and support of MBT project preparation

WASTE MANAGEMENT IN TRANSCARPATHIA AND FUTURE PLANS – BÉLA ZSIDIK, MANAGING DIRECTOR OF AVE

AVE started its operation in the centre of districts in 2006. In that year, it started first waste collection in villages.

The main problems of the waste treatment are the transport – especially in villages which difficult to reach, on the other hand landfills with inappropriate operation. These landfills should be closed and recultivated, because of the pollution that can affect drinking water and beaches (tourism).

AVE has technology for appropriate waste treatment and storage. Separate waste collection – mainly paper and plastic – has already started in some locations. For example, in Vynohradiv (Nagyszőlős) 200-300 tons of selective waste are collected every year.

According to the company, teaching and education have an important role to generate less waste; school and kindergarten education are essential.

Beyond the deficiency of national legislation, resistance of local people is a real obstacle, because they don't allow to establish landfills. If this trend continuous, there will be no area where landfill could be established. AVE has tried to establish landfills several times, but its efforts have been unsuccessful.

The company wants to develop, but because of the current waste management fees it is absolutely impossible.

For example, in Vynohradiv (Nagyszőlős) district, waste treatment price for a 3-member family is 60-88 hryvnia/family/month (approx. 600-880 HUF). Therefore, it doesn't reach 10,000 HUF limit per family on an annual basis.

The services they have previously provided free of charge are now being offered at a price that is still below the fair value. However, change of attitude of people and communication with them are needed, because if the prices arise, it is feared that even more people will burn and dispose waste illegally.

After Mr. Zsidik's presentation, Viktor Mikulin the Deputy Head of Regional State Administration in Transcarpathia asked activity and help of AVE. He offered possibility of consultation in order to the area move forward and the planned landfill can be built.

HOW THE "ZERO WASTE" PARADIGM IS BEING IMPLEMENTED IN LVIV (UKRAINE) – DIANA POPFALUSHI, ZERO WASTE LVIV (COORDINATOR)

[The tragedy at the Lviv's landfill in 2016](#) contributed initiatives to develop waste management and reduce waste production. A project like the circular economy concept has been developed in Lviv.

Instead of waste management → Resource management



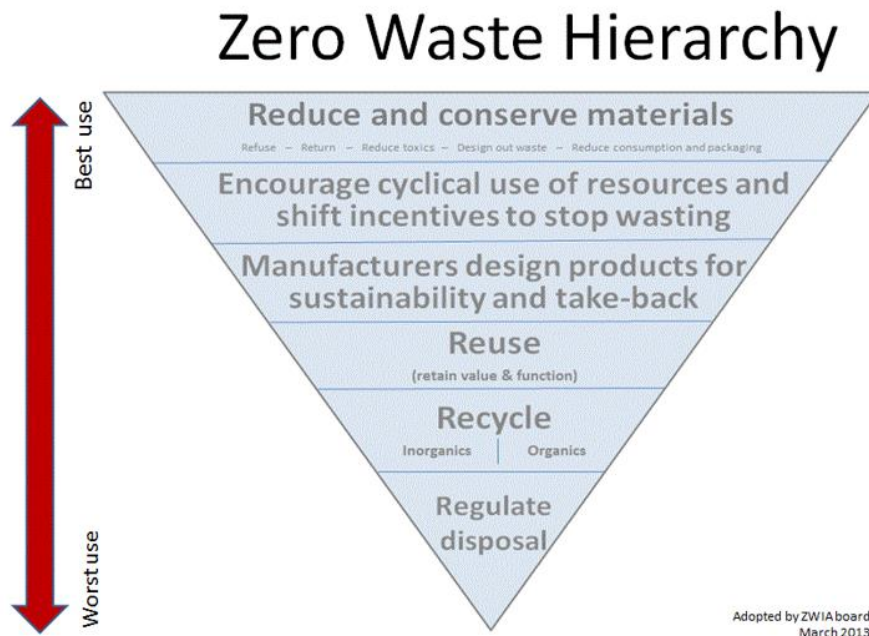
What is Zero Waste about?

Cultural change – a change in paradigm. It has to go beyond the current goal of EU waste policy of becoming a Recycling Society; it needs to embrace the reduction of material and energy use in order to turn it into a Zero Waste Society.

Engaging community – Citizens should be invited to invent and adopt waste free practices and take active participation in the design of the resource management system towards waste reduction.

Changing infrastructure – The production system and the waste management infrastructure in Europe must be designed to reflect priorities of waste prevention, separate collection and reduction of residual waste!

<https://www.zerowasteurope.eu/about/principles-zw-europe/>



<https://www.zerowasteurope.eu/2013/04/zero-waste-hierarchy/>

Local government, local enterprises and civilians were involved. While waste management strategy has not been realized here for 10 years, cities in other countries gain international reputation through their “zero waste” initiatives, e.g. [Zero waste Contarina](#), Italy: 85% of municipal waste was recycled, and only 53 kg per person of waste was disposed (EU average: 42% and 285 kg).

40% of waste in Lviv is biodegradable (compostable), 13% is plastic, 10% is glass, 3% is paper, the others are difficult to categorize.

One of the most important steps would be the separation of the recyclable and wet (compostable) waste.

“Waste Reduction and Prevention Strategy of Lviv 2017-2019” was established. It results a Waste treatment Department at the local government and a “Green City” organization in Lviv.

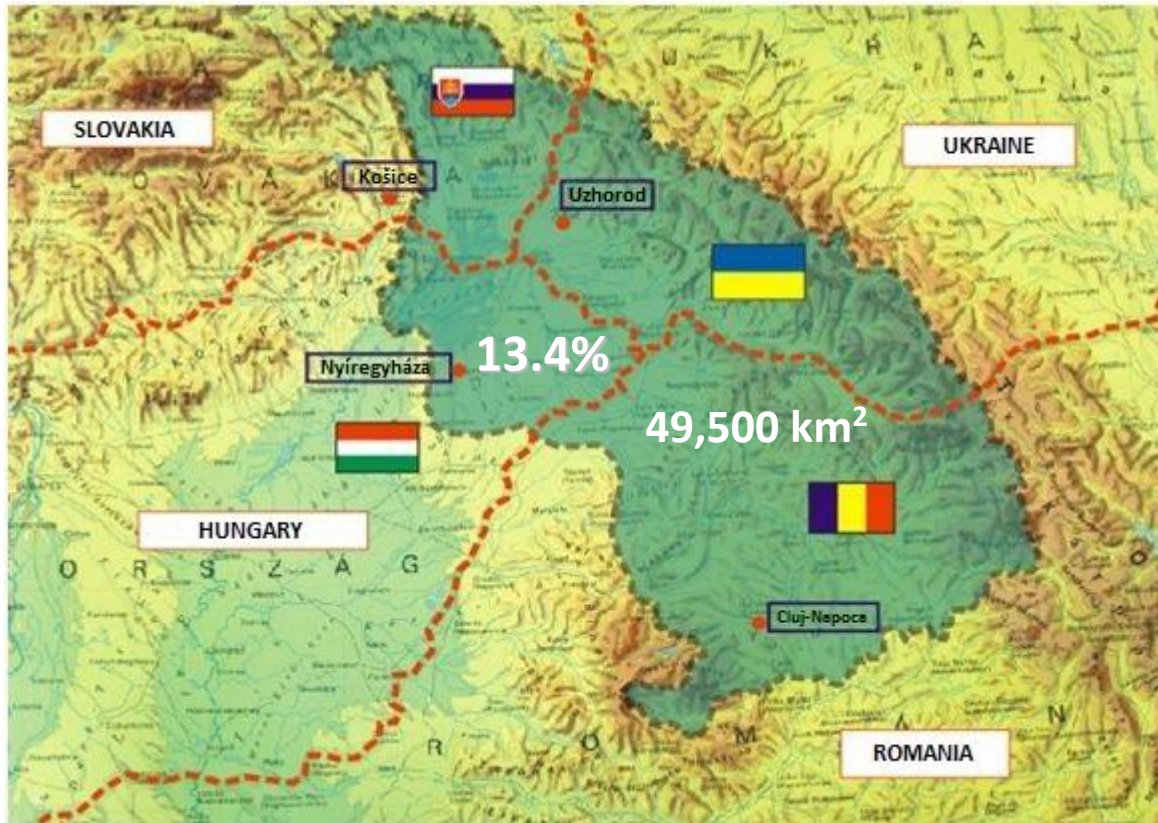
We are looking forward the next great step!

You can join to the Zero Waste Lviv project here:

<https://www.facebook.com/zerowastelviv/>

THE PROBLEM OF THE WATER POLLUTION IN TISZA – PERSPECTIVE FROM THE HUNGARIAN WATER AUTHORITIES – LÁSZLÓ AMBRUS, HEAD OF DEPARTEMENT, UPPER-TISZA-REGIONAL WATER DIRECTORATE (FETIVIZIG)

Operation area of FETIVIZIG covers 13.4% of the catchment area of Tisza. More than 95% of the catchment area is beyond the border.



Source: FETIVIZIG, László Ambrusz

We are exposed to water pollution from abroad – our rivers function as a transport medium.

Dominant polluters:

- Municipal waste
- Cyan and heavy metal contamination (Romanian minefield)
- Municipal and industrial wastewater
- Hydrocarbons

Most of the trash comes from the other side of the border, from Ukraine and Romania, where it's commonplace to dump household waste on the floodplains. The trash accumulates during the winter, then is picked up as the meltwater and spring rains swell the river. It's carried across the border and deposited in the lower-lying floodplain forests and on the shores of sand islands. [The drifting waste often causes damage that runs in the millions of forint](#), and at times even triggers water quality warnings [because of its dangerous contents!](#)

Data are available about the pollution for the period from 2004 to 2018. This large amount of waste arrive since the early 2000s – right after cyanide pollution. 2008 and 2017 were the peak in relation to the amount of waste, when more than 500 bottles per minute floated down on the water surface.

Effects of pollutions:

- aesthetic pollution,
- touristic downturn,
- microplastic problem: a new research field; they can absorb pollutants on their surface, where these materials can accumulate and travel,
- accumulated municipal waste at embankments continues to pollute and needs many people and money,
- removal of residual waste from floodplain forests is almost impossible,
- Not only the Upper-Tisza-Region is contaminated, but everywhere along the Tisza: Natura 2000 floodplain forests are polluted. The river is the longest, contiguous ecological corridor in Hungary.
- hazardous and toxic waste also arrive on the water,
- waste is also cause damage in the natural and the built environment (water facilities).

Actions:

Transboundary negotiations

In all possible transboundary negotiations and other forums are discussed. Transboundary relationships have only indirect effects. Transboundary partners have no direct influence on the source of problem.

Prevention and waste collection – on water

- Expensive and hazardous
- Technically difficult (water speed, time advantage) – development of tools is required
- In spring 2017, 55,000 bags of waste were collected by FETIVZIG colleagues.

Prevention and waste collection – on land

- Expensive
- Difficult, degrading
- It is impossible completely
- FETIVZIG applied for tenders for the field of water quality damage prevention in 10 subject, but none has won yet...

Solutions, according to the Water Management

- Prevention – reducing use of plastics, recollection (producer and consumer responsibility)
- Prevention – professional waste management, elimination of existing illegal landfills
- Water Management has an intervention plan: use of floating barrier at low-water, derive to the shore by floating devices at mean water level and waste collection on land and water at high-water.

At mean water level, Water Management now use floating devices to derive waste to the shores, which advantages are the following:

- stable hull derives the waste efficiently
- rising from water can be mechanized
- effective at high intensity as well
- pre-planned intervention sites
- high efficiency
- it can also operate in case of mixed waste



Source: FETIVIZIG, László Ambrusz

Developments above cost 40-50,000-100,000 EUR.

A Government Decision No 1519/2018. (X. 17.) have been published almost at the same time professional conference in Vyshkovo. In this Decision, Hungarian government agrees with the preparation of investments to remove municipal waste in the Upper-Tisza, supports its implementation and designates government bodies responsible for prepare and implement the investments. Hungarian government has also decided to examine legal options of claim for compensation for Ukraine and Romania.

DANUBE REGION STRATEGY AND ITS FLAGSHIP PROJECT, THE JOINTISZA – GYÖRGY FARKAS, GENERAL DIRECTORATE OF WATER MANAGEMENT, DEPUTY HEAD OF DIVISION

The project was approved in 2011, during the Hungarian Presidency as the 2nd macro-regional strategy of EU. 14 countries and their 100 million inhabitants are involved, which is fifth of EU territory.

Harmonization of territorial development happens in 4 pillar and 12 priority areas:

Table 1: EDRS pillars and priority areas

Policy coordination development along four pillars and priority areas 11					
Connecting the Danube region to other regions			Creating prosperity in the Danube region		
PA 1/a	Mobility – inland waterways	Austria and Romania	PA 7	Knowledge society	Serbia and Slovakia
PA 1/b	Mobility – rail, road and air transport	Serbia and Slovenia	PA 8	Competitiveness	Baden-Württemberg and Croatia
PA 2	Sustainable energy	Czech Republic and Hungary	PA 9	People and skills	Austria and Moldova
PA 3	Culture and tourism	Bulgaria and Romania			
Environmental protection in the Danube region			Strengthening of Danube region		
PA 4	Water quality	Hungary and Slovakia	PA 10	Institutional capacity and cooperation	Austria and Slovenia
PA 5	Environmental risks	Hungary and Romania	PA 11	Security	Bulgaria and Germany
PA 6	Biodiversity, land, air and soil quality	Bavaria and Croatia			

Source: Jenei, 2017

Source: <https://eng.polgariszemle.hu>

Objectives of Water Quality Priority Area (PA4):

- Major objective: maintain and restore the quality of waters,
- Implementation of objective: Along 14 directions (Action Plans and Schedules)
- Main problems: organic and nutrient pollution, pollution due to hazardous materials, and differences caused by hydrological and morphological changes
- Tools of implementation: organization of managing meetings, participation in financial programming, coordination with existing organizations, search for financing sources, encourage establishment and implementation of projects, publish project results

Major objectives:

1. Achieve the management objectives set out in the Danube River Basin Management Plan;
2. Reduce the nutrient levels in the Danube River to allow the recovery of the Black Sea ecosystems to conditions similar to 1960s;

3. Elaborate a Danube Delta Analysis Report as a step towards completion of the Delta management Plan;
4. Development, acceptance and implementation of part Basin Management Plans, e.g. for catchment area of Sava, Tisza and Prut;
5. Secure viable populations of Danube sturgeon species.

Further information about the project: <https://www.danubewaterquality.eu/>

Flagship project – JOINTISZA

Project partners: 12 partners & 5 Authorized Support Partners (APs)

Duration: January, 2017 - June, 2019 (30 months)

Budget: 2,254,126.8 €

Priority: PA2. Environment and culture responsible Danube region

Specific objective SO2.1 Strengthen transnational water management and flood risk prevention

12 partners: General Directorate of Water Management, Hungary (lead partner) | Global Water Partnership Central and Eastern Europe, Slovakia | International Commission for the Protection of the Danube River | Jaroslav Černi Institute for the Development of Water Resources, Serbia | Ministry of Water and Forests, Romania | Ministry of Foreign Affairs and Trade, Hungary | National Administration “Romanian Waters”, Romania | National Institute of Hydrology and Water Management, Romania | Public Water Management Company “Vode Vojvodine”, Serbia | Regional Environmental Center for Central and Eastern Europe, Hungary | Water Research Institute, Slovakia | World Wide Fund for Nature Hungary



Objective and results of JOINTISZA

The main objective of the project is strengthening approaches and cooperation among the relevant actors of the river basin management planning process especially actors of flood risk prevention/flood protection sector to enhance the status of waters of the basin.

Planned results:

- Data collection and a renewed GIS database on Tisza River and its tributaries
- Final version of International Water Management Plan of Tisza River
- Urban hydrology pilot activity and related trainings
- Drought management and climate change pilot activity
- Involvement of interested stakeholders and society, development of related strategy
- Dam breaking simulation pilot activity

For further information, please visit the project's website: www.interreg-danube.eu/jointisza

NATURAL TREASURES AND PROTECTED SPECIES OF TRANSCARPATHIA – SZABOLCS SZANYI, PRESIDENT, PAPILIO – NATURE AND ENVIRONMENT ASSOCIATION

Szabolcs Szanyi presented primarily the wildlife of the floodplain forests along the Tisza River, highlighting the relevance of these untouched areas. He added, the region is under-researched even in relation of the most well-known groups of organisms. As an example, he showed the results of his surveys in certain areas of Game Reserve of Velyka Dobron', which site belongs to floodplain of Latorica. Szabolcs is doctoral candidate at University of Debrecen, Department of Evolutionary, Zoology and Human Biology. His dissertation is about phytophage insect communities at Game Reserve of Velyka Dobron'. For writing of the dissertation he has been carried out several years of research activity in the reserve area. Based on the results he has identified several new directions for further researches, which are now implemented by the members of PAPILIO Association.

In his presentation he highlighted the following examples of results of surveys until now:

1. Natural status of lawns in the Reserve can be determined by investigation of daytime butterflies and Orthopterans ("straight-wings": grasshoppers, locusts and crickets). During the sampling, a presence of 67 day-time butterflies species has been detected, more than 25% of the species are protected in Hungary. During sweep-net samplings, 24 Orthopteran species were captured, most of them are closely connected to cool and wet floodplain habitats.
2. Diversity of night-time butterflies shows well the status of floodplain forests. Groups were tested by light and fragrance trapping methods. During field sampling, nearly 600 species have been detected, more than 10% of them are significant from fauna aspect.
3. Not only butterflies, but members of other insect groups were also captured at the fragrance trapping tests. These were determined by the experts of each group after a previous selection. Based on the results, presence of more than 30 Aculeata species (stinging wasps) have been successfully detected. Five of them is new data in the region and significant to the Carpathian Basin. In addition, 26 Brachycera fly family members were collected from the area. A new fly species has been detected from the samples to the Ukrainian fauna. During the survey, 11 Neuroptera species (net-winged insects) have been founded until now, data of these species have not been known from the area yet.
4. One of the best indicator organisms of surface waters are caddisflies (Trichoptera). According to the surveys in floodplain of Latorica, 42 species have been successfully identified until now, which is very significant compared to the neighboring Hungarian areas. There were 11 species that have not been known in Transcarpathian lowland so far.
5. There were no data about alternate spelling mosquitos (Culicidae) from the area as well, which were also primarily connected to wetlands. Despite the fact that this insect group may able to distribute serious diseases, it is also important from a public health aspect. During the surveys, 19 species have been detected in the area, three of them have not been

found yet in the Hungarian part of Bereg lowland (*Coquilletidia richiardi*, *Ochlerotatus nigrinus*, *Uranotaenia unguiculata*).

The results have been presented in detail in more than 50 published scientific journals in Hungary and abroad so far, as well as at several national and international conferences.

The facts mentioned above show well, that how rich in species are the hardwood forests and lawns at the floodplain belongs to the catchment area of Tisza. However, we know very little about them, especially about wildlife of the Transcarpathian part.

In the near future, Szabolcs would like to formally defend his dissertation and obtain the doctoral degree in community and nature conservation ecology and entomology.

Aim of PAPILO Association is to know and familiarize natural values of Transcarpathia, to continue research and extend it to other areas. The Association firstly organized the “Kárpátaljai Élőlényleltár” event in 2018 with the participation of experts from Hungarian Biodiversity Research Society, University of Debrecen and Uzhhorod National University. Informations collected in the event will be published soon. It is planned that the program will continue in the future and they will launch a series of monographs showing the natural values and wildlife of Transcarpathia.

Researches are expensive, so the most important tasks now are to obtain financial support and found sources from tenders in the future.

INTERNATIONAL COOPERATION OPPORTUNITIES – EXAMPLE OF HRUSKOVA CROSS-BORDER COOPERATION PROGRAM AND OTHER OPPORTUNITIES TO APPLY FOR COOPERATION – LÁSZLÓ BÚS, R & D BUSINESS MANAGER, EX ANTE LTD.



Ex Ante Ltd. has already helped previously organized Tisza Roundtables and Tisza river protection for several times by its expert assistant on the professional programmes. This year in Vyshkovo, the following programmes and tenders were collected for the audience, in order to cooperations could be funded in the future.

HUSKROVA ENI CBC Programme:

3rd call for proposals is expected to be launched in early 2019.

Thematic Objective 6: **Environmental protection, climate change mitigation and adaptation.**

Priority 1: Sustainable use of the environment in the cross border area – preservation of natural resources, actions to reduce GHG emission and pollution of rivers. Expected results:

An increased capacity in the programming area to address challenges in the field of environmental protection and climate change mitigation.

Specific objective	Environmental protection, climate change mitigation and adaptation
Investment priority	6.1 Priority: Sustainable use of the environment in the cross border area; preservation of natural resources, actions to reduce GHG emission and pollution of rivers
Selection process	One-round Call
Budget allocation	100,000 – 1,500,000 EUR
Own contribution	min. 5%
Possible duration of implementation	12-36 months

Danube Transnational Programme:

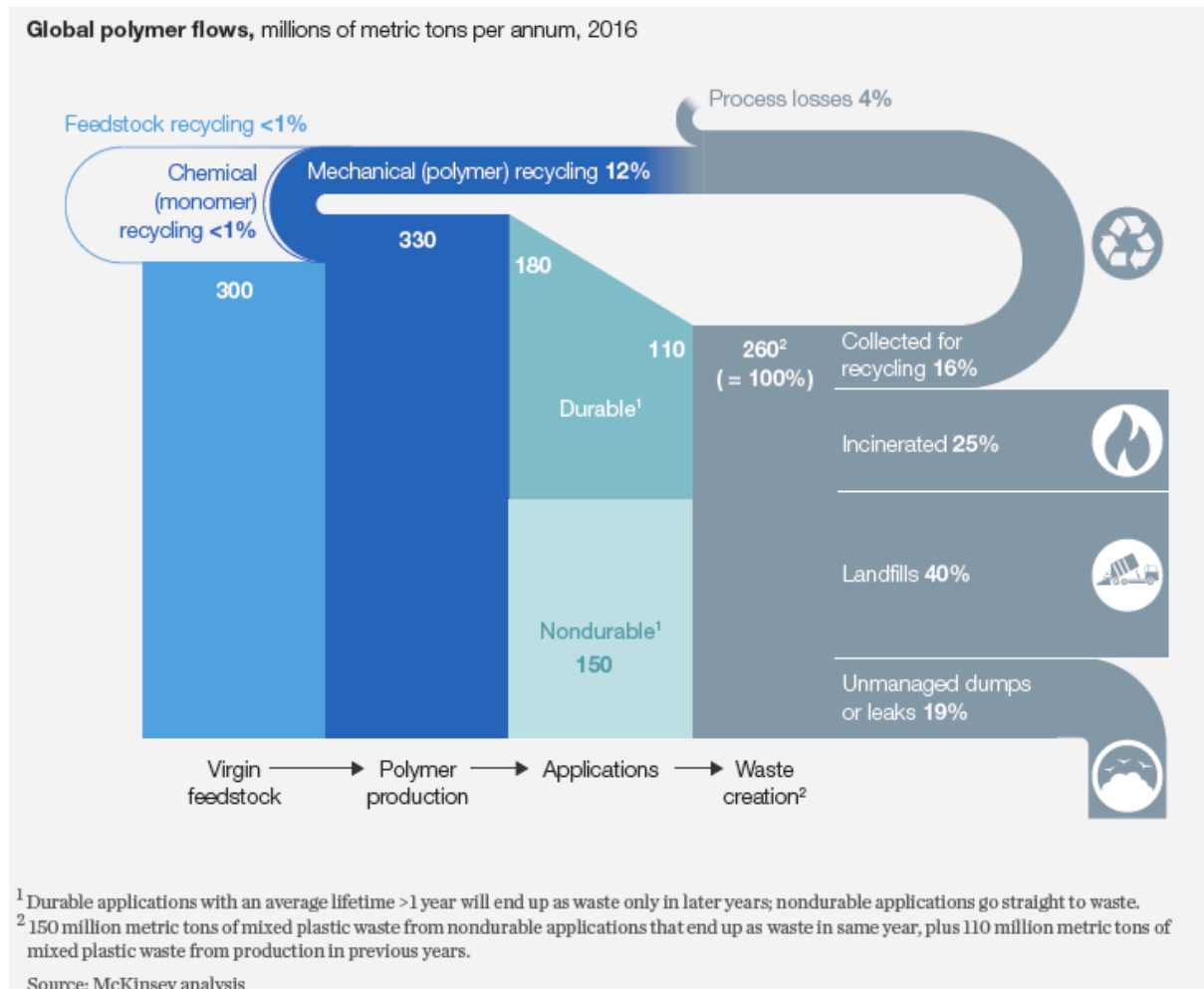
2nd Priority of the programme are **environmental protection** and culture. Ukraine’s four county are involved: Chernivetska, Ivano-Frankiviska, Zakarpatska, Odessa. The Specific Objectives covered by Priority 2 are strengthen transnational water management and flood risk prevention, foster sustainable use of natural and cultural heritage and resources, foster the restoration and management of ecological corridors and improve preparedness for environmental risk management. Types of actions to be supported under the cooperation programme: suggestions, strategies in fields of transnational relevance, transnational tools and services (e.g. analytical tools, management tools etc.), preparation of transnational investments, pilot activities, training and capacity building, information, communication and dissemination. The 3rd call to be launched soon. For participation in the programme at least three partners are needed (five is recommended) from the Member States and **85% of costs are eligible**.

PRESENTATION OF CLEAN TRANSCARPATHIA AND PLASTIC CUP PROJECT AND THE EXPERIENCES OF THE WASTE MANAGEMENT EXPO IN KIEV – GERGELY HANKÓ, MANAGING DIRECTOR OF THE HUNGARIAN ASSOCIATION OF ENVIRONMENTAL ENTERPRISES AND PLASTIC CUP PROJECT MANAGER



What Tisza mean for us? – we asked this question again and again during our presentations. The answers are water tours, recreation, fishing, bathing and date... If we think about it more deeply, this river determines our life for thousand of years. Dozens of villages, towns bear its name; we owe it a number of profession, tricks and phrases. The river provides our food and drinking water, tempers our climate, produces energy, supplies irrigation water, its navigability enables industrial and personal transportation and so on. Not is vain, clear water is one of the most important and elementary ecosystem service. It is the basic need of all humans and organisms. We produce 400 million tons of plastic a year,

recollection and utilization is almost impossible. Plastic Waste Strategy of EU also reflects the problem and suggests overall, preventive and complex solutions against the actual paradigm. The question is, can we cooperate globally and act in order to reduce the use of unnecessary plastic products and packages?



Waste tsunami

Thus, waste tsunami has been observed in Tisza for 15 years. This means that thousands of tons municipal solid and liquid waste float down the Tisza a year. Most of waste come from outside of our borders, from Ukraine and Romania, where infrastructure is missing. In settlements, inhabitants deposit their waste at the riverbank or floodplain forests. The waste accumulated during winter months is taken up by the flooded river in spring. The river transports alluvion across the border and then deposits it in the lower sections of floodplain forests. The trash accumulates during the winter, then is picked up as the meltwater and spring rains swell the river. It's carried across the border and deposited in the lower-lying floodplain forests and on the shores of sand islands. Between 2008 and 2015, 216 damage occurred in Tisza (on average 27 per year, 2.25 per months), 42% of that was municipal waste pollution.

3. Roundtable for a cleaner Tisza_FINAL_ENG

After icy flood in 2017, more than 2400 m³ of waste remained in floodplain, whose remedial actions was around one hundred million forints. Water Management was cleaning floodplain forest with the help of hundreds of people for weeks, and damage in habitats and organisms is priceless.



Photo: Sándor Szabó

Initiative of PET Cup struggled against pollution for 6 years and search and research for possible solutions. The civil initiative launched by the Természetfilm.hu Association has evolved a series of events throughout the year. It is also a national – almost international – cooperation.

We monitor floodplain forests, localize polluted areas with GPS, plan cleaning equipments, organize trash-collection expeditions, trainings and events. Every year we organize the PET Cup race, when we compete with ships built by waste, so we cause a big surprise at local beaches and in national media. Somebody applies solar power system, others install a huge ship wheel, put up a sail or use recycled pallet. After a week, quantity of collected points (PETÁks) is officially measured by the PET Master.

In recent years, PET Cup has succeeded in establishing cooperation and professional relations with ministries, water directorates and waste treatment companies. Without their help, the project would not be there it is, because international experts visit this great nature conservation competition as well. The JOINTISZA's crew come from 8 countries on 4 continents (India, Morocco, USA, United Kingdom, Serbia, Slovakia, Italy and Norway) to the Upper-Tisza. They helped the common work with their water management, waste and marketing expertise. [JOINTISZA project](#) focus on actualization of river basin management plan and support the goals of [Danube Region Strategy](#), thereby civilian aims met professional plans. Our guests felt so good, they won the CUP this year.

Local people also help a lot for PET Cup, many settlements are almost like a second home of our Pirates. It's not rare, that they become friends forever. The most important helpers of the Cup are the volunteers. They are the engine of the initiative, not only during the Cup, but all year.

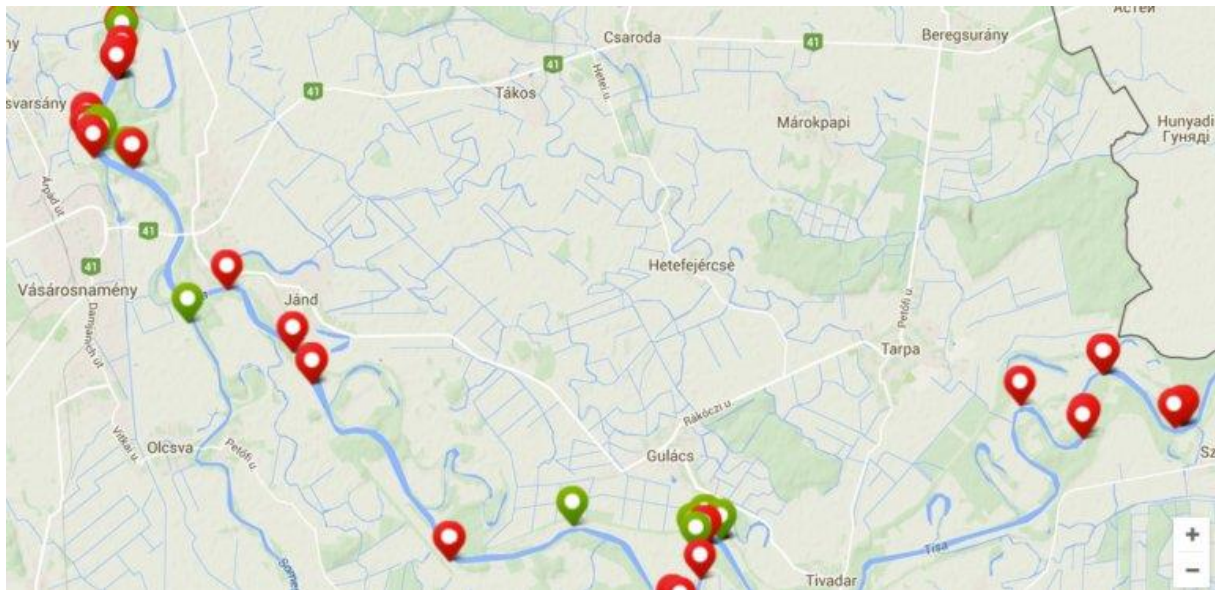
Who do the Pirates on board for?

“Our Beloved Beautiful Blonde Tisza” is home of uncountable plants and animals, therefore the river is the longest ecological corridor in Hungary. For example, we can find willow-poplar gallery forests, oak-ash-elm forests, oak-hornbeam forests and alder woodlands in **Szatmár-Bereg Plain Landscape Protection Area** at Upper-Tisza, where the understory vegetation includes crocus species, snowdrop, spring snowflake and squill species. Beside the varied flora, we can find here common lizard, common European adder, black stork, European honey buzzard, bats and wildcat. Pastures, meadows and old backwaters provide another fairytale and rich habitats.

Results of previous researches

Waste monitoring

Aside from the annual PET Cup race and waste collection, we have also started a systematic survey and location of the severely polluted areas. [Trash monitoring](#) is done by the organizers and volunteers for 3 years. They use a mobile app, [\(Trash Out\)](#), which makes handling locations and amounts easier and more coordinated. Framers, hunting and fishing associations must be involved along Tisza, that would help survey, get information flow faster and establish a widespread cooperation.



Localized polluted sites in Trash Out

We've so far **surveyed 160 polluted locations** on the Upper-Tisza and have cleared 21 of those, thanks to the many helping hands.

Experience of monitoring activities (4 times, 240 km) is that the problem is much more complex and serious than it is known. A part of accumulated waste degrades fastly, such as polyurethane foam and polystyrene. Oil bottles and insecticide spray bottles pose a risk in short term.

Most of the wastes are invisible, however we do not currently have information on the heavier materials deposited in the sludge. According to the experience of Ukrainian, Romanian field-surveys and professional works, there is a full spectrum of household waste (including hazardous waste) on shallower parts, but these materials are not present on Hungarian area.

Microplastic research

Water and mud samples from the contaminated floodplain were analyzed by [Wessling Hungary Kft.](#) Results showed that phthalate compounds were present in the samples and their amount were more than double than the limit value⁴! Phthalates are used in the plastics industry, as plasticizers.

In July 2017, the first microplastic (plastic fragments, smaller than 5mm) analyses carried out by Wessling Laboratory as part of the 5th PET Cup. Results of the water and sediment samples confirmed the conclusions of international research: microplastics pollution affects our waters globally.

They can enter our natural waters via two major routes: from the washing of clothes made of synthetic fabrics and from cosmetics through sewage treatment plants, and through the physicochemical fragmentation of plastic wastes present in the environment. The research of their occurrence has been at the center of scientific interest in the last 5 to 10 years, however, analyses so far have been performed primarily in the marine environment.

According to the results, there are 4.9 fragments larger than 300 micrometer but smaller than 2 mm, and 62.5 fragments between 15 and 300 microns in the Tisza per cubic meter. These data are also significant in the light of international results since, in the range over 300 micrometers, 0.3 fragments per cubic meter were detected in the Austrian section of the Danube, 1 to 4 fragments in Italian lakes, while 15 to 20 fragments in the industrialized section of the Rhine. In view of the above data, it is likely that several millions of microplastic fragments float down the Upper Tisza every hour!

Recently, new informations and newer researches were heard about Lake Tisza, River Rába and Danube at the “[Microplastics in cycle](#)” conference organized by Hungarian Association of Environmental Enterprises (HAEE).

⁴ <https://laboratorium.hu/szennyzoekatiszaiPETpalackok>

Clean Transcarpathia and Tisza Roundtable

Beside the summer competition, a series of events throughout the year have also highlighted the importance of protecting domestic waters. The developing, increasing and diversified initiative is already present in Transcarpathia this year, because organizers hold another roundtable (October 18-19, 2018, Vyshkovo), which topic is practical implementation of Ukrainian waste strategy. Additionally, in 2018 we participated at Waste Management Expo in Kiev with our environmental protection booth and presentation, in close cooperation with our partner organizations in Transcarpathia.

“M.V. Petényi, the junk-eating junk-boat” is under development!

To cover the cost of construction, the organizers of the PLASTIC Cup arranged a community fund-raising campaign in 2016, when they collected 754,000 forints to build the first Hungarian fluvial waste collecting machine. The planning was started, and the ship was on water during PET Cup in 2017. Planning of waste skimmer machine is still in progress (applying for a tender), but the ship functions well as a load-bearer and a mothership. **“Message in the bottle”** On March 20, 2018, we presented a 52-minute environmental documentary film, “Message in the bottle – or the official story of PET Pirates” at A38 Ship, on the occasion of World Water Day. The successful, full-housed screenings were filled by former participants of PET Cup races, sponsors, and environmental policy professionals. The film has already been purchased by French and Greek TVs, and we can watch it in Hungarian TVs from the fall of 2018.

We trust this widespread cooperation will be successful and other countries will follow it. Because everybody can be a real PET Pirate, just the appropriate band and goal is needed!

What can we do?

WHAT CAN MANUFACTURER AND DIRECTORS DO?	WHAT CAN LEGISLATURE DO?	WHAT CAN PEOPLE DO?
- extension of producer responsibility	- taxation of environmentally harmful products (e.g. plastic bag tax)	- change of mind, individual act!
- long-life products	- stricter regulation	- reduce consumption – abandonment of certain products
- manufacturing lighter products	- stronger enforcement of sustainability principles in regulation	- economical use of product – increasing the period of use
- manufacturing repairable products, supporting of small repair services	- system approach	- appropriate selection
- replacement of disposable product	- result-oriented action	- composting
- research and development		- conscious shopping
- innovative industrial eco-design		
- life cycle assessments (LCAs), e.g. for packaging (turnable/disposable?)		
- spreading ecological thinking		

COMMON THINKING AND FINDING SOLUTIONS – INTERACTIVE BRAINSTORMING IN 2 GROUPS

Our themes:

1. How can we help in achieving progress with the Waste Strategy?

In May 2018, European Commission proposed new EU-wide rules to target the 10 single-use plastic products most often found on Europe's beaches and seas:

1. Plastic ban in certain products
2. Consumption reduction and collection targets
3. Cost obligations for producers
4. Labelling requirements
5. Awareness-raising measures

These measures should be followed and adapted, because Ukraine could skip the most polluting part of the life cycle of waste production (where a great part of European countries are), and can optimize the system in time; so it can reduce costs of implementation.

It is necessary to distinguish micro and macro dimensions: local solutions for small settlements, micro-projects, large investments in big cities, complex programs.

Local, preventive solutions should be developed for small settlements, villages and regions, which are difficult to access. For example, [horse-drawn carriage, glass waste collection like in Hajdúság, or Trash Bank in Indonesia](#). There are other preventive solutions, such as local composting, using of refillable packaging, limiting of single-use plastic packaging and skipping unnecessary plastic products, or e.g. local waste processing and product manufacturing (small recycling plant in a container).

It would be of paramount importance to create utilization/recollection interest:

- Applying reward cards; if people return packaging or cooking oil, would earn points on their card, that they can spend in green shop, at public service or cultural events.
- Introducing of green procurement and preferring products made by recycled materials.
- Providing predictable material prices for recovery plants.

2. Awareness raising (Education and communication) what can we do to make our river cleaner?

Foundations:

Ukraine should adapt good practices, in order to do not have to start from the beginning. Change of attitude must be started as soon as possible; large majority should be addressed at the same time through a comprehensive and complex communication programme. It will not work without decision makers, ministries must be involved.

Who have to we address and how?

TEACHERS: educational programmes for credit points, spreading environmental knowledges
Development of environmental education programmes, organization of field exercises.

POLICY: Environmental knowledges should be included in the curriculum. It is also worthwhile to include sustainability and environmental protection issues to some subjects (e.g. mathematics, history). Ukrainian civilians can make the curriculum, as Hungarian Society for Environmental Education did in Hungary.

Universities, collages could apply for making such curricula within the framework of INTERREG tender.

Stricter and more transparent regulation.

3. Roundtable for a cleaner Tisza_FINAL_ENG

CHILDREN: Playfully, with publications. More field exercises over 10 years, children do not read publications.

Forest schools should apply for INTERREG tender.

Activist should make mobile eco-playground and visit schools.

COMPANIES, ENTERPRISES: They have to support more green projects within CSR, PR.

Waste reducing and sustainability programmes should be started at companies.

They must recollect their own packages.

Who are the main stakeholders and how do we address them?

- Uzhhorod National University
- Ferenc Rákóczi II. Transcarpathian Hungarian Institute
- Rákóczi Association
- Transcarpathian Hungarian Cultural Association
- Transcarpathian Hungarian Pedagogical Association
- Student's unions
- Transcarpathian Hungarian Students and Young Researchers Association (KMDFKSZ)
- Vodokanal
- Forestries
- Local governments
- National Nature Park Synevyr
- Coca-Cola Ukraine and Moldova
- WWF Ukraine
- ...

Made by Gergely Hankó, Managing Director – Hungarian Association of Environmental Enterprises (HAEE)

Translated by Melánia Szántó-Szabó - environmental researcher, translator

Megvalósult
a Magyar Kormány
támogatásával



MINISZTERELNÖKSÉG
NEMZETPOLITIKAI ÁLLAMTITKÁRSÁG



BETHLEN GÁBOR
Alap