

Report on Electronic Stakeholders Involvement for SWMI and ITRBM Plan Update 2019

20 SEPTEMBER 2019





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Abbreviations

CIS Common Implementation Strategy

EU European Union

FD Floods Directive (Directive 2007/60/EC of the European Parliament and of the

Council of 23 October 2007 on the assessment and management of flood risks)

FRMP Flood risk management plan

ICPDR International Commission for the Protection of the Danube River

ITRBMP Integrated Tisza River Basin Management Plan

JPoM Joint Programme of Measures

MoU Memorandum of Understanding

NGO Non-governmental organisation

PIPS Public Involvement and Participation Strategy

PP EG Public Participation Expert Group

RBD River basin district

RBM River basin management

RBMP River basin management plan

SWMI Significant water management issues

TRB Tisza River Basin

UNECE The United Nations Economic Commission for Europe

WFD Water Framework Directive (Directive 2000/60/EC of the European Parliament and

of the Council establishing a framework for the Community action in the field of

water policy)



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Summary

The online JOINTISZA Project questionnaire is aimed to gather the opinion and recommendations of different stakeholders about the problems and solutions of the Significant Water Management issues and thus the ITRBMP update 2019.

General introduction of the entire stakeholders' involvement process is given in Chapter 1.

A list of the Tisza River Basin stakeholders is given in Annex A.

An overview of received comments and responses, as well as results and conclusions per country and for the entire Tisza River Basin are given in Annex B.

Obtained results and conclusions per country and graphical presentation of the on-line electronic questionnaire are given in Annex C.

Annex D collects all received responses.

An invitation to participate was sent to the list of stakeholders (Annex A), posted on the project web-site and distributed via individual networks of experts and activists identified during the life of the project.

In total, 27 people filled in the questionnaire for the four significant water management issues (SWMIs) which are the main pressures and can affect the status of surface water bodies focused in ITRBMP update 2019.

Results of the online questionnaire show that considering the entire Tisza River Basin, 96% of participants see both organic and nutrient pollution as an important water management issue, while positive answers come from 85% of participants regarding hazardous pollution and 92% regarding hydromorphology.

The identified significant water management issues (SWMI) are prioritised as follows:

- o For organic pollution (OP) municipal wastewater treatment is considered as the most important one, followed by agricultural activities;
- O Agricultural activities and sanitary waters treatment are identified as the most important ones when dealing with nutrient pollution (NP),
- For hazardous pollution (HP) industrial contamination and lack of proper environmental monitoring and control are identified as the most important issues, being followed by mining and agricultural activities, and,
- Hydromorphological alterations are highlighted as the priority that impacts status of examined water bodies in the entire basin, then presence of hydrotechnical structures and river training, as well as flood management activities.

In regard to the proposed joint programme of measures (JPoM), 93% of participants think that measures proposed to achieve good status related to organic pollution are enough, while 70% of them believe that measures proposed to achieve good status related to nutrient and hazardous pollution are sufficient. At the same time, only 54% of participants are confident in results to be



achieved by measures related to hydromorphology.

In relation to additional measures to be introduced to improve or preserve current water status results participants were underlining following:

- Regarding organic pollution (OP) an enhancement of legal and institutional framework is underlined as the most important one, then measures related to the management of municipal wastewaters, capacity building and education activities, followed by economic measures and strengthening of legal and institutional settings;
- Nutrient pollution (NP) related measures, an improvement of water management practice and decision-making processes are considered as the most required ones, followed by development and enhancement of agricultural measures,
- Hazardous pollution (HP) related measures connect an improvement of water management practice and decision-making processes as the most required ones, followed by a need for an urgent upgrade of the existing monitoring practice and
- Hydromorphology issues should be treated by wider introduction of natural water retention measures being followed by a variety of measures focusing on the improvement of existing hydro-morphological alterations in the Tisza River Basin

All participants consider water quantity as an important issue for the entire River Basin, and 96 % believe it should be introduced as another SWMI in the future. Regarding present water status one third of participants consider achieved results as good, one third does not know, while the rest believe water status should be much better.



1. Introduction

1.1 Objectives and legal framework for Public Participation

The JOINTISZA Project adheres to its committed to active public participation in its decision making. The JOINTISZA Project firmly believes that this facilitates broader support for policies and leads to increased efficiency in implementation efforts.

"The main purpose of public participation is to improve decision-making, by ensuring that decisions are soundly based on shared knowledge's, experiences and scientific evidence, that decisions are influenced by the views and experience of those affected by them, that innovative and creative options are considered and that new arrangements are workable, and acceptable to the public." (CIS Working Group 2.9, 2003¹)

Public involvement and participation ensure transparency in different stages of decision-making by informing the public on the activities and decisions that were and are yet to be made. Besides, it enables the decision-makers to gain different views and new knowledge, perceive concerns and expectations of the involved public and possibly obtain information and data, in order to come to better decisions and plans, which would be beneficial for the most and more sustainable after the implementation.

The JOINTISZA Project consulted stakeholders in the entire cycle of its activities. The Tisza River Basin countries along with the other Danube countries have committed to apply the EU legislation within the framework of the ICPDR. Therefore, two basic European Union directives set the legal and policy framework for the information and involvement of the public in the development of river basin plans: The Water Framework Directive (WFD) (Directive 2000/60/EC) and the Floods Directive (Directive 2007/60/EC). In addition, several international agreements also must be applied to which the Tisza countries are parties.

The access to information is the basis for the public participation, ensuring that the general public and all identified stakeholders are provided with information regularly, and actively throughout the RBM planning (and the project implementation). This should entail proper information for the public and stakeholders of the planned measures and on the progress of their implementation in order to enable their involvement.

1.2 Stakeholders to the JOINTISZA

The Tisza River Basin (TRB) is the largest sub-basin of the Danube River Basin with drainage area of 156,869 km² and shared by Ukraine, Romania, Slovakia, Hungary and Serbia. It provides livelihoods for approximately 12.5 million people through water supply, agriculture, forestry, pastures, mining, navigation and energy production. The TRB is an important European resource with rich biodiversity and outstanding natural ecological assets.

¹ CIS Working Group 2.9, 2003, Common Implementation Strategy for the Water Framework Directive (2000/60/EC) (No. 8.), Guidance document, Office for Official Publications of the European Communities, Luxembourg



During the stakeholder analysis an inventory of the interests, concerns, influence of stakeholder groups was conducted based on expert judgement as well as through a targeted questionnaire. This also examined how the RBM planning will or may impact the stakeholders and what type of involvement is needed or can be foreseen from their part. The stakeholders were grouped in the below categories and final list of stakeholders is presented in Annex A

- a. Government bodies and authorities at international level, basin level and sub-basin level (including national and local level)
 - O Decision-makers on the draft ITRBM Plan or those influencing the planning and the decision-making
 - National government authorities in the TRB in charge of RBM planning
 - National level government structures/institutions who may have activities or may deal with issues related to the TRB relevant to RBM planning, or which may have an impact on the TRB:
 - Ministries (Environmental, Water, Agriculture, Industry, Health, Finance, Transport, Interior, Emergencies, Development Agencies, Foreign Affairs...etc.)
 - Representatives of River Basin Councils or Committees (sub-basin level)
 - Relevant bodies at the EU level dealing with RBM planning (DG Environment)
 - International organizations and their Expert Groups: ICPDR, Secretariat of the Carpathian Convention, Danube Commission, etc.)
 - Danube Strategy related officials, PA coordinators from the Tisza countries (national, regional)
 - o Implementers of the ITRBMP
 - National Water Management Authorities, e.g. OVF, Romanian Waters, Serbian Waters, Romanian Waters, Slovak etc. and relevant directorates in the TRB
 - Water management institutions,
 - National institutions in charge of flood defence and drought management, including irrigation
 - Public water utility companies, WWTs
 - Bilateral water commissions in the TRB
 - National parks, national reserves, Natura 2000 sites,
 - Climate change related institutions
- b. Local and regional governments, their associations on regional and sub-basin level (including national and local level)
 - o Municipality associations in the TRB; Municipalities, regional (country) authorities,
 - EU Regional public authorities European Committee of the Regions, Interregional Group "Carpathians"
 - o European Groups of Territorial Cooperation active in the TRB
- c. NGOs and NGO networks at the international, basin and sub-basin level (including national and local level)
 - Interested NGOs or NGO networks working on TRB level or nationally or locally in important areas/topics or other international NGOs involved in activities in the Tisza region;
 - o Organizations dealing with biodiversity, wetlands and nature protection
 - o Climate change related groups;
 - O Water users (associations of water companies, WWTs, those dealing with recreation, fishing, etc.);
 - National farmers' association in the Tisza River Basins;



- d. Research Institutes, university, academia
 - Research centers, universities dealing with relevant topics related to the RBM Planning in the Tisza River Basin;
 - o Institutions dealing with biodiversity, wetlands and nature protection
 - Flood and drought related institutions
 - o Climate change related institutions
 - o International projects or major national projects have or may have an impact on water bodies in the Tisza River Basin, relevant to the RBM planning
- e. Industry (private and public sectors and their associations)
 - o Industrial players, private and public companies or their associations, who carry out significant economic activities and have or may have potential impact on the TRB through their emissions (e.g. pharmaceutical industry, chemical industry, mining, etc.);
 - Navigation
 - Tourism
- f. Agriculture (agricultural producers and their associations)
 - o Relevant observers active in the Danube River Basin;
- g. Media
 - o Relevant regional, sub-regional, national or local media
- h. Other (International projects or major national projects have or may have an impact on the TRB relevant to the RBM planning)

1.3 Stakeholders Involvement for the ITRBM Plan Update 2019

The JOINTISZA project involves the joint efforts of the five countries that share the Tisza River Basin —Ukraine, Slovakia, Hungary, Serbia and Romania. It focuses on the interactions of two key aspects of water management — river basin management (RBM) and flood protection — while considering the relevant stakeholders who play a crucial role in the Tisza RBM planning process. The main output of the project will be an updated final draft of the 2nd Integrated Tisza RBM Plan (ITRBMP) prepared in accordance to the EU Water Framework Directive (Directive 2000/60/EC), which includes the primary aspects of flood risk management stipulated in the EU Floods Directive (Directive 2007/60/EC).

1.3.1 Online questionnaire

It is important to achieve 'good chemical and ecological status (or potential)' for all surface waters and 'good chemical' and 'quantitative status' for all groundwater as well as to prevent deterioration of the status of all surface and groundwater bodies. In order to identify problems and take the necessary measures to achieve the abovementioned objectives the five Tisza countries prepared a draft integrated Tisza river basin management plan (ITRBMP) in the framework of the JOINTISZA project.

In the online questionnaire JOINTISZA Project aimed to gather the opinion and recommendations of different stakeholders about the problems and solutions for identified Significant Water Management issues and proposed Joint Program of Measures in the ITRBMP update 2019.



In total, 27 people filled in the questionnaire for the four significant water management issues (SWMIs) which are the main pressures and can affect the status of surface water bodies focused in ITRBMP update 2019. Questions and data can be found in Annexes B and C of this report.

1.4 Development & use of this Stakeholders Involvement Report

The 2nd ITRBMP is currently being prepared through the JOINTISZA project with a high engagement of public interested in river basin management and flood management, through workshops, online questionnaire etc.

Online questionnaire accompanied with the "Significant pressures relevant for the Tisza River Basin" and draft integrated Tisza river basin management plan (ITRBMP) was shared with the stakeholders to receive feedback from people and organisations whose environmental or business interests might be affected by decisions on how water resources are used and protected in the Tisza River Basin, as well as from those whose activities might have an impact on these waters.

To ensure the highest possible transparency, all comments requesting changes or additions in the ITRBM Plan Update 2019 were collected and will be processed by the relevant JOINTISZA Project expert or task group.

This report will be published alongside with the ITRBM Plan Update 2019. It will be sent to all organisations and individuals that participated in the public consultation activities and will be published on JOINTISZA Project website http://www.interreg-danube.eu/approved-projects/jointisza

1.5 Links to public consultation on the national level

Direct involvement of the JOINTISZA project stakeholders has begun at the same time as the project itself with the JOINTISZA - OPEN DOORS event that was aimed to introduce the project objectives, activities and expected results to the interested parties. Furthermore, it initiated a discussion and exchange of views of the participants on how the project can further strengthen cooperation among the relevant actors of the river basin management planning process and to improve the status of the waters in the basin. The team continued with a training for project experts on stakeholder (SH) involvement. This documented learning interaction covered the knowledge gaps on effective public involvement and its methodologies and thus helped the planning exercise and preparation of the ITRBMP, involving experts in communication and social sciences and by taking in consideration the general and country specifics.

After the Shared Vison Planning (SVP) methodology presentation, that is documented in the "Deliverable 6.5.1" and the training a first – national-level – SH involvement step was carried out followed by 10 national level follow-up meetings with the project partners, in order to make the Public Involvement Plan (PIP) of the draft ITRBMP the most effective possible. The 1st round focused on identifying the tools that fit best to the working programs' development, while the 2nd



round, after the implementation of the selected methods, focused on discussing the feedback from the stakeholders and their integration into the planning mechanism.

The goal of the national-level stakeholders' involvement (preparatory phase) was to connect, inform and continue with:

- establishing a list of stakeholders in all 5 countries for further steps
- receiving general comments from stakeholders on the basin wide importance problems and the 1st ITRBMP – and integrate them into the new Plan.

Stakeholders lists (Annex A) and experiences were shared with project partners to understand and conduct basin-wide consultations concerning: i) electronic/written consultation on the significant water management issues (SWMIs) and ii) basin-wide consultation event on the draft ITRBMP/JPoMs. The document thus produced with the support of project partners and stakeholders further helped for Electronic Stakeholders Involvement for SWMI and ITRBM Plan Update 2019. Electronic Stakeholders Involvement, being one important part of the whole project and its process and its tenure is illustrated, analysed and thus explained in the next section of the report.



2. Annex A: Stakeholders

By stakeholders we mean representatives of groups, institutions or individuals who have certain defined vested interest or "stake" in the decision-making process related to the development and implementation of the ITRBMP. These interests may be various: environmental, economic, social, cultural, recreational or other interests, legally or otherwise defined. The term "stakeholders", in a broader sense and in the context of the RBM planning, may be also additionally defined as those having some influence on the outcome of the decision-making or some expertise, knowledge, experience, information or activities which may be useful for the decision-making process, etc.

For the target groups who were actively involved or invited for electronic consultation are enumerated in Table 2.1

Table 2.1 Stakeholders

No	Code	SH group	Organization
1	HU1	Water Management Advisory Bodies regional level	Trans-Tisza Water Management Council
2	HU2	Member of Water Management Advisory Bodies- regional level	Prime Minister's Office (World Heritage)
3	HU3	Member of Water Management Advisory Bodies- regional level	Hajdú-Bihar County Directorate of the National Chamber of Agriculture
4	HU4	Member of Water Management Advisory Bodies- regional level	Hajdú-Bihar County Chamber of Engineering
5	HU5	Member of Water Management Advisory Bodies- regional level	Ministry of Interior
6	HU6	Member of Water Management Advisory Bodies- regional level	Trans-Tisza Water Management Directorate
7	HU7	Member of Water Management Advisory Bodies- regional level	General Department of Environmental Protection and Nature Conservation of District Office of Debrecen, Government Office of Hajdú-Bihar County
8	HU8	Water Management Advisory Bodies - regional level	North-Hungarian Water Management Council
9	HU9	National Park Directorates	Aggtelek National Park Directorate
10	HU10	Member of Water Management Advisory Bodies - regional level	Heves County Chamber of Engineering
11	HU11	Disaster Management Authority/Water Management Authority	Borsod-Abaúj-Zemplén County Disaster Management Directorate
12	HU12	Govt. Offices/Authorities	General Department of Environmental Protection and Nature Conservation of Government Office of District Office of Miskolc, Borsod-Abaúj-Zemplén County
13	HU13	Member of Water Management Advisory Bodies - regional level	General Department of Public Health, Government Office of Borsod-Abaúj- Zemplén County



No	Code	SH group	Organization
14	HU14	Member of Water Management	General Department of Public Health,
14	ПО14	Advisory Bodies - regional level	Government Office of Heves County
15	HU15	National Park Directorates	Bükk National Park Directorate
16	HU16	Member of Water Management	Development of Tokaj Wine Region
10	11010	Advisory Bodies - regional level	Nonprofit Ltd.
17	HU17	Water Management Advisory Bodies - regional level	Lower-Tisza Water Management Council
18	HU18	Water Management Advisory Bodies - regional level	Upper-Tisza Water Management Council
19	HU19	Govt. Offices/Authorities	General Department of Environmental Protection and Nature Conservation of District Office of Nyíregyháza, Government Office of Szabolcs-Szatmár Bereg County
20	HU20	Member of Water Management Advisory Bodies - regional level	Upper-Tisza Water Management Directorate
21	HU21	Member of Water Management Advisory Bodies- regional level	General Department of Agriculture, Department of Agriculture of District Office of Nyíregyháza, Government Office of Szabolcs-Szatmár Bereg County
22	HU22	Water Management Advisory Bodies - regional level	River Basin Management Planning Committee of the Körös Countryside Water Management Council
23	HU23	Disaster Management Authority/Water Management Authority	Borsod-Abaúj-Zemplén County Disaster Management Directorate
24	HU24	Local governments	Assembly of Borsod-Abaúj-Zemplén County
25	HU25	National Park Directorates	Bükk National Park Directorate
26	HU26	Non-governmental, non-political organizations and institutions - Agriculture, industry, trade and chambers	National Federation of Agricultural Cooperatives and Producers
27	HU27	Non-governmental, non-political organizations and institutions	Greenpeace Hungary Association
28	HU28	Govt. Offices/Authorities	General Department of Environmental Protection and Nature Conservation of District Office of Debrecen, Government Office of Hajdú-Bihar County
29	HU29	Govt. Offices/Authorities	General Department of Environmental Protection and Nature Conservation of District Office of Békéscsaba, Government Office of Békés County
30	HU30	Govt. Offices/Authorities	General Department of Environmental Protection and Nature Conservation of District Office of Nyíregyháza, Government Office of Szabolcs-Szatmár Bereg County



No	Code	SH group	Organization
		<u> </u>	National Agricultural Research and
31	HU31	Scientific and educational	Innovation Centre - Research Institute for
		institutions	Fisheries and Aquaculture
32	HU32	Local governments	Assembly of Csongrád County
33	HU33	Scientific and educational	University of Debrecen. Department of
33	позз	institutions	Hydrobiology
34	HU34	Local governments	Assembly of Hajdú-Bihar County
			Hungarian Academy of Sciences, Centre
35	HU35	Scientific and educational	for Ecological Researches, Danube
	11033	institutions	Research Institute, Department of Tisza
			River Research
36	HU36	Local governments	Assembly of Szabolcs-Szatmár-Bereg
			County
37	HU37	National Park Directorate	Hortobágy National Park Directorate
38	HU38	Water Management Advisory	Tisza Sub-River Basin Water
		Bodies - regional level	Management Council
39	HU39	Non-governmental, non-political	Alliance for Living Tisza
		organizations and institutions	-
40	HU40	Non-governmental, non-political	Carpathians-Tisza International
-		organizations and institutions	Development Association
		Non-governmental, non-political organizations and institutions -	
41	HU41	Agriculture, industry, trade and	Hungarian Chamber of Agriculture
		chambers	
42	RO1	Govt. Offices/Authorities	Oradea City Hall
43	RO2	Govt. Offices/Authorities	Anif Satu Mare
		Non-governmental, non-political	
44	RO3	organizations and institutions -	Excelsior Association
		Nature, environment and sports	
45	RO4	NP Directorates	National Park Rodnei Mountains
43	KO4	NP Directorates	Administration
46	RO5	Govt. Offices/Authorities	Environmental Protection Agency - Cluj
		Non-governmental, non-political	
47	RO6	organizations and institutions -	ONG Hobby Club Jules Verne
		Nature, environment and sports	
48	RO7	Disaster Mgm/Water Mgm	ISUJ Arad
		Authorities	
49	RO8	Disaster Mgm/Water Mgm	Water Basin Administration - Crisuri
50	DOO	Authorities	A
50	RO9	Significant water users Govt. Offices/Authorities	Aquatim Public Health Agency, Clui
51	RO10 RO11	Govt. Offices/Authorities Govt. Offices/Authorities	Public Health Agency - Cluj Boghis Town Hall (Salaj County)
32	KUII	Non-governmental, non-political	Bognis Town Han (Saiaj County)
53	RO12	organizations and institutions -	WWF
	KO12	Nature, environment and sports	
54	RO13	Govt. Offices/Authorities	County Council Cluj
		Disaster Mgm/Water Mgm	Water Basin Administration - Somes -
55	RO14	Authorities	Tisza
	l		<u> </u>



No	Code	SH group	Organization
		Non-governmental, non-political	Center for Protected Areas and
56	RO15	organizations and institutions -	
		Nature, environment and sports	Sustainable Development -Bihor
		Non-governmental, non-political	
57	RO16	organizations and institutions -	Heidenroslein Association
		Nature, environment and sports	
7 0	D 0 1 5	Scientific and educational	D 124
58	RO17	institutions	Banat National Museum
		Non-governmental, non-political	
59	RO18	organizations and institutions -	Transylvanian Carpathian Society
		Nature, environment and sports	
	D 0 1 0	-	Lunca Muresului Natural Park
60	RO19	NP Directorates	Administration
61	RO20	Govt. Offices/Authorities	Tamaseu Town Hall
62	RO21	Govt. Offices/Authorities	Socodor Town Hall
		Non-governmental, non-political	
63	RO22	organizations and institutions -	Verde 2000 Foundation
		Nature, environment and sports	
		Non-governmental, non-political	
64	RO23	organizations and institutions -	Educational-Ecologic Association
		Nature, environment and sports	Ecotransilvania
		Non-governmental, non-political	
65	RO24	organizations and institutions -	Milvus Association
		Nature, environment and sports	
	D-025	Disaster Mgm/Water Mgm	Inspectorate for Emergency Situations
66	RO25	Authorities	Crisana (Bihor County)
67	RO26	NP Directorates	Maramuresului Mountains Natural Park
60	CDD1	W-tMD-1	Public Water Management Company
68	SRB1	Water Mgm Bodies	Vode Vojvodine
60	CDD2	Water Mana Dadies	Public Water Management Company
69	SRB2	Water Mgm Bodies	Vode Vojvodine
70	SRB3	Water Mam Dadies	Public Water Management Company
70	SKD3	Water Mgm Bodies	Vode Vojvodine
71	SRB4	Water Mam Dadies	Public Water Management Company
/ 1	SKD4	Water Mgm Bodies	Vode Vojvodine
72	SRB5	Water Mam Padies	Public Water Management Company
12	SKDS	Water Mgm Bodies	Vode Vojvodine
73	SRB6	Water Mgm Bodies	Public Water Management Company
13	SKD0	water wight bodies	Vode Vojvodine
			Ministry of Agriculture, Forestry and
74	SRB7	Govt. Offices/Authorities	Water Management,
			Directorate For Water
			Ministry of Agriculture, Forestry and
75	SRB8	Govt. Offices/Authorities	Water Management,
			Directorate For Water
76	SRB9	Govt. Offices/Authorities	Provincial Secretariat for Agriculture,
/ 0	SICD)	Gove. Offices/Tumorines	Water Management and Forestry
77	SRB10	Govt. Offices/Authorities	Provincial Secretariat for Urban Planning
, ,	SILDIO	Sort Offices/Humorities	and Environmental Protection



No	Code	SH group	Organization
78	SRB11	NGO	Cooperative Alliance of Vojvodina
79	SRB12	NGO	WWF Serbia
80	SRB13	NGO	World and Danube
			Ministry of Agriculture, Forestry and
81	SRB14	Govt. Offices/Authorities	Water Management,
			Directorate For Water
		Colontific and advantional	University of Novi Sad, Faculty of
82	SRB15	Scientific and educational institutions	Agriculture, Department of Water
		institutions	Management
		Spinntific and advantional	University of Novi Sad, Faculty of
83	SRB16	Scientific and educational institutions	Agriculture, Department of Water
		Institutions	Management
84	SRB17	Scientific and educational	University of Novi Sad, Faculty of
04	SKD1/	institutions	Agriculture
85	SRB18	Scientific and educational	University of Novi Sad, Faculty of
65	SKD16	institutions	Agriculture
86	SRB19	Scientific and educational	Institute for Nature Conservation of
- 00	SKD19	institutions	Vojvodina Province
87	SRB20	Scientific and educational	Institute for Nature Conservation of
07	SKD20	institutions	Vojvodina Province
88	SRB21	Scientific and educational	Institute for Nature Conservation of
- 00	SIND21	institutions	Vojvodina Province
89	SRB22	Scientific and educational	Institute for Nature Conservation of
- 07	SIGDEE	institutions	Vojvodina Province
90	SRB23	Scientific and educational	Institute for Nature Conservation of
	516523	institutions	Vojvodina Province
91	SRB24	Scientific and educational	Institute for Nature Conservation of
0.2	CDD25	institutions	Vojvodina Province
92	SRB25	Forest Public Company	"Vojvodinašume" Public Company
93	SRB26	Forest Public Company	"Vojvodinašume" Public Company
94	SRB27	Forest Public Company	"Vojvodinašume" Public Company
95	SRB28	1 3	"Vojvodinašume" Public Company
96	SRB29	Forest Public Company	"Vojvodinašume" Public Company
97	SRB30	NGO	Ecological Movement of Vrbas
98	SRB31	NGO	Fishing Alliance Vojvodine
99	SK1	Water Mgm Authorities	Water Research Institute
100	SK2	Significant water users	Slovak Water Management Enterprise
101	SK3	Water Mgm Authorities	Slovak Hydrometeorological Institute
102	SK4	Local governments	Ministry of Environment (Water
	CIZE	-	Directorate)
103	SK5	Local governments	Forests of the Slovak Republic
		Non-governmental, non-political	
104	SK6	organizations and institutions -	GWP Slovensko
		Agriculture, industry, trade and chambers	
		Chambers	Ministry of Environment (Nature
105	SK7	Local governments	Protection, biodiversity and Landscape
103	SIX/	Local governments	Directorate)
			Directorate



No	Code	SH group	Organization
106	SK8	Non-governmental, non-political organizations and institutions - Agriculture, industry, trade and chambers	BirdLife Slovakia
107	SK9	Academia	Slovak Academy of Science, Institute of Hydrology (Research Base Michalovce)
108	SK10	Non-governmental, non-political organizations and institutions - Agriculture, industry, trade and chambers	State Nature Conservancy of the Slovak Republic
109	SK11	Local governments	Ministry of the Environment of the Slovak Republic, Ramsar Administrative Authority
110	SK12	Water Mgm Authorities	State Nature Conservancy of the Slovak Republic Latorica
111	SK13	Non-governmental, non-political organizations and institutions - Agriculture, industry, trade and chambers	Regional development agency Dolny Zemplin
112	SK14	Academia	Technical University of Košice, Faculty of Mining, Ecology, Process Control and Geotechnologies
113	SK15	Local governments	Ministry of Agriculture and Rural Development
114	SK16	Non-governmental, non-political organizations and institutions - Agriculture, industry, trade and chambers	National Agricultural and Food Centre Slovakia - Soil Science and Conservation Research Institute
115	SK17	Academia	State Geological Institute of Dioníz Štúr
116	SK18	Non-governmental, non-political organizations and institutions - Agriculture, industry, trade and chambers	Slovak agricultural and Food Chamber
117	SK19	Academia	Slovak University of Technology in Bratislava
118	UA1	Govt. Offices/Authorities	Baranyntsi United territorial community
119	UA2	Govt. Offices/Authorities	Beregovo city council
120	UA3	Govt. Offices/Authorities	Beregovo forest farm
121	UA4	Govt. Offices/Authorities	Beregovo rayon council
122	UA5	Govt. Offices/Authorities	Beregovo rayon state administration
123	UA6	Govt. Offices/Authorities	Chop City council
124	UA7	Govt. Offices/Authorities	Communcal enterprise "Rahivteplo"
125	UA8	Govt. Offices/Authorities	Department of agricultural development of Zakarpats'ka oblast state administration
126	UA9	Govt. Offices/Authorities	Department of economic development and trade of Zakarpats'ka oblast state administration
127	UA10	Govt. Offices/Authorities	Department of environmental protection of oblast state administration



No	Code	SH group	Organization
128	UA11	Govt. Offices/Authorities	Department of finance of Zakarpats'ka
128	UAII	Govi. Offices/Authorities	oblast state administration
			Department of infrastructure, housing
129	UA12	Govt. Offices/Authorities	maintenance and utilities of Zakarpats'ka
			oblast state administration
130	UA13	Govt. Offices/Authorities	Department of State Service of emergency
130	UAIS	Govt. Offices/Authorities	situations
			Department of urban development and
131	UA14	Govt. Offices/Authorities	architecture of Zakarpats'ka oblast state
			administration
132	UA15	Govt. Offices/Authorities	Dobzhans'ke forest-hunting enterprise
133	UA16	Govt. Offices/Authorities	Enterprise «Svalyava forest farm»
134	UA17	Govt. Offices/Authorities	Enterprise «Volovets forest farm»
135	UA18	Govt. Offices/Authorities	Gan'kovytska village council
136	UA19	Govt. Offices/Authorities	Geology and hydrogeological centre,
			Zakarpats'ka oblast
137	UA20	Govt. Offices/Authorities	Hust Rayon Council
138	UA21	Govt. Offices/Authorities	Hust Rayon State Administration
139	UA22	Govt. Offices/Authorities	Hust City Council
140	UA23	Govt. Offices/Authorities	Irshava rayon council
141	UA24	Govt. Offices/Authorities	Irshava rayon state administration
142	UA25	Govt. Offices/Authorities	Irshava United terriorial community
143	UA26	Govt. Offices/Authorities	Mizhgir'e Rayon Council
144	UA27	Govt. Offices/Authorities	Mizhgir'e Rayon State Administration
145	UA28	Govt. Offices/Authorities	Mokryans'ke forest and hunting farm
146	UA29	Govt. Offices/Authorities	Mukachevo city administration
147	UA30	Govt. Offices/Authorities	Mukachevo rayon state administration
148	UA31	Govt. Offices/Authorities	Perechyn Rayon council
149	UA32	Govt. Offices/Authorities	Perechyn Rayon state administration
150	UA33	Govt. Offices/Authorities	Perechyn United territorial community
151	UA34	Govt. Offices/Authorities	Polyana united territorial community
152	UA35	Govt. Offices/Authorities	Rahiv Rayon Council
153	UA36	Govt. Offices/Authorities	Rahiv Rayon State Administration
154	UA37	Govt. Offices/Authorities	Specialised forest and agrarian eneterpize
134	UAST	Govt. Offices/Authorities	"Irshavaagroforest"
155	UA38	Govt. Offices/Authorities	State ecological inspection in
133	UAS	Govt. Offices/Authorities	Zakarpats'ka oblast
156	UA39	Govt. Offices/Authorities	State enterprise «Perechyn forest farm»
157	UA40	Govt. Offices/Authorities	Svalyava city council
158	UA41	Govt. Offices/Authorities	Svalyava rayon council
159	UA42	Govt. Offices/Authorities	Svalyava rayon state administration
160	UA43	Govt. Offices/Authorities	Tyachiv city council
161	UA44	Govt. Offices/Authorities	Tyachiv forest and hunting farm
162	UA45	Govt. Offices/Authorities	Tyachiv Rayon Council
163	UA46	Govt. Offices/Authorities	Tyachiv Rayon State Administration
164	UA47	Govt. Offices/Authorities	Uzhgorod City council
165	UA48	Govt. Offices/Authorities	Uzhgorod forest-hunting enterprise
166	UA49	Govt. Offices/Authorities	Uzhgorod Rayon council
167	UA50	Govt. Offices/Authorities	Uzhgorod Rayon state administartion



No	Code	SH group	Organization
168	UA51	Govt. Offices/Authorities	Velykoberesyans'ka Rayon state
108	UAJI		administartion
169	UA52	Govt. Offices/Authorities	Velykoberesyans'ka a Rayon council
170	UA53	Govt. Offices/Authorities	Velykobereznyans'k state forest enterprise
171	UA54	Govt. Offices/Authorities	Vil'hovets'ka Territorial Community
172	UA55	Govt. Offices/Authorities	Volovets rayon council
173	UA56	Govt. Offices/Authorities	Volovets rayon state administration
174	UA57	Govt. Offices/Authorities	Volovets village council
175	UA58	Govt. Offices/Authorities	Vynogradiv Rayon Council
176	UA59	Govt. Offices/Authorities	Vynogradiv Rayon State Administration
177	UA60	Govt. Offices/Authorities	Zakarpats'ka oblast state administration Department of environment
178	UA61	Govt. Offices/Authorities	Zakarpats'kyi geological department
179	UA62	Water Mgm Bodies	Beregovo city department of water management
180	UA63	Water Mgm Bodies	Brusturyans'ke forest and hunting farm
			City communal enerprise
181	UA64	Water Mgm Bodies	«Mukachivvodokanal»
100	11465	W . M . D 1	Communal enerprise of Zhdeniivska
182	UA65	Water Mgm Bodies	village council
102	11466	W . M . D 1	Communal enetrprise «ZhKO Grand»
183	UA66	Water Mgm Bodies	V.Bakta village
184	UA67	Water Mgm Bodies	Communal Enterprise "Burshtynoservis"
			Communal enterprise "Mizhgir'ya
185	UA68	Water Mgm Bodies	Industiral department of water supply and
			housing"
186	UA69	Water Mgm Bodies	Communal enterprise "Vody Solotvyna"
187	11470	Water Mara Dadies	Communal enterprise "Volovets village
10/	UA70	Water Mgm Bodies	«Volivchyk»"
188	UA71	Water Mgm Bodies	Communcal enterprise "Kobyaletske Industiral department of water supply and housing"
			Communcal enterprise "Kobyletske
189	UA72	Water Mgm Bodies	Industiral department of water supply and
			housing"
			Communcal enterprise "Tyachiv
190	UA73	Water Mgm Bodies	Industiral department of water supply and
			housing"
			Communcal enterprise "Vynohradiv
191	UA74	Water Mgm Bodies	Industiral department of water supply and
			housing"
192	UA75	Water Mgm Bodies	Communinal Enterprise «Rozivka»
			Community eneterprise "Komunal-
193	UA76	Water Mgm Bodies	service" Velykoberesnyans'k village
			council
194	UA77	Water Mgm Bodies	Community Enterprise «Komunalnik»
195	UA78	Water Mgm Bodies	Community enterprise Chop Vodokanal
			Community enterprise Uzhgorod
196	UA79	Water Mgm Bodies	Vodokanal



No	Code	SH group	Organization
197	UA80	Water Mgm Bodies	Department of the mountain rivers of
		-	Tisza Rier Management Unit
198	UA81	Water Mgm Bodies	Enterprise «Vodokanal Karpatvis"
199	UA82	Water Mgm Bodies	Irshava City Council communal water enterprise
200	UA83	Water Mgm Bodies	Private Enterprise «Express IP»
201	UA84	Water Mgm Bodies	Uzhgorod city department of water management
202	UA85	Water Mgm Bodies	Vynohradiv city department of water management
203	UA86	Business - significant water users	PJSC «Zakarpatoblenergo»
204	UA87	Business - significant water users	Farm «Konyk»
205	UA88	Business - significant water users	Enerprise «Derenivs'ka kupil'"
206	UA89	Business - significant water users	Agrarian company «Leanka»
207	UA90	Business - significant water users	Agrarian company Yablogrouppe Zakarpattya
208	UA91	Business - significant water users	Enerprise «Perechyn Lisochemical factory»
209	UA92	Business - significant water users	Energy company «Zelena technologia»
210	UA93	Business - significant water users	Enerprise «Voevodino»
211	UA94	Business - significant water users	Enerprise «Lumshory»
212	UA95	Business - significant water users	Resort Krasiya owned by Lviv Railway
213	UA96	Business - significant water users	Enterprise "Uzhanski kupeli"
214	UA97	Business - significant water users	Eneterprise "Recreation sport resort "Zakarpattya"
215	UA98	Business - significant water users	Agricultural society "Bereg-Kochik"
216	UA99	Business - significant water users	Provate enterprise «Zhaivoronok - Pachirrta»
217	UA100	Business - significant water users	Enterprise «Chizai»
218	UA101	Business - significant water users	Farm «Artos»
219	UA102	Business - significant water users	Enetrprise "Kontar"
220	UA103	Business - significant water users	Zakarpattya branch of "Druzhba" gas line
221	UA104	Business - significant water users	Enterprise «Rosynka»



No	Code	SH group	Organization
222	UA105	Business - significant water users	Private Enterprise IP
223	UA106	Business - significant water users	«Borzhava» resort
224	UA107	Business - significant water users	Farm «AMOK»
225	UA108	Business - significant water users	Farm «Mochar IP»
226	UA109	Business - significant water users	Resort "Synyak"
227	UA110	Business - significant water users	Resort "Karpaty"
228	UA111	Business - significant water users	Enetrprise "Zakarpattya fish farm"
229	UA112	Business - significant water users	Private enterprise «Petro Carbo Chem»
230	UA113	Business - significant water users	Farm «Meat world»
231	UA114	Business - significant water users	Fish farm "Zhdymyr"
232	UA115	Business - significant water users	Resort "Sonyachne Zararpattya"
233	UA116	Business - significant water users	Enterprise «Suzir'ya»
234	UA117	Business - significant water users	Resort "Polyana"
235	UA118	Business - significant water users	Enterprise «Kryshtaleve dzherelo»
236	UA119	Business - significant water users	Enterprise «Ploskiv mineral waters factory
237	UA120	Business - significant water users	LLC «BIOTEC»
238	UA121	Business - significant water users	LLC «Energiya Karpat»
239	UA122	Business - significant water users	Private enterprise «Ecobat Shuravi»
240	UA123	Business - significant water users	Private enterprise «Tltctrobud»
241	UA124	Business - significant water users	LLC «RENER»
242	UA125	Business - significant water users	«Novyi riven' 2000» Farm
243	UA126	Business - significant water users	LLC «Shayans'ki mineral'ni vody»
244	UA127	Business - significant water users	«Shayan» Resort
245	UA128	Business - significant water users	LLC «Aquanove development»



No	Code	SH group	Organization
246	UA129	Business - significant water users	LLC «Tepli vody»
247	UA130	Business - significant water users	Resort "Hirs'ka Tysa"
248	UA131	Non-governmental, non-political organizations and institutions - Nature, environment and sports	Beregovo society of hunters and fishermen
249	UA132	Non-governmental, non-political organizations and institutions - Nature, environment and sports	Bureau of environment and health protection
250	UA133	Non-governmental institutions - Nature, environment	Civil organization "Ecosphera"
251	UA134	Non-governmental institutions - Nature, environment	Civil organization "Forza"
252	UA135	Non-governmental institutions - Nature, environment	Civil organization «Clean bank»
253	UA136	Non-governmental institutions - Nature, environment	Civil organization All-Ukraininan Ecological League
254	UA137	Non-governmental institutions - Nature, environment	Civil organization Perechyn
255	UA138	Non-governmental institutions - Nature, environment	International Institute of human and global studies "Noosphera"
256	UA139	Non-governmental institutions - Nature, environment	Rayon city council Irshava hunting and fishing farm
257	UA140	Scientific, educational institutions, protected areas	Carpathian biosphere reserve
258	UA141	Scientific, educational institutions, protected areas	Carpathian forest scientific research station
259	UA142	Scientific, educational institutions, protected areas	National nature park "Synevyr"
260	UA143	Scientific, educational institutions, protected areas	National Nature park "Uzhanskii"
261	UA144	Scientific, educational institutions, protected areas	National Nature Park «Zacharovannyi Krai»
262	UA145	Scientific, educational institutions, protected areas	Regional Landscape Park "Synyak"
263	UA146	Scientific, educational institutions, protected areas	Tyachiv rayon ecological centre for youth



3. Annex B: Overview Table & Responses

The following tables break down the individual comments for identified SWMI (Table 3.1) and proposed Joint Program of Measures within the 2nd draft ITRBM Plan Update 2019 (Table 3.2), together with information on the relevant topics they relate. These comments will be added to the 2nd draft ITRBM Plan Update 2019 as an Annex. Tisza countries shell consider these comments and take individual actions at national level, in line with existing plans and programmes, before submitting the ITRBMP to authorized bodies for official approval.

The tables draw from the online questionnaire described in this report, present collected comments regarding priorities among identified SWMI (in total: 88 comments) and suggestions for additional measured to deal with these issues (in total: 51 comments). In these tables comments are grouped per country.

Table 3.1 Significant Water Management Issues (SWMI)

No	Ref.	Comment: Priorities among SWMI?
	Ukraine	
1	Organic Pollution (Q1) ²	Untreated municipal wastewater
2	Nutrient Pollution (Q2)	Phosphate contamination
3	Hazardous Pollution (Q3)	Discharges from mining operations;Accidental pollution
4	Hydromorphology (Q4)	Flooding,Rivers' continuity
5	Organic Pollution (Q1)	Making wastewater treatment systems in every household, industrial and non-industrial sites
6	Nutrient Pollution (Q2)	Reduction of surface runoff from agricultural and forest lands using current technologies on soil compaction Improvement of urban water management systems
7	Hazardous Pollution (Q3)	Industrial effluents
8	Hydromorphology (Q4)	Agriculture and hydropower also have adverse effects on aquatic ecosystems, as well as hydraulic structures (gas pipelines of gas transportation enterprises) through rivers and streams
9	Organic Pollution (Q1)	Quality of drinking water
10	Hazardous Pollution (Q3)	Industrial effluents;
11	Hydromorphology (Q4)	Stop changing morphology of rivers
12	Organic Pollution (Q1)	Insufficiently treated municipal wastewater from households
13	Hazardous Pollution (Q3)	Discharges from mining operations
14	Hydromorphology (Q4)	River morphology
15	Organic Pollution (Q1)	Problem of runoff pollution from residential complexes due to inefficient treatment constructions
16	Hazardous Pollution (Q3)	Discharges from mining operations
17	Hydromorphology (Q4)	River morphology alterations
	Slovakia	
18	Organic Pollution (Q1)	Eutrophication affecting aquatic fauna
19	Nutrient Pollution (Q2)	Eutrophication of waters and impact on fauna and flora

² Question number

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No	Ref.	Comment: Priorities among SWMI?
20	Hazardous Pollution (Q3)	Impact on fauna, food chains
21	Hydromorphology (Q4)	Flood control
22	Organic Pollution (Q1)	Insufficient cleaning of small sources of pollution
23	Nutrient Pollution (Q2)	Need for strict rules for farmers
24	Hazardous Pollution (Q3)	Insufficient monitoring, so we do not know exactly who
		releases pollutants, concerning type and quantity
_	Romania	
25	Organic Pollution (Q1)	1. Livestock farms,
		2. Agglomerations
26	N	3. Diffuse pollution of agriculture
26	Nutrient Pollution (Q2)	1. Diffuse agricultural pollution
27	H1 D-11-4: (O2)	2. Urban pollution
27	Hazardous Pollution (Q3)	Plant protection products Hormone residues
		Hormone residues Medicinal residues
28	Hydromorphology (Q4)	Neutomar residues Longitudinal barrier facilities
20	Trydromorphology (Q4)	2. Longitudinal filling systems
	Hungary	2. Longitudinai ining systems
29	Organic Pollution (Q1)	Microbiological contamination
30	Nutrient Pollution (Q2)	Agriculture and urban waste water management
31	Hazardous Pollution (Q3)	Monitoring
32	Hydromorphology (Q4)	Interruption of river continuity
33	Organic Pollution (Q1)	Improperly treated wastewater
34	Nutrient Pollution (Q2)	Municipal and industrial - meat processors - contaminants
35	Hazardous Pollution (Q3)	o Ban on cyanide technology,
		Re-cultivation of tailings ponds, tailings pits
36	Organic Pollution (Q1	o Elimination of health hazards
		Reduction of agricultural pollution
		o Improvement of ecological status
37	Nutrient Pollution (Q2)	It needs to be addressed in particular. In order to protect the
		drinking water supply, sewage hills below the settlements must
		be eliminated, organic matter concentration in surface water
		must be reduced and its alternative utilization should be promoted
38	Hazardous Pollution (Q3)	With regard to hazardous substances of industrial origin, the
36	Trazardous Foliution (Q3)	review of industrial technology and alternative solutions
		provide opportunities. Pre-treatment before utilizing rainwater
		is essential in potentially contaminated areas. Otherwise,
		emphasis should be placed on the use of rainwater for irrigation
		purposes, rather than on rapid drainage, which is still a priority
		in municipalities.
39	Organic Pollution (Q1)	Agriculture
40	Nutrient Pollution (Q2)	Agriculture
41	Hazardous Pollution (Q3)	Industrial pollution
42	Hydromorphology (Q4)	Flood protection
43	Organic Pollution (Q1)	1. Untreated sewage
1		2. Agricultural pollution
	N D. H (CO)	3. Improperly treated, purified sewage
44	Nutrient Pollution (Q2)	1. Uncleaned or inadequately treated wastewater.
15	III D-11-4* (O2)	2. Pollution of agricultural origin.
45	Hazardous Pollution (Q3)	1. Industrial wastewater
		Mining pollution River waste
L	I	J. MIVEL WASIE



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ns between wetlands and flooding
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ication sources of pollution
hology
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mai waster waters and waste waters
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er treatment facilities
artificial fertilizers and increasing of
zers (cattle manure) which will result
sion i.e. washing out of nutrients due
he soil
ng and transparency of the results and
nese existing problems
ald be included in all sectoral policies
sional and interdisciplinary approach
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ontinuity
sources are of the same importance
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esticides and other chemicals used in
concludes and other eliciliticals used III



No	Ref.	Comment: Priorities among SWMI?
75	Hydromorphology (Q4)	Interruption of the river continuity
76	Organic Pollution (Q1)	Untreated waste waters from households, industry and agriculture
77	Nutrient Pollution (Q2)	Point sources of pollution
78	Hazardous Pollution (Q3)	Monitoring
79	Hydromorphology (Q4)	Changes of natural hydro-morphological conditions caused by anthropogenic activities i.e. consequences of different hydrotechnical measures
80	Organic Pollution (Q1)	Pollution from the agriculture
81	Nutrient Pollution (Q2)	Diffuse sources of pollution
82	Hazardous Pollution (Q3)	Toxic substances
83	Hydromorphology (Q4)	Effects of hydro-morphological changes of ecology and ecological status of the river (eco)system
84	Hydromorphology (Q4)	Gravel excavations from riverbeds
	Other	
85	Organic Pollution (Q1)	 O Urban population growth, intensive livestock farming are the most important causes of organic pollution, and climate change is worsening the situation. Urban population growth and intensive livestock farming lead directly or indirectly to increased wastewater discharge, thus an increased organic matter load of freshwaters. Self-cleaning capacity of rivers consists of dilution by natural runoff and natural degradation by microorganisms. As a result of climate change severe weather extremities occur nowadays, which reduce the self-cleaning capacity. In drought periods the available water in surface waters is remarkably reduced, while water extractions for irrigation or other purposes grow, hence the water amount in rivers decrease. Higher water temperatures in summer periods not only increase the organic matter concentration in rivers (due to reduced dilution), but intensify eutrophication, with harmful consequences. Furthermore, when intensive rainfalls take place, urban wastewater treatment plants may not have the capacity to take in the significantly higher amount of wastewater and it may be let in the river. Such events can have major negative impact on river or lake ecosystems. Climate change makes these extremities more frequent.
86	Nutrient Pollution (Q2)	 Nutrient pollution is a severe problem in the Tisza basin and there were only a few improvements in the field of reducing diffuse pollution from agricultural production. This should be priority in the future because the nitrogen and phosphorus amount of the fertilizers, which plants can't use, still reach the river. The extent of floodplains is also very low, thus they can't play their filter role. Floodplains' extensions are multifunctional measures and bring solutions not only for nutrient solutions. (See also our recommendations under the other points) Also, washing detergents with phosphorus content are still sold. Source of nitrogen oxide from the atmosphere is growing as a result of the expanding transportation. There was some improvement in biological wastewater treatment with



No	Ref.	Comment: Priorities among SWMI?
		nitrogen and phosphorus removal, but it is still not typical along the Tisza river basin. O In case of severe weather extremities like storms (see above, written at organic pollution questions), wastewater treatment plants may not have proper capacity for taking in the drastically increased amount of wastewater and so it is let in the river — completely untreated. Also there are many calamities along the river (e.g. breakdown of wastewater treatment plants or systems) when the untreated wastewater ends up in the river.
87	Hazardous Pollution (Q3)	 It is quite obvious from the description above that Tisza countries have hardly enough data about the volume of the contamination and the effects of the used priority substances. Gathering enough and proper data should be priority in the future and Polluters pay principle should be applied. We urge to develop proposals how the monitoring should be fully or partially paid by the polluters (industry and agriculture)
88	Hydromorphology (Q4)	o The hydromorphological alterations on Tisza is a priority problem by the opinion of WWF. It is hardly possible to rank them, all that are described above are priority issues (interruption of river continuity, alteration of river morphology, hydrological alterations and impacts of future infrastructure projects) since these are interconnected. In WWF's opinion the hydromorphological alterations have a priority among these ones (compared to the three other significant water management issues – organic and nutrient pollution and hazardous substances). We suggest that managing of the hydromorphological alterations receive high role on basin wide level and cross-border co-operations' opportunities are on the agenda of Tisza countries in the next river basin management cycle. Since the restoration potential along Tisza is significant and the restoration capacity of living rivers is fast, effective pilot works can be implemented in all Tisza countries, not only on Tisza, but also on its tributaries. The hydromorphological problems is an issue where root causes of the problems can be identified by involving the proper stakeholders and together with them the effective measures can be developed and implemented.



Table 3.2 Programme of Measures

No	Ref.	Comment: Any other proposals?
	Ukraine	
1	Organic Pollution (Q1)	Along with the above measures related to sewage and sewage treatment plants; cities require the installation of a system of water absorption, water storage areas to divert rainwater to these areas, not sewage systems.
2	Nutrient Pollution (Q2)	If the measures listed will include measures to increase absorption the ability of soils and landscapes.
3	Hazardous Pollution (Q3)	It is also necessary to shut down / discontinue the production of pollutant companies that are unable to implement more advanced technologies (e.g. Perechyn forestry and similar industries)
4	Hydromorphology (Q4)	Remove all existing artificial barriers to migration not only of fish but also of other aquatic ones organisms.
5	Organic Pollution (Q1)	these measures should be prioritized
6	Hazardous Pollution (Q3)	First of all it is necessary to carry out construction of treatment facilities
7	Organic Pollution (Q1)	EU support in resolving issues
8	Organic Pollution (Q1)	Investments are needed to reconstruct the water supply and sewerage system, and also for new treatment plants
	Slovakia	
9	Organic Pollution (Q1)	Construction of main sewage treatment plants and protection and revitalization of wetlands
10	Nutrient Pollution (Q2)	Protection and revitalization of wetlands in the catchment area
11	Hydromorphology (Q4)	Increase efforts to restore the river continuum by removing barriers on the streams and intensify restoration of trough morphology and lateral connectivity and revitalization of wetlands
12	Organic Pollution (Q1)	The obligation to plan to invest in the construction of WWT into the annual budget of the state and not only to paper
13	Hazardous Pollution (Q3)	To find out who is releasing hazardous pollutants, including type and amount of pollutants.
	Romania	
14	Hazardous Pollution (Q3)	There is no adequate monitoring for hormone and drug residues, so the extent of the problem cannot be estimated
15	Hydromorphology (Q4)	 Accelerated completion of planned work Much more flood plain restoration actions need to be considered and implemented
	Hungary	
16	Organic Pollution (Q1)	Municipal wastewater collection and treatment instead of regional gig investments - residential wastewater collection and treatment
17	Nutrient Pollution (Q2)	Prevention
18	Hazardous Pollution (Q3)	See above
19	Hydromorphology (Q4)	Based on our existing knowledge: water retention water management, wetland habitat program
20	Organic Pollution (Q1)	 Sewerage and wastewater treatment also concentrate the purification of treated wastewater into receivers that have inadequate yields and insufficient dilution water. In addition, water for irrigation is used for agriculture. It is recommended to deal with wastewater utilization in addition to the construction of wastewater treatment plants.



No	Ref.	Comment: Any other proposals?
		This will reduce the burden on the recipients and achieve more sustainable water management. - The drought problem cannot now be ignored.
21	Nutrient Pollution (Q2)	The development of purification technology is not sufficient, in the case of municipal wastewater recycling, near-natural after-treatment is required.
22	Hazardous Pollution (Q3)	There is a need for technological change and reduction of hazardous substances. There is a much higher cost involved in monitoring here.
23	Hydromorphology (Q4)	It would be good to increase water retention at a much higher rate. The current flood plain is only one tenth of the former floodplain. I believe that water retention could be more effective if we can develop water management systems that are much more profitable than traditional arable farming. In this case, farmers would voluntarily join All of this could be greatly assisted by area-based state aid!
24	Organic Pollution (Q1)	It is particularly important to examine the decision-making system
25	Nutrient Pollution (Q2)	The benefits of changing land use should be disseminated, in particular by providing farmers with a detailed and comprehensible description of the economic side and of new land use.
26	Hazardous Pollution (Q3)	They are basically good, but BAT, the development of industrial technology, is one of the mainstream developments, although a complete redesign on ecological principles can be more effective. This may be included in the draft, but I think it will fail.
27	Hydromorphology (Q4)	The best reservoir is land, so altered agricultural tillage should be generalized to minimize the need for reservoirs.
28	Organic Pollution (Q1)	More financial support. Professional operation of cleaning systems, promotion of this. More effective control and enforcement of laws and regulations.
29	Nutrient Pollution (Q2)	Increase the nutrient load charge where a sewage system already exists. Support for custom wastewater treatment.
30	Hazardous Pollution (Q3)	Stricter mining activity. Waste management solution.
31	Hydromorphology (Q4)	 Much more attention has to be paid to the regulation of water courses, since the degenerate riverbed can cause great damage. Water retention in multipurpose reservoirs. State-of-the-art damming system to solve problems of water use, navigation, nature conservation.
32	Nutrient Pollution (Q2)	Unified regulations beyond national borders, monitoring of their compliance
33	Hazardous Pollution (Q3)	Regular water quality monitoring and special measures initiated up to a month
34	Hydromorphology (Q4)	For those no action is taken, export plans should be prepared.
	Serbia (24)	
35 36	Organic Pollution (Q1) Nutrient Pollution (Q2)	Result would be visible if these measures were achieved Awareness raising and training of farmers related to better control of using of fertilizers



No	Ref.	Comment: Any other proposals?
37	Hazardous Pollution (Q3)	Conservation and revitalization of contaminated areas in flooding zones
38	Hydromorphology (Q4)	Intensification of measures for revitalization of flooding areas and wetlands as well as stricter control of water abstraction
39	Organic Pollution (Q1)	Proper legal provisions and capacities for their implementation should be established, especially in non-EU countries
40	Nutrient Pollution (Q2)	Education, dissemination of knowledge,Implementation of economic measures
41	Organic Pollution (Q1)	Introduction of the best practices examples for small treatment facilities and using of the organic substrate as renewable energy source (biogas)
42	Organic Pollution (Q1)	Priorities should be set and clear plan should be define (time and space wise) while the implementation should be supported by proper inspection
43	Nutrient Pollution (Q2)	Measures resulting from existing experiences from other countries should be clearly defined and implemented in all areas
44	Nutrient Pollution (Q2)	Measures for education of agricultural communities should be included
45	Organic Pollution (Q1)	Awareness raising on the needs for reducing pollution in upstream basin areas
46	Hazardous Pollution (Q3)	Wider action to reduce the use of hazardous waste; e.g. excessive use of antibiotics, hormones, etc.; better control of their disposal, both in legal and organizational terms
47	Hydromorphology (Q4)	Measures to prevent gravel extraction
	Other	
48	Organic Pollution (Q1)	(1) Change economic policies – Water use and pollution pricing should reflect more accurately the environmental and social costs. The full recovery of costs of water services is a central target of the Water Framework Directive too. (2) Basin-scale water management should be handled together with climate adaptation measures on national and international level as well. (3) Freshwater availability should be increased – more freshwater from foods should be retained in landscapes by nature friendly measures for human purposes and to enrich the biodiversity of habitats. (4) More active floodplains are needed (by broadening them and to [re]connect new areas), which can function as filters of organic matters in rivers; (5) Raise the environmental awareness of consumers – increase the demand for less water intensive products in order to reduce water stress. (6) Planning of waste water treatment facilities have to consider the growing risk of weather extremities due to climate change. (7) Planning demand management and managing water use conflicts between consumers should include climate change issues (growing risk of droughts, intense floods, flash floods). Consumers have to be incentivized for long term planning and using less water
49	Nutrient Pollution (Q2)	- Yes, the reduction of pollution from using fertilizers in agriculture production is necessary. Measures should be



No	Ref.	Comment: Any other proposals?
		necessary to be implemented to manage the diffuse pollution due to the intensive agriculture production. The implementation of the best available technics is necessary, but not enough and we suggest that the quantity of fertilizers is reduced in Tisza river basin and the use of nature friendly soil management and nutrient replacement techniques (manure, no till technologies, eco farming, sustainable floodplain farming etc.) should be radically increased. No till and nature friendly soil enrichment techniques may help to store more water in the soil. This requires intense communication and cooperation with the agriculture sector. Water management, agriculture and nature conservation sector have to find integrated measures and set the necessary conditions for identifying and implementing measures in the Tisza countries. By WWF opinion these sectors should all agree that the harmful effects of the diffuse nutrient pollution can be managed by at least two ways. (1) Providing incentives for farmers to use soil enriching and water retaining, and (2) environment friendly techniques should be a high priority in the 2020–2027 Common Agricultural Policy. The implementation of the measures proposed by the JOINTISZA final document is necessary, but the reduction in diffuse pollution is a key for reducing the pollution on basin level too. The directives and the national regulations are necessary, but not enough and the proper implementation and the control should be joint expectations of water management bodies. Recommendations (both nationally and internationally): (1) Urgent improvement of wastewater treatment plants with nitrogen and phosphorus removal on the whole Tisza basin (2) Replacement of chemical fertilizers with biological techniques like cover crops, no till technologies, manure use. The extent of ecologically farmed areas and managed by sustainable floodplain farming should be increased. (3) Larger floodplains should be given back to the river with land use (see the previous point), because beside their ma
50	Hazardous Pollution (Q3)	The measures proposed are very obvious ones and should have started and been implemented for years. We do suggest that not only proposals are developed for the necessary measures, but strategy is developed how the responsible sectors are tackled and involved into the implementation of the measures, development of a monitoring program and paying for the monitoring. The risk of using hazardous substances is significant and reducing this risk is an overriding public interest. That's why solving this risk on basin level should be implemented by involving the responsible sectors.



D 4	
Ref.	Comment: Any other proposals?
Hydromorphology (Q4)	Reducing the interruption of river continuity is a priority on Tisza and on its tributaries. We suggest that those barriers are removed or made passable that have the most serious effects on the migration of sh or on sediment balance. The priority list of barriers (based on their harmful effects) should be developed on Tisza basin level and measures need to tackle them in priority order. Many measures are possible, we strongly suggest that if fish migration aids are applied, these should always be functioning. We see low ambition to improve the hydromorphology based on the proposed measures. Measures are planned only on 5 water bodies to improve river morphology and no measures will be taken in 50+29 ones. That is very low ambition, WWF do suggest increasing the number of river restoration measures. The reconnection potential of wetlands is significant, but only 1655 hectare is planned to be reconnected after 2021. A significant paradigm shift is necessary to exploit the reconnection potential and give more space for the river in the landscape. The 1655 hectare is a very small size comparing it the whole Tisza basin and even if it is compared to the reconnection potential. WWF does suggest making steps for the reactivation of the morphological floodplains that are outside the flood protection dykes. River restoration and reconnection could be key measures of climate change adaptation. These measures are anyway multifunctional ones. The impoundments have also huge capacity, where WWF suggests implementation of natural water retention measures. This has the highest potential positive impacts on the status of the river morphology, and species or habitats in the adjacent floodplain. The water abstraction has relatively small effect on the hydromorphology and relates more to water quantity issues. The volume of the water abstraction should always consider the minimum ecological water demand of habitats along the river.
	Ref. Hydromorphology (Q4)

For the analyses and conclusions relevant for the entire Tisza River Basin comments related to both, the SWMI as well as the JPoM, are clustered and results explicitly presented in Annex C, chapters 2.2.2 and 4.2.3.

Results of the online questionnaire show that considering the entire Tisza River Basin, 96% of participants see both organic and nutrient pollution as an important water management issue, while positive answers come from 85% of participants regarding hazardous pollution and 92% regarding hydromorphology

Being asked to prioritise identified SWMI, participant suggested following list of issues:

- Regarding organic pollution (OP) municipal wastewater treatment is considered as the most important one, followed by agricultural activities;
- O Agricultural activities and treatment of sanitary water are identified as the most important ones when dealing with nutrient pollution (NP),
- o For Hazardous pollution (HP) industrial contamination and lack of proper environmental monitoring and control are identified as the most important issues, being followed by minig and agricultural activities.
- O Hydromorphological alterations are highlighted as the priority that impacts status of examined water bodies in the entire basin, then presence of hydrotechnical structures and



river training, as well as flood management activities.

As for proposed joint programme of measures (JPoM), 93% of participants think that measures proposed to achieve good status related to organic pollution are sufficient, positive answers come from 70% of them consider nutrient and hazardous pollution, while only 54% are confident regarding hydromorphology.

In relation to additional measures to be introduced aimed to improve or preserve current water status results participant were underlining following:

- Regarding organic pollution (OP) an enhancement of legal and institutional framework is underlined as the most important one, then measures related to the management of municipal wastewaters, capacity building and education activities, followed by economic measures and strengthening of legal and institutional settings;
- Nutrient pollution (NP) related measures, an improvement of water management practice and decision-making processes are considered as the most required ones, followed by development and enhancement of agricultural measures,
- O Hazardous pollution (HP) related measures connect an improvement of water management practice and decision-making processes as the most required ones, followed by a need for an urgent upgrade of the existing monitoring practice and
- O Hydromorphology issues should be treated by wider introduction of natural water retention measures being followed by a variety of measures focusing on the improvement of existing hydro-morphological alterations in the Tisza river Basin

All participants consider water quantity as an important issue for the entire Tisza River Basin, while 96 % believe it should be introduced as another SWMI in the future. Regarding present water status one third of applicant consider achieved results as good, one third does not know, while the rest believe water status should be much better.



4. Annex C: Online Questionnaire's Results

4.1 Online questionnaire

In the online questionnaire JOINTISZA Project aimed to gather the opinion and recommendations of different stakeholders about the problems and solutions of the Significant Water Management Issues and thus the ITRBMP update 2019.

In total, 27 people filled in the questionnaire for the four Significant Water Management Issues (SWMIs) which are the main pressures and can affect the status of surface water bodies focused in ITRBMP update 2019. Questions and data can be found in the Annex C of this report.

4.1.1 Ukraine

In Ukraine, all participants think organic and nutrient pollution are important issues and all, except one, trust that the proposed measures are enough to achieve good status, while for pollution caused by hazardous substances, 60% believe it is an important issue in the Tisza River Basin, whereas 80% think that the proposed measures are enough to achieve good status. As for hydromorphology, 80% think it is an important issue and proposed measures are enough to achieve good status.

All participants see also water quantity as an important issue that should be among SWMIs in the future, with priorities given to: (i) accidental pollution due to flooding, (ii) impacts of climate change on low water flow and (iii) pollution from human agglomerations, industrial activities and agricultural practices. Currently achieved status of water bodies in the Tisza river basin is considered mostly as moderate result (60%), 20% believe it should be much better and 20% does not have enough information to make any conclusion.

Talking about other issues to be considered important in the Tisza River Basin, participants have listed: (i) insufficient funding for the RBM Plan activities, (ii) integrated management approach, taking into consideration all natural resources and landscapes and evolving specific measures for each defined catchment and sub-catchment, depending on their size, landscape elements and economic development to identify all land users within each catchment and sub-collection and (iii) household waste management.

4.1.2 Slovakia

In Slovakia, all participants think organic and nutrient pollution are important issues and all, except one, trust that the proposed measures are enough to achieve good status, while for pollution caused by hazardous substances, 50% believe it is an important issue in the Tisza River Basin, whereas all think that the proposed measures are enough to achieve good status. As for hydromorphology, all think it is an important issue and 50% see proposed measures being enough to achieve good status.

All participants see also water quantity as an important issue that should be among SWMIs in the future, with priorities given to: (i) drought and lack of water, including climate change, (ii)



insufficient use of water retention and (iii) necessity to involve municipalities and foresters in related activities. Besides, they think that the currently achieved status of water bodies in the Tisza river basin is good.

4.1.3 Romania

In Romania, all participants think that all four identified SWMI are important and all, except one, trust that the proposed measures are enough to achieve good status. All participants see also water quantity as an important issue that should be among SWMIs in the future, with priorities given to: (i) hydromorphological problems caused by flood protection measures, (ii) loss of wetlands, (iii) excessive water abstraction, (iv) increased irrigation and (v) climate change. Currently achieved status of water bodies in the Tisza river basin is considered as good (50%) vs moderate (50%), while deforestation of the Tisza meadows is mentioned as another important issue to be considered too.

4.1.4 Hungary

In Hungary, organic pollution and hydromorphology are considered as important issues by 87.5% of participants, while nutrients and hazardous substances are underlined by all participants. Measured proposed to achieve good status related to organic and hazardous substances pollution are assessed enough by 50% of participants, while for nutrient pollution that percent is 62.5%. Only 25% of applicants see measures related to hydromorphology as sufficient to achieve good status in the Tisza River Basin.

All participants see water quantity as an important issue where 87.5% think it should be among SWMIs in the future, with priorities given to: (i) proper management of flood risk, followed by drought and water scarcity management, (ii) decrease of low and average water discharges (iii) solid waste management, (iv) accidental pollution, (v) increased surface and ground waters abstraction and (vi) loss of wetlands. Currently achieved status of water bodies in the Tisza River Basin is considered as a good result by 50% of participants and moderate by 25%; while 12.5% believe it should be much better or not enough information have been available to make any conclusion.

Talking about other issues to be considered, participants have listed: (i) land use and spatial planning, (ii) need for a new water management in the Tisza River Plain, (iii) democratization of water decision-making and involvement of researchers and (iv) competitive uses of water in agriculture.

4.1.5 Serbia

In Serbia, organic and nutrient pollution and hydromophology are considered as important issues by all participants, while app. 89% consider pollution caused by hazardous substances important. Similarly, app. 78% trust that proposed measures are enough to achieve good status related to organic pollution, hazardous pollution and hydromorphology, while measures proposed for reducing problems caused by nutrient pollution are sufficient for 89% of applicants.

All participants see also water quantity as an important issue that should be among SWMIs in the future, with priorities given to: (i) droughts and water shortages, (ii) floods and droughts, (iii) water quality and quantity and (iv) impact of climate change. Currently achieved status of water bodies in the Tisza river basin is considered as good result (67%) and moderate by 22%, while



11% believe it should be much better.

Talking about other issues to be considered, participants have listed: (i) pollutions in the Tisza River sub-basins and (ii) proper land use and spatial planning.

4.1.6 Other

Basin wide aspect is commented by one applicant underlining that all four issues (organic, nutrient and hazardous substances pollution, as well as hydromophology) are important while no measures are enough to achieve good status.

Water quantity is underlined as an important issue that should be among SWMIs in the future, with priorities given to: (i) water scarcity, (ii) land use change and strategic approach in management of natural water retention, (iii) climate change impact on the low water flows. Currently achieved status of water bodies in the Tisza river basin is considered as moderate result.

Talking about other issues to be considered, it's listed: (i) Waste management systems to be quickly improved on the upper part of the catchment. (ii) Cross-border and harmonized cooperation would be necessary in this issue; (iii) data exchange and information flow among countries need to be improved on emergency contamination of the Tisza and mainly on its tributaries. (iv) Strategic approach in involving all relevant sectors, participating in the planning and implementation process. (v). Avoiding risky infrastructure developments along the river is necessary to prevent deterioration.



4.2 Basin wide graphical analysis

4.2.1 General Questions

Figure 1. Country

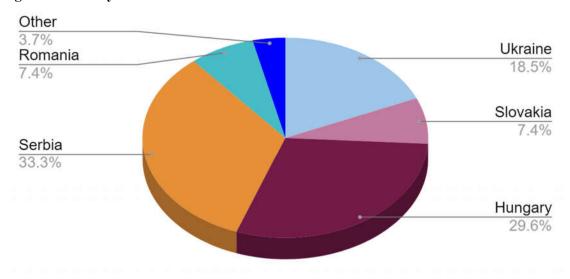


Figure 2. Stakeholder groups

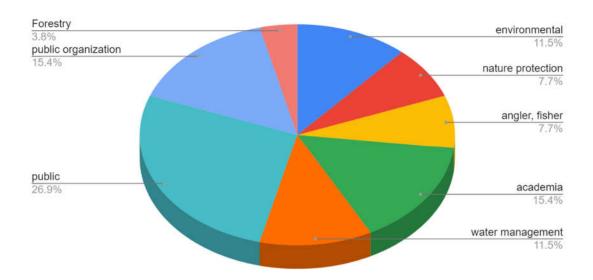




Figure 3. How many people's opinion is represented by you?

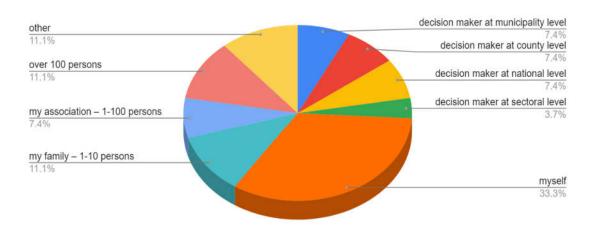


Figure 4. What is your source of income?

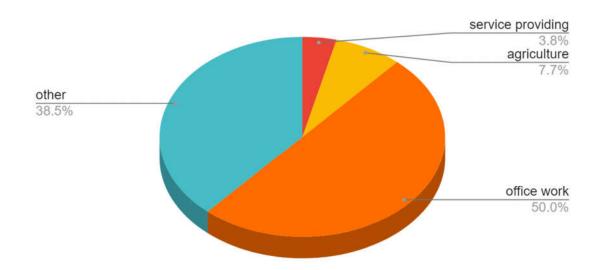




Figure 5. Level of Education

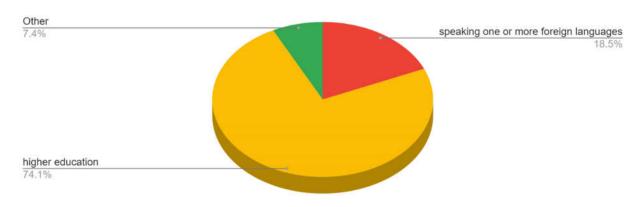
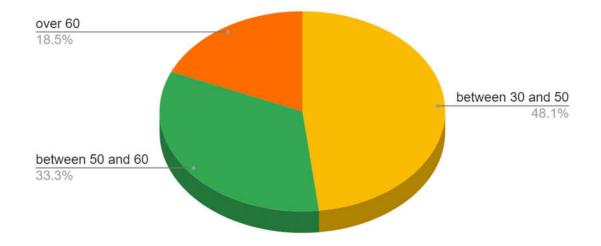


Figure 6. Age





4.2.2 Significant Water Management Issues (SWMI)

1) Organic pollution

Figure 7. Do you think organic pollution issues considered in the report important?

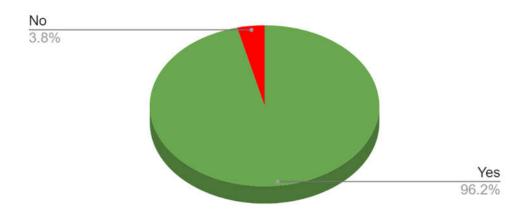
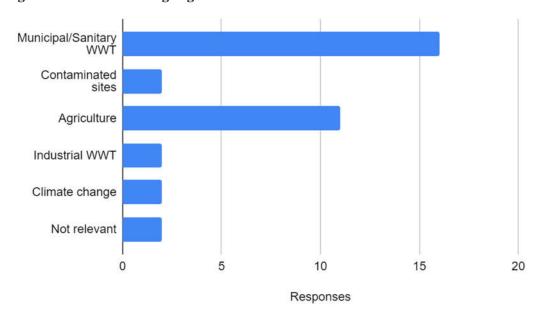


Figure 8. Priorities among organic Pollution





2) Nutrient Pollution

Figure 9. Do you think nutrient pollution issues considered in the report important?

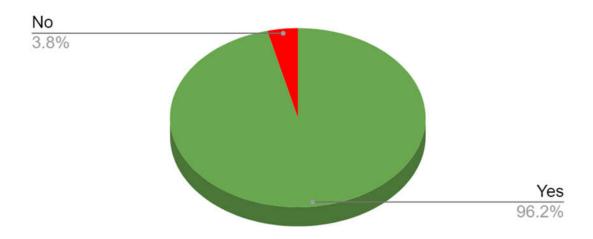
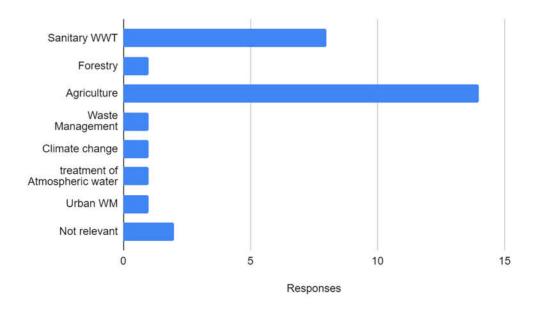


Figure 10. Priorities among nutrient Pollution





3) Hazardous Pollution

Figure 11. Do you think hazardous pollution issues considered in the report important?

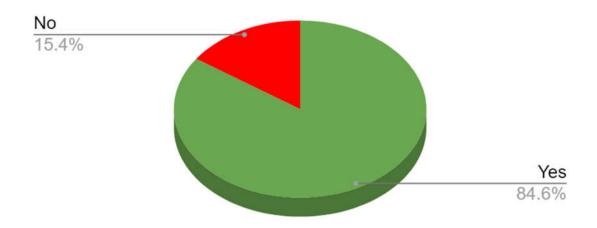
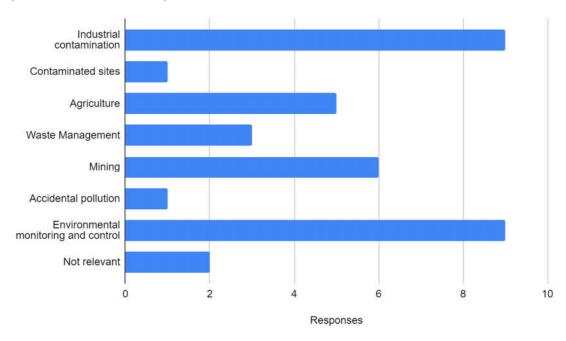


Figure 12. Priorities among hazardous Pollution





4) Hydromorphology

Figure 13. Do you think hydromorphological pollution issues considered in the report important?

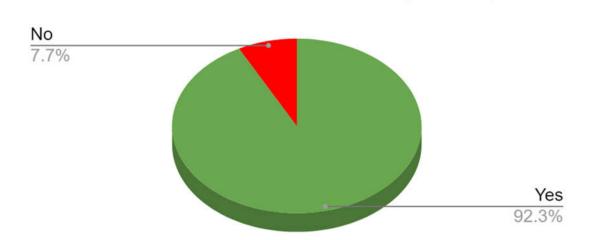
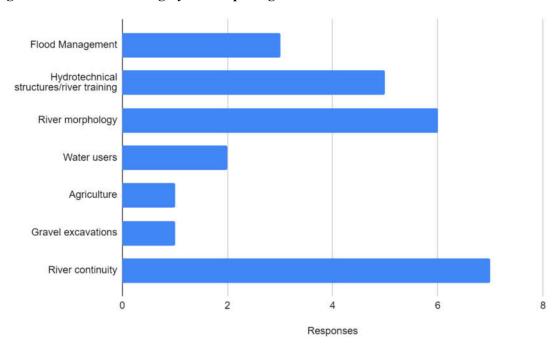


Figure 14. Priorities among hydromorphological alterations

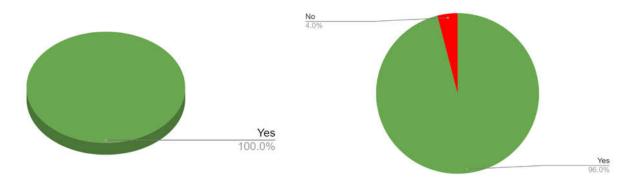




5) Water quantity

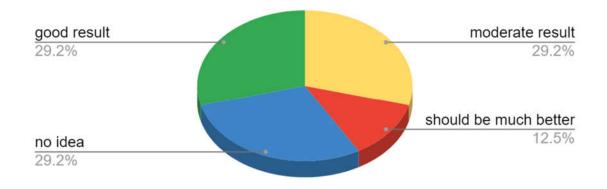
Figure 15. Do you think water quantity issues considered in the report important?

Figure 16. Water quantity to be among SWMIs in the future?



6) Water Status

Figure 17. Do you think it is a good result?





4.2.3 Program of Measures

1) Organic pollution

Figure 18. Do you think those measures are enough to achieve good status related to organic pollution?

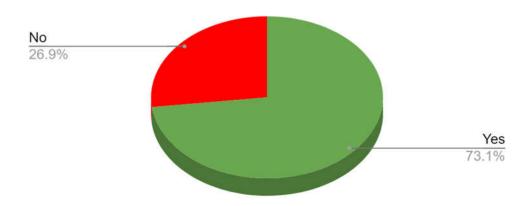
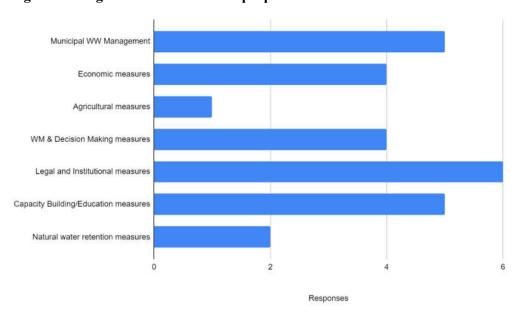


Figure 19. Organic Pollution – other proposals





2) Nutrient Pollution

Figure 20. Do you think those measures are enough to achieve good status related to nutrient pollution?

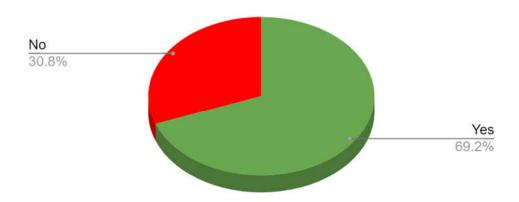
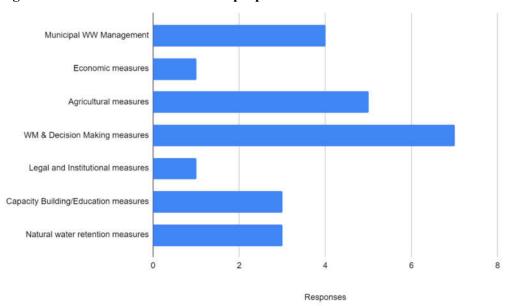


Figure 21. Nutrient Pollution – other proposals





3) Hazardous Pollution

Figure 22. Do you think those measures are enough to achieve good status related to hazardous pollution?

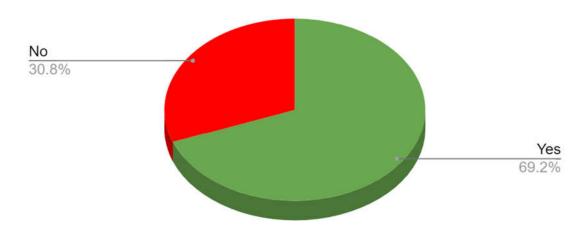
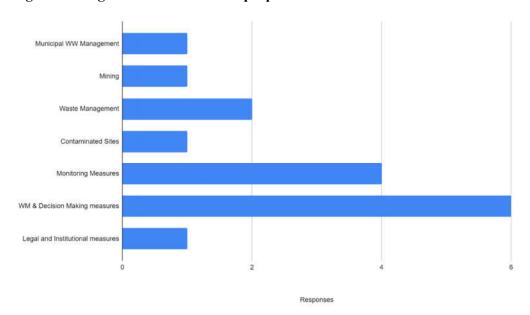


Figure 23. Organic Pollution - other proposals





4) Hydromorphology

Figure 24. Do you think those measures are enough to achieve good status related to hydromorphological alterations?

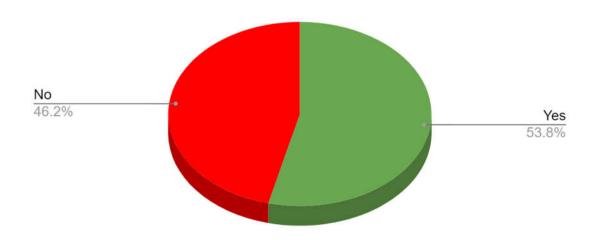
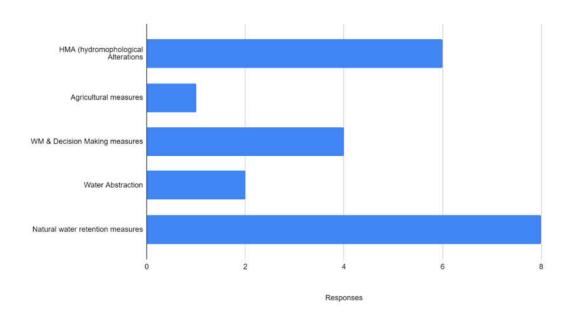


Figure 25. Hydromorphological alterations – other proposals





5. Annex D: On-line Questionnaire's responses



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Project co-funded by the European Union (ERDF, IPA funds)

Partners: General Directorate of Water Management, Hungary | Global Water Partnership Central and Eastern Europe, Slovakia | International Comission for the Protection of the Danube River, Austria | Ministry of Environment, Water and Forest, 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 | The Jaroslav Černi Institute for the Development of Water Resources, Serbia | Water Research Institute, Slovakia | World Wide Fund for Nature Hungary

Associated Partners: Interior Ministry, Hungary | Republic of Serbia Ministry of Agriculture and Environmental Protection – Water Directorate | Secretariat of the Carpathian Convention (SCC), Austria | State Agency of Water Resources of Ukraine | Tisza River Basin Water Resources Directorate, Ukraine

