Deliverable 5.4.1
Report on Danube River Basin stakeholders workshop related to future actions and agreed deadlines on Danube wide level

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

Work Package (WP)	WP5: Danube Floodplain Guide
Activity	Activity 5.4
Deliverable	D 5.4.1 Report on Danube River Basin stakeholders workshop related to future actions and agreed deadlines on Danube wide level
Activity-leader	NARW
Deliverable prepared by	NARW based on the Output 5.3 Floodplain restoration/preservation action plan
Involved partners	All project partners contributing to the Output 5.3 Floodplain restoration/preservation action plan and D.3.2.1 Priority list with potential preservation and restoration areas (based on-FEM-tool).
Connection with other deliverables/outputs	Output 5.3, D. 3.2.1

Table of Contents

Introduction....4

1st International Stakeholder Workshop....4

2nd International Stakeholder Workshop....5

Stakeholder involvement within Danube Floodplain Project....7

Action plan for Danube Floodplain project pilot areas and to be considered in the restoration process of active and potential floodplains....16

Introduction

Deliverable D 5.4.1 Report on Danube River Basin stakeholders workshop related to future actions and agreed deadlines on Danube wide level contains taken steps for realization of floodplain restoration projects both on Danube basin wide and national level in order to implement a successful integrative floodplain restoration and management in the Danube basin countries after the Danube Floodplain project end.
In this respect, in order to ensure the acceptance of future actions relating to an integrative approach on flood risk management, the permanent involvement of the stakeholders is highly important.

This consultation process have held during the project life but also after project end by key project outputs (Manual, Strategic Guidance and Roadmap) dissemination on various way in the pilots and in prioritized areas having high potential to be restored taking into account their technical and ecological potential while contributing to flood risk mitigation.
These prioritized areas will be considered in Flood Risk Management and River Basin Management Plans finalization process at national and Danube River Basin level.

*
* *

In the process of drawing the Floodplain restoration/preservation action plan, two international stakeholder meetings have held, one in 2020 and other in 2021. Due to the evolution of the COVID-19 pandemic event both meetings have held online via zoom.

1st International Stakeholder Workshop

First International Stakeholder Meeting took place on 15-16 October 2020 from Munich (Germany) and was organized by Technical University Munich.
The meeting hosted strategic international-level stakeholders across five countries from the upper regions of the Danube River Basin: Austria, Czech Republic, Germany, Slovakia, and Slovenia. The goal of the meeting was not only to inform the stakeholders about the state of the project and its preliminary results, but also to use this opportunity to get feedback on the methodologies before the end of the project. The results related to the restoration of floodplains in the Krka and Morava pilot areas were presented, as well as the achievements at the river basin level.

Project partners from many institutions presented the project's results: Technical University Munich, National Administration Romanian Waters, Catholic University

Eichstaett-Ingolstadt, University of Natural Resources and Life Sciences from Vienna (BOKU), Slovenian Water Agency, Morava River Basin Authority, and WWF Hungary.
The meeting was attended by 52 participants from 24 institutions (water authorities, NGOs, research field, engineering and education).
On the first day, the stakeholders also had the chance to attend presentations of connected projects, i.e. the Interreg Danube Sediment project, presented by M.Sc. Markus Reisenbüchler, and the PHUSICOS project, presented by Dr. Aude Zingraff-Hamed. Moreover, a stakeholder engagement session was also organised by BOKU to get feedback regarding the Floodplain Evaluation Matrix methodology.
On the second day, local project partners presented the results of hydrodynamic modelling in the pilot areas Morava (Czech Republik and Slovakia) and Krka (Slovenia). Then, three presentations were given on the topics of ecosystem services (ESS) mapping, decision making through cost-benefit analysis and ESS monetization, the resulting feasibility studies conducted of practical interventions and restoration approaches based on successful implemented restoration projects, helping practitioners to develop win-win measures in the Danube River Basin in the future.

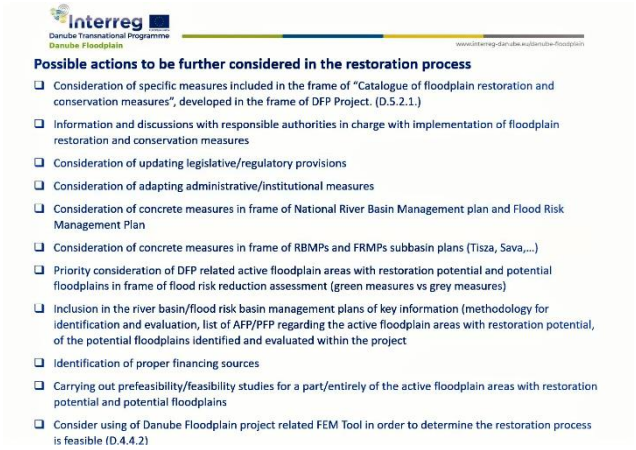
The event contributed to the creation or reinforcement of a network of stakeholders that are interested in the topics of habitats restoration, flood risk management, and nature-based solutions. Their cooperation is very important regarding the planning and realization of projects related to integrative water management through restoration of floodplains, combination of grey and green infrastructure, and natural retention measures.

2nd International Stakeholder Workshop

The second International Stakeholder Meeting was organized by the National Administration Romanian Waters from Bucharest in 22-23 September 2021.
The second International Stakeholder workshop was attended mainly by the stakeholders from the Lower Danube countries and had as objective the consultation of the draft form of the Floodplain restoration, preservation action plan (the Roadmap).
The meeting was attended by 51 participants from 26 institutions (water authorities, NGOs, research field, engineering and education).
There were presented measures and hydraulic simulation results from three pilot areas. Middle Tisza, Begečka Jama and Bistret and mapping and assessment the ecosystem services results also from Bistret by Middle Tisza Water Directorate, Jaroslav Cerni Water Institute and National Administration Romanian Waters.

The Roadmap includes the agreed next steps towards realizing future floodplains restoration projects at Danube basin wide and national level and includes two parts: one is the action plan for implementation of the measures defined in the (pre-)feasibility studies of the pilot areas as results of the detailed multi-criteria analysis and the second, an action plan for elaboration of (pre)feasibility studies of priority sites prioritized within the project.
In this second International Stakeholder workshop there were presented also other two important outcomes of the project, the Manual for floodplain preservation and restoration and the Strategic Guidance (the brief form of the Manual).
During the International stakeholder meeting some important issues emerged:

- Mr. Igor Liska from the ICPDR Secretariat underlined the necessity to integrate the Roadmap and other outcomes of the Danube Floodplain project results into the Danube Flood Risk Management Plan and the Danube River Basin Management Plan until the beginning of November 2021, both plans would be adopted officially in the beginning of December by the Head of Delegations;
- beside active floodplain restoration, how the second roadmaps of the potential restoration sites could be synchronized somehow with the river basin management plans and the flood risk management plans;
- now we will have the roadmap, will have different actions in placing implementing during the next years, it is also the suggestion to include something that the monitoring of this result from that activities could be embedded in the next actions. So after for example five years to know what was happening with those actions, and how should we proceed further with those actions, if there is other blockages, risks and so on for each project, because these type of projects are not very easy to implement and are coming with high risk from different levels, legal, land ownership, and so on. These type of activities probably will be useful to monitor the implementation and to adjust them during the next period of time;



- the financial aspects are very important for implementing the restoration projects (in some national recovery and resilience plans, there is some budget for the restoration measures, but it is called for these green measures to be localized in respective countries);

- in Hungary two stakeholder meetings

will be organized on the Middle Tisza pilot area by WWF-HU, one of them on 5th of October 2021 and another one in 14th of October 2021. Results of these two meetings are integrated in the final draft material. Project results and activity of WP6 A6.1 will be presented here, including selection criteria of the pilot area, 2D hydrological, potential vegetation modelling and cost benefit analysis.

These stakeholder meetings contributed to the development of a network of stakeholders that are interested in the topics of floodplain restoration through an integrative flood risk management with habitats restoration and nature-based solutions. The cooperation among stakeholders and converged interests are essential for a successful floodplain restoration projects in the future.

Stakeholder involvement within Danube Floodplain Project

Danube Floodplain Project aimed to involve various stakeholders from the beginning of the project, not just to inform about the project, its outputs and deliverables, but to increase the knowledge about floodplain restoration and to improve cooperation between different sectors (like water management, agriculture and nature protection).

The main objective for engaging stakeholders in Danube Floodplain project **was to achieve a shared understanding of the project results and implementation at both national and basin level, as well as an improved implementation process, improved feedback and data collection.**

Based on the input from all project partners, the objectives of engaging stakeholders in Danube Floodplain project were: to raise interest for the project at national and regional levels, to involve

different groups of stakeholders into the process of floodplain restoration and preservation to properly select and evaluate potential floodplain areas in the pre-selected pilot sites, to promote the "win-win" measures (measures to achieve the objectives of both EU Floods Directive and EU Water Framework Directive) at national level, to promote the floodplain restoration measures as a mean for flood risk reduction to the broader stakeholder groups at national level and to increase awareness on the issue, to ensure wider involvement in the development of the final project documents, to improve the stakeholder cooperation in future floodplain management at national and river basin level, to support the final project results/outcomes, to provide ongoing information about the project, to raise interest about the topic of flood risk, to raise interest about the topic of floodplain restoration and show the benefits of floodplains for both humans and habitats, to raise interest (and promote possible application) about new methods developed for the analyses implemented under the project (scientific aspect), to collect input from stakeholders on not known past and ongoing projects, methods, data availability, experts consulting, to collect and develop possible ideas for follow-up projects.

A Stakeholder Engagement Strategy was made aiming to produce a practical stakeholder engagement guide for all partners in Danube Floodplain project. It provided practical guidance, advice and information points for the partners interested in how to make stakeholder engagement more effective and beneficial for the project.

First series of stakeholder workshops in pilot areas were held in 2019.

Various target groups from different interest fields took part in the workshops. Depending on the pre-selected pilot area, representatives from local, regional and national public authorities, from sectoral agencies, from interest groups including NGOs, from higher education and research, from international organizations and from General public participated.

The number of participated groups varied between 12 (Krka) and 32 (Middle Tisza). The large number of groups participating in the workshop of the Middle Tisza workshop results from the high number of participating regional authorities (14), mainly district water management directorates (9). In contrast, in most other workshops only 2 regional authorities were present. No regional public authority participated at the workshop at Morava River. In two of the five pre-selected pilot areas no researchers or participants of higher education were present. The high number of participated local public authorities in Romania is an indication that there is a high need for action in the Bistret region in order to improve the flood protection situation as well as the economic situation. There was also a great deal of interest from various representatives of NGOs in Serbia (Begečka Jama) and Hungary (Middle Tisza). In Serbia, there were representatives from the fishing, tourism and forestry sectors. In Hungary, the workshop was attended by representatives of agriculture, spatial development, water management planning, tourism, energy and nature conservation. On the Krka and the Morava, mainly national authorities took part in the workshop. Additionally, there was one more target group (general public) participated in the pilot area Krka and Begečka Jama, citizens of neighboring villages took part on the workshops.

The participants came from different sectors like water management, nature conservation and protection, fishery, forestry and agriculture, from the field of spatial development, natural sciences, and engineering as well as representatives and citizens from neighboring municipalities.

Representatives of the natural sciences were biologists, ecologists, geographers and hydrologists. Only one representative from each of the hunting, waste water and civil engineering sectors was represented in a single pilot area. Even agricultural sector was sparsely represented and only in two pilot areas, although agricultural land in all pilot areas is affected by the planned measures.

A total of 204 people took part in those five workshops. Representatives from 12 different sectors took part in the workshop, respectively: water management, nature conservation and protection, fishery, citizens, forestry, agriculture, natural science, tourism, spatial development, energy, flood defence and disaster management, waste water management, hunting, civil engineering. The largest participation was in Middle Tisza (71), then Morava (41), Bistret (38), Begecka Jama (37) and Krka (17).

The second series of workshops were held in 2020 online or with significant reduced physical presence due to the covid-19 event evolution.

A stakeholder meeting was held on 10 September 2020 in Szolnok, (Hungary) jointly organized by the Central Tisza Region Water Directorate and the University of Szeged, Department of Physical Geography and Geoinformatics. During the meeting, the results related to the revitalization and rehabilitation of floodplains in the Middle Tisza Pilot area since the beginning of the project were presented to the stakeholders and the press.

Through the presentations, the stakeholders were given an overview of the tasks performed so far related to each work package. The speakers highlighted the importance of optimizing floodplain land use. The eradication of invasive species is of paramount importance from both a flood and nature conservation point of view, as invasive plants significantly increase the roughness of the floodplain and thus the risk of flooding.

In the review meeting, the stakeholders and the press were able to get detailed information's about the CBA analysis of the feasibility of practical interventions and the economic evaluation of ecosystem services on the example of a pilot floodplain area. During the fieldtrip related to the stakeholder meeting, the participants were able to view the results of an already implemented floodplain rehabilitation, which serves as a model for the planned interventions (land use changes) in the Fokorú-puszta area as a pilot area in the Danube Floodplain project.

During the meeting, the stakeholders were given the opportunity to express their questions and opinions. The Hungarian Fishermen's Association asked the speakers about the possibilities of floodplain fishing, while the representative of WWF Hungary asked the speakers about the eradication of invasive species.

A press trip was organized by WWF Hungary and Kötivizig on 22 June 2021 to the Hungarian pilot area, Fokorúpuszta by the River Tisza, near Szolnok. Local and national press participated together with local authority representatives.

Construction works have already started at Fokorúpuszta based on the complex floodplain reconstruction analysis which has taken into consideration the decrease of flood risk and ecological benefits. The works at Fokorúpuszta include dyke relocation, wetland restoration and land rehabilitation. When works have been completed, this area is going to be a good example of further floodplain reconstruction projects not only by the River Tisza, but also by other rivers.

In the current foreshores, flood perspectives have to be considered. Land structure characteristic to the foreshores – forests, meadows, pastures, sidearms among which forests have become dominant – provide excellent opportunity. The original mosaic structure supports more the flood security. Along the Middle Tisza these perspectives prevail, as a result of ten dyke relocations almost 1500 hectares have become again foreshores, providing such amount of space to the river.

In Hungary we have lost more wetlands than the global average during the last one hundred years. Nevertheless, these diverse habitats play an important role in climate regulation. Especially in Hungary where due to climate reasons more water evaporates than falling down as rain. Wherever possible, we have to give the rivers back their floodplains. This is beneficial not only for nature, but for society and farmers. Participants also visited Bivaly-tó, which has been restored 15 years ago and now a thriving floodplain.

The 2nd stakeholder meeting was organized in two parts in Hungary by WWF Hungary and KÖTIVIZIG. The first part was organized for farmers on 5 October, while the second part aimed authorities and regional asset managers on 14 October. The results of the Danube Floodplain project were presented to the stakeholders with special focus on the pilot area located near Tiszaföldvár, Martfű and Cibakháza.

On 5 October 2021 stakeholder meeting in Szolnok, Hungary was organized aiming at involving farmers to give inputs about their needs and experiences about the lack of water on the area. Participants first listened to presentations which showed various possibilities of water supply on this former deep floodplain area. It could improve long drought conditions of the area. As no infrastructure is present on the area, it would be technically possible to make the floodplain active again.

In case of floodplain activation the area could serve the mitigation of catastrophic flood events and with setting up a water supply system smaller floods could serve as water supply in drought periods.

Various possibilities of advantageous land use change were also presented – from a possibility of conservation of current land use structure but with an adaptation of hygrophilous crops through applying plants and trees or wetland which break up monotony of intensive cultures, improving biodiversity and water balance.

In the second part of the event a very active discussion followed where the present farmers spoke about their problems which are in connection with area payments: EU CAP doesn't support those areas which are inundated, they need to irrigate but irrigation channels don't work. They would not do any agricultural activity there if the area would be an active floodplain again.

Summarizing the outcome of the event, people would like the idea of any water supply but Common Agriculture Policy (CAP) must serve the new land use system.

On 14 October 2021, participants first listened to presentations which showed various possibilities of water supply on this former deep floodplain area. It could improve long drought conditions of the area. As no infrastructure is present on the area, it would be technically possible to make the floodplain active again.

In case of floodplain activation the area could serve the mitigation of catastrophic flood events and with setting up a water supply system smaller floods could serve as water supply in drought periods.

Various possibilities of advantageous land use change were also presented – from a possibility of conservation of current land use structure but with an adaptation of hygrophilous crops through applying plants and trees or wetland which break up monotony of intensive cultures, improving biodiversity and water balance.

Hereinafter, role of cost-benefit analysis with an integration of certain, monetizable ecosystem services was presented.

Modelling results of potential natural vegetation of the area could be helpful in planning of new land use system and also in showing location of new xerophytic or hygrophilous associations since after the alterations and the restorations the water surplus is not obvious on the whole area.

At the end representative of the chamber of agriculture in Hungary gave an insight about new possibilities in financial support of outlined water retention activities.

In the second part of the event a very active discussion followed and this focused on verifying the feasibility of the technical solutions from water directorate land ownership and nature conservation perspective. All authorities are working under current legal conditions and could not change the whole structure at once. A step by step solution is needed where the first step would be to make this land use type to be supportable.

Related to Krka pilot area, Slovenian Water Agency, in cooperation with the Municipality of Kostanjevica na Krki, organized an Online Stakeholder Workshop on scenarios for flood risk reduction in the pilot area Kostanjevica na Krki on 2nd of October 2020. More than 30 attendees from 15 institutions participated at the meeting which was the 2nd official stakeholder meeting of the Danube Floodplain project.

During implementation of the Danube Floodplain project, three scenarios for the purpose of flood risk reduction were developed.

- Scenario 1 - combination of a corridor enabling floodplain activation, and measures to increase water conductivity in the river bed through Kostanjevica, thus lowering water levels within the settlement.
- Scenario 2 – a wider combination of a corridor enabling floodplain activation, and measures to increase water conductivity in the river bed through Kostanjevica, thus lowering water levels within the settlement.

Based on the results of the hydraulic simulations of the scenarios, scenarios 1 and 2 have no significant impact on the flood hazard in Kostanjevica.

- Scenario 3 – here we tried to combine several approaches to get a confirmation, if quite extensive measures can assure any result in lowering water levels within the settlement. Scenario 3 includes construction of the bypass channel, construction of levees, elevation of the road between the floodplain and the settlement, construction of dams (for inflow from the Krka river to the floodplain and outflow from the floodplain downstream of the Kostanjevica na Krki), and some other necessary infrastructure measures. But, no matter how we tried, we could not assure the desired results in flood risk reduction only or mostly with the additional activation of the floodplains.

Namely, the floodplains along the Krka river and in the Krakovski forest are already rather active at lower return periods. According to simulations, additional activation does not yield any significant improvements in flood risk. River bed deepening of the northern stream of the Krka river has no perceivable effect on floodwater depth decrease. The Scenario 3, which activates the floodplains to their maximum possible

extend, does yield significant improvements in flood hazard in Kostanjevica, but the estimated costs are prohibitively expensive, and we believe the scenario is not feasible.
In the future, the intention will be to explore some more options for the purpose of flood risk reduction in the pilot area (such is the construction of temporary precast walls installed only when a flood is expected).
Nevertheless, the results and the experiences gained from the project Danube Floodplain so far will significantly help them in preparation of the Floodplain management Manual, the Catalogue with win-win restoration and preservation measures, and DRB Sustainable Floodplain Management Strategic guidance. Such a framework will provide a solid foundation to stakeholders in flood risk management planning, considering floodplains as an important factor for flood risk reduction with the emphasis on water protection and nature conservation.

On 16 October 2020 referring to Begečka jama, 2nd National event in Serbia was organized aiming at presenting the Danube Floodplain Project results gathered so far. The event included the Ecosystem Services workshop addressing the follow-up of the first ESS setup given by related stakeholders on the 1st workshop held in January 2019.

The event was held during the COVID-19 pandemic, so all precaution measures (e.g. face masks and hand disinfectants) were taken to assure safe conditions for both the JCWI team and the audience. Various stakeholders from the local to the national level were invited and participated in the event.

At the very beginning, "Jaroslav Černi Water Institute" reminded the audience of the general content and objectives of the Danube Floodplain Project. After that, a presentation on Floodplain Evaluation Matrix implementation for ranking and evaluation of the active floodplains was given together with results obtained for Serbian stretches of the Danube, Sava and Tisza Rivers. Also, the main idea and results of the effects of the potential floodplains – flood retentions - on the Danube, Sava and Tisa Rivers are presented.

In the following session, the Ecosystem Services principles and methods for evaluation were explained. The audience heard about how the ESS assessed at the 1st ESS Workshop were further improved and the results of the respective evaluation obtained.

A very active discussion followed both presentations showing the strong commitment of the local stakeholders to the preservation and improvement of the pilot area Begečka jama. On the other hand, province and national stakeholders expressed more interest in the floodplains' evaluation and ranking.

In 26 October 2020 was held in Bistret pilot area a stakeholder workshop with a restraint physical participation of local citizens with various interests, WWF Romania, Ministry of Environment, Waters and Forests, National Institute of Hydrology and Water Management and National Administration Romanian Waters. At the meeting all variants (three restoration scenarios) showing them advantages or disadvantages in each case have been emphasized, aiming to define the ecosystem services important for the locals based on specific scenario defined under the draft feasibility study. During the discussions, the feasibility of the options defined by National Administration Romanian Waters has been discussed with locals and representatives of Mayoralties.

Also in Bistret pilot area (Dolj county), a press-trip was organized on 13 May 2021 in the Romanian pilot area of Danube Floodplain project. 5 journalists from local and national press organizations joined the event, together with local stakeholders and project partners.

They first visited the pilot area, in order to understand the importance of the area for the project objectives and for the joint development of the water management at Danube basin level.

Studies that are included in the feasibility study and other socio-economic analyzes, which should be implemented in the near future, have been done during the project. Through the respective analyzes, studies, calculations, to be able to apply the results in other areas along the Danube.

In this pilot area the Romanian partners have tried to achieve the objectives of the project regarding the flood risk management and the ecosystem services as well. The Bistret area was chosen precisely in the light of the flood events that took place in 2006 and the best solutions to consolidate the existing works will be achieved. At the end of the event, the ecosystem services for Bistret area were presented, as well three restoration scenarios.

Action plan for Danube Floodplain project pilot areas and to be considered in the restoration process of active and potential floodplains

Following stakeholder workshops in pilot areas and two international stakeholder workshops at Danube basin wide level, some actions have been drawn as following:

Pilot area	Measures	Effects of measures	Responsible authority
Bistreț on the Danube 17,698 ha, cost estimation 52 mil. €, estimated time for implementation 2027	Scenario selected: Realistic Construction ▪ dike relocation ▪ controlled dike overtopping / gaps in the dike Land cover and lateral branches ▪ create and connect new lateral branches or pools / new water regime ▪ create retention areas / flood channels ▪ connection of lateral branches/oxbows	Socio-economic ▪ Expending the surface and volume of Lake Bistreț ▪ Economic development of the area (aquaculture, ecotourism) Environmental ▪ Improving the morphological conditions ▪ Improving of aquatic species and habitats	Local authorities National Administration ”Romanian Waters”
Begečka Jama on the Danube 1013 ha, cost estimation 1.3 mil. €, estimated time for implementation 4 years (several phases)	Scenario selected: Realistic Construction ▪ change operation mode of weirs ▪ migration permeability at weirs land cover and lateral branches ▪ create and connect new lateral branches or pools / new water regime ▪ connection of lateral branches/oxbows ▪ deepening lateral branches/oxbows River channel geometry alteration ▪ increase the diversity of the river morphology (riffles, pools, potholes, sand or gravel banks, cut banks and	Socio-economic ▪ Economic development of the area (agriculture, ecotourism) ▪ Supporting the water flow through the floodplain. Environment ▪ Improving the functions and processes of the floodplain ecosystem. ▪ Contributing to preserving the mosaic aquatic and terrestrial habitats on the floodplain and protection of species.	Local authority - city of Novi Sad Administration for environmental protection, through the Protected Area Management Plan. Protected Area Manager

Pilot area	Measures	Effects of measures	Responsible authority
	slip-off-slope, broader and narrower passages of the river,…); diversity of cross profiles of the river ▪ create fish spawning areas	▪ Improving the status of typical floodplain habitats (oxbows, marshes, ephemeral channels, flooded meadows). ▪ Enabling fish spawning and nursery in new habitats (phytophilic and phyto-litophilic). ▪ Additional nesting and feeding ground for waterfowl. ▪ Improving visual integrity of the landscape and aesthetic value.	
Kostanjevica na Krki on Krka 3,630 ha, cost estimation 10 mil. €, estimated time for implementation 2024	Scenario selected: Optimistic land cover and lateral branches ▪ create and connect new lateral branches or pools / new water regime ▪ create retention areas / flood channels ▪ increase floodplain area river channel geometry alteration ▪ widening of river channel	Socio-economic ▪ HQ100 protection of ASFP Kostanjevica na Krki Environment Improving the functions and processes of the floodplain ecosystem. ▪ Preserving and improvement the mosaic of aquatic and terrestrial habitats on the floodplain and protection of species.	Slovenian Water Agency
Middle Tisza on Tisza 4,951 ha, cost estimation 15.2 mil. €, estimated time for implementation 5-10 years	Scenario selected: Realistic Construction ▪ dike relocation ▪ dike removal ▪ controlled dike overtopping / gaps in the dike land cover and lateral branches ▪ convert land cover towards natural conditions ▪ modify floodplain DEM ▪ increase floodplain area river channel geometry alteration	Decreasing flood risk Increase in biodiversity and spawning areas as a result of habitat restoration Sustainable development and ecotourism While the biggest share from the benefits is associated with flood risk reduction, periodic flooding of	Water management authorities. Middle-Tisza Water Management Directorate Hortobágy National Park Directorate

Pilot area	Measures	Effects of measures	Responsible authority
	▪ removing bank stabilizations / embankments ▪ create fish spawning areas ▪ Removing sand bars	the area will improve certain ecosystem services in the area. In the Fokorúpuszta area, afforestation of plantations and invasive species and the establishment of a fish spawning are also planned. Together, these interventions could have a positive impact in economic, social and ecological terms.	
Morava on Morava 147,37 ha, cost estimation 46.2 mil. €, estimated time for implementation 2028	Construction ▪ dike relocation ▪ removal of weirs ▪ change operation mode of weirs land cover and lateral branches ▪ connection of lateral branches/oxbows ▪ deepening lateral branches/oxbows ▪ reconnect old oxbow ▪ increase floodplain area river channel geometry alteration ▪ change course of the river (meandering) ▪ removing ground sills, plunges	Socio-economic ▪ Sustainable economic development of the area ▪ Supporting the water provisions for forestry Environment ▪ Improving the functions and processes of the floodplain ecosystem. ▪ Contributing to preserving the mosaic aquatic and terrestrial habitats on the floodplain with influence of annual flood ▪ Improving the status of typical floodplain habitats (oxbows, marshes, ephemeral channels, flooded meadows). ▪ Enabling fish spawning and nursery in new habitats (phytophilic andphyto-litophilic). ▪ restoration of natural morphological processes	Morava River Basin Authority Slovak Water Management Enterprise

Pilot area	Measures	Effects of measures	Responsible authority
		▪ connecting 22.4 km of the original riverbed back to the Morava River ▪ Return of annual flooding to 2900 ha of river floodplain	

Actions to be considered in the restoration process of active and potential floodplains

Actions to be considered in the restoration process		
For active floodplains with restoration demand		
Technical	**Administrative and legislative**	**Financial & Responsible authority**
Germany		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project	➢ Information and discussions with competent authorities	
Austria, Slovakia		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process) ➢ Carrying out prefeasibility/feasibility studies.	➢ Information and discussions with competent authorities ➢ Consideration of updating legislative/regulatory provisions ➢ Consideration of adapting administrative/institutional measures ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA, FEM-Tool) ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain	➢ Identification of proper financing sources ➢ Water management authorities at national and regional level ➢ Local authorities (e.g., municipalities)

Slovakia, Hungary		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process) ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain ➢ Carrying out prefeasibility/feasibility studies ➢ Consideration of Danube Floodplain project related FEM Tool ➢ Consider using new tools (e.g., from IDES project) to improve calculation of the floodplain status, and to determine effective measures).	➢ Information and discussions with competent authorities	➢ Identification of proper financing sources ➢ Water management authorities
Hungary		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process) ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain ➢ Carrying out prefeasibility/feasibility studies ➢ Consideration of Danube Floodplain project related FEM Tool ➢ Consider using new tools (e.g., from IDES project[1]) to improve calculation of the floodplain status, and to determine effective measures).	➢ Information and discussions with competent authorities	➢ Identification of proper financing sources ➢ Water management authorities
Croatia, Serbia		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project;	➢ Information and discussions with competent authorities	➢ Identification of proper financing sources

➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process); ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA	➢ Consideration of adapting administrative/institutional measures	➢ Both state and local involvement, with state authority dealing more with design and local authority with implementation
Serbia		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process); ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA ➢ Consideration of Danube Floodplain project related FEM Tool	➢ Information and discussions with competent authorities ➢ Consideration of adapting administrative/institutional measures	➢ Identification of proper financing sources ➢ Water management authorities
Bulgaria, Romania		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA	➢ Consideration of updating legislative/regulatory provisions ➢ Information and discussions with competent authorities	➢ Identification of proper financing sources ➢ Water management authorities at national and basin level ➢ Local authorities ➢ National scientific institutions

Romania		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process); ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA ➢ Carrying out prefeasibility/feasibility studies	➢ Consideration of updating legislative/regulatory provisions	➢ Identification of proper financing sources ➢ Water management authorities at national and basin level ➢ Local authorities ➢ Others
For potential floodplains		
Technical	**Administrative and legislative**	**Financial & Responsible authority**
Germany		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project	➢ Information and discussions with competent authorities	
Austria		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process); ➢ Carrying out prefeasibility/feasibility studies.	➢ Information and discussions with competent authorities ➢ Consideration of updating legislative/regulatory provisions ➢ Consideration of adapting administrative/institutional measures ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA, FEM-Tool)	➢ Identification of proper financing sources ➢ Water management authorities at national and regional level ➢ Local authorities (e.g. municipalities)

	➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain	
Hungary, Croatia		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process); ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain ➢ Carrying out prefeasibility/feasibility studies ➢ Consideration of Danube Floodplain project related FEM Tool ➢ Consider using new tools (e.g., from IDES project) to improve calculation of the floodplain status, and to determine effective measures).	➢ Information and discussions with competent authorities	➢ Identification of proper financing sources ➢ Water management authorities
Hungary		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan ((including in the screening process); ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain ➢ Carrying out prefeasibility/feasibility studies ➢ Consideration of Danube Floodplain project related FEM Tool ➢ Consider using new tools (e.g., from IDES project) to improve calculation of the floodplain status, and to determine effective measures).	➢ Information and discussions with competent authorities	➢ Identification of proper financing sources ➢ Water Management Authorities

Serbia		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process); ➢ Priority consideration of Danube Floodplain project results of the restoration demand ranking for active floodplain ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA ➢ Carrying out prefeasibility/feasibility studies ➢ Consideration of Danube Floodplain project related FEM Tool	➢ Information and discussions with competent authorities ➢ Consideration of adapting administrative/institutional measures	➢ Identification of proper financing sources
Bulgaria, Romania		
➢ Carrying out prefeasibility/feasibility studies ➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project ➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA	➢ Information and discussions with competent authorities ➢ Consideration of updating legislative/regulatory provisions	➢ Identification of proper financing sources ➢ Water management authorities at national and basin level ➢ National scientific institutions
Romania		
➢ Consideration of specific measures included in the frame of "Catalogue of floodplain restoration and conservation measures", developed in the frame of DFP Project; ➢ Consideration as concrete restoration and preservation areas in frame of National River Basin Management Plan and Flood Risk Management Plan (including in the screening process);	➢ Consideration of updating legislative/regulatory provisions	➢ Identification of proper financing sources ➢ Water management authorities at national and basin level ➢ Local authorities ➢ Others

➢ Consideration in the National River Basin Management Plan and Flood Risk Management Plan of key results of the project (methodology for identification and evaluation of active and potential floodplains, Ecosystem service assessment, extended CBA ➢ Carrying out prefeasibility/feasibility studies		

References

1. Danube Floodplain, Deliverable 4.2.1 Report about the stakeholder analysis;
2. Danube Floodplain, Deliverable 2.1.1 Danube Floodplain Stakeholder Engagement Strategy;
3. Press-releases and Newsletters from the Danube Floodplain project.
4. Output 5.3 - Floodplain restoration/preservation action plan