

Branislava B.Matić, Marija Perović and Dragica Vulić

Natural Water Retention Measures contribution to Integrated Transboundary Tisza River Basin Management-Environmental and Flood Risk Management Objectives Synergy



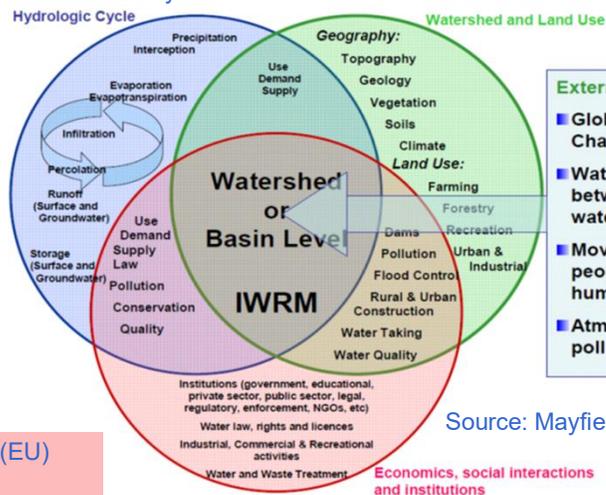
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Novi Sad, 23-24 September 2021

IWRM



Contemporary water resources management goal: to address development, social equity, & environmental sustainability.

IWRM : coordinated development & management of water, land & related resources to maximize resultant economic and social welfare in an equitable manner without compromising the sustainability of the vital ecosystems and need of the future generations



- External Impacts**
- Global Climate Changes
 - Water transfer between watersheds
 - Movement of people and human activity
 - Atmospheric pollution

Source: Mayfield et al., 2004

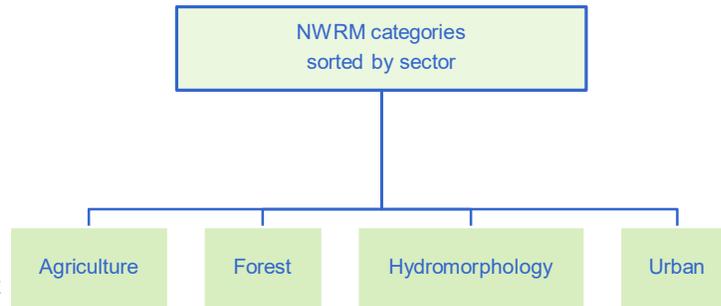
IWRM is integrated in national, regional (EU) and Global policies, Conventions, etc

NWRM



It is the understanding of basin retention opportunities that gets more and more important in contemporary water management due to its favourable contributions to sustainable development and integrated water resources goals achievement (Matić, 2019).

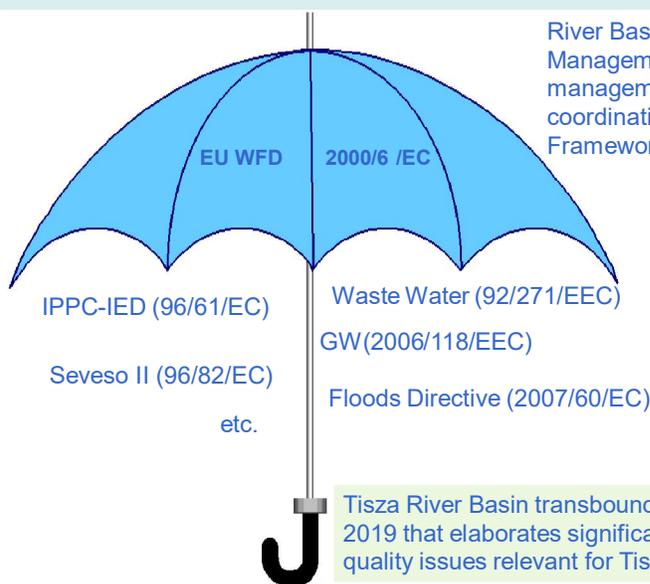
The main focus of applying NWRM is to enhance the retention capacity of aquifers, soil, and aquatic and water dependent ecosystems with a view to improve their status.



The restored ecosystems, e.g., improved hydrologic ecosystem services (natural water retention capacity) contribute both to CC adaptation & mitigation, increase river basin resilience to hydrological extreme events & other changes due to human activities (Matić and Simić, 2017).

NWRM contribute to achievement of the key EU policies WFD and FD among the others.

WFD-FD-ITRBM (2019)



River Basin Management Plans (RBMP) and Flood Risk Management Plans (FRMP) are integrated river basin management elements and hence the importance of coordination between the two processes guided by Water Framework Directive and Flood Directive

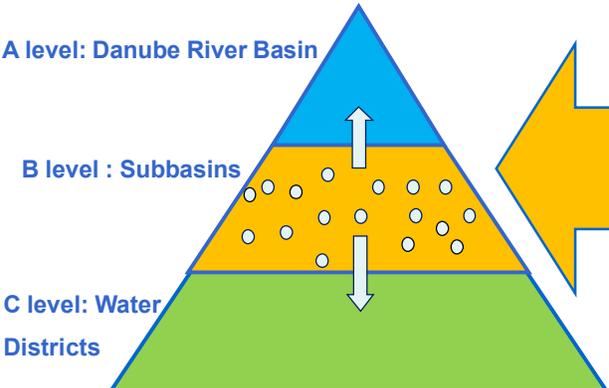
WFD Art. 4 – Environmental Objectives
EU FD Art. 7.3 & 9 – WFD environmental objectives to be consider to achieve Flood Risk Management Objectives

Tisza River Basin transboundary cooperation generates the Updated ITRBMP 2019 that elaborates significant water management issues, water quantity and quality issues relevant for Tisza River Basin and **underlines WFD & FD synergy**

River Basin Management



River Basin Management Plans



Tisza River Basin level B

The Tisza River - the longest tributary of the Danube River : 157,186 km², Q - 825 m³/s , population app. 14,000,000.00
 Sava : 97,713 km², 8.5 mil, Q - 1,559 m³/s ,

Tisa Analyses Report (2007)
 ITRBMP (2011, 2019)

International cooperation within the scope of ICPDR – AdHok Tisza Group MoU (December 2004)

Framework for Tisza Countries (UA,RO,SK, HU and RS) cooperation in transboundary water management and RBMs development

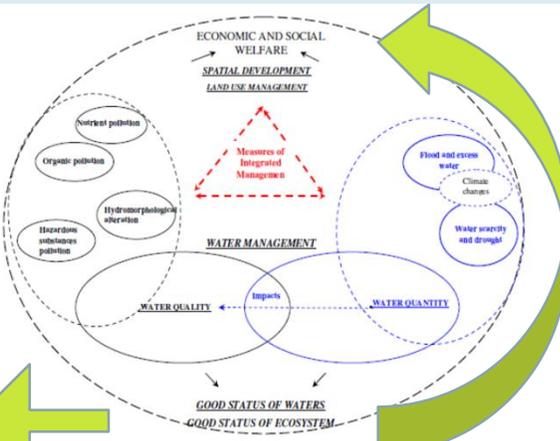
ITRBMP update, MoU (September 2019)

Tisza River Basin selected by EU as a pilot for subbasin RBMP development- ITRBM Plan (2011)
ITRBM includes FRMP components

SWMIs & Tisza Relevant WM issues







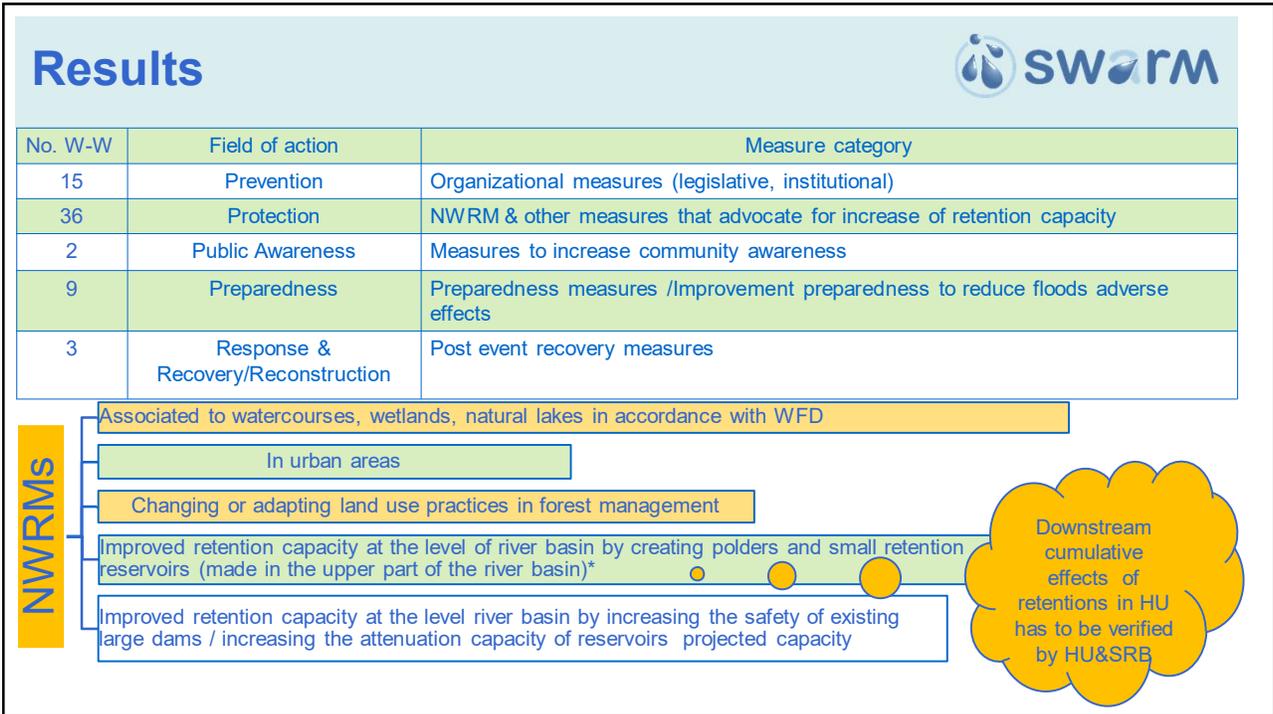
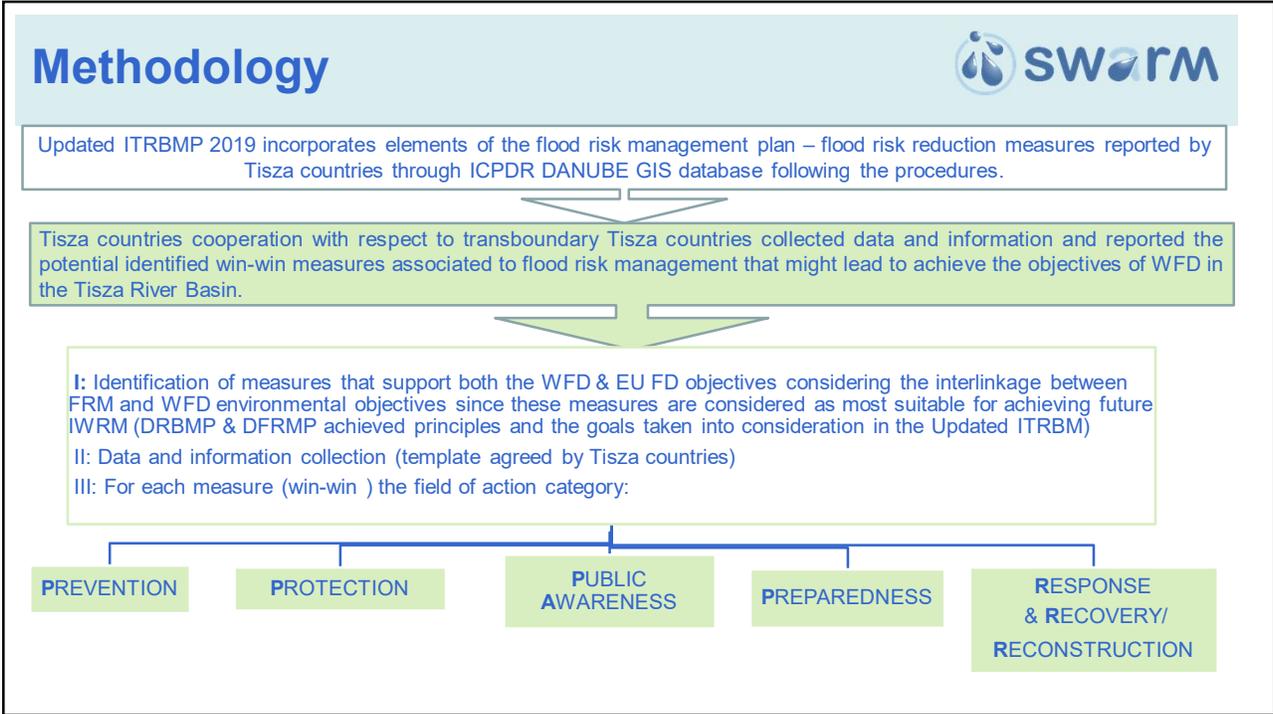
Significant Water Management Issues:

- ◆ Pollution by organic substances;
- ◆ Pollution by nutrients;
- ◆ Pollution by hazardous substances;
- ◆ Hydromorphological alterations.

The key integrated water quantity management issues are categorized in a following way:

- ◆ Floods and excess water;
- ◆ Droughts and water scarcity; and
- ◆ Climate change

Inter-linkages between the water quality and quantity related management issues for TRB identified by the ICPDR Tisza Group



Conclusions



- ◆ Integration of the win-win measures associated to flood risk management that might lead to achieve the objectives of WFD in the Tisza River Basin in the updated ITRBM reinforce synergy between flood risk management and environmental objectives;
- ◆ Proposed measures are extracted from the national catalogues of measures and in line with measures reported in the Flood Risk Management Plan for the Danube River district;
- ◆ > 70% of win-win measures reported by Tisza countries are within the NWRM category, both in urban and rural areas;
- ◆ The implementation of the JOINTISZA project generates ITRBMP 2019 endorsed by Memorandum of Understanding signature by Tisza countries during a high-level Ministerial meeting (September, 2019);
- ◆ Given the multi benefits of the NWRM, their identification enhance Tisza countries cooperation with respect to transboundary water management visions and objectives, improve integrated water resources management, and support cooperation among various sectors relevant for flood risk and water resources planning and management;
- ◆ Implementation of proposed NWRM within the Tisza River Basin addresses the water quantity and quality issues interlinkage and measures relevant for Tisza River Basin SWMIs.

Acknowledgment



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Strengthening cooperation between river basin management planning and flood risk prevention to enhance the status of waters of the Tisza River Basin & Tisza countries experts joint work within the scope of ICPDR Tisza group, & contribution of international organizations: **GWP CEE, WWF Hungary, and REC.**

