





FAiRway Danube

a milestone for the realization of
the Fairway Rehabilitation and
Maintenance Master Plan

Danube Fairway Master Plan

- Lists **critical locations** as regards fairway rehabilitation and maintenance
 - **below 2.5m fairway depth (ENR)** and specified fairway widths
 - Identified by waterway administrations  and Danube users 



- Specifies the **required national measures** and **additional investments** needed to reach **recommended minimum Levels of Service**

... but how to deploy this in the field...

Objective



Requirements concerning transport infrastructure and ecology



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Commitment



Fairway Rehabilitation & Maintenance Master Plan



Deployment



Studies (Danube Development Study, DAREM, FAST Danube,...)

Equipment (bg. surveying vessel,...)

Rehabilitation of locks (Gabčíkovo, Iron Gate 1, Danube-Black Sea Canal,...)

Works (AT, RS, RO,...)

... we are on a good track, but more effort is needed ...



monitoring:
National Action
Plans

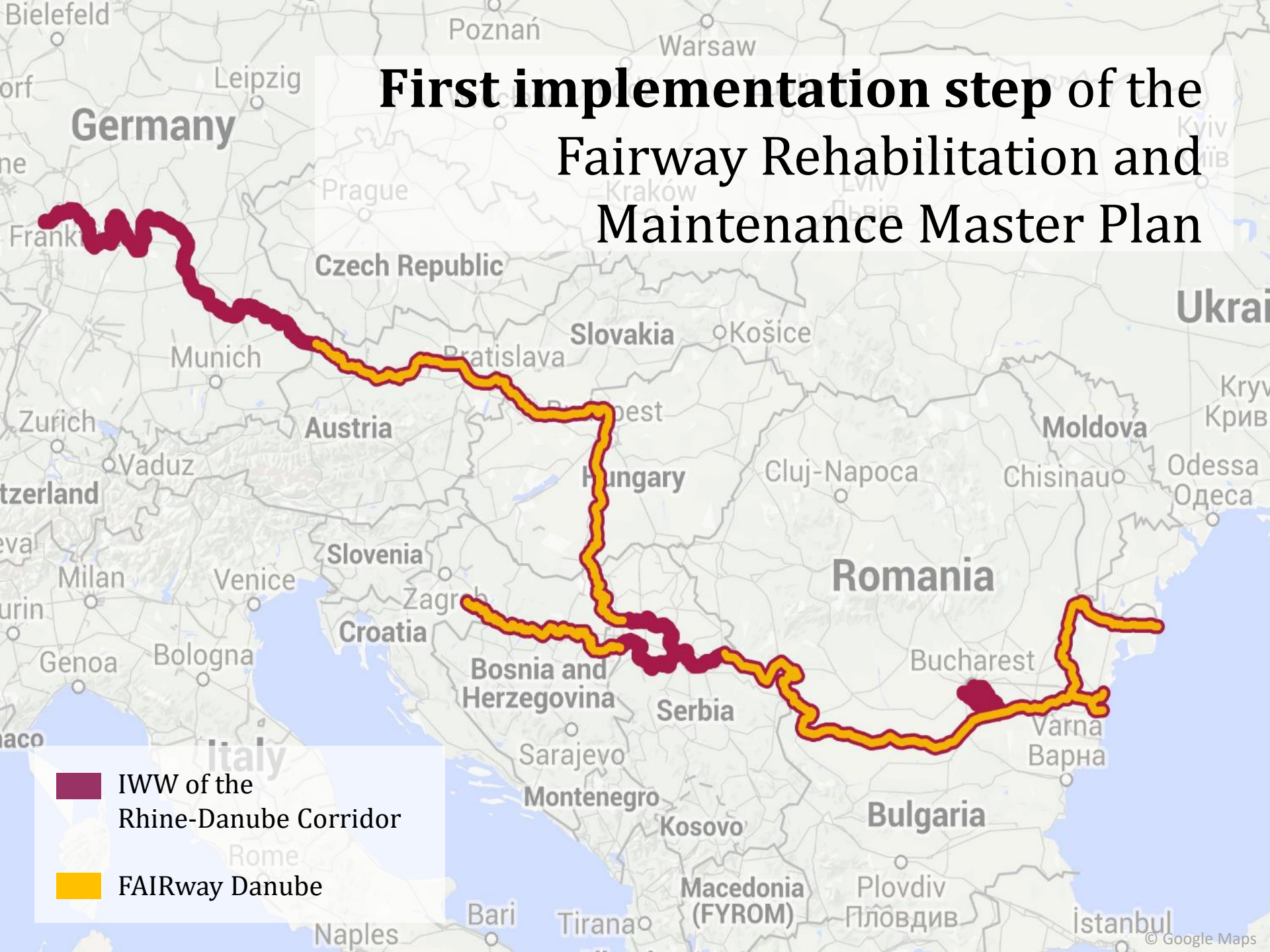


EU co-financing is
crucial enabler



Co-financed by the European Union
Connecting Europe Facility

First implementation step of the Fairway Rehabilitation and Maintenance Master Plan



■ IWW of the
Rhine-Danube Corridor

■ FAIRway Danube

FAIRway Danube in a nutshell

Inland waterway
study with pilots

No physical
interventions
(no dredging)

Duration

6 years,
from
1 July 2015
until
31 December 2021

Budget

Total: 21,7 Mn EUR
CEF: 18,2 Mn EUR
27%
effective co-funding for AT,
85%
for cohesion countries

7 partners in
6 Danube riparian
countries

Coordinated by:

Austrian Ministry for Climate Action, Environment,
Energy, Mobility, Innovation and Technology &

via donau-Österreichische Wasserstraßen-
Gesellschaft mbH (viadonau)

viadonau

Website: www.fairwaydanube.eu

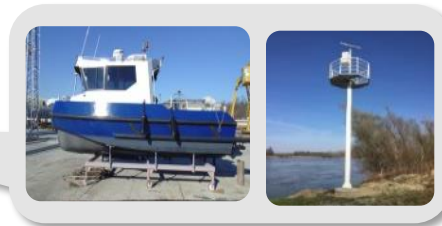
Activities within FAIRway Danube

1. Project Management



2. Action Plans

3. Procurement



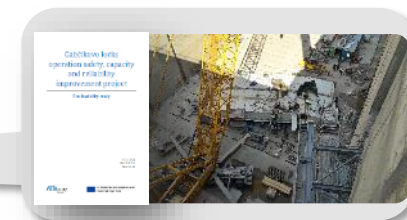
4. Pilots



5. Innovative Approaches



6. Documentation for full deployment




Activities within FAIRway Danube

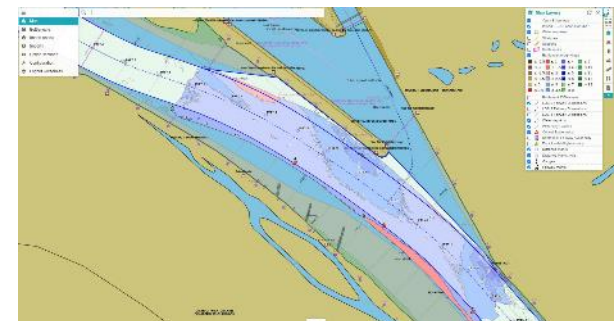
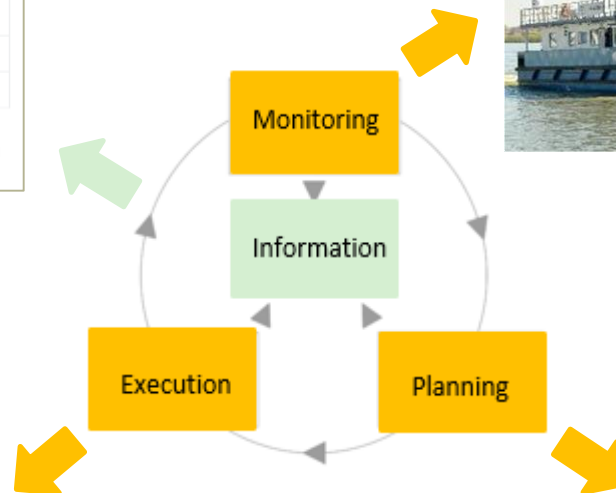
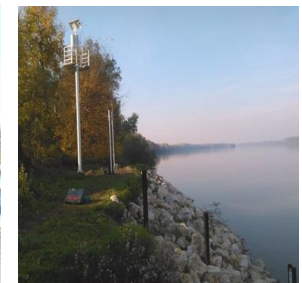
- **Monitoring** of fairway parameters (surveying vessels & gauging stations)
- **Planning** of fairway measures (WAMS/WAMOS)
- **Execution** of fairway optimization (marking vessels)
- **Information** on fairway depth (waterlevel forecast)

Tabular presentation of the water level

Gauge	05.11.	06.11.	07.11.	08.11.	09.11.
Batina	-17	-13	-8	-1	24
Ajmaš	12	20	32	54	90
Vukovar	12	17	27	42	70

FAIRway
Danube

 Co-financed by the European Union
Connecting Europe Facility



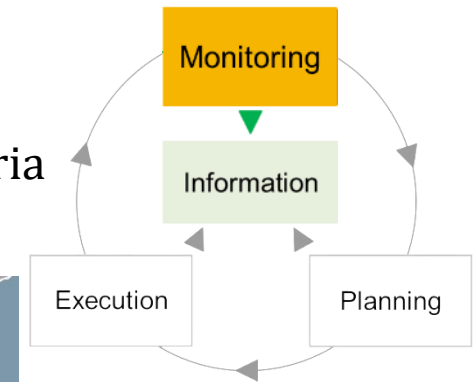
National action plans for status monitoring

- 10 updates between 2015 and 2020
- Under the lead of FAIRway Danube, in cooperation with the EU Danube Region Strategy's Priority Area 1a



Monitoring

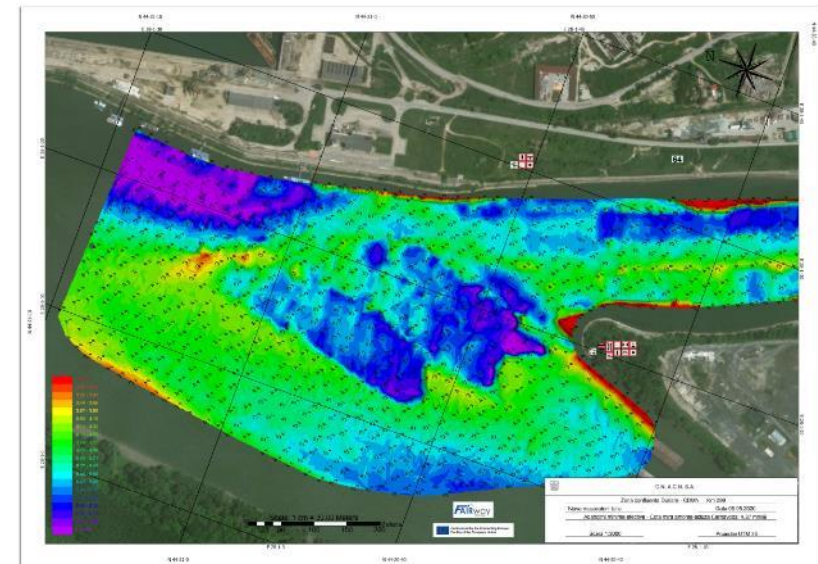
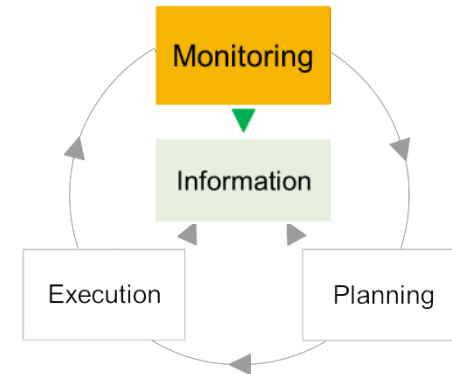
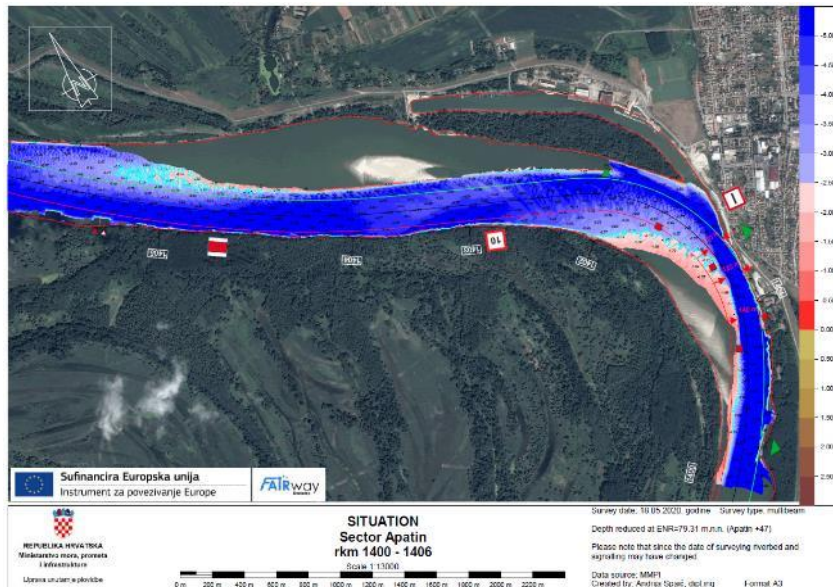
- New surveying vessels in Slovakia, Hungary, Croatia, Bulgaria and Romania
- 9 new gauging stations in Croatia, 18 new gauging stations in Romania (ACN & AFDJ) and 10 new gauging stations in Bulgaria



Monitoring

Surveying results published on Danube FIS-Portal

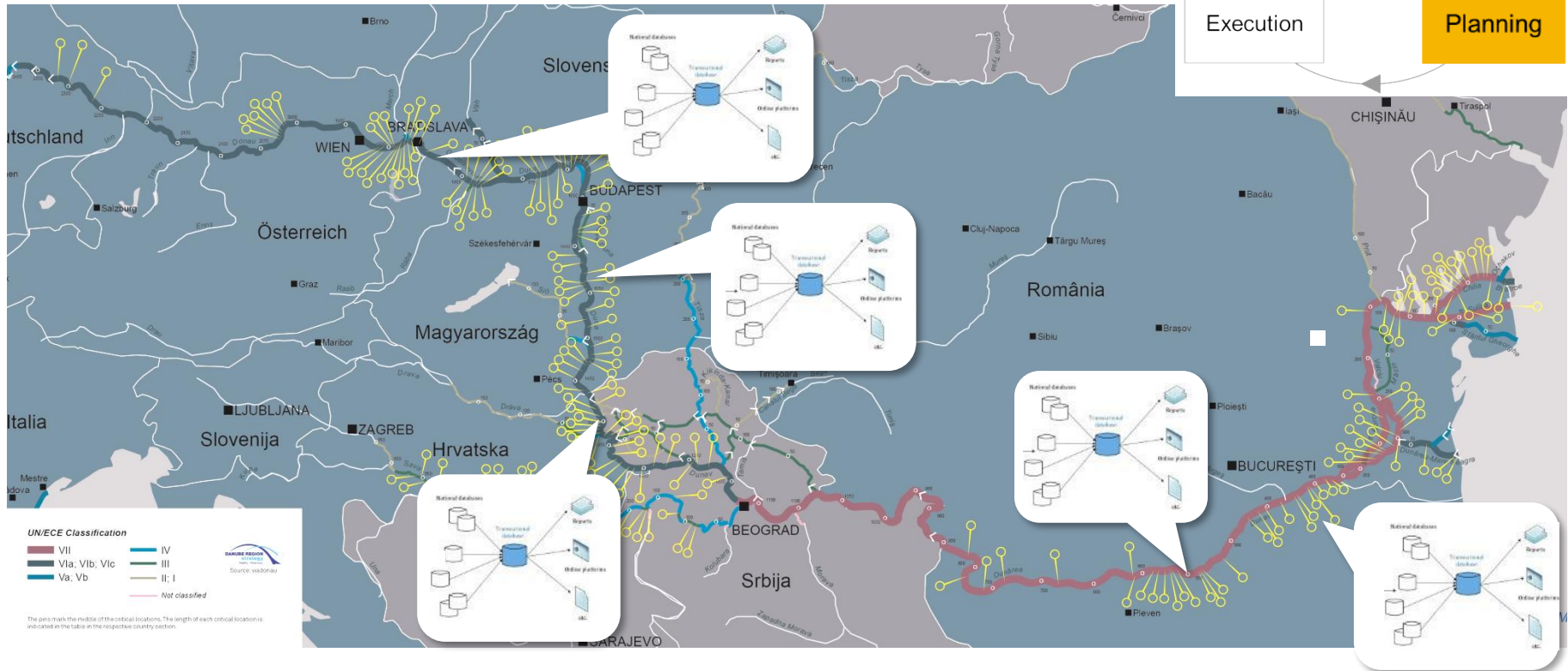
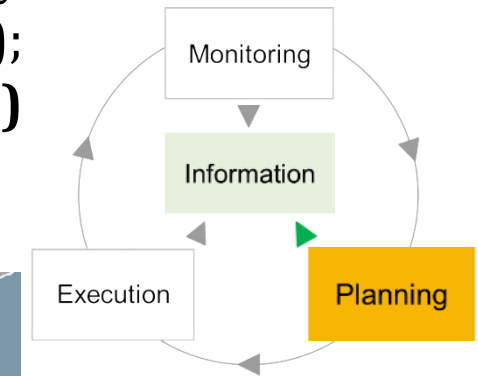
Shallow section information for Apatin (May 2020)



Shallow section information for Cernavoda canal (May 2020)

Planning

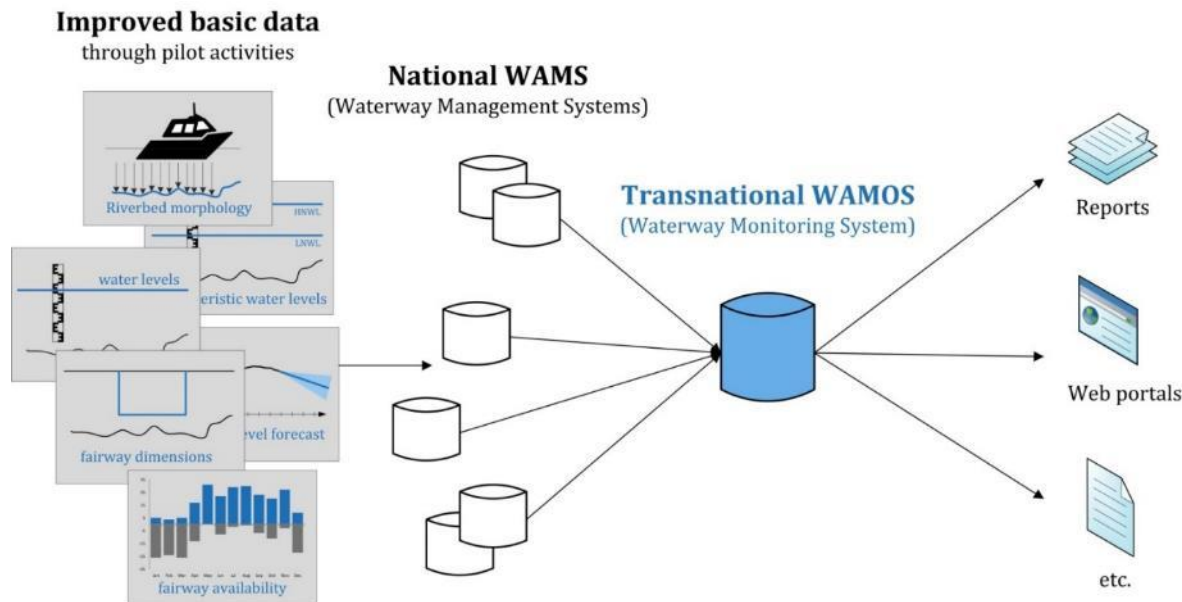
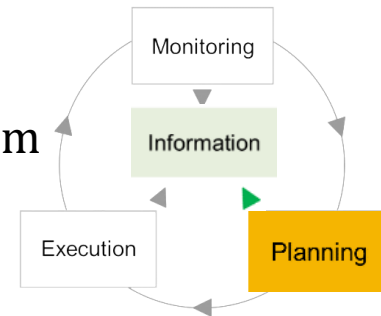
Coming in 2020: national **WAMS** to support waterway administrations in planning (SK, HU, HR, RO, BG);
transnational Waterway Monitoring System (WAMOS)
for consistent data



Planning

WAMS (national): **W**aterway **A**sset **M**anagement **S**ystem

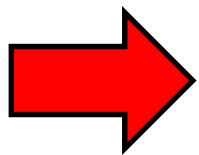
WAMOS (transnational/ common database): **W**aterway **M**onitoring **S**ystem



1. Compile & display
basic fairway information

2. Analyse and evaluate
basic data

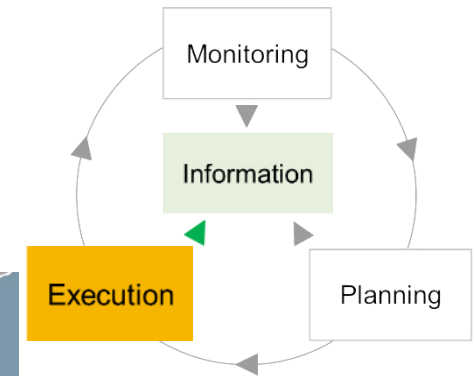
3. Extract relevant
information



PILOT OPERATION STARTED ON OCTOBER 2019!

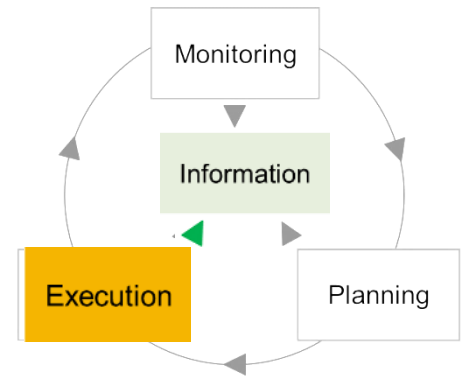
Execution

- In total, 4 new and 3 upgraded marking vessels are in operation in Slovakia, Hungary, Croatia, Romania (AFDJ) and Bulgaria;**



Execution

- Marking vessels are equipped with single-beam technology
- Facilitated navigation experience and improved positioning of buoys.
- Marking results are published in Danube FIS Portal (www.danubeportal.com)



New marking vessels

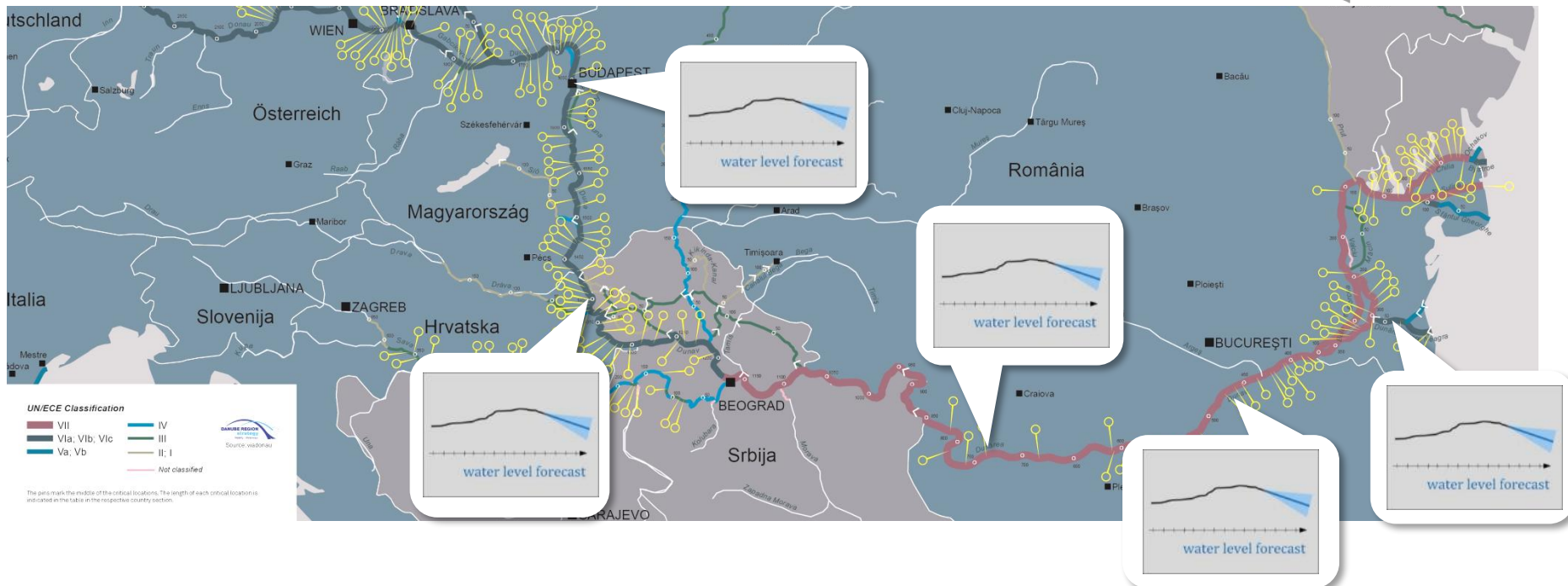
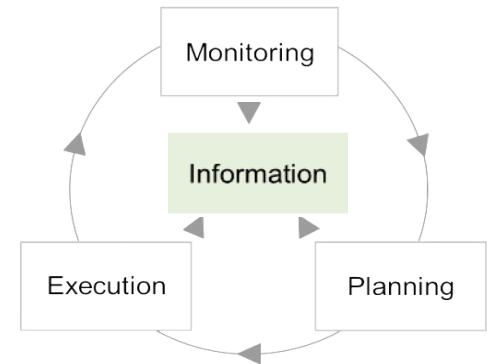


Upgraded marking equipment



Information

- **New water level forecast** for important gauges in **Hungary and Croatia** introduced
- Coming in 2020: New/enhanced level forecast for important gauges in Romania (AFDJ+ACN) as well as Bulgaria



Innovative Approaches

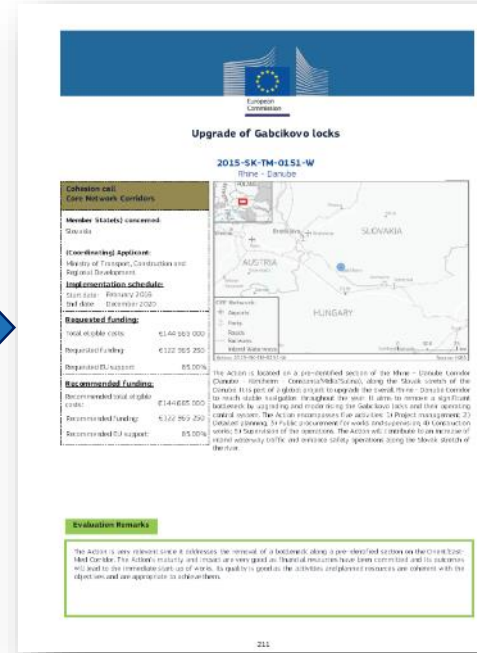
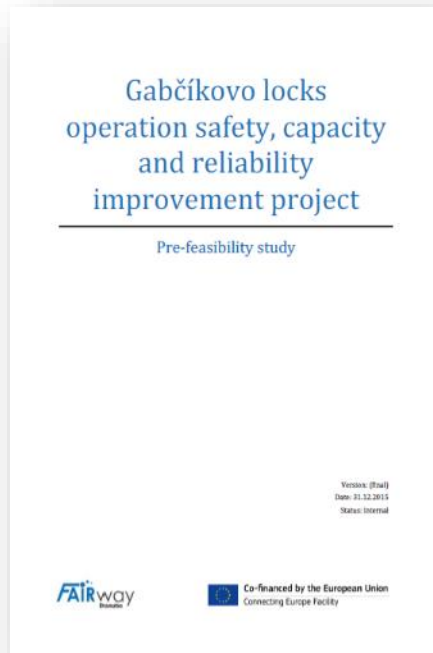
Include studies such as on:

- aerial photo monitoring concepts,
- identification of the optimum speed at navigable canals,
- recalculation of Low Navigable Water Levels on the lower Danube,
- development of an AIS AtoN application concept



Lock Rehabilitation in Slovakia

- FAIRway Danube prepared **pre-feasibility study** on rehabilitation of Gabčíkovo locks
- Works project (€ 145 Mn.)
- Permanent operation of both lock chambers → improved efficiency



Expected impact of FAIRway Danube: improved fairway conditions

Coordinated approach
give insight on national circumstances and coordinate planned actions

Updated **national action plans** twice a year



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Collect, analyze and publish **basic data**

5 surveying vessels and **37 gauges**,
3 years **pilot operation**,
improved **water level forecasts**

Use available depths:
relocate the fairway

4 marking vessels,
3 years **pilot operation**



Test **innovative approaches**,

Preparatory studies for Váh and Gabčíkovo

AIS AtoNs, drones for monitoring, etc.
Studies on the navigability of the Váh and the upgrade of Gabčíkovo



Thank you for your attention.



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