OUTPUT FACT SHEET

Pilot actions (including investment, if applicable)

Version 2

Project index number and acronym	CE983 FramWat
Lead partner	WCL
Output number and title	OT3.5 - Action plans for implementing N(S)WRM into the RBMPs; D.T3.5.9 – Action Plan for the Pilot Catchment Aist
Investment number and title (if applicable)	-
Responsible partner (PP name and number)	9. WCL
Project website	https://www.interreg-central.eu/Content.Node/FramWat.html
Delivery date	06.2020

Summary description of the pilot action (including investment, if applicable) explaining its experimental nature and demonstration character

In the frame of the FramWat project on Natural Small Water Retention Measures (NSWRM) six pilot catchments in Central Europe were chosen to test the NSWRM approach and the FramWat project tools. The final pilot study reports that are presenting the main outcomes for the pilot catchments are called “Action Plans”.

The existing Action Plan for the Austrian pilot catchment Aist provides a compilation of the catchment modeling results and presents the effectiveness of a selected set of NSWRM in the Aist catchment. The overall aim of the Action Plan is to support a sustainable sediment management in the Aist catchment.

Rivers in the Aist catchment (and also neighboring catchments in the Mühlviertel region) suffer from sediment accumulation in the river bed. This in-stream sediment accumulation in the size of coarse sand to fine gravel (diameter 1-10 mm) can negatively affect the morphological, physicochemical, and biological status of water bodies.

NSWRM have the potential to improve the sediment balance of a catchment. NSWRM include a broad set of in-stream, off-stream, structural, and management practices with the aim to mitigate negative impacts of human activities on freshwater ecosystems by exploiting natural processes and cycles to restore and rehabilitate the affected degraded aquatic ecosystems.

Dynamic hydrological, hydraulic, and sediment models can effectively support the planning of NSWRM at different scales (catchment scale, reach scale, habitat scale). In the frame of the FRAMWAT project, the assessment of the effectiveness of NSWRM for the Austrian pilot catchment Aist was – for the first time – performed with an interlinked modeling cascade to bridge the different scales. The models of this ecohydrological modeling cascade were used to assess the effectiveness of a set of NSWRM that are of special interest for nature protection and water management authorities. The effectiveness in mitigating the sand accumulation issue was evaluated both at the catchment scale and for some selected (diagnostics) reaches, where improvements in the ecological status are desired. The Action Plan summarizes the outcomes and serves as guidance and support for nature protection and water management authorities in decision-making in the future.

The Action Plan is supposed to generally support the goal of an enhanced NSWRM planning and to facilitate the implementation of NSWRM in catchment management. At the moment, NWRM implementation is often hampered by a lack of specific and targeted funding schemes and legislation documents. However, NSWRM have multiple benefits and can help to achieve the legal obligations of different policy objectives. Several EU and national funding programs can be used to finance NSWRM. Therefore, the Action Plan also sums up opportunities and limitations given by European and national legislation for NSWRM implementation and gives an overview on existing funding possibilities.

The Action Plan also gives examples of how NSWRM can be monitored. Monitoring of NSWRM can give valuable information on the measures effectiveness and can support future planning with analysis and interpretation of field data collected for specific local situations. Field data are essential to support and to validate model results and assumptions. In the Aist catchment and in the neighbouring Maltsch catchment, some NSWRM have been built recently. Monitoring investigations have been carried out and their results can support further NSWRM planning.

NUTS region(s) concerned by the pilot action (relevant NUTS level)

Austrian Pilot Catchment: River Aist in Upper Austria, Mühlviertel region;
NUTS-3 code: AT 313

Investment costs (EUR), if applicable

not applicable

Expected impact and benefits of the pilot action for the concerned territory and target groups and leverage of additional funds (if applicable)

The Action Plan for the Aist catchment analyses the effectiveness of a selected set of feasible measure types at sites of special interest for nature protection and water management authorities. The analyzed measure types were selected together with the regional authorities and represent one possibility of how to combine NSWRM in the catchment in order to improve the main catchment problem of sand accumulation.
The effectiveness in mitigating the sand accumulation issue was evaluated both at the catchment scale and for some reaches, which were selected by the nature protection authorities because improvements in the ecological status are desired there.

Nature protection and water management authorities can use the Action Plan as guidance and support in future catchment management and planning. The suggested measures (NSWRM) can be considered in the next update of the national water management plan and in the planning of management actions for freshwater protected areas (Natura 2000).

The Action Plan generally points out modeling possibilities and gives insights into NSWRM effectiveness assessment with the help of models. It proofs that modelling is a powerful analyses tool for effectiveness assessment of different measure types and is suitable for a broad range of catchments and management issues.

The Action Plan presents an overview on policies and funding schemes to support NSWRM implementation in Austria.
The Action Plan gives an example of how the effectiveness of NSWRMs can be monitored with the help of a field investigation program.

The NSWRM approach in general as well as the FramWat project outcomes and the Austrian Action Plan have received support (Letter of Recommendation/Support) of
(1) WCL's Associated Partner "The International Commission for the Protection of the Danube River (ICDPR)" and
(2) The Austrian Ministry of Agriculture, Regions and Tourism responsible for national water management issues.

Both institutions confirm the multiple benefits of NSWRM on the water and sediment balance, as well as on nutrients re-circulation in a river basin and the importance of a systematic integration of NSWRM in future river basin management plans.

Sustainability of the pilot action results and transferability to other territories and stakeholders.

The Action Plan for the Austrian pilot catchment Aist - summarizing all main outcomes for the Aist catchment - can serve as a long-term guidance document for water management and nature protection in the region and can support other stakeholder groups within the catchment region and in other territories by

1. Giving insight into the pilot catchment Aist, the catchment characteristics and the main environmental problems.

2. Highlighting the potential of NSWRM to address the problem of sediment accumulation and river bed aggradation by showing the results of an effectiveness assessment of a set of selected NSWRM with the use of a cascade of dynamic models;

3. Presenting an overview on policies and funding schemes to support NSWRM implementation in Austria;

4. Showing an example of a monitoring program suitable to assess the effectiveness of single NSWRM

Many river basins in the geological territory of the Bohemian Massif (Upper Austria, Lower Austria, Bavaria, Czech Republic) share the same problem of siltation (sediment accumulation) and can thus directly profit from the experiences and analyses made in the Aist catchment.

Dynamic modelling is a powerful tool for detailed analyses in water management and nature protection. The modelling experiences made in the Aist catchment are transferrable to other catchments. Detailed knowledge of the possibilities and limitations of modelling are essential for targeted approaches in catchment management in the future.

The multiple benefits of NSWRM can contribute to different international and national policy objectives. The overview on policy fields and policy documents relevant for NSWRM planning as well as the list of potential national and international financing sources are important information that can be used for NSWRM implementation all over Austria by different stakeholders.

Furthermore, monitoring the effectiveness of NSWRM at the local scale is relevant for all territories and sectors as insights into the local effectiveness can be gained. Field-collected data are necessary for upscaling the effectiveness to the catchment scale and, therefore, for successful catchment planning. It is important to raise the awareness of documented monitoring strategies to sustainably generate knowledge on single and cumulative measure effectiveness.

All results and outputs regarding the Aist pilot action will be maintained by WasserCluster Lunz. WCL will take care of sustaining the pilot catchment models and archiving the models outputs for consultation in the future. The developed models will be used for further impact analyses in the area (e.g. climate change impact on in-stream sediment accumulation).

Lessons learned and added value of transnational cooperation of the pilot action implementation (including investment, if applicable)

The transnational cooperation allowed to

- learn about different approaches in water management in the different partner countries,
- get to know different catchments showing specific characteristics and problems
- hear about different legal background and financing approaches for NSWRM
- benefit from other partners' experience and expertise and exchange knowledge in the field of NSWRM and modeling
- establish cooperation and networks between partners, also for future projects
- see the strengths and weaknesses of the different country approaches
- compare and evaluate the possibilities and problems of NSWRM implementation in the different countries

Contribution to/ compliance with:

- **relevant regulatory requirements**
- **sustainable development - environmental effects. In case of risk of negative effects, mitigation measures introduced**
- **horizontal principles such as equal opportunities and non-descrimination**

Various types of measures listed under the name „Natural (Small) Water Retention Measures, N(S)WRM" can have significant positive effects on solving environmental problems such as hydrological extremes, nutrients' transport and decreased biodiversity. N(S)WRM can increase the natural buffer capacity of the landscape by retaining water, sediment, and nutrients. Their multiple benefits have the potential to improve the ecological status of water bodies and simultaneously decrease the effects of droughts and floods.

The pilot actions in the FramWat project aimed at translating existing knowledge about the N(S)WRM approach into river basin management practice. Various tools and methods to facilitate N(S)WRM planning have been developed and tested in six pilot catchments.
The Action Plans summarize the outcomes for the pilot catchments and highlight the modelling results showing the potential and the effectiveness of selected N(S)WRM implementation strategies.

References to relevant deliverables (e.g. pilot action report, studies), investment factsheet and web-links
If applicable, additional documentation, pictures or images to be provided as annex

D.T3.5.9 - Action Plan for Aist (AUT)

and "Technical background document to the ACTION PLAN for the Aist catchment: information on measures siting and effectiveness assessment with the modeling cascade"

https://www.interreg-central.eu/Content.Node/OT3.5---Action-plans-for-implementing-N(S)WRM-into-the-RB.html