

INTEGRATED APPROACH ON CUMULATIVE EFFECTIVENESS ASSESSMENT

REPORT ON STAKEHOLDER INVOLVEMENT

D.T2.5.1

Austria

WasserCluster Lunz

June 2019





1. General Information

Country:	Austria
Date & Place:	Physical meeting at WasserCluster Lunz, Lunz am See, October 2018 + E-mail and telephone interaction, focus: May 2019
Organizers:	WasserCluster Lunz: Eva Feldbacher, Damiano Baldan, Thomas Hein, Gabriele Weigelhofer
Documents Please send together with the report: <ul style="list-style-type: none"> • Scan of list of participants • Agenda • Photos 	
Further engagement of the stakeholders Please do not forget to send report of the consultation also to all participants to keep them informed and engaged. Invite them also to subscribe to our newsletter, on our project webpage (at the bottom of the front page: www.interreg-central.eu/Content.Node/FramWat.html).	

2. Report

Agenda and main points of the consultation *(max 1000 characters)*

Please shortly describe the agenda of the consultation. Which topics did you cover? Who were the presenters? Did you connect with any other similar project/initiative/event?

The focus of the event in Oct2018 was on the FramWat Landscape Valorization Method and the online FroGIS Tool:

- Methodology, Explanation of online tool
- First results for the pilot catchment Aist
- Collection of Stakeholders' opinion, feedback, expectations
- Analyzing strength and weaknesses of the tool

plus:

- Information on next step: static tool to assess effectiveness
- Information on progress of dynamic catchment modelling

Thomas Hein, managing director of WasserCluster Lunz and FramWat project leader, welcomed the stakeholders and acted as facilitator throughout the entire event which took around three hours in total.

After a short introduction to the event by Eva Feldbacher, Damiano Baldan presented the Landscape Valorization Method (Work Package 1). The methodology (developed by WULS) was explained in detail and each work step was described: i.a. what catchment data is needed and how input data needs to be pre-processed, how to generate the Spatial Planning Units (SPU), what indicator groups exist and how indicators are calculated, what to do with the resulting correlation matrix, the different approaches to classify indicators (equal width, quantiles...), the aggregation method and definition of weights, and finally the generation and interpretation



of the resulting maps.

The online available GIS tool FroGIS, that is using the above mentioned methodology, was demonstrated by Eva Feldbacher: the web interface, the e-learning course, the manual, the example data, and the specific working steps that have to be performed with the tool.

In a next step, first results of the testing of the FroGIS Tool for the pilot catchment Aist were presented. A focus lay on the explanation and discussion of the choice of the overarching goal „sediment balance“ and the three sub-goals: (1) reduction of sediment generation, (2) reduction of sediment off-stream transport, (3) improvement of sediment in-stream transport and the different indicators used within the computations for the three different goals.

A long discussion on possible indicators followed and new indicators were proposed by the stakeholders. Another part of the discussion dealt with the input data and the complex pre-processing of the data that is needed for the tool. Additionally, other strengths and weaknesses of the tool were discussed and compiled.

The second part of the event was dedicated to the dynamic modelling of the pilot catchment. Damiano Baldan gave an update of the progress of the hydrological and hydraulic modelling, the modelling cascade to downscale from catchment to habitat scale, and provided first information on the habitat model for the freshwater pearl mussel.

In the third part of the event, Damiano Baldan presented preliminary results of field investigations performed during summer 2018 in the catchment. These field investigations are not part of the FramWat project itself but part of Damiano Baldan’s PhD thesis. Results from the field investigations will ideally be used within the modelling part of the FramWat project and serve as validation and additional information for effectiveness assessment of N(S)WRM combinations.

Generally, stakeholder opinions and expectations of the valorization tool as well as the subsequent static tool for effectiveness assessment were collected. As the detailed methodology of the static tool wasn’t known at the time of the stakeholder event, the first ideas to link the static tool to the FroGIS Tool were presented and stakeholders were prepared to get more information in spring. Unfortunately, a physical meeting in spring was not possible as stakeholders were not available. Therefore information on the static tool was prepared and sent by e-mail together with an introduction to the “Concept Plan” and explanations of the proposed variants. These variants have already been discussed with stakeholders in advance. For a better understanding of the underlying ideas and concepts, all information was prepared in German.

A further introduction to the existing tools as well as the Concept and the Action Plan will be made at the next stakeholder meeting, which is already scheduled for October 29, 2019, at WasserCluster Lunz.

Participants *(max 500 characters)*

Shortly describe who were the participants, from which sector, institutions, levels, ...? How many of them, etc.?

Target groups <i>*according to the Target groups identified in AF</i>	Number <i>(see also list of participants)</i>
Local public authority	
Regional public authority	6 (4 water management, 2 nature protection)



National public authority	
Sectoral agency	
Interest groups including NGOs	
Higher education and research	
International organization	

Description:

The focus of this stakeholder consultation was put on information and involvement of authorities responsible for water management and nature protection in the pilot catchment area “Aist” in the Mühlviertel region in the Austrian province “Upper Austria”.

Six governmental representatives from the provincial government of Upper Austria were taking part in the stakeholder event: two from the nature protection department, four from the water management department, including the head of the department and the head of the water management district of the pilot catchment.

Discussion (max 1000 characters)

How did the discussion take place (in small groups, general discussion, facilitated by whom)? Which topics/questions did you discuss? What were the main conclusions?

There was room for questions and discussions during all presentations and the entire event, but the focus of discussions was on the FramWat Valorization Tool and Results as well as the planned Static Tool. Several aspects of both tools were addressed. Stakeholders were also asked for feedback in the May 2019 e-mail information campaign. All feedback was collected and is presented below.

3. Outcomes

Did you include any of the below proposed questions/topics into the discussion? If yes, please provide short feedback from your stakeholders:

Topic discussed with stakeholders	Stakeholder Feedback
T1 - Identification of potential locations of the N(S)WRMs	
<p>Stakeholder Feedback on Landscape Valorization and FroGIS Tool</p> <p>What are the user’s needs, requirements, and expectations regarding the GIS Tool for identification of locations?</p>	<p>Summary:</p> <p>Generally stakeholders are interested in the tool and the goals it is based upon. The use of the FroGIS Tool by water and nature protection authorities will be limited, though. On the one hand it is not detailed enough to be a proper planning instrument, on the other hand it’s too complicated to serve just a screening instrument (for rough assessment of a catchment and its characteristics).</p> <p>If we want authorities to be frequent users of the tool, we have to go „one step back” and make the tool simpler, and in this way raise the usability of the tool.</p> <p>One suggestion is to make a two-step approach for the tool:</p> <ul style="list-style-type: none"> - Version „light“- fixes datasets with lower resolution for screening purposes of catchments (cf. Tool „WFD surface water viewer“ of EEA)



	<ul style="list-style-type: none"> - Version „pro“- restricted access for trained experts only; possible to make „regionalisation“ by input of catchment specific data and indicators with higher resolution <p>Specific Issues:</p> <ul style="list-style-type: none"> - Uncertainties and ambiguities concerning the terminology exist - the meaning and the data base of various indicators is still unclear - e.g. ArableRatio - it’s not clear, which agricultural areas fall under this term (plough land with tillage farming only, no pastures/meadows) - DrainageDensity - the term is connected to agricultural draining practices (at least in Austria) but only includes the river network for catchments >1 km² (no ditches or other artificial drainage systems) - Indicator „Forest“: For the Austrian catchment it is necessary to distinguish between spruce monocultures and natural/semi-natural mixed forests (conifers and broadleaf forests) because these two have different effects on water and sediment retention: In the spruce monocultures there are high erosion rates and sediment inputs into surface waters (due to fissures at banks of rivers and forest roads), whereas natural mixed forests show less erosion rates and support water and sediment retention. - The possibility of one indicator to be stimulant and non-stimulant for different retention goals can lead to problems in understanding. It would be easier, if certain indicators always act into the same direction. - The possibility to include expert judgement (e.g.in the selection of the indicators, in the weighting process...) is seen very critically. Generally speaking, the more expert judgement is included, the more difficult the application of the tool gets because comprehensibility, reproducibility, and transparency might get lost. - SPU (Standard Planning Units): it’s unclear what level of detail should be used; the use of SPUs exported out of SWAT is not feasible for water authorities as these are normally not available; as a fast & simple application is wanted, existing catchment divisions should also lead to meaningful results. - The resulting maps need proper legends and meaningful descriptions! At the moment the colouring is a bit unclear. - It’s necessary to properly describe what “high need for retention” means for all resulting maps, as otherwise even experts can jump to wrong conclusions. Deficit analyses and implications have to be described precisely. - It has to be made clear that the GIS Tool is a static tool and not applicable for assessments of extreme events. Results cannot be used to deduce necessary flood retention measures.
T2 - Effectiveness of the NSWORMs	
<p>How to assess the effectiveness of NSWORM - a request to provide good case study or already existing method</p>	<p>Effectiveness assessment was only performed for single aim and single measure so far - e.g. effect of flood protection measure on flood wave mitigation/flood retention.</p>
<p>Are there experiences among the stakeholders with assessing, monitoring or modeling the effectiveness of the</p>	<p>No - only one climate region within pilot catchment</p>



<p>same type of measure within different climate regions, ecoregions, etc.?</p>	
<p>What is the appropriate scale to assess effectiveness of measures or to propose measures to the decision makers or stakeholders? Is it water body catchment, river basin, other division of land? Can decision maker/stakeholder (land owner/user) think at catchment scales?</p>	<p>The appropriate scale to assess effectiveness is depending on the tasks and aims of the measures themselves: The Austrian catchment has two main problems: water quantity (floods) and sediment & nutrient fluxes (siltation/aggradation affecting habitat availability), thus these two aspects have to be considered and probably treated separately in an effectiveness assessment: 1. For floods: the main settlements in the region (around 5) are seen as nodes and their upstream catchments have to be taken into account. The flood protection measures should be as close to the areas to be protected as possible. 2. For the sediment aspect the transitions zones from steep gorges to flat plateaus (break points in longitudinal river course) are the nodes and their upstream catchments are of interest. For nutrients retention the appropriate scale is the one that considers all main nutrient sources in the catchment (point and distributed). As NSWRM are local measures the appropriate scale to assess the effectiveness is rather small in a first step, e.g. sub-catchment scale and assessment of effectiveness of measures in a range of a few hundred meters downstream of the measure implementation. An upscaling to catchment scale is possible in a second step e.g. with the help of catchment modelling.</p>
<p>Are different kinds of stakeholders (foresters, farmers, water managers, etc.) willing to implement measures on the river basin with cumulative effects or rather choosing one measure with maximum effect for their concern? How the priorities can be chosen?</p>	<p>Practical implementation is always depending on cost-benefit analyses. So, there is no general answer to that question, every measure and/or measure combination has to be assessed individually. It is depending on the parameters that should be influenced (improved) and on the aims of the measures. Additionally, ecologists and water engineers have different opinions. Whereas many smaller measures are perceived to foster ecological improvements, measures for flood protection and also river restorations need a certain size to be effective, also in the sense of cost-effectiveness. More information/knowledge is needed on cumulative effectiveness. The possibility to compare the effects of bigger technical measures with the effects of sets of NSWRM would be of high interest for the stakeholders.</p>
<p>Is it possible to cover all problems of particular pilot area within the chosen variants of the Concept plan? Are they covering all problems/issues identified within Strategic documents of different policies?</p>	<p>For the pilot catchment Aist the FramWat project partner WasserCluster Lunz together with the main regional authorities decided to focus on the problem “sediment balance” and “habitats for the protected species Freshwater Pearl Mussel”. These are also the major aims of the described variants in the Concept Plan. An improved sediment balance is directly and/or indirectly also affecting other goals in the catchment, e.g. water quality, water retention in general, and hydrological extremes.</p>
<p>Is it possible to use dynamic models for assessing the effectiveness and/or cumulative effectiveness of N(S)WRMs? Which ones? For each type of N(S)WRM, if not, for which of N(S)WRMs?</p>	<p>The dynamic models for the pilot catchment Aist will test various sets of NSWRM implementation. First results are expected at a later stage of the project. NSWRM tested (for the time being) are: sedimentation ponds, buffer strips, river channel improvements, best agricultural management practices. Many other NSWRM from the EU catalogue of measures cannot be implemented in the dynamic models used to analyse the pilot catchment Aist in the frame of the FramWat project. Other modelling approaches would have to be used.</p>
<p>Is it possible to use dynamic</p>	<p>We are testing the same NSWRM with the static method and the dy-</p>



models to verify results of static method to assess effectiveness?	dynamic modelling to be able to compare the results and draw conclusions on this question.
What can be done to improve the accuracy of the Static Method to assess cumulative effect of N(S)WRM in the river basins?	A lot of expert judgement and decision is involved in the whole Static Tool workflow - already in the FroGIS Tool analysis (see also stakeholder feedback on T1 above), and even more in the Static Tool computations. This bears a lot of dangers for the credibility of the tool results as, in the worst case, results can be susceptible to manipulation and irreproducible. It is important, thus, to record all user decisions within the tools workflow precisely and transparently.
Does the Static method on effectiveness assessment reflect the expectations of stakeholders, what are their expectations?	After presenting the main aim and first ideas of the Static Tool for effectiveness assessment at the stakeholder meeting in autumn 2018, all detailed information on the methodology of the Static Method was forwarded to the stakeholders as soon as it was available in May 2019 by e-mail. The Excel spreadsheet for the improvement value calculation and the manual were passed on, too, together with an offer to give a more extensive physical training if wanted. The stakeholder's feedback and interest in the Static Tool were - in a first reaction - rather limited as the application seems very complex and involves a lot of expert judgement (see also answers above). Our stakeholders would generally prefer a simple tool for quick effectiveness estimations for catchment screening purposes. In-depth assessments in Austria are normally made within a detailed planning process often involving dynamic modelling and/or similar analyses, and mostly not performed by the authorities themselves but by external experts. Nevertheless, stakeholders will receive the Static Tool Testing report for the pilot catchment and the Static Tool will also be on the agenda of the next physical stakeholder meeting in autumn 2019 (October 29, 2019).
All Work Packages	
Are there any good practices in implementing NSWRM that could be shared among partners/countries in the region?	Some best practice examples exist in the pilot area - e.g. small sand/sediment traps; renaturation of river stretches; removal of migration barriers...

Stakeholders' feedback (max 1000 characters)
 What were stakeholder's comments/observations on the presented FramWat planned outputs?
 Were they interested to be further informed, involved into the project activities?

Generally stakeholders are interested in the FramWat project, its tools and outputs. They want to be further informed and involved in the project activities and want to be regularly updated with all project progress.

Stakeholders were interested in the WP1 GIS tool as it can serve as a useful support and complement to their existing planning tools. But they expressed various concerns and expectations that are all listed in the table above. These also relate to the static tool for effectiveness assessment, because the tool builds upon the FroGIS results and thus carries further all the related (and already mentioned) concerns and expectations.

Generally stakeholders would prefer easy and quick tools for first estimations and assessments. In Austria all detailed analyses are mostly part of a detailed planning process that often involves dynamic modelling or other in-depth approaches.



Stakeholders are very interested in the WP2 modelling results for the catchment, especially in the cumulative effectiveness assessment, as little knowledge and experience exist on cumulative effectiveness assessment and multiple benefits of N(S)WRM in general.

Stakeholders stressed that project results should especially be transferred to the agricultural and forestry sectors. At the moment, many farmers are not aware of the direct links between NWR in the catchment and its possible benefits for e.g. during dry periods. Thus, activities to raise awareness would be very important.

Outcomes

What would you consider to be the main outcomes of the National Stakeholder Consultation? Summarize in few points (500 characters)

Tools for NSWRM planning for water authorities should be designed in a way that they are user-friendly and easy to apply, as Austrian authorities would use them for first effectiveness estimations and screening purposes of selected catchments.

The theoretical background of NWRM and the benefits are well-known among water and environmental managers and are getting increased attention in the light of climate change adaptation and mitigation. The demand for ecological solutions like the NWRM approach is clearly there. The practical implementation lags far behind, though, mainly due to problems of (1) land availability, (2) lack of financial resources and (3) difficulties regarding maintenance obligations. These are also the reasons why many smaller NWRM are even harder to implement.

More information/knowledge is needed on multiple benefits of NSWRM and cumulative effectiveness of measure combinations.

Especially the agricultural sector has to be considered and involved when talking about N(S)WRM. More activities on awareness raising and information exchange are needed to change agricultural management behavior. High participation quota is a prerequisite for positive impacts at the catchment scale. The measures should be attractive (economic incentives) for the farmers and landscape managers.

A proper combination of policy tools and measures, targeted financing programs to support cost-efficient measures, implementation of multi-beneficial measures (water retention, nutrient management, sediment management, climate change resilience, etc.), well-organized advisory services, and bottom-up initiatives for information exchange would be preferred.

Next steps

Were there any further steps agreed on the seminar?

Agreement exists to

- keep stakeholders updated on project progress
- involve stakeholders in testing of tools in pilot catchment
- inform them well in advance of upcoming events and planned participation.

A next meeting with stakeholders was already scheduled for October 2019.

Organizer's feedback on the process

Let us know if you like the way work with the stakeholders is organized within the project (plan, communication, etc.). What is missing? Share your recommendations, comments, etc.

Give information on planned stakeholder events further in advance because approaching, preparing and inviting stakeholders (especially on higher level) needs a lot of time.







Presenting a new tool at a stakeholder event also needs several weeks' notice as it is necessary to get familiar with the tool and generate first results as a basis for discussion with stakeholders.



Annex:

- (A) Scan of list of participants
- (B) Agenda
- (C) Photos of event


(A) Scan of list of participants:

  FramWat - Stakeholder Veranstaltung, WasserCluster Lunz, 22. Oktober 2018 		
Anwesenheitsliste		
Name	Institution	Unterschrift
Torben Valters, MA	Land Oberösterreich WW-HV	
FELIX WEINGROBER	LAND OÖ, WW-HV	
Peter Anderwald	- " - WW-PL	
Gudrun Straub-Wachsegger	- " - Naturschutz	
Flora GILLHARD	- " - GIB-Linz	
Stefan GUTTMANN	- " , Naturschutz	
Thomas HEIN	WCC	
Eva FELDBACHER	WCC	
DAMIANO BALDAN	WCL	


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(B) Agenda:

Interreg 
CENTRAL EUROPE European Union
European Regional
Development Fund

FramWat



Framework for improving water balance and nutrient mitigation by applying NATURAL SMALL WATER RETENTION MEASURES (NSWRM)

FramWat - Stakeholder Veranstaltung
WasserCluster Lunz, 22. Oktober 2018, 14:30

AGENDA

Teil 1 - GIS Tool zur Landschaftsbewertung

- Vorstellung „Landscape Valorization Method“ und online GIS Tool - Methodik, Stärken und Schwächen
- Erste Ergebnisse für das Einzugsgebiet Aist
- Feedback und Diskussion

Kaffeepause

Teil 2 - SWAT Modellierung

- Update Ergebnisse für das Einzugsgebiet Aist

Teil 3 - Felduntersuchungen

- Kurzbericht zu Untersuchungen an der Maltzsch 2018
- Präsentation erster Ergebnisse
- Vorstellung Ideen Untersuchungsdesign Aist - Naarn 2019

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(C) Photos of the event:

