# FEEDBACK WORKSHOP

D.T1.3.2

Version 1

December 2018

| | |
|---|---|
| *WP* | **W T1: Identification of potential locations of the Natural Small Water Retention measures** |
| *Activity* | Act. 1.2. Testing the prototype of the GIS tool in the river basins together with stakeholders |
| *Activity leader* | WULS |
| *Number and name of the deliverable/output* | D.T1.3.2 Feedback workshop |
| *Participating partners* | Lead Partner 1 - Warsaw University of Life Sciences, Warsaw, Poland<br>Partner 2 - Global Water Partnership CEE, Slovakia<br>Partner 3 - Slovak Watermanagement Enterprise, Slovakia<br>Partner 4 - Regional Environmental Centre, Hungary<br>Partner 5 - Middle-Tisza District Water Directorate, Hungary<br>Partner 6 - Limnos, Slovenia<br>Partner 7 - Croatian Waters, Croatia<br>Partner 8 - University of Ljubljana, Slovenia<br>Partner 9 - WasserCluster Lunz – biologische Station GmbH, Austria<br>Associated Partner 1 – International Commission for the Protection of the Danube River<br>Associated Partner 3 - The Regional Water Management Authority<br>Associated Partner 4 - Ministry of Environment of the Slovak Republic<br>Associated Partner 6 - Slovenian Water Agency |
| *Type of the deliverable/output (analysis, report, guideline, workshop, brochure, etc.)* | Workshop |
| *Purpose of the deliverable/output* | to summarise results of testing the Prototype of the GIS tools (FroGIS) and collect bugs and discussing about changes in functionality the final version GIS Tools and valorisation method. |
| *Connection with other deliverables* | D.T1.1.1, D.T.1.2.1, D.T.1.2.2, D.T.1.3.1, D.T2.3.1, D.T2.3.2 |
| *Start date* | **Nov-18** |
| *End date* | **Nov-18** |

# CONTENT

# 1 INTRODUCTION

The feedback workshop took place on the 22nd of November 2018 at the Faculty of Civil Engineering, University of Ljubljana, Hajdrihova 28, 1000 Ljubljana, Slovenia. The event was hosted by the project's partner - University of Ljubljana and included 27 participants. All nine project partners from six countries and other associated partners, met to review and comment on the FroGIS tool.

Main goals of the workshop:

- Presentation of GIS Tools testing results (FroGIS) for six pilot catchments,
- Collection of reports on FroGIS bugs and errors
- Discussion about changes in functionality in the final version of FroGIS
- Discussion about changes in the valorisation method

Other important goals:

- Supporting the development of a report from FroGIS tests.

# 2 PROGRAM AND INVITATION PROCESS

The invitation to the workshop was sent out to project partners who were asked to delegate to the workshop at least 1 person who is responsible for testing the FroGIS tool for their pilot catchment. Selected participants were trained during an online meeting (16.11.2018) on how to prepare data and a presentation for the workshop. They also received as an example the presentation for the Kamienna catchment. Participants had to fill in a registration form. Lunch and coffee brakes were provided during the workshop but participants had to arrange accommodation on their own behalf.

# AGENDA

## Feedback workshop

## FramWat - Framework for improving water balance and nutrient mitigation by applying small water retention measures

## Ljubljana, 22 November 2018

Faculty of civil engineering (University of Ljubljana),
Hajdrihova 28, 1000 Ljubljana, Slovenia.

| | | |
|---|---|---|
| 15:00 | 15:10 | Welcome (T. Okruszko) |
| 15:10 | 15:30 | Introduction (I. Kardel) |
| 15:30 | 16:30 | Presentations of FroGIS test results on individual pilot catchments (20minutes per catchment) |
| 16:30 | 16:45 | Coffee break |
| 16:45 | 17.45 | Presentations of FroGIS test results on individual pilot catchments (20minutes per catchment) - continuation |
| 17.45 | 18.20 | Discussion, panel FAQ and answers (Presentation how to solve same problems, discussing the scope of FroGIS updates that can be made) |
| 18.20 | 19:00 | Technical consultation panel (for technical staff with their own computers) |

# 3 DESCRIPTION OF WORKSHOP

Workshops were divided into three parts:
1. Presentations of partners implementing the FroGIS program in pilot catchments,
2. General discussion
3. Substantive work with the FroGIS program

1. Presentations of partners implementing the FroGIS program in pilot catchments.

Presentations were presented according to a previously prepared template, in which issues related to:

- Characteristics of the catchment,
- Issues identified in the catchment,
- Description of workflow,
- Analysis of variants,
- Comparison and description of results and
- Summary

The partners presented the progress of works in the following order:

a) Poland – Ignacy Kardel – Kamienna river

Results of FroGIS application tests on the Kamienna catchment

Summary:

- The difference between valorisation with variable weights and with weight 1 is only 16-35%
- The best method of division into classes is natural breaks because give as minimum errors, i.e. the difference between [field recognition goals classes] - [valorisation calsses]

b) Austria – Damiano Baldan – Aist river

Results of FroGIS application tests on the Aist catchment

Summary:

Issues on use of the tool:

- How to separate longitudinal (upstream/downstream) effects from lateral effects?
- How to weight results in case of longitudinal effects?

- Weighting process: guidelines for criteria?
- How to implement/interpretate validation?
- Guidelines on how to present results
- Documentation is still partial

Feedbacks from stakeholders :

- Interested in the tool but…
- …not fine enough for planning and too complicated for screening: one step back?
- Two versions: simpler one for planning? (e.g. with standard data)
- Some indicators are unclear (e.g. Forest)
- Stimulant/destimulant definition is confusing (depends on goals)
- SPUs conceptualization/definition is unclear
- Is the tool usable for extreme events (e.g. floods)?
- Maps out of the tool need to be interpreted
- Expert based weighting makes the process subjective

c) Croatia – Luka Vukmanić- Bednja river

Testing the prototype of FroGIS tool

Summary:

Work is continuing on the implementation of FroGIS in the Bendja river basin, weight solver, classes of indicators and valorization variants.

There were some data problems.

d) Slovenia – Mateja Skrejaniec – Kamniska Bistrica river

Results of FroGIS application tests on the Kamniška Bistrica catchment

Summary:

- Data pre-processing is time consuming and demanding
- FroGis Projections are problematic (maybe this could be eliminated inside the program)
- More testing in FroGis is needed in order to get better results

- More SPUs
- Weight changing

e) Hungary – Middle TISHA river

The progress of work on the implementation of the FroGIS program has been presented.

f) Slovakia – Slana river

The progress of work on the implementation of the FroGIS program has been presented.

2. General discussion

After the presentation of the results of the implementation there was a general discussion conducted by Tomasz Okruszko.

The main thoughts are noted below:

Tomasz Okruszko: Preparing the date for FroGIS is complicated.

Damiano Baldan: Most compicated is to get and convert dynamic data into static (e.g. flow characteristic)

Tomasz Okruszko: there are two approaches which are testing: 1 indicators, 2 experts. Which one should we follow?

Adam Kovacs: without experts knowledge we are getting very strange results, it should be expert knowledge [used]

Thomas Hain: it should be transparent what is expert knowledge and objective indicators

Alan Cibilic: We will need a expert knowlange

Monika Supekova: we need both. Experts should check the final results.

Tomasz Okruszko: is some very important indicator is missing?

Adam Kovacs: floods damage functions

TISHA: excess of water from (division into): fluvial or rain flood

3. substantive work with the FroGIS program

Substantive work took place with the application opened.

# 4 REPORTED COMMENTS

During the workshop participants were asked to describe their comments on the functionality of the FroGIS. The table presents the most important issues emerging.

*Tab. 1 Comments reported during Feedback meeting*

| Who reported | Issues on use of the FroGIS |
|---|---|
| WCL | How to separate longitudinal (upstream/downstream) effects from lateral effects? |
| WCL | It is difficult to disaggregate "river network" contributions from "SPUs" contributions to the some indicator values. A weighting system that considers the river network geometry could solve this issue, at the cost of adding more complexity to the model. |
| WCL | Guidelines for weighting process are missing. |
| WCL | Documentation is still partial and hard to understand for users with limited hydrological engineering background |
| WCL | Guidelines on the presentation of results may be useful when it comes to interpret the results |
| Austrian stakeholders | If authorities should be frequent users of the tool, it has to become user-friendlier by simplifying the tool's working steps (going „one step back").<br>One suggestion was to make a two-step approach for the tool:<br>• Version „light"– fixes datasets with lower resolution for screening purposes of catchments<br>• Version „pro"– restricted access for trained experts only; possible to make „regionalisation" by input of catchment specific data and indicators with higher resolution |
| Austrian stakeholders | Uncertainties and ambiguities concerning the terminology of data and indicators exist – the meaning and the data base of various indicators is unclear:<br>e.g. ArableRatio – it's not clear, which agricultural areas fall under this term (plough land with tillage farming only, no pastures/meadows)<br>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) |
| Austrian stakeholders | 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. |
| Austrian stakeholders | The possibility of one indicator to be stimulant and non-stimulant for different retention goals seems can lead to problems in understanding. It would be easier if certain indicators always act into the same direction. |
| Austrian stakeholders | 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 get lost. |
| Austrian stakeholders | SPUs (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. |
| Polish stakeholders | How to balance two groups of indicators: opportunities and needs? |
| Polish stakeholders | It was necessary to simplify the process of data preparation. |
| Polish stakeholders | Is the application based on data quality assessment and analysis of the method adopted by an expert is able to assess the quality of the valorisation map? |
| Polish stakeholders | Expert based weighting makes the process shut be describe in Valorisation Methodology |
| WULS | Due to the specifics of the FroGIS application, it would be necessary to introduce in it minimum requirements as to the number of SPU (> 40), DEM quality and its hydrological correctness with rivers, etc.: |
| WULS | For making the application more user friendly mark or enter default / recommended values such as: 5 classes for final valorisation maps |
| WULS | The precision of class interval limit should be increased (this will be improved Quantil method) |
| WULS | Remove next indicators: CWB_Var_a; CWB_Var_m - because they do not introduce significant changes |
| UL | Data pre-processing is time consuming and demanding |
| UL | FroGis Projections are problematic (maybe this could be eliminated inside the program) |
| UL | More testing in FroGis is needed in order to get better results (More SPUs, Weight changing) |
| MTDWD | Proposal to add to the goals pluvial (rain-related) flood |

# 5 PARTICIPANTS LIST

Interreg CENTRAL EUROPE
European Union European Regional Development Fund
FramWat

**Participant list**

**Feedback workshop**

22 November 2018

FGG UL - LIMNOS Ljubljana

| lp | Name | | organisation | signature |
|---|---|---|---|---|
| 1 | Tomasz | Okruszko | WULS | |
| 2 | Ignacy | Kardel | WULS | |
| 3 | Magda | Jarecka | WULS | |
| 4 | Paweł | Trandziuk | WULS | |
| 5 | Mikołaj | Piniewski | WULS | |
| 6 | Sabina | Bokal | GWP CEE | |
| 7 | Danka | Thalmeinerova | GWP CEE | |
| 8 | Monika | Supeková | SWME | |
| 9 | Jozef | Dobias | SWME | |
| 10 | Danko | Aleksic | REC | |
| 11 | Bujar | Rexhepi | REC | |
| 12 | Attila | Lovas | MTDWD (KöTIVIZIG) | |
| 13 | Nikolett | Gallé-Gázsity | MTDWD | |
| 14 | Péter | Sólyom | MTDWD | |
| 15 | Gábor | Péter Farkas | MTDWD | |
| 16 | Melinda | Váci | MTDWD | |
| 17 | Anja | Potokar | Limos | |
| 18 | Alenka | Zalaznik | Limos | |
| 19 | Alan | Cibilic | HV | |

Page 1

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|---|---|---|---|---|
| 20 | Luka | Vukmanić | HV | |
| 21 | Mateja | Skerjanec | UL | |
| 22 | Primož | Banovec | UL | |
| 23 | Eva | Feldbacher | WCL | |
| 24 | Thomas | Hein | WCL | |
| 25 | Damiano | Baldan | WCL | |
| 26 | Adam | Kovacs | ICPDR | |
| 27 | Louis | Courseau | Wody Polskie | |
| 28 | Ivan | Hapco | Ministry of Environment of the Slovak Republic | |
| 29 | Jurij | Krajcic | Slovenian Water Agency | |
| 30 | GÁBOR | HARGITAI | MTDWD | |
| 31 | | | | |
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| 33 | | | | |

Date ..... 22.XI.2018

Signature.....

# 6 PHOTOS


Interreg
CENTRAL EUROPE
FRAMWAT