



---

# UPDATED VERSION OF THE VALORISATION METHOD AND GIS TOOL

---

**D.T1.3.3**

**Version 1**  
**12.2018**

---



**Content**

- 1 Scope of update..... 3
- 2 Work flow ..... 3
- 3 List of comments ..... 4
- 4 Update valorisation method ..... 5
- 5 Summary..... 5



## 1 Scope of update

The report describes the scope of the update of the GIS Tool developed in April 2018, which was later named FroGIS. After the training course for the GIS Tool, project partners tested the Tool in six pilot catchment. During the tests, a number of errors were reported, some of which were removed on a regular basis. After the tests, the partners prepared reports describing the errors and suggestions that were analysed by the main contractor (WULS). Taking into account the obligations resulting from the project application, the available financial resources and the fact that it is an open source application and its further development will be possible on the GitLab portal, the contractor commenced to implement some of the submitted comments. This extend of those changes is described in this report.

## 2 Work flow

To allow the test process being carried out without major disruptions, it was decided to make the entire FroGIS application available to partners at <https://gitlab.com/framwat>. Partners were able to submit comments on an ongoing basis in the **Issues** tab. Additional 30 comments were submitted during the FeedBack meeting, most of which were solved. After dissolving some of the comments, a new version of the application was published. In total, 17 versions were published from v.0.8.0 to 0.9.6. These changes are documented in the **Container\_registry** tab.

Application tests were conducted in the following stages:

- publication of the new version at <http://levis-framwat.sggw.pl>,
- tests carried out by a WULS employee which reported his comments in the [LookUpTable of indicator & input data & goals](#)- containing the tabular structure of the application,
- publication of a summary of changes at the [Changelog](#) website - link available in the FroGIS application
- publication of a new version on the DemoServer <http://WaterRetention.sggw.pl>
- frequent errors that can be resolved by the user were described in the [FAQ](#) file - link available in the FroGIS application



### 3 List of comments

In Tab. 1 put a list of comments and describe decisions of WULS about the update.

Tab. 1 Comments reported during Feedback meeting

Who reported	Issues on use of the FroGIS	Updated
WCL	How to separate longitudinal (upstream/downstream) effects from lateral effects?	Yes
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.	Not
WCL	Guidelines for weighting process are missing.	Yes
WCL	Documentation is still partial and hard to understand for users with limited hydrological engineering background	Yes
WCL	Guidelines on the presentation of results may be useful when it comes to interpret the results	Yes
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“). One suggestion was to make a two-step approach for the tool: <ul style="list-style-type: none"> <li>Version „light“ – fixes datasets with lower resolution for screening purposes of catchments</li> <li>Version „pro“ – restricted access for trained experts only; possible to make „regionalisation“ by input of catchment specific data and indicators with higher resolution</li> </ul>	Partly
Austrian stakeholders	Uncertainties and ambiguities concerning the terminology of data and indicators exist – the meaning and the data base of various indicators is 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 km <sup>2</sup> (no ditches or other artificial drainage systems)	Partly
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.	Partly
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.	Not
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.	Not
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.	Partly
Polish stakeholders	How to balance two groups of indicators: opportunities and needs?	Partly
Polish stakeholders	It was necessary to simplify the process of data preparation.	Yes
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?	Not
Polish stakeholders	Expert based weighting makes the process shut be describe in Valorisation Methodology	Yes
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.:	Yes
WULS	For making the application more user friendly mark or enter default / recommended values such as: 5 classes for final valorisation maps	Yes
WULS	The precision of class interval limit should be increased (this will be improved Quantil method)	Yes



Who reported	Issues on use of the FroGIS	Updated
WULS	Remove next indicators: CWB_Var_a; CWB_Var_m - because they do not introduce significant changes	Yes
UL	Data pre-processing is time consuming and demanding	Partly
UL	FroGis Projections are problematic (maybe this could be eliminated inside the program)	Yes
UL	More testing in FroGis is needed in order to get better results (More SPUs, Weight changing)	Partly
MTDWD	Proposal to add to the goals pluvial (rain-related) flood	Not

## 4 Update valorisation method

The new version of the methodology introduced the following changes:

- the methodology for identifying weighting factors was added,
- Updated LookUpTable of indicator & input data & goals.

## 5 Summary

With the available project funds and requirements FroGIS application was updated and made available on Demo Server at <http://WaterRetention.sggw.pl>. Some of the ideas were not implemented due to the fact that they exceeded the project requirements, available financial resources and time expenditure. Additionally some of the comments were new ideas that would significantly change the application structure. These ideas were published at the GitLab portal, for possible future implementation by the Internet community <https://gitlab.com/framwat>.