

# Reports from pilot action for testing Decision Support System for Planning of Natural (Small) Water Retention Measures

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## 1. Introduction

Decision Support System for Planning Natural (Small) Water Retention Measures (DSS) is created for people involved in planning water retention measures to mitigate the effects of droughts, floods and surface contamination by biogenes.

The goal of the application is to familiarize the user with the catalog of Natural Small Water Retention Measures (NSWRM) and the planning process as well as to survey their preferences for the area of interest. An additional function is to help the user in making a decision about the location and type of measure and to develop a report, based on which the user will be able to develop an implementation plan and prepare the necessary permits. The available set of data, tools, guidelines and procedures (methods) enables the assessment of cost and efficiency of different combinations of NSWRM at the catchment scale. The application development process has already gone through the following phases:

- The project planning phase,
- Developing the prototype ,
- Testing.

The prototype of DSS was presented and discussed by most partners during the last National meeting held in individual countries. The purpose of this report is to describe the methodology and testing results for the following four Pilot Catchments: Slana, Kamniska Bistrica, Kamienna, Nagykunsági.



## 2. Methods

Test were carried out in two stages:

- first only by WULS-SGGW employees and the associated partner Regional Water Board Warsaw,
- second along with the remaining project partners.

The results of the first tests were submitted and solved on the GitLab platform <https://gitlab.com/framwat/decision-support-system>. After carrying out those tests the second stage began, the methods of which were agreed during an online meeting with ten participants from partner institutions: WULS, MTDWD, SWME, UL.

Accepted methods includes carrying out the following tests on the website:

<https://planning.waterRetention.sggw.pl>

Tests are carried out in an independent and parallel mode in order to control the multi user editing function. In addition, the tests should include the new generation of browsers: Chrome, Microsoft Edge, Opera, FireFox.

The following groups of test of different contents and functionality of the DSS have been identified:

- Test1 Multilingualism
- Test2 Descriptions and links
- Test3 Catalogue of measure
- Test4 Legal procedures for implementing NSWRM (polish)
- Test5 Planner of NSWRM
- Test6 Multi users editing

Test1 includes testing the language availability and suitability of the translations. The DSS is available in 6 project partners languages and english.

Test2 applies to testing the links within the DSS to check if they are active. Another step is to test if the descriptions are suitable and explanatory for the user.

Test3 comprises examining different configurations of chosen measures in the catalogue of measures. This is carried out by selecting different boxes in the sector, goal, scale, soil permeability, land use, landscape sections.

Test4 is carried out only by the Polish project partners as this section is available in Polish language and is relevant for Polish conditions. This test is conducted by selecting different configurations from the drop down menus.



Test5 involves using the mapping tool called planner of NSWRM. The person carrying out the tests should create an account and log in. The next step is to create polygons and specify the details of the measures. The last step is to generate a report.

Test6 is carried out to check if the measures included in the planner of NSWRM can be edited or created in parallel by multiple users (from different accounts).

A draft bug report is available on the website and includes the following attributes:

- DSS ver.
- Date@time
- Pilot Catchment
- Temporary email for test
- Temporary password
- Tested objects
- Describe of problem
- Description of suggestion / new functionality
- Developer answer

Tests should include the following objects:

- Edu. Movies,
- Edu. Programmes,
- Edu. Sciences pub.,
- Edu. Databases,
- Edu. Guideline - case studies,
- Help,
- Catalogue of Measures,
- Planner Login,
- Planner Map settings,
- Planner Zoom +/-,
- Planner manage layers,
- Planner Find information,
- Planner Add new measurement,
- Planner See measures list,
- Planner generate report,
- Planner Administration panel



### 3. Results

Testers were asked to fill in an online Google spreadsheet table with any issues they encounter. The tester had to write what version of the DSS they were using, at what date and time were they carrying out the tests, pilot catchment used, their email address, temporary password used, what object that was tested, describe the encountered problem, suggest any new functionalities or solutions. There is also a place for the developer to answer. A total number of 38 issues were reported within the spreadsheet with a breakdown on the type of issues summarised in Tab.1 and the full table available in the appendix (Tab. A1). Most issues were identified in the catalogue of measures and the Planner.

Tab. 1 Summary of the reported issues

| Type of issue                                     | Number of issues |
|---|------------------|
| Wrong or missing translation                      | 17               |
| Text or photos overlaying/covering other features | 5                |
| Broken links                                      | 4                |
| Issues with generating a report from the Planner  | 2                |
| Various   | 10               |



## 4. Conclusions

Testing results were forwarded for implementation to the WULS IT specialist who commented on the possibility of solving or improving the issue brought to his attention in table 1. The goal of carrying out those tests was to increase the efficiency and functionality of the final version of the application.

The source code for the tools developed during the FramWat project is publicly available on the GitLab platform. It can be further developed and modified by the users. Currently the most important functions work correctly and others can be developed according to up-to-date needs.





## 5. Appendix

Tab. A1 Bugs reported by DSS testers from partner institutions during the second round of testing.



| No. | DSS ver. | Pilot Catchment   | Tested object           | Describe of problem  | Description of suggestion / new functionality   | Developer answer |
|-----|----------|-------------------|-------------------------|--|---|------------------|
| 1   | 0.1.26   | Kamienna          | Edu. Movies             | One layer covers the other   | Introducing the ability to change the order of layers view  | done             |
| 2   | 0.1.60   | Nagykunsági       | Catalogue of Measures   | translation problem  | general means: Általános  | will be done     |
| 3   | 0.1.63   | Blh               | Catalogue of Measures   | translation  | better translation of 'Near a watercourse or drained area' : Vízfolyás vagy vízrendezett terület közelében                                | will be done     |
| 4   | 0.1.63   | Kamniška Bistrica | Edu. Databases          | Link not working (regardless of language)                                    | Tools>Dynamic method link is not working. Either remove or repair.  | will be done     |
| 5   | 0.1.63   | Kamniška Bistrica | Planner manage layers   | Base layer multiplication  | Under base layers (left side of Planner) the same base layers are written a couple of times. Looks like all layers repeat again and again | will be done     |
| 6   | 0.1.63   | Kamniška Bistrica | Planner manage layers   | Layers don't shut down   | After pressing a layer on/off button a couple of times, some layers would always stay on regardless of the on /off button                 | will be done     |
| 7   | 0.1.60   | Nagykunsági       | Catalogue of Measures   | translation correction need  | better translation of 'scale' : lépték (not 'skála')  | will be done     |
| 8   | 0.1.60   | Nagykunsági       | Catalogue of Measures   | translation correction need  | better translation of 'highlands' : hegy és dombvidék (not 'felföld')   | will be done     |
| 9   | 0.1.60   | Nagykunsági       | Catalogue of Measures   | translation correction need  | better translation of 'Near a watercourse or drained area' : Vízfolyás vagy vízrendezett terület közelében                                | will be done     |
| 10  | 0.1.60   | Nagykunsági       | Planner generate report | translation of the report  | at least english version recommended  | ?                |
| 11  | 0.1.60   | Nagykunsági       | Planner generate report | Tab. 3. explanation of precipitation data, annual is average of monthly data |   | will be done     |



|    |        |     |  |                                  |  |              |
|----|--------|-----|--|----------------------------------|--|--------------|
| 12 | 0.1.63 | Blh | Edu. Databases                                       | Links not working                | links not working from Dataset name: NCDC/NOAA, till Monthly climate and climatic water balance for global terrestrial surfaces from 1958-2015   | will be done |
| 13 | 0.1.63 | Blh | Tools - N(S)WRM planner                              | wrong name of catchment          | it is not catchment of river Slaná but catchment of river Blh  | will be done |
| 14 | 0.1.63 | Blh | Planner generate report                              | needs some fixing                | when i add more measures system doesnt want to generate report for me, when i add new measure that contains more then one measure report shows just the name of first measure that i chosen, i cant fully delete polygons when im trying measures and so on... | will be done |
| 15 | 0.1.63 | Blh | Tools - Dynamic metod of assessing the effectiveness | link doesnt work                 | when i click on it nothing happens   | will done    |
| 16 | 0.1.63 | Blh | Help   | lower bar issue                  | lower bar called:Decision Support System is a part of Central Europe Interreg Project - is overlaying with some parts of text  | will be done |
| 17 | 0.1.63 | Blh | Home   | recommendation                   | I recommend to add some pictures to make the site look more appealing  | will done    |
| 18 | 0.1.63 | Blh | Tools - legal procedures for implementing NSWRM      | correction of translation needed | this part of site uses mostly Polish language  | will done    |
| 19 | 0.1.63 | Blh | main menu  | translation                      | Home - Domov<br>Education - Vzdelávanie<br>Tools - Nástroje<br>Help - Pomoc  | will done    |
| 20 | 0.1.63 | Blh | Tools - AHP method                                   | translation                      | ahp method has not been translated into Slovak   | will done    |
| 21 | 0.1.63 | Blh | Planner Find information                             | doesnt work                      | this button doesnt show any information about area   | will be done |



|    |        |                   |                             |  |  |              |
|----|--------|-------------------|-----------------------------|--|--|--------------|
| 22 | 0.1.63 | Kamniška Bistrica | Planner generate report     | Translation  | Headers under "Tab 1 Administration units" are in Polish, but should be in English (note: the whole report is in English)                    | will be done |
| 23 | 0.1.63 | Blh               | Planner manage layers       |  | shows double Manage layers   | will be done |
| 24 | 0.1.63 | Blh               | Add WMS layer               | doesnt work  | can not open WMS - <a href="https://zbgisws.skgeodesy.sk/retm_wms/service.svc/get">https://zbgisws.skgeodesy.sk/retm_wms/service.svc/get</a> | will be done |
| 25 | 0.1.63 | Slana             | Planner Add new measurement | after adding 3 polygons the edition is suspended, i.e. the graphic rises but the form window does not pop up and after the refresh the values in the form are lost                                 |  | will be done |
| 26 | 0.1.63 | Blh               | Planner generate report     | translation  | some parts of generated report are not correctly translated  | ?            |
| 27 | 0.1.63 | Slana             | Planner Find information    | "find information button" is not working, tested by click on selected reservoir, diferent layers. Or?  | to incorporate   | will be done |
| 28 | 0.1.63 | Slana             | Planner Login               | How to log out? There is no "log out button"? Or?  | to incorporate pop-up window   | will be done |
| 29 | 0.1.63 | Slana             | Planner manage layers       | layers are shown in left side panel twice, when "clicking on one of them", both are marked, although layer seems to be shown in the portal only once. Will send prnts "errors_1_layers-twice.jpg". |  | will be done |



|    |        |          |                             |  |   |              |
|----|--------|----------|-----------------------------|--|---|--------------|
| 30 | 0.1.63 | Slana    | Planner manage layers       | some layers have similar "violet colour" (e.g. TWI and Protected surface), this is little bit misleading.  | to tune colours at the end of testing   | will be done |
| 31 | 0.1.63 | Slana    | Upper black menu            | not translated to Slovak. Only Catalogue of measures is in Slovak.   | translate all into Slovak, or keep all in English. But translation will be better, as planned to be used by local stakeholders. | will be done |
| 32 | 0.1.63 | Slana    | Planner Add new measurement | translation of some measures is wrong ("odvodňovací priestor", "hydromorfológiu").   | to correct - e.g. "hydromorfológiu" into "hydromorfológia"  | will be done |
| 33 | 0.1.63 | Slana    | Planner generate report     | not translated to Slovak at all.   | to serve with translated version  | ?            |
| 34 | 0.1.63 | Slana    | Planner generate report     | for 2 measures with switched-on few layers the report generation was OK. For 6 measures with switched-off layers the report was not generated at all.                      |   | will be done |
| 35 | 0.1.63 | Slana    |                             | translation  | (in footer) Współfinansowane przez - S finančnou podporou   | will be done |
| 36 | 0.1.63 | Slana    |                             | translation  | (In footer) Education - Vzdelávanie<br>(In footer) Tools - Nástroje   | will be done |
| 37 | 0.1.63 | Kamienna | Planner generate report     | suspension (not generating), after adding a new one to existing ones and deleting the first object on the list. After refresh web page generation of report works correct. |   | will be done |
| 38 | 0.1.63 | Kamienna | Planner generate report     | Annual sum of precipitation is wrong   |   | will be done |



|    |        |          |                         |  |  |              |
|----|--------|----------|-------------------------|--|--|--------------|
| 39 | 0.1.63 | Kamienna | Planner generate report | Tab.6 Risk investmen - The rows are repeated twice: once from the surface, and once without surface. |  | will be done |
| 40 | 0.1.63 | Kamienna | Planner generate report | Tab.5 Sum of run off per month or year in mm - In annual, the sum of monthly values should be        |  | will be done |
| 41 | 0.1.63 | Kamienna | Planner generate report |  | Tab. 8. Land cover occupation; Rename column Value to Area [m2] and remove Unit column | will be done |
| 42 | 0.1.63 | Kamienna | Upper black menu        |  | Add Gudline to menu between Education and Catalog of Measure                           | will be done |
| 43 | 0.1.63 | Kamienna | Planner generate report |  | Add link to pdf of Report  | will be done |

