

# INTEGRATED APPROACH ON CUMULATIVE EFFECTIVENESS ASSESSMENT

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Reports from national trainings

Slovakia

Slovak Water Management Enterprise and  
GWP Central and Eastern Europe

Version 1

05 2019

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## 1. General information

<b>Country:</b>	Slovakia
<b>Date &amp; Place:</b>	29 March 2019, TUZVO, Zvolen, Slovakia 6 May 2019, SPU Nitra, Slovakia
<b>Organizers:</b>	Slovak Water Management Enterprise (SWME) and GWP Central and Eastern Europe (GWP-CEE)
<b>Documents</b> Please send together with the report: <ul style="list-style-type: none"> <li>• Scan of list of participants</li> <li>• Agenda</li> <li>• Photos</li> </ul>	
<b>Further engagement of the stakeholders</b> Please do not forget to send report of the training 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: <a href="http://www.interreg-central.eu/Content.Node/FramWat.html">www.interreg-central.eu/Content.Node/FramWat.html</a> ).	

## 2. Report

**Agenda and main points of the trainings** (*max 1000 characters*)  
 Please shortly describe the agenda of the trainings. Which topics did you cover? Who were the presenters? Did you connect with any other similar project/initiative/event?

The trainings were opened and further moderated by Monika Supeková (SWME), project manager for Slovakia. At the beginning, the participants introduced themselves. The main scope of the national trainings was to present and discuss with participants the actual status in development of the online tools on landscape valorization and on NSWRMs effectiveness assessment, their partial results for the Blh sub-catchment, and to train the participants in using the already developed landscape valorization online tool. The first part of the national trainings was dedicated to presentations and discussions held in the plenary, and second part was dedicated to training session. The topics covered within presentation were - already reached results and outputs of FramWat project (Monika Supeková), landscape valorization method, relevant indicators (Jozef Dobias), assessment of NSWRMs effectiveness, approach to solution (Monika Supeková), proposal of method to assess NSWRMs effectiveness, relevant indicators (Monika Supeková), expected inputs from stakeholders (Ján Špiner). As introduction to training session the presentation on developed tools within FramWat project as workmanual and results of valorization tool testing for Blh sub-catchment were held by Jozef Dobias, he has led the training session for stakeholders too.



**Participants** (max 500 characters)

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

Target groups	47 (please attach also list of participants)
Local public authority	2 (State Nature Conservancy of the SR, branch Muránska Planina) 2 (State Nature Conservancy of the SR, branch Cerová Vrchovina) 1 (Slovak Water Management Enterprise, branch Rimavská Sobota)
Regional public authority	2 (Slovak Hydrometeorological Institute, branch Banská Bystrica) 3 (Slovak Water Management Enterprise, branch Banská Bystrica)
National public authority	3 (Slovak Water Management Enterprise Banská Štiavnica) 1 (Slovak Hydrometeorological Institute) 3 (State Nature Conservancy of the Slovak republic) 3 (Forests of the Slovak Republic Banská Bystrica)
Sectoral agency	1 (Slovak Environment Agency)
Interest groups including NGOs	1 (DHI Slovakia) 2 (GWP-CEE)
Higher education and research	1 (Technical University in Zvolen) 17 (Slovak University of Agriculture in Nitra) 1 (Slovak Academy of Science) 1 (Water Research Institute) 2 (National Forest Centre)
International organization	
General public	1 (Association of Towns and Communities of Slovakia)

*\*according to the Target groups identified in AF*

**Description:**

The National Training was held in Zvolen at Technical University of Zvolen, in the municipality close to pilot river basin of Slaná River and its sub-catchment of the Blh river. There was held the second one National Training in Nitra at Slovak University of Agriculture. At National Trainings there have participated 47 participants in total, there of 5 from local, 5 from regional and 10 from national public authorities, 1 from sectoral agency and 3 participants from interested groups and business, and 22 from educational and research organizations and 1 representative from general public too (Association of Towns and Communities of Slovakia). It was plenty of organizations with responsibilities of national coordination level up to local implementation level. Regarding sectors there were covered all crucial sectors, it means water management including hydrologists, forestry, nature protection, research in the field of water management and agriculture and forestry too including landscape planning and landscape ecology too. As interested group, also the private company with specialization in dynamic modelling had participated.



**Trainings and discussion** (*max 1000 characters*)

How did the trainings and discussion take place (presentation of method, general discussion, in small groups, facilitated by whom)? Which topics/questions did you discuss? What were the main conclusions? (*please attach also 2-3 photos*)

The first part of the national trainings was dedicated to presentations and discussions held in the plenary, second part was dedicated to training session. The discussion was facilitated by Monika Supeková (SWME). After each presentation a set of questions were raised and discussed, mainly after presentation on results and outputs of the FramWat project, on already developed landscape valorization method and its tool and on proposed static method to assess effectiveness of measures. For the training session there was prepared a room with computers (PCs) available for each participant of the national training. The tool and the materials were available through the link <http://waterretention.sggw.pl> or alternatively <http://levis-framwat.sggw.pl>, the link with web application was installed at each PC. Each participant had his own computer and was working on the PC individually or in group of 2 persons. The main topics which were asked and discussed by participants were what are the input data for the tools and whether satellite data were used, that for geodetic projections the conversion tool is necessary, whether the FroGIS tool is based on surface run-off model, that for the measures also cost should be quantified, which types of measures are covered within catalogue of measures and if really applicable legislative measures will be proposed.

### 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 to be discussed with stakeholders	Stakeholder Feedbacks
<b>T2 - Effectiveness of the NSWRMs</b>	
Does the Static method on effectiveness assessment reflects the expectations of stakeholders, what are their expectations?	For the stakeholders both methods (landscape valorization and effectiveness assessment) seems to be very technical and complicated, mainly in the frame if to less concrete values (e.g. on effectiveness) are available. The methods/tools should be more easier to be a kind of screening tools serving to municipalities, local stakeholders without any expert knowledge in any field (data preparation, GIS, hydrology, ...). For the researchers tools are very interesting, the most important seems to be that these are open sources and could be further developed/tested by another teams.
Which other indicators of water retention (using N(S)WRM) should be incorporated into the	Regarding landuse indicators, there was a comment that Corine landuse 2018 as data source is not very precise and the update is every 5 years only - no dynamics of forests is visible. It was proposed to use satellite data, where also vegetation indexes



<p>Static method on effectiveness assessment?</p>	<p>(vegetation density) are available. But no concrete idea on further classification of this data was proposed. Not only arable land should be taken into account, also semi-natural types, as indicators also a ratio of impermeable areas could be taken into account. It was proposed to take into account nature protection localities, localities of beaver protection, migration barriers, etc., but when discussed on indicators expression, there was no concrete proposal.</p>
<p>Are there experiences among the stakeholders with assessing, monitoring or modelling the effectiveness/relevance of the same type of measure within different climate regions, ecoregions, etc.?</p>	<p>Slovak University of Agriculture, Nitra has some experimental fields where efficiency/water retention capacity is monitored. Slovak Technical University, Bratislava has experimental fields with main focus on erosion monitoring, case study Vrbovce municipality. Technical University of Zvolen has some experimental fields where water interception efficiency of coniferous/deciduous trees is monitored. But no experiences within different climate regions or ecoregions. Most experiences with standard hydraulic or run-off modelling of a same type of measures but not on combinations of different types of measures are available across Slovakia.</p>
<p>How to assess the effectiveness of NSWRM - a request to provide good case study or already existing method</p>	<p>No example of good case study was provided at national trainings.</p>
<p>What can be done to improve the accuracy of the Static Method to assess cumulative effect of N(S)WRM in the river basins? Is it anyhow possible to assess the cumulative effect of N(S)WRMs?</p>	<p>There were no concrete proposals mentioned during national trainings. As the expert input is asked within the process of effectiveness assessment, it is possible, that different kinds of experts will create a different scenario with different final effect. This should be minimalized, if the tools are to be used publicly; they have to serve with the same results and should be used in the same manner by each group of stakeholders. The information on measures efficiency is still very rare in general.</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</p>	<p>The terminology could cause problems in understanding the issue in the same way by all stakeholders (e.g. polder vs dry reservoir, ...). The question was raised whether SPU is the smallest unit. As NSWORMs are small in their extent, their effect is rather local. Local scale or sub-catchments scale should be the scale of their design. Land owner/users do not care about wider impacts, they are interested in their own business. But for planning</p>



<p>maker/stakeholder (land owner/user) think at catchment scales?</p>	<p>purposes (for decision makers) the river basin scale is appropriate, but only some easy screening tool should be available for them.</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 choose one measure with maximum effect for their concern? How the priorities can be chosen?</p>	<p>State Nature Conservancy strongly emphasized that instead one big dry reservoir, many small water retention measures should be proposed. Their effect is much more positive, but they are not able to quantify it. Between water managers and nature conservancy the “acceptable extent of measure” is the most crucial point. Priorities for river basins should be set at state level (public authorities). Priorities in Slovakia are based and anyway should be based on combination of effect of the measure (possibility to reach goal) and of costs of measures. For example incentives and other financing mechanism for farmers for NSWRMs are set on the national level, but they are not used, because the farmers are interested only in their business and not in “positive effect of measures” in broader meaning/scale (e.g. flood or dry mitigation). The “motivation tools” should be improved/developed on national level.</p>
<p>Is it possible to cover all problems of particular pilot area within Expert variant and Local preferences variant of Concept plan? Are they covering all problems/issues identified within Strategic documents of different policies?</p>	<p>The general opinion is, that all problems of the pilot area will not be covered within concept plan. All problems defined within strategic documents could be covered, but to find compromise between local wishes will be a challenge. The possibility to propose own measures within Blh sub-catchment territory was very appreciated by State Nature Conservancy.</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>Participants from research organizations mentioned that multicriteria analyses should be applied before choosing the variants. Dynamic models can be used mainly for the measures which effect is possible to quantify (as reservoirs, dry reservoirs, ...), with this kind of modelling are the best experiences within Slovakia. For such kind of measures it is quite easy to calculate the cumulative effectiveness. With calculations of cumulative effectiveness of different types of measures the participants do not have experiences.</p>
<p>Is it possible to use dynamic models to verify results of static method to assess effectiveness?</p>	<p>Yes, for some types of measures it will be possible to use static method and dynamic method too.</p>



All Work Packages	
<p>Are there any good practices in implementing NSWRM that could be shared among partners/countries in the region?</p>	<p>Water regime improvement of old oxbow lakes, wetlands rehabilitation - within project “Ochrana bučiaka veľkého a chochlačky bielookej v CHVÚ Medzibodrožie na Slovensku” (LIFE+ ), cooperation of NGO SOS/BirdLife Slovensko, SWME Branch Košice, municipality Vojka <a href="http://www.minzp.sk/tlacovy-servis/tlacove-spravy/tlacove-spravy-2016/tlacove-spravy-februar-2016/zelenymi-opatreniami-chvu-medzibodrozie-prispeju-vodohospodari-k-zachrane-mokradi.html">http://www.minzp.sk/tlacovy-servis/tlacove-spravy/tlacove-spravy-2016/tlacove-spravy-februar-2016/zelenymi-opatreniami-chvu-medzibodrozie-prispeju-vodohospodari-k-zachrane-mokradi.html</a>.</p> <p>Preventive measures to mitigate negative impacts of floods and droughts, water retention measures - within project “Povodie hornej Nitry - Opatrenia na prevenciu pred povodňami a suchom” (NFM-EEA Grants), cooperation of SWME Branch Piešťany, many different municipalities Žitná, Rybany, Nadlice, Lehota pod Vtáčnikom, location of tributaries of Handlovka River, Nitra River too <a href="https://www.svp.sk/sk/povodie-hornej-nitry-opatrenia-na-prevenciu-pred-povodnami-suchom/">https://www.svp.sk/sk/povodie-hornej-nitry-opatrenia-na-prevenciu-pred-povodnami-suchom/</a>.</p> <p>Wetlands rehabilitation - built Bird island at Water reservoir Kunov <a href="https://www.svp.sk/sk/17598-2/">https://www.svp.sk/sk/17598-2/</a>.</p> <p>Within the project DriDanube and platform Intersucho.SK the active monitoring of drought impacts on agriculture and forests based on information filled-in via reporters per districts is collected <a href="https://www.intersucho.cz/sk/?mapcountry=sk&amp;map=3&amp;from=2019-09-10&amp;to=2019-10-08&amp;current=2019-10-03">https://www.intersucho.cz/sk/?mapcountry=sk&amp;map=3&amp;from=2019-09-10&amp;to=2019-10-08&amp;current=2019-10-03</a>.</p>

**Stakeholders’ feedback** (max 2000 characters)

What were stakeholder’s comments/observations on the developed methods and planned FramWat outputs?

Were they interested to be further informed, involved into the project activities as defining the indicators, their values determination/estimation, dynamic modelling, measures proposals?

The request to use open sources to develop all of the tools was raised again as during the first national consultation held in 2018. As each country is using a different geographic projections in GIS, the request to incorporate converters into tool was raised, or to add for Slovakia also S-JTSK Křovak east-nord. The question on applicability in another regions/catchments of Slovakia was raised. The State Nature Conservancy representatives appreciated much the scope of the project dealing with NSWRMs and emphasized that from their point of view except of one big dry reservoir a few smaller should be built. The possibility to propose own measures within Blh sub-catchment territory to be part of the concept plan was very appreciated by State Nature Conservancy but also by the representative of Association of Towns and Communities of Slovakia. The developed landscape valorization method and its tool FroGIS was assessed as very good basis for identification of problems and potential localities for NSWRMs design. Catalogue of measure to be available publicly and in national language is imperative for stakeholders for planning purposes, but also for financial



authorities to allocate resources. As there is still huge lack of knowledge on measures effectiveness assessment the proposed method to assess effectiveness is also very appreciated mainly by the participants from research and academia. The data preparation manual for FroGIS tool was assessed as very useful for users. It was highlighted that easy manuals on how to work with all the developed tools and best in national languages are necessary, if tools should be used. The questions on why the correlated parameters should be neglected was raised by State Nature Conservancy, whether the calculations should be proceeded only in the excel format or whether there is also another environment available, online tools were welcomed. All of participants were interested to be further informed, the participants were offered with an opportunity to subscribe to the newsletter. The representatives of State Nature Conservancy and of Association of Towns and Communities of Slovakia were interested in individual training within their own premises. The representatives of research and academy sector are willing to further participate/cooperate on effectiveness assessment. In general the scope of the project and its ambitions were very high appreciated mainly by State Nature Conservancy, representatives of forestry sector and research in the field of agriculture too.

#### **Outcomes** *(500 characters)*

What would you consider to be the main outcomes of the National Trainings? Summarize in few points.

The national trainings gathered together stakeholders from the different sectors and levels. The opportunity to discuss the problems and trying to find solutions (propose measures) within one territory by using common tools is not common still, cross-sectoral dialogues should be part of daily work routine. Focus should be oriented on agriculture (small land owners), forestry but municipalities too, as stakeholders are still not aware on possible measures to be proposed and on financial instruments to be used for measures realisation. The awareness raising initiatives are necessary. Publicly available information and tools in national languages are missing too. Many of participants (mainly foresters) highlighted necessity to focus on this topic as there is still bigger and bigger demand to realize effective measures in relation to droughts and floods, but nobody is able to say which ones and what would be the effectiveness for particular goal. Research and observations/monitoring in this field is missing. The application of FramWat results into praxis was raised by participants mainly in regards to not perfect legislative measures analysed within the project for Slovakia too. More research initiatives of measures effectiveness are necessary in Slovakia, maybe to coordinate them at national level across sectors to gain relevant usable results, which can be applied across Slovakia.

#### **Next steps**

Were there any further steps agreed with stakeholders on the National Trainings?

The next steps will be to keep participants informed, to share presentations, short report and to involve stakeholders from the pilot catchment into testing the developed methods and tools. To support the stakeholders which would like to test the developed tools in their territory with using the tools and preparation of the data.





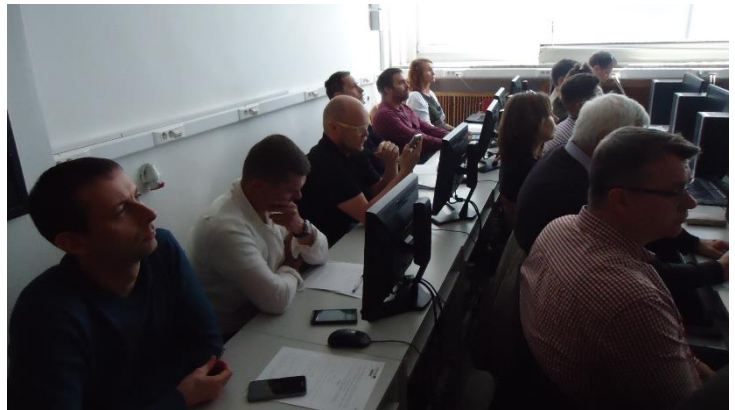
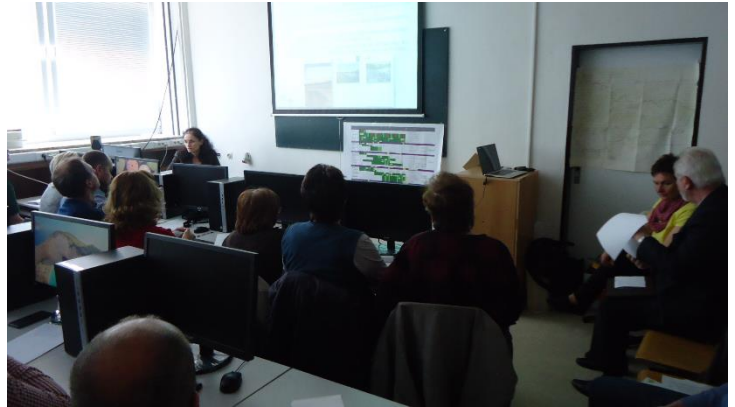
### Organizer's feedback on the process

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

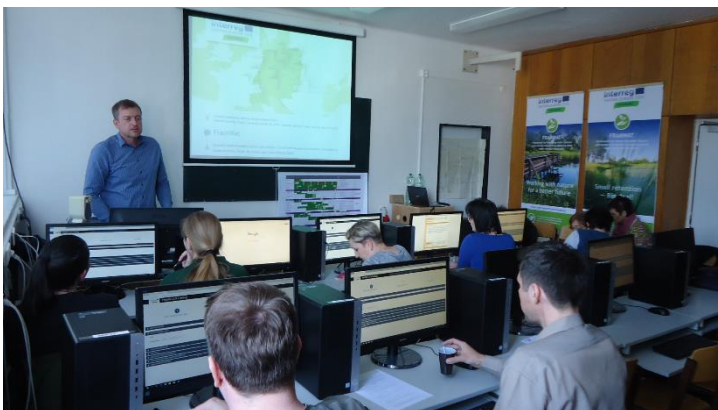
The stakeholders will be further invited to the next project events. Those who are interested to share data or have a more active role, will be contacted directly. The preparatory documents will be distributed among them and among partners enough in advance.

## 4. Photos

29 March 2019, Technical University of Zvolen (TUZVO), Zvolen, Slovakia  
Presentation session



Training session





6 May 2019, Slovak University of Agriculture (SPU) Nitra, Slovakia

