

# PROLINE-CE WORKPACKAGE T4, ACTIVITY T4.2

## ORGANISATION OF TRANSNATIONAL EVENTS FOR REPRESENTATIVES OF OPERATIONAL AND DECISION MAKING LEVEL

D.T4.2.2 STAKEHOLDER DIALOGUE / ROUND TABLE 1

**INFOBROCHURE FOR AUDIENCE** 

WP T4 - ADVANCEMENT: STRATEGIC POSITIONING AND COMMITMENT

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### 1. Introduction

Within WP T4 "Advancement - Strategic Positioning and Commitment" several transnational events are foreseen to foster the transnational transferability respectively usability of results and the involvement of stakeholders from various countries (partially also outside CE-area) working in different fields of action.

The outcomes of the series of transnational WP events - as the two Round tables - will provide important feedback and input for the development of the two main outputs of PROLINE-CE: the GOWARE (Output O.T3.1 - Transnational Guide towards and optimal water regime) and the DriFLU Charta (Output O.T4.2 - Drinking Water/Floods/Land use Charta).

At the first transnational Round table (D.T4.2.2.) on 12<sup>th</sup> of June 2018 in Ljubljana the Draft DriFLU input report ((D.T4.1.2) will be discussed with participating key players, whereas during the second transnational Round table (D.T4.2.5) the DriFLU Charta will then be raised to a higher strategic level.

Within the first transnational Round table two presentations will be held by the WP-Leaders responsible for GOWARE (T3) and DriFLU Charta (T4) presenting first insights in these two main outputs of PROLINE-CE providing a discussion basis for the workshop afterwards, which will be moderated by an expert. Before this workshop four experts coming from different fields of action (agriculture, water management and forest management) will present their point of view concerning drinking water protection. Main part of this Round table will be the moderated workshop, which should provide feed-back loops for GOWARE and DriFLU Charta according to applicability of target-oriented land use management.





### 2. Programme

CENTRAL EUROPE	PROGRAMME Stakeholder Dialogue & Round Table 1 June 12 <sup>th</sup> 2018, Ljubljana, Slovenia	
14:00 - 14:30	Session 1	
Presentations	Preliminary work for GOWARE Guido Rianna (Euro-Mediterranean Centre on Climate Change Foundation, IT)	
	Draft DriFLU report Elisabeth Gerhardt (Federal Research and Training Centre for Forests, Natural Hazards and Landscape, Vienna, AT)	
	Discussion	
14:30 - 15:10	<b>Session 2</b> Still existing shortcomings and challenges and national arrangements for DriFLU Charta	
Presentations	<b>Agriculture:</b> Irrigation as a sustainable land use management measure in drinking water protection areas Marina Pintar (University of Ljubljana, Biotechnical faculty, Ljubljana, SI)	
	Water management: Cost-effectiveness of woodland measures to improve water quality: aspirations, activities and initial findings of the PESFOR-W COST Action Gregory Valatin (PESFOR-W Forest Research, Surrey, GB)	
	Opening the black box of spring water microbiology to support proactive drinking water resource management Georg Reischer (Interuniversity Cooperation Centre Water & Health, Technical University Vienna, AT)	
	<b>Forest Management:</b> Importance of forest site mapping for drinking water protection Alexander Mrkvicka (Forest Department of the City of Vienna, AT)	
	Discussion	
15:10 - 15:30	Coffee Break	
15:30 - 17:00	Workshop: Feed-back loops for GOWARE and DriFLU Charta according to applicability in different fields of actions (agriculture, forestry, water management)	
Moderation	Stefan Kollarits, PRISMA solutions, Mödling, AT	





# 3. Insight into and actual status of the thematic work packages of PROLINE-CE

### 3.1. WP T1 - Capitalization: Capacity Building and Stakeholder Engagement

In order to achieve the main objective of PROLINE-CE, which is improved protection of drinking water resources by integrated land-use management approach, it is necessary to determine in which manner land-use activities influence drinking water quality and quantity. By applying analytical SWOT (strengths, weaknesses, opportunities and threats) and DPSIR (driver, pressure, state, impact, response) frameworks, most important gaps and potentials for improvement in current management practices are derived. Additionally, a detailed peer review of land use and water management practices is provided, forming a detailed state-of-the-art compendium regarding water management, drinking water protection zones, land-use activities, flood and drought mitigation in Central Europe. Important contribution is provided by developing existing best management practices catalogue, where over 200 best management practices are shown for different types of land uses (e.g. agriculture, forestry, urban and industrial areas), including a chapter dealing with non-structural flood mitigation measures, whose advantages over structural ("grey") measures include sustainability over the longer period of time, with minimal costs for operation and maintenance.

Furthermore, WP T1 marked the first structured stakeholder involvement in the project, without whom the implementation and dissemination of project results would be impossible. Start-up series of stakeholder's workshops were organized by project partners (country leaders) in seven CE countries. The workshops were successfully carried out and attended by 191 participants of various professional backgrounds such as foresters, ecologists, hydrogeologists, urban planners, farmers, university researchers, policy and decision makers, water suppliers, journalists, NGOs, broad population and many more. During the workshops, interesting thematic lectures were held by invited speakers, followed by capacity building activities and interactive dialogue where stakeholders informed project partners of gaps and management issues they encounter in every-day business while project partners informed stakeholders of innovative best management practices and their application in real-life scenarios.







Figure 1: Presentations and interactive dialogue during Austrian workshops, organized by PROLINE-CE Lead Partner - Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management

On the basis of gaps and proposed solutions identified by stakeholders, a "Transnational catalogue of strategies and measures to be integrated into existing policy guidelines" was developed, providing a major advancement towards improved management practices in Central Europe. This Transnational catalogue contains a set of 38 innovative best management practices for water protection which could be implemented either in PROLINE-CE pilot areas or beyond. The most important output of this work package is the "Strategy for the improvement of policy guidelines", which encompasses main results and findings of T1 and sets the foundations for further PROLINE-CE outputs, mainly development of pilot actions, strategies and action plans (Guide towards Optimal WAter REgime - GOWARE and Drinking Water/Floods/Land-Use Charta - DriFLU) for improved protection of drinking water resources.







Figure 2: Modro lake in Imotski

The synthesis of the WP T1 deliverables provided an overview of applicable best management practices and measures supported by stakeholder input that are ready for integration into higher level strategies and policy guidelines which is the next step relevant for the following work packages. Overall, successful development of WP T1 "Capitalization: Capacity Building and Stakeholder Engagement" provides methodology and vision for further PROLINE-CE activities towards operationalization of best management practices, identifying funding systems and encouraging intensive cooperation with relevant stakeholders to push application of PROLINE-CE outputs and results.

#### 3.1.1. Catalogue of Best management practices for drinking water protection

The protection of drinking water resources regarding land-use management and flood protection is an environmental challenge common to all countries in Central Europe (CE) and has a specific transboundary and transnational relevance. The existing diverging levels of best management practices implementation are a common problem in the region which additionally emphasizes the lack of integrated sustainable solutions.





The PROLINE-CE deliverable D.T1.3.4 "Transnational catalogue of strategies and measures to be integrated into existing policy guidelines" represents a conversion of lessons learnt from the first national stakeholder workshops held in May and June 2017 by Project Partners and their Associated Partners. The workshop participants included local, regional and national public authorities, infrastructure and service providers, higher education and research facilities, interest groups and NGOs and also general public. These stakeholder targeted events identified the leading problems in land use and flood management in relation to drinking water protection via SWOT analysis reflection, interactive dialogue between stakeholders and project partners, as well as accenting problems that relevant stakeholders experience in their daily business.

Gaps and measures (best management practices) were collected on a national level by the Project Partners who assessed their relevance in respect to cost, time, sustainability, water protection functionality and limitations. In total, a set of 38 measures have been selected and elaborated by Project Partners, as seen in D.T1.3.4, based on their significance and overall impact in the CE region regarding its most pronounced issues in various land-use categories. General (all) land uses, agriculture and forest-related measures are the most dominant ones which is to be expected due to their widespread presence in European countries (Figure 3). The majority of the proposed best management practices are non-structural.

The compilation of the catalogue emphasized the need for further effort in effective long-term management which would include financial stimulus for good practices, adaptation scenarios and funding for climate change research and a more engaged approach to awareness raising activities.

The expected project results include the development of an implementation strategy for effectively harmonized environmental standards in the drinking water recharge areas of the participating regions that shall improve water- and soil quality and reduce flood/drought risks. It will be demonstrated in the "GOWARE" (Guide towards Optimal WAter REgime) which aims to provide an overall frame for the implementation of best practices. The application of selected best practices in pilot cases allows their operationalisation and supports drinking water protection implementation in recharge areas. The transfer of results to policy level will be made certain by the joint declaration act about drinking water protection, floods and land use titled DriFLU Charta.





### Figure 3: Most notable best management practices from the D.T1.3.4. "Transnational catalogue of strategies and measures to be integrated into existing policy guidelines"

	Forest installation rules in floodplain of drinking water resources protection area
ices	Establishment of buffer strips
nt pract	Increasing the efficient use of water in agriculture and adapting to CC and crop irrigation to achieve optimum yields
jeme	Encouraging organic farming
anag	Preservation of existing (permanent) grasslands
est m	Wetland restoration
nt be	Climate change adaptation and resilience
eleva	Evaluating effects of Soil Protection Plans on water bodies
ost r	Assessing flood impacts on drinking water supply systems and on water bodies
M	Joined and integrated management of drinking water resources (horizontal and vertical cooperation)



### 3.2. WP T2 - Pilots: Implementation and Feedback

The main objective of the PROLINE-CE is implementation of the existing strategies and management plans in order to improve the current situation in the land use management, drinking water sources protection and non-structural flood mitigation. In T2, best management practices for drinking water supply issues derived from Work Package T1 are reviewed in selected Pilot Actions.

*Pilot Action* presents activities performed at Pilot Site, such as study of gaps and best management practices of land use and flood protection measures for enabling drinking water protection. Implementation status of existing best management practices is identified. In case of lacks identified, possibilities of improvements are proposed. Thus, water supply management systems and best management practices should be strategically implemented in the Pilot Actions, in order to achieve a function-oriented land-use based spatial management for drinking





water protection at the operational level. Measures and actions are analysed and proposed concerning mitigation of extremes and achieving a sustainable drinking water management.

Pilot Actions were selected in order to cover the broad range of possible conflicts regarding land use (forest practices, agriculture, urbanization, etc.) and flood management versus drinking water protection and management in different natural conditions: mountainous areas, plain areas and riparian strips. Therefore, the single Pilot Action is allocated in three clusters: mountain sites, plain sites and special sites - riparian strips (Figure 4 and Figure 5).



#### Figure 4: Pilot Action Areas

For all Pilot Actions cost effective and environmental friendly risk management is a prerequisite for ensuring safety of drinking water, therefore mitigation measures will be developed and piloted, including ecosystem services of water bodies and wetlands. Drinking water sources along rivers are vulnerable to floods, more distant areas to droughts. Developed best practices for flood and drought risk management will be implemented and tested concerning their contribution to improvement of drinking water safety and effectiveness including ecosystem services as well as economic efficiency. According to the outcomes of the different Pilot Actions, an Action Plan for achieving best functional patterns of land use will be lined out. It shall contain the sequence of steps in order to reach a smooth steering of using different land cover types within CE. The revised best land use management practices are a basis for the improvement of policy guidelines in the respective regions.







Cluster 1: Austrian mountain sites



Cluster 2: Slovenian Plain Areas

Practical applicability during and after project implementation is guaranteed due to meeting the various stakeholders' needs that have been identified before. Pilot Actions cover manifold issues and conflicts between land uses, water supply and water protection needs. Thus they can be applied in order to generate similar results in other areas.

The Action Plan generated is taking into account all those issues and lines out best practices identified and sets the basis for improvement of policy guidelines. By means of tailored workshops different target groups - also beyond the project partnership - become acquainted with this new strategic document.

Results of activities performed within Pilot Action are presented on the interactive web platform: <u>http://proline-ce.fgg.unilj.si/</u>



Cluster 3: Italian Riparian strips

Figure 5: Clustered Pilot Areas (Cluster 1: mountain sites, Cluster 2: plain sites and Cluster 3: special sites - riparian strips)

#### 3.3. WP T3 - Synopsis: Vision and Guidance

Ecosystem services, defined as "the benefits people obtain from ecosystems" (MA, 2005) received increasing interest after Millennium Ecosystem Assessment (MA) (2005), the former





international effort to emphasize and promote the role and significance of ecosystems for human well-being.

In this perspective, all the different frameworks proposed to categorise and describe ecosystem services (e.g. MA,2005; TEEB, 2010; Haines-Young and Potschin, 2018) clearly recognizes *hydrologic ecosystem services* as the benefits to people produced by terrestrial ecosystem effects on freshwater. The pivotal reviews carried out by Brauman (2007; 2015) identify, to this aim, the four main "attributes": quantity, quality, location and timing (Figure 6) in which water resources can be influenced by different ecosystems and the associated services (Figure 7)



Figure 6: Relationship of hydrologic ecosystem processes to hydrologic services

On these grounds, WP3 is aimed to foster and develop measures and practices properly supporting drinking water protection and reducing, at the same time, the occurrence and magnitude of water-related disasters detecting an adequate trade-off between the two objectives.

To this end, desk review and expertise of different Project Partners will permit identifying the most suitable possibilities for funding ecosystems services (e.g. REDD+, Reducing emissions from





deforestation and forest degradation Program) at national and transnational level. At the same time, it could entail mainstreaming the "Ecosystem services" concept into sectoral and horizontal policies enhancing the coherence among the different tools (e.g. biodiversity, climate changes, water security).

These efforts will permit achieving several key products:

- elaboration of a transnational, but tailored at national scale, plan for land-use management and its variation addressing, in effective way, drinking water protection and water related disasters induced by water excess or shortage (flood and droughts)

- definition of recommendations properly targeted for operational (e.g. water suppliers) and spatial planning and management purposes (e.g. Municipalities or Regional Authorities) promoting a sustainable and safe utilisation of water resources.

All the findings and the developed approaches will then systematized CE Transnational Guide towards Optimal WAter REgime (GOWARE) conceived as the tool supporting project partners in preparing adequate information transfer to stakeholders and providing a plan for implementation of sustainable land use management in participating regions beyond lifetime.



Figure 7: Ecohydrological flows and ecosystem services into a catchment. Left side: Conceptual diagram highlighting three main flows (precipitation, evapotranspiration and surface runoff) in the hydrological cycle. Right side: hydrologic services framework showing how ecohydrologic flows impact the ways people can use water at the catchment scale [from Taffarello et al., 2017]





# 3.4. WP T4 - Advancement: Strategic Positioning and Commitment

One of the main outputs of PROLINE-CE is the so-called **DriFLU Charta**. The abbreviation "DriFLU" stands for "**Drinking water/Floods/Land use**" combining the most important thematic issues within this project.

This joint declaration act will contain transnational guidelines regarding an efficient protection of drinking water resources. This objective should be achieved through the development of sustainable and appropriate land use and management measures aiming at the protection of drinking water resources and additionally at the mitigation as well as reduction of droughts and floods influencing these resources, under the challenges of climate change.

Based on the main outcomes of the previous working steps within PROLINE-CE a common agreed paper between all participating project partners will be prepared and at the end of the project - during the Final Conference - signed by notable representatives of each country to determine the most important tasks towards an optimized and effective land use and flood / drought management with efficient organizational structures regarding drinking water protection.

To ensure the usability of this Charta on national/regional/local level as well as on transnational level an adequate intensive stakeholder involvement (2<sup>nd</sup> series of national stakeholder operationalisation workshops, 2 Round Tables) is envisaged resulting in additional DriFLU Chartas on the level of each participating country to have the possibility to focus more on national specific characteristics and problems.

Transnational DriFLU Charta						
Recommendations for						
Forestry						
Agriculture						
Urban						
Grassland						
	Wetland					
		General				
National DriFLU	National DriFLU	National DriFLU	National DriFLU	(for each partner country		
National DriFLU Forestry	National DriFLU Forestry	National DriFLU Forestry	National DriFLU Forestry	(for each partner country Forestry		
National DriFLU Forestry Agriculture	National DriFLU Forestry Agriculture	National DriFLU Forestry Agriculture	National DriFLU Forestry Agriculture	(for each partner country Forestry Agriculture		
National DriFLU Forestry Agriculture Urban	National DriFLU Forestry Agriculture Urban	National DriFLU Forestry Agriculture Urban	National DriFLU Forestry Agriculture Urban	(for each partner country Forestry Agriculture Urban		
National DriFLU Forestry Agriculture Urban Grassland	National DriFLU Forestry Agriculture Urban Grassland	National DriFLU Forestry Agriculture Urban Grassland	National DriFLU Forestry Agriculture Urban Grassland	(for each partner country Forestry Agriculture Urban Grassland		
National DriFLU Forestry Agriculture Urban Grassland Wetland	National DriFLU Forestry Agriculture Urban Grassland Wetland	National DriFLU Forestry Agriculture Urban Grassland Wetland	National DriFLU Forestry Agriculture Urban Grassland Wetland	(for each partner country Forestry Agriculture Urban Grassland Wetland		

#### Figure 8: Structure of DriFLU Charta - on transnational and national level





As the Declaration Act will be signed by all participating countries the targets have to be defined and formulated in a more general way to guarantee the applicability to addressees and areas also outside the programme area. It should be a joint declaration act to bundle efforts towards an integrated land use and flood/drought management connected to drinking water protection.

Therefore the transnational DriFLU Charta will be just a very understandable, focused and short paper with the main necessary measures concerning the different land uses: forestry, agriculture, urban, grassland, wetland and general recommendations. Within an Annex these mentioned issues will be explained more in detail to be as precise as possible.

Furthermore as the DriFLU Charta should not be only a paper, which will be signed, but also a document which should be implemented in each participating country it is important to create this Charta also related to the national specific issues, which can differ more or less between the PROLINE-CE countries. To guarantee a quite target-oriented document embedding relevant topics in national/regional strategies and policies, participatory processes with respective stakeholders will be conducted.

The thematic basis for the DriFLU Charta will be on the one hand the outcomes of the previous work packages (WP T1 - 3) and on the other hand some relevant drinking water protection issues of international documents [e.g. United Nations World Water Development Report (WWAP); Natural Water Retention Measures (NWRM)-project; Sustainable Drainage Systems (SuDS)-Manual].

Finally the main outputs of PROLINE-CE (GOWARE and DriFLU Charta) will provide important contributions to EU-relevant documents, like EUSDR, EUSALP, EU 2020 Strategy, 2030 Agenda for Sustainable Development (mainly to the Sustainable Development Goal SDG 6), EU Strategy on Adaptation to Climate Change, EU Water Framework Directive (River Basin Management Plan 2021-2027) and EU Floods Directive.





### 4. Literature

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