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## IMPROVING THE CONSERVATION EFFECTIVENESS OF WETLANDS – WETMAINAREAS: PURPOSE AND CONTRIBUTION OF PROJECT FUNDED UNDER TRANSNATIONAL COOPERATION PROGRAMME BALKAN – MEDITERRANEAN 2014-2020

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**Abstract.** This paper aims to announce the purpose and contribution of the transnational cooperation project *Improving the conservation effectiveness of wetlands – WetMainAreas*. The project with a duration of two years (01.09.2017-31.08.2019) is funded under TNCP Balkan-Mediterranean 2014-2020 in accordance with Subsidy Contract BMP1/2.1/2342/2017. The *WetMainAreas* brings together research partners, users and observer partners from Bulgaria, Greece, Albania and Republic of North Macedonia. The main purpose of the project is protection, conservation and development of the wetlands as a shared asset of the Balkan-Mediterranean territory, ensuring expansion of ecological connectivity and transnational ecosystems integration of designated areas with a target value of 3 568 225 ha. The project methodology is highly innovative – based on remote Earth observation techniques and testing of a novel method for proving the wetlands role as connecting units within the frame of ecosystem services. The main focus is on the „small wetlands“ and their maintaining role for improving the conservation effectiveness. The project contribution is: 1) Update of the picture of wetlands through mapping and field studies; 2) Mapping and assessment of wetland ecosystems connectivity and analysis of their integration in the designated areas and networks (NATURA 2000); 3) Demonstration of joined wetlands conservation techniques at 4 pilot sites; 4) Development of good practices for promotion of environmental and cultural heritage; 5) Improvement of wetlands conservation policies.

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## INTRODUCTION

The paper presents main aims and methodology of a recent transnational project oriented towards effective management and protection of Balkan wetlands with a duration of two years (01.09.2017-31.08.2019). It is named *Project Improving the conservation effectiveness of wetlands – WetMainAreas*, and is funded under Transnational Cooperation Programme Balkan – Mediterranean 2014-2020, in accordance with Subsidy Contract № BMP1/2.1/2342/2017. Details on the project are available at:

- <http://www.interreg-balkanmed.eu/approved-project/10/>; <https://www.KEEP.eu/project/19704/improving-the-conservation-effectiveness-of-wetlands>;
- <https://wetmainareas.com/wp-content/uploads/2018/10/leaflet.pdf>;
- <http://fe.swu.bg/en/scientific-activity/eu-and-international-funded-projects/eu-and-international-funded-projects/project-improving-the-conservation-effectiveness-of-wetlands-wetmainareas/>.

Letters of support have been received from the Ministry of Environment and Water, Bulgaria, from the coordinator of Horizon 2020 European research project *Satellite based wetland observation service – SWOS*, and from the initiative coordinator of *Ramsar regional initiative for the Mediterranean Wetlands* (MedWet).

WetMainAreas brings together 10 partners from the Balkan-Mediterranean territory, as follows:

- 1) University of Forestry, Faculty of Ecology and Landscape Architecture – Lead Partner (Bulgaria);
- 2) Goulandris Natural History Museum/ Greek Biotope - Wetland Centre – Project partner 2 (Greece);
- 3) Faculty of Economics, South-West University "Neofit Rilski" – Project partner 3 (Bulgaria);
- 4) Management Unit of Special Research Account, National Observatory of Athens – Project partner 4 (Greece);
- 5) National Environmental Agency – Project partner 5 (Albania);
- 6) “St. Kliment Ohridski” University – Bitola, Faculty of Tourism and Hospitality – Ohrid – Project partner 6 (Republic of North Macedonia, formerly FYROM);
- 7) Region of Thessaly – Project partner 7 (Greece);
- 8) Municipality of Gotse Delchev – Project partner 8 (Bulgaria);
- 9) Ministry of Environment and Energy – Observer partner (Greece);
- 10) State Environmental Inspectorate – Observer partner (Republic of North Macedonia).

All of the above researchers, users and observers have been brought together

for dealing with the transnational challenge of promoting ecological connectivity and transnational ecosystems integration by focusing on wetlands conservation and scientific policy improvement.

Within the EU directives and under the umbrella of EU Biodiversity Strategy 2020, wetland ecosystems are of major importance for wild fauna and flora, and they host a range of habitats and species of Community interest. By their function as stepping stones or corridors, they are essential for migration, dispersal and genetic exchange of wild species, and they have to be conserved as key landscape features for enhancing the coherence, connectivity and resilience of the broader protected areas network. Despite this importance, there is no general overview of the BalkanMed wetlands spatial distribution and the biodiversity they host. Data exist at country or region level, and for individual sites in various formats, but often they are not easily accessible and occur in non-compatible formats. Definitely, the lack of comprehensive knowledge could lead to inadequate protection and poor planning. WetMainAreas tackles the lack of data and the assessment on wetlands connectivity.

The main purpose of the project is protection, conservation and development of wetlands as shared asset of the Balkan-Mediterranean territory.

The specific objectives are:

1) To assess the BalkanMed wetland connectivity beyond the boundaries of the protected areas and national borders in order to improve the knowledge on ecological connectivity and transnational ecosystem integration in the BalkanMed territory.

2) To support the policy and action plans by integrating scientific knowledge into guidance documents.

WetMainAreas contributes to 3 EU Macroregional Strategies: a) through the participation of Bulgaria in the EU Strategy for the Danube Region (EUSDR)/ Priority Area 06 “To preserve biodiversity, landscapes and the quality of air and soil”; b) through Greece and Albania - in the EU Strategy for the Adriatic-Ionian Region (EUSAIR) /T.O. 6 “Tackling the environment & resources efficiency” (in the aspect of terrestrial part of coastal zone); c) through Bulgaria and Greece - in the EU Strategy for the Black Sea Region (EUSBS)/ Priority 2 “Energy, transport and environment” (in the aspect of protection of natural resources).

The WetMainAreas capitalizes on existing knowledge and tools developed in previous EU funded projects and initiatives – the inventory tools that were developed and promoted by the Ramsar regional initiative for the Mediterranean Wetlands (MedWet), the research work of the Horizon 2020 European research project *Satellite based wetland observation service – SWOS* (ABDUL MALAK ET AL. 2019) .

## MATERIALS AND METHODS

The project territory covers Bulgaria, Greece, Cyprus, Albania and Republic of North Macedonia ensuring expansion of ecological connectivity and transnational ecosystems integration of the designated areas with a target value of 3 568 225 ha (**Figs. 1-4**). WetMainAreas adopts the widely accepted Ramsar wetlands definition and typology with taking into consideration all wetlands with area of at least 1 ha.

The project consists of 5 work packages (WP), as follows: WP 1: Project management and coordination; WP 2: Project communication and dissemination; WP 3: BalkanMed wetland identification and connectivity; WP 4: Joint pilot BalkanMed wetland assessments, and WP 5: Support in policy and action plan.

The core of the project are work packages 3 to 5. Project methodology is articulated around: knowledge improvement (Work package 3 and Work package 4) and scientific knowledge uptake into policy (Work package 5). It is highly innovative, based on pilot technologies and methods.

**Work Package 3** includes the following tasks:

- Production of Remote Sensing intermediate wetland layer per country (Sentinel-2 analysis results for water and wetness detection in 2017).

- Evaluation of the Remote Sensing intermediate wetland layer (photointerpretation via GoogleEarth).

Production of Final GIS wetland layer per country based mainly on the existing wetlands inventories and other GIS layers – Copernicus Hydro Data for Europe (COPERNICUS 2015), Global surface water Explorer, Open street map data for European countries. Compilation of a site code and name per each wetland. The key source for producing the final GIS wetland layer per Bulgaria is the DataBase from the Inventory of Bulgarian wetlands and their biodiversity (MICHEV & STOYNEVA 2007).

- Production of harmonized wetland inventory datasets per wetland site and population of a common database. For this a minimum harmonized dataset per wetland site is compiled, including: site code, wetland name, general category (marine, coastal, inland), protection status, Ramsar wetland type.

- Assessment of ecosystem potential at national level (biodiversity state, impact of anthropogenic pressure, ecosystem potential at country level to activate the flow of the ecosystem services).

- Assessment of wetlands as connecting units at country and at Balkan-Mediterranean level. This is an approach set by SWOS Horizon 2020 project (ABDUL MALAK ET AL. 2019) to develop a widely applicable methodology for the assessment of wetlands role in the supply of the Ecosystem Service maintaining nursery populations and habitats (including gene pool protection) according to CICES V5.1 (CZÚCZ ET AL. 2016; HAINES-YOUNG & POTSCHIN 2018).

Work package 4 zooms the experience and results from Work package 3 into

4 pilot sites through development of joint wetland conservation techniques and eco-tourism opportunities. The pilot sites are:

1. Mesta /Nestos River basin (Bulgaria and Greece, **Fig. 1**);
2. Vardar/Axios River basin (Republic of North Macedonia and Greece, **Fig. 2**);
3. Vjosa/Aoos River basin (Albania and Greece, **Fig. 3**);
4. Thessaly region (Greece, **Fig. 4**).

**Work package 4** includes the following tasks:

- Desk study on all existing data on biodiversity, environment, land management, etc. in the pilot sites.
- Field studies within the pilot sites.
- Population of additional datasets in the common database.
- Production of Reports on the pilot sites.
- Production of a Guideline, including conservation techniques for wetlands ecosystems that are ecologically and functionally connected - WetMainAreas
  - Inventory of cultural heritage in the four pilot sites.
  - Production of a Tourist guide promoting sustainable cultural and ecotourism in the four pilot sites.

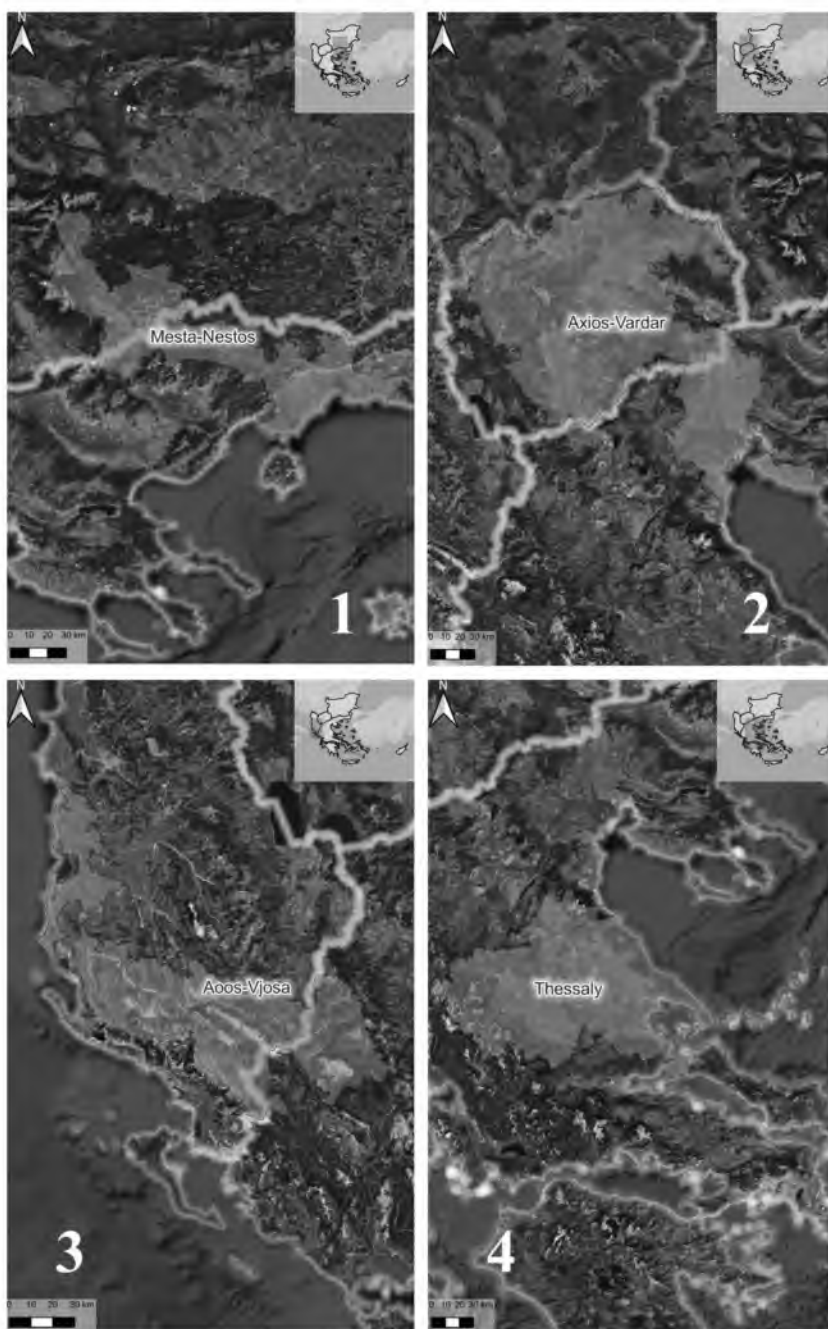
**Work package 5** includes the following tasks:

- Study on the state-of-art on wetland relevant policies and links with other sectoral and territorial plans such as agriculture, fishery, water management.
- Living lab workshop on transnational wetland ecosystems.
- Integration of project results into policy and action plan.

## RESULTS AND DISCUSSIONS

In 2019, the first project results will be available – lists of wetlands within the project area, populated common database with a geoportal, pilot assessments on wetland ecosystems connectivity and analysis on their integration to the designated areas and networks. The project will end with combination of data from all partners and with a common publication with a free on-line access.

The implementation of the WetMainAreas project leads to the following contribution: 1) Update of the picture of wetlands through mapping and field studies; 2) Mapping and assessment of wetland ecosystems connectivity and analysis on their integration to the designated areas and networks (NATURA 2000); 3) Demonstration of joined wetlands conservation techniques at four pilot sites; 4) Development of good practices for promotion of environmental and cultural heritage; 5) Improvement of wetlands conservation policies.



**Figs. 1-4.** Pilot sites of the Project: **1** - Mesta /Nestos River basin (Bulgaria and Greece); **2** - Vardar/Axios River basin (Republic of North Macedonia and Greece); **3** - Vjosa/Aoos River basin (Albania and Greece); **4** - Thessaly region (Greece).

## CONCLUSION

The main idea of the project is to outline not only the conservation value of the wetlands, but also their maintaining role for the designated areas as well. Our approach aims at development of practices and techniques for conservation of these maintaining wetlands and thus at improving the conservation effectiveness. This idea has to be disseminated as wide as possible. As many key actors as possible need to be involved in order to ensure sustainability of this understanding and to ensure proper management that will lead to improving the conservation effectiveness of wetlands.

## CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests regarding the publication of this article.

## AUTHOR CONTRIBUTIONS

Both authors contributed equally to the paper preparation.

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