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Elaboration and implementation of a cultural services' indicator of impacts in the Mediterranean: a first diagnosis

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Introduction

Since 2009, the Observatory of Mediterranean wetlands, managed by the Tour du Valat and covering 27 countries, is increasing awareness about the necessity to maintain these specific natural environments and their unique properties in terms of biodiversity, water and land resources, and other and specific ecosystem services. The observatory has adopted a DPSIR (Driver-Pressure-Status-Impact-Response) model in order to define the main indicators to be followed. This was realized in order to give a regular overview and analysis of each state and tendencies of these ecosystems at the regional level. The only impact indicator of this DPSIR model for the Mediterranean wetlands, elaborated in 2016, concerns the impacts of recreational services provided by these areas.

The structure of this indicator has already been developed in the MMV8 session (Serbia, 2016), based on the main capitals to be considered: it differentiates the conditions capitals (natural capital and accessibility capital) from the impact capitals (social capital and human capital); it aims at measuring the impact of recreational visits to the social and human capital of visitors and at linking the state of the condition capitals to the state of the impact capitals. Specific indicators of performance have been defined for summarizing the level of each kind of capital. This impact, composite and non-monetary wetlands cultural services indicator has been conceived as an index, ranging from 0 to 1.

Objectives

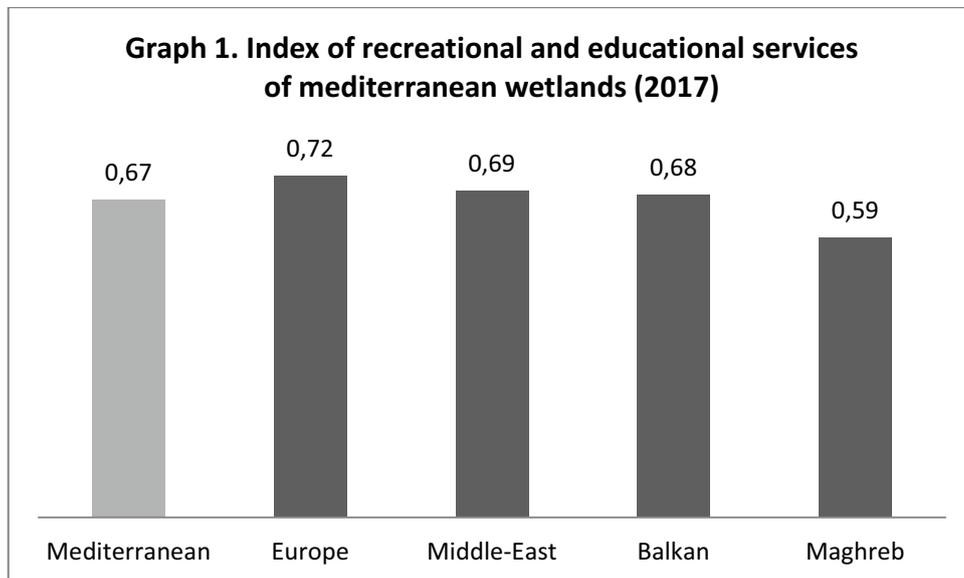
The purpose of this presentation is to develop on the original results that have been obtained, based on the first review of the available data for OZHM sites: 27 sites that have significantly contributed to this project will therefore be considered in this study. Specifically, 6 sites in the non-EU Balkans countries (Albania, Montenegro, and Serbia), 8 in the Maghreb (Algeria and Tunisia), 4 in the Middle-East (Lebanon and Jordan) and 9 in Europe (France, Slovenia, Croatia) are considered. The needed information is collected mainly from the 27 sites managers and a total of 3986 visitor questionnaires, with an average of 148 visitor questionnaires per site.

Results

High heterogeneity of services between sites: the results show that heterogeneity of index value is higher between sites than between countries in terms of capitals of condition and impact; the analysis of sensitivity (that consists in changing the weight of each capital in the global indices calculation) results in no significant change of the classification among the 27 studied sites according to their global performance (aggregation of all capitals' results).

Mediterranean index of wetlands cultural services above average: In 2017, with a value of 0.67, the Mediterranean index (Graph 1) is scoring more than two thirds of the maximum score. This value includes sites where the index varies from 0.48 for less performing sites, to 0.80 for sites providing the largest impacts. For sites obtaining an index above 0.62 (70% of studied sites in 2017), the general public indicates an acceptable level of satisfaction for both

natural capital and quality and diversity of infrastructures and services provided by site managers. Overall, this index value is reached except in sites located in the Maghreb region, due to the lack of sustained and permanent quality and managed visitor services.



Source: Mediterranean wetlands Observatory, 2018

Human and social impact on visitors directly correlated with efforts of managers: desegregated results show that the level of visitor satisfaction and social impact increase with managers' efforts to provide adequate services (path, information board, toilet, coffee corner, parking, etc.) allowing easy and comfortable visit for general public. Human impacts among visitors are also correlated with managers' efforts in areas like the Balkans, the Maghreb region and Lebanon. In Europe countries, although manager's efforts to provide quality services and information in wetland sites, visitors acquire less knowledge in proportion compared to non-EU countries because they are usually more aware of ecological issues and have already experienced the visit of wetlands.

Landscape aesthetic and educational services, key elements of human and social impacts: results show that landscape aesthetic and perception, including waterbirds, water, greenery and quietness, are the key reasons and attractive elements mentioned by recreative visitors for their well-being. Wetlands sites organizing educative visits for schools and clubs score high on human impacts in term of acquisition of new knowledge.

The perception of wetlands ecosystem by visitors penalized by external pressures: the disaggregated analysis of the natural capital of all wetlands studied show that their status of protection and site notoriety obtain the highest score. However, in the cultural service index of wetlands, the natural capital is losing value due to external pressures such as surrounding urbanization, public infrastructure and pollution depleting landscape integrity and reducing quietness.

Implications and recommendations

Boost wetlands managers' efforts, especially in improving visitor services and ensuring comfortable and easy visit conditions for the general public; conditions considered essential to strengthen visitor interest to positively discover nature, wetlands and their biodiversity.

Favor service quality instead of quantity for wetland visitors to increase the efficiency of recreational and educational services and wetlands image. Indeed, without adequate wetland and service management, visits may become counter-productive for a wetland's image.

Increase human impact among recreational visitors, by motivating wetland managers to regularly adapt information and messages for visitors, in line with evolving societal and environmental challenges, and communicate them in an innovative and attractive manner.

Influence land use decisions in and around wetlands, among development sectors and local administration, in order to protect and restore landscape integrity and quietness, considered the two key values on which most recreative visitors plan their visit.

Develop this monitoring in additional wetlands to cover a good representation of wetland diversity in the Mediterranean region and its sub-regions (total of 40 sites (10 by sub-region)).

Last, the indicator is useful for the RAMSAR convention that is currently missing indicators that can evaluate the contribution of the cultural services of wetlands to the society's well-being.

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