Mediterranean Wetlands Observatory

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Monitoring of recreational and educational services provided by Mediterranean wetlands – SYNTHESIS FOR DECISION-MAKERS AND MANAGERS

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Mediterranean Wetlands Observatory

Recreational and educational Services of Mediterranean Wetlands

This synthesis targeted to decision-makers and wetlands managers is extracted from the full report of the 2017 monitoring exercise, realized by Tour du Valat and IAM Montpellier between January and August 2018. We have not analyzed the results at country level because, except Algeria, there were not enough sites to get sound results at this scale.

The 2017 monitoring results and analysis in 2017, based on 27 sites in 10 Mediterranean countries could be carried-out thanks to the participation des of Country representatives, site managers, staff including students, and visitors that were patient enough to reply to, or fill in, the questionnaires.

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Synthesis for national decision-makers and wetlands managers

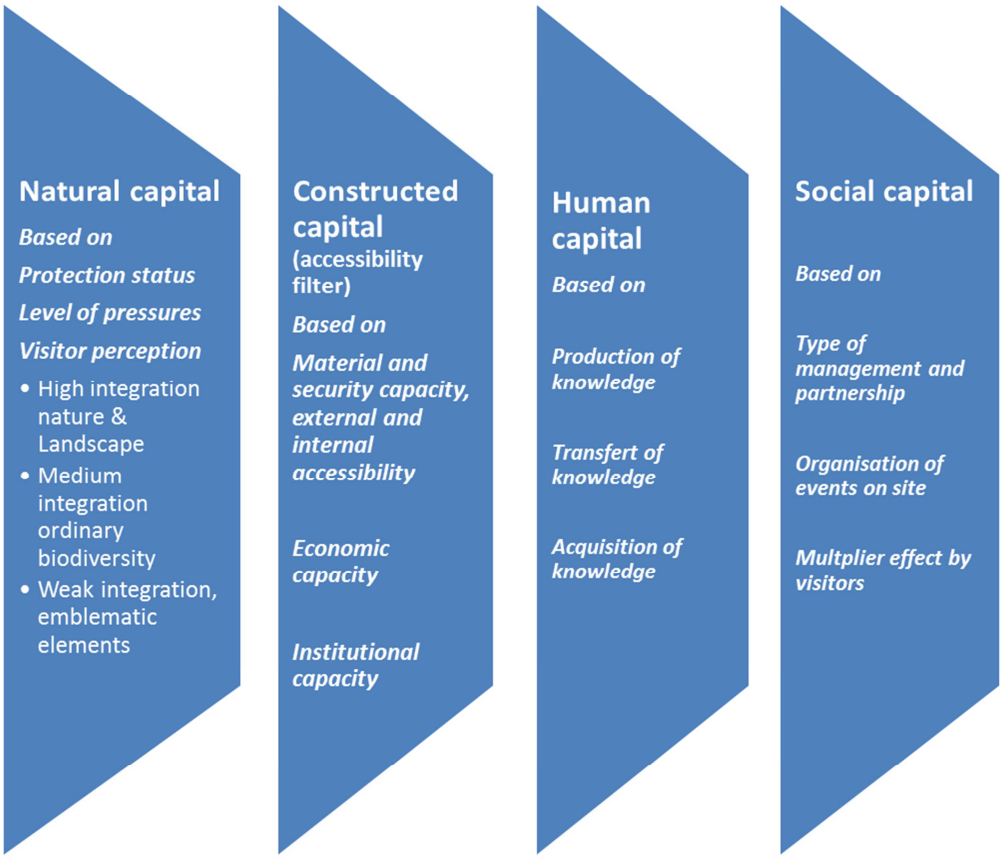
The Indicator

The Indicator on recreational and Educational services of Mediterranean wetlands (RES-MW) aims at measuring with a harmonized protocol among sites, the human and social impacts that wetlands provide amongst visitors of these ecosystems. This monitoring provides a contribution of cultural wetland services to the human well-being. Developed and tested between 2011 and 2016 by Tour du Valat and the Mediterranean Agronomic Institute of Montpellier (IAMM), it constitutes the first specific indicator of wetlands ecosystems for the Mediterranean Wetlands Observatory (MWO). This monitoring took place in 27 out of the 150 Mediterranean wetlands benefiting of a visitor center or permanent management team.

This indicator is a composite and non-monetary impact index, with value ranging from « 0 » to « 1 ».This index was elaborated based on **the multi-capital method** (Graph 1) with the following logic:

- A ***Natural Capital*** (wetlands)
- When made accessible through a ***Constructed Capital*** (visitor infrastructures and services made by manager)
- Generate impact on ***Human Capital*** and ***Social Capital*** among visitors.

Graph 1*: Number of visitor's interviews realized by site*



The indicator is then measured through a series of 12 variables (3 for each of the four capital), based on data collected from 19 questions (16 from site manager and 3 from visitors). For each site, a total of 150 visitor interviews were recommended, to take into account the diversity of recreational and educational profiles of visitors.[1] The monitoring of this indicator starts at wetland site level and aggregations of results and analysis are possible at national, ecological zones, sub-regions and Mediterranean Basin levels.

This indicator is targeted to national and local decision-makers as well as to site managers, identified as key actors involved in wetlands management decision process. It informs these targeted users on social and human advantages provided by these ecosystems among general public visiting them.

For decision-makers, this new « cultural » argument, (associated to ongoing ecologic monitoring of these ecosystems), bring information that they often ignore or underestimate. The hypothesis is that the creation of "cultural" awareness could be translated in the planning process and political agenda. At local level, monitoring results should be transferred to elected people and civil servants as well as to representatives of decentralized sectors impacting wetlands (urban planning, agriculture, tourism, etc.). At national level, results should also reach sectors impacting wetlands (agriculture, fisheries, tourism, urban planning, energy, etc.).

For wetland's managers, the results of this monitoring could help them in better matching their management strategies with expectations of targeted visitors, including for infrastructures and services to be developed to improve visit conditions and positive impact among visitors. Analysis may also help in timely manage visitor flows and in proposing more attractive structures and services. This may increase the efficiency of efforts, for both social and human impact. The usefulness of monitoring results for managers is considered key for the sustainability of monitoring, because managers are and will be key resource persons for this monitoring programme.

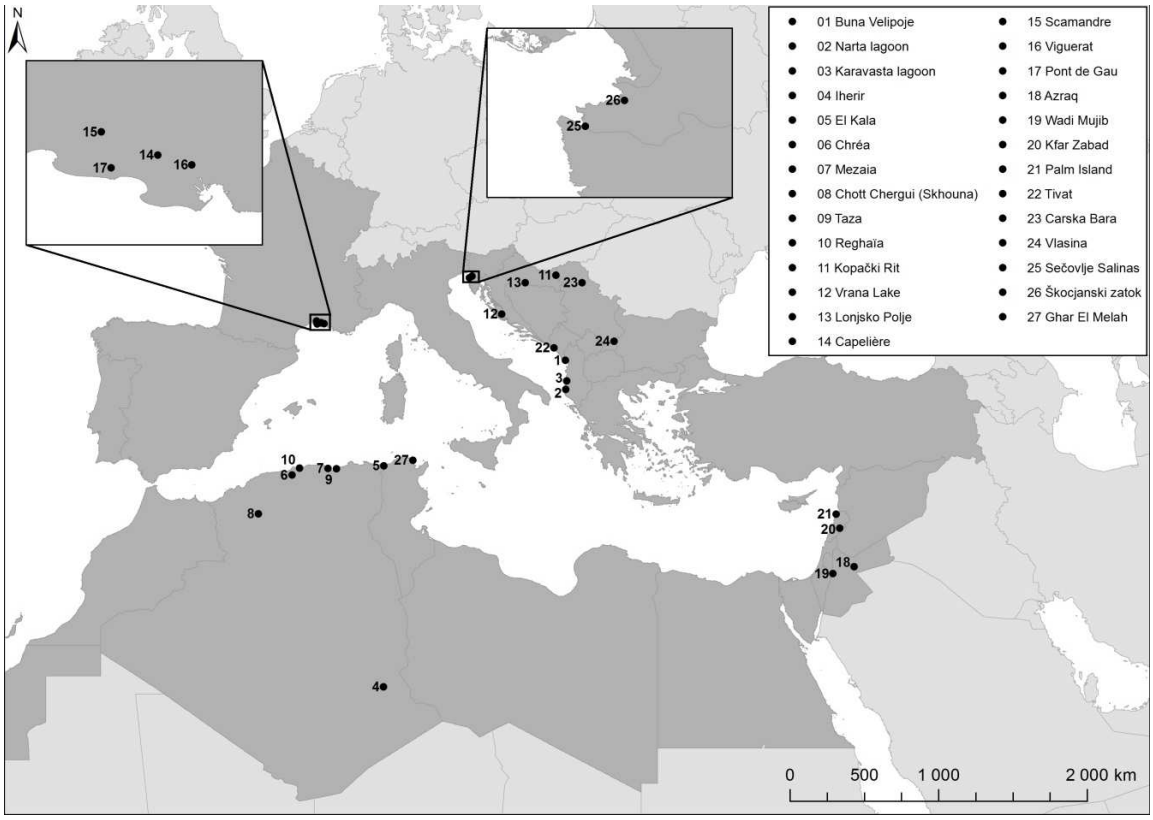
This synthesis provides the key results and analysis of 2017 monitoring exercise. The Mediterranean Wetlands Observatory (MWO), managed by Tour du Valat in the framework of the Mediterranean initiative of Ramsar (MedWet), has coordinated this work in partnership with the Mediterranean Agronomic Institute of Montpellier (IAMM). This work also aimed at establishing the first baseline reference for subsequent monitoring.

Scope, conditions and usefulness of the 2017 monitoring

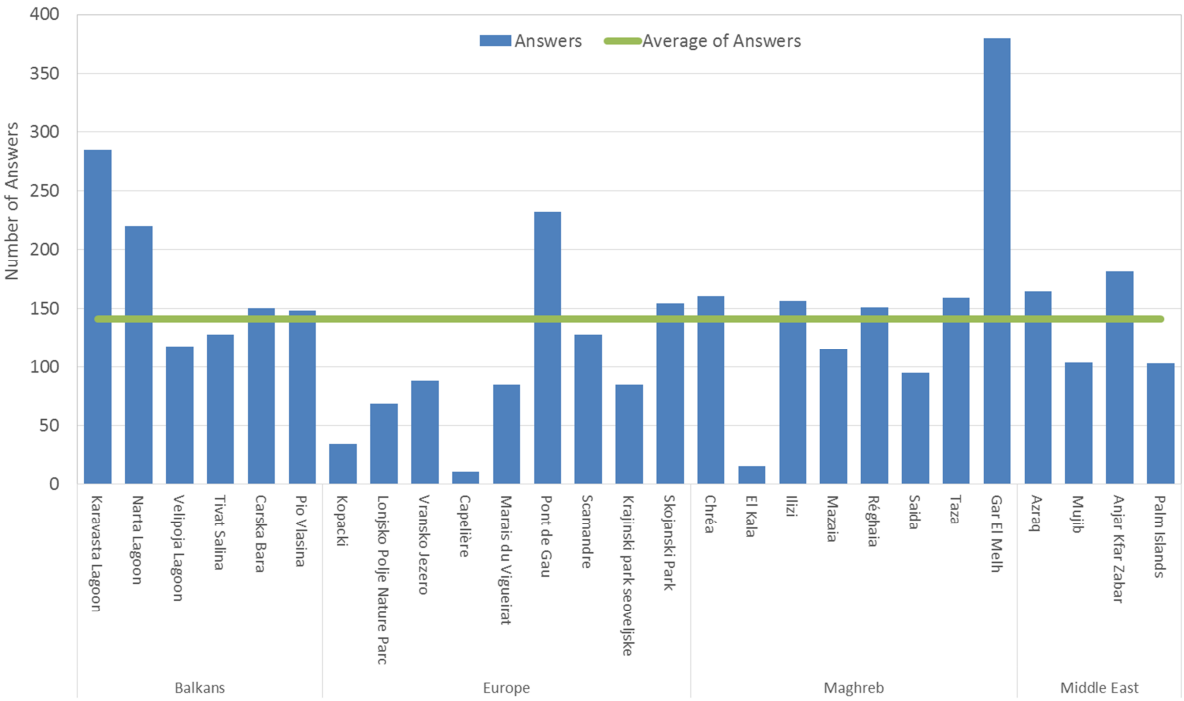
In 2017, the first quantitative monitoring of this indicator covered 10 countries (37% of MedWet countries including 9 EU countries, 8 Maghreb countries, 6 Balkan countries outside EU and 4 Middle-East countries) and 27 sites validated for this exercise (about 18% of wetlands benefiting of a visitor center, Park house or relatively permanent management team) totaling 3947 visitor interviews (146 interviews per site in average) and 27 manager interviews (1 per site). (Map 1 and Graph 2)

[1] See variables, questions and scoring method in annex of the main report.

Map 1: *Localization of sites*



Graph 2: *Number of visitor's interviews realized by site*



For 2017, based on the 27 sites, the mean distance of attraction to come to the site was 71 km, ranging from 40 km in Balkan sites to 94 km for Middle-East sites. At national level, it

ranged from 19 km in Albania to 141 in Jordan. At site level, mean distance of visit ranged from 1 km in Karavasta (Albania) to 566 km in El Kala (Algeria). These important variations are mainly linked to the country size, site notoriety (local, national or international), distance of the site from towns, touristic zones and accommodation area and to density of protected wetlands in the territory.

If about 61% of interviewed visitors in all sites are from national origin, the ratio of foreign visitors in Balkan and Middle-East sites is important. The proportion of foreign visitors is particularly high in several internationally known Albania and Jordan sites, while the proportion is below 20% of our sample in Maghreb (Algeria and Tunisia) and in Serbia.

The 2017 monitoring exercise allows the establishment of an indicator value at the **Mediterranean scale** and to get a first index reference for the four **sub-regions**. However, for this first monitoring, except for Algeria, the desegregation of the monitoring at **the national scale** is not really representative due to the limited number of sites.

These monitoring scales interest mainly national decision-makers and international organizations involved in wetlands protection, as well as actors studying ecosystem services and in particular cultural services.

The detailed analysis by site is also possible for all sites in which a minimum of 80 visitor questionnaires have been validated (22 out of 27 sites) This monitoring is particularly robust for sites with at least 145 visitor interviews validated, which is the case for 12 sites : Karavasta and Narta (Albania), Reghaia, Taza, Iherir Illizi and Chréa (Algeria), Pont de Gau (France), Azrak (Jordan), Kfar Zabad (Lebanon), Pio Vlasina and Carska Bara (Serbia), Skojanski (Slovenia). This scale of monitoring interests particularly wetland's managers, local administrations, decentralized sectors and national public institutions in charge of wetlands, because they can verify the adequacy between their management strategy and visitor profiles, including their expectations and level of satisfaction.

Overall, the first 2017 monitoring exercise was implemented as planned with limited financial and human resources as well as with limited training for site managers. Results are nevertheless obtained and already ready for analysis and use. This successful outcome is due to a series of factors:

- Past and ongoing active working linkages between MWO and other stakeholders (national focal points and site managers), such as in the Projet "wetlands sentinels", MAVA and CEPF projects, national wetlands strategies, etc.).
- Regular electronic guidance, support, training and communication of MWO (assisted by a M2 student of IAMM) to countries and site managers to motivate them to take part in this new monitoring, in French, English and Arab languages. Serbo-Croatian languages could have been also an advantage for Balkan countries.
- The monitoring simplification that has limited the reluctance of site managers to embark in this monitoring program.
- The data collection alert system and automation of the indicator that helped to keep monitoring deadlines in visitor interviews calendar and in simplifying data capture and calculation of indicator value.

For this first monitoring exercise, quality control of visitor's interviews has been kept at Tour du Valat. When visitor's questionnaires were not completed or presented some inconsistencies, Tour du Valat informed manager. If these issues could not be solved, questionnaires were not used for measuring indicator value and analyzing results.

However, some actions could have been improved along the monitoring process:

- An additional training module in each participating country before launching the monitoring exercise, including field tests, to ensure the common understanding of the

questions and the social approach to visitors. This additional training could have reduced the percentage of non-validated questionnaires because of insufficient quality.

- The better control of monitoring protocol and survey sampling among visitors per site, in particular to take into account the visitors diversity (profile, recreation and education) and the repartition of interviews during the different seasons.

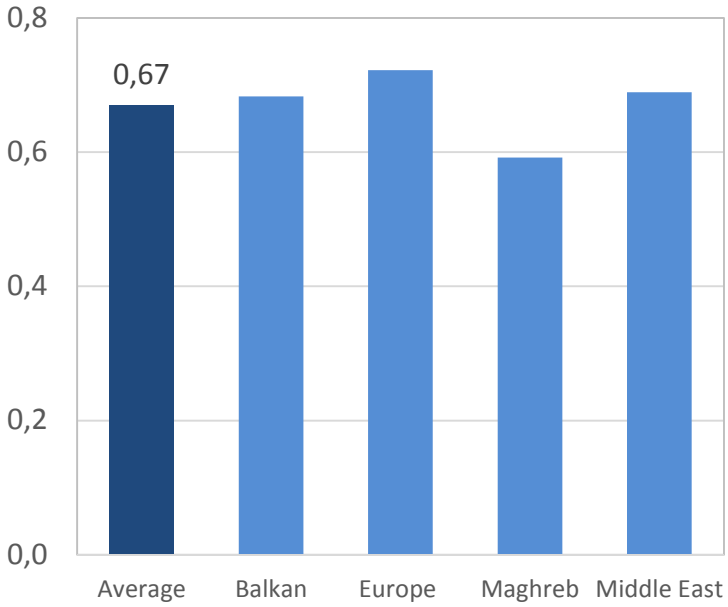
These two points have suffered of a lack of financial and human resources in MWO, especially during the monitoring launching period (January-March 2017).

Synthesis for decision-makers

Key results

A value of recreational and educational wetland service index above the satisfaction benchmark but presenting high site diversity

In 2017, the index value is based on a total of **3 717 validated questionnaires** implemented in **27 sites of 10 countries**[2]. The Mediterranean Mean index is **0.67** (***Graph 3***). This result is relatively similar to the qualitative one of 2015, obtained based on nine pilot sites, with a value of 0,66.



Graph 3: *2017 Index - recreational and educational Mediterranean wetlands services*

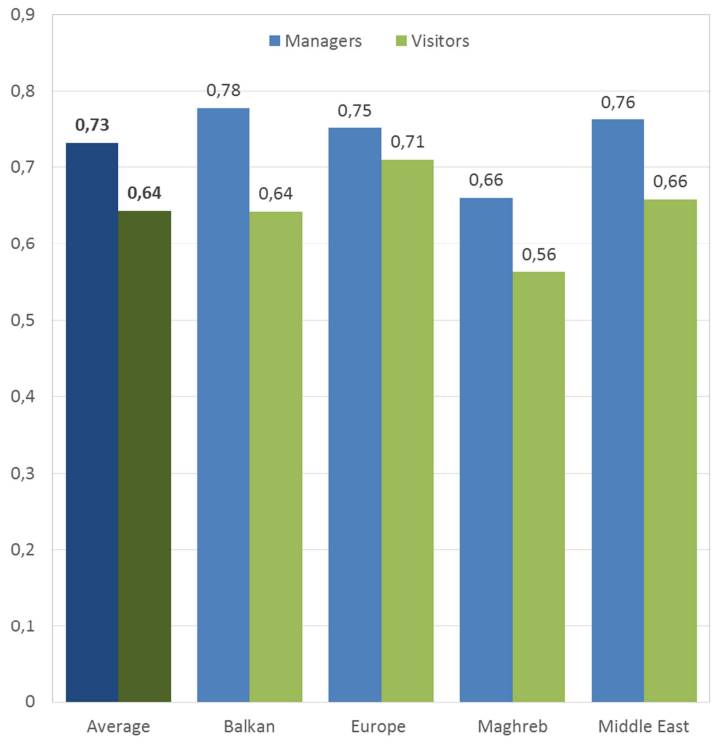
This Mediterranean mean value encapsulates sites with index values ranging from 0,48 for the less performing sites to 0,80 for the ones providing larger impacts. **Sites reaching and index higher than 0,61 are the ones showing a good satisfaction among the general public In 2017, 74% of the surveyed sites were within this category.** To obtain this score, in about two thirds of sites, the level of protection and the status of sites are favorable and the infrastructures and services provided by managers, considered as mandatory by visitors (paths, toilets, visitor desk, access to drinking water, rest areas, information, observatories, etc.) are operational. However, for the last third of sites, the level of satisfaction is also generated by the emotional effect, landscape aesthetics, boundary-breaking and wilderness perception of the sites (for example Iherir in Algeria, Palm Island in Lebanon and Mujib in Jordan), as well as by the proximity of beach tourism center and holiday summer atmosphere conducive to satisfaction (Karavasta and Narta in Albania)

Overall, wetlands from European Union countries, Middle-East and Balkans regions get indexes above the Mediterranean index. However, sites, more than countries, are the main explanatory scale of the indicator value. All sites situated in European Union are above the Mediterranean average, which is coherent with efforts and legal framework of EU for the protection of wetlands and their biodiversity since 1992. Some sites, especially in Lebanon, Algeria and Albania, suffer of a weak control de protection and/or a high level of visitor's dissatisfaction. Sites of Carska Bara in Serbia, Mujib and Azraq in Jordan and Scocjanske in Slovenia, emblematic national and well-known wetlands, get also very high indexes', higher than 0,78.

[2] Albania (3 sites), Algeria (7 sites), Croatia (3 sites), France (4 sites), Jordan (2 sites), Lebanon (2 sites), Montenegro (1 site), Serbia (2 sites), Slovenia (2 sites), Tunisia (1 site).

The recreational and educational impact among visitors directly linked to the manager efforts

The desegregated analysis of responses from managers and visitors show that overall, visitor's satisfaction and perception over the natural capital increase with enhanced site management and availability of diversified services. (*Graph 4*).



***Graph 4: Efficiency** of visitor impact as compared to manager efforts*

Manager effort is particularly efficient in Balkans area (+ 0,14 difference between visitor index and manager index). It is less valued in Europe (+ 0,03). There are two main explanatory factors: in Balkans countries, wetlands with visitor centers, still not in big number, are often situated near coastal touristic areas and are usually well-known. In Europe, although efforts and quality services provided by managers, visitors have a large choice of wetlands to visit. They are then more demanding and often indicate that they are already aware of environmental and wetlands challenges before visiting sites. This situation decrease the impact of the visit in terms of new knowledge acquired.

Landscape aesthetic and educational programs are the two main vectors of human and social impacts

Landscape aesthetic and perception that include water birds, water, greenery and quietness, are the key reasons of visit as well as the main elements expected by the general recreational visitors during their visit. For educational visitors, including school children and members of green clubs, educational program with field visit are very conducive and efficient for transferring new knowledge about wetlands and challenges they face.

Score reached by wetlands ecosystems penalized by external pressures

Desegregated analysis of wetlands natural capital show that when site notoriety and protection status are high (maximum score for all sites), the value of the RES-MW is penalized by external pressures such as urban and public infrastructures extension and pollution around sites, generating a landscape degradation and impacting negatively on perception and satisfaction.

Key messages

- Disaggregated analysis at different scales (sites, countries, sub-regions and Mediterranean) allow targeting different decision-makers and site managers to influence their decisions.

- The level of impact and satisfaction among general public visiting wetlands is linked to the capacity and efforts of wetlands managers to ensure site accessibility and attractiveness and at the same time manage site with a cluster of services considered by general public to be mandatory for a comfortable visit.

- Landscape aesthetic and integrity as well as quietness are the values most expected by the general public visiting wetlands. These values are important to preserve in and around wetland's sites in order to maintain or improve positive impacts among visitors.

- The level of satisfaction of visitors is clearly reinforced when emotion is created during wetlands visit, or when other nearby attractions mutually reinforces this satisfaction. Sites benefiting of large space and exceptional and wild landscape and the ones receiving part of nearby mass tourists (especially beach tourism) generate this phenomena. However, especially for this last category of sites, studies about site and fauna disturbance due to people frequentation should be updated to improve the management of visitor flows.

- If the protection status and international recognition (label) of the studied sites are high, the level of pressures plays negatively on the perception of the manager and on the visitor satisfaction.

- Educational impact of wetlands among school and green club members is very high where manager develop educational service.

- Acquisition of knowledge and awareness creation are in the visit concept of about half of the recreational visitors. Its efficiency depend mainly of the level of awareness of visitors prior the visit and of the manager efforts to transfer knowledge in an innovative and attractive manner, as well as to update this knowledge in line with emerging society challenges (water management, climate change, etc.)

Recommendations to increase the impact efficiency among visitors

- Where and when possible, develop proximity accessible and managed wetlands every 35 kilometers and not beyond 70 kms distance from towns, distance considered a maximum for the general public vising wetlands.

- For sites enjoying high status of protection and with high visitor reputation, provide an additional effort to avoid or limit external pressures (urban extension, pollution, disturbance, over-exploitation of resources) that act negatively on visitor's impact and satisfaction. A high level inter-sector consultation is often necessary.

- Encourage wetlands manager's efforts, especially in terms of visitor-oriented services to ensure comfortable visit for the general public, condition considered by them as mandatory in the majority of sites to enhance their interest to positively discover nature, wetlands and their biodiversity with high level of satisfaction.

- To increase visitor's interest to better understand the functions of wetlands, motivate managers to regularly adapt information and messages for visitors, in line with emerging societal challenges and communicate them on pedagogic and attractive way, and in different languages.

- Spread monitoring results to influence development decisions and land use planning in and outside wetlands, among relevant development sectors and local administration, in order to conserve and restore landscape aesthetic and quietness in and around sites, the two key added values appreciated by recreational visitors.

Synthesis for wetlands managers

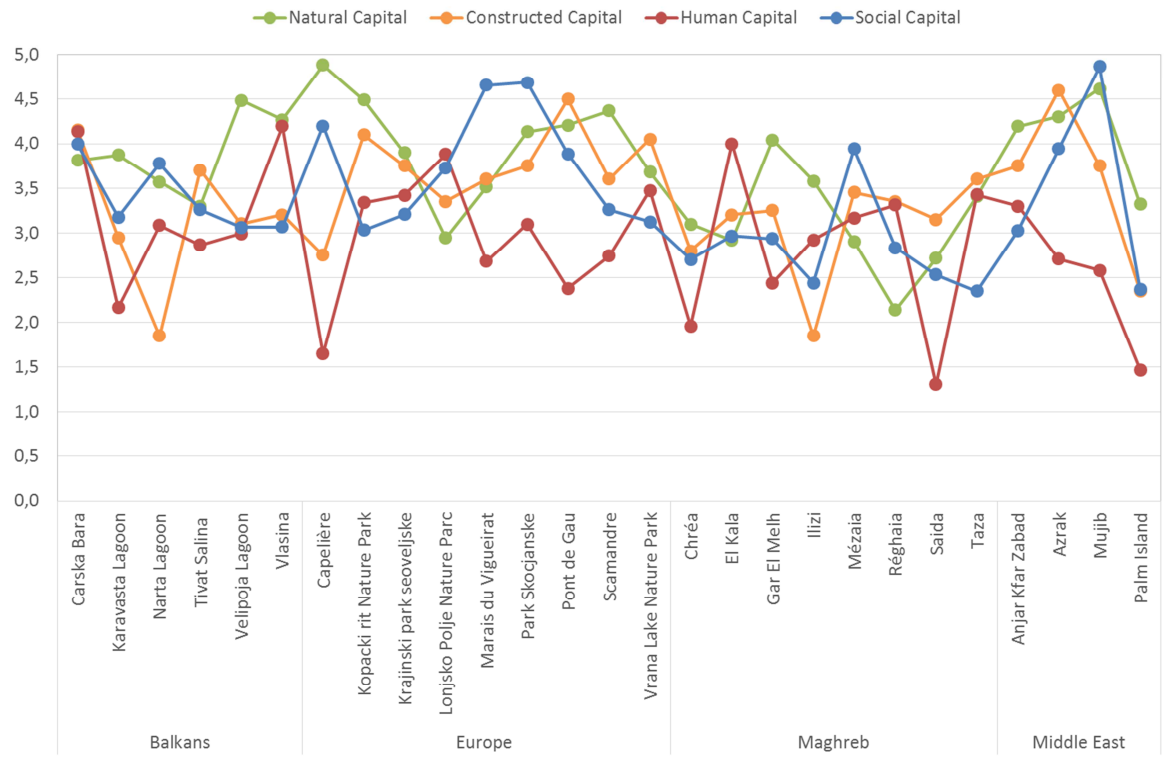
Key results

Important management effort but human impact lagging behind

Based on monitoring results, the natural capital of Mediterranean wetlands benefiting of visitor centers is attractive, managers are doing important efforts to value it, but human capital impact of the visits still lag behind expectation, although a relatively good satisfaction (Social capital) reported from visitors (***Graph 5***). Consequently, the improvement of the RES-MW index value will need to address the human capital impact issue, for which the reflexion may also be linked to the review of the constructed capital (adequacy between infrastructures and services provided by managers and visitor expectations in terms of human impact) and external effects that may influence results of the human capital.

The external factors penalizing human capital impact during the visits seems to have three main origins : 1) the general public deciding to visit wetlands expect above all the link with nature and quietness, the learning part being often a secondary reason for some groups seeking first emotion, contemplation, sport, picnic area, etc. ; 2) In Europe, a high proportion of visitors mention that they are already aware about environmental and wetlands issues and then did not acquire additional knowledge during the visits ; 3) Several sites focus information and mean of communication on biodiversity, in particular water birds, while some visitors seek other information more related with societal challenges: ecosystem modification, human-nature relationship, water management, wetlands and climate change.

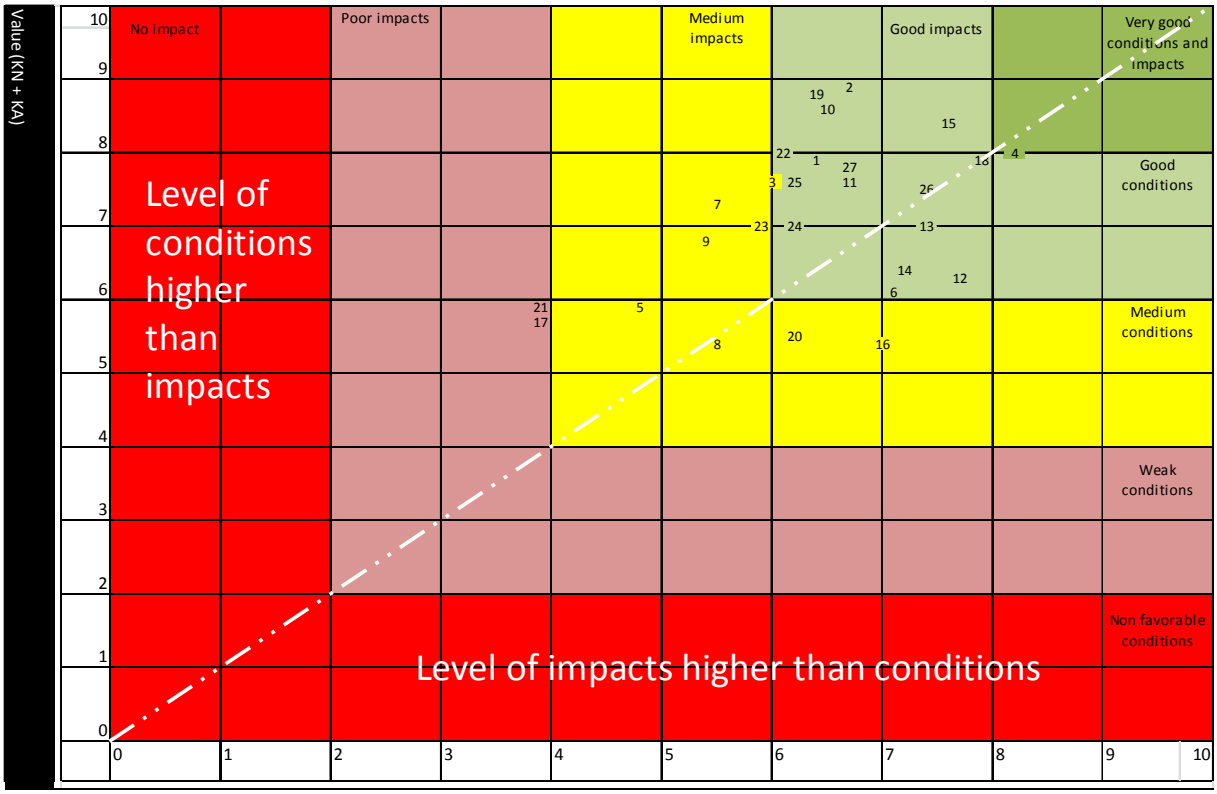
Graph 5: *Weight of each capital in the score of indicator per site*



Manager's efforts are key for visitor satisfaction and their acquisition of knowledge

Overall, among the two capitals of condition, the manager's efforts to protect the natural capital, to adapt land use and to ensure site accessibility and attractiveness is a dominant factor of RES-MW variation including impact, compared to natural capital variables. Said differently, the natural capital impact more visitors if the manager efforts is adapted to the general public (Graph 5). By general public, we include the different visitor profiles that represent more than 85% of non-environmental specialists, including 60% adopting a social entry (the visit being a mean to share experience with friends or family) or a psychological entry (visit by individuals seeking energy, emotion, contemplation from nature). The remaining visitors (40%) adopted a "nature" key interest in visiting wetlands. (Khechimi, 2015). This result gathers also specific site situations that are important for site managers to take into account for their visit strategy. The extreme case is Mezaia site, a small artificial urban Lake of 3 ha in Algeria facing several urban pressures that succeed, thanks to the manager efforts, to impact positively visitors.

Graph 6: *Efficiency level for each site between the conditions of visit and the level of impact.*



Name of site	Number	Name of site	Number	Name of site	Number
Anjar Kfar zabad	1	Kopacki rit	10	Pont de Gau	19
Azrak	2	Seoveljske	11	Reghaia	20
Capelière	3	Lonjsko Polje	12	Saida	21
Carska bara	4	Marais du Vigueirat	13	Scamandre	22
Chréa	5	Mezaia	14	Taza	23
El Kala	6	Mujib ;	15	Tivat salina	24
Ghar el Melh	7	Narta	16	Velipoja	25
Iherir Illizi	8	Palm Island	17	Pio Vlasina	26
Karavasta	9	Skojanski	18	Vrana	27

The social impact from wetlands visits is in general linked to the level of satisfaction reported by visitors, satisfaction enhanced by the manager effort to develop and manage services expected by the general public. This correlation is clearly verified in sites in EU countries, in Jordan and in some sites of Serbia, Albania and Montenegro. This is less clear for Iherir Illizi (Algeria) and Palm Island (Lebanon) proposing very few visitor services, even if visitors seems to make do with it. This is because the exceptional landscape beauty and perception of wilderness in Iherir Illizi or the scarcity of natural area and paradise Natural Island in Palm Island seems to provoke such emotion that infrastructures and services are considered much more of secondary concerns. The diversity of individual perception and social representation of wetlands by visitors is reflecting the diversity of visitor profiles, of the visit approaches (social, psychological and nature) and of their expectations (concept of visit), and also the emotional dimension of their visit.

The index helps wetland's managers to improve their impact efficiency

This visual representation of impact efficiency by site between conditions of visit and level of impact (***Graph 6***) is particularly useful for wetlands managers, to help them to better assess their comparative situation in the Mediterranean for recreational and educational services. The graph objective is to favor analytical understanding of each site situation, especially for the use of site manager. This graph can also be useful for managers wishing to improve their impact efficiency, by going back to the detailed results included in the general synthesis. The graph shows that Carska Bara is the only site within the category "very good conditions and satisfaction" between condition capitals and impact capitals. Sites such as Pont de Gau, Azrak and Kopacki Rit reach the highest score in terms of condition capitals, but register a less favorable impact ratio if compared with sites situated near the median line (Skojanski, Lonjsko Polje, Marais du Vigueirat, Mujib and Pio Vlasina). These last sites show a good adequacy between manager efforts and impacts on visitors.

Ideally, where emotional and external factors do not strongly influence people decisions to visit wetlands, sites should be situated near the median line, in 6-10 cells. This situation corresponds to a satisfactory or very satisfactory impact with good or very good visit conditions. Within this category, the most efficient sites are Carska Bara, Mujib, Marais du Vigueirat, Skojanske et Pio Vlasina. For some sites, such as Pont de Gau, Scamandre, Kopacki rit and Azrak, efforts should be focused on improved impact efficiency, in particular by developing innovative way of transferring knowledge, in order to better value the important efforts carried-out by managers.

For sites such as Saida, Chréa and Karavasta, efforts should focus on both conditions of visit (in particular services improving the comfort of visit, the information and the access to the natural capital) and impact capitals (especially efficiency of knowledge transfer in the human capital). Sites such as Narta, Londsko Polje and El Kala enjoy of high notoriety and impressive natural and cultural values that impact positively visitors with medium manager efforts. If effort efficiency is overall very good in this condition, condition capitals may not be appropriate for certain profiles of visitors.

Overall, at sub-region scale, better are the conditions, better are the impacts. At this scale, analysis confirms the correlation between manager efforts (constructed capital) and impact.

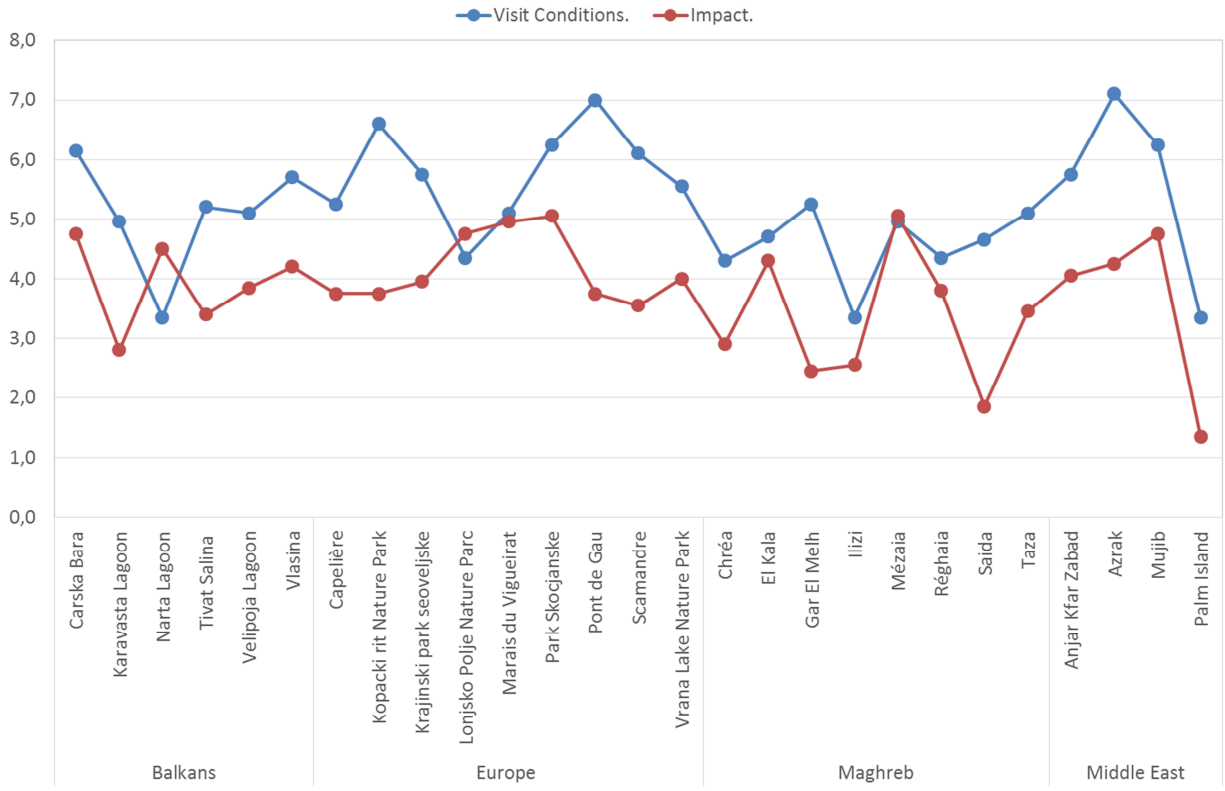
If sites in EU and Middle-East countries enjoy the best conditions of visit, the ripple effect of the condition capitals on impact is particularly clear in Balkan. This impact efficiency in Balkan seems to have three main reasons : 1) these countries have a small number of recently managed wetlands with visitor centers and national and sub-regional visitors are then curious to discover and learn about these ecosystems; 2) the environmental awareness is more recent compared to EU countries and wetlands have a comparative advantage to create awareness through discovery and information ; 3) an high percentage of the studied

sites is situated in emblematic touristic areas and then propitious for satisfaction (external effect of holiday atmosphere on beaches and Salina with private tourist-oriented services).

Positive emotion and nearby attractions enhance satisfaction of general public visiting wetlands

The comparative analysis of results per site (***Graph 7***) show that if the link between the conditions of visit (condition capitals) and the impact among visitors can be verified in about two thirds of sites, this link is less clear for some sites such as Saida, Reghaia, Mezaia (Algeria), Narta (Albania), Pont de Gau, Viguerat, Scamandre (France), Lonjsko Polje (Croatia) et Krajinski (Slovenia). It is not easy to explain these results with the 12 variables included in this indicator, because they are more influenced by specific situations and external factors. Furthermore, in these conditions, detailed results show that the sum of social and human impacts can reach very different scores (Palm Island, Iherir/Illizi).

Graph 7: *Contribution of condition and impact capitals on in the index per site*



Key messages

- Each site displays proper context and face specific external factors that cannot be detected in the monitoring at sub-regions and country scales. These specific features represent sometimes, relatively independently tor manager efforts, important explanatory factors of monitoring results of visit conditions and social and human impacts on visitors.

- Landscape integrity and absence of pressures on site favor positive social impact among recreative visitors.

- Adequacy between offer (managers) and demand (visitors) per site is important to be considered, in order for wetland to fully play is « cultural" role among targeted public. This requires that managers better know their public and expectations, because they are not only passionate ornithologists and other naturalists that are often happy with a minimum of services.

- The appropriate management of comfort services (access, toilet, access to drinking water, security, etc…) and of nature observation services (Observatories, paths, information boards, etc.) increases the satisfaction of visitors for sites for which the reasons of visit are not influenced by strong emotional (exceptional landscape) and external factors (other nearby attractions).

- The emotional factor created by the natural capital (panorama, exceptional landscape, wilderness and also emblematic natural and cultural features) favor impact, satisfaction and souvenir.

- Some of the mass tourists coming to coastal beach areas during summer time visits nearby coastal wetlands. The visit of « natural site » during the summer holiday atmosphere is conducive to high satisfaction.

Recommendations

- Ensure the protection of natural capital by associating a landscape approach with manager, institutes and universities specialized in this approach. Altogether, panorama, water, birds and greenery constitutes the pillars of wetlands landscape identity, as expected by the large majority of visitors.

- For an efficient recreational and educational service and for the image of wetlands, favor visitor's service quality over the quantity. Indeed, without enough wetlands quality infrastructures, services and management, as perceived by the general public, the visit can become counter-productive and give a negative image of the wetlands.

- Build on the « emotion » generated by the natural capital of some sites or by the nearby mass attractions (tourist areas including beaches, monuments, culture, etc.) to develop, at wetland site, access services (road, public transport, paths and indication boards), nature observation services (observatories, binoculars) and value addition of the natural capital (value areas with best panoramic views, favorable area for aesthetic landscape discovery), while taking into account visitor flow management to avoid or limit disturbance on site, including fauna during reproduction period and the notion of discomfort of visitors, especially between profiles with diverging interests.

- For each site not influenced by the « emotional » dimension or by other nearby attractions, the increase of visitor impact efficiency is observed with the decrease or the good management of pressures on sites, the appropriate management of comfort and nature observation services as well as by the innovative way to create awareness among the general public, using attractive themes.

- Favor school contracts and projects, for which educational impact has been found very efficient with a long-term effect. The pedagogic and playful method and capacity of the staff to transfer knowledge and messages is very important.