

**Proposal for
"Annual Prize to the CIHEAM best Thesis"
Year 2016**

Title of the MS thesis :

**Proposal for an indicator of cultural ecosystem services:
Measuring the impact of recreational visits of Mediterranean
wetlands on human well-being.**

*Proposition d'un indicateur écosystémique culturel : Mesurer l'impact
des visites récréatives des zones humides méditerranéennes sur le bien
être humain.*

Author:

Ms Wided KHECHIMI, Tunisia

Our proposal is based on the following points:

- 1. She obtained the *Master of Science* of CIHEAM, with a mention *Cum Laude* and an average mark of 75/100 during the academic year 2012-2013.**
- 2. The evaluation, before the defence of the written document, was made by a jury and gave the following results: (scale 1-5) :**

a.	Originality and importance of the problem	5,0
b.	Applicability of methods and analyses	5,0
c.	Interpretation of results	4,5
d.	Accuracy of conclusions and abstract	4,5
e.	Coherence of the used bibliography with the subject	5,0
f.	Written expression and grammar precision	4,5
- 3. The jury recommended the publication of the results in peer-reviewed journals together with the publication of the Thesis master in the CIHEAM collection.**

1. The jury recommendation is to publish the resultats in peer-reviewed journals

The jury recommended the publication of the Master in the CIHEAM collection, as well as the publication of peer-reviewed articles and any other form of scientific valorisation based on the Master's work.

A scientific paper is under preparation, as well as other uses of the thesis research work for decision support.

Communication and publication work is ongoing:

Chazee L., Requier-Desjardins M., Khechimi W., 2016. "Monitoring recreational and educational services provided by Mediterranean Wetlands: how natural capital impact human and social capital?" *International conference - Monitoring and management of Visitors in Recreational and Protected areas* - 26-30 September 2016 - Novi Sad, Serbia

Chazee L., Requier-Desjardins M., Khechimi W., 2016. Suivre les services récréatifs et éducatifs des zones humides méditerranéennes, *Zones Humides Infos* – n° 92-93 – 3-4 trimestres 2016, p.28
<http://www.snpp.com/spip.php?article2511#92-93>

2. The scientific quality of the work and the adequacy of the adopted methodology.

Mrs. Wided Khechimi has done a remarkably good scientific work. His Master's thesis offers a conceptual model for the operational monitoring of an indicator of cultural services in protected Mediterranean wetlands.

Growing awareness of the need to manage these wetlands sustainably places the issue of cultural services and their societal role at the heart of sustainability issues. Because of their essentially non-market nature, cultural services invite us to rethink the assessment of their impact on welfare in non-monetary terms.

This work is based on the assumption that it is through the recognition of ecosystem services that contribute to their well-being that visitors are encouraged to preserve them and promote their preservation.

The work carried out is original so far as few indicators exist to inform cultural services: in the RAMSAR Convention, there is no such thing at the moment.

The construction of the indicator is anchored in the work of the biodiversity economy. It builds on the ecosystem services framework to measure the impact of service flows on human well-being. Its development is also borrowed from the approach of multiple capitals and that of livelihoods. The proposed indicator thus links the flow of services provided by natural capital with the improvement of the human and social capital of visitors to protected wetlands.

By mobilizing the multiple capitals approach and integrating it into the ecosystem services framework to propose a monitoring indicator for cultural services with a functional purpose, Mrs. Khechimi has developed an original and robust approach to measuring the impact of recreational activities and educational programs on the well-being of visitors. The work of Wided Khechimi is thus an innovation in methodological terms.

This approach, based on a new conceptualization of impact measurement, identifies the main types of capital (human, social, natural) and their co evolution. It distinguishes two main types of capital: the capital of conditions (natural capital and accessibility capital) and the capital of impacts (social capital and human capital) in order to take into account, differentiate and classify in an orderly manner All the elements that allow the visit (those involved in the choice to visit the site) and all the effects or potential impacts resulting from the visit in terms of enhancing visitors' capacities.

On the empirical level, this thesis is the continuity of the M2 master of Wided Khechimi, which summarizes nine analyzes of the perception of the recreational cultural services of the wetlands. These studies were carried out in 9 northern and southern Mediterranean natural parks (4 sites in Algeria, 3 sites in France, 1 site in Morocco, 1 site in Tunisia).

To achieve this synthesis, Wided Khechimi had to harmonize the data from the nine qualitative surveys on site, to reconstruct a general database on the perceptions of 750 visitors and to analyze it. This work of formatting and analysis of the data is remarkable for its rigor.

From the point of view of the indicator, the synthesis specifies notably the reasons for the visit and the benefits derived from it. The state of the area, and its accessibility, as well as the interior fittings and the visiting infrastructures are important criteria that condition the visit. Wetlands are seen as privileged places for sociability and relaxation, places for educational and scientific purposes, important functions that invite them to preserve them.

The data from the 9 perception studies were also useful for the indicator test and a first measure of the impact of cultural services on the human and social capital of the visitors. Regular contacts with the management teams of the natural parks in which the perception surveys were conducted made it possible to improve the results of the sensitivity analysis carried out on the indicator. Thus, Wided Khechimi applied the conceptual model of the indicator to all the 9 sites in order to test its relevance, operationality and robustness. The analysis of its initial results is promising from the point of view of the objectives sought: in particular, quality and originality of the monitoring of site performance (participative scoring), usefulness for decision makers and site managers, the pedagogical scope of the indicator, simplicity of implementation in use.

This work was developed as part of an international research project, the Observatory of Wetlands (OZHM). This project brings together 27 Mediterranean countries. It aims at the harmonized production of information useful to decision makers and managers of Mediterranean wetlands. CIHEAM has been a partner of the Observatory since its creation and is part of its indicator group. This Observatory created in 2009 is hosted at the research center of the Tour du Valat in Camargue. The results of this work were very favorably received by the Observatory team.

Finally, the concrete results of Wided Khechimi's research work are significant in terms of operational monitoring.

The indicator is currently being monitored in forty Mediterranean natural parks in 5 countries.

To carry out his research, Wided Khechimi followed four steps:

- The first part of his work (M2 in appendix) consisted in the analysis and synthesis of the nine perception studies, a work whose main conclusions are summarized in the Master of Sciences to highlight the decisive factors in the visit of protected wetlands, as well as the specific benefits derived from them in terms of human well-being.
- The second part of his work has established the basic theoretical elements allowing the conceptual development of the indicator. It is based on a consistent literature review on welfare indicators (i) (the part on ecosystem services and cultural services being done in the M2), a referential of methodologies of assessment, non-monetary valuation methods, the fundamental role of perception studies, the interest of multicriteria methods etc. for the development of a relevant indicator summarizing the impact of natural capital on human and social capital. This part is decisive and original because Mrs Khechimi uniquely links the framework of ecosystem services (TEEB, international initiative on the economics of ecosystems and biodiversity) to those of multiple capital and capacities.
- The third part explains and tests the methodology developed to evaluate the impacts of visiting protected wetlands on the different capitals of visiting actors. The sensitivity and robustness tests are carried out on the basis of the information contained in the detailed reports of the perception studies and the information provided by the managers of the 9 parks.
- The last part reviews the operational dimension of the indicator, specifying how the main users could take advantage of it: the two main categories of users are managers and decision-makers. For the former, the indicator is an interesting management tool to organize a follow-up of cultural services; for the latter, the indicator can serve as a basis for investment choices or as a source of advocacy in international environmental governance fora such as the RAMSAR Convention on Protected Wetlands.

The work accomplished by Wided Khechimi is of outstanding scientific quality. The proposed methodology is adapted to monitor and analyze the impact of cultural services of protected wetlands on the welfare of the Mediterranean. Its potential in terms of contribution to sustainable and human development and is quite significant.

3. Personnel quality of the candidate

The candidate graduated from the Institut des Hautes Etudes Commerciales in Carthage (Tunisia) “majore” in 2007 from the promotion of communication. She worked in this field with many partners of development: the African Development Bank, the Delegation of the European Union. She then worked at UNDP Tunis in the management and follow-up of development projects, and specialized in CIHEAM-IAMM in the field of project engineering and development policies. The results obtained by the candidate during her master year are excellent.

During her Master of Science thesis, Mrs Khechimi has demonstrated excellent aptitude for applied research. She has chosen a particularly innovative theme, the theme of cultural services and their impact on well-being; she has developed it on a specific object, the wetlands, which are heavily threatened by human activities; she applied it to the Mediterranean region, a space with strong environmental stakes: the presence of an important biodiversity richness, water scarcity, significant human pressure on all natural resources in a context of climate change.

4. Applicability of results in the Mediterranean area and possible use in Mediterranean cooperation

This thesis is part of a Mediterranean partnership. It was conducted as part of the Mediterranean Wetlands Observatory project, OZHM coordinated at the Tour du Valat. This observatory works in partnership with the Mediterranean network Medwet, a major scientific and advocacy source for the Ramsar Convention. The CIHEAM of Montpellier has been collaborating in this project for 6 years as a scientific support and expertise, through training in the search for Mediterranean students.

The OZHM Observatory consists of the development of a decision-making tool based on the evaluation of a set of indicators and the DPSIR (drivers, pressure, state impact and Responses) of the OECD and the European Environment Agency. This indicator of cultural services is the first impact indicator proposed by the Observatory. It is intended to be replicated throughout the region and protected wetlands of the Mediterranean in order to be a tool for improving wetland knowledge, advocacy and identification of critical points between Conservation stakeholders at different scales, local, national and international. In January 2017, the indicator was officially launched in the 27 countries of the Observatory.

As a result of this work, training on the indicator for the monitoring of protected wetlands has taken place in several partner countries of the Mediterranean Wetlands Observatory; they made it possible to adjust and validate it. It is currently being tested on some forty sites on the northern and southern shores of the Mediterranean with a view to an upcoming replication at the scale of the region by 2018.

Based on the previous development, we give the following marks:

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| ▪ Scientific quality | 9,9/10 |
| ▪ Importance and applicability of these methods in the Mediterranean area | 9,9/10 |
| ▪ Example of cooperation between Mediterranean institutions | 9,9/10 |