

HOW MUCH ARE THE PROTECTED AREAS WORTH TO THE TOURISM SECTOR? MARAMUREŞ MOUNTAINS CASE STUDY

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Abstract: *This paper is a starting point for communicating information that proves that biodiversity and ecosystem services can be priced and have a market in the tourism sector. The data were collected and interpreted starting from a baseline situation and value; business as usual (BAU) and sustainable ecosystem management (SEM) scenarios applied on Maramureş Mountains Natural Park bring the idea of additional value added by SEM. Thus, the paper is supporting the funding decision of protected areas management.*

Key words: *tourism, protected areas, ecosystem services valuation.*

1. Introduction

This paper recognises the distinction between ecological and biodiversity capital and the flow of economic benefits that is produced by this capital. While the primary goal of PAs (Protected Areas) is biodiversity conservation, they commonly have a significant economic influence at the local, national and, in some cases, at global level: stock of natural capital (recreation, fisheries, non-timber products, pasture, landscape etc.), flows of goods and services (producing outputs, supporting consumption, generating income, reducing costs, avoiding losses, minimising risks, protecting infrastructure etc.), positive economic outcomes (sectoral income, GDP, employment, forex earnings, fiscal revenues, business profits, etc.) [16].

Different stakeholders appreciate the services provided by PAs in different

ways. Public and corporate decision makers, facing increasing pressure on funding, tend to allocate less financial resources to PAs relative to other sectors, which are perceived to be more productive in development terms. PAs are an important and productive asset providing a significant flow of economically valuable goods and services and this needs to be clearly communicated to decision makers [16]. Economic studies drawing out the significance of these services in monetary terms and their contribution to local, regional and national economies can be a powerful way of demonstrating the significance of PAs to decision makers.

Tourism is an important and rapidly-growing sector in Romania's economy, and one of the most important and emphasised development priorities [6]. In 2009 and 2010 around 6.1 million visitors were recorded, accounting for 17.3 million

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and 16.0 million bed nights respectively: 22% were international arrivals and 94% are leisure visitors [9], [10].

The present paper is a starting point for gathering and collating information that proves that biodiversity and ecosystem services can be priced and can have a market in the tourism sector, the costs and losses associated with PAs degradation and loss can be accounted and the calculation of the economic value relative to the tourism sector sustains funding decisions.

2. Objectives

This paper aims to develop tools for demonstrating that in a sustainable ecosystem management alternative, the monetary value of the ecosystem services can have a high level in the case of the tourism sector. The arguments presented in the paper use tools that are familiar to decision makers, aiming to determine them to invest in PAs management; this will bring important economic benefits for the tourism sector in Maramures Mountains Natural Park (MNP) on the medium and long term.

3. Methodology

Protected areas are important locations for both domestic and international tourism. Generally speaking, visitor data are not available for the PAs, but there are a number of studies from which a conservative estimate of Romania's PA tourism sector has been derived. Starting with a baseline situation and value (year 2010), BAU (Business as Usual) and SEM (Sustainable Ecosystem Management) scenarios bring the idea of additional value-added by SEM.

Based on the link between ecosystem services and human wellbeing, the study conducted underlines the framework that has now long been used by environmental economists to categorize and define the total economic value of ecosystems and

biodiversity. From an economist's perspective, the innovation lies in the fact that this recognizes that biodiversity and ecosystems generate values that exceed by far those that have conventionally been calculated by economists, and included in decision-making – they do not just support commercial resource uses, but also generate a wide range of non-market values, and broader sources of support to production, consumption and wellbeing [13].

A second framework that the paper draws on is that provided by TEEB – the EU-sponsored initiative on “The Economics of Ecosystems and Biodiversity”. This has recently gained a great deal of publicity and currency with decision-makers [15]. TEEB suggests an approach which has three stages: identifying and assessing ecosystem services, estimating and demonstrating their value in economic terms, and capturing these values and seeking solutions [15]. The present valuation paper deals with the first two of these steps, while the future initiatives may also extend to the third.

The third framework that the paper focused on is comparing scenarios. This paper compares two scenarios, and shows their economic implications. The first is the Business As Usual Scenario and illustrates what would happen if the current practices and activities continued at their current level of under-financing; under this scenario, on-going ecosystem degradation and loss is anticipated. The second is an effective, well-managed and adequately-funded PAs management. We look at the state of ecosystems under each scenario, and the goods and services that they provide, the impact on the local and national economic output and wellbeing where possible.

The scenarios are based on the assumptions which have been developed by the author or collected through

governmental strategic targets. This valuation paper focuses on conducting a valuation exercise for MNP. The study involved micro-level analysis of key tourism related ecosystem values and economic linkages for the MNP. Although the resulting data can be used to advocate for investments in PAs conservation to national decision-makers, it is only able to

present information on selected PA values, and does not express the economic returns from investing in conserving the Romanian network of PAs. However, the methods used in the current valuation study (and to some extent the data generated) should be able to be scaled up to the entire network of PAs in the future.

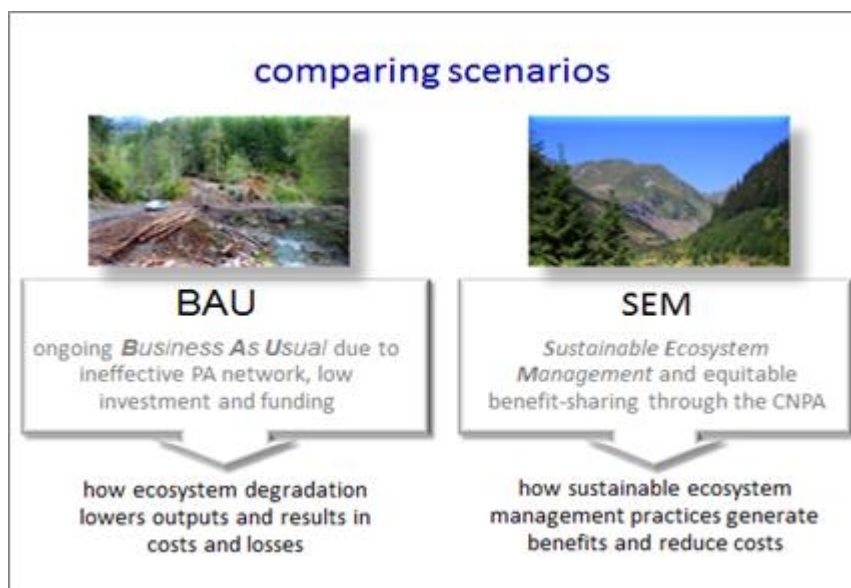


Fig. 1. *BAU and SEM approach* [16]

The current study mainly relies on the collection, synthesis and interpretation of existing data sources (e.g. national and local-level economic and sectoral statistics, data sets from previous surveys and studies). Only limited primary data has therefore been collected, focused mainly on ground-truthing, verifying and gap-filling existing records and statistics. Contrary to initial expectations, there is a fairly good (although in no way comprehensive) body of secondary information and studies on tourism ecosystem values in Romania, including work already carried out under some UNDP-GEF projects[16], and various academic and research publications[11],

[12], [14]. The valuation estimates presented in this paper are not comprehensive, and depend on many assumptions. The study also relies to some extent on extrapolating the few data that are available for the Romanian system of PAs, and it uses "value transfer" techniques. There are many limitations to the value transfer approach which have mainly to do with the credibility of applying data about a particular site or ecosystem to another context which might have very different biological, ecological and socio-economic characteristics [16].

Where value transfer techniques have been used, a conservative approach has been taken. The primary source of data is

valuation studies that have been carried out in Romania as well as in Central, South and Eastern European countries with similar economic, institutional and ecological conditions to Romania [16]. All values have been adjusted to bring them to 2012 Romania price levels, applying a

consumer price index (CPI) deflator to account for domestic inflation, and using appropriate Gross Domestic Product Purchasing Power Parity (GDP PPP) conversion rates to equalise differences between Romania and other countries.

BAU and SEM scenarios description

Table 1

Indicator	Changes from the baseline 2011-2035	
	BAU	SEM
Total visitor arrivals	Increase 4.8% per year till 2026 (MRDT 2007), stagnant after that	
Total visitor overnights	Increase 6.8%/year till 2026 (MRDT 2007), 2.5% per year after that	
Recorded visitors to PA	Increase in ecotourism emphasis in total arrivals: 15% of total arrivals increase till 2016, 20% of total arrivals increase till 2026, stagnant after that.	Increase in ecotourism emphasis in total arrivals: 25% of total arrivals increase till 2016, 50% of total arrivals increase between 2016 and 2026, stagnant after that.
PA entry fees	No change	
Average expenditures per visitor per visit (food & hotel)	No change over short-term, but decrease over longer term as PAS stagnates	No change over short-term, but increases over longer term as PAS improves
% PA tourists spending on food & hotels	No change over short-term, but decrease over longer term as PAS stagnates	No change over short-term, but increases over longer term as PAS improves
Average contribution to conservation per visitor	No change until 2016, after which it decreases	No change the first 5 years then increases by 1% the following 5 years and then 1.5% until 2025; stagnant after that
Total PA tourist consumer surplus per visitor	No change until 2016, after which it decreases	No change the first 5 years then increases by 1% the following 5 years and then 1.5% until 2025; stagnant after that

The resulting analysis should therefore be seen as an initial (and incomplete) assessment of the economic contribution of MNP to the tourism sector. The estimates presented remain highly speculative, and involve many assumptions and approximations. It is to be hoped that, when new data become available, or as more detailed studies are undertaken, the figures presented in this report can be supplemented, improved, updated and

replicated.

4. Results and discussions

Visitor data are not available for MNP, except for the data recorded in the MNP management plan [8] and some studies [1] showing that around 10,000 visitors were recorded in the Vaser Valley (where records are kept by the rail way operator) in 2007. Based on interviews with park administration employees, it is likely that

the number of people visiting Maramureş Area (including MNP) is far higher than this, as the available data are based on those sites for which visitor records are kept. To account for this, the study makes a conservative estimate that half as many tourists are visiting areas in the MNP for which visitor numbers are not recorded. In addition, the estimation of visitors in 2007

was translated using the national change percentage in number of arrivals to a today estimate of 8.700 visitors in 2010. Based on the survey in 2007 [1] all respondents show that, even if they are not aware of the MNP values, their visit includes enjoying one of the promoted values or sites in the Park.

Value of MNP tourism sector

Table 2

EUR	
Direct revenues and earnings	1,326,206.3
Visitor consumer surplus	661,635.0
Total PA tourist value	1,987,841.3
<i>Including (note: values not additive)</i>	
Revenues to PAs	
Revenues to hotels and restaurants	1,326,206.3
Visitor conservation values	237,510.0
Other not captured visitor benefits	424,125.0

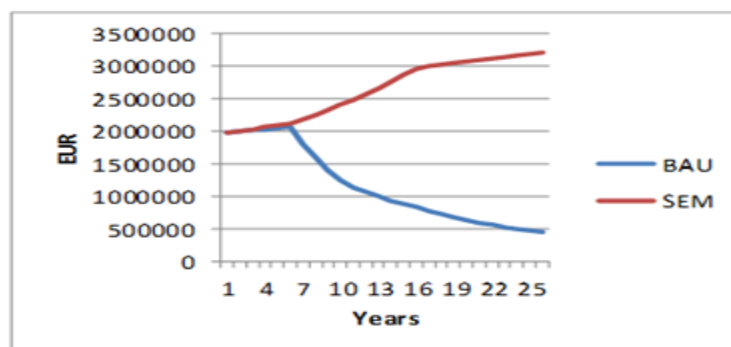


Fig. 2. *Tourism sector values MNP – BAU and SEM*

One important source of economic impact is from the expenditure that is made by visitors. In 2010, MNP did not generate direct revenues (from entry fees and other charges); however, visitors to MNP spent money on hotels and restaurants. The study in 2007 [1] has calculated that average expenditures per visit and visitor on food and accommodation in MNP was RON 483.5 in 2007, equivalent to €135.5 per visitor per visit (2012 prices). Based on the findings of the same study, the average period of the visit was 5 days, meaning a total daily expenditure per visitor of €27.1 [1]. These estimates seem to be

conservative compared to data collected at Durmitor National Park in Montenegro, which found a gross turnover of €1.6 million for hotels and restaurants, translating into an average accommodation fee of €12.6, plus typical spending on food, drinks and other services of €46.0 per visitor/ day [16]. They also appear to be conservative when comparing with the data from nearby countries. In Tatra National Park in Poland visitors spend about €45 per day, and in Slovakia's Slovensky Raj National Park total visitor expenditure averages €54 per person/ day [5].

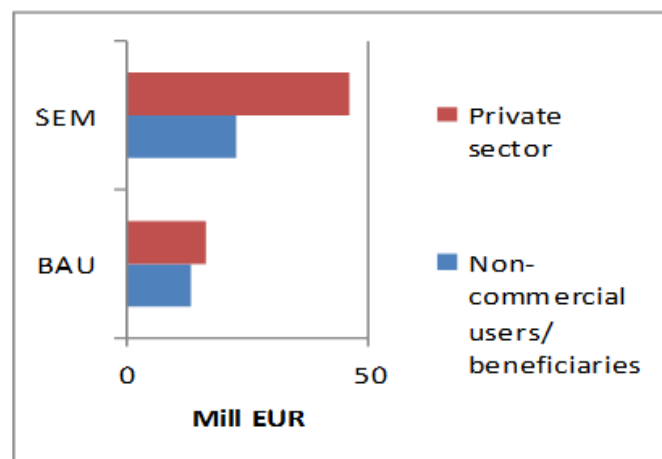


Fig. 3. *Winners and losers in BAU and SEM scenarios – MNP, tourism*

Assuming that 75% of the tourists are visiting MNP as part of longer stays or holidays, direct spending on hotels may therefore account for annual revenues of €1.3 million. This is a conservative estimate, as there is evidence that spending on hotels in areas with attractive natural landscapes tends to be greater than that in other places. Work carried out in Croatia by the Institute of Tourism has for example found that there is a premium of as much as 24-32% attached to the price that visitors are willing to pay for hotels

located in forest areas, and that landscape is a decisive factor in visitors' choice of hotels [12].

The total economic value of PA tourism is however greater than the amount of money that people spend. Expenditures on entry fees, hotels and restaurants, travel costs and other purchases only tell us the minimum amount that visitors are willing to pay to visit PAs. For most tourists, the total value they ascribe to their visit to PAs exceeds the market prices they pay. The net economic benefit or "consumer

surplus” to PA visitors is their total willingness to pay for PA tourism minus expenditures actually made on their trip. In Romania, a study carried out in 5 PAs finds an average consumer surplus per visitor of €42, including an average willingness to pay for conservation of €15 [2], [3] at the level of 2007. In present prices (using PPP conversions), that would be an average consumer surplus per visitor of €50.7, including an average willingness to pay for conservation of €18.2.

Even if those are average estimations from 5 Parks, MNP not being among them, still the data can be used without significant doubt as long as another survey, less precise, done in MNP in 2007 shows that just under 60% of visitors expressed their willingness to contribute between €18 (for the conservation of traditional landscapes) and €21 (for wildlife conservation programmes) to PA funding [1].

Doing the calculation, this equates a total consumer surplus of some €0.7 million a year, including a willingness to contribute to conservation of €0.2 million.

Applying the designed models for BAU and SEM generated a NPV of just above €14 million in BAU scenario and around €21.6 million in SEM (Figure 2). In BAU, even if initially there is an increasing tendency, after that, the value drops together with the decreasing attraction for degraded landscape and improper ecosystem management. In SEM, the values are permanently increasing with a slower slope at the end of the considered period.

We can differentiate two main groups that are economically impacted by PAs: the private sector, and non-commercial users. In MNP case, the private sector is the main champion, showing that, in case of MNP, the payment for ecosystem services mechanisms are to focus on the private sector (Figure 3). It is worth mentioning that the improvement in the

private sector revenue may also lead to increased revenues for the local and national budget, based on the profitability of the sector.

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