

# Accounting for cultural ecosystem services: a case of recreation services in Finland

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## Introduction

Ecosystem accounting is a coherent framework for integrating measures of ecosystems and the flows of services from ecosystems with measures of economic and other human activity. Ecosystem accounting complements, and builds on the accounting for environmental assets as described in the System of Environmental-Economic Accounting (SEEA) Central Framework (UN, et al., 2014, UN 2017). This presentation describes a study focusing on the accounting of cultural ecosystem services, particularly nature-based recreation. The case study is part of a wider project ‘Towards ecosystem accounting based on innovations and insights on natural capital knowledge’, financed by EUROSTAT that includes also cases of provisioning (fish stocks) and to regulating (carbon accounting) ecosystems services. The general objective of the project is to improve national capacity to implement ecosystem accounting by showing gaps and possibilities in existing data and knowledge. The project also increases the awareness of national key stakeholders such as the Ministry of the Environment, Ministry of Agriculture and Forestry, Ministry of Economic Affairs and Employment on ecosystem accounting and the related future needs.

In this study of cultural ecosystem service accounting the aim was to assess nature-based recreation in Finland by applying both physical and monetary measures. This presentation describes the methods and data sets used in analyses of indicators, thoughts of advantages and shortcomings, and identification of the gaps in data and methods. The presentation also discusses the opportunities to use the approach in broader European context.

## The framework of main elements and models

We offer a framework how ecosystem services accounting is possible to construct, and how data gathering is possible to organize. The framework is a description of methodology and needed assets, which are suitable to be processed for the accounting system of cultural ecosystem services. The account includes an estimate of the annual volume of recreational visits to nature areas, an estimate of annual change of visits, and an estimate of the value in monetary terms of the recreational use of nature areas and natural resources. We illustrate how the nationwide data collection that provides the estimate of number of recreational visits in nature areas (Neuvonen & Sievänen 2011) is a solid base for physical measures, and also for monetary values of the recreational visits (Lankia et al. 2015, Jäppinen & Heliölä 2015). The assessment for the supply of recreational resources is based on land use categories (<http://stat.luke.fi/tilasto/6219>) and on data set of public recreation services (LIPAS - Geographic database for sport facilities, [www.liikuntapaikat.fi](http://www.liikuntapaikat.fi)).

## The European challenge

On European level the feasible accounting system could offer a solid framework and comparable estimates of recreational services from different parts of Europe. The challenge and a future task are to create a European wide ecosystem services accounting system that would harmonize the data collection and analysis. The first task is to discover which

European countries have recreation monitoring, the level of monitoring, and what kind of efforts is demanded for harmonization the monitoring both in Finland and in other countries. These evaluations will be based on the literature and experience of COST E33 and Diabolo projects as well as the experiences gained in this MMV9 session (Sievänen et al. 2018, Diabolo project 2015-2019, <http://diabolo-project.eu/>).

## Discussion and conclusions

The presentation will provide the opportunity to discuss practical recommendations of actions to be taken in order to improve accounting of recreation in European wide context.

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