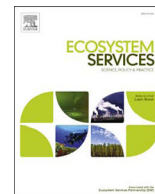




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## Ecosystem Services

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# Capability of the Polish legal system to introduce the ecosystem services approach into environmental management

Małgorzata Stępniewska\*, Iwona Zwierzchowska, Andrzej Mizgajski

Adam Mickiewicz University, Department of Integrated Geography, Poznań, Poland

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## ABSTRACT

Following the scientific progress and the European Union activity, Polish strategic papers have started to postulate the implementation of the ecosystem services (ES) approach (National Urban Policy, 2015; Program for biodiversity protection and sustainable use, 2015). The aim of this paper is to show the implementation of the ES concept into the Polish legal system and the challenges related to its implementation. The paper attempts to review the legal acts concerning the protection of ecosystems, their functions and benefits for people.

Until now, the term “ecosystem services” has not been presented in Polish legal acts. However, the results of study show that current regulations allow for this approach (although not in a direct way) to be taken into consideration to a significant extent. Perceiving the ecosystems as beneficial for human beings is, in Polish regulations, clearly visible in the spatial management, nature conservation, forestry, and water management. The existing provisions incorporate both the services, which are already captured by the market mechanisms, and non-market services. The character of these regulations is preventive, maintaining, restoring and ES enhancing. We conclude that a further effort should be aimed at: harmonization of existing provisions; introducing the ES notion directly into legal acts; and implementation of ES approach in executive regulations.

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## 1. Introduction

In the EU, the mapping and assessment of ecosystems and their services (MAES), is seen as a key tool to maintain, restore and avoid degradation of natural capital (Maes et al., 2015). The EU 2020 Biodiversity Strategy calls Member States to map and assess the state of ecosystems and their services in their national territory, assess the economic value of ecosystem services and promote the integration of these values into accounting and reporting systems (Action 5, Target 2). Member states differ significantly in the implementation levels of Action 5; although their activity in this area has been growing recently (Kopperoinen et al., 2016).

In the case of Poland, the concept of ecosystem services (ES) has entered into scientific discussions in the 2000s (e.g. Mizgajski, 2010; Żylicz, 2010). Every two years since 2010, a Symposium on Ecosystem Services in Transdisciplinary Approach (ECOSERV) has

taken place in Poznań. These meetings and publications that follow (Ekonomia i Środowisko, 2012, 2014, 2016) create an opportunity to review progress in the methodology and application of this concept. As the last symposium in this cycle reflected, a current stage of development of ES research in Poland is mostly manifested by the reflection on the availability of source data and their quality, and the growing number of original research studies conducted on a local and regional scale (Mizgajski et al., 2014). Following the scientific progress and the EU activity, at present, the ES approach, albeit with difficulty, is reaching the policy. The conceptual framework of a national ecosystem services assessment was proposed in 2012 (Mizgajski and Stępniewska, 2012). In 2015, two projects commissioned by Polish Ministry of Environment have been completed: MAES for Poland (UNEP/GRID-Warszawa, 2015) and Urban MAES (Mizgajski et al., 2015). A case study of the Poznań city became part of the EU MAES pilot study for urban ecosystems (Maes et al., 2016a). The first result of the actions presented is the introduction of the ES term into national strategic documents (National Urban Policy, 2015; Program for biodiversity protection and sustainable use, 2015).

The aim of this paper is to show the implementation of the ES approach into the Polish legal system and the challenges related to its implementation. The paper attempts to review the legal acts

\* Corresponding author at: Department of Integrated Geography, Faculty of Geographical and Geological Sciences, Adam Mickiewicz University, ul. Bogumiła Krygowskiego 10, 61-680 Poznań, Poland.

E-mail addresses: [malgorzata.stepniewska@amu.edu.pl](mailto:malgorzata.stepniewska@amu.edu.pl) (M. Stępniewska), [iwona.zwierzchowska@amu.edu.pl](mailto:iwona.zwierzchowska@amu.edu.pl) (I. Zwierzchowska), [andrzej.mizgajski@amu.edu.pl](mailto:andrzej.mizgajski@amu.edu.pl) (A. Mizgajski).

concerning the protection of ecosystems, their functions and benefits for people. Our objective is to point out the possibilities of applying the ES approach within the scope of actions referred to in legal regulations. Legal acts have been reviewed and discussed in three dimensions: i) Protection and enhancement of ES in the context of environmental protection and spatial planning; ii) Chosen types of ecosystems; and, iii) Specific elements of ecosystems.

## 2. Material and methods

In this study we use an inductive, exploratory approach to examine the implementation of the ES approach in Polish national law. Regarding policy-making at various administrative levels, the national level is the key scale, which links European Union law and strategic documents with their implementation according to a top-down approach (Albert et al., 2014; Maes et al., 2016b). There are numerous studies on the legislative aspects of environmental management at different levels of legislation (e.g. Matczak et al., 2014; Sadath and Krott, 2012; Vasarhelyi and Thomas, 2006; Zhenghong et al., 2013). The methodological concerns faced during the course of this study were a lack of direct identification of the ES concept in Polish legislation. For this reason, we reviewed the legal acts in search of equivalent notions of those elements, which in the state-of-the-art literature (e.g. Bastian et al., 2013; Burkhard et al., 2014; Grêt-Regamey et al., 2015; MAES, 2013, 2014; Potschin and Burkhard, 2015; Villamagna et al., 2013) are considered to be an integral part of the ES concept. We have followed the viewpoint that “Ecosystem services are the direct and indirect contributions of ecosystems in interaction with contributions from human society to human well-being” (Braat, 2014, p. 23). Legal acts

which we have selected for analysis concern the use and protection of natural capital. Referring to the ES concept, these are partly include ecosystem functions that underpin ES, partly various contributions of ecosystems to human well-being, and partly interactions of the natural capital with human input in the supply of ES.

The review allowed to select nine legal acts considered as the most relevant to the issue of ES (Table 1).

We adopted the legal status as of June 1, 2016. In interpretation of the content of analyses acts, we used the categorization of ES provided by the Common International Classification of Ecosystem Services (CICES version 4.3, 2013). As CICES has a hierarchical structure with five levels of generality (section – division – group – class – class type), depending on the degree of detail of the law, we matched the individual provisions with the most detailed possible level of CICES.

## 3. Results and discussion

### 3.1. Protection and enhancement of ES in the context of environmental protection and spatial planning

#### 3.1.1. The Environmental Protection Law

The Act of April 27, 2001 on the Environmental Protection Law establishes a general framework for the management of ecosystems in Poland (Lew-Gliniecka, 2012). Detailed principles of protection and conditions for using individual components of ecosystems are regulated by specialist acts discussed further in the article. Although the Act does not contain a single explicit use of the ES term, natural capital is intuitively and automatically perceived as a provider of goods and services. For this reason, a lot

**Table 1**  
Legal acts considered.

Name of Act	Year of launch*	Scope of regulation
Environmental Protection Law	2001	The Act defines the principles of environmental protection and conditions for using its resources, in particular: <ul style="list-style-type: none"> <li>– principles of defining: conditions for protection of environmental resources; conditions of releasing substances or energy into the environment; costs of using the environment;</li> <li>– duties of administrative bodies;</li> <li>– responsibility and sanctions.</li> </ul>
Act on providing information on the environment and environmental protection, public participation in environmental protection and on environmental impact assessment	2008	The Act defines: <ul style="list-style-type: none"> <li>– principles and procedures in cases of: <ol style="list-style-type: none"> <li>a) providing information about the environment and its protection;</li> <li>b) environmental impact assessments and strategic environmental assessments;</li> <li>c) cross-border impact assessments;</li> </ol> </li> <li>– principles of public participation in environmental protection.</li> </ul>
Act on Spatial Planning and Development	2003	The Act defines: <ul style="list-style-type: none"> <li>– principles of shaping spatial policy by administrative bodies;</li> <li>– the scope and procedures related to intended use of areas and defining principles of their development.</li> </ul>
Act on changing certain acts in connection with strengthening landscape protection tools	2015	The Act introduces changes to 10 acts in force.
Nature Conservation Act	2004	The Act defines the objectives, principles and forms of animate and inanimate nature and the landscape.
Act on Forests	1991	The Act defines the principles of maintaining, protection and increasing forest resources and principles of forest management in connection with other elements of the environment and the national economy.
Act on protection of agricultural areas and forests	1995	The Act regulates the principles of protecting agricultural land and soil improvement.
Water Law	2001	The Act regulates water management in accordance with the principle of sustainable development, in particular, the shaping and protection of water resources, and the use of water.
Act on Inspectorate of Environmental Protection	1991	The Act defines competences and organization of the Inspectorate of Environmental Protection as a body for controlling the compliance of environmental regulations and monitoring of the condition of the environment.

\* All acts have been amended several times.

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