

Drivers of the ecosystem services approach in Poland and perception by practitioners



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ABSTRACT

The uptake of the Ecosystem Services (ES) Approach in Poland with emphasis on the drivers stimulating the research and activity of the authorities, as well as the perception of this approach by the practitioners, are presented in this paper. The study focused on the identification of the stimulus for the activities concerning mapping and assessment of ecosystems and their services (MAES). The survey carried out among practitioners allowed to define the main challenges for ES implementation.

Two pairs of dichotomic drivers of the MAES process in Poland have been identified: scientific and administrative, as well as international and national. With regard to science, the most important drivers were found to be large international research projects. The inclusion of the ES approach in strategic documents of the European Union was of mobilising importance for the administration.

Currently, there is no wider interest in the ES approach at a regional and local level. The results of the survey showed that there is a deficit in knowledge on the practical way of using this approach.

In general, it may be said that there is a large potential for the development of ES applications in Poland. Activating it depends on political decisions.

1. Introduction

Twenty years ago, two inspirational publications (Costanza et al., 1997; Daily, 1997) kicked off the concept of ecosystem services (ES) as a subject of applied research and policy. Just two years later, the first Polish papers appeared on the economic valuation of nature (Markowska and Zylicz, 1999). However, in the Polish geographical bibliography, the idea of material and non-material benefits from the environment appeared already in the 1970s. The precursor of the ES approach in Poland was T. Bartkowski who formulated the following requirement as early as the mid-1970s: "... it is necessary to develop geographical information in such way as to enable the transition to economic valuation. It is the first step towards research, in which it will be possible to establish relationships between physical-geographic parameters and their economically tangible impact" (Bartkowski, 1973). Another paper (Marszałek and Podgórski, 1978) directly considered the functions and benefits provided by forest ecosystems. It is worth to notice that the paper of Ryszkowski (1995), even before Costanza's paper, concerned the question of managing ecosystem services.

Global programs (MEA, 2005; TEEB, 2010) preceded European activities concerning the promotion of the ES approach as a tool for the

improvement of nature conservation and to support the protection of natural capital. The European Union introduced the ES into its Biodiversity Strategy for 2020 (EC, 2011) specifying Target 2, Action 5 as the mapping and assessment of ecosystems and their services (MAES). The activities of the European Commission, especially the MAES Working Group and its reports (Erhard et al., 2016; Maes et al., 2018, 2016, 2014, 2013), contributed to the implementation of this action; however, the uptake of the ES approach in Member States varies (Maes, 2016).

Therefore, we have to ask about the factors deciding about the uptake of the ES approach in individual countries. The subject of this paper is to present the development of MAES in Poland with emphasis on drivers stimulating the research and activity of authorities as well as the perception of this approach by practitioners. The analytical work was focused on identifying milestones for MAES actions in Poland. These milestones were connected with the activity of Polish researchers and with actions of policy makers. The survey carried out among practitioners on the regional and local level allowed to assess the perception of the ES approach and to define the main challenges for ES implementation. Many of the findings could be interesting for other countries, which have to implement action 5 of the EU Biodiversity

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Strategy to 2020.

2. Materials and methods

We used a set of analytical techniques, including a content analysis of literature databases, a survey on practitioners using a structured questionnaire, as well as the frequency tables for statistical analysis of the survey results. Generally, we carried out the discourse on drivers for the development of the ES approach in Poland and the process itself based on our experience as scientists and experts acting internationally, on the country level and the regional level.

The widely used quantitative content analysis (Graneheim and Lundman, 2004; Hsieh and Shannon, 2005; Kabisch, 2015; Piwowarczyk et al., 2013) was adopted for the bibliometric description of the development of research on ES in Poland. We calculated the number of documents devoted to ES, published by the authors affiliated in Poland in the years between 1995 and 2017 based on information collected through Scopus and Google Scholar. Scopus is a database of only peer-reviewed literature, taking a broad range of papers covering physical, life, health and social sciences into consideration. Google Scholar also includes other documents like grey literature and non-reviewed materials. The selection, which was performed in February 2018, covers all kinds of documents containing the term “ecosystem services” (in English or in Polish) in the title, abstract, or keywords.

To identify the perception of the ES approach among Polish practitioners, we conducted the survey among representatives of authorities and institutions dealing with spatial planning and environmental management. We distributed the questionnaires among participants of the conference on “Ecosystem services in spatial planning” held on 13th June 2017 in Poznań. The event gathered representatives of regional and local public administration from the Greater Poland Region in Western Poland. The questionnaire was completed by 55 out of 85 participants of the conference. The sample is probably under-representing the entire Polish spatial planning community; therefore, the outcomes should be interpreted with some caution. Despite this fact, in the authors’ opinion, the conducted research provides a valuable insight into the challenges and rewards of mainstreaming ES in the policy and decision making. The survey findings are similar to the convictions of experts from other regions and cities of Poland concerning the development of the ES approach (e.g. Mizgajski et al., 2014; Stepniewska et al., 2017).

The survey objectives included: (1) determining how many spatial planners and officials had heard before about the ES approach and what was the source of this knowledge; (2) recognition of the potential of the ES approach for application in environmental management procedures and (3) determining constraints in the implementation of ES. The

questionnaire also covered the professional position of the respondents, including the level of administration they are dealing with (see survey template in [Supplementary material](#)).

The data were analysed using frequency tables (Hill and Lewicki, 2006; Stanisz, 2007). This allowed to order and summarise the answers, while making it easier to interpret the obtained results.

3. Development of ES approach in Poland and its drivers

Two pairs of dichotomic drivers of the mapping and assessment of ecosystems and their services in Poland have been identified: scientific and administrative as well as international and national. These factors are discussed below.

The ground-breaking papers of Costanza et al. (1997) and Daily (1997) generated limited response among Polish scholars; however, individual publications appeared at the turn of century (Buszko-Briggs et al., 2004; Markowska and Zylicz, 1999; Zalewski, 2004, 2002; Żylicz, 2000). Thus, we can conclude that a small group of Polish scholars developed basic knowledge that underpinned further absorption of the ES approach quite early. The Millennium Ecosystem Assessment (MEA, 2005) carried out in the period of 2001–2005 under the umbrella of the United Nations played a crucial role for the dissemination of the ES concept in Poland during the last decade.

The rising global interest in ES was expressed by a rapid increase of scientific papers (Costanza et al., 2017; Costanza and Kubiszewski, 2012). During conferences in Wrocław (2006), Janów Lubelski (2008), Białystok (2008), single presentations appeared, and then publications concerning ES (Mizgajski, 2004; Mizgajski and Stepniewska, 2009; Ryszkowski, 2007; Solon, 2008).

Growing interest among Polish researchers concerning ES started in 2010 in connection with the Symposium on “Ecosystem services in transdisciplinary approach” – ECOSERV. It was the first nationwide conference devoted fully to ES. Apart from scientists, the representatives of the Polish Ministry of Environment, the National Council for Nature Conservation and the Directorate for Environmental Protection took part in this event. The success of ECOSERV 2010 resulted in the organisation of subsequent symposia in Poznań every two years (ECOSERV 2012, 2014, 2016, 2018). About 100 scientists and representatives of various levels of administration attend these symposia every time. Those meetings hosted prominent scientists, who presented current problems of research on ES (Braat, 2014; Costanza, 2012; Maes, 2016). Anne Teller from the European Commission showed actions of the MAES Working Group for the development of the ES approach in the European Union and Member States. The ECOSERV symposia have played a key role for the dissemination of the ES approach in Poland as well as for leveraging the research quality (Mizgajski

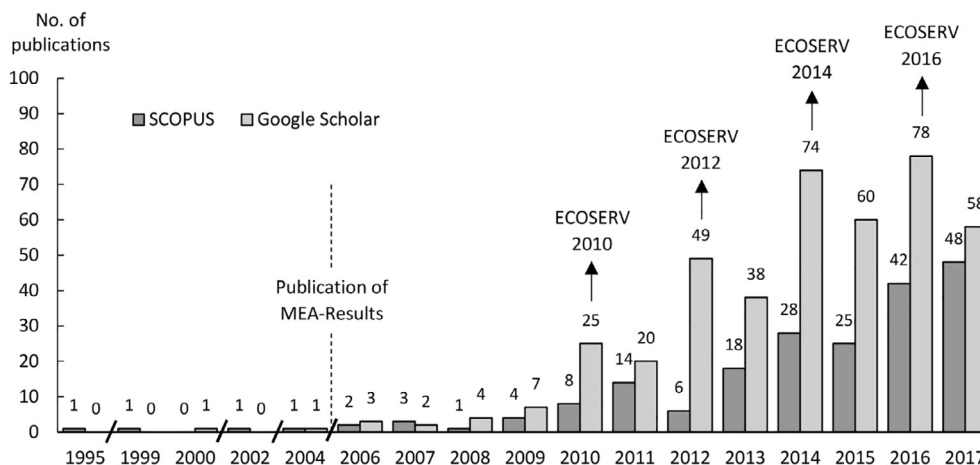


Fig. 1. Number of documents published by authors affiliated in Poland in the years 1995–2017. Source: own elaboration based on SCOPUS and Google Scholar (access 02.2018).

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