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## IS THE ECOSYSTEM SERVICES CONCEPT USEFUL IN POLISH POLICY MAKING? QUALITATIVE ANALYSIS OF EXPERTS PERCEPTION

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### CZY USŁUGI EKOSYSTEMOWE SĄ UŻYTECZNE W TWORZENIU POLSKICH POLITYK PUBLICZNYCH? JAKOŚCIOWA ANALIZA PERCEPCJI EKSPERTÓW

**STRESZCZENIE:** Koncepcja usług ekosystemowych jest coraz szerzej stosowana zarówno w badaniach naukowych, jak i konstruowaniu polityk publicznych, także w Polsce. W niniejszym artykule przedstawiono wyniki indywidualnych pogłębionych wywiadów eksperckich ze specjalistami z zakresu ochrony przyrody. Na podstawie wywiadów zidentyfikowano przyczyny ograniczonej obecności koncepcji usług ekosystemowych w polskich politykach publicznych, został oceniony potencjał tej koncepcji w stosunku do różnych sektorów gospodarki, a także wskazano pozytywne i negatywne konsekwencje mogące wynikać z jej praktycznego stosowania.

**SŁOWA KLUCZOWE:** usługi ekosystemowe, polityki publiczne, eksperci, wywiady

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## Introduction

The concept of ecosystem services has been increasingly applied in biodiversity research and policies all over the world<sup>1</sup>. As Norgaard<sup>2</sup> pointed out, the concept of ecosystem services started as a humble metaphor which could help us to think about the relation between people and nature, but eventually it became integral to what we thought about the future of humanity and biological evolution. It enables us to describe and to analyse the relations between people and the environment<sup>3</sup> and involves some novel, incentive-based conservation strategies<sup>4</sup>. The approach presumes that nature provides services which are beneficial for human societies, allows for economic valuation of particular ecosystem services and contributes to the new conservation debate<sup>5</sup>. Within the debate, the traditional nature conservation approach, which disregards the losses to human societies, is challenged. The ecosystem services approach is treated in this debate as a framework offering possibilities for negotiating costs and benefits of conservation<sup>6</sup>. It may offer guidelines for improving conservation and human welfare via win-win solutions<sup>7</sup>. Nevertheless, it is also criticized as it could be misleading in conservation efforts because of its narrow economic orientation towards nature as a stock, which may lead to commodity fetishism<sup>8</sup>.

<sup>1</sup> R. Costanza et al., *The value of the world's ecosystem services and natural capital*, "Nature" 1997 no. 387, p. 253-260; *The millenium ecosystem assesement, ecosystems and human well-being: a framework for assessment*, www.cices.eu [12-09-2014]; see also: TEEB, *The economics of ecosystems and biodiversity for local and regional policy makers*, www.teebweb.org [12-09-2014]; R. Haines-Young, M. Potschin, *Common international classification of ecosystem services (CICES): Consultation on version 4, August-December 2012*, www.cices.eu [12-09-2014]; P. Lamarque, F. Quetier, p. Lavorel, *The diversity of the ecosystem services concept and its implications for their assessment and management*, "Comptes Rendus Biologies" 2011 no. 334, p. 441-449.

<sup>2</sup> R. B. Norgaard, *Ecosystem services: From eye-opening metaphor to complexity blinder*, "Ecological Economics" 2010 no. 6(69), p. 1219-1227.

<sup>3</sup> R. S. de Groot, M. A. Wilson, R. M. J. Boumans, *A typology for the classification, description and valuation of ecosystem functions, goods and services*, "Ecological Economics" 2002 no. 41(3), p. 393-408; E. Gómez-Baggethun; D. N. Barton, *Classifying and valuing ecosystem services for urban planning*, "Ecological Economics" 2013 no. 86, p. 235-245.

<sup>4</sup> J. Paavola, K. Hubacek, *Ecosystem services, governance, and stakeholder participation: an introduction*, "Ecology and Society" 2013 no. 18.

<sup>5</sup> B. A. Minteer, T. R. Miller, *The New Conservation Debate: ethical foundations, strategic trade-offs, and policy opportunities*, "Biological Conservation" 2011 no. 144, p. 945-947.

<sup>6</sup> T. O. McShane et al., *Hard choices. Making trade-offs between biodiversity conservation and human well-being*, "Biological Conservation" 2011 no. 144, p. 966-972.

<sup>7</sup> S. C. Farber, R. Costanza, M. A. Wilson, *Economic and ecological concepts for valuing ecosystem services*, "Ecological Economics" 2002 no. 3 (41), p. 375-392.

<sup>8</sup> N. Kosoy, E. Corbera, *Payments for ecosystem services as commodity fetishism*, "Ecological Economics" 2010 no. 6(69), p. 1228-1236.

Although significant progress has been made in the assessment frameworks of ecosystem services, there is still work to be done<sup>9</sup>, e.g. development of frameworks that would allow the transition of a scientific concept into a rationale of policy making<sup>10</sup>. De Groot et al.<sup>11</sup> found five groups of challenges and obstacles that need to be addressed in order to fully utilize the concept: (a) Understanding and quantifying how ecosystems provide services; (b) Valuing ecosystem services; (c) Using ecosystem services in a trade-off analysis and decision; (d) Using ecosystem services in planning and management; (e) Financing sustainable use of ecosystem services. The concept is more often perceived as help rather than hindrance as it addresses some current problems of the environmental assessment practice<sup>12</sup>. Yet, some very basic issues, such as a clear and consistent definition to avoid misrepresentations, which could undermine the credibility of the ecosystem services concept, have not been solved. Nevertheless, the implementation of the concept needs to be context specific, used on a case-by-case basis, and take into account both benefits and limitations. It is necessary to put more emphasis on the analysis of ecosystem functionality, structural and functional linkages within ecosystem services and determinants of human well-being, and to integrate ecosystem services into conventional development policies and priorities from their conception to their execution<sup>13</sup>.

In Poland, the concept began to be used in scientific research in the 2000s<sup>14</sup>. Yet, in legal and legislative documents, the concept has been barely presented so

<sup>9</sup> G. Yapp, J. Walker, R. Thackway, *Linking vegetation type and condition to ecosystem goods and services*, "Ecological Complexity" 2010 no. 3(7), p. 292-301.

<sup>10</sup> K. Helming, K. Diehl, D. Geneletti, H. Wiggering, *Mainstreaming ecosystem services in european policy impact assessment*, "Environmental Impact Assessment Review" 2013 no. 40, p. 82-87.

<sup>11</sup> R. S. de Groot et al., *Challenges in integrating the concept of ecosystem services and values in landscape planning, management and decision making*, "Ecological Complexity" 2010 no. 3(7), p. 260-272.

<sup>12</sup> P. Lamarque et al., op. cit.; A. Nahlik, M. E. Kentula, M. Siobhan Fennessy, *Where is the consensus? A proposed foundation for moving ecosystem service concepts into practice*, "Ecological Economics" 2012 no. 77, p. 27-35.

<sup>13</sup> G. C. Daily, P. A. Matson, *Ecosystem services: From theory to implementation*, "Proceedings of the National Academy of Sciences" 2008 no. 28(105), p. 9455-9456; see also: D. Ervin, et al., *Growing cities depend on ecosystem services*, "Solutions" 2012 no. 6, p. 74-86; J. Baker, W. R. Sheate, *Ecosystem services in environmental assessment. Help or hindrance?*, "Environmental Impact Assessment Review" 2013 no. 40, p. 3-13; M. Kandziora, B. Burkhard; F. Müller, *Interactions of ecosystem properties, ecosystem integrity and ecosystem service indicators. A theoretical matrix exercise*, "Ecological Indicators" 2013 no. 28, p. 54-78; P. Kumar, S. E. Esen, M. Yoshihiro, *Linking ecosystem services to strategic environmental assessment in development policies*, "Environmental Impact Assessment Review" 2013 no. 40, p. 75-81.

<sup>14</sup> A. Mizgajski, *Ecosystem services as an emerging field of research and application*, "Ekonomia i Środowisko" 2010 no. 1(37), p. 10-19; T. Żylicz, *Valuation of ecosystem services. An overview of world research*, "Ekonomia i Środowisko" 2010 no. 1(37), p. 31-45; see also: Z. Rosin et al., *Ecosystem services as an efficient tool of nature conservation: a view from the Polish farmland*, "Chrońmy Przyrodę Ojczystą" 2011 no. 1(67), p. 3-20; J. Kronenberg, et al., *The importance of White Stork Ciconia ciconia for society: an analysis from the perspective of ecosystem services*, "Chrońmy Przyrodę Ojczystą" 2013 no. 3(69), p. 179-203.

far<sup>15</sup>. Our previous study<sup>16</sup> showed that the scope of ecosystem services implementation in the Polish legislation and policy documents is limited. However, the reason for this weak implementation of the concept is still unidentified.

## Aim of the research

The study aims to explore the potential for a practical use of the ecosystem services concept, taking into account the scope of its implementation in the legislative and policy documents in Poland. Although the ecosystem services concept is becoming increasingly common in the area of scientific research, it has yet to be widely implemented in practice. Exploring the reasons for this phenomenon contributes to the debate on the utility of the ecosystem services concept because the concept might be useful in nature conservation policies, but at the same time, it might also entail some risks.

The quantitative assessment of the presence of the ES concept in the Polish legal and policy documents<sup>17</sup> aimed at recognizing to what extent the ecosystem services concept is present in Polish legal and policy documents concerning environment protection. The analysis of the documents revealed that the use of the concept is limited. The concept is applied as a certain underlying approach. In particular, ESs are used in a rather descriptive sense (and mostly latently). Within 46 documents that we coded, there were 1315 parts which were relevant to the ecosystem services concept. Moreover, 264 of those parts were found in the Nature Conservation Act (the document with most frequent coding) while the ES concept did not appear in 15 documents at all. Since most of them were decrees (12), we can argue that the ecosystem services concept is hardly present in the lower rank documents. Taking into account the most general level of ES, i.e. the sections concerning provisioning, regulation and maintenance, and cultural services, the most represented category is "Regulation and maintenance" (42% appearances), followed by "Provisioning" (38%), while "Cultural" is the least frequent section. The difference between the two most frequent categories is small (only 4%). A much bigger gap may be observed between both these sections and the "Cultural" section (20% of all appearances), which suggests that the cultural aspect of ecosystems is applied relatively rarely in the legislation in Poland. Moreover, we also found out that the second most frequent ecosystem service is "lifecycle maintenance, habitat and gene pool protection" (142 appearances), while the first most frequent level is the most general one – ecosystem services.

<sup>15</sup> Z. Rosin et al., op cit.

<sup>16</sup> P. Matczak et al., *Catalogue of ecosystem services targeted in protected areas management and spatial planning in Norway and Poland*, Poznań 2014.

<sup>17</sup> Ibidem.

## Methodology

In order to investigate the issue of the limited and specific presence of ES in the Polish legislation, we designed and conducted a series of in-depth interviews with experts in the area of environment protection. The guidelines for interviews were prepared on the basis of content analysis to explore broader context of the concept utility in institutions of nature conservation at different level of public management and background (academia, NGOs etc.) as well as particular results of ecosystem services presence in documents. An expert, individual and in-depth interview is a method that has an exploratory value. We used it for analysing the potential of the ES concept in Polish policies. Nine in-depth interviews were conducted with high-level experts in the field of environment protection. Six of them were “face to face” in the offices of experts, two of them were phone interviews and in one case we got answers via e-mail. The interviews were realized from May of 2014 until July of 2014 and lasted between 20 and 40 min. The selection of experts was made on the basis of snowball sampling supported with a literature review and a media reconnaissance. Four categories of experts were interviewed: 1) Representatives of the administration: a specialist from the Department of Environment Protection in the Ministry of the Environment; a director in the National Forest Holding; a director at the National Fund for Environmental Protection and Water Management; an expert from the Ministry of the Environment working on ecological education; a former Vice-Minister of the Environment; 2) Researchers: a leader of a research center; a professor at a university of life sciences specialising in nature conservation; a scientist working at a university and for a nature protection foundation specialising in ecosystem services; 3) NGOs: a president of one of the leading associations for nature protection; 4) Politicians: a member of the Senate working on the environment protection. The analysis of nine interviews helped to identify the diversity of opinions of ecosystem services utility, limitations and potential among experts with various background.

## Results

The analysis is divided into three sections: 1) The scope and potential of the ecosystem services concept implementation; 2) Positive consequences of ecosystem services implementation; 3) Negative consequences of ecosystem services implementation.

### The scope and potential of the ecosystem services concept implementation

Supporting the results of the earlier quantitative analysis, the experts claim that the ecosystem services concept is not commonly present in the Polish public administration, which is responsible for the environment protection. Moreover,

they argue that even if the concept is used, its application is usually inappropriate – not corresponding to the scientific knowledge on ecosystem services. Apart from the uses in scientific research that has some relevance when the development of policies is concerned, the concept is applied by NGOs as a tool for promoting biodiversity protection.

According to the experts, the ecosystem services concept is hardly implemented in the regulations because the term is unclear and imprecise. It is a barrier in day-to-day decision making. Moreover, the concept can rather be used on the highest level of public administration (by central governmental administration) than on the lower ones. There are two reasons for that. Firstly, among the highest level of government officials there is more knowledge of “trendy” new ideas. Secondly, the concept is applied in acts and in national strategies at a high degree of generality, as a mere notion. The application on the level of decrees or the local level of day-to-day decision making processes would possibly require translation into more concrete parameters, concerning specific actions and money flow. However, the concept is lacking such parameters.

It was also identified that, on the one hand, the EU regulations on ecosystem services are still not very precise, but on the other hand, the use of ecosystem services concept is likely to expand in the future due to the new European legislation. According to experts, there is a tendency to focus on ecosystem services in the EU environmental laws and strategies. Poland as a member state has to transpose European regulations (e.g. assessments of ecosystem services in national accounts<sup>18</sup>) into the national law.

Although some experts did not have an opinion on the ecosystem services concept utility in particular economy sectors (they only knew the facts connected to their institutions), the others noticed that various sectors differ a lot in terms of the implementation potential of the ecosystem services concept.

According to them, the ecosystem services concept is useful in such sectors as tourism and forestry because these yield direct profits from nature. Some experts pointed out that although agriculture is also a sector which reaps direct profits from nature, the concept is not used in this sector because agricultural ecosystems are very intensively exploited, with a much smaller emphasis on their protection.

Regarding the significant disproportion between particular ecosystem services applications in the Polish legislation, experts pointed out that cultural ecosystem services were less represented than provisioning and regulating services for at least two reasons. Firstly, this could be connected with the general regularities which were described in the Maslow’s hierarchy of needs – cultural services were on a higher level of this hierarchy and first required the fulfilment of more basic needs, like provisioning, regulating and maintenance services. Secondly, this could be attributed to the educational background of the governmental officials who are engaged in the environmental policies construction process.

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<sup>18</sup> The Europe Union 2020 Biodiversity Strategy.

According to the experts, such officials are mainly naturalists, and they focus on habitats and biological processes and are less interested in cultural services.

Furthermore, even if some experts were not sure why there was a relatively large presence of lifecycle maintenance, habitat and gene pool protection ecosystem services, they agreed that this might be caused by a traditional understanding of environment protection as a protection of species and a protection of valuable areas. Moreover, they argue that many analysed documents were written by biologists who are aware of such environmental processes as lifecycle maintenance or gene pool protection.

Another reason could be the Europeanization of the Polish national law – the transposition of the EU directives into the national legislation. For instance, there are some significant uses of ecosystem services concept in the documents on water management as a consequence of the Water Framework Directive<sup>19</sup> or in the implementation of Natura 2000: “The aim of the network is to assure a long-term survival of Europe’s most valuable and threatened species and habitats”<sup>20</sup>.

### Positive consequences and negative of ecosystem services implementation

Experts emphasize that the concept is very useful as a social communication tool in discussing environmental issues. It can minimize conflicts concerning e.g. implementation and management of Natura 2000 by helping to compromise or to work out better solutions during the decision-making process and it can educate people on environmental protection in a more intuitive way (explaining what people get from ecosystems and how much it may cost). Moreover, a wider use of the concept creates the need for more research and more expertise in the area of ecological economics. Thus, it builds a market for environmental experts.

According to some experts, the concept as a neutral idea and the method does not have negatives aspects. However, for most experts, there is a risk stemming from the fact that the concept frames the environment not in terms of its intrinsic values, but in terms of its monetary value. It presumes that we can protect only those elements which we can calculate. Thus, the ES concept entails a danger of commodification of nature, which is fundamentally wrong and poses a threat for the environment in the long run.

<sup>19</sup> Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

<sup>20</sup> MEMO on Commission strategy to protect Europe’s most important wildlife areas – frequently asked questions about NATURA 2000, [www.ec.europa.eu](http://www.ec.europa.eu) [20-09-2014].

## Conclusions

The ecosystem services concept is seldom applied in the Polish legal and policy documents. The interviewed experts confirm the hypothesis that is based on the experiences from other countries<sup>21</sup> (however the identification of precise distribution of opinions requires further research).

The hypothesis states that the idea has a high potential and that it is a promising tool for policy and decision making. The research also confirms that some of de Groot's groups of obstacles<sup>22</sup> have not been overcome yet, especially those connected with day-to-day policy and management. Previous studies emphasized the necessity to integrate ecosystem services into conventional development policies in every phase of their development and execution<sup>23</sup>. Yet, the ambiguity and inconsistency of the concept pose constraints into the concept application. Moreover, due to a fragmented knowledge of the interested parties, the concept is used in the regulatory framework mainly as a general, guiding idea, not as a practically oriented method used operationally in the decision-making process. The concept is intellectually attractive but entails difficulties in its application in policies. Actually, it seems to be more useful in argumentation and communication than in measurement. Furthermore, experts attribute reasons for the limited progress of the application of the ES approach mainly to human factors: specific education of the administrators and decisions makers, reluctance to apply new concepts, and also limited and fragmented knowledge.

The concept might be perceived as ambivalent because the ecosystem services approach can be framed both as helpful in nature conservation and as dangerous to nature conservation. It may be helpful in the decision making process, but it may also entail risks as it promotes perceiving the environment mainly through the prism of monetary values, which may lead to commodity fetishism<sup>24</sup> in Poland and in other countries. To summarise, the ecosystem services concept has a policy potential, but in order to be applied, it requires more clarified definitions adjusted to policy making. Perhaps, application in some policy areas, such as forestry or water management, would be a step forward offering some experience useful in other domains.

*This paper is a result of research conducted within the project LINKAGE (LINKing systems, perspectives and disciplines for Active biodiversity GovernancE, POL-NOR/2/196105/2013).*

<sup>21</sup> E.g. T. O. McSheane et al., op. cit.; P. Lamarque et al., op. cit.; A. Nahlik et al., op. cit.

<sup>22</sup> R. S. de Groot et al., op. cit.

<sup>23</sup> P. Kumar et al., op. cit.

<sup>24</sup> N. Kosoy, E. Corbera, op. cit.