EJE TEMÁTICO: Incorporación de los Servicios Ecosistémicos en la Toma de Decisiones

PROCEDURES TO SELECT PRIORITY AREAS FOR PAYMENT FOR ECOSYSTEM SERVICES PROGRAMS

PROCEDIMIENTOS PARA LA SELECCIÓN DE ÁREAS PRIORITARIAS DE LOS PROGRAMAS DE PAGO POR SERVICIOS DE LOS ECOSISTEMAS

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RESUMEN

Este trabajo fue desarrollado con el objetivo de contribuir a la aplicación de los principios de servicios ecosistémicos en la toma de decisiones en la gestión de los recursos hídricos. La intención fue identificar los procedimientos y metodologías utilizadas con el fin de seleccionar las areas prioritarias que deben incluirse en los proyectos o programas que utilizan instrumentos de compensación por servicios de los ecosistemas. Con este fin, se buscaron los métodos y experiencias para la selección de áreas prioritarias en la literatura científica y técnica; se identificaron las principales etapas clave del proceso de selección de esas áreas; se realizó una recopilación de los procedimientos adoptados para cada etapa clave; finalmente, se analizaron y se clasificaron los datos colectados. Los resultados presentados aquí nos permiten identificar los principales objetivos, las acciones y los criterios utilizados para la selección de áreas prioritarias para programas de compensación por servicios ecosistémicos. También indican la necesidad urgente de estos programas de sistematizar y compartir sus experiencias en esta área.

ABSTRACT

This work was developed in order to contribute to the application of principles of ecosystem services in decision-making for water resources management. It aims to identify procedures and methodologies used for decision-making in order to select priority areas to be included in projects or programs of compensation for ecosystem services. To do so, methods and experiences to select priority areas were sought in the technical and scientific literature; the key steps used in the selection process of priority areas were identified; then a survey of the procedures adopted to each key step was done considering the literature selected; and, finally, the information collected was analyzed and classified. The results we found showed the main objectives, actions and criteria used to select priority areas for compensation for ecosystem services programs or projects. They also indicate the pressing need for these projects or programs to systematize and share their experiences in this area.

KEY WORDS
Payment for Ecosystem Services, Selection of Priority Areas, Decision Support.

INTRODUCTION

The concept of ecosystem services has become a central issue in conservation planning, seeking to reduce the degradation of ecosystem quality (KOSCHKE et al., 2012; FISHER & TURNER, 2008). The ecosystem service approach has been largely applied because it permits interdisciplinary research, linking environmental and socio-economic concepts. But its application is limited by the lack of appropriate data that may guide the decision processes (BURKHARD et al., 2009).

This work aims to contribute for the application of ecosystem services principles, in the specific case of the decision process in water management. It aims to identify procedures and methodologies applied to decision process of selecting priority areas in programs or projects of economical compensation for ecosystem services. The work is part of the "Strengthening of knowledge, organization of information and developing tools to support programs of payments for watershed ecosystem services in rural areas" research project, whose activities were supported by Embrapa.

MATERIAL AND METHODS

The work included the survey, analysis and the synthesis of methods and procedures to select priority areas for payment or other forms of compensation for ecosystem services supply. For this, the database of the mentioned project was used, which presented 278 documents collected in technical and scientific literature about ecosystem services. Documents that describe methods and procedures to select priority areas were found in the database. Initially the key steps applied in the selection process of priority areas were identified. Then a survey was developed to know the procedures adopted in each of the key steps: the definition of the objectives of the selection process, the definition of the actions for intervention, the establishment of the criteria for the selection, the weighting of the criteria, the application of the method to integrate data, and the validation of the results. Finally, the information was analyzed and classified.

RESULTS AND DISCUSSION

Considering the total of 278 documents in the database, 17 were selected because they contained methods or procedures to select priority areas, totalizing 29 methods. It is important to consider that the database consulted focuses primarily on experiences related to water ecosystem services. Twenty-one of the 29 methods identified focused on water resources.

The documents showed that the objectives are not always explicit, making the analysis and synthesis difficult. We tried to associate the type of improvement that was sought in order to identify the main objectives which had motivated the selection of priority areas. To do so, we used the synthesis presented in a comprehensive study of initiatives of watershed payments directed by Bennett et al. (2012) as the reference. Three types of objectives were classified: 1) those directly related to the improvement of water services, 2) those aimed at providing socio-economic benefits and 3) those aimed at providing other ecosystem services.

The objectives directly related to the improvement of water services were the most common, which had been expected due to the priority set in this work. Among these, we found: to regulate water flow, to improve water quality, to control sediments, to conserve watersheds, to protect water sources and to control pollution. Considering the objectives to provide socio-economic benefits, we observed: to strengthen rural communities and to improve the quality of life. These results reflect the characteristics of the programs described in the literature we analyzed, which primarily involve the rural population, whose land has an important role in providing ecosystem services. Among the

objectives to provide improvements in other services, we found: to conserve biodiversity, to reduce deforestation or to maintain forests, to reduce greenhouse gas emissions, to conserve habitats or to preserve endangered species.

The actions for intervention are related to the objectives and they are mostly aimed at reforestation, use of better agricultural practices and protection of environmentally relevant areas.

The survey of the criteria to select priority areas showed that these are very diverse. Some criteria were established to identify priority regions, which can be watersheds, municipalities or other boundaries defined *a priori*. Other criteria were defined to select lands which had priority conditions for the defined intervention.

The diversity of criteria and the specificity observed in some of the analyzed procedures showed that they had been developed and applied to specific conditions - local or regional - or to specific objectives of the program or project analyzed.

Only one of the procedures to select areas described a method for weighting. This result may indicate that differentiating criteria according to their importance or relevance in the analysis is not a common practice.

Several approaches for the integrated analysis of all criteria were observed. In most cases, the criteria were applied directly and the cases that met most of them were selected. The application of indicators and spatial analyses are practices still scarcely used.

It is important to notice that the coherence between objectives, actions proposed for intervention and criteria to select areas, was not observed in some of the documents. Several criteria mentioned did not have any relation to the objectives or actions proposed in the program or project. This may be due to the fact that most of the analyzed documents did not aim to describe the process of selecting priority areas in detail, which could have resulted in some omissions.

CONCLUSION

Considering this study's sample, the selection of priority areas was done in most cases based on the direct use of predetermined criteria. The use of indicators and spatial analyses, are practices still scarcely used. This result highlights the importance of defining the criteria and rules for their joint analysis, especially considering that there may be high correlation - positive or negative - among criteria, which can lead to a biased assessment of priority areas, with over or under appreciation of some of its features.

We must highlight, however, that most of the analyzed documents did not aim to describe the process of selecting priority areas in detail, which may have resulted in some omissions. Although these conditions may lead to limitations to the analyses in this study, the results presented here allow us to identify the main objectives and criteria used to select priority areas for programs or projects of compensation for ecosystem services. They also indicate the pressing need for these projects or programs to systematize and share their experiences in this area.

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