METHOD FACTSHEET

Preference assessment surveys

Introduction

Preference assessment is a direct and quantitative consultative method for analyzing perceptions, knowledge and associated values of ecosystem service demand or use (or even social motivations for maintaining the service) without using economic metrics. It can also be used to understand which ecosystem services are perceived as the most vulnerable, or which make the greatest contribution to human wellbeing. Data is collected through surveys using a consultative approach with different variations, such as free-listing exercises, ecosystem service ranking, rating or ecosystem service selection. It is generally used with an emphasis on individual perceptions (but collective preferences can be also gathered). Preference assessment is a useful approach for identifying relevant services from different stakeholder perspectives with diverging interest or needs. Its application can help to uncover differences and similarities in preferences between different social groups in terms of ecosystem service demands. In some cases, the different preferences between social actors and stakeholder groups fit the trade-offs and synergies of ecosystem services created by land-use management (Martin-López et al. 2012) because different stakeholders might be able to manage the landscape on the basis of their needs, interests and preferences (Nagendra et al., 2013).

Keywords

Individual value; Demand; Quantitative assessment; Questionnaire; Survey method; Social preference; Socio-cultural valuation.

Why would I chose this approach?

The motivation for using this method is the requirement to understand which services are in highest demand (or valued most) in a particular context (or the ones that are socially perceived as the most vulnerable). This approach could be helpful to address the following objectives:

- to demonstrate the social importance of ecosystem services,
- to set priorities within management strategies (e.g. working first on those services characterized as highly vulnerable but highly demanded) within the context of the ecological status of other ecosystem services (declining, stable or improving).
- to understand the multiple needs of different stakeholders and, in doing so, anticipate potential social conflicts derived from policy decisions affecting different ecosystem services.

It can be conducted using different survey options: (1) free-listing exercises where no previous information is provided and respondents are asked to name ecosystem services using an open ended question, (2) ranking or rating of ecosystem services on the basis of panels provided to respondents with some information (e.g. Castro et al., 2011; Martín-López et al., 2012); or (c) selection of ecosystem services that are the most important for respondents individual wellbeing or for social wellbeing from a pre-defined list

of existing services in a given context (Oteros-Rozas et al. 2014). Usually, supporting material is provided including pictures or examples. Additional questions can be useful to capture information on motivations or reasons behind the services selection.

When assessing collective preferences, a small group of participants debates and reaches a consensus-based value of the main ecosystem services in a particular area (Palomo et al. 2012). These surveys and workshops can also include information (qualitative or quantitative) regarding which services are the most important or vulnerable, the main trends in ecosystem service delivery, the drivers of change, or the spatial scale at which an ecosystem service is demanded (García-Nieto et al. 2015). In this template, we are going to focus mainly on the individual survey application.

Methodologically, the main challenge of individual preferences is related to the sample size required to collect representative information. The sample size should be representative of the population targeted in the analysis. This challenge is also reflected in other methods, such as photo-elicitation or time use.

Any ecosystem service could be assessed and valuated through this tool when the targeted respondents have a fairly good understanding of the services. In fact, a wide range of ecosystem services can be assessed at the same time. Information collected through preference assessment can be feed into awareness raising campaigns but can also be used to inform priority setting processes (with quantitative data) or instrument designs.

This approach is suitable to apply at any spatial scales if sample representation is guaranteed.

What are the main advantages of the approach?

- It assesses a range of ecosystem services at the same time, and could be used for all different service categories;
- It can provide robust quantitative information (from a representative sample) (Scholte et al. 2015);
- It avoids incommensurability issues resulting from the assignation of monetary value to service properties that cannot be monetarily measured (Martinez Alier et al. 1998; García-Llorente et al. 2011);
- The standardisation of the questions included could promote comparability with other case studies (e.g. Martín-López et al. 2012).

What are the constraints/limitations of the approach?

- Preference assessment captures a point in time, not a trend. In addition, sometimes, extra qualitative information is needed to understand the reasons behind the responses given;
- Key stakeholders can be ignored if the surveys focus on characteristics which are relevant for a very limited percentage of the population.
- Answers focused on the contribution of ecosystem service to an individual respondents' human wellbeing fails to take into account shared and social values of ecosystem services (Kenter et al. 2015). For a comparison between individual wellbeing and social wellbeing (i.e., shared and social values) by using this technique, see Oteros-Rozas et al. (2014).

What types of value can the approach help me understand?

Preference assessment is highly suitable to ascertain socio-cultural values, as it was originally designed for that purpose. It is useful for estimating the instrumental values of nature's benefits and how people might

relate to nature through developing different activities (i.e. relational values). It is therefore suitable for estimating use and non-use values of nature and ecosystem services.

How does the approach address uncertainty?

The method aims at obtaining a representative sample of the population potentially affected. Multi-variate statistical methods can be used, which makes it possible to test whether variables explaining preference rankings/ratings are statistically significant.

How do I apply the approach?

The method requires 6 basic steps (see figure 1 below): (1) to target the ecosystem services in the valuation exercise, (2) to select the specific methodologies which can be adopted within the approach, e.g. restoration initiatives or conservation activities related with ecosystem services, (3) to identify the targeted population, (4) to design the questionnaire, (5) to conduct the survey, and (6) to analyze the WTT metric through econometric analyses.

For the questionnaire design, if researchers decide to present a list of ecosystem services to respondents, then it is essential to provide a suitable list of ecosystem services adapted for the case study context. It could be helpful to follow and adapt a recognized ecosystem service classifications such as the common international classification of ecosystem services (CICES; www.cices.eu) (Haines-Young and Potschin, 2013).

A pilot sampling is always recommended to improve the wording of the survey and adapt it to the case study context (e.g. particular ecosystem services, specific activities to invest time in, target population).

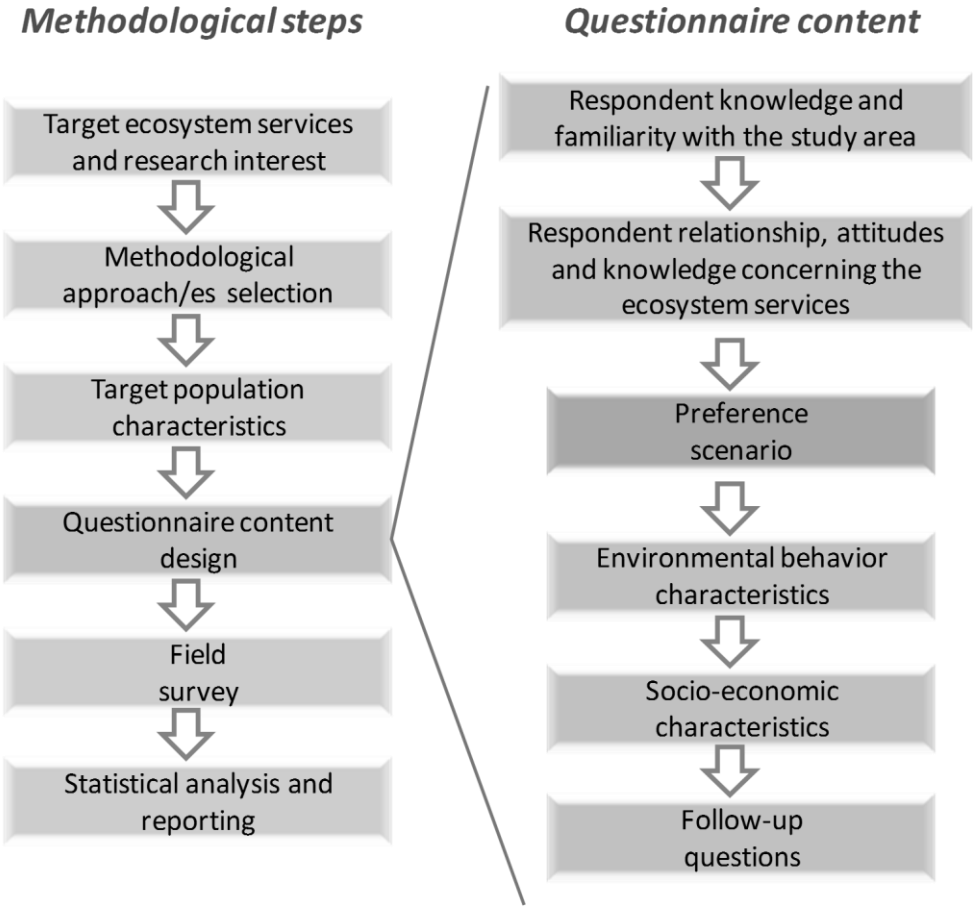

Figure 1. The basic steps to be employed in Preference Assessment

Requirements

Requirements		Comments
Data	□ Data is available □ Need to collect some new data (e.g. participatory valuation) □ **Need to collect lots of new data (e.g. valuation based on surveys)**	This statement only refers to social surveys.
Type of data	□ **Quantitative** □ **Qualitative**	Quantitative data is key, and qualitative data is recommended.
Expertise and production of knowledge	□ **Working with researchers within your own field** □ **Working with researchers from other fields** □ Working of non-academic stakeholders	
Software	□ **Freely available** □ **License required** □ **Advanced software knowledge required**	Software for statistical analysis is required; the particular software and its availability will depend on the researcher decision.
Time resources	□ Short-term (less than 1 year) □ **Medium-term (1-2 years)** □ Long-term (more than 2 years)	Time requirements will vary in terms of the previous information compiled (literature review or interviews) and the techniques used (for example online surveys would be completed much faster than face-to-face questionnaires). Minimum of 9 months (questionnaire design, data gathering in field, and econometric analysis) could be established, till one or two years for a recommended situation. It is essential to ensure that respondents understand the exercise
Economic resources	□ Low-demanding (less than 6 PMs) □ **Medium-demanding (6-12 PMs)** □ High-demanding (more than 12 PMs)	
Other requirements		

Where do I go for more information?

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