

# Chapter 12

## Assessing Urban Ecosystem Services: Different Methodological Approaches Applied in Brazil, Germany, and Portugal

**Marise Barreiros Horta**  
*Federal University of Minas Gerais,  
Brazil*

**Maria Inês Cabral**  
*Martin Luther University, Germany &  
iDiv, Germany*

**Iva Pires**  
*Nova University of Lisbon, Portugal*

**Laura Salles Bachi**  
*Federal University of Minas Gerais,  
Brazil*

**Ana Luz**  
*Nova University of Lisbon, Portugal*

**Geraldo Wilson Fernandes**  
*Federal University of Minas Gerais,  
Brazil*

**Maria Auxiliadora Drumond**  
*Federal University of Minas Gerais,  
Brazil*

**Sónia Carvalho-Ribeiro**  
*Federal University of Minas Gerais,  
Brazil*

### ABSTRACT

*By integrating social, ecological, and economic perspectives, the assessment of ecosystem services (ES) provides valuable information for better targeting landscape planning and governance. This chapter summarizes different participatory approaches for assessing ES in urban areas of three countries. In Belo Horizonte (Brazil), a conceptual framework for the vacant lots ES assessment is presented as an attempt to integrate landscape, social, and political dimensions. In Leipzig (Germany), a*

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## INTRODUCTION

There is a growing recognition that the assessment of the Ecosystem Services (ES) can provide valuable information for better targeting landscape planning and governance, especially for shaping innovative adaptation strategies in the context of global environmental change (Brendan, Costanza, Turner, & Morling, 2007; de Groot, Alkemade, Braat, Hein, & Willemen, 2010; Gómez-Baggethun et al., 2013). Many authors agree that the concept of ES (designated as the benefits people obtain from nature) is currently widespread and accepted, providing a useful framework that aggregates social, ecological, and economic perspectives (Burkhard, Petrosillo, & Costanza, 2010; Gómez-Baggethun et al., 2013; Koschke, Fürst, Frank, & Makeschin, 2012; Millenium Ecosystem Assessment [MEA], 2005; Primmer et al., 2015).

Although ES offer valuable insights concerning the human and nature connections and dependencies, the concept has however remained away from the political applications (Burkhard et al., 2010). In this sense, empirical applications and tools are required for the development and improvement of the ES concept and its insertion in the decision-making process (Burkhard & Müller, 2015).

Over the past decades the assessments of ES have been favoring the biophysical and economic aspects, leaving aside the social dimension formed by the services beneficiaries and the institutions (Martín-López, Gómez-Baggethun, Garcia-Llorente, & Montes, 2014; Primmer et al., 2015). The biophysical approach involves the ecosystem services supply and demand, and it is influenced by Land Use and Land Cover (LULC) structures and processes, which change in space and time (Burkhard & Müller, 2015). The economic view comprises the monetary valuation of services varying from local to regional and global scales (de Groot et al., 2012).

More recently, the accumulated knowledge in the field has raised the need for integration, which enables the overcoming of the limitations through the incorporation of applied methods and tools to bring ES assessments closer to the political and decision-making agendas. One avenue for moving forward in the decision-making process is the insertion of the socio-cultural dimension through the utilization of participatory approaches (Bixler, Dell'Angelo, Mfuné, & Rob, 2015). Participatory approaches are based on interactivity and include social interaction, mutual learning, and communication (de Montis, 2007).

In this context, attempts have been made focused on the use of participatory approaches for broadening the traditional biophysical ecosystem services perspective into a set of social and political processes (Haines-Young & Potschin, 2014; Martín-López et al., 2014; Turnpenny, Russel, & Jordan, 2014). Among the tools and methods utilized, it is possible to highlight the social surveys and interviews organized for collecting data on ecosystem services, concerning the mode in which multiple users or beneficiaries acknowledge ecosystem's capacity to deliver services

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