

THE ECOLOGY AND ECONOMICS OF URBAN ECOSYSTEM SERVICES

ERIK GOMEZ BAGGETHUN¹; DAVID N. BARTON²

1. ICTA-AUTONOMOUS UNIVERSITY OF BARCELONA; 2. NORWEGIAN INSTITUTE FOR ENVIRONMENTAL RESEARCH.

Abstract:

Despite the formal consideration of urban systems by international initiatives like the Millennium Ecosystem Assessment (MA) and The Economics of Ecosystems and Biodiversity (TEEB), urban ecosystem s remains little explored from the ecosystem services approach, and no systematic account has yet been done of the economics of urban ecosystem services. This paper reviews and synthesizes available empirical knowledge for the incorporation of the economic value of urban ecosystem services in long-term urban planning. First, we examine the economic value attributable to the resilience created by urban biodiversity by securing continued delivery of ecosystems services to the urban population in the face of disturbance and change (referred to as insurance value in the TEEB report). Second, we examine the economic value resulting from the direct contribution of final ecosystem benefits to human well-being. In doing so, we categorize critical service providing units in urban ecosystems, together with a classification of most relevant urban ecosystem functions, services and disservices. Third we classify methods for the accounting and valuation of urban natural capital and ecosystem services in biophysical and monetary terms, covering both benefits from ecosystem services and costs from ecosystems disservices. Finally, we discuss which particularities must be taken into account when dealing with the economics of urban ecosystem services and we identify the areas where accounting and valuation of ecosystem services can most critically contribute to the sustainability of cities. The paper concludes with a synthesis of our main findings.