

PAYMENTS FOR ECOSYSTEM SERVICES: A TOOL FOR URBAN RESILIENCE?

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ABSTRACT

The provision of Ecosystem Services (ES) in cities is being increasingly read as a crucial component of urban environmental and social quality. More specifically, some recent studies focused on the potential of ES to promote urban resilience. ES can actually help to mitigate climate change effects and increase existing adaptive capacity of urban socio-ecological systems. To achieve the maintenance and enhancement of ES provision, incentive mechanisms such as Payments for Ecosystem Services (PES) can be used. The idea that underlies PES is that who provide ES should be remunerated for doing so, “putting a price” on previously un-priced environmental goods. Differently from compensation actions, that are based on the “polluter pays principle”, PES are thus based on the “beneficiary pays principle”. Due to the typical features of conditionality, additionality and permanence, PES can act as an effective tool to grant the enhancement of ES provision. However, PES are still a technical testing ground for environmental and landscape policies, above all in Italy, where there is not a dedicated legal framework and due to a strong tradition of “command and control” planning tools. In this contribution – through the illustration of some cases of PES application for the provision of ES in and for cities in Italy and abroad – PES are investigated as a potential tool to promote urban resilience, and to address the topic of the resilience’s economic costs.

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1. Challenges and opportunities of applying Payments for Ecosystem Services to support urban resilience

Urban Ecosystem Services (ES) significantly contribute to improve city environmental and social quality. The link between ES provision and urban resilience, in particular, is tight: on the one side, ES can help to mitigate climate change effects and increase existing adaptive capacity of urban socio-ecological systems; on the other side, cities need to safeguard resilient supply of ES in the long-term to ensure urban human well-being. Thus, the concept of ES should be systematically integrated in planning, design and management policies that address the urban resilience issue. However, in most cities urban ES and resilience perspectives are still poorly connected (McPhearson *et al.*, 2014).

Incorporating ES into public-sector decisions and transactions to address the resilience issue poses several challenges (Scarlett and Boyd, 2013) and asks for a dynamic governance approach that mixes public funding and private stewardship to sustain ES provision. Payments for Ecosystem Services (PES) are a crucial tool of this approach.

PES can be defined as incentive mechanisms to promote the provision of ES. The idea that underlies PES is that who provide ES should be remunerated for doing so, “putting a price” on previously un-priced environmental goods (DEFRA, 2013). Differently from compensation actions, that are based on the “polluter pays principle”, PES are thus based on the “beneficiary pays principle”.

More specifically PES have been defined as “a voluntary transaction where a well-defined ES (or a land-use likely to secure that service) is being ‘bought’ by a (minimum one) ES buyer from a (minimum one) ES provider, if and only if the ES provider secures ES provision (conditionality)” (Wunder, 2005, p. 3). Beyond voluntariness, PES should be characterized by additionality (the actions paid should go beyond regulatory compliance), and they should be able to ensure permanence (i.e. a continued ES provision) and to avoid leakage (i.e. no negative impact on the provision of other ES). These features, if applied, could make PES a powerful tool to grant the enhancement of ES provision ES, avoiding conflicts, involving stakeholders (through a shift from a “command and control” approach to a “responsabilization” approach), and supporting the effectiveness of the landscape design action.

This theoretical scheme proves to be significantly more complex when applied in reality. First of all, complex governance systems are usually required. The network of actors involved in PES can be larger than the dual and straightforward relationship “buyer-provider”, and it can involve, for instance, intermediary organizations, consultants, governments too (Muradian *et al.*, 2010). Moreover, to grant the above-mentioned PES features – i.e. conditionality, additionality and permanence – a long-term ES valuation and monitoring action is required, that, in turn, asks for multiple competencies and financial and time resources. Finally, we should recall that the actors, the scale and the typology of ES profoundly influence the structure of a PES model. Therefore, every PES is necessarily a site-specific solution. This is even truer in Italy, where there is not a legal framework for ES (the legislative decree which should have regulated PES in accordance with the principles laid out by Section 70(1) of Law 221/2015, art. 70.1, is still to be enacted).

All these aspects (complex governance, long-term monitoring, site-specific solutions) make PES a technical testing ground for environmental and landscape policies. In Italy, moreover, a strong tradition of “command and control” planning tools and a widespread land property fragmentation do not favour the implementation of PES, that are less common in our country compared to other European countries (Maztdorf *et al.*, 2014).

However, some interesting experimentation currently undergoing in Italy show how PES could improve the effectiveness of ES provision in urban contexts – both at the large scale and at the local scale – thus sustaining urban resilience aims and costs.

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