Payments for Ecosystem Services: versus or with degrowth?

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Abstract

Despite the general scepticism within the degrowth movement concerning tools that involve the institutionalization of markets for no-commodity concerns, in this paper we try to understand if it is possible to combine the creation of a transaction scheme for ecosystem services deriving from landscape and environmental conservation, like Payments for Ecosystem Services (PES) one, with a degrowth context. To do this we try to compare the characteristics of PES with degrowth principles and in particular with the so-called eight "R" conditions pointed out by S. Latouche.
First of all, we consider the results of some studies we conducted during last years about environmental evaluation that allowed us to quantify the importance given by citizens to ecosystem services. A starting premise is that a great number of citizens are willing to pay for the provision of an environmental good/ecosystem service that has neither a market nor a price, but a significant value in its life. In detail, they would be willing to pay an amount to provide land users with financial incentives not to degrade landscape and environmental resources and their services, but rather to protect them. This willingness to pay could be considered a first step for the creation of social commerce, whose property is social. PES seems to be an example to counteract the negative consequences of capitalism towards the economy of happiness and degrowth.

Keywords: Payment for Ecosystem Services, ecosystem services, landscape, degrowth.

1. INTRODUCTION

Ecosystems provide services to humanity (Costanza and Daily, 1987; De Groot, 1987). According to the Millennium Ecosystem Assessment (2005), the ecosystems are able to provide provisioning services, i.e. products obtained from ecosystem, regulating services, i.e. benefits obtained from regulation of ecosystem processes, cultural services, i.e. non-material benefits obtained from ecosystem, and supporting services, which are necessary for the production of all previous mentioned ecosystem services. The type, quality, and quantity of services provided by an ecosystem can be affected by the human decisions: more precisely, the resource use decisions depend on individuals and/or

communities decisions. In some cases the interests of the agent who takes decisions is not aligned with the benefits of the beneficiaries.

The result consists in the decline of the availability of ecosystem services (Gomez-Baggethun *et al*., 2010). In fact, the Millennium Ecosystem Assessment (2005) found first of all that ecosystems have experienced a consistent change in particular during last fifty years. Secondly, it was found that several ecosystem services have been declining. Moreover, the decline affects in particular regulating services (i.e. climate regulation, water and air quality regulation), which are basic for both food production and human life in general.

2. DEMAND AND OFFER OF ECOSYSTEM SERVICES

Farmers are the main providers of ecosystem services (FAO, 2007; Gutman and Davidson, 2007). They manage agricultural ecosystems, which are the largest managed ecosystems. Beyond the food and fibre production they could offer ecosystem services, which depend from farmers' decision. Moreover, from their action depends the improvement or degradation of ecosystems. In fact, if they properly manage agricultural lands, they can provide several ecosystem services. But, while they are generally very successful at providing ecosystem services with a market (for example, crops, fibres, livestock), in particular as regard modern agriculture, they are not able to maintain the level of a broad number of ecosystem services, like regulating, supporting and cultural services provision. For these type of services markets does not exist. Maybe, with the creation of appropriate incentives and information, farmers could improve their role in conserving and enhancing ecosystem services, like regulating and supporting services, for example, by reducing negative impacts deriving from their activity.

In some countries, farmers receive a compensation for the ecosystem services for which they have a crucial role to play (i.e. biodiversity preservation, carbon sequestration, provision of landscape aesthetics and water quality and quantity). In some cases, the improvement of the provision of supporting, regulating or cultural services derive from the reduction of the production of provision services. But, as stated, while the last ones have a market, the others are public goods. As market does not fully recognise the value of ecosystem services, consequently human decision making frequently ignores ecosystem services benefits.

Nevertheless several direct but also indirect beneficiaries are interested in supporting the preservation of the integrity of the ecosystems in order to maintain the ecosystem services provision (Khan, 2010; Marangon *et al*., 2009). Moreover, they declare their willingness to pay (WTP) to protect natural ecosystems or adapt management practices to improve/enhance the provision of ecosystem services (Marangon *et al*., 2009). The results obtained from some studies carried out by Tempesta and Thiene (2006) and by Bossi Fedrigotti *et al*. (2011) in order to identify the preferences of citizens for landscape and environmental complements allowed us to estimate that the preservation of these resources will produce benefits for the community that are around € 60 per year per household (Tempesta and Thiene, 2006). Extending data to national level it is possible to quantify the national benefits from the preservation of these resources: they amount to € 1,290 million per year.

These results highlight the fact that the ecosystem services deriving from the protection of some ecosystems produce considerable benefits to citizens (Marangon and Troiano, 2012).

The creation of arrangements to implement transactions between providers and beneficiaries through which paying for an ecosystem service provision seems to help making the value of ecosystem services clear to those who benefit from them but are not always direct land users (Gutman, 2007; Troiano and Marangon, 2010). This tool can encourage investment in their protection and enhancement, while other arrangements prove to be unable to do this (Marangon and Troiano, 2009). This is, for example, the case of the institutional intervention, which can use different tools, like Command and Control instruments, in order to support the provision of economic services from environment and landscape resources. Nevertheless, this group of instruments proves to be unable to counteract the loss of ecosystem services resulting from the abandonment of an economic landscape, especially in rural areas.

3. PAYMENTS FOR ECOSYSTEM SERVICES

Since recently a new economic tool has been using to better manage landscape and environmental resources (Pagiola, 2008). This tool named Payment for Ecosystem Services (PES) is an economic instrument aimed at providing incentives to land users to continue supplying ecosystem services benefiting society (The Katoomba Group, 2008). PES is a mechanism able to

translate the landscape and environmental non-market values into financial incentives for land users to provide ecosystem services, also without the participation of government, whose intervention is not always effective. Moreover financial resources in favour of landscape and environmental resources have been decreasing. These two conditions have encouraged the development of alternative tools like PES.

PES is constituted by a payment for the provision of an ecosystem service (or use of the soil which allows the obtainment of the service itself), which is configured as an externality. In fact, while some ecosystem services are produced with the specific intent to be sold/consumed, others are configured as externalities.

PES is an incentive-based mechanism. It is based on a payment to individuals or communities in order to undertake actions that increase levels of desired ecosystem services.

Although the recognition of the importance of the services provided by landscape and environmental resources is not recently, the introduction of the concept of PES can be placed at the end of the nineties, due to the rapid development of the tool.

The concept of PES is sometimes implemented using alternative labels, such as Compensation for Ecosystem Services (CES), or Compensation and Rewards for Environmental Services (CRES). In order to avoid misunderstandings, it is necessary to point out the features of this tool. A definition produced by Wunder (2005) tries to formalize the concept identifying five basic principles for the identification of a PES. In detail, PES is: i) a voluntary transaction, in which ii) a well-defined ecosystem service (or a use of land to secure it) iii) is acquired by at least one buyer from, iv) at least one supplier (farmer, manager of a protected area, etc.) that actually controls the supply of service, v) if and only if the provider ensures the provision (conditionality). The form of payment can be in cash or in another form (i.e. in-kind payment) (FAO, 2007; Wunder, 2005).

Although most PES schemes are funded by the public sector, the private sector is increasingly becoming involved in purchasing ecosystem services.

4. PAYMENTS FOR LANDSCAPE AESTHETICS

This type of PES regards the protection or enhancement of landscape features that are valued for their aesthetic or cultural aspects. It could be termed

"Payment for rural Landscape Beauty Services" (PaLBeS) (Marangon and Troiano, 2012).

PaLBeS provides a compensation in favor of landscape managers that produce aestethical and recreational benefits to residents, tourists, hunters, fishers or other citizens, who can derive from landscape further services (i.e. spiritual, religious, intrisic, existence, etc.) (World Resources Institute, 2009), including the pleasure citizens gain from knowing of the existence of certain landscape features. Consequently, landscape and its services have distinct values linked or not to direct use. As stated above, there is a growth demand and willingness to pay for the provision of ecosystem services provide by landscape beauties.

Several PES schemes have been creating in favor of landscape resources. Most of the PES approaches are led by the public administration, i.e. the purchaser of an ecosystem service is not the same as the beneficiary. Public sector has provided several interventions to safeguard rural landscape conservation, as for example agri-environmental payments in the European Union, which consist of financial resources provision to farmers to adopt more landscape ecosystem services-friendly practices[1]. However, this type of public-financed PES is not able to reach optimal levels of effectiveness and efficiency (Pagiola and Platais, 2007).

On the basis of users' preferences and their WTP in favor of specific landscape features, it seems to be suitable to create some users-financed PES schemes.

Among this type of PES, we can identify the relevant presence of direct payments provided by tourism enterprises in order to assure the presence of landscape beauties, as they are very important tourism attractions (UNESCAP, 2009). In these cases, landscape managers receive directly from tourism enterprises a payment to maintain a sustainable practice, conserve or improve specific features of rural landscape, or assure the presence of more biodiversity.

In some cases, PES are created among tourism enterprises and local communities in order to avoid hunting in the areas attended by tourists for bird-

[1] We refer to farmers as "Agricultural landscapes hold tremendous potential for producing a diverse stream of ecosystem services" (Goldman *et al*., 2007). Moreover "Environmental services also comprise benefits associated with different types of actively managed ecosystems, such as sustainable agricultural practices and rural landscapes" (Muradian *et al*., 2010, p. 1202).

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watching, nature photography, etc. (Wunder, 2005). Moreover ecotourism can enhance biological diversity and conservation of landscape ecosystem services, in particular when local communities are involved with operators (FAO, 2007).

Although the benefits arising from the development of PES in favor of rural landscape are usually considered to be only in favor of residents and tourists, or at least those who can easily enjoy it for recreational purposes, it must not be forgotten that there are some benefits that may potentially invest a greater portion of present and future users. Moreover some people derive a benefit from the awareness of the existence of a natural beauty (i.e. non-use values).

The ecosystem services provided by landscape are suitable for a synergistic provision, i.e. they facilitate the creation of an aggregate PES, where users can combine their payments. At the same time the ecosystem services provided by landscape depend on cooperation among farmers. In fact, only if a sufficient number of them act to protect rural scenic beauties it is possible to achieve a high quality level landscape (Goldman *et al*., 2007).

According to a broad definition of PES, such as the definition proposed by FAO (2007) comprehending the green premium price of a product, an interesting opportunity for the ecosystem services provided by rural landscape beauties seems to come from PES constructed through the certification of agricultural products. In particular, we refer to the case of certification that aims at maintaining specific landscape and biodiversity. The certification should allow us to take into account the widest range of ecosystem services attributable to a specific landscape and the aspects that are not evaluated. In this context, the idea of expanding the scope of PES schemes by creating some "landscape labels", in order to label all goods and services originating from a specific area/landscape should allow the inclusion of all those ecosystem services that arouse less interest owing to the difficulties of their identification and quantification (i.e. cultural services).

On one hand, PES scheme in favor of landscape beauties seems to have significant positive consequences, especially in some landscape contexts, as the Italian one. On the other hand, consistent are also the difficulties encountered in their implementation (non-excludability; impossibility to separate the ownership of the ecosystem services from the landscape).

Nevertheless the potential role of co-operative approaches is strategic. In fact, conservation and provision of ecosystem services related to landscape are the result of the synergic action of all stakeholders present in an area. The achievement of consensus and sharing of rules are necessary steps to obtain

ecosystem services. Cooperation may be useful not only for the supply side but also for the demand of ecosystem services.

The preparation of an adequate system of sharing and use of resources collected by the local community should also avoid distortion mechanisms (corruption, waste of resources, etc.).

The development of a PES in favor of the landscape needs the creation of synergy among different activities. The effectiveness of PES depends upon the coordination among conservation of rural landscape and environmental resources, ecotourism, production of quality goods, marketing and a number of activities.

In summary then, PES approach is part of a diverse set of tools aimed at the conservation and improvement of the landscape ecosystem services (Troiano and Marangon, 2010).

5. PAYMENTS FOR ECOSYSTEM SERVICES AND DEGROWTH PRINCIPLES

In this part, we compare PES with degrowth principles. In detail, we would like to understand if PES is on the line to degrowth.

1) According to ecological economics and bioeconomics, degrowth is based on a critique of the market (Bonaiuti, 2004; Latouche, 1993). PES is an economic instrument but its aim is "*to maintain or recreate the supply of ecosystem services through the provision of incentives*" (Tacconi, 2012, p. 35). Moreover, "*the use of PES system is not the same as a letting the 'free market' decide on the provision of ecosystem services*" (Tacconi, 2012, p. 35). PES is aimed to maintain environmental and landscape resources according to the limits of ecosystems and the finite nature of certain resources. It is used to avoid the impositions of environmental and social costs on others elsewhere or future generations (Kumar and Muradian, 2009; Ruhl and Salzman, 2007). According to degrowth, PES is not a tool of "*a system of representation that translates everything into a reified and autonomous economic reality inhabited by self-interested consumers*" (Fournier, 2008, p. 529), but it is used to prevent depletion of resources and overloading of sinks, and to preserve biodiversity. Moreover, an important determinant of the future prospects for biodiversity

preservation will be the extent to which biodiversity conservation is linked with economically significant problems (i.e. costs to prevent or limit the transmission of diseases, reduce the incidence and impacts of natural disasters). The value for biodiversity will increase to the extent that maintaining various forms of it can be found to reduce these costs (FAO, 2007). PES payment can be in cash or in-kind (FAO, 2007; Wunder, 2005). However, economics is the prevailing and most understandable language (Ten Brink, 2011). In line with the objection to growth, degrowth movement critiques the main economic indicator, GDP (Gross Domestic Product). PES helps us to measure the sustainable and equitable well-being deriving from environmental and landscape resources.

2) In line to ecologists and environmentalists, degrowth movement respects for the diversity of life found in ecosystems. Also for PES the decline of biodiversity is a major issue (Kumar, 2010). PES is a tool used to decrease economic growth and population growth pressures on biodiversity. It aims to realign the private and social consequences that results from decisions related to the ecosystems. Its target is to make ecosystem managers consider the costs and benefits they generate for society, mindful of environmental and landscape resources limits. According to Ten Brink (2011, p. 9), "*understanding value is critical to inform trade-offs in decision making on land conversion and ecosystem management. When the true value of ecosystem services are included, traditional trade-offs may be revealed as unacceptable*".
3) The adherence to a specific local context, considering cultural diversities and creating an equitable framework, is essential for participation and effectiveness of PES. PES has not been imposed as universal instrument by western culture: it is not a tool used by West to drive toward global uniformity of cultures, lifestyles and mentalities (Latouche, 1996). PESs "*have been proposed as redistributive mechanisms between different social groups, and the whole issue of benefits emanating from different ecosystems could also be framed in the context of inequality concerns in rural-urban dynamics*" (Kumar and Muradian, 2009, p. 1). Nevertheless, Corbera *et al*. (2007) pointed out that in some case studies "*political affiliation determines the project's legitimacy, while the poorest farmers and women have been excluded*

from project design and implementation. The authors argue that pitfalls such as these contribute to reinforcing existing power structures, inequities and vulnerabilities, and suggest that this is a product of the nature of emerging markets. Markets for ecosystem services are, in effect, limited in promoting more legitimate forms of decision making and a more equitable distribution of their outcomes". Although PES programs are not designed for poverty reduction (Kinzig *et al*., 2011), there can be important synergies when program design is well thought out and local conditions are favourable (Pagiola *et al*., 2005). Nevertheless, a PES tool is not able to simultaneously improve livelihoods and increase ecosystem services. It is mainly a solution for realigning the private and social benefits that result from decisions related to the ecosystems. In fact, ecosystem services have social value as the ecosystem belong to the whole society. To point out their value it is necessary to involve several stakeholders at different geographical scales: this can lead to social debate but also to conflicting views (FAO, 2011).

4) As regard the necessity to affirm sustainable life patterns trough a democratic way and collective choice, we argue that PES is a new type of subsidy: it could be financed directly and voluntarily by the beneficiaries of the ecosystem services. The institutional intervention does not regard the transaction. PES and its monetary evaluation of ecosystem services do not equate to commodification of environmental and landscape resources. Prices could be useful to reduces environmental bads (Latouche, 2009), but they could also be helpful to increase ecosystem services. "*Expanding the economic rationality of the profit calculus into the sphere of ecosystems and biodiversity*" (Gomez-Baggethun and Pérez, 2011, p. 12) does not always serve for the commodification of ecosystem services.
5) PES asks for a spirituality/voluntary simplicity. It is not to be seen as an end in itself: in fact, it is able: i) to increase the awareness of the meaning and values of biodiversity and ecosystems; ii) to involve previously unengaged actors in protection activities; iii) to favour the transition from an economy of production to an "economy" of stewardship, a life based on personal and relations. Nevertheless they require environmental education projects for the communities (Echavarria *et al.*, 2004).

6) Degrowth movement opposes the current notion of sustainable development, in particular because it fails in avoiding environmental degradation and improving human quality of life. PES is linked to sustainable development concept (FAO, 2011). As stated above it could have positive economic and social consequences, nevertheless its main aim is to protect ecosystem services provision (Solgaard *et al*., 2012). Obviously, this does not mean increased extraction of natural resources and increased waste and emissions.

6. PAYMENTS FOR ECOSYSTEM SERVICES AND LATOUCHE'S "R'S"

Latouche (2009) discussed the basis of the cultural revolution of degrowth movement through eight principles. In detail he stated eight interdependent changes that are able to trigger a degrowth process/convivial contraction. These changes have been summarized in a virtuous circles of eight R's: re-evaluate, re-conceptualize, restructure, re-localize, redistribute, reduce, re-use and recycle.

We try to compare these R's with PES schemes in order to point out possible similarities. In particular we refer to the three R's Latouche identified like "strategic" (Latouche, 2009), that are re-evaluate, reduce and re-localize.

1) Re-evaluate: Latouche (2007) proposes the re-thinking of the value in which the current society believes and which we use to organize our lives. PES and in particular the evaluation process of an ecosystem service induce people to take account of the environmental costs. Valuing ecosystem services should help us to recognize that material consumption beyond real need can reduce overall well-being (Kubiszewski and Costanza, 2012). PES scheme is a driver to socially responsible behaviour. It demands collective approaches in the management of ecosystems to achieve social benefits ecosystems (Petheram and Campbell, 2010). Inside PES schemes cooperation and altruism should prevail. The problems of social life linked to environmental and landscape resources prevail over limitless consumption. Local interests followed through PES schemes could help to solve global problems.
2) Re-conceptualize and

3) Restructure: PES schemes request an adaptation of the patterns of production/consumption, social interactions, life-styles of the contracting parties in order to preserve ecosystem service and not to putting them for sale. In the case of PES the target is not degrowth, nevertheless PES could help us to turn our patterns towards the decrease society (FAO, 2011).
4) Re-localize: According to a broad definition of PES, such as the definition proposed by FAO (2007) comprehending the green premium price of a product, an interesting opportunity for the re-localization seems to come from PES constructed through the certification of agricultural products (Robinson and Keenan, 2010). In particular, we refer to the case of certification that aims at enhancing the consumption of local agricultural products.
5) Re-distribute: As stated above, PES main aim is not to solve poverty problems (Carter Ingram, 2012), nevertheless "*without question, the future of many of these ecosystems (such as forests and coral reefs) and the future of millions of the world's poorest people are inextricably linked*" (Jenkins, 2012, p. 131). Consequently, PES can solve environmental problems but also reduce or alleviate poverty. Moreover "*if PES is not designed to target poor landholders, to induce cooperation and to enhance community cohesion, the additional cash flow can trigger social conflicts and even aggravate food insecurity*" (FAO, 2011, p. 4). PES should be carefully designed if it aims to reflect equity and social justice (Pascual *et al*., 2009).
6) Reduce: as regards the necessity to reduce the human impact over the ecosystems by diminishing production, consumption and in general working time and reducing the consumption of landscape and environmental resources correlating it with the capacity of the Earth's ecosystems to support life, it is possible to affirm that PES main target is ecosystems restoration and maintenance of the services they provide. This aim requires also decreasing production, consumption in order to preserve ecosystem services (Laurans *et al*., 2012).
7) Re-use and
8) Recycle: the objective of these mottos aim at promoting a process of self-containment in order to ensure the reproducibility of

renewable resources and the decrease to a minimum of exploitation of non-renewable ones. PES is in line with these targets. In fact, PES approaches would fit the necessity to change lifestyles and to adopt consumption away from over-consumption and pollution (Gutman and Davidson, 2007).

7. CONCLUSIONS

In this paper we tried to compare degrowth principles and Latouche's R's with an economic instrument. We noticed that PES has some similarities with degrowth movement, also if it is linked to sustainable development. In particular we identify some features of PES approaches that are innovative: i) it seems to be an effective tool to stimulate the re-thinking of the value in which the current society believes and which we use to organize our lives; ii) it proves to be effective in ensuring the reproducibility of renewable resources, and solving other problems (i.e. poverty alleviation).

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