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Research Article

The Ethics of Payment for Ecosystem Services

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Abstract: The Payment for Ecosystem Services (PES) is an economic tool that has emerged in recent years as a mechanism to promote conservation of natural resources, as well as that of various goods and services commonly used. However, its application in practice raises a number of ethical concerns that this study seeks to discuss. The concept and benefits of PES are discussed, emphasizing its neoclassical economic nature background and how the initial anthropogenic position has evolved into a more holistic ecosystem vision. The paper examines some of the relationships between ethics and ecosystem services as well as the natural conflicts emerging from the opposition of utilitarian economic values versus moral arguments and deontological ethical systems. Then, a justification for ethics in payment for ecosystem services is provided as an attempt to solve perceived conflicts between conservation and human welfare. Later, the right to benefit from natural resources and PES is discussed. The conflict between natural resources as public goods whose use is a universal right for all human beings and the property rights, either legal or ancestral, of indigenous and originary people is stressed. Finally, the future of ethics and ecosystem services on issues such as the well-being of future generations and the search of an efficient integration based on land planning and conservation management strategies is discussed. In conclusion, the paper emphasizes the need for a better, integrated accounting of the benefits and costs of nature conservation, which will probably only occur when teams of natural and social scientists work together.

Keywords: Conservation, deontology, environmental goods and services, human welfare, indigenous people, natural resources

INTRODUCTION

Ecosystem services are the conditions and processes through which natural ecosystems and the species that make them up, sustain and fulfill human life (Daily, 1997). The concept of ecosystem services encompasses the delivery, provision, production, protection or maintenance of a set of goods and services that people perceive to be important. This includes goods such as seafood, forage, timber, biomass fuels, natural fiber, pharmaceuticals and industrial products, services such as the maintenance of biodiversity and life-support functions including waste assimilation, cleansing, recycling and renewal (Daily, 1997; Norberg, 1999) and intangible aesthetic and cultural benefits.

Ecosystem services can be defined in myriad ways dependent on scale and perspective (Costanza *et al*., 1997). However, to facilitate comparative ecological economic analyses, typologies have been proposed for describing, classifying and valuing ecosystem functions, goods and services (De Groot *et al*., 2002; Wallace, 2007). Moreover, in order to consider ecosystem services as such, it is necessary, in most cases, the action of man. Benefits associated with operation or management of ecosystems incorporates material and financial capital as well as labor. The ecological properties of ecosystems not always represent direct benefits for society. Hence, Boyd and Banzhaf (2007) proposed to define ecosystem services only as those ecological processes that are incorporated in the production of products and services that people use.

The economic approach to nature has its origins in a number of theories developed since the eighteenth century. By contrast, the notion of ecosystem services is of relatively recent origin, close to the beginning of coherent environmental concerns, namely the 1970s and was originally proposed in the form of environmental services (Gómez-Baggenthun *et al*., 2010). Its rationale is the need to create a conceptual link between ecosystems and human welfare. Economic theory recognizes four kinds of capital-human, financial, manufactured and natural. Ecosystem services are the equivalent of 'natural capital'. Developed economies have focused primarily on using

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the first three (which were considered limiting factors to development) to transform natural capital (which was considered 'free' and abundant) into consumer products and services (Hawken *et al*., 2008).

Ecosystem services are considered as open access and pure public services. As a result, these services tend to have no producer property rights, ambiguous entitlement structures and prohibitive transaction costs (Sternberg, 1996). As no one ''owns'' or has ''rights'' to these services and others cannot be excluded from using or benefiting from them, little incentive exists for beneficiaries to manage ecosystem services in a sustainable way (Dasgupta *et al*., 2000). Furthermore, as Costanza *et al*. (1997) clearly asserted, because "ecosystem services are not fully 'captured' in commercial markets or adequately quantified in terms comparable with economic services and manufactured capital, they are often given too little weight in policy decisions''.

Ecosystem's services is a relatively new approach developed as a result of economic pressure and in turn, was adopted because it proved to be the most suitable in relation to the determinants of ecosystem degradation. In essence, it reflects an anthropocentric position in which nature is in service to humanity. In contrast, "ecosystem function" is a well-defined concept of ecology that describes the purpose of ecosystem interactions with the system at its higher level - the biosphere (Wallace, 2007).

Payment for Ecosystem Services (PES) schemes reward those whose lands provide these services, with subsidies or market payments from those who benefit. To arrange payments for the benefits provided by forests, coral reefs and other natural ecosystems is a way to recognize their value and ensure that these benefits continue well beyond present generations. This encourages landowners to manage resources in a manner that ensures they continue to generate the environmental services. In addition to benefiting biodiversity, such schemes also have a potential to benefit poor landowners who manage these environmental services (World Wildlife Fund, 2011). Since ecosystem services has been seen mainly under the optics of neoclassical economics, little attention has been given to the involvement of ethical issues, thus the objective of this study is to review some of the ethical concerns related to the payment for ecosystem services.

MATERIAL AND METHODS

In the face of the severe spreading of natural resources deterioration, diverse international agents and governments of countries have focused on the creation of public policies that promote social recognition and economic support for people directly involved in environmental conservation. One instrument that has proved particularly useful for this purpose given its more frequent use in recent years is the payment for ecosystem services. However, often it is argued that PES is only based on an economic approach supporting individual interests of developed countries and neglecting other ethical issues that deserve further consideration. This study consisted mainly in a review of the international literature available on the theme. At first, ethics and ecosystem services are examined. Then, the justification of ethics in Payment for Ecosystem Services is discussed. Attention is also oriented to debate between ethics and economic issues related to payment for ecosystem services. We elaborate about the right of different stakeholders to benefit from natural resources and PES. Finally, the future of ethics and Ecosystem Services is explored.

RESULTS AND DISCUSSION

Ethics and ecosystem services: Ethics is one branch of philosophy defined as ''the science of morals in human conduct'' and ''moral'' as ''concerned with goodness or badness of human character or behavior, or with the distinction between right or wrong''. Ethics seeks to define fundamentally what is right and wrong, regardless of cultural differences. Morals differ from ethics because it reflects the predominant feelings of a culture about ethical issues (Singer, 1993).

The ethical framework of conventional neoclassical economics is utilitarian, in the sense that things count to the extent that people want them (and hence relying upon moral monism); anthropocentric, for humans assign the values and instrumentalist, in that the various components of the natural world are regarded as instruments for human satisfaction (Randall, 1988).

In economics, value is a measure of the contribution of something to human welfare. Thus the economic value of an ecosystem service is its contribution to human welfare, where human welfare is measured in terms of each individual's assessment of his or her own well-being. Economic values are based on individuals' preferences or consumer sovereignty (Costanza and Folke, 1997; Freeman, 2003).

In a neoclassical framework, an entity has economic value only if people consider it desirable and are willing to pay for it Sen (1987). However, with respect to virtually every environmental issue such as the conservation of endangered species or forests, management of exotic species and management of greenhouse gas emissions, people voice moral, ethical and cultural principles and judgments that differ from a utilitarian, anthropocentric and instrumentalist ethical stance. Such positions reflect a deontological ethic which is defined as a concern with rights and duties rather than with utility (Ehrenfeld, 1988; Sagoff, 1995; Spash, 1997).

In the case of payment for ecosystem services, the assignment of monetary values to environmental

resources, particularly in order to capture non-use values, invokes moral and ethical arguments. It is important therefore to define what is meant by economic valuation. Economic values are determined by an individual's own perception of well-being. An economic value is therefore not the same thing as the value of an ecosystem and its services. It is simply a measure of what individuals perceive to be the worth or usefulness of the good or service being valued (Freeman, 2003; Bockstael *et al*., 2000). By measuring the economic value of an ecosystem service we therefore measure the contribution it makes in maintaining the present level of human well-being.

Humans typically regard themselves as having intrinsic value recognized by agreements such as the United Nations Charter on Human Rights. In any society, there are things which its members consider wrong to buy and sell because their commodification may reduce their value, distort their functions or create perverse incentives (Vatn, 2000). Many aspects of ecosystems are imbued with intrinsic value. A deontological philosophy applied to nature might recognize similar rights for plants, animals and ecosystems (Spash, 1997). The other aspect of a deontological ethical system is duty, a sense of social responsibility believed to be implicit in the ''character, commitments, responsibilities or identity of the community as a whole'' (Sagoff, 1988).

Gómez-Baggenthun *et al*. (2010) reviewed the historic development of the conceptualization of ecosystem services and examined critical landmarks in economic theory and practice with regard to the incorporation of ecosystem services into markets and payment schemes. They suggests that the trend towards monetization and commodification of ecosystem services is partly the result of a slow move from the original economic conception of nature's benefits as use values in Classical economics to the conceptualization in terms of exchange values in Neoclassical economics. Gómez-Baggenthun *et al*. (2010) conclude that the focus on monetary valuation and payment schemes has contributed to attract political support for conservation, but also to commodify a growing number of ecosystem services and to reproduce the Neoclassical economics paradigm and the market logic to tackle environmental problems.

O'Neill *et al*. (2007) pointed out that, in order to address value conflicts and overcome utilitarianism which, through welfare economics and cost-benefit analysis, has dominated much public policy making, it is necessary to modify everyday relations of humans to the environment; in the view of these authors, this would allow to integrate human needs with environmental protection. In this sense, Collar (2003) calls for a more honest admission that the natural world is an inalienable component of the human capacity to experience freedom (which is also a mental circumstance) would transform the way we treat the natural environment.

The detaching from nature has its roots in a world view that hasn't changed since the start of the Industrial Revolution. Then, natural resources were abundant and labor was the limiting factor of production. But now, there's a surplus of people, while natural capital natural resources and the ecological systems that provide vital life-support services is scarce and relatively expensive. Furthermore, the development policies ignore intrinsic value in Nature and consumption is promoted at the loss of higher values (Lipovetsky, 2006). Hawken *et al*. (2008) describe a future in which business and environmental interests increasingly overlap and in which companies can improve their bottom lines, help solve environmental problems and feel better about what they do all at the same time.

An additional difficulty associated to payment for ecosystem services is the fact that it is difficult to extract compensation payment from beneficiaries for redistribution among intra- and intergenerational parties that might be affected by negative outcomes such as loss of biodiversity, pollution or irreversible degradation and depletion of ecosystem services (Sternberg, 1996). In effect, ecosystem services fall outside the sphere of markets and tend to be 'invisible' in economic analyses.

The justification of ethics in Payment for Ecosystem Services: Increasing human population and economic activities has led to a simultaneous increase in environmental problems arising from pollution, which threaten not only human health and the productivity of the ecosystem but in some cases, the very habitability of the globe (Jabareen, 2008). Observations around the world have shown that humans are now responding to these problems; hence, our environmental ethics is beginning to express itself in broader and more fundamental ways. Humans are now recognizing that we are individually responsible for the quality of environment we live in and that our personal actions affect environmental quality. This recognition of individual responsibility is leading to changes in individual behavior. This changing attitude toward the environment by both citizens and governments is starting to reflect globally. Furthermore, individuals feel empowered when it comes to the environment and are taking some action in their daily lives to reduce consumption and waste, it was also found that those in developing countries are the most concerned and that the behavior and choices of consumers in developing countries are more environmentally friendly than those in developed countries.

At the core of conservation is the relationship between people and the landscapes that house biodiversity and the appropriate nature of that relationship has been debated at length within the

conservation community (Saberwal, 1997; Redford and Sanderson, 2000; Schwartzman *et al*., 2000).

Perceived conflicts between conservation and human welfare have alienated potential allies by engendering the sentiment that conservationists are unconcerned with people's problems or are using people only to further other ends. Although it is possible to debate the depth and extent of these "conflicts," the mere perception of conflict-regardless of its origin-has crucial implications for the success of conservation and must be addressed.

Biodiversity has intrinsic values which by themselves justify conservation. If economic assessments find that conservation practices confers a net economic gain, then that simply adds an economic argument against losing biodiversity and ecosystems, alongside the moral argument. If the results are that conservation incurs a net economic loss, then they will help quantify the net conservation bill (Chee, 2004). Conversely, it has been argued that decisions about ecosystem conservation and restoration incur costs (or forgone benefits) and can lead to misuse of resources if not guided by some concept of value or tradeoff (Pearce, 1993, 1995; Howarth and Farber, 2002).

Environmental issues require a consideration of both ethics and morals. Environmental ethics is a topic of applied ethics that examines the moral basis of environmental responsibility. In these environmentally conscious times, most people agree that we need to be environmentally responsible. The goal of environmental ethics is to convince that humans are expected to exercise freewill but also show a moral responsibility to their environment (Yang, 2006). Environmental ethics focuses on the moral foundation of environmental responsibility and how far this responsibility extends. An industry has no ethics but the people who make up the industry are faced with ethical decisions, many of them with consequences in the long term (Eldon and Bradley, 2004). It has been attributed some distinctive features such as being extended, interdisciplinary, plural, global and revolutionary. At a practical level, environmental ethics forcefully critiques the materialism, hedonism and consumerism accompanying modern capitalism and calls instead for a 'green lifestyle' that is harmonious with nature. It searches for an economic arrangement that is sensitive to Earth's limits and to concern for quality of life. In the political arena, it advocates a more equitable international economic and political order that is based on the principles of democracy, global justice and universal human rights. It argues for pacifism and against an arms race. It calls for humans to think and act locally as well as globally. It calls for a new, deeper moral consciousness (Yang, 2006).

Environmental ethics extends the scope of ethical concerns beyond one's community and nation to include not only all people everywhere, but also animals and the whole of nature-the biosphere-both now and beyond the eminent future to include future generations (Yang, 2006).

The recognition by individuals of their responsibility for the environment in which they live has led to several protests against environmentally destructive and harmful practices and examples abound elsewhere. This is as a result of individuals now showing deeper moral consciousness and responsibility for the environment. Moreover, on the part of the government, there have been efforts to cut-down on environmentally harmful practices as the eminent consequences of global warming slowly begin to manifest. A consensual moment in history is approaching, where suddenly from different corners of the planet we get a sense that the world community is now agreeing that the environment has become a matter of global priority and action (Eldon and Bradley, 2004). Today, humans are the dominant species on Earth and have the ability to cause devastating change to the world in which we live. Assaults on the environment cross international boundaries, generations and ideologies. So do conceivable solutions. To redress the balance will require an ecologically sustainable perspective that embraces all the Beings of our planet and all generations yet to come. Conservation should benefit ecosystems, nonhuman organisms and current and future human beings. Nevertheless, tension among these goals engenders potential ethical conflicts: conservationists' true motivations may differ from the justifications they offer for their activities and conservation projects have the potential to disempower and oppress people.

Keat (1997) sustains the opinion that we must establish and then follow ethical principles based on a biocentric rather than anthropocentric view of the universe. Anthropocentric cultural beliefs and arrogant and dangerous technological assumptions so prevalent in our society today are a result of a unique blending of Judeo-Christian, early Greek and medieval views regarding the place of humans in the organizational structure of the Universe. From this perspective, Chan *et al*. (2007) reviewed the promise and deficiencies of integrating social, economic and biological concerns into conservation, focusing on research in ecosystem services and efforts in community-based conservation. Despite much progress, neither paradigm provides a panacea for conservation's most pressing problems and both require additional thought and modification to become maximally effective.

Research on the links between natural ecosystems and human welfare has demonstrated that many conservation projects will benefit humanity (Millennium Ecosystem Assessment, 2005). Such win–win scenarios-in which conservation and economic growth are clearly coupled-have become the holy grail of conservation biology (Rosenzweig, 2003). Nevertheless, these benefits are often difficult to identify, slow to materialize, diffuse, or discouraged by

high transaction costs. Moreover, the benefits may accrue only to certain sectors of society, such as local political elites or geographically remote firms, while shutting out some local stakeholders whose actions may ultimately determine the fate of the landscape. Most importantly, it usually takes years for the long-term benefits of conservation to outweigh the short-term costs, whereas much shorter time horizons hold sway in economics, politics and people's day-to-day decisions. In addition, Chapin (2004) wonders if international conservation organizations are dealing ethically with local people as well as with corporate donors. In that sense, O'Connor *et al*. (2003) proposed some practical strategies to make conservation more effective in our human-dominated world. Also, the combination of a general "greening" of public debate around the world and the wide news coverage that recent environmental disasters have received, has given rise to great interest in the topic of non-market goods valuation (Foster, 1997). Nature provides a set of benefits to human populations that have broadly been labeled ecosystem services (Daily 1997; Millennium Ecosystem Assessment, 2005). Ecosystem services are supplied by natural and seminatural systems and fall into four categories: production of goods, provision of life-support processes (e.g., water purification, crop pollination), provision of life-fulfilling processes (e.g., aesthetic cultural and scientific inspiration) and preservation of future options regarding presently unrecognized values (Daily *et al*., 2000). If biodiversity can be valued inherently in this way, incorporating ecosystem services into conservation agendas becomes less a paradigm switch than a shift or expansion.

Although a conservation paradigm rooted in the concept of ecosystem services appeals to many in both scientific and nonscientific communities, some conservationists have expressed concern that a purely anthropocentric approach will be insufficient to protect biodiversity (Myers, 1997; Redford and Sanjayan, 2003). It is generally unclear which elements of biodiversity are critical for service provision-will an ecosystem service- oriented approach value functionally redundant species only as insurance against risk to other species? The designation of biodiversity itself as providing life-fulfilling ecosystem services partly sidesteps this problem. In other cases the relationship between biodiversity and ecosystem services will pit the interests of current and future people against one another. The question is how to achieve conservation given that economics is more likely than ecology to inform policy and that the same ethics that justify conservation also demand that we be mindful of poverty and associated human suffering (Singer, 1993). There can be no universal prescription for how to make conservation work and no panacea for conflicts between conservation and human interests. Nevertheless, there can be a standard set of issues for conservationists to keep in mind.

To understand the practical significance of incongruence between the interests of contemporary human beings, future generations and nonhuman organisms, we must understand how conservation projects are likely to pay off in terms of human welfare. Two problems confound the evaluation of social impacts of conservation projects, however. First, the costs and benefits of conservation are not evenly spread over all peoples, places and times. Second, it is likely that impacts that are damped locally will simply shift to another location. The Economic approach has become increasingly sharp, both theoretical and practical and contributed to the emergence of new concepts with which the complex interdependencies between people and nature can be interpreted so as to provide relevant information for decision making. Among these, a key position is occupied by the concept of "ecosystem's services" around which most solutions can be incorporated into policies and strategies to protect biodiversity.

Ethics and economic issues related to payment for ecosystem services: For years, Michael Sagoff has been an important external critique of the developing mainstream economic approach to the environment. He attacked environmental economics, cost-benefit analysis and especially willingness to pay arising from contingent valuation studies; he criticizes ecosystem services valuation as misleading and producing meaningless numbers. At first, Sagoff (1988) drew a division between the economic and political treatment of the environment. Most prominently, he advocated a distinction between the citizen and the consumer departing from stated preferences. He argues that the basic error in using cost-benefit analysis to make environmental decisions is that it requires people to think and act in their role as consumers, rather than as citizens. It follows that what should also be recognized is that when deliberating and acting as citizens, people must consider the value both of the environment and of consumption and make collective decisions about the priority to be given to these common goods when they conflict. Also, Sag off refers to a world of two opposing monistic value systems: intrinsic value in Nature and instrumental value in economics (Sagoff, 1998). More recently, Sagoff (2008a) claims that environmentalism should be based on non-consequential reasoning involving various categories of values, the aesthetic, moral, spiritual and religious, economic, political and scientific. However, it seems that economics is misguided in applying cost-benefit analysis to environmental problems since the narrow economic construals of the value of the environment (often called "market values") are inadequate as a basis for defending conservation efforts. Sagoff argues that society should aim to balance these two ways of valuing nature, without reducing one to the other; he suggests that it is

possible to have both: good economic performance and nature conservation (Sagoff, 2008b).

These last arguments are not entirely new (Leopold, 1949) and recent empirical evidence challenges the mainstream economic value theory and suggests that alternative institutions are needed to assess value conflicts (Vatn, 2005; Spash, 2006, 2008a). Some authors valued pluralism and incommensurability (O'Neill, 1993; O'Neill *et al*., 2007), which have led to the recommendation of social multiple criteria analysis (Martínez-Alier *et al*., 1998).

Holland (1996) critique focuses on some of the framework assumptions implicit in cost- benefit analysis as it is currently practiced and applied in environmental contexts, involving its concept of the environment, its picture of human nature and its role in the social/political process. Central to its concept of the environment is the 'itemizing' of environmental goods; central to its picture of human nature is the 'homogenizing' of preferences; central to its role in the political process is the 'privatizing' of judgment. Each of these aspects is discussed and criticized in turn. It is shown how each may tend to frustrate rather than promote the objectives which many practitioners of environmental economics hope to achieve. Nature is misrepresented, it is suggested, by being itemized and human nature by being homogenized. Moreover, the privacy of the cost-benefit exercise truncates people's political aspirations. The conclusion suggests that more imaginative uses of the cost-benefit exercise might help to remedy the situation.

Keat (1997) makes a distinction between a narrow and an extended form of Cost-Benefit Analysis (CBA) and argues that the extended form of CBA cannot be justified. This is because the use of this form of CBA "involves the conceptual/categorical error of treating ethical judgments as if they were judgments about the well-being of those who make them". Moreover, he does not find the efficiency versus equity tradeoff that neoclassical economists often make when discussing a particular use of resources entirely satisfactory.

The right to benefit from natural resources and PES: At the center of the ethical question on conservation of natural resources and the payment for ecosystem services is the conflict of who is to profit and receive these benefits first. On one hand, there is the history of indigenous and originary people who occupied the territories well in advance (including many in places critical for conservation) and have property rights, either legal or ancestral. They argue that, since the care is not the same than that provided by originary people, public goods rapidly deteriorate when they are expropriated. On the other hand, there is the claim that natural resources are public goods whose use is a universal right for all human beings (Alcorn, 1993; Davis and Wali, 1994; Gadgil *et al*., 1993; Lâm, 2004).

Several anthropological studies have highlighted the relevance of involving local people in conservation programs as an important factor for positive results (Orlove and Brush, 1996; Schwartzman and Zimmerman, 2005). However, Olson (1971) among others, argues that when people is placed under a situation in which they could all benefit from cooperation, such action is very unlikely to occur if an external enforcer of agreements is lacking. Also it has been given consideration to the fact that common property resources are bound to be over-exploited as demand rises. Thus, the only solution is either private enclosure or state regulation.

1n turn, Kahneman and Knetsch (1992) pointed out that contingent valuation responses reflect the willingness to pay for the moral satisfaction of contributing to public goods, not the economic value of the goods, but in practice, a public good is more an economic than a law concept. Under the international doctrine of indigenous rights and relying on the judgment of the Court in the Awas Tingni case, an argument has been developed to support indigenous people rights over natural resources (Anaya and Williams, 2001; Grossman, 2001). This has led to the emergence of a standard on the rights of indigenous peoples within the doctrine, regulations and jurisprudence of human rights (Wiessner, 1999; Thornberry, 2002). Currently, one of the few safeguards available to indigenous peoples in biodiversity and natural resources is the "prior informed consent", which some authors assimilate to a veto and an approach to sovereignty over natural resources (Lâm, 2000). The negative effect of expropriating indigenous people land is aggravated by the fact that they are impoverished and become more vulnerable to external influences.

The future of ethics and ecosystem services: Currently, although the issue of ecosystem services receives great attention from researchers, the significance of the concept is still subject to different interpretations (Gómez-Baggenthun *et al*., 2010). One way to give the idea of natural capital greater relevance for sustainability research is to relate it to human preferences for different ecosystem states. These preferences are formed within the context of prevailing social, economic and cultural constructs. Ethical considerations regarding the well-being of future generations are also associated with these preferences. In this regard, Spash (2007, 2008b) stresses the need for value articulating processes which involve open deliberative judgment rather than instantaneously stated preferences, concealed expert opinion and global cost-benefit analysis. In turn, Mathevet *et al*. (2010) refer to the concept of "Ecological Solidarity", a pragmatic compromise between ecocentric and anthropocentric ethics that allows for the integrated management of National Parks and territories. Since the year 2006,

Ecological Solidarity is a core feature of a law reforming National Park policy in France. Its efficient integration is based on land planning and conservation management strategies, but it also requires the collective exploration by local communities and stakeholders of the diverse facets of ecological solidarity. In brief, we need a better, integrated accounting of the benefits and costs of nature conservation, which will probably only occur when teams of natural and social scientists work together. There is a clear need to pool our knowledge, coordinate our actions and share what the planet has to offer, so that we can achieve a global environmental ethic.

CONCLUSION

Assessing the economic values of ecosystem services play various and important roles in linking human activity and natural systems, but also has some ethical concerns associated. The interaction of awareness (education), ethics and law as a support of any ecosystem payment scheme may help to ensure its success. This arrangement will contribute to have both traditional economic growth and nature conservation, allowing to protect rights and have prosperity. The real test, however, of whether an ecosystem service will facilitate conservation is not whether academics can valuate it, but whether someone-or some organization-is able and willing to do what is necessary to secure it.

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