

*Review*

## **Making Nature Valuable, Not Profitable: Are Payments for Ecosystem Services Suitable for Degrowth?**

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**Abstract:** The growth economy imposes multiple crises on humanity and the natural world. To challenge this economic growth imperative, the degrowth movement emerges as a dissident response. Although within an economic growth perspective, payments for ecosystem services (PES) have also been proposed to attenuate the negative impacts of capitalism, as a redistributive mechanism that is claimed to deliver equitable conservation and sustainability. Degrowth has notably similar concerns, although it is inclined to argue against PES traditional ideologies and practices, which lead conservation to perceive nature within economic growth and market ideologies, diminishing the relationship between humans and nature. In spite of that, PES are becoming a strong trend in environmental governance. This paper attempts to examine whether PES are, and how they could be suitable for degrowth, through the lens of its main sources. In order to integrate PES and degrowth, it could require a PES reconceptualization. Although we assert that PES are not the most appropriate instrument for conservation, we argue that maybe PES could contribute to degrowth as a transition instrument toward fostering better practices. However, it is important to elucidate how they can be used and under which circumstances they could be appropriate.

**Keywords:** payments for ecosystem services; degrowth; biodiversity conservation; nature; valuable; commodification; neoliberal conservation; transition practices incentive

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## 1. Introduction

Since the concern with global environmental changes arose within economic growth, new conservation approaches have been developed [1]. The ecosystem services (ES) approach, which is characterized as the benefits that are provided by ecosystems to humans [2–6], has become most likely the foremost trend in conservation and sustainability science, which is demonstrated by Millennium Ecosystem Assessment (MEA), The Economics of Ecosystems and Biodiversity (TEEB) and the recently established Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES) [7]. This concept has received, over the past few years, increasing attention as a way to communicate human dependence on ecological processes, which is clearly a utilitarian reason to protect nature [8,9]. The idea of ES has opened the possibility of understanding nature within market ideologies and recognizing environmental destruction and its effects on human well-being.

Following this logic, among other projects, payments for ecosystem services (PES) have emerged and have been fostered with much enthusiasm [10,11]. PES initiatives, which are characterized by rewarding environmental “resource” managers through economic benefits for their efforts in providing or maintaining ES, increasingly encourage the ecological science to measure, quantify and provide these services. Nature thus becomes transcribed into tradable goods (natural capital) and services (ecosystem services). This represents a discursive, institutional, technical and material change in conservation values [12] which has led to new ways of perceiving and relating to the natural world in a strictly economic way, restricting conservation to “[...] a nature that capital can ‘see’ [...]” [13] (p. 367) and to the “services” that nature “provides”.

The reproduction of the idea of natural capital for what was once perceived as nature is part of an integrated effect of neoliberalism which has the intent of “selling nature to save it” [14], putting nature on sale through ecosystems functioning. In this sense, PES are frequently perceived as a mechanism for the neoliberalization of nature [15–17]. PES make nature economically and monetarily negotiable, which brings considerable ethical implications as well as technical difficulties [8,18–20], undermining human relationships with nature. Nevertheless, PES are becoming a sturdy trend in environmental governance and are not only shaped to work within the current economic model, but conceptually based within this model.

As a counterpoint to economic growth, the degrowth perspective emerges [21]. Degrowth can be defined as an equitable and democratic transition to a moderate economy that has more contained production processes and consumption [22] and increases human wellbeing while enhancing ecological conditions in the short and long term and at both a global and local level [23]. Degrowth also addresses the concept of green economic growth, which PES integrate, challenging the notion that growth (even green growth) is a desirable path and the only path to follow [24]. Green economic growth could include efficient energy and resource uses and insinuates a socially inclusive and low-carbon society, but its main objective remains associated with growth, profit and developmentalism logic. Additionally, it has not lived up to social-ecological needs and to generating a different type of socioeconomic progress [25].

Marangon and Troiano [26] trace a parallel between degrowth and PES, arguing that they share some similarities. These authors conclude that PES can stimulate society to rethink human relations with the natural environment and could be a tool to change human patterns, aligning with degrowth

possibilities. Although degrowth and PES have convergence points [26], they are conceptually and ideologically far apart because degrowth is an alternative response to the economic growth model that the PES rely on. If one considers applying PES under degrowth assumptions, a substantial reconceptualization of PES would make it more suitable for degrowth. However, these adjustments could make PES hardly recognizable. Thus, we ask three main questions in this paper: in spite of the differences, (1) could PES be applied under degrowth perspective? (2) would there be a need for a reconceptualization of PES? (3) if so, what type of reconceptualization would be needed? This paper analyses PES origins, definitions, objectives and main characteristics; and through the lens of the main sources of degrowth [24], examines if PES are, or how they could be, suitable for degrowth and its fundamental assumptions. It explores how PES could be reconceptualized to go beyond the traditional definitions and could contribute to degrowth as a transition instrument to foster better practices.

This paper is structured as follows: Section 2 presents some fundamental ideas of degrowth as a response to the misleading way that humans perceive nature under economic growth. Section 3 notes how the idea of ES changes perceptions about the natural world. Sections 4 and 5 address the concept and origins of PES, highlighting their difficulties and contradictions. Section 6 relates PES assumptions to degrowth sources and inspirations, revealing the tensions between them. Section 7 introduces some ideas on how PES could be soluble to degrowth. The last section presents the conclusions.

## 2. Fundamental Assumptions of Degrowth

The current political context is strongly influenced by the growth economic paradigm model. The search for profits, the high levels of consumption and production, allied with the current technologies and population growth are pushing the natural environment to its limits. The “natural resource” extraction, waste disposal, and power asymmetries are reaching the farthest places on earth. The social metabolism of advanced economics, namely the increasing flow of energy and material, have environmental and social costs, with considerable iniquities [27]. It is true that concerns about the natural environment are becoming more salient and urgent; however, these concerns have been embedded within this growth model and have been increasingly trapped in the promise of having a continuous increase and improvement in efficiency and technology [23].

The sustainable development discourse represents this contradiction very well [28–30]. Over a period of twenty years or more [31], it has failed to demonstrate the required ability to change the political environment or to change individual and collective behaviors toward mitigating social-environmental problems [22]. Societies still have a consumerist logic that exceeds their material and energy capacities, with a rooted dependency on fossil fuels [22,32]. On the other hand, the economic crisis creates opportunities to re-evaluate the way that modern human lives are shaped, the restructuring of social institutions [23,33], the reshaping of human lifestyles, repairing the loss of biodiversity, precluding social collapse and adapting to climate change [23].

To challenge this economic growth imperative, the degrowth movement emerges as a dissident response to the multiple crises [34]. Degrowth, which is a literal representation of the French word *décroissance*, is a voluntary process toward a transition, or even a transformation, to a social and environmental state that can be sustained [23]. Beyond the concept, degrowth is a political slogan that has significant theoretical implications [30,35], an activism that soon became a movement [24] that

represents an effort to re-politicize the debate around having an urgent socio-ecological transformation, and presenting an alternative proposal [24]. It is crucial to realize that the idea of degrowth is not a degrowth for degrowth's sake, or a negative growth, and for that reason, it cannot be thought of in a symmetrical relationship with growth [30]; otherwise, the repercussions would be devastating, with significant social and environmental decadence, including economic insecurity, unemployment, tight credit, jeopardizing the health, social, educational, cultural and environment project, and even leading to a social peace collapse [21,23,30,32,34,36].

Degrowth can represent a response to the way that humans perceive nature under economic growth assumptions, avoiding the valuation of what should not have economic monetary value, such as nature, care and relations. The way that we conceive the natural world and its ecological functions can seriously reverberate in conservation policy trends. As long as we continue to understand nature as a service provider, the logic of growth will not be easily abandoned. Once degrowth emerges as a dissident process, it can require a reconsideration of pre-established concepts and values about the idea of ES and its related tools. As Cattaneo *et al.* [37] (p. 515) affirm, this would require “[...] avoiding the trap of getting tangled in economic proposals and an economic idiom when envisioning the transition to a degrowth society, *i.e.*, avoiding the ‘economicism’ that characterizes industrial society and which is at the heart of the ideology of development”.

### 3. From Functions to Services and from Metaphor to Commoditization

The idea of ES was thought to be a metaphor [38] to represent the notion that nature serves humans [19] through ecological functions. The intention of the concept was largely pedagogical, intended to draw attention to social dependence on ecological processes and justify biodiversity preservation [1,19,39]. However, what was once a metaphor became a leading conservation framework and the dominant environmental policy approach, from a local to international agenda. Still, there is an ongoing debate on how it could possibly help decision making in different policy venues [40]. Despite the popularity and apparent robustness of the concept, it is still filled with uncertainties and controversies [41].

Although the intention of ES appeared to enhance the information that is available to decision makers [3], it further provoked the utilitarian standpoint on ecosystem functions, allowing the attachment of monetary values to these services as well as their transactions through the creation of markets for them [19,42]. The “Ecosystem Marketplace”, for example, is a network made viable by ES and natural capital concepts, that clearly “seeks to become the world’s leading source of information on markets and payments schemes for ES” [43]. Thus, the market has penetrated the idea of ES. The criticism to the eruption of generalized markets [44,45] is often present in the degrowth movement [23], to the extent that markets have become the main form of human relations. This circumstance can also be extrapolated to the relationship between humans and nature, whereas human relationships with the natural world becomes mediated by economic relations of markets and commodities.

Therefore, the history of ES constitutes a parallel history of commodification of ecosystem functions [1]. The idea of commodities (and its fetishism) in Marx’s theory [46] helps to explain the limitations of the ES paradigm for ecosystem functions and its associated biodiversity protection [18,47,48]. By turning ecosystem functions into services and, thus, into commodities, the biotic elements and their intrinsic relations in the ecosystems and their processes are completely ignored, leaving only what

interests humans: the services. ES became the commodities and not only material components, which expresses the trails of the neoliberalization over conservation [49,50]. This construction of the natural world conceptually turns the earth into a corporation that provides goods and services to be quantified, priced and traded as commodities [43,51], combining the technocratic and economic ideals in its discourse [52,53] and making a world of ES [54]. The ES approach integrates the idea of “grabbing green”, in which nature is instrumentalized and appropriated with a capital accumulation purpose [55,56], and changes the way that we perceive nature and biodiversity [53,54], also changing the entire logic of conservation.

#### **4. Origins and Definitions of PES: from Promises to Difficulties**

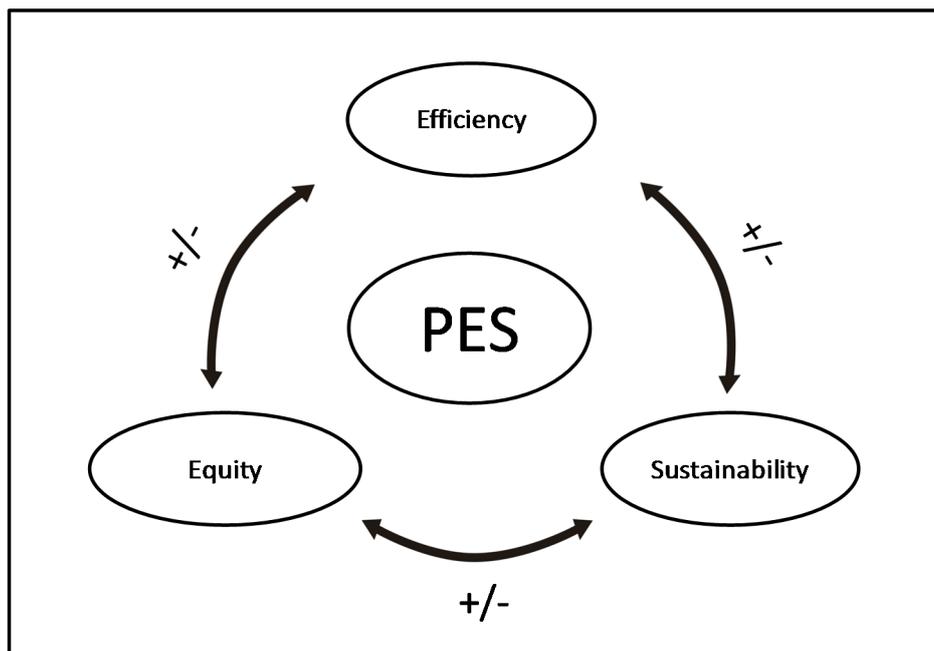
PES have been increasingly noticeable in academia, with a substantial number of publications, as well as in political spheres worldwide, among developed and, especially, developing countries [10,11,57–60]. During its 10 years of implementation, PES have already evolved and led to the emergence of distinctive perspectives and conceptualizations [11,61–67]. The most widely used definition was proposed by Wunder [61] (p. 3), which states that PES must correspond to a “[...] (a) voluntary transaction where (b) a well-defined environmental service (or a land use likely to secure that service) (c) is being ‘bought’ by a (minimum one) service buyer (d) from a (minimum one) service provider (e) if and only if the service provider secures service provision (conditionality)”.

This approach is in line with the Ronald Coase theorem. Accordingly it is an approach that favors political options that are based on markets that are characterized by the allocation of property rights to achieve optimal social levels of environmental externalities [10,11]. This perspective can be framed as an environmental economic perspective of PES, which emphasizes and prioritizes economic efficiency, and the attempt to insert and fit ES into market schemes [58,63]. The dominating bias of PES considers environmental problems to be externalities that resulted from market failures and considers that payments would be able to solve the problem of an undersupply of natural elements [10].

Because conditionality (provision of the service), additionality (to add a value in relation to the lack of action) and voluntariness (when all the parts are voluntarily involved) are not always fulfilled, in practice, a few PES schemes actually establish real markets [11,20,68]. A wide variety of PES schemes depend on other factors, such as having a strong involvement of the state and community [11,20,69]. In Latin America, Asia and Africa, most of the PES schemes are supported by a combination of funding agencies, government subsidies or donations from conservation NGOs [70], despite the strong debate on whether this support is appropriate or not. However, the more similar they are to markets, the more PES can exacerbate inequities and injustice [71], which is a clear reason to contest the PES market-based nature [69].

PES bring enthusiasm, promises, opportunities, dangers and challenges, by drawing attention to the “fatal attraction of win-win solution” [68]. One of the reasons why PES have become so popular is that they promise efficiency in natural environmental management while also contributing to poverty alleviation [10,57]. However, the main function of PES under this perspective is to improve natural resource management and economic efficiency as opposed to accomplishing poverty reduction, although the latter could be a positive effect (but a side effect) as long as it does not impair the efficiency of the scheme [11,61]. However, equity and efficiency issues are usually intertwined in PES schemes [72–74], and although (social and environmental) sustainability can be the ultimate goal, there

are tensions and trade-offs to be considered between these aspects (Figure 1). For example, by reaching for efficiency a large landowner could be paid to not degrade his/her land. But payments would not favor equity or poverty alleviation because payments are not targeted for small landowners who are usually in greater needs. Payments would not favor sustainability neither, since payments are usually temporary. Once payments are gone, there will be no apparent reason for the landowners to keep their land preserved. When the scheme favors equity, consequently the efficiency could also be minimized, whereas the poor that usually does not pose a threat to the natural environment receives payments to conserve.



**Figure 1.** Typical definitions of the PES framework. PES frame their objectives within three spheres, which can have positive or negative interactions or trade-offs. Sustainability in this framework is generally reduced to the service level and is subjected to market-based rules.

To articulate PES conceptualization with a consistent practice, Muradian *et al.* [11] (p. 1205) elaborated a more sensible, but broader, framework for the complexities and diversity of PES, which is defined “[...] as a transfer of resources between social actors, which aims to create incentives to align individual and/or collective land use decisions with the social interest in the management of natural resources”. This definition is more in line with ecological economics assumptions [63], in which ecological sustainability and fair distribution take precedence over market efficiency in achieving social interests. Thus, efficiency is to be considered but with no primacy given the complexities of the PES in practice [73,75].

PES are significantly dependent on political, socio-cultural and institutional contexts, reinforcing the need for a more inclusive and reflective dialogue, in order to reconcile theory and practice [11], and to increase the perception of equity in PES schemes [72,73]. This approach opens up more space for the involvement of actors that could be highly important. Nevertheless, many key actors are not considered in decisions and perceptions of natural environment management [76], and some groups can influence the PES design more than others, revealing that PES could weaken further the

environmental governance process [38,68], increasing inequalities and disparities in power relations, capital accumulation and the excessive power conferred to markets [68].

## 5. The Case against PES

### 5.1. PES as Commodity Fetishism

Commodities are objects and things that by their properties satisfy humans wants and desires, whatever those may be, while expressing a utility and use value. However, at the same time, commodities also have an exchange value [46]. When a commodity is produced for the markets, *i.e.*, with the exchange-value intention, it tends to lose its relations with labor and with the previous nature of the matter of the commodity, obfuscating the social relations surrounding its production [46]. This is the commodity fetishism. Kosoy and Corbera [18] argue that PES can be characterized as commodity fetishism, while it demands to: (i) reduce ecological functions to a service level, separating these services from ecosystems as a whole; (ii) demarcate a single exchange unit for those services; and (iii) relate “providers” and “consumers” of these services in a market-based exchange. This process hides ecological complexities [8,47], an entire multiplicity of values and even some institutional asymmetries [18,20], which favor an unbalanced power relation between the people and communities that are involved as well as their relationship with nature.

While few PES operate as genuine markets, the “services” are not always monetarily valued, as evidenced in some PES practices. Wunder [77] argues, as do Farley and Costanza [58], that there is not much left to characterize PES as commodity fetishism. Nevertheless, simply the idea of treating nature as an ecosystem “services” provider could lead nature to be considered as a commodity.

### 5.2. PES as a Neoliberalization of Nature

Neoliberal capitalism is a powerful ideological and political project of global governance [78], which has been driving global political, economic and cultural pathways, providing context and addressing the way in which humans interact with one another and with nature [78,79]. The neoliberalization of nature, environments, ecologies and conservation has been approached and revisited already with some attention [50,78–87].

The ES approach reflects the capitalist paradoxical idea: to be the “[...] answer to their own ecological contradictions” [16] (p. 30). PES is a tool that is aligned to the global political economics of neoliberalism [15–17,88,89], which is built on developmentalism growth logic. Therefore, it is possible to envisage that an instrument as such can even increase the problems’ dynamics rather than mitigate them [16], further accentuating the difficulty in building more constructive and meaningful solutions to address our relationship with nature.

### 5.3. Natural Capital vs. Nature

Nature has been, over recent decades, perceived as “natural capital” [3,90–92]. This approach is an attempt to compute nature in economic terms as well as the impacts that fall upon it. The abstraction of nature as a capital entity creates opportunities for new private rights with respect to nature, to create commodities and to establish new markets for exchange [12,51,93].

It is alarming to realize that (local and global) institutional arrangements are structured to legitimize and create foundations to make real the notion of nature as capital, leading conservationist trends [93]. To this extent, humans are perceived to be an agglomerate of preferences to be satisfied and maximized from nature, which in turn is perceived as an agglomerate of resources for human satisfaction. Thereby, humans and nature are homogenized and grossly simplified [94]. The ecological crisis is not solely about a decline in natural capital but instead is mainly about the disappearance of the natural world. The current economic paradigm tends to preserve the integrity of its own entity, the capital, and when nature is conceived to be capital, it is no longer nature [94].

#### *5.4. Markets or Not, Is that the Question?*

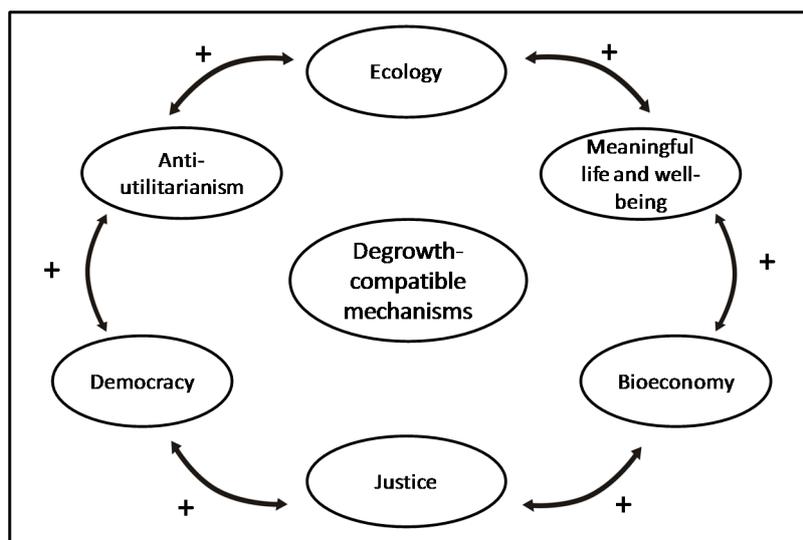
Few PES are considered to be pure markets in practice [11,15,68,77]. The implications of PES for communities and conservation cannot be fully understood by only accounting for environmental markets and their effects and, in fact, the excessive preoccupation with PES based on markets could even prove to be not very useful in understanding the processes of PES [95].

Regardless of its direct relationship with markets, PES “masquerade as a market”, using its discourse and practices to shape human behavior and “[...] outsourcing decisions about how conservation is achieved and who benefits in the process” [95] (p. 154). Therefore, PES simulate the market metaphor, fostering the community choice to be based on market rationality, absolving conservationists from important political decisions and avoiding the complex questions that concern conservation. Instruments such as PES, even when they are not perfectly suited to market logic, tend to be seen as a new trend for conservation, intended to replace complex socio-ecological dynamics and disguise fundamental elements in environmental governance.

The current economy continues to uphold its reasons by quantifying the consequences, but the changes in climate, in ecosystems and their relations with the social system dynamics augment uncertainties that are not susceptible to quantification, and humanity must be increasingly empowered to prioritize ethical issues as well as transition to an individual ethical virtue [38]. Environmental governance should consider the importance of protecting nature from human interests as well. It is important to recognize that there is a value in the natural world that exists independently of the human eye and its ability to value.

### **6. Relating PES to Sources of Degrowth: Highlighting the Tensions**

The degrowth concept has a solid basis that is rooted in philosophical, cultural, anthropological and institutional critiques of growth and development concepts [34]. Hence, degrowth is not solely related to an exclusive source and inspiration; instead, it is characterized by a variety of thoughts from social to ecological thinking [24]. These inspirational sources of degrowth were identified, systematized and developed primarily by Flipo [96,97] and should be accounted for when relating PES with degrowth. Six sources have been identified [24], and all of them are fundamental to developing a degrowth-compatible mechanism (Figure 2).



**Figure 2.** Conceptual framework of the objectives of a degrowth-compatible mechanism. The arrows represent synergies (positive feedback) instead of trade-offs between the objectives, which are essential in such a framework.

The first is the *Ecology* source, which represents the recognition that ecosystems are worthwhile by themselves, not only by their instrumental value or their utility for humans as ES [24] but also by revealing a respect for living beings in their various dimensions [23]. This environmentalism tradition radically diverges from the domination of humans over nature and reflects some inspiration from Deep Ecology, Land Ethics and other environmental ethics movements [97,98]. PES are anchored on the concept of ES, treating nature as capital and commodity and ignoring other valuation languages, including the intrinsic value. Consequently, PES do not seem to be compatible with this source of degrowth to the extent that this source recognizes the intrinsic value in the midst of a plurality of values.

The second source, *Critiques of development and praise for anti-utilitarianism*, comes from anthropological origins that seek to dismantle the hegemonic imaginary of development and argue for anti-utilitarianism logic [24,96]. This culturalistic critique of development pulsates in the theories of François Partant, Gilbert Rist, and Serge Latouche and also in the works of André Gorz and Jacques Grinevald, especially in relationship to environmental problems that are generated by productivism [22]. PES is an instrument that is aligned with the neoliberalization of nature, which attests to productivism and its facets. Traditionally, PES aim to make natural environment management (economically) efficient, with their main objective being the maximization of ES in a utilitarian logic, regardless of, ultimately, who pays and who gets paid. Therefore, this approach causes (or strengthens) a chain of inequities and inequalities in which nature is misled by being reduced to the level of services and the developmentalism utility.

This second inspiration, as is well known by the culturalistic critique, unveils the economic imaginary that economic growth and development are by themselves the solution to social and environmental problems and constitute a reason of their own [30]. The concept of sustainable development strongly represents this idea, which is considered to be an oxymoron by the degrowth movement [21,24,30]. PES is one more caricature of green claims of growth that are imbued with the concept of sustainable development.

According to anti-utilitarian sources of degrowth, the utilitarian maximization and self-interest as driving forces of human behavior are criticized [24]. Degrowth intends to overcome the human identification as a strictly economic agent, the *homo economicus*, encouraging a new imagery in which human culture and identity are fostered by sharing, gifting and reciprocity, a culture where conviviality and social relations are not mediated by economic thinking [24,99]. PES are an expression of the expansion of economic mediations of human relations to environmental governance. The payment for the conservation of ecosystem functions “crowds out” the intrinsic motivation for conservation [18,20,68,100]. PES can also favor a “crowds in” scenario [77] but at the cost of corruption of the relation between humans and nature [94] because the payment breaks with a commitment (to preserve, whether by nature or human well-being) and fosters a behavior through incentives that are often monetary. This source of degrowth represents discontentment toward the role that monetary-economic transactions or market-based transactions increasingly play in human relationships and society [99,101]. Degrowth authors, in general, believe that PES could represent a threat in terms of the generalized advance of markets (even when PES do not represent pure markets), whilst the values that govern human relations eventually follow the profit and market logic [21] that could jeopardize a more robust governance. Thus, PES do not appear to be adequate for this source of degrowth.

The third source arises from a search that is ever more present in modern societies for a *meaningful life and well-being* [24]. This inspiration is a counterpoint to the modern lifestyle, which is fundamentally based on “[...] working more, earning more, selling more and buying more” [24] (p. 197). The actors in the PES schemes (buyers, providers and “brokers”) play the role of *homo economicus*. The so-called ecosystem service provider intends to preserve nature only if the payments cover its opportunity costs. The PES, thereby, favor the self-interest behaviors that are fostered by economic incentives; they reinforce land tenure importance and the notion of the appropriation of nature. The importance of land tenure also creates tension between efficiency and fairness. More informed landowners and those with their land boundaries secured would be more eligible to participate in a PES scheme, while traditional and other disadvantaged people would have their chances diminished or completely ignored.

Degrowth comes with some inspirations from Henry David Thoreau (Walden, Life in the Woods), Pierre Rabhi (Happy Sobriety), Serge Mongeau (Voluntary Simplicity), E.F. Schumacher (Small is Beautiful) and J.C. Kumarappa (Economy of Permanence) [24], and more recently seeking inspirations in the *Buen Vivir* movement in South America [102]. It does not appear that such inspirations match situations in which PES are expected to be applied. Wunder [61] (p. 12) admits that “[...] what seems certain is that neither the ‘ecologically noble savage’ who fully safeguards his or her environment, nor the impoverished farmer too poor to do significant ecological damage, will emerge on the scene as major [ES] sellers”, leaving PES to those who actually pose a threat, *i.e.*, “[...] the ideal [ES] seller is, if not outright environmentally nasty, then at least potentially about to become so”. Thus, the implementation of PES, in many cases, accentuates inequalities. Even when PES tend to emphasise rural development by including not only efficiency but also the reduction of inequities and poverty alleviation, they rely on the same development that endangers equity and poverty reduction.

The term bioeconomy, which was introduced by Nicholas Georgescu-Roegen, is the fourth source of degrowth; this concept is mainly related to ecological economics and their foundations [24,27] and to “Limits to Growth” [103,104] in current human economy, *i.e.*, the ecosystem limits to satisfy human

subjectivities. The steady state economy represents a response to the current economy [105], as well as the degrowth movement. However, Jackson [32] demonstrates that even when slowing down the consumption of energy and materials, a stationary state would not be sufficient when accounting for the current state of an ecosystem, especially in rich countries, which implies that decreasing the consumption would be crucial. According to Kershner [106], degrowth could be considered to be a path for reaching the ideal stationary state. This source is, perhaps, the source of degrowth that becomes closest to PES. PES have been developed within both environmental and ecological economics [58,63], albeit there have sometimes been different discourses, concepts and applications. If degrowth claims a reduction in material and energy consumption, then PES can be a tool that makes this process more economically efficient with regard to the natural elements that are covered by human interests, *i.e.*, the ES.

Although degrowth does not intend to overlook technological improvements [21], it criticizes having blind faith in technology and the notion that modernization, efficiency and innovation will solve the problems of the ecological crisis [24,30] and it brings a word of warning to the unlimited growth that technological ability promotes or even the biophysical limits that technology tends to overcome. This consideration is thoroughly discussed by the “Jevons paradox”, or the so-called “rebound effect”, which argues that the impacts that are avoided or reduced by technology and efficiency are outsourced and reallocated elsewhere [23,107]. The more similar they are to markets, the more PES favor the rebound effect. Thus, the more the provision of services is optimized, the more the services are consumed and the more their consumption is justified. Carbon and biodiversity credits and the optimization of the so-called ES in the developing and poor countries largely favor the developed and rich countries to sustain their consumption and lifestyle.

The fundamental role of democracy on degrowth assumptions makes it the fifth source of degrowth [24]. The need for a revitalization or a complete transformation of the democratic process has been discussed with respect to degrowth [37,108]. In its traditional definition, PES demand a voluntary participatory process [10], although in practice, this condition is not always fulfilled [11,58,63]. PES work very often through non-voluntary and mandatory fees or charges (especially in watershed PES cases, in which buyers pay with their water bills, sometimes without even knowing that they are involved in a PES scheme [11]). Thus, at least from the buyer’s side, it is not required, in practice, to have voluntary participation. Situations such as these, which are institutionally legitimized, undermine some of the democratic assumptions, weakening trust in democracy or simply misleading democracy perceptions. Voluntariness, however, is critical in the involvement of the providers. Many providers are “forced” to attend because of their vulnerable condition [11], which reveals ethical, justice and democratic fragilities.

Economic monetary rules can affect social norms [109] and can also undermine the democratic process. The main purpose of PES is to achieve economic efficiency of environmental management, which is often skewed by market logic, surpassing the plurality of values on perceiving the natural environment as well as disregarding other conservation options. When the instrument overcomes the socio-ecological context, the technique overcomes, to some extent, human control of it [22,24,110,111]. PES relations with the democracy source of degrowth are also conditioned to the institutional design. The choice for PES is critical and it is essential that executors do not attempt to adjust the institutions

when applying PES but instead recognize that they should not be applied arbitrarily while denying the history of the social-ecological relationships that are at stake.

Justice emerges as the sixth source of inspiration [24]. Degrowth seeks to explore ways in which sustainability and justice are compatible, assuming inequities reduction to be critical, also opting for large scale redistribution, sharing of excessive incomes and wealth and less competition [24], accordingly to the second and third source. Aristotle distinguished two main types of justice: distributive justice concern how the benefits and burdens should be distributed; and corrective justice related to punishment and compensation [112], or retributive justice. However, many contemporary theories of justice stand for a broader perspective than how things are distributed [113], or how they are compensated. Thus, beyond distributional justice, we could present procedural justice, justice as recognition [114,115], justice as capabilities [116,117], also with components of participatory justice. Justice that includes not only theories about recognition, participation and social structure, but the intuition about them [113].

Nevertheless, debates about justice (in terms of fairness and equity) and efficiency are perhaps the most pronounced issue in PES, revealing that justice is frequently undermined in general sense, especially in terms of distribution. Evidence shows that the elite (large landowners) largely profit from PES resources, while the poorest and most vulnerable are not benefited as much [118] or are even harmed. In Brazilian Amazon, for example, even when payment is universal, the largest landowners (usually those most responsible for deforestation) end up capturing most of the PES resources [67]. In addition to this relationship between efficiency and equity, there are also ethical issues, especially when a PES beneficiary choice is based on competitive criteria that are purely grounded in market logic, which in turn favors those who have better resources to ensure additionality or land tenure [11]. The opportunity cost of this type of landowner is very high and is difficult to cover. Because the poorest have a lower opportunity cost, they can be persuaded to accept a PES scheme at very low cost. The question is whether this acceptance, under such conditions, is voluntary or forced because their condition of vulnerability and poverty can hinder their capacity to refuse to participate in any scheme of PES [11].

These inequities are also extrapolated to the global level. “The Reducing Emission from Deforestation and Degradation” (REDD+) has been endorsed by the market-based model, using PES principles as models [70,71], and thus, the REDD+ can be conceptualized as the largest PES experiment on a global scale [100]. The logic of the neoliberalization of nature when applied to REDD+ and PES reinforces inequities between urban and rural, rich and poor, among generations, and between North and South countries [71]. The lower the opportunity cost is, the lower the offset costs, and in the world market, labor, land and life are cheaper in developing countries; therefore, people are willing to accept less for conservation [71], which reflects and strengthens the idea that the “poor sell cheap” [119]. In this respect, therefore, PES have not been shown to be compatible with degrowth and its relationship with justice. REDD+ and PES (and especially the integration of both) contribute to conservation in utilitarian terms, denying ethical terms and endangering socio-ecological complexities [100]. The more preserved the poorest countries are, the more reasons the wealthiest countries have to justify their lifestyles because their consumptions are compensated. PES and REDD+ could favor this indolence of the wealthiest countries, revealing an obfuscation of a serious environmental governance and political will. Although from a more deontological justice perspective, it is necessary to have degrowth in the

lifestyles of more affluent groups, in the countries of both the North and South. This circumstance implies cultural changes in which production and consumption are much less enticing [24].

Although the distributional issue seems to sum up in relation to PES, it is not just a matter of distributional justice, but justice as recognition and capabilities. Those that are less well-off in this schemes of distribution are surpassed in terms of recognition [113]. Young [114] (p. 34) argues that “[...] for a norm to be just, everyone who follow it must in principle have an effective voice in its consideration and be able to agree to it without coercion”. If communities are not recognized, there is a barrier to their participation. She continuous “[...] for a social condition to be just it must enable all to meet their needs and exercise their freedom; thus justice requires that all be able to express their needs”. Then, the non-recognition and also misrecognition leads to an institutionalization of social subordination [115]. PES if not thoroughly thought through can institutionalize patterns of non-recognition and misrecognition by ignoring socioecological context and local voices within their implementation [120]. The lack of recognition is a harm such as maldistribution.

The argument of recognition leads us to the justice as capabilities. According to this theory the focus on distribution of goods is not sufficient, requiring to expand to how these goods can be transformed to propitiate individuals and communities to flourish [113,116,117]. Again, according to the second and third sources, the opportunity to flourish is aligned with degrowth. However, are PES able to provide the necessary capacities for individuals and communities to fully choose for what they value? In fact, there are situations where communities could manifest against the traditional PES, revaluing the rural environment [69,121]. Nevertheless, there is a variety of reasons to be caution about social justice that could stimulate an exclusionary governance. The benefits for communities and ecosystems are frequently surpassed by the profit logic of markets which seek to control who will benefit and what ecosystems receive priority [122], for example, the displacement of indigenous and traditional knowledge and values by the logic of ES and its quantification. Also, the unequal access to participate, the uneven distribution of benefits, the accumulation by dispossession are usually part of the process of PES [122], likely suffocating participation and outsourcing local decisions. Participation is crucial to define justice as capabilities, [113] and to ensure opportunities for people to develop the qualities to choose what they consider valuable [116,117], to be empowered in their decisions. This could also be considered a procedural gap, whereas procedural justice can be framed as the fairness of participation [123].

It should be noted that the Southern countries should also be dedicated to degrowth as a commitment to the planet and to the “good life”, which must be disentangled from unbridled economic growth. To some extent, reducing poverty for the poorest can only be solved by some economic growth because people who are in these conditions are not voluntarily committed to low consumption but are forced by their social realities and contexts. However, perhaps it is true that Southern developing countries must avoid falling into the same stalemate of the Northern developed countries: that economic growth will solve all of their problems [30]. The *Buen Vivir* movement, in Ecuador, is a great example. The core of the movement dismantle the material mechanistic and endless accumulation present in the ideology of progress and economic growth, reinforcing that humans realize themselves with each other but in harmony with nature [102,124,125].

Another way to understand justice in degrowth is the demand for repairing injustices of the past [24], given colonial explorations of the Northern over Southern countries, for example, which is a process

that hides histories and cultures. The socio-environmental justice movements demonstrate the compatibility between justice and degrowth by noting the need for rich countries to contain their ecological debts through having economic degrowth, which implies a lower social metabolism [27,119]. PES and REDD+, as designed, can be harmful instruments that can cause negative impacts to developing countries over the years [100] and still reinforce colonialism logic, *i.e.*, when the Southern countries have their territories administered and dominated by the Northern powers, by a variation of traditional means [126,127].

PES can work in certain situations and can benefit some people and sometimes even the natural environment (especially what is conventionally called ES). Otherwise, it would not have attracted as much attention. However, PES work within the same economic growth logic that is largely denied by degrowth. The relation developed here is essentially conceptual and ideological. Nonetheless, it is a warning that although both degrowth and PES have convergence points [26], they are far apart, being almost opposite both conceptually and ideologically. The following section presents some suggestions to make PES more favorable, which implies a reconceptualization of some of their fundamental ideas.

## 7. Calling for a Reconceptualization?

Brockington [60] (p. 368) “predicts” that “PES schemes will likely occur ever more frequently, and the vigor of its advocates is unlikely to cease. This is a force with which environmentalists and conservationists will have to contend and engage”. If Brockington’s “prophecy” is to become true, would there be a need for an actual reconceptualization of PES? If so, what type of reconceptualization would be needed?

Conservation is not only about the natural world; it is also about people, about bringing people back to nature or at least leading them to care about it. Thus, we must think of PES as not an instrument for conserving biodiversity but as a mechanism for encouraging a transition from conventional practices to better practices and “better ways” of living. That arrangement should be, perhaps, the role of PES under degrowth assumptions, to incentivize that transition and make possible a context of resilience, autonomy and self-sufficiency. However, for that goal to occur, it is important to leave behind some of PES’s ideas.

First, conservation should not be thought to be mainly within the ES approach. PES must be prepared to provide biodiversity protection instead of service provision. Nature is not a service provider; a tree is not only wood nor the carbon and equivalences stored. Of course, ecosystem functioning is fundamental to us humans, but it is not for humans. The idea of ES understates the ecological complexity and human relationship with nature. Nevertheless, the message is not to “throw away” the entire concept; the metaphor can be pedagogical and useful, but we should be very careful when the metaphor becomes a framework.

It is important to recognize that nature is morally considerable, by its intrinsic and inherent value. It does not mean that human interests would be denied or neglected but that they could be adjusted to nature’s interests as well. It is a call for an ethical consideration, as McCauley [128] (p. 27) argues: “[...] to make significant and long-lasting gains in conservation, we must strongly assert the primacy of ethics and aesthetics in conservation. We must act quickly to redirect much of the effort now being devoted to the commodification of nature back towards instilling a love for nature in more people”. We should complement with instilling a sense of duty, virtue, responsibility and precaution. Alternatively

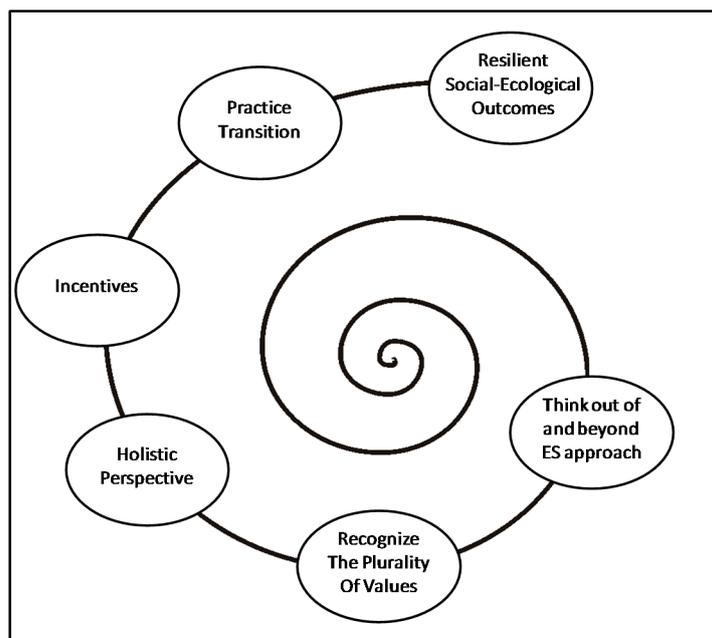
to a utilitarian perspective, Kosoy and Corbera [18] (p. 1234) find that “[...] PES would concentrate instead on environmental ethics, [...] and discarding any attempt to price and market them [ecosystem functioning] as a way to foster conservation”. Moral and economic consideration can lead to different directions. What should be the pathway to follow?

There is a plurality of values to be considered in regard to conserving nature and biodiversity, and the intrinsic value is one of them. To foster a transition and to be in line with both degrowth and conservation, PES should also be capable of recognizing the diversity of values around nature, renouncing the unifying monetary perspective that represents the single exchange-value, which is embedded in the ES approach. That would be the second step. Evidently, nature has, besides an intrinsic value, a eudaemonistic, fundamental and instrumental value [129,130]. The plurality of values around nature is essential to reaching a balance, and PES, in their actual configurations, predominantly ignore other languages of valuation. Kosoy *et al.* [76] (p. 2082) argue that “PES should be viewed as a window of opportunity, allowing for a coexistence of value systems rather than imposing a language of valuation”. However, it is very important to state that this should not be an opportunity for the accumulation of capital and profit, as intended by the capitalist mainstream [87,88]; instead, it should be intended for stimulating others to adopt a virtuous relationship within nature. As stated by O’Neill [131] (p. 24) “[...] care for the natural world is constitutive of a flourishing human life. The best human life is one that includes an awareness of and practical concern with the goods and entities in the non-human world”.

That consideration leads us to the third aspect: PES market character must be abandoned. Although most of the PES schemes do not represent a market per se, they are purely based on market ideals. Therefore, even when PES are not actual markets, in practice, they work as masquerade markets, influencing the way that we contend with conservation: avoiding important decisions in regard to conservation, outsourcing them from where and how it should be taken, and deviating from the recognition that humans are responsible for their decisions and actions. The growth economy demands a continuous valuation of what has no monetary value and should not have (such as nature, care and relations) to integrate it in the logic of markets and profit at the cost of the degradation of its essence and their alternative value systems [21]. The answer cannot simply rely on the question “to value or not to value” nature monetarily [132], but as long as the market ideals are increasingly supported, the growth paradigm will continue to be encouraged.

PES, then, should abandon the logic of “buyers, providers, intermediaries and regulators”, to reach a more holistic livelihood perspective [66] in which social equity, environmental justice, local livelihood context and local socio-ecological context must be embedded. With a holistic perspective, PES could be disentangled from their market ideology (even when they are not actual markets) and could be able to attend the plurality of values and allow other languages to be considered. To be in line with the degrowth perspective, for example, it would be desirable that PES should not be applied to those who pose a threat to the environment and instead should follow social equity matters [73]. In practice, PES favour large landowners [67,118,133], and PES can be very inclined to create a lucrative and tendentious market in which the objectives (conservation or equity distribution) could get lost. One of the presuppositions of degrowth would be to reduce these inequalities and support local communities, small landowners and collective properties.

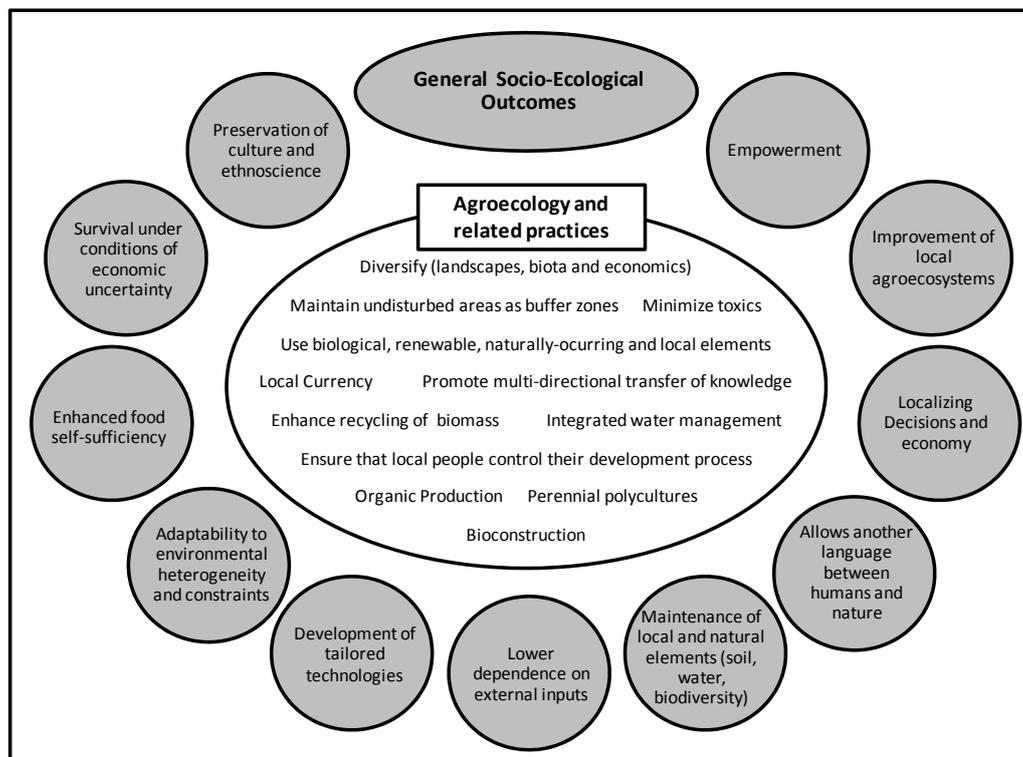
We must think about the resilience of the system, integrating the ecological vulnerability and human vulnerability and attempting to answer what people need to reduce ecological vulnerabilities and at the same time improve their overall socio-ecological resilience. PES, to be suitable for degrowth, should create conditions for a retro-feeding mechanism (described in Figure 3) to reach another level; *i.e.*, the incentives would be only an initial opportunity (as a transition instrument) to create socio-ecological resilience and autonomy.



**Figure 3.** Conceptual trajectory from an ecosystem services approach to a Transition Framework. This spiraling trajectory represents an ever increasing awareness and improved socio-environmental quality and can be supported by incentives such as PES. It states that to obtain the best and most long-lasting social-ecological outcomes, such incentives must be integrated in a holistic perspective.

To be a conservation mechanism that is compatible with degrowth, PES should create conditions to transition practices, acting as a transitory incentive to make possible the transition from a vicious to a virtuous practice. For example, PES schemes could be directed to convert conventional agriculture into agroecological systems, which avoid the use of agrochemicals, prevent soil degradation and water contamination as well as improve soil and water quality, improve productivity, and create corridors to biodiversity flux [134]. They also have beneficial social implications, in terms of improvements in livelihood, food security and sovereignty as well as technological and energetic sovereignty [134,135]. PES should favor other ideal practices and “better ways” of life (such as agroecology itself, permaculture ideologies, traditional and indigenous knowledge and communities and other neo-rural movements). That arrangement would be a way to enforce PES in which ideals, practices and movements would be incentivized to reach resilient socio-ecological outcomes. Figure 4 shows some practices that are mostly associated with agroecology and that could be fostered and result in socio-ecological outcomes that are suited to degrowth. These are practices and perceptions that can also be found in other

systems, such as permaculture [136], traditional indigenous knowledge and communities [134,137] and neo-rural movements [138] and can sometimes be inspired by them.



**Figure 4.** Agroecological-related practices and their general socio-ecological outcomes. In the central ellipse, there are some general examples of agroecological practices (and related practices, which are also in line with some other systems and movements such as permaculture, traditional and indigenous knowledge, neo-rural movements and transitions networks, for example). The grey circles represent some general socio-ecological outcomes that derive from the practices in the central ellipse and, thus, make these practices suitable for degrowth sources and inspirations (Based on [134,136]).

The fourth aspect is that PES should avoid monetary payment or the logic of such payments. Payments could break a commitment, and incentives could foster a commitment. For example, payments in PES are often arranged to cover opportunity costs, and if they do not fulfil that purpose, the conservation, or even the so-called “services”, could be undermined. The logic of payment crowds out the intrinsic motivation [20,100] to change; then, the willingness to accept will be more enticing than the willingness to change. An incentive, such as technical assistance, for example, does not require covering an opportunity cost but could offer an opportunity to change.

If we want to change some of the practices, then incentives can be crucial. The incentive is not a payment to conserve, or even less to provide a service, but to change practices and even empower people. People are responsible for their practices. PES are conventionally built to outsource the decisions from the hands of those who work with the land, but they must, instead, be giving power to the people, placing the decision in their hands, according to their contexts, *i.e.*, localizing decisions. Instead of taking people out of the land [43,44], under degrowth assumptions, PES should be “taking people back to nature”.

In summary (Figure 3), PES must expand their horizons and be thought of beyond the ES approach and, consequently, beyond services provision. They must recognize a plurality of values around nature and biodiversity in regard to conservation. Then, PES must abandon the logic of market and buyer/provider schemes to be able to promote a holistic perspective (in which social equity, environmental justice, livelihood context and socio-ecological context must be embedded). Next, PES should avoid monetary payments and focus on (non-monetary) incentives. Thus, PES should work as a mechanism that creates opportunities to foster a practice transition, leading to self-sufficient and resilient socio-ecological outcomes.

The main idea is that PES would favor a tipping point, or a transition point, thus creating a new state or improved socio-ecological condition that becomes self-sustainable instead of being only a mechanism for artificially maintaining a higher “ecosystem services” state while the incentive is present that will fall back to the previous state once the incentives are gone, as often happens. At this point, perhaps, we should leave the acronym PES and possibly call it by another name: Transition Practices Incentive (TPI), which ideally do not focus on the monetary perspective, but on a platform and a network of practices and knowledge that can support the general socio-ecological outcomes and provide conditions and opportunities for cosmovisions beyond the current economic paradigm.

To be considered a suitable conservation instrument, PES should be capable of protecting biodiversity and, thus, making nature valuable, not profitable: valuable as a precious entity that deserves care-taking and as an entity for whom we ought to have moral consideration.

## 8. Conclusions

We argued in this paper that PES are aligned with the neoliberalization of nature, which is built on the logic of economic development growth. Leaning on the ES approach, PES diminish the relationship between humans and nature, reducing it to a single exchange unity, and thus ignores the plurality of languages around this relation. PES are conceptualized as commodity fetishism and also reproduce the idea of natural capital to represent what once was perceived as nature. Whether PES are characterized as market or not, they discourage a more serious governance that is concerned with ethical and justice assumptions, for humans and the non-human world.

Nature should not be perceived as capital nor ecosystem functioning as services; therefore, there should not even exist payments for ecosystem services. Based on these assumptions, PES should not be considered to be soluble to degrowth ideals. Some similarities have been raised between the two perspectives [26], but this is not sufficient to justify the application of PES, in their current configuration, under degrowth assumptions. Conceptually and ideologically, degrowth and PES are very distant, almost opposites, at least when accounting for traditional definitions of PES and the main sources and inspirations of degrowth.

Nevertheless, PES have been proposed as a redistributive mechanism between social groups [139] and have been described as one of the “[...] best suited instruments to deliver equitable conservation outcomes at the heart of ecological economist’s concerns for nature, justice, and sustainability” [77] (p. 230). Additionally, PES proponents claim that implementation will stimulate society to rethink human relations with the natural environment and to be a tool for changing human patterns of consumption and production, and counteract the negative impacts of capitalism [26]. Degrowth is an emergent

movement that has very similar concerns; although it tends to argue against PES traditional ideologies and practices. It is important, however, to perceive that PES in practice, in their current configuration, in spite of some beneficial results, might not be the appropriate instrument to be applied to degrowth, nor to protect and conserve nature and biodiversity.

On the other hand, PES might incentivize some practices, which in turn have socio-ecological outcomes that could be suited to degrowth. However, PES would have to leave behind some of their fundamental assumptions and go further. Thus, PES (i) must abandon the logic of service provision and move beyond the ES approach to (ii) recognize a plurality of values and languages around nature and biodiversity when addressing conservation while renouncing the unified monetary perspective that represents a single exchange-value. Then, PES (iii) should abandon their market ideals (the logic of payments and buyers/providers), (iv) to be able to promote a holistic perspective, recognizing that there is more to be considered (social equity; environmental justice; livelihood context; socio-ecological context and so on). Henceforth, PES (v) should avoid monetary payments. Once the logic of payments is abandoned, PES could be a mechanism of (non-monetary) incentives for creating opportunities to enable a practice transition that would finally achieve resilient socio-ecological outcomes that could be suitable to degrowth assumptions. However, there is not much in such a reconceptualization that resembles PES, which we could call Transition Practices Incentive. We are aware that such alternative requires a more careful design and in depth elaboration. How to implement such alternative perspective also needs to be advanced.

Our analyses developed here are essentially conceptual and ideological. In fact, there are no well-known attempts that aimed to align both perspectives in practice; and thus there are no substantive research that shows that they could not be compatible in a practice manner. Nonetheless, there are many practices and knowledge that are built on the land and inspired by cosmovisions that foster a harmonious relationship with others and with nature. Future research could (re)explore conservation based on non-commodified values, and to “bring people back to nature”.

The intention is not to completely deny the ES approach. There is no unconditional statement that ES cannot be acknowledged in a degrowth scenario. However, the concept of ES and the tools that are associated with it (as PES and markets for ES) should not be “taken for granted” and should be used with caution and awareness of its uncertainties and controversies [41] (p. 120). By employing this approach, it must be clear that the overall mission is to “[...] protect nature, not make it turn a profit” [128] (p. 28). It is important to better understand how this approach can be used, where it is or is not appropriate (or even unhelpful) [130], notwithstanding comprehending that an approach such as PES is not an inexorable pathway.

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## Author Contributions

Rodrigo Muniz is responsible for designing, developing and writing the article. Maria João Cruz helped in the preparation of the manuscript and provided several and fundamental insights, comments and suggestions on the article.

## Conflicts of Interest

The authors declare no conflict of interest.

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