

State and the Commodification of Natural Resources: A Framework of Analysis

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Abstract

The commodification of nature and framing of the environment as natural resources have become increasingly prominent in international environmental governance discuss because most natural resources are traded through organised commodity exchanges. The result the depletion of natural resources with the attendant negative impact on the environment and the poor. Commodification has brought about the framing of the environment as a ‘natural resource’ and has become increasingly prominent in international environmental governance. The role of international organisations like the World Bank, United Nations Environmental Programme (UNEP) through Payments for Ecosystem Services (PES) and The Economics of Ecosystems and Biodiversity (TEEB) and its adoption by the Convention on Biological Conservation are indications of the concepts wide-ranging appeal. This paper sees commodification and the role of different actors as putting a price on nature’s goods in the form of species banking and conservation finance as a strategy for solving a range of environmental problems from climate change to deforestation. The paper concluded that commodification should be seen as an approach to bringing ethics into natural resources management, capable of generating incentives that are required to guide people towards ethical use of natural resources to the advantage of all.

Keywords: Natural resource, commodification, international trade, Multinational Corporation and environmentalist.

Introduction

Commodification processes have been studied by social scientists as the framing of the environment as a ‘common good’ and the regulating of nature-based industries and environmental services has become increasingly common in international environmental governance, supported by global financial institutions such as the World Bank, United Nations Environmental Programme (UNEP) through Payments for Ecosystem Services (PES), Reducing Emissions from Deforestation and Forest Degradation (REDD) and The Economics of Ecosystems and Biodiversity (TEEB). In this framing, Shoreman-Ouimet and Kopnina, (2016) noted that forest protection and community rights are seen as externalities that can be mitigated through economic measures. These measures stimulate a convergence of capitalist expansion and environmental protection within so-called neoliberal conservation through top-down to environmental governance (Brosius, 1999; Büscher & Fletcher, 2014; Duffy et al. 2015). Igoe and Brockington (2007) tagged this as ‘hybrid environmental governance’, in which governments, the private sector, non-governmental organisations (NGOs) and communities share responsibility for and profits from conservation, by establishing new types of territorialisation, that is, the partitioning of resources and landscapes in manner that local people could be controlled through regulation by national and transnational elites.

These processes are often linked and related to various phenomena such as marketisation, monetary valuation, privatisation, financialisation, etc., stressing on the impact of the economic justification on the idiosyncratic value of items initially considered as being outside the market realm. Commodification as a concept covers a wide range of subjects, from the human body parts (Radin 1996; Wilkinson 2003), mass media, to the internet (Smyrnaio 2018). Concerns of nature and the environment offers a prolific opportunity for commodification studies, for the reason that species, landscapes, ecosystems, climate balances and so on are all entities which can potentially be commodified, either for pure business reasons such as trade of wild species or for apparently noble courses like market-based instruments for conservation goals.

These discussion and controversies on human economy’s relation with the natural environment are as old as the study of economics itself, and it is

remarkably the epistemological disagreement on nature's economic valuation which made ecological economics emerge as a new critical social science in the 1980s (Missemer 2018). However, debates on these topics under the specific banner of 'commodification of nature' were initially held in the 2000s in a different epistemic community, that of critical geography (Robertson 2002; 2004; 2006; Bakker 2003; 2005; 2007; Castree 2003a; McCarthy and Prudham 2004; Mansfield 2004; Heynen et al. 2007).

More recently, this vocabulary and corresponding debates have extended to other disciplines, including political ecology and ecological economics (e.g. Kosoy and Corbera 2010; Gómez-Baggethun and Ruiz-Pérez 2011; Hahn et al. 2015; Thomas and Boisvert 2015). Even if some scholars adopt a general definition of commodification, such as "the transformation of goods and services into objects meant for trading commodities" (Kosoy and Corbera 2010), there does not seem to be a fully shared understanding of the term among researchers.

This paper is organised as follows: the first section introduces the subject and stimulates a convergence of capitalist expansion and environmental protection within the context of environmental eco-system services. The second section of the work provided the conceptual classification. The third section discusses commodification as a process in the production of a product that is assigned a commodity status. In the fourth section, conceptual and theoretical issues are discussed. The fifth section had a broader discussion on critical issues in commodification and concludes.

Conceptual Clarification

Resource

Natural resources are precisely difficult to define within the context of international trade. Different people hold different opinions on what natural resources are, and their ideas are capable of creating more confusion when dealing with a situation that is already abstruse. A resource is a source of supply from which value is created. Naturally, resources are materials, money, services, staff, or other assets that are transformed to create value and in the process could be consumed or made unavailable. The use of resources brings about a number of benefits which could include increased

wealth, meeting needs or wants, effectiveness in operation and functioning of a system, or improved well-being. Looking at the interdependence between man and nature, man has continued to see anything received from natural environment as what is meant to meet human needs and wants (Cohen-Tanuqi, 2008). When assessed from a wider biological or ecological viewpoint, a resource is expected to satisfy the needs of a living organism. The concept of resource here cuts across diverse field to include subject areas like economics, biology, land management, computer science and human resource. This is linked to the idea of competition, the need for sustainability and the essence for conservative movement that is relevant to ecological stewardship. The use of resource within human society, whether for commercial or non-commercial purposes will require distribution through resource management approach.

It has been established that natural resources have three key characteristics: (i) utility, (ii) scarcity, and (iii) depletion or consumption. Miller and Spoolman (2011) categorised resources. The first is biotic resources which include all living elements of the environment such as forest and forest products. Crops, birds, wildlife, fishes and other marine lives are all biotic resources (biosphere resources). They reproduce and regenerate themselves that is why they are renewable. Though coal and mineral oil fall within these categories of biotic material, they are not renewable. The second is the abiotic resources, which is made up of all non-living things in the environment. Land resources, water, air (atmospheric resources) and minerals, such as gold, copper, iron, silver etc are abiotic resources. They are exhaustible and non-renewable; they cannot be regenerated or reproduced (Getis et al., 2011).

There is another categorisation based on whether the resource in question is renewable or non-renewable. Renewable resources can be replenished or reproduced relatively quickly (Freedman, 2018). Non-renewable resources are formed over a long geological period. This category includes minerals and fossils, in view of the fact that their rate of formation is extremely slow; they are not replenishable when depleted. Resources within these categories are the metallic minerals that can be re-used by recycling them, but coal and petroleum cannot be recycled.

There is also the ‘potential’ and ‘actual’ resources. The differences lies in the knowledge whether a particular mineral is in existence or maybe it will be available for use in the future. Until the time a resource is actually extracted and put into use, it remains a ‘potential’ resource. On the other hand, ‘actual’ resources are those that have been surveyed, their ‘actual’ quantity and quality ascertained, and are currently being put to use (FAO & Earthscan, 2011).

World Trade Report (2010) notes that when we consider that both wood and crude oil are natural resources that could be transformed to different tradable goods, we may appreciate the complexity of defining natural resources. That listing of natural resources from water, land and an array of goods conceivable that comes out of them that are being traded in the natural state or processed before they become what could be consumed is another aspect of direct definition. ‘The construction of something as a resource is a matter of convention, and involves a discursive and practical ‘cut’ into the seamless complexity of the world in order to name discrete ‘noun-chunks’ of reality that are deemed to be socially useful’ (Castree, 2003).

In today’s world, most natural resources are traded through organised commodity exchanges and the consequence is that the environment witnesses depletion and negative impacts.

Commodification

Commodification is the process by which technologies and resources are given value, normally for the purpose of making them exchangeable. Commodification and Reflective Design Commodification is often viewed as an essential stage in the production of a product and having been assigned a commodity status, which is not something intrinsic to a natural entity, but rather an assigned quality brought about through an active process. Castree (2003) and Bridge et. al. (2009) see the conversions of a whole class of goods or services as being responsible for the changes in the way nature is conceptualised and discursively represented. Prudham (2009) opined that there is no ‘single path’ to commodification; while Josling (2012) stresses that commodification, in fact involves several interrelated aspects, or ‘relational moments,’ that should not be confused or conflated as they can

be employed independent of each other. Water, for example, is presented to the consumer in metered amounts, whether from the tap, sachet or in tagged bottles. Time is numbered in hours, minutes, and seconds, and thereafter, it is given monetary value.

Commodification of Nature

The commodification of nature is an area of research within critical environmental studies concerned with the ways by which natural entities and processes are made exchangeable through the economy, and the implications thereof. The process of commodification might be seen as the boundary work, behind our classes of everyday objects and patterns of division and subdivision of naturally unsure concepts into portable, exchangeable portions of value. Reflective design can make this process visible or disrupt it outright. The user might be invited to think about the arbitrary nature of values applied to natural resources, such as water. A clock produced through reflective design might reject common ideas of time, meter, and worth.

Therefore, it is necessary to make a distinction between natural resource as a factor of production and natural resources as goods tradable in international market. Minerals, oil, and various other materials can be extracted and put into trade. However, other resources could form the economic basis for different sector of the national economy, which are traded (WTR, 2010).

Prudham (2013) examined this area of work as critical and normative while he raised the issue of dualistic notions as relate to society and nature in the early political economy and the role of social struggles over land in developing Polany's (2001)'s 'theory of fictitious commodities, embeddedness and double movement. The work draws centrally on Marx's theorisation of primitive accumulation of an inherent extra-economic facet of historical – geographical capitalism, a differentiated unity linking the commodification and objectification of human and nonhuman natures as exchange of value (Marx, 1981).

A number of theorists have used commodification sketch to contest the perspectives of 'market environmentalism' where market is seen as an explanation to environmental degradation. The environment has remained

the main site of conflict between product and processes towards eco-systems services that are being supported by the expansion of market standards, relations and approaches to governance. However, those who oppose to such expansion time and the challengers emphasise the contradictions and objectionable physical and concerns brought about by the commodification of natural resources (WTR, 2010).

Natural resources are significant inputs to production and capitalism; and capitalism as a flexible and adaptive system has been obvious because it had survived two world wars and other terrible catastrophes which have convinced many that its end has not yet come. Habermas (1973) once affirmed that there is no 'absolutely hopeless situation' for capitalism. However, opponents of the system drew attention to 'the newness, rapid collapse of previous order with longer duration, class consciousness and other perceived inadequacy' to manage the crises and related structural issues. Wallerstein (2004) predicts capitalism being substituted by another world system. Lenin (1920) sees capitalism as very active development in the 21st century, characterised by a new mix of high-technological advances, the concentration of (speculative) financial capital, and post-Fordism, all producing a background of rising demarcation in wealth/security between the better off and the worse off in societies.

Mandel (1972) opines that late-stage capitalism will be dominated by the intrigues, manoeuvrings or maybe better, fluidities of financial capital and also by the rising commodification and industrialisation of increasingly more inclusive sectors of human life (Dillon, 2006). Mandel was insistent that 'far from representing a 'post-industrial society', late capitalism thus constitutes generalised worldwide industrialisation for the first time in history.' In his main work, *Late Capitalism*, Mandel argues for three periods in the development of the capitalist mode of production. The first is freely competitive capitalism, which occurred from 1700 to 1850 and is characterised largely by the growth of industrial capital in domestic markets. Second, there is the phase of monopoly capitalism, which lasted until approximately 1940, and is characterised by the imperialistic development of international markets as well as the exploitation of colonial territories. Finally, there is the era of late capitalism emerging out of the second World War, which has as its dominant features the multinational corporations, globalised markets

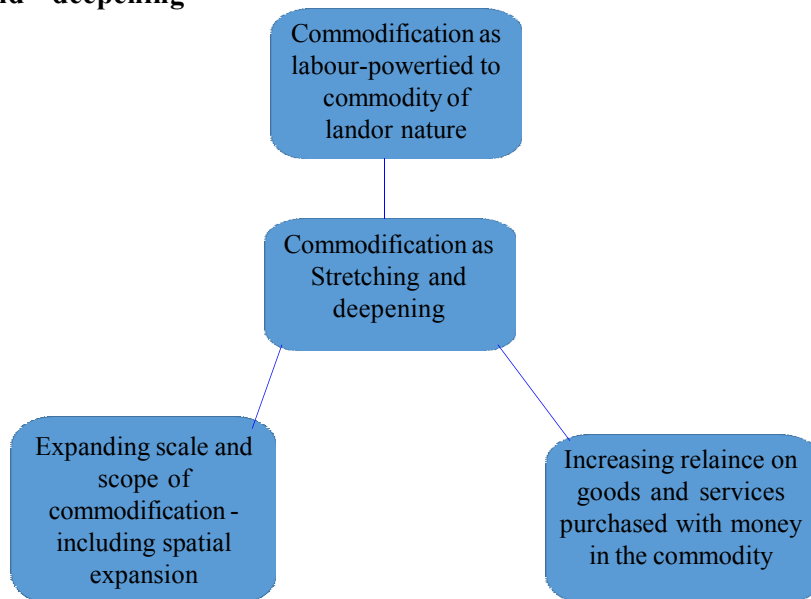
and labour, mass consumption, and the space of liquid capital flows of the multinationals (James, 1997).

With reference to the main laws of motion on capitalism specified by Marx, Mandel explained the unexpected revival of capitalism after World War II, in a classical Marxists tradition; he tried to characterise the nature of the modern age as a whole, contrary to leftist prognoses, and the long economic boom which showed the fastest economic growth ever seen in human history (Mandel, 1975).

Jameson used Mandel's third stage description as a point of departure to argue that this post-modernity or cultural logic of late capitalism involves an emergence of a cultural dominant, or approach of cultural production, which differs noticeably in its various manifestations from those of its predecessor, referred to collectively and broadly as Modernism, particularly in its treatment of 'subject position', temporality and narrative. For Jameson, (1996) 'every position on postmodernism today whether apologia or stigmatisation is also necessarily an implicitly or explicitly political stance on the nature of multinational capitalism.'

Commodification of nature happens at two different moments as capitalisation stretches, it extends to longer distances of space and time and deepens to enter into more goods and services. This further goes into external nature that constitutes a capital accumulation strategy through some traditional activities like mining and agriculture, or in new commodity borderlines in bio-prospecting and ecotourism. In all these, what emerged is a method of accumulation by dispossession which releases assets at a very low or zero cost, to provide immediate profitability and counteracting over accumulation. This is what Harvey (2003) considered the 'wholesale commodification of nature in all its forms' and a new wave of enclosing the commons that employs environmentalism to service hurried expansion of capitalism (McCarthy, et al, 2009).

Fig.1.0 Commodification as an Integrated Process of “Stretching” and “deepening”



Prudham 2009 (p. 126)

The transformation of a whole class of goods or services requires changes in the way nature is conceptualised and discursively represented (Bridge, et al., 2009). Commodity status is not something fundamental to a natural object, but is rather an assigned quality brought about through an active process.

4. Commodification at Theoretical Level

At theoretical level, commodification could be seen as a process by which qualitatively varied things are made equal and exchangeable through the use of money whose value of the exchange rate makes commensurable (Castree, 2003) Commodification modifies the obvious dissolution of qualitative difference and its “renegotiation,” as commodities are standardised in order to maintain a constant identity across space and time (Kosoy, 2010).

Table 1. **Explanation of Interrelatedness in Commodification**

Element	Meaning
Privatisation	Assigning of legal title over a commodity to a particular actor
Alienability	Capacity of a given commodity to be physically and morally separated from sellers
Individuation	Separating a commodity from supporting context through legal and material boundaries
Abstraction	Setting individual things as equivalent based on classifiable similarities
Valuation	Monetising the value of a commodity
Displacement	Spatiotemporal separation, obscuring origins and relations

Source: Castree (2003) 'Commodifying What Nature?' *Progress in Human Geography*, 27(3): pp. 273-297.

Privatisation

This is the allocating of legal title to an entity or process, which allows a commodity to be owned, either by an individual or a group, in order to be traded. In the words of Castree (2011), privatisation of natural substance can involve enclosure or the representation thereof (as with intellectual property rights, and indicate change in social relations, changing rights of access, use and disposal as things move from communally, state or un-owned modes into private hands.

Alienability

This is the capacity of a given commodity to be separated, physically and morally, from its seller. O'Neill (2001) posited that if a commodity is not alienable, it cannot be exchanged and is thus protected or secured from the market. For example, commoditised human organs might be privatised (owned by their bearer) but very rarely would they be considered alienable.

Individuation

This is the representational and physical act of sorting out a commodity from its supporting context through legal and/or material boundaries. This could involve ‘splitting’ an ecosystem into legally-defined and tradable property rights to exact services or resources (Castree, 2003).

Abstraction

This is the assimilation of a given thing into a broader type or process, the conversion of particular things into classes (Kosy, et al, 2004). Through functional concept, ‘wetlands’ are constructed as a generic category despite the uniqueness of physical sites (Robertson, 2000), and different gasses and activities are equated through Carbon Markets (Lohmann, 2010). Through spatial abstraction, Mackenzie (2009) says things in one place can be treated as the same as things located elsewhere so that both can form part of the same markets.

Valuation

This is the manifestation of all expressions of worth (aesthetic, practical, ethical, *et cetera*) through a single exchange value. Monetisation is thus foundational to capitalism, rendering things commensurable and exchangeable, allowing for the separation of production, circulation and consumption over great gulfs of time and space (Prudham, 2009).

Displacement

This involves something that comes into view as ‘something other than itself.’ Prudham (2009) further opined that commodities might be better thought of as ‘socio-natural relations’ than reified as things ‘in and of themselves,’ but through spatio-temporal separation of producers and clients, the histories and relations of commodities become hidden. This is what Kosoy *et. al.* (2010), called Marx’s Commodity fetishism, the ‘making invisible’ of the social relationships and embeddedness of production.

Theory of Exploitation

Smith (2009) observes that the theory of exploitation applies to commodification. He explained that the ‘disparity of value’ theory of exploitation is most easily notable from theory of objectification as it deems the fairness of how much one is paid to a certain extent than argue that

money is inappropriate to the exchange. If we judge by the case of the September 11 victim Compensation Fund as an instance, a disparity of value analysis could take issue with the injustices of giving the families of a deceased investment banker with much larger compensation packages than those of night-watchmen. However, an objectification analysis may face the very conversion of the worth of the dead into a dollar amount. Disparity of value accounts of exploitation has no inherent objections to commodification, as long as the transaction does not lead to impermissible harms (Smith, 2009). Differences concerning what constitute the basis of such harm will, however, create the possibility for what Wilkinson describes as ‘mutually advantageous exploitation.’ If we become mindful of harm as rendering someone ‘worse off’ than they were previous to the transaction rather than according to some normative baseline; such as a principle that everyone deserves an equivalent of a living wage, we can then claim that the poor person is better off having received some money for her kidney even if she continues to live far below a living wage. Reflecting on the point above regarding the benefits of commodification within capitalism, legal prohibition of such ‘mutually advantageous exploitation’ loses support when we focus on the individual and the short term consequences of the transaction (Smith, 2009; Zwolinski, 2016). According to Smith (2004) the pimp, the organ buyers, and the mine owners provide opportunities without a clearly established and enforced normative baseline. These opportunities may well present the sex worker, organ seller, and miner with their best choices even as they spiral into poverty and illness (Wilkinson, 2000). On any given day, the option that will leave them poorer and sicker may be their best choice relative to the alternatives. Mutually beneficial exploitation is therefore one of the most effective concepts in capitalism’s ideological toolbox because it justifies and perpetuates global inequality for a considerable section of humanity. Without doubt we often tenaciously block certain exchanges, such as markets in narcotics, because of their long-term effects to individuals and collectives. This is, over and over again, not a matter of wrongful use of exploitation (heroin is too scarce to be commodified) or disparity of value exploitation (if only heroin traded at a fair price), but rather a belief that certain markets cause other kinds of harm. It is worrisome, however, that

we are losing the ability to think of ‘other kinds of harm’ in non-economic terms (Smith, 2004).

Critical Issues in Commodification of Nature

Daly *et. al.* (1994) are of the view that ‘a sustained willingness to change depends on a love of the earth that human beings once felt strongly, but that has been thinned and demeaned as the land was commodified.’ To reflect ethically and take stock in regarding to the way forward for natural resources and their exploitation, is to go back to the basics, on the fundamental issues that cause the destruction of nature in the last two centuries. According to Hayden, (2012), who researched environmental ethics, philosophy and history which made him to ‘realise that conservationists constantly need to remind themselves why society so often ‘doesn’t get’ what conservation is about. The answer is because of society’s worldview, something conservationists and those arguing for national parks rarely talk about, but we should.’ It is important to consider a central point in our worldview whether nature, (like beautiful flowers locate somewhere in a park has a right to exist for itself or is it just something for humans to use? If you believe the former (an eco- centric belief) you believe in the intrinsic value of nature. If you think nature is just for our ‘use’, then your worldview is anthropocentric (focused on ourselves), resourcist (nature is just a resource), and utilitarian (it’s all about human use). This view collectively has been called ‘modernism or modernity.’ Modernism completed the ‘the intellectual divorce of humankind from nature’ (Oelschlaeger, 1991). However, most conservationists want to protect these places because they think the land has a right to exist for itself. They employ the utilitarian arguments because they work with those who have a modernist worldview. Consequently, they articulate the value of ecosystem services to human society– regulating water flow, containing bio-resources, holding soil, recycling nutrients, etc. They rarely say ‘this place should be protected from exploitation because it has a right to exist for itself, not just for us.’

It is not gain saying today that the latest state of the world presents a situation where the consumerist and resourcist view of modernism is largely in control. Definitely, it is an indication that consumerism is spreading to cultures all around the world (WWI, 2010). More often commonly nature

is seen as just a commodity, not something sacred and phenomenal to keep for future generations. Of recent, water is seriously subjected to the high levels of commodification across the globe. Rather than being something held in public, it became a commodity to own and trade. Few people seemed to notice. The same thing is happening with our atmosphere in terms of carbon trading. CO₂ is just another commodity without consideration to the danger it possess; it can be traded. To them, it is a part of the triumph of the market economy. Commodification is now spreading to nature as a whole. It has been applied to the living Earth, where parks are being reduced to just tourist commodities.

In the late 1800s and early 1900s, the United States of America had great writers and advocate of nature in Henry David Thoreau (1854) and later Aldo Leopold (1949), the author of the 'Land Ethics'. These writers spoke persuasively on the intrinsic value of nature, arguing that national parks and wilderness should be first and foremost for nature conservation. But of late, Forester Gifford Pinchot opposed Muir's view of wilderness with his remark that 'conservation' was about using these places for human benefit. However, the idea of national parks for nature conservation worn out (Oelschlaeger, 1991).

It is understandable that the state of the environment would undoubtedly be worse if conservation strategies had not been in place; traditional conservation has so far failed to reverse biodiversity and habitat loss (Armswork, et al, 2007). Arguably, this failure cannot be understood without connecting it to the long-established reluctance of much of the environmental movement to mix economics and conservation. The conservation movement has thereby failed to act upon the economic and socio-political drivers of changes that are at the root of many present environmental problems (MA, 2005).

Different forms of government and ideology have been observed with some remarkable influence on natural resource exploitation, except in the few countries with functioning democratic institutions and well-developed civil societies. Regardless of professed ideology, most political systems have pursued the same policies toward resource exploitation: reducing direct costs by creating economies of scale. While the main of resource policy formulation varies from country to country, long-entrenched bureaucracies

dominate the execution phase. In remote areas, where natural resources are found, career officials of relevant ministries and police are the primary face of government. The most important differences in outcomes have to do with governmental competence and capacity, the means of valuating resources, the extent of corruption— which is commonly widespread— and the political balance between vested interests (both state and private) and the interest of those who occupy the land whose resources are to be exploited.

The international policy agenda on the expansion of the ecosystem service approach beyond specialised academic circles took place in the 1990s. A major landmark was the shift from theory to policy through the partial endorsement of the ecosystem services approach by the Convention on Biological Diversity in 1992. This was immediately followed within a decade by the first comprehensive frameworks for the analysis of ecosystem services which were published; first with the seminal work of Daily (1997) and later with the development of frameworks and methods for the identification and classification of ecosystem services (De-Groot, 2002). Following the publication of the Millennium Ecosystem Assessment in 2005 (MA, 2005), ecosystem services became confidently settled into the international environmental policy agenda. The agenda includes international concerns to develop integrated systems of ecosystem and economic accounts (UN *et. al.*, 2003) and standardised classifications of ecosystem service (Costanza, 2008). Such initiatives, according to Stertn (2006), have developed in parallel with the use of cost-benefit analysis (CBA) to address large-scale environmental problems like global climate change and biodiversity loss (Teeb, 2010) the promotion of markets for environmental commodities (Bayon, 2004) and payments for ecosystem services schemes (Engel, 2008).

Summary and Conclusion

This paper addresses the following issues: the evolving role of academic literature on the commodification of nature and the environment since the early 2000s; major stakeholders working on commodification of nature; the processes that relate to commodification of nature, and their definition and analyses in relevant literature and lastly, how these processes relate to

each other in conceptual frameworks reflecting or not a systemic analysis of the commodification of nature.

Commodification is a way of framing the environment as a natural resource and this is prominent in environmental governance. This framing of the environment has resulted in commercialisation and exchanges that bring about benefits, including wealth, meeting needs within a functioning system or improving well-being based on the qualities, utility, scarcity and depletion. All these offer concerns for nature and environment and opportunity to study commodification are a result of the fact that species, landscapes, ecosystem, climate balances are commodifiable entity.

While some scholars considered commodification as the transformation of goods and services into objects of trade, others subscribes to the idea of competition, the essence of sustainable use and conservation. However, there are concerns for renewable and non-renewable, biotic and non-biotic as well as potential and actual resource whose future informed the degree of concern by different schools of thought. Commodification is a stage in production process, where values are assigned to make them exchangeable. Its sketches have been used to contest the perspectives of market environmentalism where market is seen as being responsible for depletion and degradation and poverty. This assertion brings environment as a site of conflict between product and process towards ecosystem services that are being supported by the expanding of market standards, relations and approaches to governance.

As a system driven by capitalism, commodification is characterised by new and a mix of high technological advances with speculative financial capital that is engendering a background of rising demarcation in wealth/security between the rich and the poor in the society without checks or controls.

The answers to the questions raised are as follows. The quantity of publications has increased considerably. Commodification studies are primarily carried out by economists, political ecologists and geographers located in Northern and Western English-speaking countries but dealing with Southern-countries. Privatisation often associated with marketisation and commodification in general (not always well defined) are the main processes discussed. There are attempts at complete systematisation of

commodification schemes yielding a comprehensive view of the subject. Most publications, however, focus on one process in particular, without examination of the commodification dynamics as a whole.

The fact that the literature has quantitatively increased is not surprising, since the market-based instruments approach has been supported by many institutions since 2005 (upon the publication of the Millennium Ecosystem Assessment report with the support of the United Nations) and 2010 (TEEB) report with the support of the European Commission), thus offering opportunities for the literature that explicitly refers to the commodification of nature.

These provided the corporations and firm the choice to pollute then pay the charges or buy credits to do so, or clean up their mess. Tradable pollution rights mean that permission to pollute is auctioned to the highest bidder; which invariably means they can keep polluting or dirty industries in business if they can afford the pollution charges or can buy up credits. In this way, companies can choose whether or not to change production processes, introduce innovations to reduce their emissions or just pay to continue to pollute the environment. It is evident therefore, that the market, far from being free or operating efficiently to allocate resources in the interests of a globalising society, is dominated by a relatively small group of large multinational corporations which aim to make the most of their private profit through exploiting nature and human resources.

Commodification as being advocated reduces everything to capital, including humans. Water is no longer water; but natural capital, with an economic value. It is significant to know that nothing we do under the current globalisation is sustainable. This also applies to water as well. As it stands, the uniqueness of water cannot be separated from resource because water exists in everything. Therefore, if we have an unequal society, then we have an unequal supply of water. If we have inequality across the world, we have inequality of water supply. If things are unsustainable, then the water supply is also unsustainable. We cannot talk about a water ethic as just water.

In conclusion, the bigger aspiration is to pursue ethics to attain a better integrated resources management in industry, ecology, agriculture, and all other sectors for proper ecosystem management. But from a realistic point

of view, we still have to be involved in some kind of strategic thinking. If the existing framework does not work, we must identify a system that helps promote a workable innovation without losing sight of the big picture. The best way is to consider the array of resources within the environment, and then put the environment back into development. A global development that will be total and beyond management of water ethic but that can enhance a way forward with likeminded people around the world because we have the numbers, but the big corporations have the power. Finally, we must be prepared to get involved in arguments, if we are to move towards consensus, it is tremendously significant to build an open, transparent, inclusive and a process of participatory decision-making to bring environment into a sustainable level of development in a globalised world

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