

Moving from Environmental Economics to Ecological Economics: what difference does it make for forest management under the carbon market framework?

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Abstract

The conceptualisation of nature in environmental economics disregards the most important principle in the relationship between the economic system and its natural environment. A comparative analysis shows that the approach from environmental economics orients natural resources management to a merely strategic rationale where the dynamics, changes and responses of ecosystems are ignored in both theory and practice. In contrast, ecological economics gives a leap forward into a shift in the opposite way by providing an energetic flow approach for understanding the impacts of the economic-nature interaction. However, even ecological economics broadens the comprehension on the subject there is still a disconnection between the new knowledge and the policy making process. The successful transfer would have enormous differences in forest management, shifting from the current perspective of them as carbon credits producers for offsetting to a reconstructed framework based on biophysical principles.

Keywords: environmental economics, ecological economics, forest management, carbon market

INTRODUCTION

Forests are one of the most controversial topics discussed in the meetings of the United Nations Framework Convention on Climate Change (UNFCCC). Being the third in contributing to the CO₂ emissions, it has been negotiating about changes to be made in forest management in the context of global warming and climate change. Some of those changes include the allocation of a price to the CO₂ absorbed and stored within a forest as well as a market to trade it. Currently, there are voluntary carbon markets in which forestry activities such as reforestation and sustainable management participate, and that are most commonly known as part of a proposed mechanism for Reducing Emissions from Deforestation and Degradation (REDD+). On the other hand, many critiques have been raised from different perspectives arguing that there are decisive points yet to be solved in order to put it into a global official practice, and that there are strong doubts regarding its effectiveness to fulfil the aim it has been thought for. The basis of these doubts is that the reduction of the CO₂ emissions is of vital importance, so if no serious mitigation actions are implemented it is very likely an increase in the global mean temperature of 5 to 6 °C that would cost the Earth about 100,000 years to recover.¹

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ENVIRONMENTAL ECONOMICS VS ECOLOGICAL ECONOMICS

The point is that whether the conditions to consolidate the necessary mitigation actions actually exist because political and economic obstacles have to be overcome for their accomplishment. It is not only about addressing the environmental problem, not in this world. Resolving the environmental problem is not a priority. Before that, the priority is to assure the permanence of the pillars that hold this world, such as economic growth, efficiency, private property and market. The implementation of necessary mitigation measures depends on these pillars, the pillars of neoliberal capitalism. So, how two principles of environmental sustainability are dealt in the context of neoliberal capitalism, reveals the feasibility of implementing these mitigation actions.

The most important principle in the current relationship between the global society with nature is the conceptualization of nature. This principle in turn, leads to another, the principle of the terms in which the relationship is established. The neoliberal capitalist economic system has emerged as the great system in which it exists anything else, human beings and nature, and therefore, ultimately these two are subsystems of the great economic system. This system imposes rules, and both humans and nature must abide them.

Now, these are the foundations upon which is built the current Anthropocene. In it, it is understood that there must be governance over natural resources for development, and not governance over the economic system to curb environmental degradation caused by this development. It is also understood that nature provides exploitable resources, and no ecosystem functions. In the first case nature is the means for sustainable development, in contrast, nature seen as ecosystem functions is the means for living. It rather would have to be re-conceptualized the biophysical limits of the development based on the ideology of neoliberal capitalism. That is, it rather would have to be rethought the economic system for managing itself within the biophysical limits of the planet, and not the reverse, by finding new ways of managing natural resources to allow more development in a finite world. The problem of keep thinking in development, even if it is called sustainable, is that the notion of development in the dominant economic system is capitalist enrichment. There can be no capitalism without economic growth. In contrast, there is a reason why things in nature grow to a certain limit, and that is because they exist in a finite world. But neoliberal capitalist economy is thought that it can grow forever². For that, nature is not the means for living, nature is the means to enable the economy to grow forever. Either by the exploitation or destruction of Nature. Ultimately, according to Solow, the world indeed can exist without natural resources³. Then, Nature can be allocated a price and be traded like any other commodity in the market is. By making a product of Nature, now Nature must seek to be profitable ie, it loses its intrinsic value and acquires an economic value for the type of goods to which it is transformed. So, the relationship with Nature is determined by the market.

We can see this ongoing architecture. The globalization of the neoliberal capitalist economic system has accelerated the destruction of Nature due to an intensive demand of products. In Environmental Economics, the area of natural resource studies for the

neoliberal capitalist economic system, all this destruction is something external to the operation of the market. "The neoliberal analysis sees the market as *perfect societas*" ... so, this external destruction of Nature, "...these market failures are corrected with more market." Because the market is perfect, and "the reason for the destruction of nature is the failure of its privatization." This aggregation of the market is underlying to the same policy of the financial world, which sees the problem solved when it is improved what they call the globalization of markets".⁴ Then, the concentration of atmospheric CO₂ that is increasing the global mean temperature of Earth is an externality, nature has not been privatized in its wholeness so this failure of the market should be resolved through the market. So, for Environmental Economics the solution lies in the privatization of natural resources, ecological services and the creation of a market for them. This is the function of the carbon market, in it the problem of increasing atmospheric CO₂, global warming and climate change is resolved by commodifying Nature. Regarding forest management, carbon markets trade a new product, the CO₂ that forests store. Thus, Nature is serving the goal of capitalist enrichment in new ways, and for that it is also being subject to private appropriation and efficiency processes. Serves to capitalist enrichment because even as it is still a voluntary market, according to the World Bank figures for 2009 this was a market of \$ 144 billion dollars. Also, while big polluters seek the way to offset their CO₂ emissions, one of the most difficult details in the negotiations of REDD +, is the fear that this may be a way to facilitate corporate privatization of Nature.⁵ Equally, to ensure the maximum utilization of forest resources as CO₂ storage, production of agrodisel and sub-products for the cosmetic industry among others, it has been practiced in some places like Indonesia and several African countries the replacement of forest ecosystems with monoculture plantations.⁶

But nature can not escape from this system because the institutions, organizations and mechanisms through which man governs his relations with Nature are incapable of dealing with current changes. On the contrary, this architecture subjects Nature. For example, the carbon market has been conceived as a strategy to mitigate climate change, but its implementation seems to have no considerable impacts, because atmospheric CO₂ concentrations continue to rise. NASA climatologist James Hansen has discarded these carbon offsets as a scam because "there are many industries and people who do not want to see another world beyond fossil fuels."⁷ Additionally, although the exploitation of fossil fuels has allowed the development that our civilization knows and justifies the madness for hydrocarbons, we are currently facing the environmental consequences of such development.

It is because of these consequences that from a critical perspective there is a need for searching for a new way of understanding the world, one that could overcome the ideology and architecture of neoliberal capitalism. In this regard, it is important to consider the contributions made by Nicholas Georgescu-Roegen, who had written already in the 70's on the environmental costs of economic production, and which eventually leads to the depletion of raw materials and energy. He argues that there is no expenditure of energy that do not involve costs, energy costs to be more precise, and from this idea he wonders what the real costs of production and reproduction of the economy would be. These costs are the negation of the carrying capacity and resilience

of Nature, is a denial of its existence. But a new kind of understanding came with bioeconomics or better known as Ecological Economics, an outstanding contribution of Georgescu-Roegen.

The foundations of Ecological Economics are the laws of thermodynamics. The first law refers as some authors have resumed, to the fact that man can not create or destroy matter or energy⁸. So, following this, Georgescu-Roegen was interested in observing the economic process from a physical point of view as for mainstream economics, within the economic process raw materials and energy are transformed into goods and services. Then, moving ahead with the analysis of that process, he located a missing piece in it. There is no transformation of matter or energy without losses, so where in the economic process could we see that? This losses do not appear in it. So, this came to be one of the focal points of the study of Ecological Economics. From the thermodynamics point of view matter and energy enter the economic process in a state of low entropy and comes out of it in a state of high entropy or unavailable energy. In Nature, virtually all organisms live of low entropy, ie, that their living costs little to nature in terms of energy flows. However, nature receive from human beings large amounts of energy that is no longer available. This, according to the law of entropy, leads to a deficit in nature. This is why in nature things grow to a certain limit.

When writing the document "Towards a humane economy" in 1973, Georgescu-Roegen was already proposing that the ideology of growth had to be replaced. This ideology had been used as a substitute for the equitable distribution of wealth, and it still does it nowadays. So economic growth is justified this way, as the panacea for solving global problems. He wrote as well, that the production and consumption should be subordinated to the goals of survival and justice. However, achieving these goals is conditional on overcoming the ideology and architecture of neoliberal capitalism, because they are totally incompatible with those ideas of survival and justice. Neoliberal capitalism produces poor and excluded so that there can be rich and elites by denying survival and justice of the vast majority of human beings in the world. The same thing happens with Nature.

Then, Nature has to look for its salvation. In neoliberal capitalism the only option given is to test that it is profitable and useful for the system. So even if the things that it has to endure are bad for it, they are right as they serve to test that it is profitable and worth saving. What is good is useless and what is bad is useful⁹. It is good for Earth to keep its ecosystems healthy so its capacity to sustain life and be resilient to antropogenic changes are fully operational. But this is useless for the economic system. Nature would capture serious attention when fully turned into profitable assets. The phrase heard in the past Conference of the Parties held in Copenhagen says it eloquently, "if the climate were a bank, they would have saved it already".

There is still a disconnection between science and the policy making process. While science is pulling the attention to the changing planet, neoliberal capitalist policy pulls the attention to the new opportunities for making profit out of it. It is useless to have

healthy forest ecosystems full of biodiversity when there is a very useful option, a market worth billions of dollars.

It would mean a huge difference for the living planet to move from what Environmental Economics sets as a relationship with Nature to Ecological Economics, because this shift starts with a whole new conceptualization of the world and therefore making changes to that relationship too.

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