academicJournals

Vol. 7(7), pp. 151-156, July, 2015
DOI: 10.5897/JEIF2014.0620
Article Number: 4211A0A54324
ISSN 2141-6672

http://www.academicjournals.org/JEIF

Journal of Economics and International Finance

Full Length Research Paper

The political economy of climate change

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Received 9 November, 2014; Accepted 23 June, 2015

This article debates institutional proposals given to address climate change which is not attacking basic socioeconomic determinants but only impacts such as emissions of greenhouse gases (GHE). Getting to the bottom of the problem requires moving beyond mere energy transition to renewable energy, which is necessary. But they are insufficient to ensure the preservation of life on earth and the social order. These circumstances enable the emergence of the political economy of climate change, introducing a necessary reform towards sustainability by applying the required and appropriate economic and financial instruments and regulations; thus it is not just a matter of adaptation and mitigation of this situation, but of restructuring the economy, society and culture to the benefit of people.

Key words: Climate change, mitigation, adaptation, restructuring.

INTRODUCTION: THE GLOBAL DISASTER

The solution around renewable energy could mean a great fallacy (Lovelock, 2007; Rifkin, 1993) while not taking into account the economic determinants of climate change. It means, with the current model in place oriented to profit as an end in itself; and reduced to combat its atmospheric impacts, all of which shows dramatic way we have changed the natural conditions on our planet; so this disrupts both the economy and society.

All this increases the fragility and vulnerability of the world and affects "sensitivity" (Roe, et al., 2007; Knutti and Hegere, 2008; Berger, 1980) of the state of the atmosphere, increasing its uncertainty (IPCC, 2007) even more in the social sphere.

The starting point is the analytical point of view from the economical economy (Costanza, et al., 1999), based on the principle of dependence of human societies from the natural environment; therefore, continue to insist on the absolute subordination of nature by man, it is to feed a greater ecological and social disaster.

It notes that, in the case of climate, such dependence has become almost absolute in the current phase of global warming, since it is no longer an independent factor (Acot, 2005), as it was previously and for centuries. Thus, unwittingly, we have returned to primitive society, with their vulnerabilities); which represents a contrast compared to rapid technological change.

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Climate crisis

We can start this discussion by highlighting the following paradox: although the origin and consequences of climate change affect the conditions of survival of the planet and therefore human societies, these changes are largely irreversible (Houghton, et al. 2001); however, human foundations themselves are reversible. In addition, this means the cost of opportunity to act more directly and effectively to this end.

It can be added that proposals on this issue, [corroborated in the Cancun Summit COP20 (2010); continued in Durban (2011) and Doha (2012)], only take into account technological and financial factors of the energy transition, in benefit in the practice of large private coorporations, but not the majority of the population (which suffers overcrowding (Masahisa et al., 2000).

The solution to this problem might not be the mere reduction of GHE by itself, because other factors are also present, and that extreme inequality increases in the economic model in place also contributing to the rise in temperature to concentrate the decisions about the management of the natural and social energy takes, and this affects the world.

Nevertheless, there is also the presence of factors such as deforestation, loss of biodiversity, reduction of glaciers, ozone, etc., all of which contribute to increased temperature, directly or indirectly, and all of them are important for themselves.

It should be noted that to reduce or to avoid greenhouse gas emissions, and the energy transition towards the widespread use of renewable fuels is not a warranty to be successful, and this has been shown throughout history (Clive, 2007; Gugha and Gadgil 1993) because the mismanagement of natural resources has always led to different environmental crisis.

Above all we must consider what economic factors conducive to this situation today, is necessary to counteract them like the price system, deregulation, inappropriate technologies, hyper-urbanization, inefficient agriculture, etcetera.

The current climate change

The contemporary global climate crisis (Vidal et al., 2011) has been explained as the result of atmospheric concentration of greenhouse gases (CMNUCC, 1998; Calderón, 2012) product turn a model of society wasteful of energy and materials (Edwards, 2010), which has been seen outside (not inside) of nature (Benyus, 2002; Hawken, 2010), and even the interests of the majority of the population.

This is due to the nowadays lower planetary ability to reflect sunlight (albedo effect) caused by industrial development (Lovelock, 2007). As a product of generation of liquid, solid and gaseous wastes; all of which, permit the persistent increase in temperature (beyond what would constitute an independent natural phenomenon of man); that after a point, it affects the natural balance, which in turn enable the conservation or human-social balances. All this is the result of even economic model in place, lacking adequate regulations (combining market with them) to work out up the problem.

The economics of climate change policy

We can say that the political economy of climate change, tries, more than anything else, explain and correct the multiple causes (economic, political and social), and the effects generated by this warming; product model of capital accumulation on a global scale based on the extreme inequality and liberalization. Such corrections are more or less drastic and gradual, under all the relationships involved.

It should be noted that, ultimately, GHEs are just one indicator of climate change, so those are not sufficient as an explanation; since this (as well as part of the environmental crisis) should be fought not only in its physical effects but in economic and socio-cultural causes (which have a basis on the mindset of the time).

PURPOSE AND METHODOLOGY

This article deals with the possible routes that society and governments facing the presence of climate change at the global level (as it is an expression of the environmental crisis) and this is a growing and irreversible phenomenon as well as multi-determined (waste, irresponsibility, deregulation, model appropriation of nature, ignorance, consumerism, productivism).

The complexity of climate change, its causes and consequences, both natural and human are considered; all of which are closely interlinked and ongoing solutions to this problem.

Some strategic lines are defined in order to advance beyond offering gradualist measures in force have given poor results; which are applied without undertaking the necessary and broader transformations that are required in the economic and socio-cultural structure of today's world.

POLITICAL ECONOMY AND CLIMATE CHANGE

The first consideration for analyzing this relationship, is that only a deep position on the climate change may also establish its limits, and propose a fair distribution of costs

and benefits derived from this phenomenon (Rawls, 2003; Hayward; 2005), moving towards an eco-social reorganization.

A key issue is that, besides being the main generator of GHE war economy (Melman, 1979) and the hyper-consumption (Georgescu-Roegen, 1975) they are factors that are constantly pushing the political society, creating uncertainty, worrying the public opinion and eroding the historical-natural bases of any possible and necessary development.

It is therefore indispensable to consider other variables to reverse climate change (e.g. the proportion in generating less waste compared to total capital, the rate of recycling, the reduction of the times of degradation, etc.), with their respective indicators that should take into account the economic, social and planetary health.

All this has to do with the need for an approach to natural ecosystems as a whole (together with economy), so refer to a carbon economy, it would be confusing if not takes into account simultaneously the total economy, understood as the unity between ecology and society, where carbon footprint is reduced to being a residue of economic activity.

The political economy of climate change then arises as a criticism of institutional policies to combat the climate change (Stern, 2008; Galindo, 2009), as it aims to go further than the deal with the effects of it, since it involves removing their fundamentals (Mc. Kibben, 2009), that they are in the mode of appropriation of nature as well as asymmetrical current socio-political relations.

Thus, two options are presented in the carbon economy: 1. Through the eco-social restructuring (Laswzlo, 2008); and 2. or without it (Laszlo, 2008). The low-carbon economy (and the restructuring involved) means that it can be to the benefit or detriment of the majority of the population; so of course is not impartial.

Public policies to climate change

The adaptation and mitigation policies raised in international agreements are limited to reducing GHE causing climate change, since not much consideration that some of the economic and social causes which explain at last such emissions.

The agreements reached at various summits are somewhat illusory way, since there are no real commit-ments; and all be solved voluntarily (without penalties), through economic mechanisms that turn out to be too weak to make progress in solving the problem Therefore, the serious institutional diagnosis does not correspond to the agreed measures.

In the case of the Green Fund, it is a good idea but it cannot be realized at all, because the mechanisms for its implementation, as a matter of relegating no bilateral but multilateral character is not defined. However, most difficulty it is that there is not enough availability of money, leaving only the agreement as a promise (to be fulfilled in 2020).

In the scheme proposed about transfer of technology, it is limited to opening markets to global companies, forgetting that technology must be designed according to local needs (Abetti, 1983), which requires generation of it adapted to the environment (even with foreign support), and not a mere transfer; besides, the need to open the global patent's system.

For its part, the REDD + program[1] aims to conserve forests and compensate the owners for it. This deepens the bond market carbon and environmental services; but masking and new forms of pollution control. The agreement also has been criticized for attempting to advance the privatization of "natural capital" (Sarukhán et al., 2009), depriving communities of their natural resources; for example, when the economic resources derived from the carbon market for the protection of the forest does not really runs to the forest.

The summits held, to accept further increases the temperature of the planet, did everything to maintain the status quo through the carbon market (and CDM)[2] from the Kyoto Protocol (CMNUCC, 1998).

ATTACKING THE CAUSES OF CLIMATE CHANGE IMPLY RESTRUCTURATION

The climate has irreversibly changed in recent decades, at the same time its determinants have deepened. Therefore, the best way to counter it is not limited to adaptation policies and mitigation, present in the official discourse, because although they are indispensable, have failed to curb emissions so as expected in most cases. For this reason is therefore necessary to revise these [proposed in the CMCNUCC (1998)] and elaborate alternative concepts in the fight against climate change:

1. MITIGATION. Attacking the roots of the climate crisis is not a question of more or less greenhouse gas emissions, although of course it is necessary to reduce them. It is more than that, a real shock (Klein, 2008), although undertaken by civil society, not from above; moreover, of course to stop predation. It is a prerequisite for embarking on the path towards an alternative model with low carbon (and ecological) footprint, but with greater capacity, and by environmental democracy condition; where every person has what is necessary and sufficient to living.

2. ADAPTATION. This point is dealing to addressing the

[1] Reduction of Deforestation and Degradation Plus Program.
[2] Clean Development Mechanism.

vulnerabilities. It is a long-term strategy to be effective and should be based in evolution as a priority; therefore, as understood in the background compatibility human economy regarding nature. Thus, it must be exercised preventive planning of cities; and made respecting the natural and cultural conditions, applying the rules necessary to achieve land management and, therefore, population. The solution required is not only adaptation to climate change like a consequence of the devastation of nature; rather, society must adapt to nature, stopping the destruction and initiating a new way of relating to it.
3. RESTRUCTURING. Despite the climate crisis, it involves removing the socio-economic, cultural and technological processes that lead to present disaster, which *tout court* focus on ways to make profit at all costs, destroying the Earth and Man. It is necessary therefore to guarantee and ensure social control and surveillance of mega corporations.

It includes several strategic lines in this direction (especially for developing countries):

1. A fair and proper relationship between population and the territory, which is a real national decentralization, and that results in reducing the ecological and carbon footprint; 2. Reconstruction of large cities (C40, 2013), through a network of green small and medium cities with low carbon footprint; 3. Decentralization of budget resources in agriculture to promote small and medium-sized units as well as employment and food sovereignty; 4. Promotion of science and technology view from the eco-social conditions of each country; and 5. Substitution based on starvation wages and technological back-wardness model, through a national agreement for the improvement of wages and productivity and strengthening the domestic market.
4. *PLANETARY COOLING*. It involves the application of longer-term measures. Especially how to properly manage the hydrological cycle, counteract acidification of the seas, increasing carbon sequestration; also, the extent and intensity of biomass production. Increasing the capacity of renewable natural resources and reducing the use of nonrenewable (Edwards, 2010); lessening the aggressiveness of cities and megacities (more green, less gray); driving the new agriculture aimed at reducing the use of petroleum and other fossil fuels, applying agro-ecological alternatives. Nevertheless cooling the planet means, at certain point of view, cooling the economic-political system (Latouche, 2008).

Therefore, the solution is more than energy transition, but take steps toward a deep restructuring of the economy, society and culture (among other changes). Since there we must also bear in mind that clean energy that is promoting, generate waste and does not eliminate the second law of thermodynamic; and many times is not socially appropriate (hydro, wind, nuclear, biofuels). The climate crisis should enable more rapid environmental transition, because, otherwise, would continue em-broidering only on secondary effects (atmospheric emissions); regardless of the foundations of today's world: the exploitation of Earth and Human being.

This whole thing means to reach a compatible development between society, economy and nature.

THE LESSONS OF CLIMATE CHANGE

Finally, some lessons resulting from global climate change are as follows:

1. The greenhouse world (Rifkin, 1993) is rooted largely in dependence on the use of fossil fuels (which are still the cheapest), because of a model of society based on in obtaining an enormous private profits and governments to achieve an intended, but unattainable, sustained economic growth. However, the ultimate explanation of global warming is that all decisions made by the few and the few beneficiaries living of many, increasingly impoverished (Acot, 2005).

So then, would be that part of the emissions of developing countries they should be counted as part of global companies (plus it is made by country). Thus, the laxity of the laws would be offset on the periphery.
2. International Agreements reached in this area, as commitments were only rhetoric and surely must of governments are not able to fulfill the considered goals.
3. This phenomenon is both a real opportunity to take action, focused on overcoming the predatory mode of appropriation of nature and economic-political model dominant.
4. To undertake the troubles mentioned and the reforms that are necessary, we must recognize the un-sustainability of the current relationship with nature (among humans) has come to corroborate that, beyond a point, the losses outweigh the desired gains.
5. Final Paradox: In spite of the cost of the adjustment (Piketty, 2014) mentioned derivative of climate change is the opportunity to move towards a new model of (sustainable) society (Edwards, 2010).

Conclusion

Current global policies do not address the economic model which is not sustainable because of the planetary and human predation (which that privileges profit over eco- social repair damage) as well as the corresponding mentality; that corresponds; where economic security is above human and planetary security.

The human causes of world-gases emissions are correctable (although they have irreversible effects) and go through the disintegration of the predator model, as well as the faster energy transition; thus, minimizing the social cost of the inevitable adjustment, but under areal democratic way (that means democratic sustainability).
Then, it would be useless then to the energy jump, if society continues to play an unnatural, anti-human and anti-democratic, still running mode.

Deeper changes are justified further by the fact that natural causes (independent of man) in global warming are also present, which means that the required changes are even more dramatic and persistent because if only a human issue could be more easily resolved, but not when it has disturbed the natural state of the Earth.

We must also note that the environmental crisis is not the result only of the application of inappropriate technology, entropy, the development model, mentality, etc.; but also, it is the result of human isolation.

Thus, only a fruitful universal dialogue by reaching clear agreements (Dyson, 1985) can lead to understanding the causes and give effective solutions to this human and planetary problem: equitably distributing the costs and economic, ecological and social benefits through global cooperation. This means that tackling climate change cannot be reduced only in terms to mitigate and adapt to it (which is as much as resigned to it, without considering the eco-social consequences).

Consequently, only a real economic and social restructuring (and certainly culture) may contribute to this local global problem solved, which is the most serious problem in the world in the present century (CMNUCC, 1998).

However, institutional solutions offered address this problem are presented in the context of (and political) economic monopoly, where the technology is not designed to apply to local conditions and according to the needs of the population, this entails huge private profits, albeit at the cost of huge negative externalities that society has to pay. This is unfair but it does not solve the problem worsens

Finally, after everything discussed above, it can be concluded that:

1. They are meager results of the fight against climate change to avoid the necessary restructuring of the economy and society.
2. Social inequalities are back: rich and poor growing even pollute differently.
3. Hence, it is necessary to subsidize new technologies, apply green taxes and ensure appropriate planning of the civil society.
4. It is therefore urgent to move towards the democratization of society (with a strong social sector).
5. The improvement of social welfare is essential for achieve required transit (which requires higher pay for access to new technologies).
6. It is imperative to build a new world and environmental culture.
7. As break with the free market dogma, because it is full of faults (irrationalities); it is rather its combination with social and state intervention.
8. International agreements because of universal dialogue are key to overcome this problem.
9. The collapse is almost inevitable and must be confronted and overcome it through social re-appropriation, which requires urban resilience (Holling, 1973; Bianchini, 2010; ICLEI, 2013) and rural (PECC, 2009: 7; Buttel et al., 1987); and involves the global / local development and citizen empowerment; both in the countryside and in the city.
10. With these changes would move more and lower than the mere energy conversion cost, since it is better to spend to avoid emissions to combat them once they are there.

Finally, human survival should be creative and go beyond just thinking about repeating what has already failed with inadequate social benefits (Mc Donough and Braungart, 2002). This requires both known and novel financial instruments, to actually access to a new era post fossilize and make effective the fight against climate change; but this needs tackling the economic and political inequalities (Piketty, 2014)) and the enormous concentration of power behind them.

Conflict of Interests

The author has not declared any conflict of interests.

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