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Common Goods, Socio- ecological Metabolism and the Common Future of Humanity: A North/South Analysis

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Introduction

The common goods, or that heritage which is essential for the collective life of humanity and which also supports the very existence of the planet's biological diversity, have in modern times become increasingly the object of appropriation and commercialization. The original accumulation of capital was the first step in dismantling the system of individual ownership based on labour and on the collective ownership of common goods, especially of the land. This led in its turn to private ownership of the means of production, and so to the possibility of buying up the labour of dispossessed peasants, thus establishing capitalist agriculture properly so called.

This original accumulation of capital goods became possible after the collective ownership of the land was dissolved, along with other common goods connected with it. Such dispossession was then established as a structural element in the current production system. It was in fact a double dispossession, both of common goods and of labour, whereas the latest is understood as the human form of mediating, regulating and controlling the metabolism between the human being and nature.

As Marx put it, the process of labour "is the universal condition for the metabolic interaction (*stoffwechsel*) between man and nature, the everlasting nature-imposed condition of human existence." (Karl Marx, *Capital*, Vol.1: 637-638). Because of the above, this (socio-ecological) metabolism has become more relevant as a dialectical and also analytical-conceptual tool, since it allows us to resolve the artificial – and mechanical – separation of nature and the human being which has been well established in the body of dominant knowledge in modern science, or 'normal' science as Kuhn understood it (1971).

Since then, this process of appropriation has modified and extended itself in time and in space, adjusting and renewing itself to adapt to whatever conditions might be necessary to prolong and deepen the capital accumulation process, thus resolving, at least temporarily, any systemic contradictions such as over-accumulation.¹ It is thus a process in which "the right of ownership changes in the course of accumulation into appropriation of other people's property" (Rosa Luxemburg, 2003: 432). Such appropriation is only made possible through the dispossession of others and, as Harvey points out (2003: 115) it is a permanent force in the historical geography of capital accumulation; a process that takes specific features not only within the nation-States but above all between central and peripheral nation-States.

These social-spatial relationships are not just spontaneous but are produced (within society) in obedience to the logic of furthering the accumulation of capital. Thus the territorial space is *ordered* in a functional manner, establishing practices, processes of organization and the planning of production, distribution and consumption. In the same way the relationships of

¹ For Harvey (2003: 116) it is clear that there is a 'continuous and persistent role of the predatory practices of 'primitive' and 'original' accumulation and hence he considers that it is not very appropriate to call 'primitive' or 'original' a process that still exists and continues to develop at the present time

specific and unequal powers become 'natural' and even 'legal', thus increasing the dispossession still further (and hence intensifying the tragedy of the commons).²

Up until now, neoliberal practice has been consolidated as "the" contemporary approach of appropriation of wealth and, in practice, of nature and labour, in a way that is now more aggressive and unequal than it has ever been in the history of humanity. This means that not only has the plunder of common goods been maintained and deepened and the exploitation of labour heightened, but closely associated with these developments there has been an enormous increase in the biophysical flows (or material-energy flows) in contemporary societies – though here too in a markedly unequal measure. In this process, *ad hoc* techno-scientific development has played a key role, influencing to a large extent not only the method, but also the rhythm, intensity and complexity of socio-ecological metabolic interactions, or *stoffwechsel*.

However, whereas this process has certainly in the short term contributed to mitigating the problem of over-accumulation, it has also shown up more clearly than ever the social and natural –relative– "limits" of the current system of production, its contradictions and potential implications which are far from behaving as linear processes. This is true, for example, for the case of environmental implications as well as for technological ones.

The result of all this is that the dynamic of capital accumulation in concrete territorial spaces is threatening the preservation of common goods, including the very viability of life – and not only human life. In other words, the effect of the present production system is increasingly and dramatically to endanger the expectations of future generations, diminishing the possibility of establishing the collective construction of the Common Good of Humanity in its multiple forms and methods.

It is precisely for this reason that territorial space is also beset by contradictions, arguments, conflicts and social responses, as are other forms of appropriation and its construction. In the process, the issue of socio-ecological metabolism is no small matter. On the contrary, it is hugely important in any efforts to build alternatives as it enables us to analyse labour (in its various forms), taking into account the material-energy flows required and the extent of its viability, both in time and space.

It is hardly necessary to point out that the act of production is an act of producing space and as such it is a historical category that is not given for the eternity because it is indeed a social construction (Santos, 1990: 135-137).³ The way the space is produced depends not

² It should be noted that international law and law in general have permanently blocked collective rights. At the same time, these laws have become instruments for the plundering and commercialization of common goods. Of course, the challenge is how to re-formulate law as a political instrument, first, as a formal (juridical) solution to social injustice and the violation of human rights – though always in association with social mobilization. And, second, how to prepare the ground through other forms of law for an eventual articulation of legal and regulatory principles that seek to protect and guarantee the common good of humanity – that is, short, medium and long term collective interests (which should replace the present situation in which only private, short-term interests are protected and guaranteed).

³ For Milton Santos, space is a combination of the representative forms of social relationship of past and present on the one hand, and on the other a structure represented by social relations that take place under our eyes and

only on immediate and direct economic activities, but also on future expectations. It follows that the space dimension is not neutral, since it serves social reproduction (Ibid: 156) wherever it takes place.

Socio-ecological metabolism and global change

Modern society is becoming ever more complex because it is taking resources from nature, many of which are finite, and at the same time is depositing large quantities of waste back into nature. This process is changing the ecosystems, and the very functioning of its biochemical cycles of the planet. However, in contrast with past civilizations, the scale and rapidity with which the current system of production is plundering resources and producing entropy (spent energy and materials) makes for a unique situation.

The effects of this dynamic are multiple, the global warming caused by human activities being one of the most visible symptoms. This is produced, above all, by the indiscriminate burning of fossil fuels. Thus, the quantity of carbon in the atmosphere, which has been constant in the last 10,000 years at about 280 parts per million (ppm) reached 360 ppm in 1998, 383 ppm in 2006 and 391 ppm at the beginning of 2011 (Heinberg, 2003; 32; co2now.org). This latest figure is already considered by the climate scientists to be 'dangerous territory' in the sense of potentially reaching a no-return point.⁴ The indicated means that from the pre-industrial era (1790) up until today, the concentrations of carbon dioxide have increased by slightly over 35 per cent, while those of methane almost 150 per cent and nitrous oxide nearly 20 per cent (IPCC-WGI, 2007:3).

The polarization in the individual (and national) contributions to the destruction of the environment is evident: 20 per cent of the world population living in the metropolitan countries has, in the past, generated 90 per cent of the greenhouse gases (Godrej, 2001:95).

Furthermore, the world ecological footprint, an indicator that calculates – on the basis of our present way of life – the territory needed both to produce the resources and energy being used up, and to assimilate the residues generated by humanity, shows that they have already surpassed those of Planet Earth by anything from 25 to 39 per cent, depending on the way it is calculated.⁵ Accordingly we need, in the best-case scenario, another quarter of a planet to maintain the consumption and wastage levels at the beginning of the 21st century. Most of this consumption is however attributed to metropolitan or central countries, since in the periphery a little less than half of the population does not even have access to the most basic 'blessings' of modernity (e.g. sufficient energy, above all electricity, and drinking water, not to mention sanitary and health services of quality, let alone telecommunications, among others).⁶ The data on the distribution of world wealth is in this context

that can be seen in its processes and functions (Santos, 1990: 138)

⁴ As was stated, for example, by James Hansen of NASA's Goddard Institute for Space Studies.

⁵ Estimates vary. For the Global Footprint Network, humanity had used (in net terms) half of the biocapacity of the planet by 1961 and 1.25 times by 2003 (Global Footprint Network, 2004). According to *Redefining Progress*, the biocapacity of the planet had been lowered, for the year 2005, by 39 per cent (Venetoulis and Talbert, 2005)

⁶ As an example: the energy consumption in the richest countries is 21 times per capita more than in the poor countries. Similarly, 85 per cent of the use and consumption of fresh water is allotted to only 12 per cent of the

revealing and consequently of great importance. In 2007, 20 per cent of the richest owned 82.7 per cent of the wealth, while 20 per cent of the poorest owned 1.4 per cent (and the penultimate 20 per cent only 1.9 per cent).

In this state of situation we should remind ourselves that the short to medium term impacts of greenhouse gases include: the contamination of vegetation; the infiltration of pollutants of aquifers and hence to the rest of the food chain; acid rain; various illnesses such as asthma, heart disorders, cancer, inflammation and allergies, etc. (Epstein and Selber, 2002: 35-42). The long term or 'indirect' impacts are essentially linked to the implications of global warming, a phenomenon that has been confirmed over the last three decades (see the reports of the International Panel on Climate Change –IPCC– on www.ipcc.ch) and which is believed to have many and complex implications, mainly around four key areas: 1) an increase of temperature, even of more than 3 degrees C; 2) the melting of the polar icecaps; and, as a consequence, 3) the rise in sea levels of over one metre, and 4) greater frequency of extreme meteorological events. Some of the impacts foreseen calculate a reduction in the accessibility of water resources (from 10 to 30 per cent in temperate latitudes and the humid tropics), accompanied among other things by loss in food production; the salinization of continental waters through the infiltration of seawater; an increase in the irreversible loss of species and the generalized erosion of many ecosystems; loss of land in the coastal areas due to the increase in sea levels, leading to the displacement of millions of people (the climate change migration); an increase in the risk of flooding in certain areas; a greater spread of particular infectious vectors, among others. And yet the expected costs and eventual impacts of climate change will be higher and/or more difficult to deal with in those countries whose contribution to greenhouse gas emissions has been very slight.

Since all these variables reinforce or feed into one another, at the same time producing results that are non-linear and therefore synergetic (although to a certain extent unpredictable), this whole ensemble of processes and implications has been called 'global change'. It involves a series of changes that are happening more or less simultaneously and are already affecting the planetary system (including, obviously, ourselves as part of it) in many and various ways, and often with unequal effects. It is the first change of such magnitude to be caused by human beings and was certainly beginning to become visible some time ago. This is what Leakey and Lewin (1997) have termed the Sixth Extinction.

The phenomenon is thus the result, to a large extent, of the kind of metabolism or *stoffwechsel*, that humanity has developed. One that is essentially determined by placing the accumulation of capital beyond any other socio-environmental considerations and which has led, among other things, to irrational, wasteful and destructive patterns and actions.

'Development' in the present system of production is thus understood as exclusively economic growth, leaving aside other considerations such as the social, environmental and cultural spheres which, as a consequence –and for other reasons as well– are all in a state

richest population in the world (Delgado, 2005: 25).

of crisis. Hence, it is properly to talk of a conjunction of multiple crises at the beginning of the 21st century.

The limited contemporary view of development is as something automatically and mechanically assumed to be good and desirable because it is seen as the lever that makes it possible to generate jobs and wealth. Whether through the medium of the market or, on occasion, through State mechanisms, in one way or the other wealth is socially distributed (how effectively this is done can be seen from the data quoted above on the distribution of wealth at the world level). Given such a view, widely assumed and disseminated by the ruling and governing classes (Domhoff, 1969), it is not surprising that most of the political agendas of the nations of the world are likely to be imbued with this mercantilist notion of development. As a consequence, all political objectives are linked to the promotion of economic growth. Evaluations of the 'well-being of a country' or of management by officials tend to have the same criteria. This even includes associating the quality of life with how much materials and energy are consumed - thus presupposing that consumption is everything, that only the utilitarian provides a logic and meaning to human life.

Hence, by introducing the 'environmental' variable, the 'natural', in such a context, is to find "the" formula whereby we can have continued growth while at the same time conserving the environment. This assumes, on the one hand, that while economic growth will lead to an increase in environmental impact or 'externalities' at the beginning, these will reach a maximum and will then decline (following the Kuznets environmental curve). On the other hand it is considered that such a trend for the environmental impact to diminish can accelerate *if* the economic surpluses resulting from growth are then partially used in green development and the conservation of the ecosystems.

The United Nations Conference on the Human Environment, which was held in Stockholm in 1972, was a forerunner of this economic-environmental perspective. It was seen as the first effort of the capitalist system to take measures to combat the world's ecological problems, which even then had become evident.

Later, in 1974, the idea of 'eco-development' was informally presented within the framework of the Cocoyoc Declaration. It questioned the nature and aim of development because, as it was argued: "[this] must not be the development of things but of the human being" (Cocoyoc Declaration, 1974). The Declaration, which was the result of a meeting of the United Nations Environment Programme (UNEP), included some valuable proposals,⁷ calling for the objective of economic development to be to improve living conditions among the poorest. However it was speedily adjusted to serve the logic of the system by the adop-

⁷ Among these was the need for what is now called the 'de-globalization' of the economy, giving more importance to the local; the need to break with economic dependency between rich and poor countries; the reorientation of scientific-technological agendas to solve environment problems, especially those related to energy; and a change of consumption patterns and strategies for the use of land. Among other, more questionable ones was the proposal to apply taxes on the use of global common goods as a point of departure for establishing a system of global taxes that would serve as a platform for transferring resources to assist the poor countries.

tion of a notion, to be called 'sustainable development', that enabled the dilution of any social component and the corresponding prevalent power relationships.

The concept first appeared in the Brundtland Report in 1984 where it was conceived as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." (Report of the World Commission on Environment and Development: Our Common Future, transmitted to the General Assembly as an Annex to document A/42/427 – Development and International Co-operation: Environment. Chapter 2) However, sustainable development made a formal and institutional commitment in "an integrated approach to policy- and decision-making in which environmental protection and long-term economic growth are seen not as incompatible but as complementary, indeed mutually dependent: solving environmental problems requires resources which only economic growth can provide, while economic growth will falter if human and natural resources are damaged by environmental degradation." (United Nations Commission on Sustainable Development in <http://www.un.org/esa/documents/ecosoc/cn17/1997/ecn171997-3.htm>).

Since then, the discourse has been more and more elaborated, with the Earth Summit at Rio serving as a milepost in the process. More recently there has been a return to a commitment to 'green' capitalism in the context of measures to be taken on climate change.

'Green capitalism', being at least three decades in construction, on the one hand defends economic growth as a precondition for 'sustainability' and, on the other, puts forward market mechanisms as the way to organize all 'adaptation' and 'mitigation' activities (i.e. tradable green certificates markets such as the carbon market, the water rights market, clean development mechanisms, REDD+ projects, etcetera). The point has even been reached when the global environmental crisis of the beginning of this century is actually being seen as an opportunity to consolidate new market niches for achieving economic surpluses and hence for business. Accordingly, the role of novel techno-science is seen as key to the eventual adoption of technological changes. It is even considered a change of concrete actors, but of course not of the system itself.

Thus we have seen, for example, timid support for the development and expansion of renewable energies, a niche which plays a limited role within the current world energy pattern but that is causing already, on one side, considerable tensions among inter-capitalist competitors in the case of wind⁸ and photovoltaic energies, and on the other hand, considerable criticism over agrofuels as an alternative clean energy and as a measure to fight climate change since it has been demonstrated that they deepen socio-environmental problems (at least for the case of the so called first generations) (see Delgado, 2009A; François, 2009; Giampietro and Mayumi, 2009).

⁸ The fight for the market in alternative energies is already evident, above all between the central countries and potential challengers like China, which is already an important producer of turbines and photoelectric cells at the global level and is beginning to develop its own technology in these fields. Thus we see the promotion of plans to subordinate the production of the peripheral countries in wind, solar and other technology to enterprises in the central countries. Hence a technological imperialism in these fields is being consolidated. For a view of the US interests, read Levi, Economy, O'Neil and Segal 2010: 111-121

The conventional discourse then tells us that with the development of these type of technologies, among others, we can extricate ourselves from the problem of global change, without ever questioning for a moment the biophysical patterns that support the present production-circulation-consumption system that enable surpluses to be made and hence, capital accumulation to be generated. Such a position ignores the 'Jevons paradox', which states that in the current system of production, an increase in the efficiency of the use of material-energy resources only generates an increase in demand, because efficiency brings with it an increase in economic expansion.

In this way, by assuming that the market alone can solve the environmental crisis, productivist logic ensures that the goal of ever increasing economic growth can remain unaffected. Thus capitalism can subscribe to the green charter and still not make any important structural changes. In other words, it can maintain accelerating exploitation and capital accumulation within a context of clearly 'uneven development' (Smith, 2008).

For Georgescu-Roegen (1971), 'sustainable development' is seen as merely 'balm', given that economic development necessarily and inevitably involves, to a greater or lesser extent, a transformative effect on the environment. In this sense the concept becomes an oxymoron, as Daly and Townsend (1993) have pointed out.

And, as it has already been stated, growth requires not only maintaining the level of exploitation but quantitatively and qualitatively increasing it, both in the labour force and in the use of natural resources (materials and energy). This in turn obliges capitalism to stimulate the growth of consumption patterns, both on the part of individuals and of the institutions that shape the system.

From all that has been said it is therefore clear that the 'natural limits' of any production system will come up against the fact that it is only a sub-system of the biosphere which makes its existence possible in terms of materials and energy. This means that the capitalist system of production cannot grow exponentially in a natural system that is finite, at least not without incurring heavy socio-environmental costs, many of which may well be irreversible.

This is the limitation that O'Connor describes as *the second contradiction of capitalism*, the first being the tendency of the rate of profit to decrease - even if this, in turn, forces the capitalist production system to generate counter mechanisms like a greater exploitation of labour and of nature, reduction of product lifetime, technological innovation, or warfare. According to O'Connor, "capitalist threats to the reproduction of production conditions [work, infrastructure, nature, etc.] are not only threats to profits and accumulation, but also to the viability of the social and natural environment as means of life and life itself" (1997:30). And notice, the first and second contradictions are synergetically linked. While the first is a factor of the heightening of the second, the second is, in principle and up to a certain point, the limiting factor of the first. This is why, as Bellamy-Foster observes (2009: 206), the second contradiction does not necessarily block the capacity of the system to generate profits and accumulate capital. In other words, it can achieve continuity within a context of destruction, even to the point of no return.

In this sense, the second contradiction of capitalism must not be understood as 'the' variable that will unquestionably block the capitalist production system insofar as it submits the system to the conditions of underproduction. The commitment to green capitalism shows the way and the forms that the system will take to preserve itself, strengthening itself even as it is completely eroding and destroying not only the common goods but the Common Good of Humanity, now and increasingly in the future. Therefore, the first contradiction of capitalism (and its neutralization) as well as the class antagonisms typical of the system still are the central elements limiting alternative projects, specially those that tend to less aggressive metabolic interactions (*stoffwechsel*) which aim at the common good. In that sense, taking nature's limits into account seems extremely relevant for the transition towards the common good and the constructing of it. Metabolism's characteristics, and the relative *limitations* of the present system, are thus key issues, mainly because it is necessary to know the departing point, meaning the dimensions and types of current biophysical flows.

Georgescu-Roegen (1971) described the economic process from such a viewpoint, looking at the economic process from a thermodynamics perspective and in particular from the law of entropy (the Second Law of Thermodynamics) which proves that there is a continual and irrevocable deterioration from free energy (or low entropy) to dependent energy (or high entropy). This led Georgescu-Roegen into noting that the material basis of life is therefore an entropic and hence finite process since we consume orderly or free energy and expel disordered or dependent energy. Something similar happens with materials, the difference being that they are to a large extent recyclable, although never completely so (of course the process requires elevated amounts of energy).

However, it is characteristic of the contemporary human being to use energy not only endosomatically (by using instruments that are part of each individual organism by birth) but also more and more using it exosomatically (by using even more complex machinery and tools). The capitalist economic system consists of an exponential transformation of low entropy into waste, and given that this transformation is irrevocable (because of the 1st Thermodynamic Law), the environment, in principle, establishes limits to the economic subsystem if it is to continue under known circumstances. Or, as Georgescu-Roegen put it (1996: 67), "if we abstract from the other causes that may sound the death knell of the human species, it is clear that natural resources represent the limitative factor as concerns the life span of that species. Man's existence is now irrevocably tied to the use of exosomatic instruments and hence to the use of natural resources." And he adds: "we need no elaborated argument to see that the maximum of life quantity requires the minimum rate of natural resource depletion [...] There can be no doubt about it: any use of the natural resources for the satisfaction of non-vital needs means a smaller quantity of life in the future." (Ibid.)

It can therefore be said that development, understood as merely economic growth, comes up against serious socio-environmental limits because in principle there is not enough of the planet to sustain an exponential production process that is based on patterns of spend-thrift consumption. In other words, the capacity load of the planet is being exceeded because nature is not growing at the same rate or rhythm as capitalism is doing and intends

to continue doing so. In fact, if the system is able to overcome its contradictions and ignores the biophysical dimensions of the economic process, eventually it will reach a point of no return - at least for life as we know it, including human life.

Growth, environment and the search for alternatives

The tension between economic growth and the environment has encouraged many debates and alternative proposals. There are positions that defend the environment as a 'cult'; those that advocate a slowing down of growth; and those that talk of eco-development, or even 'degrowth'.

While the cult of the environment is unreal, since, strictly speaking, it means changing our surroundings as little as possible and thus not using materials and energy, even to satisfy many of our basic needs; a mere slowing down of economic growth will only delay the inevitable socio-environment crisis that is associated with it.

The eco-development suffers instead from a serious conceptual problem, according to authors like Latouche (2008). This is because it is usually rooted in developmentalism, understood as economic growth for the sake of economic growth. However, it should be borne in mind that there are notions of 'eco-development' that are different from the proposal of green capitalism and that they even put forward the idea of 'degrowth', or an economy in dynamic equilibrium, i.e. with zero growth (Daly, 1992).

For example, the perspective of eco-development proposed by Ignacy Sachs (1981) is in general pro-active, and in certain aspects close to that of Daly or Latouche, even if –and here the latter author is right in saying this- from the political and practical viewpoint it is still linked, in the eyes of the non-experts, to the notion of a 'good', sustainable development that has more 'green' and 'social' content.

In spite of that, it is possible to argue, in Sachs's favour, that the debate over concepts is necessary. This would mean that if the concept of eco-development was to be made positive (so to speak) it would involve detaching it from the notion of capitalist development and building another, completely different vision of development –one that abandons developmentalism and has a strong and genuine socioecological metabolic awareness.

Sachs hits upon making use of a positive notion of development, exploring different aims for the development process, at the same time as emphasizing the need for the cultural contributions of the people. He is concerned, among other things, about the possibility of getting bogged down in the mistaken tendency to find homogeneous solutions, induced by what he calls "cultural imitation, uni-linear vision and the impoverishment of development" (Sachs, 1981:16). His idea is therefore to promote endogenous and pluralistic solutions based on autonomy in decision-making and self-confidence, as well as being more selective in connections with the outside world (Ibid.).

This argument, to a large extent, is in line with the 'degrowth' proposal of Latouche (2008:145), who calls for the 'decolonization of the imaginary' and the 'deconstruction of progress and progressivism'. In the same way, Daly talks of the need for 'moral growth' as being fundamental for implementing what he calls a zero growth economy, a process that requires, apart from good management, a debate on 'ultimate objectives' (Daly, 1992).

From his perspective, Sachs visualizes 'other form of development' which means improving the material and non-material conditions of people (Sachs, 1981:18). For him, this has to be supported by five pillars: to be endogenous and count on one's own forces; to take the logic of necessities as a point of departure; to concentrate on promoting the symbiosis between human societies and nature; and to be open to institutional change (Sachs, 1981: 17). It is a blueprint in which not only the global but above all the local is key, because, for Sachs, development cannot be achieved outside this dimension and, in his words, "eco-development cannot happen without the initiative and the engagement of the people's imagination to attain the social objectives and highlight the specific solutions that should be achieved, which brings us down, once again, to the local level" (Ibid: 18). Therefore, 'local eco-development', rural and/or urban, seems to be an obligatory point of departure.

As for Latouche, he advocates downgrading 'good-having' in order to advance 'good-living', so that for him the central problem is not in changing the patterns of value so much as starting to change values themselves and to start drawing the consequences for the concepts (Latouche, 2008:82). The society of 'degrowth', according to Latouche, involves limiting economic growth and therefore capital accumulation. However, it can only happen if there is a reduction in the patterns of spendthrift consumption, which would have a negative effect on surpluses, the rates of profit and capital accumulation. This should imply a biophysical 'degrowth', both in material and energy flows. Latouche however is not clear or consistent because at times he seems to refer simply to economic 'degrowth' as though it were equivalent to biophysical 'degrowth'.

Accordingly, biophysical degrowth or 'sustainable degrowth'⁹ has been defined in the following terms:

"an equitable down-scaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level, in the short and long term ... [is a tendency in which] certain social qualities, small/medium-scale economic activities and impoverished groups or regions may still selectively need to grow. [...Therefore] sustainable degrowth should be accounted at multiple levels." (Schneider et al, 2010:512).

Biophysical degrowth can only come about, not as a result of negative fluctuations in the economy such as crises or recessions that merely discourage consumption, but by establishing concrete limits and reductions, in absolute terms, in the use of materials and energy. Thus the concept of degrowth, according to Schneider et al., implies the need "to construct an alternative for a sustainable future" (Ibid.) -in other words, a genuine socio-environmental sustainability or of harmonious socio-ecological metabolism. It is therefore

⁹ I prefer to use the term 'biophysical degrowth' given the ambiguity in the meaning of sustainability (see foregoing paragraphs on this subject).

important not to strip the concept of its content, either political or social, since it must not be used to justify an authoritarian (and thus unequal) imposition of limits in an acute crisis. But neither should we think of it as a mere reduction in the flow of energy and materials. It should be a reduction that is socially just, based on a fairly distributed increase in the quality of life. That is to say, the biophysical reduction should not be made general, but should only affect spendthrift patterns of consumption, and not only the final consumption but of the whole system itself.

In these alternative modalities of production and of continuance of life, reducing consumption patterns therefore does not mean depriving people of basic necessities. It does mean limiting extravagance and consumption that is clearly unnecessary (at present stimulated, as already indicated above, by publicity and fashion, a deliberate reduction in the quality of goods in order to reduce their shelf life, destruction through warfare, etc.) (See Baran and Sweezy, 1966.)

The 'biophysical de-growth society', as it can be called, will therefore lead to a general reduction in consumption in the central or metropolitan countries and a temporary increase of consumption in the periphery, in order to satisfy, at least, the basic necessities of everyone. For this to happen it will be necessary to break existing ties and dependencies between the centre and the periphery, and at the same time seek viable ways of reconstructing territorial space in all its dimensions –including social, political and cultural ones. This reconstruction, both in the metropolitan and peripheral areas, must be seen above all in terms of the local and the regional, because this is where people live and can concretely construct a 'new geography'. Technology for a "biophysical de-growth society" would play of course an important role, and certainly it would be of a different kind and rationality.

Dispossession and transfer of the periphery's natural resources: Limits of the transition towards the Common Good of Humanity

At the outset of the 21st century, the tendency to maintain and even expand national economic projects that revolve around extractive activities, primarily 'enclave' exporters or those economies concentrated on exploiting natural resources with little (and irrelevant) or no productive endogenous linkages, is taking on new features and an even more ruthless dynamics. The bleeding of these (peripheral) regions has been going on since colonization up until the present and is indeed intensifying.

This is not only due to the growing rhythm in the extraction of natural resources that the world economy demands (especially certain countries), but also to the fact that, unlike in those years when import substitution was the economic model, Latin America – with the relative exception of Brazil and Argentina - is constantly losing its ability even to produce its own food. The neoliberal model in the region is enthusiastically embracing non-food crops (or ones that are marginal to the basic diet) and certain products clearly destined for export. The process has turned the region into a vast market for the surplus production of US

farmers and other 'partners' of world agribusiness, this being only possible thanks to the technological advances of the last century which are mostly based on high inputs of chemicals and fossil energy. Thus Mexico, for example, has become dependent on imported food (including maize and beans that are the basis of the Mexican diet) which had represented 10 per cent of the total before the signing of the North American Free Trade Agreement (NAFTA) and which rose to a little over 40 per cent at the end of the first decade of the 21st century. Colombia is also heavily dependent on imports for more than 50 per cent of its food, including almost all its wheat, lentils and barley, two-thirds of its maize and a quarter of its rice and beans. Chile and Venezuela have similar percentages of dependency, particularly in basic grains like wheat and maize, and some oleaginous products (<http://faostat.fao.org>).

In spite of the enormous agricultural potential of Argentina and Brazil, the expansion of monocultures of improved seeds and genetically modified organisms (GMOs) is creating a complicated and somewhat unfavourable situation for them, as it tends to homogenize most of their crops while increasing the environmental and social costs in the medium and long term. This is evidently the case for their soybean production, as well as for Brazilian sugarcane, which is concentrated on the production of agrofuels. However, these two countries are not the only ones with this monoculture model (also of soybean, sugarcane, as well as of pineapple, African palm, cellulose, among others): it is being spread, although perhaps so far with relatively less intensity, to other parts of Latin America.¹¹

The extractive nature of the enclave economy, clearly locates Latin America at the system's periphery, with no sufficient food in spite of its great natural and human wealth. It can thus be said that Latin America is subordinated, in varying degrees, to the interests and flows of metropolitan capital.

Marini (1973) gave clear warning of this, and since then there have been several decades in which the structural dependency of the region has grown, caused by that particular international division of labour typical of *sui generis* Latin American capitalism. He added: "...as the world market becomes more developed [...] international exploitation can more and more rely on reproducing economic relationships that perpetuate and increase the backwardness and the weakness of these nations." (Ibid: 32)

It is evident that the political sovereignty of the Latin American nations did not and do not lead automatically to economic independence. Political sociology, or the study of power relations, behaviour, interests and contradictions of the governing classes and local powers (i.e. oligarchy) in Latin America go a long way to explain this situation, which otherwise would not be possible (for the Mexican situation see: Delgado, 2009B). Of course it is also to notice the no less important interference of foreign interests and pressures from international organizations like the International Monetary Fund, the World Bank, the World Trade Organization or the Interamerican Development Bank, as well as agencies and other bodies

¹¹ The various examples are given in Emanuelli, Jonsén and Monsalve, 2009. For a critique of the dispossession of land in Latin America, see Grain, 2010a and 2010b, which advises on and monitors the land dispossession among other agrarian themes (<http://farmlandgrab.org>)

of the defence and security apparatuses of countries like the United States of America, assistance (and development aid) from various countries, including China, business representatives and their lobbies, etcetera (see: Saxe-Fernández and Delgado, 2004; Wallach and Woodall/Public Citizen, 2004; Toussaint, 2006; Toussaint and Millet, 2009; Ugarteche, 2010; Delgado and Romano, 2010).

From the socio-environmental viewpoint, extractive activities have a negative influence on peoples in the short, medium and long term. Acosta (2009) rightly warns that the economic model based on extraction is problematic, since the natural and human wealth of Latin America has distorted the structure and allocation of its economic resources, redistributing the national income regressively and concentrating national wealth in few hands, while causing widespread poverty. This situation has been responsible for recurrent economic crises, while it reinforces, as Acosta says, the '*rentier*' mentality, weakens already feeble institutions that are limited in scope, encourages corruption and leads to the deterioration of the environment (Ibid: 11).

Extractive economies are responsible for the production logic of peripheral countries like those of Latin America, which are being driven by external demand since they do not need an internal market and can function with diminishing numbers of wage labourers. This increases the destitution of the population, which contrasts markedly with the tremendous amount of their natural resources (Ibid: 29; read also: Marini, 1973). Summing up, says Acosta, "... it is as if this wealth is slipping through our fingers and ending up beyond our borders, feeding into the channels of international trade but without triggering a qualitative leap forward in national development" (Acosta, 2009: 15).

This situation can be explained by the fact that today, as in colonial times, the pillage of the periphery is continuing all the time (though with all the complexity and distinctive characteristics of each historical moment), as is also the firm control of the strategic means of production and key areas of the Latin American economies by foreign capital, although they leave some business, essentially in the service sector, to their 'minor partners' (regional monopolies) (See: Delgado, 2009B).

The role of Latin America as a strategic reserve of natural resources that is crucial for the world economy becomes clear when one analyses the economic and geopolitical imperialism of countries like the United States of America in the region, which is due, among other factors, to their increasing dependency on materials and energy. This is becoming more and more acute, especially since the second half of the 20th century, when scientific and technological progress made it possible to accelerate the production/ accumulation cycles and thus to transform nature at even more unsustainable rates. It is a situation in which the access, management and usufruct of natural resources are clearly the central aspects of dispute. Thus it is clearly useful and necessary to constantly monitor the region's political ecology, i.e. the study and diagnosis of the complexity of existing interests, power structures and conflicts around strategic natural resources for the functioning of the world economy – all this within a context of biophysical factors and specific environmental limits that if are infringe, degrade and even mortgage the future of the peoples and their natural surroundings.

The US financial flows into Latin America make this international division of labour and the role of the region highly visible. Thus, for 2009,¹² while the US invested, under the heading of chemicals, a total of 15,759 million dollars, out of this 11,596 million dollars were invested in Europe and only 1,898 million dollars in Latin America and 152 million dollars in Africa. Under machinery, for a total of 3,627 million dollars, 2,035 million dollars were invested in Europe. There was a similar tendency for electrical equipment, with a total of 1,316 million dollars, of which 738 million dollars were destined for Europe, 229 million dollars for Latin America and 3 million dollars for Africa. For professional and scientific services, the disparity between centre and periphery is again confirmed, with a total of 6,545 million dollars being invested, of which 3,887 million dollars went to Europe and only 171 million dollars to Latin America, 68 million dollars to Africa and 1,680 million dollars to Asia. In contrast, the total US investment in mining was 22,259 million dollars, the biggest share (10,795 million dollars) being allocated to Latin America, while Canada took 2,572 million dollars, Africa 5,733 million dollars and Asia 3,052 million dollars. Europe is recorded with negative investment under this heading: -576 million dollars.

From the kind of foreign companies operating in Latin America and the most important Latin American enterprises, one can also see the international division of labour in operation, especially the persistence of uneven and hence disadvantageous trade for the region. However nothing more clearly reveals it (apart from a few exceptions) than the extractivist, assembly-plant and strategically offshore nature of the Latin American economy.

According to data offered by *América Economía* (2010), out of the 500 biggest companies of Latin America, 25 per cent of their sales in 2009 were in the oil and gas sector, 7 per cent in the generation of electricity, 5 per cent in mining, 4 per cent in agribusiness and 2 per cent in cement and paper. This means that half of the income for Latin America came from natural resources and the rest from low technology sectors more linked with trade, telecommunications, drinks and processed food, and manufacturing assembly.

Meanwhile most of the equipment and machine tools, as well as oil and petrochemical products were provided by foreign industry, coming less or more from one country or another. The Mexican case is really shameful because, in spite of being an oil producing country, it imports some 40 per cent of the gasoline that it consumes.

It is generally known that, in addition to this uneven trade, Latin America is not only a strategic reserve of natural resources but it is also crucial for the realization of metropolitan surpluses, which is achieved through capital exports or what is known as foreign direct investment (FDI) but also through technology transfers. Meanwhile Latin America transfers its surpluses through paying down its external (and also internal) debts. So, while Latin American external debt cannot be paid off because it is based on a mechanism that seeks to expand and deepen the dependency of the region,¹³ the United States and other metro-

¹² All data relating to the aggregates provided by the US Department of Commerce under 'US Direct Investment Abroad: financial outflows without current cost adjustment, 2009'. This is available on www.bea.gov/international/xls/fin_09.xls

¹³ From 1985 to the beginning of 2004, the debt of Latin America rose from 672 thousand million dollars to 1,459 billion dollars (Toussaint, 2007: 163). In fact, if one looks at the annual net financial transfers (the

politan powers maintain large flows of capital with which they have speculated and profited on the leading activities of the Latin American nations, from oil and mining deposits to sea-ports and airports, roads, railways, etc.

The yields from the FDI alone are just as great. For example, the 60 largest non-financial corporations alone in Latin America –most of them foreign—¹⁴ generated, in consolidated sales in the region for 2007, some 424.862 million dollars. That is little less than four times the total FDI of that year, which was 113,157 million dollars (CEPAL, 2009: 26, 55, 56). This statistic shows the considerable effect of FDI on the realization of exported capital, and enables one to see more clearly the significance of the fact that Latin America and the Caribbean absorb 8 per cent of the world FDI, or a quarter of the world FDI destined for the countries of the periphery (Ibid.20).

The above figures indicate that both the FDI and the debt stimulate more and more extraction activities. While the FDI seeks to ensure the transfer of surpluses as quickly as possible, without considering social or environmental ‘externalities’, the external debt and its interests stimulate greater exploitation of the region’s own resources, i.e. the labour force and nature.

Hence the FDI and the debt are mechanisms that consolidate dependency and imperialism in Latin America.

Final Thoughts

The need to devise, debate and construct new paradigms of development is increasingly evident, meaning those that take history into account and are fundamentally critical, socio-environmentally more harmonious and fair, as well as promoting biophysical de-growth. This means, for the periphery, that it is vital to move away from extraction activities and to rethink seriously how to arrange and manage the territory. At all events, science, technology and industrialization, while important, should never be seen as ends in themselves, but as appropriate tools for building other possible kinds of development.

This is a challenge that requires inter-disciplinary reflection specific for each country and region in the world. Experiences can be and indeed should be shared, but concrete solutions will require much effort at the local level so as to implement activities that correspond to the specific reality of each case.

difference between payments to service the debt and the repatriation of profits for foreign multinationals, compared with the gross exogenous income from grants, loans and investments), the net transfer was negative for Latin America for almost all of the 1980s and 1990s, as well for the first decade of the millennium.

¹⁴ According to the statistics of CEPAL (2009: 56), only four corporations were Latin American and all the others were foreign. The United States accounted for 23, although the Europeans, if taken all together, came to 26. There were also three Japanese, two Korean, one from Singapore and one Anglo-Australian. The Latin American corporations were huge monopolies: América Móvil/Telmex of Mexico (telecommunications), Techint of Argentina (steel and metallurgy), the State-owned Petrobras of Brazil (oil), and Cencosud of Chile (supermarket chain).

It is thus important to stress that the current vision of 'sustainable development' or 'sustainability' have negative effects when they are used by ruling and governing classes to greenwash their action and speeches. However, these terms have a positive aspect in that they enable social actors, who were unable to dialogue and who had no terms of reference, to use the argument on what is 'sustainable' (or the defence of common goods) in creating discussion networks, alliances and agreements. These alliances and agreements should ideally be much more refined, for they should be based on constructing not only a much stronger social fabric, but also a process of cultural and conceptual decolonization that facilitates a broader vision of the socio-environmental issues as at the beginning of this century and the possible paths for moving towards the common good. It could therefore be said that the ecological crisis is more than any other issue relevant to the exploited classes, above all the poorest, as they are the first to be affected by the havoc being wrought on their immediate natural surroundings. Social struggles against dispossession and to defend the environment, both by people in the metropolitan areas and by those in the peripheral areas, constitute the social fabric of the genuine 'ecology of the poor'.¹⁵ For what is at stake is not only the right to a healthy environment but the very existence of these peoples, which is being threatened increasingly by accumulation through dispossession (Harvey, 2006). As for the rest, what could be called the 'ecology of the rich' or that of the ruling and governing classes, including a good part of the middle classes who have adapted themselves, it is mainly 'balm' or demagogy, only made possible thanks to prevailing class structures and power.

The construction of different but interlocking alternatives for other ways of making or building territorial space in all its complexity, must be socially and environmentally harmonious, fair and democratic. These should be collective processes which not only require a commitment to the Common Good (continuance of life), a great capacity to promote knowledge(s) dialogue, socio-political responsibility and a historical memory (of society and nature), but above all there should be acknowledgement by the actors that they are anti-systemic in as much as they seek to reproduce good quality living conditions for everyone, while also accepting the diversity of life among those who share the planet with us.

Thus the construction of 'other kinds of development' requires, from the beginning, raising the level of awareness, organization and cohesion of peoples in their various magnitudes and viable modalities.

At the heart of the present situation, as I have indicated, is that what is at stake is not only the eco-social viability of certain territorial spaces, but -for the first time in the history of humanity- the very frame of reference of life itself.

The struggle for the Common Good of Humanity thus involves the struggle for freedom, for liberty seen from the viewpoint of natural necessity. This means, in the words of Marx: "...that socialized man [...] govern the human metabolism with nature in a rational way,

¹⁵ Martinez-Alier has proposed the concept of the 'ecology of the poor' referring to the social movements of the periphery who are fighting for their natural environment, not as a result of a mere ecological consciousness, but because it is their only and very often last means of subsistence. See the impressive review of cases of the 'ecology of the poor' that have been documented by the author in: Martinez-Alier, 2002

bringing it under their own collective control rather than being dominated by it as a blind power; accomplishing it with the least expenditure of energy and in conditions most worthy and appropriate for their human nature.” (Karl Marx, *Capital*, Vol.3: 959.)

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