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## Material, social and theoretical aspects of Sustainable Development

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### Abstract

This paper explores some of the material, social and theoretical aspects of sustainable development. It starts from a critical scrutiny of some methodological and conceptual weaknesses or flaws of mainstream approaches. It also discusses the limitations of ecological reforms and of the efforts to create sustainability conditions under capitalism. **Based on a Marxist perspective, it proceeds to identify and briefly analyze some crucial aspects or preconditions for a truly sustainable development**, including externalities, the scale of production and growth limits, and the growing rift in the nature – society dialectical metabolism. **Particular emphasis is placed on the material and social conditions as well as the historical perspectives, extending beyond capitalism, for creating the preconditions of sustainable development.**

### 1. Introduction

The exacerbation of economic, ecological, and arguably of a more comprehensive socio-ecological crisis has recently led to a multifaceted and often heated debate concerning the causes of crisis and the preconditions of ‘sustainable development’. **The concept itself of ‘sustainable development’, which has dominated in mainstream approaches after the Brundtland Report (1987) and the Rio Summit (1992), has been largely framed according to a more general neoclassical approach and the requirements of the prevailing social relations of production (see WCED, 1987; UN, 2012 report; Söderbaum, 2012).** As a result, the idea itself and the content of sustainable development are hotly debated (see Lélé, 1991; Foster, 1995; Castro, 2004; Liodakis, 2010b). At the same time, it is evident that, despite a very extensive literature in the last two decades concerning sustainable development, a planetary ecological crisis and a more general socio-ecological crisis continue unabated, or are exacerbated even further. (pp. 1-2)

In an attempt to identify some missing points or misconceptions of mainstream approaches, which largely explain the ineffectiveness of mainstream policies towards a sustainable development, this paper will start by focusing on the theoretical approach and how we understand the economy, society, economic growth and sustainable development. **Starting**

**from the premises of a materialist Marxist approach, we could argue that, instead of a dialectical and historical conception of nature and social reality, the dominant theoretical approaches (mainstream) follow a series of unhistorical and arbitrary abstractions which do not allow an adequate understanding of ecological and social complexities, the underlying rich determinations of natural and social phenomena, and the dynamics of ecological and social co-evolution.** Some of these theoretical abstractions have, of course, specific historical and social roots. **The institution of private property, for example, which precedes capitalism, has played an important role in the separation and estrangement of humans from nature.** On this historical basis, the culmination and qualitative elevation of private property under capitalism, along with the capitalist need to treat nature as an ‘object’ and an exploitable resource, have largely contributed to a conception of nature as an external and immutable reality. As is well known, this historical process, in parallel with the generalization of commodity production and wage labour under capitalism, has gradually led to a dis-embeddedness, not only of society from nature, but also of the economy from society (see Adaman et al., 2003). Thus, instead of recognizing that nature and the ecosystem is the context and the material basis for all societies, and that the economy is inextricably related with society, the mainstream approaches consider nature, society and the economy as independent entities and theoretical categories. Moreover, these approaches consider the economy and the prevailing capitalist relations of production in an unhistorical manner, as an eternal reality. In the literature concerning sustainable development, economic growth (the economy) is arbitrarily and un-dialectically juxtaposed to ‘sustainable development’ (protection of the environment), while economic growth, social equality and environmental sustainability are often considered as the three (presumably independent) pillars of sustainable development (see UN, 2012 report, 6). (p. 2)

...**The significance of the prevailing capitalist mode of production (CMP) and its inherent characteristics for the degradation of the environment and the currently faced ecological crisis has been more specifically analyzed elsewhere (see Lioukakis, 2010a, 109-110; 2010b).** **The particular characteristics and the systemic responsibilities of the CMP include the role of private property in shaping the society-nature relation, the profit-maximizing goal of capitalism and hence the trend towards a maximum production of exchange values (commodities)** which implies a depletion of natural resources, the value form of labour and a valorization process ignoring the particular contribution of nature in the production of wealth, the contradictory (competitive) character of capital and the related trend towards increasing externalities, and the specific technology intentionally shaped to serve the goals of capital.

It should be pointed out more specifically that **the currently dominant CMP on a planetary level has important implications for a number of factors or processes, which may be considered as the most crucial preconditions of sustainability**, as well as for our understanding of these processes and the requirements of a truly sustainable development. These processes and relations concern both the relations or contradictions among people or social classes, and the relationship between society and nature. It will be the task of subsequent sections to more specifically analyze some of these processes and preconditions of sustainable development. (p. 3)

...Mainstream theory, for reasons already noted, commonly considers nature as an external and immutable material reality, and in this sense the abstract division between society and nature implies that the relations of society with nature are conceived as external relations. **Contrary to this Cartesian divide, Marxist scholars adopt a dialectical approach concerning the determination of the nature – society relation and largely recognize the possibility of producing nature** (see Smith, 1984; Castree, 1995; O'Connor, 1998). In this sense, the production of nature (of a 'second nature' or alternative natures) can constitute a strategy facilitating capital accumulation (see Smith, 2006). Rather than examining the impact of economic and social activities on nature as an external relation, as is the case with the mainstream, or considering the impact of capitalism on nature and the ecosystem, according to some radical or Marxist approaches, **it is therefore more appropriate to speak of capitalism as a historically specific ecology (see Moore, 2011).**

According to the same reasoning, the common distinction, in mainstream thinking but also in some Marxist analyses, between economic and ecological crises, or other forms of crisis, is partly misleading. Economic crisis is commonly considered as the drastic impairment of profitability and the conditions of reproduction of capital, while ecological crisis refers to the degradation or the disruption of the conditions concerning the sustainability of a particular ecological system. However, though it may be helpful to distinguish among these particular forms of crisis, as is more extensively argued elsewhere, **the common material and social underpinnings and the root causes of all these crises make it more pertinent to speak of an overall socio-ecological crisis facing contemporary world capitalism (Liodakis, forthcoming). This is an example concerning the organic relation of a part to the whole, specifically determined by capitalism. Arguably, unless we adequately understand this organic relation, no amount of technically advanced research on the conditions of sustainability will be sufficient to ensure a really sustainable development.** (p. 4)

#### ... 4. The significance of externalities for sustainable development

The mainstream (neoclassical) literature on externalities and 'market failure' recognizes several cases of divergence between the actual allocation of resources through the market and what can be considered as a socially optimal allocation. This divergence is largely attributed to negative or positive externalities, and policy makers have paid considerable efforts over the recent decades trying to rectify such market failures by internalizing the total cost of production in each

production line. After several decades, however, such attempts have proved rather ineffective, not only due to the class nature of the state, but also because these attempts and **the market failure metaphor itself misleadingly end up with a policy lock-in which 'deprives environmental policy of the dynamic adjustments necessary for achieving sustainability'** (Bromley, 2007, 678). In other words, **tinkering on market failures and the margins of capitalism will not be sufficient to create or restore conditions of a sustainable development.**

It can be more broadly accepted that externalities indirectly but significantly concern the relations among different producers as well as the relation to nature within a capitalist ecology. However, **ruling social forces and several categories of market advocates are reluctant to proceed to deep social reforms, including property regimes, or to consider other forms of economic and social coordination beyond the market mechanism. While they are keen to argue that only private property would ensure environmental care, in the case of extensive externalities which tend to impair the common (social and ecological) conditions of production and hence the forces and efficiency of production, they fail to recognize the lack of (or insufficient) care about these common conditions** (see Johnston, 2003). **Under such conditions, a common property regime and a collective management or action would probably increase social efficiency** (see Swaney, 1990). Remarkably, however, while some mainstream economists (see Schmitz, 1999) seem to recognize that collective efficiency may derive from (positive) external economies and conscious cooperation (joint action), they are trapped within methodological individualism and fail to see the implications of conscious collective action for social planning, which might raise efficiency and the potential of sustainable development.

Mainstream theory tends also to ignore **a considerable recent literature which asserts that common property regimes and collective action may offer better chances, compared to a private property regime and individualist capitalist action**, in establishing conditions of social equality and a long-run sustainable development (see Runge, 1986; Ostrom, 1990; Agrawal, 2001; O'Neill, 2001; Vatn, 2001; Burkett, 2006, 310–19). Thus, **mainstream theory remains blind to the advantages of common property and common (or**

## **communal) production over private property and competitive capitalist production.** (p.5)

...Neoclassical economists often tend to overoptimistically ignore natural limits, expecting that technological developments, a substitution of important natural resources, and perhaps some 'greening' of capitalism will be sufficient to cope with any problems of environmental degradation. On the other hand, several researchers following **a neo-Malthusian approach, like most mainstream analysts, consider nature as an external unchangeable factor**. Assuming that natural resources are fixed, they interpret natural limits in an absolute manner, while usually blaming overpopulation for ecological crisis. (p.6)

... Consequently, **they submit theoretical proposals associated with a 'steady state economy' and de-growth or zero-growth policy for tackling the severe ecological crisis on a planetary level (see Daly, 1996; Latouche, 2007; Jackson, 2009). What is missed in this case, however, is that growth is an inherent tendency of the CMP. Capitalism is a grow-or-die system. As pointed out in the relevant literature, capitalism without growth cannot be sustained and there are hardly any chances that such policy proposals can be accepted and implemented (see Fotopoulos, 2007; Lebowitz, 2010; R. Smith, 2010).**

... **What needs to be challenged, therefore, is not merely economic growth, but rather capitalism** as a system regularly generating an unlimited and often destructive growth for the two fundamental sources of all wealth, human labour and nature.

## **6. The significance of metabolic rift for a Marxist approach**

As is familiar, **Marx's fruitful insight led him to depict the relation between nature and society as a metabolic relation increasingly disrupted by the development of capitalism, both in agriculture and industry** (see Marx, 1967 I, 505; 1967 III, 813; Burkett, 2006, 299). ***This insight has served as the basis for a considerable recent literature concerning this growing metabolic rift and its implications for a sustainable and ecologically compatible development*** (Foster, 1999; 2000a; Moore, 2000; Rudy, 2001; Clark and York, 2008; Foster et al., 2010).

For Marx, the nature – society metabolic rift was largely due to the increasing disruption of the soil-humans-soil recycling of the soil nutrients that ensure the fecundity of agricultural land. For him, but also for a number of other 19th century researches, including H. Carey, J. Johnston and J. von Liebig, this metabolic disruption (rift) was mainly the result of a disintegration of agricultural production, a growing social division of labour and separation of industrial production from agriculture, a growing urbanization and polarization of the city-country divide, and a rapid development of long-distance international trade. **This rift had important and multifaceted effects as it tended to a social and environmental (ecological) degradation both in the countryside and in the growing urban centres.** The declining fertility of agricultural land, due to an over-cultivation and the disruption in the recycling of soil nutrients, was initially replenished by various additives (guano or bones) and later by the use of chemical fertilizers. However, the rapid expansion in the use of chemical fertilizers after the latter part of 19th century had considerable negative implications as it increased the cost of production and led to a rising soil pollution and water contamination, all the more so as the effectiveness of fertilization gradually decreased (see also Foster, 2000b; 2002). (p. 7)

**In the course of the 20th century, the rapid growth of the chemical industry and the even more extensive use of chemical fertilizers and other agro-chemicals had an even greater impact on the degradation of land and the ecosystem.** At the same time the increasing specialization of agricultural production, the dislocation and separation of horticultural from stock production, the rapid urbanization and development of world trade led the society – nature metabolic rift to explosive dimensions, with detrimental effects for the ecosystem and the quality of life. **Thus, apart from severing the relationship of humans with their ecological environment, the rapid ecological degradation implies further an increasing cost of production which fuels economic crisis and this in turn leads to an exacerbation of a more general socioecological crisis.** (pp. 7-8)

The recent reinterpretation of **the theory of metabolic rift** has seen this rift, more specifically, in two ways. The *first* focuses more narrowly on the **disruption of the nutrient cycle and the resulting degradation of soil fertility or the socio-ecological effects of this process.** The *second broader conception* of the metabolic rift is used to ‘describe **the complex, dynamic, interdependent set of needs and relations brought into being and constantly reproduced in alienated form under capitalism**’ (Foster, 2000a, 158). As is also stressed, ‘This second meaning of metabolism goes beyond the physical laws of nutrient exchanges and addresses **the transformation in labor relations and property**

**tenure that must accompany ecological changes if long-term sustainability is to result'** (Clausen, 2007, 47).

... A number of researchers have also utilized the metabolic rift concept to explore contemporary ecological problems or investigated **the necessary policies and the required transformations beyond capitalism that would contribute to a healing or overcoming of the exacerbated metabolic rift brought about under current capitalist conditions** (see Clausen, 2007; McLaughlin and Clow, 2007; Wallis, 2008; Wittman, 2009). (p.8)

... Examining the ecological implications of modern agriculture, **Marx was led to the conclusion that 'a rational agriculture is incompatible with the capitalist system...and needs either the hand of the small farmer living by his own labour or the control of associated producers'** (Marx, 1967 III, 121). As he further asserted, it will be only within a communal context that the associated producers will become capable of 'rationally regulating their interchange with Nature... achieving this with the least expenditure of energy and under conditions most favourable to, and worthy of, their human nature' (Marx, 1967 III, 820).

**The task for the present and future generations, after the collapse of what was erroneously conceived as 'actually existing socialism', is to specify under post-revolutionary conditions the institutional configuration of the required land ownership**

**and tenure regime, and the particular organization and scale of production which would allow that rational and sustainable interchange with the rest of nature.**

#### 7. On the policies and preconditions of a truly sustainable development.

... As already discussed, however, **policies to internalize cost and tinker with market failures or de-growth policies cannot be adequately effective in establishing conditions of sustainable development within capitalism.**

Markets themselves, one of the main culprits of environmental degradation and crisis, cannot be credibly proposed as a cure for the ecological problem (see Perelman, 2003). Ecological modernization has also been proposed in recent decades as a particular theoretical and policy approach aiming at an ecological restructuring and reform, or a “green” redevelopment of capitalism (see Hajer, 1995; Mol and Spaargaren, 2000). As pointed out in the relevant critical literature, however, **this attempt towards a ‘green’ redevelopment of capitalism is found to be rather inadequate on both theoretical and empirical grounds** (see Clark and York, 2005; Wallis, 2008; Næss and Høyer, 2009). (p.9)

... **Although technological transformations may play a role in alleviating or resolving some environmental problems, it should be clear that we cannot possibly substitute technological means to essentially resolve what in fact constitutes a social problem. Technology itself, as it is specifically shaped under capitalism, is in fact part of the problem and cannot constitute the means of its resolution.** Even if a particular technology could, under different conditions, economize on natural resources and energy, under capitalist conditions it turns out as a vehicle for a massive depletion of resources and a rapid degradation of the environment. This is asserted in a number of cases associated with the so-called ‘Jevon’s paradox’ (see Foster, 2000b).



Searching on an institutional level to achieve sustainable development, mainstream researches and international Organizations often urge for a strengthening of institutional governance. It is more specifically argued that ‘we need to build an effective framework of institutions and decision-making processes at the local, national, regional and global levels’ (UN, 1012 report, 7). In this case, however, as in the literature more generally concerning (global) environmental governance, the specificity of the relevant governance is not sufficiently clarified. In other words, it is not clearly specified as to what end and for whom this governance should develop. Such an abstract analysis, ignoring the specific class structure and the immanent features of existing capitalism, as well as the class-shaped process of knowledge formation (see Bonds, 2010), is largely misleading insofar as it fails to identify the real conflicts and the underlying motive forces in the (global) development of production, international institutions, and the determination of environmental policies. Taking a materialist class-based approach, we can conceive of the non-neutral (class) character of the state and its role in promoting capitalist accumulation, and by extension the nonneutral character of international Organizations, which are not mere representations of the global community benevolently promoting the global good or conditions of global sustainability in particular. The specific constitution and operation of international Organizations speaks clearly to the particular practices and the policies promoted, aiming overwhelmingly at the maximum and most profitable accumulation of capital. As indicated in the relevant critical literature, these policies recently include processes of land grabbing and control, biodiversity conservation and exploitation, and natural resource protection and enclosure leading to an expanding and deepening process of primitive accumulation (see McCarthy, 2004; Kelly, 2011; Corson and MacDonald, 2012). And as it should be clear, these policies and practices, rather than ensuring the conditions of social and environmental sustainability, are in fact contributing to a further environmental degradation and socio-ecological crisis.

**An alternative social and institutional structure would require**, not merely another top-down model of capitalism or another relevant model of global governance, but rather **a bottom-up revolutionary reshaping of society, starting from the local and extending to the global level.** As various researchers have underscored (see Shiva, 2005; O’Neill, 2007; Söderbaum, 2012) and the evidence available confirms, democracy and economic equity are absolutely crucial for the

**achievement of sustainable development**. As argued throughout this paper, however, **due to the essential features of capitalism, it is impossible to have reforms of capitalism adequate to the task of creating conditions of social and ecological sustainability**, not to speak of a truly sustainable human development (see Marx, 1967 III, 250; Burkett, 1999, 206- 207; 2005b). (p. 10)

... If we are to seriously search for the establishment of sustainability conditions, **we should clearly reject, on both theoretical and ideological grounds, the monopoly of dominant neoclassical economics** and the attitude or practice of ‘business as usual’ (see Söderbaum, 2012). But, as argued, even ecological modernization and apparently radical changes within capitalism will not be adequate.

**...On the other hand, despite the collapse of ‘20th century socialism’ and the relevant defame of communism, there are good reasons to believe that the theoretical and socio-ecological perspective offered by *Marx’s work and the work of others in the Marxist tradition* (see Burkett, 1999; 2006; Foster, 2000a; Chattopadhyay, 2010) is our *best and still largely unexplored choice*.**

As argued elsewhere, **the conditions of a social and ecological sustainability can be seriously searched for only within a communist perspective**

**(Liodakis, forthcoming).** There is, however, an enormous amount of theoretical and ideological work to be done, as well as social and class struggle, before we can hopefully proceed in this direction. As follows from our analysis in this paper, in the transformation process towards communism, common property regimes can be developed and tested at various levels, while social struggle and experimentation will contribute to a crystallization of socially and ecologically more rational institutions. **Common property and collective action, along with a relevant institutional configuration, will most likely promote cooperative interdependence, capture any external effects and increase social efficiency, thus creating the most crucial conditions for a sustainable development** and co-evolution with nature. (p.11)