

Growth Economy and Its Ecological Impacts upon China: A Red-green Perspective

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Abstract: While identifying the emerging features of China's economy as a growth economy, this article argues that the real ecological threat is the increasing dependence of Chinese economy and society upon economic growth, and that building a socialist ecological civilisation might constitute a greener and more fruitful political ecology to restrain or reverse this tendency. As a main conclusion, China stands at a crucial crossroad: not very much in terms of the stages of its economic growth, but whether or not it can move forward to a green future.

Key words: Growth economy, ecological impacts, China, red-green, environmental politics

Partly because of the complexity of reality, various approaches can be applied to explore and frame the relationship between the on-going economic modernisation process in China and its ecological outcomes. Based upon a red-green or eco-socialist perspective, this article will first conceptualise the nature of China's economy of today and its relationship to the ecological deterioration, then turn to analyse the evolution of dominant political ecology responding to the environmental problems, and lastly conclude with judging to what extent an alternative is necessary and/or possible.

The nature of China's economy of today and its ecological outcomes

Let us start with making a terminological distinction between these two terms: growing economy and growth economy.^[1] A growing economy refers to an economy which maybe characterized by a rapid economic growth but only on a certain stage of its development, while a growth economy is a growth-oriented or growth-dependent economy. Therefore, to distinguish these two different types of economy, the following three questions can be raised.

1) What is the fundamental purpose of economic growth? The guiding principle for a growing economy is to meet the basic needs of people, such as food, clothing, housing, travel, and so on, while a growth economy is subject to the 'maximum profit' law of capital.

^[2] In other words, what a growing economy really cares about is the survival or wellbeing of human being while a growth economy's objective is the economy's growth itself or the proliferation of capital. In practice it is not easy to draw a clear-cut line of division between a growing, people-oriented, economy and a growth economy, but we can reasonably describe a growing economy as one aiming at the satisfaction of the basic needs of its people

and those non-basic needs which are economically and ecologically sustainable, in contrast to a growth economy whose aim is maximisation of growth either for profit and capital accumulation or for the development of productive forces per se.

2) Is economic growth socially controlled? To a large extent this question can be reshaped as this: between societal regulation and economic growth which enjoys the priority? If the answer is societal regulation, then we can call an economy a growing economy, otherwise, a growth economy. In other words, a growing economy is a socially meaningful or controllable economy, while a growth economy is not. A measurement difficulty probably exists too, namely, by what standard we can claim that an economy is already moving beyond the limit of social control. However, we can safely say that an economy is moving beyond the limit of social control if the answers to the fundamental questions of any scarcity economy, i.e. *what* to produce, *how* to produce it and *for whom* are given by the market forces.

3) Is economic growth still reversible? One of the key contrasts between a growing economy and a growth economy is whether economic growth is a temporary stage or instead a permanent phenomenon. In a growing economy, growth is just a necessary, and thus temporary, stage in a long-term development that will lead to the satisfaction of the needs of its citizens. From a long-term perspective, the real function of a growing economy is to prepare for its transformation into a new type of economy, in which economic growth is no longer a major feature. Quite the contrary, a growth economy is growth-oriented or growth-dependent, and therefore low- or zero economic growth for such an economy is undesirable or even unimaginable.

Basing upon the above analysis, we can attempt to conceptualise the nature of China's economy of today. A key question is that, is the Chinese economy today still a growing economy after almost thirty years' growth with an annual growth rate around 10 percent? If restricted to economic figures, the answer would be a quite easy one. As many prominent economists—both from China and the West—argue, an economic growth rate around 10 percent in China will last at least for the decade to come.^[3] However, if measuring with the indicators which are laid above, we have to conclude that Chinese economy is undoubtedly gaining some features of a growth economy.

As table 1 shows, on the one hand, though there is an observable long-term trend of decline, an economic growth rate of higher than 9.5 percent in China has been maintaining for three decades, and this economic growth rate will probably hold in the near future; on the other hand, what accompanies such a high-speed economic growth are the even higher growth rate of total investment in fixed assets and government expenditure. For instance, the corresponding figures during the period of 1990-2005 are 9.7:20.8:16.8. Very different explanations can be made for this data, but it seems that there is an undeniable connection between the high-speed economic growth and the even higher growth of capital investment.

Table 1:

Some basic indicators on national economic development of China (1978~2005)

	Total				Average Growth Rate(%)		
	1978	1989	1997	2005	1979~2005	1990~2005	1998~2005
GDP(100 million Yuan)	3645	17001	77653	183956	9.6	9.7	8.9
Total Investment in Fixed Assets (100 million Yuan)	--	4410	24941	88774	--	20.8	14.6
Government Expenditures (100 million Yuan)	1122	2824	9234	33930	13.5	16.8	17.7
Total Energy Consumption (10 000 tons of SCE)	57144	96934	137798	223319	5.2	5.4	6.2
Grain(100 million tons)	30477	40755	49417	48402	1.7	1.1	-0.3
Coal(100 million tons)	6.18	10.54	13.73	22.05	4.8	4.7	6.1
Crude Oil(10 000 tons)	10405	13764	16074	18135	2.1	1.7	1.5
Natural Gas (100 million cu.m)	137	151	227	509	5.0	7.9	10.6
Rolled Steel (10 000 tons)	2208	4859	9979	37771	11.1	13.7	18.1
Cement(10 000 tons)	6524	21029	51174	106885	10.9	10.7	9.6

Resources:

State Statistics Agency, 'Principal aggregate indicators on national economic and social development and growth rates',

<http://www.stats.gov.cn/tjsj/ndsj/2006/html/L1201e.htm>, accessed on 18 March 2008.

It is true that there are still some discernable differences between today's economy of China and that of Western countries, such as the GDP per capita, the disposal revenue per capita, warm gases emission per capita and so on. As far as the commonality of growth economy is concerned, however, China appears to be walking on the same track as the Western countries rather than offer an alternative. As Mr. Geping Qu—the former head of State Environmental Protection Agency (SEPA)—said in 2005, 'the fundamental reason why economic indicators can be easily achieved every year while environmental protection indicators can not is that economic development is still dominated by the conventional model of development characterized as "high investment, high consumption, high pollution", and the decisions for many large-scale developing projects are made through

unscientific and undemocratic procedures'.^[4]

With recognising the emerging features of China's economy of today as a growth economy, we can have a more comprehensive understanding of its ecological impacts. The real challenge for the future of China's ecology is not that to what extent the environment is now being polluted or contaminated, but the increasing dependence of Chinese economy and society upon economic growth. And as Saral Sarkar has demonstrated^[5], without the exploitation and consumption of natural resources any real economic growth is impossible, and that will necessarily to some extent bring about environmental pollution or ecological damage, no matter what kind of high and/or clean technology are employed. In other words, environmental/ecological quality in an economically growing society like today's China might be improved in certain areas (big cities, for example), or in terms of certain measuring indicators, but it is illogical to expect that a society based upon the growth economy can eliminate environmental problem—as we all know that the Western nations seemingly achieve the both through transferring much of their dirty economic sectors or even the poisonous wastes to the developing countries.

Indeed, table 2 offers us an ideal case in this regard. On the one hand, key environmental indicators such as Industrial Waste Air Emission, Industrial Solid Wastes Produced, and Waste Water Discharge suggest that natural environment in China are facing ever stronger pressure from the high economic growth—the annual outputs of them have respectively increased 2.4, 2.3, and 1.5 times in the past three decades. A logical reasoning from these figures is that the urban and rural environment in China as a whole is still under a very serious situation and there will be a long way to go for a substantial change or 'turning point'.^[6] For instance, of the ten or thirty dirtiest cities in the world in 2007, two (Linfen and Tianying) or six (together with Wanshan, Huaxi, Lanzhou and Urumuqi) are located in China.^[7] On the other hand, if taking some selective variables including Soot Emission, Pollution Accidents, and Forest Coverage, one probably draws a much brighter picture—all of them at least show a trend of favourable turn.

Table 2:
Some Basic Statistics on Environmental Protection of China (1991~2006)

	1991	1996	2001	2005
Industrial Waste Air Emission (100 million cu.m)	113000	--	160863	268988
Sulphur Dioxide Emission (10 000 tons)	1844	1946	1947	2549
Soot Emission(10 00 tons)	1615	1751	1070	1183
Industrial Solid Wastes Produced (10 000 tons)	59000	66000	88840	134449
Pollution Accidents(times)	3038	2199	1842	1406
Investment in the Treatment of Environmental Pollution(100 million Yuan)	111	42*	1107	2388
Urban Environmental Noise(db[A])	55	56.8	47.2~65.8	47~62.7

Water Use(100 million cu.m)	--	--	5567.4	5633
Waste Water Discharge(100 million tons)	354	400*	433	525
Big-seven Rivers Water Quality	45% (I~II)	32% (I~II)	30% (I~III)	46% (I~III)
Forest Coverage(%)	13.4	13.9	16.6	18.2

Resources:

The SEPA, see <http://www.zhb.gov.cn/plan/zkgb>; The SSA, 'Basic statistics on environmental protection', <http://www.stats.gov.cn/tjsj/ndsj/2006/html/L1201e.htm>, accessed on 18 March 2008.

* Estimated figures.

Major political ecologies responding to environmental problems

Generally speaking, over the past three decades three major political ecologies are proposed or formulated and successively dominate the political thinking of China to respond to environmental problems. They are *environmental protection national policy*, sustainable development strategy (principle), and *scientific concept of development* (ecological modernisation).^[8]

1) Environmental protection national policy (1978-1991)

For a quite long time after the foundation of the People's Republic of China (PRC) in 1949, environmental pollution was not commonly recognised as a problem of socialist regime, and China's participation in the Stockholm Conference on Human Environment in 1972 was to a large extent owing to the political insight of former premier Enlai Zhou. It is the Reform and Openness Policy—announcing that the Communist Party of China (CPC) shifts its political guideline from class struggle to economic construction—introduced in 1978 that reshaped the political thinking of both the political elites and the public regarding environmental problems very quickly. As a result environmental protection was adopted by the Chinese government as one of the two key national policies—together with family planning—in 1983.

With the impetus originating from this policy, a national legal and administrative system for environmental protection was established over the 1980s. Of the former aspect the most significant achievement is the revised *Environmental Protection Law* passed by the National People's Congress (NPC) in 1989, and in the latter the national administration was enhanced from the National Environmental Protection Bureau (NEPB) affiliated to the Ministry for City and Country Construction and Environmental Protection to National Environmental Protection Agency (NEPA) directly responsible to the State Council in 1988.

The core idea of *environmental protection national policy*, however, is that 'economic modernization enjoys the priority' in terms of the relation between economic growth and environmental protection with a basic belief that the goal for environmental protection can

be achieved without any painful sacrifice of economic growth. With the economic system reform transferring from the highly-centralised planning system to a market-oriented system, Chinese economy entered into a decades-long period of high-speed growth characterised by the transformation of state-owned enterprises and the proliferation of country- and town-invested business. Along with the strong motivation for individual wealth inherent in market economy, the unequal development among different provinces, regions and counties soon constituted another impetus for economic competition. As a result, as far as environmental protection is concerned, a national policy is very difficult to be worked out and/or carried out. In a retrospective perspective, a reasonable explanation or defense for the dominance of this political ecology is that economic modernisation process at that time was only at its stage of initiation, and accordingly, environmental pollution and ecological damage resulting from industrialisation and urbanisation are relatively insensible. Moreover, compared with the severe poverty problem throughout China then, certain negative environmental outcomes from economic growth seem to be bearable and/or forgivable.

2) Sustainable development strategy (1992-2001)

The concept of sustainable development was imported to China with the publication of the UN Commission Report on Environment and Development—*Our Common Future*—in 1987^[9], which offered a good example of the impacts of international environmental discourses dominated by the advanced West upon the developing countries including China. This new strategy or principle for dealing with environmental problems was adopted by the Chinese government when preparing for and participating in the Rio Summit on Environment and Development in 1992, and soon received a very high popularity and public support. Throughout the 1990s, sustainable development enjoyed a very intensive media coverage and academic attention.^[10]

Within the conceptual framework of sustainable development, quite a lot of achievements were made in China. To implement the international treaties on global environmental issues such as decreasing warm gas emission and protecting biological diversity, China formulated a series of new national policies and action strategies centering upon the *China Agenda for the 21st Century*. In 1996, Chinese government issued its first white paper on environmental protection to summarise the major progresses and challenges over the past decade, stressing that China will determinately stick to the strategy of sustainable development. Two years later, the NEPA was elevated to the State Environmental Protection Agency (SEPA) with ministerial status and more than 160 000 employees. More significantly, from my point of view, another outcome of choosing and propagating such a national discourse or political ecology is the ecological education. There is an undeniable gap between the green fantasies and the ever deteriorating reality, and everybody can see and feel it. Thus a question even the common people may put to themselves is that do we really move towards a sustainable future in a sustainable way?

The key idea of sustainable development, however, is the compatibility of environment and development—economic goals can be achieved in an environment-friendly way. Therefore, at best it can introduce a new dimension of environment into economic development, and at worst it might degenerate into an approach about how to make economic growth maintainable. In other words, the greenest version of sustainable development, namely, ‘ecological sustainability enjoys the priority’, can only be raised and recognized in rare

cases, especially in the arena of international environmental politics.^[11] Given the Chinese context of 1990s—‘development is the top priority’ (*fa zhan shi ying dao li*), sustainable development was defined and formulated to a large extent in the model of ‘making the economic growth environment-friendly’. Such a formula of sustainable development, at least in theory, can promote and press for more attention to the environment from all the economic projects. In practice, however, without proper political, social and financial mechanisms, economic growth achieved under the guidance of such a light-green version of sustainable development is not necessarily sustainable in an ecological sense. This is probably the reason, to my understanding, why environmental situation in China even became worse during an era of implementing a national strategy of sustainable development.^[12] A lot of factors can be raised to explain why China was unable to accept or practice a greener version of sustainable development, but it seems quite clear that a weak version of sustainable development can not offer great help to curb, let alone eliminate, environmental problems.

3) Scientific concept of development/ecological modernisation (2002-)

The Scientific concept of development represents another attempt of the Chinese political leaders to re-conceptualise the relationship of economic development and environmental protection when the economic modernisation process in China seems to enter into its medium-and-late stage. This term was first put forward by the CPC’s secretary-general Jintao Hu in 2004, but it can reasonably go back to the CPC’s 16th Convention in 2002, on which the CPC called for a comprehensive construction of a well-being society. The new bases for this political ecology include at least two considerations. On the one hand, Chinese economy has been growing up to the third largest economy of the world, but its competitiveness is still relatively low. And it is commonly believed that without a strong competitive Chinese economy, there will be not a really powerful China. On the other hand, as far as natural resources provision and ecological environment support are concerned, the current high rate of economic growth is un-maintainable and unsustainable. Thus, a rational conclusion is that, in order to achieve a highly competitive and long-term maintainable economic growth, China has to make more efforts to carry out a systematic transformation of development, namely, “scientific development”. According to this theory, the main features of scientific development include quality, competitiveness, and environment-friendliness, or in one word, it is a ‘both good and efficient development’.^[13]

In some senses, *scientific concept of development* is an improved version of sustainable development. It more willingly recognises the un-scientificness and un-sustainability of conventional model of economic development—achieving high rate of economic growth at the same high cost of natural environment, and stresses the crucial importance of environmental and ecological consideration in economic development, even for the growth rate itself. More significantly, championed by the CPC’s most authoritative leader, this national policy can be expected with a more effective implementation, at least as far as the media coverage and academic research are concerned. In other words, *scientific concept of development* can offer, or can be used to provide, both powerful defense and strong impetus for a stricter environmental protection policy in China.^[14] As a political ecology, however, *scientific concept of development* might not be able to provide a greener perspective than sustainable development for the relation of economic development and environmental protection. For instance, it also becomes easier for one region or company

to defend its development policy or projects with scientific reasons, just as they claim that their policy or projects are sustainable.

If defining the major characteristics of scientific development as a qualitative, competitive, and environment-friendly development, we can easily find its similarity with the theory of ecological modernisation which is quite popular in the advanced West countries, especially in Europe.^[15] Both of them are aware of the seriousness of environmental problems resulting from the process of industrialisation and urbanisation, but they all believe that economic growth is achievable and maintainable through an environment-friendly way. In other words, they claim that, with appropriate institutions such as a healthy market system, piecemeal adjustment of economic structure, and insightful technical investment, the seemingly unbeatable conflict for the environmentalists between economic growth or economic modernisation and environment protection or sustainability is indeed resolvable in a ‘win-win’ manner. Noteworthily, both European and Chinese scholars now are inclining to the term of ecological modernisation when describing the progress in environmental protection of China under the guidance of *scientific concept of development*^[16], though from my point of view, ecological modernization is probably not an appropriate phase to frame the direction China is moving towards or should be headed for.^[17]

Then, what conclusions can be drawn from the foregoing review on the evolution of dominant political ecologies in China over the past thirty years? Firstly, it seems that there is a clear correlation between the deteriorating environmental situation and the strengthening feature of its growth economy as identified in the first section. As discussed earlier, an exact description of the reality of environmental protection in China today is that regional or partial improvements are always offset or exceeded by the newly created environmental pollutions or ecological damages. Nobody can deny the improvement of environmental quality which is being made mainly in the large cities, but the same is also true that the natural environment as a whole is bearing ever bigger burdens or risks. Secondly, these political ecologies have played a very weak restraining, if not promoting, role in establishing such a correlation. Why? In the author’s point of view, though environmental protection has been receiving an ever more important position with the replacement of these political ecologies from one to the other, what remains unchanged is their positive attitude towards societal progress defined in economic terms, or a ‘growth ideology’.^[18] And it is this unquestioned ‘growth ideology’ that underlies and dominates all the environment-friendly political thinking and policy approaches.

Socialist ecological civilisation: A more radical or greener alternative?

Even if the following consensus can be reached—ecological situation in China at present is still very severe or dangerous and both the theoretical and practical responses are still not strong enough, there are still quite different roads or even directions to move forward. Based upon the above argumentation that there is a correlation between the deteriorating environmental situation and the strengthening feature of Chinese economy as a growth economy, this last section will stick to a red-green perspective and examine whether or not building a socialist ecological civilization can constitute a more radical or greener

alternative as the leading political ecology in a foreseeable future.

Ecological civilisation or ecological civilisation construction is actually not a new term, at least for the scholars in this field.^[19] What really new in the Chinese context, however, is that the CPC incorporated this word into the Central Commission Report to its 17th Convention in November 2007, and enhanced it as one of the key elements of the CPC's political guidelines, 'constructing/ developing a socialism with Chinese characteristics'. As a result, this term is now receiving a very high popularity and academic attention that is comparable with *scientific concept of development*^[20] It is too early to make any objective evaluation of the policy effects of this new discourse of political ecology. From my own perspective, however, it is absolutely necessary at the very beginning to clarify that there are various approaches to define the contents of ecological civilisation, and only its eco-socialist version can constitute a real and fundamental solution to the environmental problems.^[21]

What is socialist ecological civilisation? To my understanding, it aims to transcend over both the green capitalism and the greening of 'actually existing socialism' in at least three senses. First of all, people's well-being rather than the profits-making of capital becomes the fundamental purpose and motivation mechanism of economy. That implies, both the organisation of economic production and the distribution of societal wealth will be done in a more people-oriented or 'equality of unequals' manner.^[22] Market system may continue to exist, but people will have learned how to arrange their economic activities socially and democratically. As a result, economy will retreat to its historical status as a part of society, socially meaningful and socially controlled. Secondly, ecological sustainability replaces the economic development as the first policy goal for the governments at different levels. In other words, 'economic development enjoys the priority' will be changed into 'ecological sustainability enjoys the priority'. Not because of the managed richness, but because of the fully recognised limits of nature, the ecologically awaked people^[23]—both the social elites and the commons—will realise that without ecological sustainability any type of advanced human civilisation is unmaintainable. Thus, it will become least likely for those developing projects violating this principle to be put forward or to be approved. Thirdly, economic growth in general, and that brought about by large-scale economic development projects and worldwide trade in particular, is no longer preferred or desirable. With recognising not only the negative effects of development projects, but the given limits of nature to human society, one can easily agree that unlimited economic growth is impossible, and the economic growth worship is questionable and should be abandoned. If ecologically necessary, economic growth can be decreased or even reversed, and to achieve this large-scale economic development projects and the globalising trade should be the first targets. In one sentence, socialist ecological civilisation as such is a green-in-essence socialism, a socially radical ecologism and thus a new type of civilisation.^[24]

The above description of major features of a socialist ecological civilisation clearly shows that political thinking of the 'socialism vs. capitalism' division does not matter, on the one hand. Both the greening capitalism and the traditional socialism can not be expected or even imagined to take such a radical policy change or reorientation. On the other hand, political thinking of the 'socialism vs. capitalism' division does matter. To leave behind the 'growth ideology' which underlies and dominates even some of the green political ecologies, a new kind of socialist political thinking is obviously necessary and urgent.^[25]

Therefore, there is little doubt that socialist ecological civilisation as defined above can constitute a more radical or greener alternative to the dominant political ecologies in China. Another question to be answered, though, is that is this version of socialist ecological civilization applicable or workable in the Chinese reality? Or to put it in another way, is it really possible for China to restraint and weaken the developing feature of Chinese growth economy as well as its supporting bases of marketisation of economic activities and economicalisation of society? In deed, quite a lot of favourable factors suggest that China can actively and effectively implement this political ecology and achieve such a green turn when its economy grows up to a certain size and before it become socially uncontrollable. Of all these factors the most significant or relevant one, from my point of view, is the CPC's political willingness and its capacity to make such a political choice, and the other is the so stringent natural limits for China's economic development, especially in its modern capitalist model. As for first factor, 'people-orientation' (*yi ren wei ben*) and/or 'serving the basic interests of the most majority common people' is still claimed by the CPC as its number one political principle to guide all the economic and social developing policy and strategies^[26], and there is no reason at the moment to doubt the CPC's capacity of implementing them, if it wants. As for the second factor, once a large enough number of leading politicians and social elites fully realise the harshness of natural limits to China, willingly or unwillingly, this great challenge in the traditional sense may turn out to be a true opportunity of reorienting China's direction of development.

Of course, there are also some factors to which we need to pay more attention or worry about from an eco-socialist perspective. Firstly, the severe unevenness of economic development in the world and within China itself offers the Chinese governments a very strong motivation, or defending argument, to seek a high-rate or long-lasting economic growth. As a result, governments at different levels are increasingly undertaking a commercial role of attracting foreign investment or promoting the competitiveness of regional economy. Moreover, both central and regional governments are carrying out many directly-invested large-scale projects often in the name of eliminating the poverty in certain areas.^[27] The key question arisen from this tendency is not that who is the real beneficiary of those grand programmes, but it will create a man-made scene: development is always necessary and possible (the necessity for further development is not of the *need* but the *want* of people, because everybody is comparatively poor). Secondly, the total amount of idle or floating capital in Chinese society is being accelerated very quickly. Up to the end of 2007, China's foreign exchange reserve amounted to 1528 billion \$, and the total value of stock markets in Shanghai and Shenzhen is 32700 billion RMB.^[28] The life of capital lies in making profits, which implies that such a large size of capital has to find the channels of investment to realise its proliferation. And if any difficulty, capital will make its voices louder through its representatives in politics and societies, as the NPC's sessional debating in 2008 has demonstrated^[29] These two tendencies, together with other factors, might eventually lead China into a new era of popular consumerism which will provide the further impetus for economic growth—the flourishingly-growing car industry and housing industry are only the harbingers. That maybe a piece of good news for most of the common Chinese people today, but it will definitely bury the ideal of socialist ecological civilisation.

As the main conclusion of this analysis, China today stands at a crucial crossroad: not very much in terms of the stages of its economic growth, but whether or not it can move forward to a green future. There is no guarantee that China will definitely choose the political

ecology of building a socialist ecological civilisation, and that would necessarily be a success if it eventually decides to do so, especially within the system of the internationalised market economy and neo-liberal globalisation.^[30] What we can surely say, however, is that such a choice will make China's future very different, and more likely a greener one.

[1] For a more comprehensive and distinctive analysis of the concept of growth economy, please see Takis Fotopoulos, *Towards an Inclusive Democracy: The Crisis of the Growth Economy and the Need for a New Liberatory Project* (London: Cassell, 1997), pp.62-63. In this paper, my starting-point is not to criticise economic growth unconditionally, but how to make the Chinese economy to leave behind a necessary stage of economic growth and move forward to a more sustainable future.

[2] For the types of growth economy, please see Takis Fotopoulos, *Towards an Inclusive Democracy: The Crisis of the Growth Economy and the Need for a New Liberatory Project*, chapter 2.

[3] Peter Steve, 'Consumption will stimulate the continuing economic growth of China', *The Times*, 11 March 2008; Donghui Sun, 'Expert says: China can maintain the growth rate of 6%-10% for next 20 years', *Economic Times of China*, 1 June 2007.

[4] Geping Qu, 'High official of the SEPA talks about the environmental performance in the 10th Five-Year-Plan period', http://news.xinhuanet.com/newscenter/2006-04/12/content_4415170.htm, accessed on 18 March 2008,

[5] Saral Sarkar, *Eco-socialism or Eco-capitalism? A Critical Analysis of Humanity's Fundamental Choices*(London: Zed Books, 1999), pp.154-157.

[6] Friends of Nature, *China's Environmental Crisis and Its Favourable Turn* (Beijing: Social Science Documents Press: 2008), see <http://it.sohu.com/20080320/n255817385.shtml>, accessed on 18 March 2008.

[7] Blacksmith Institute, 'The dirtiest cities in the world', <http://www.blacksmithinstitute.org>, 30 September 2007.

[8] The News Office of State Council, *White Paper on China's Environmental Protection*, 1996 and 2006.

[9] The UNCED, *Our Common Future* (New York: Oxford University Press, 1987).

[10] Wenyuan Niu(ed.), *Green Strategy: China's Environment and Sustainable Development in the 21st Century* (Qingdao: Qingdao Press, 1997).

[11] Qingzhi Huan, *International Comparison on Environmental Politics*(Jinan: Shandong University Press, 2007), pp.5-6.

[12] One anonymous referee of this article pointed out that the main reason why the environmental situation in China became worse during this period is clearly the vast expansion of the market-economy based sector of the economy, but the author would argue that what is relevant here is that so many economic development projects are carried out under the environment-friendly banner.

[13] Yuanzheng Pang, 'On scientific concept of development', *Green Leaf* 11 (2007), pp.14-15.

[14] Muzhi Hu, 'Reconstructing development views: Green GDP and scientific concept of development', *Green Leaf* 4 (2007), pp.28-29.

[15] Albert Weale, 'Ecological modernisation and the integration of European environmental policy', in Duncan Liefferink, Philip Lowe and Arthur Mol(eds.), *European Integration and Environmental Policy* (London: Belhaven Press, 1993), pp.196-216; Stephen C. Young(ed.), *The Emergence of Ecological Modernization: Integrating the Environment and the Economy* (London: Routledge, 2000); Debra Johnson, 'Ecological modernization, globalization and Europeanization', in John Barry, Brian Baxter and Richard Dunphy(eds.), *Europe, Globalization and Sustainable Development*

(London: Routledge, 2004), pp.152-67. For a critique of this theory, please see Takis Fotopoulos, 'The ecological crisis as part of the present multi-dimensional crisis and inclusive democracy', *The International Journal of Inclusive Democracy* 3/3(2007); Ted Trainer, 'The greenhouse problem: The refusal to recognise the situation', *The International Journal of Inclusive Democracy*, 4/2(2008)

[16] Arthur P. J. Mol, 'Environment and modernity in transitional China: frontiers of ecological modernisation', *Development and Change* 37/1 (2006), pp. 29-56; Chuanqi He, *Report on China's Modernisation: 2007*, see <http://eedu.org.cn/article/ecology>, accessed on 15 April 2008.

[17] Qingzhi Huan, 'Ecological modernisation: A realistic Green road for China?', *Environmental Politics* 16/4 (2007), pp.683-687.

[18] Takis Fotopoulos, *The Multi-dimensional Crisis and Inclusive Democracy* (London: The International Journal of Inclusive Democracy, 2005), chapter 5.

[19] We can find the related discussion as early as in the mid-1990s, see Roy Morrison, *Ecological Democracy* (Boston: South End Press, 1995); Mouchang Yu, *A New Century for Culture: Theoretical Explanation on Ecological Culture* (Changchun: Northeast Forest University Press, 1996).

[20] 'Constructing ecological civilisation', see the special issue of *Green Leaf* 10 (2007).

[21] There are two possible explanations why the CPC Report used the term of 'ecological civilisation' instead of 'socialist ecological civilisation'. One is that the socialist nature of ecological civilisation in China is taken for granted and the other there is a strong suspicion among the elites as well as the public upon the legacy of the polarized division of 'socialism vs. capitalism'. See Yue Pan, 'On socialist ecological civilisation', <http://www.tt65.net/?action-viewnews-itemid-123>, accessed on 13 February 2008; Qingzhi Huan, 'Socialist ecological civilization: A terminological analysis', *Green Leaf* 2 (2008), pp.96-102

[22] Murray Bookchin, *The Ecology of Freedom: The Emergence and Dissolution of Hierarchy* (Oakland: AK Press, 2005), p.219.

[23] Saral Sarkar, *Eco-socialism or Eco-capitalism? A Critical Analysis of Humanity's Fundamental Choices*, pp.255-258.

[24] This version of socialist ecological civilisation is both a red-green Utopia(in a positive sense) and a discourse as environmental politics, and for myself both of them are indispensable for us to overcome the ecological crisis today.

[25] Joel Kovel and Michael Löwy, 'An eco-socialist Manifesto', <http://www.iefd.org/manifestos>, accessed on 19 February 2008. Of course, there are many approaches to go beyond the "growth ideology", for example, through creating an inclusive democracy, but we should not reject all the possibility of socialism to manage this and it is obviously more relevant than others in China today.

[26] The CPC, *The Central Commission's Report to the 17th Convention*, 15 November 2007.

[27] According to the up-to-date standard of Chinese government (annual income per capita lower than 1 300 RMB), there are still 80 million people who are living in poverty, see *Economic Reference Daily*, 13 April 2008.

[28] The State Administration of Foreign Exchange, 'China's foreign reserve exchange', http://www.safe.gov.cn/model_safe; Xinhua Net, 'The value of share A increased 268% in 2007', <http://news.xinhuanet.com/fortune/2008-01/10>, accessed on 12 April 2008.

[29] Jianfeng Xiong, 'Debating the discourse rights of the rich', <http://news.sohu.com/20080318>, accessed on 12 April 2008.

[30] For this point, I thank Takis Fotopoulos reminding me to realise the further difficulties for China to build a socialist ecological society once it determines to do so. However, as one can see from above, the focus of this article is not the feasibility of a new political ecology, namely, socialist ecological civilisation, but why and to what extent it is needed to resolve the identified environmental problems in China.