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Towards a sustainable social model: Implications for the post-2015 agenda

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ABSTRACT

Implementation of the *Agenda 21* bifurcated into two tracks. While the economic and social development agenda gelled into the Millennium Development Goals (MDGs), the environmental protection agenda moved along a different track, represented by the United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biodiversity (CBD), etc. This bifurcation also led to very different "domain configurations." While there were some advantages of this bifurcation, it led to a conflict between the human development and the environmental goals. This paper presents a framework for bringing environment and development together in the UN post-2015 agenda.

JEL Classification: O1, Q3, Q5, P5

Keywords: Sustainable Development, Industrial Revolution, Post-2015

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1 Introduction

This paper is an exercise in *meta-analysis*. It brings together several strands of research to examine whether they fit together to produce a "social model" that can be more conducive to sustainability. By social model we are referring to the society as a whole, including its economy, politics, knowledge, and culture. The call for such a model is getting louder with time.

Many arguments have been put forward for a new social model. Three stand out among them. The first is that the current model is leading to breaches in planetary boundaries, jeopardizing the very existence of human civilization on this planet. Climate change caused by the rising volume of GHG (Green House Gas) emissions is the most prominent and ominous example. There are however other examples. The second argument is that the current model is not proving efficient for achieving human development goals in developing countries. The third argument is that the current model is not proving helpful in improving life satisfaction even in developed countries. In view of the above, more scholars are calling for a new social model.

However, pointing to the inadequacies of the current model is easier than putting forward a new model. Yet, unless such a model emerges, it is difficult to persuade people and governments to abandon the current model.

The main purpose of this paper is to review the ideas that have been put forward regarding a new social model and to examine their relevance for the post-2015 agenda. It is important, in this regard, to distinguish between the "long run" and the "short run." The problem of sustainability that human society currently faces is not the result of recent events. It is instead the outcome of a cumulative process that started with the Industrial Revolution (IR), which put the human society from a largely horizontal trajectory onto an almost vertical trajectory. However, such a vertical trajectory is not sustainable, and it is necessary to climb down from it, while preserving the productivity gains achieved and the scope for advancing these gains further.

The climbing down from the vertical trajectory is however not possible without reversing some of the societal changes that IR brought about. One of the consequences of IR was the subjugation of the society by the economy, which was in turn driven by private gains. While this allowed output and productivity to rise, it also created the problem of unsustainability. Therefore, sustainability requires re-embodiment of the economy in society and substitution of private gains by social welfare as the motive force of the economy. Such a societal transformation however can be the result only of a long run process.

However, as the Chinese proverb goes, even a long journey has to start with an initial short step. It is therefore necessary to think of initial steps that may be taken towards a sustainable social model. Many ideas have been put forward in this regard. These include (i) changes in measures of performance of the economy; (ii) correction of prices to internalize externalities; (iii) changes in consumption pattern; (iv) enhancement of public spheres of life; (v) sharing of profit and employment; (vi) switch to social business model, etc. This paper reviews some of these ideas to examine how they relate to each other and to the long term goal of re-embodiment of economy in society.

The paper next considers the implications of the above ideas for the post-2015 agenda. It notes that while *Agenda 21* put forward a comprehensive action plan, its implementation process bifurcated into two separate tracks. While the economic and social dimensions found reflection in the concept of human development and ultimately gelled into the Millennium Development Goals (MDG), international efforts to deal with environmental issues proceeded along a different track, represented by the United Nations Framework Convention on Climate Change (UNFCCC), Convention on Bio-Diversity, Convention on Desertification, etc. While this bifurcation had its advantages, it did not prove beneficial in the long run, for either development or environment, and in fact it led to a conflict between the two. It is in part a reaction to this unsatisfactory state of affairs that the Rio+20 conference came forward with

the proposal to formulate Sustainable Development Goals (SDG). The United Nation now faces the task of bringing the new idea of SDGs and the previous idea of MDGs together. The question is how this can be done.

The paper shows that acceptance of and steps toward the sustainable social model can bring environment and development together. The process has to begin with transition to sustainable consumption and production in developed countries. This transition will however require transformative changes in the economy, society, culture, and lifestyle. These changes will constitute a new phase of human development for developed countries. Thereby human development will become a universal goal applicable to both developed and developing countries, though its focus will be different in these two regions.

The transition of developed countries toward sustainable consumption pattern will increase the resource and environmental space for developing countries to grow and improve their material standard of living. It will also have a demonstration effect by offering a different 'aspiration model,' so that developing countries may no longer strive to adopt the unsustainable consumption pattern currently observed in developed countries. Furthermore, the changed context may also make developing countries willing to cooperate more with developed countries in confronting global environmental challenges, including climate change. Thus environmental protection goal will also become universal. Both environment and development goals can thus be made universal and integrated in a common UN post-2015 agenda.

The paper is organized as follows. Section 2 presents the main arguments for a new social model. Section 3 considers the question of sustainable social model in the long run. Section 4 considers the initial steps necessary to reach that model. Section 5 draws the implications for the post-2015 agenda. Section 6 concludes.

2 Arguments for a new model

a. Inadequacy of the current model for protecting planetary boundaries

The most well known argument for a new social model is that the current model is leading to breaches in planetary boundaries, thus undermining the very existence of human civilization on the earth. The most obvious example is climate change.

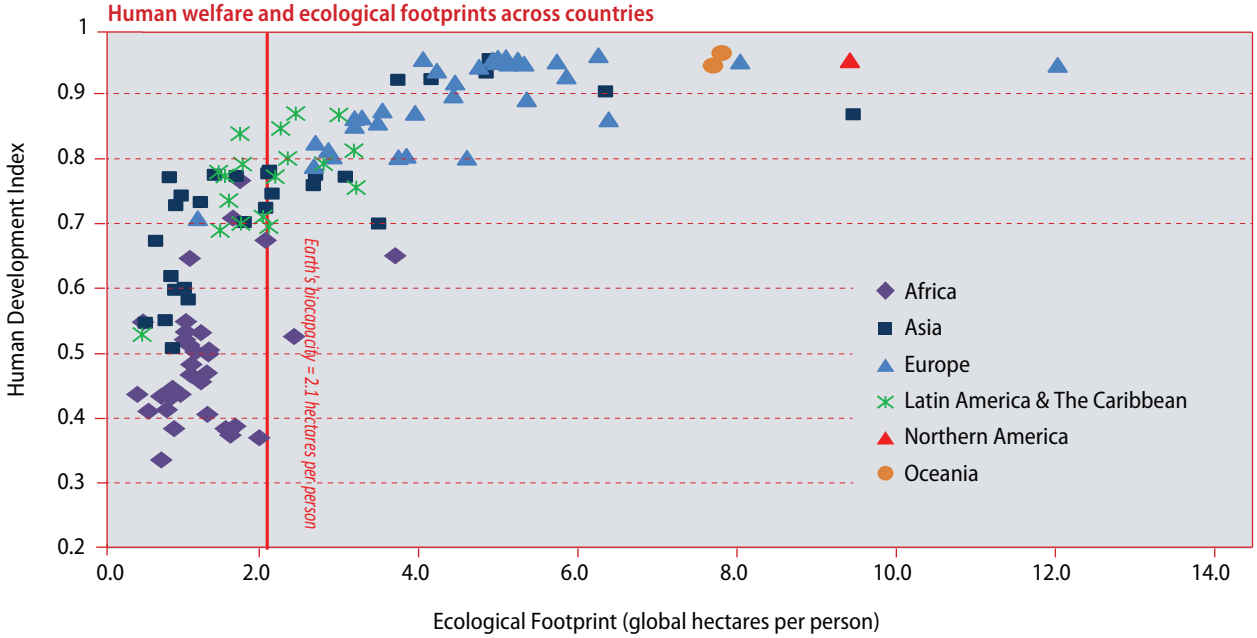
In the pre-industrial era, when atmospheric carbon concentration level and global temperature were stable, the total annual volume of GHG emissions was about 5 gigaton. It has now increased to about 40 gigatons, eight times larger. Similarly, carbon concentration has increased from the pre-industrial level of about 250 ppm to more than 400 ppm. Developed countries are mostly responsible for the cumulative volume of GHG emissions. Even now, per capita GHG emissions of developed countries are several times larger than those of developing countries,[1] and the global volume of GHG emission continues to rise, undermining the goal of limiting global temperature increase to 2 degree centigrade (relative to the pre-industrial level).

There are other signs of breaches, such as the rising volume of non-biodegradable, toxic, and radio-active waste; vanishing bio-diversity; threatened marine ecology; the dwindling stock of mineral resources; crisis of freshwater resources; etc.

Concerns about diminishing availability of mineral *resources* are not new. Studies by the Club of Rome voiced such concerns in the 1970s (see Meadows, Meadows, Randers, and Behrens, 1972). In follow up studies, many of these authors extended their concerns to include the danger posed by rising volume of *waste*, in particular GHG (see Meadows, Randers, and Meadows, 2002; Turner, 2008).

More recent studies have expressed these concerns using the concept of "ecological footprint" (Global Footprint Network, 2009).[2] For example, nef (2006, p. 3) points out that the bio-capacity of the earth is limited to 11.5 billion hectares of biologically

Figure 1
Human welfare and ecological footprints across countries



Source: Global Footprint Network (available at http://www.footprintnetwork.org/en/index.php/GFN/page/trendalyzer).

productive space. With the current population standing at 6.4 billion, this implies only 1.8 hectares of "environmental space" per person. The ecological footprint per person has already exceeded this limit and is rising. Similarly, according to Global Footprint Network, humanity's total ecological footprint for 2007 was equivalent to 1.5 planet Earths, implying that humankind uses ecological services 1.5 times as quickly as Earth can renew them.[3]

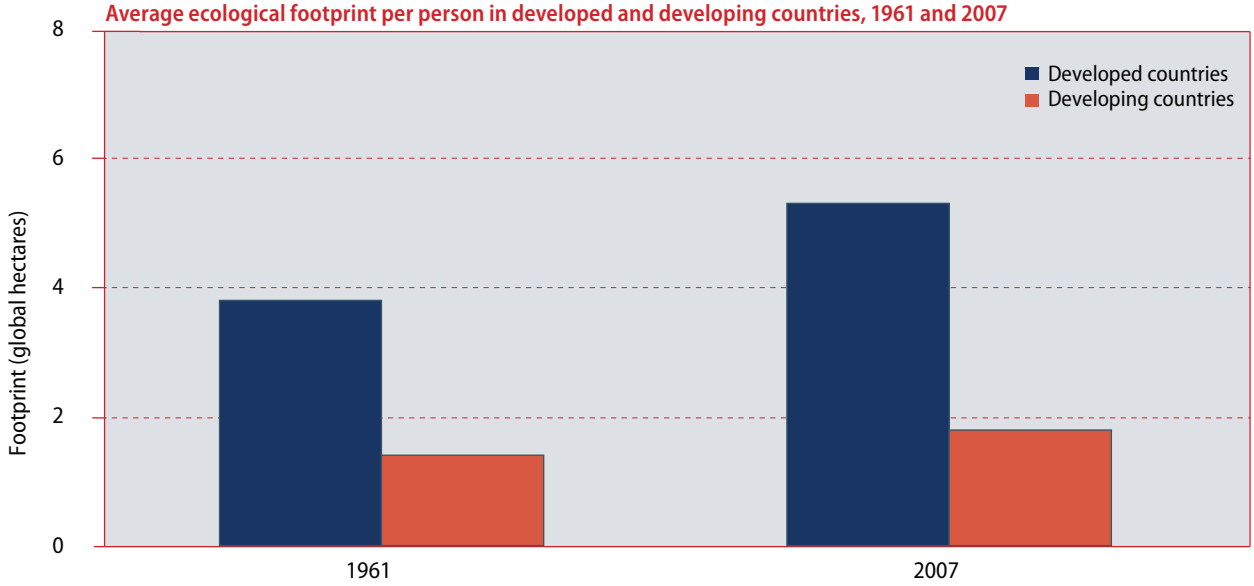
There is an enormous difference between developed and developing countries regarding "ecological footprint" (Figures 1 and 2). The average ecological footprint (per person) in Europe in 2007 was 4.7 (global) hectares, compared to an actual availability of 2.7 hectares. This implies that people of Europe are using up bio-space of other parts of the world. The same is true for the USA, where ecological footprint is more than 8 hectares per person, with an available bio-capacity of 3.9 hectare. By comparison, ecological footprint in developing countries is 1.5 hectare per person (in 2001) (nef, 2006, p. 3).

Furthermore, the ecological footprint in developed countries is rising at a faster pace than in developing countries. For example, ecological footprint in developed countries increased from 3.8 global hectares in 1961 to 5.3 in 2007, representing an overall increase of 39 pct. By contrast, ecological footprint in developing countries increased from 1.4 in 1961 to 1.8 hectares in 2007, an increase of 28 pct. (nef 2006, p. 3 and Global Footprint Network, 2010).

Several things are clear from the above numbers. First, planetary boundaries have been breached, and the breaches are widening and spreading to more fronts. Second, these breaches are mainly due the cumulative impact of unsustainable consumption pattern in developed countries. Third, efforts by developing countries to emulate developed countries' current consumption pattern will aggravate the breaches further. For example, under the current production technology, if the whole world wanted to consume at the 2001 level of the UK, resources equivalent to that of 15 planets like the Earth would be required (nef 2010a/GIP, p. 5).

Scholars who are skeptical about the arguments above generally put forward two counter arguments (Pearce, Markandya, and Barbier, 1989). First, they

Figure 2
Average ecological footprint per person in developed and developing countries, 1961 and 2007



Source: Figure II.6, WESS 2013.

point out that while the Earth's resources are limited in an ultimate sense, what matters at a particular point of time is resource "availability," which depends on science and technology. Progress in technology can increase the availability of resources over time. The second counter argument is that, through improved technology and policies, it is possible to increase the efficiency of resource use (hence the *effective* availability) and reduce the volume of waste generated.

The idea of increasing resource efficiency has led to the notion of "decoupling" of growth from resource use and waste generated. Decoupling in turn has been interpreted in two ways. One is known as "relative decoupling," implying increase in output with less-than-proportionate increase in inputs required and waste generated. The other is known as "absolute decoupling," implying increase in output with no increase in input required and waste generated.

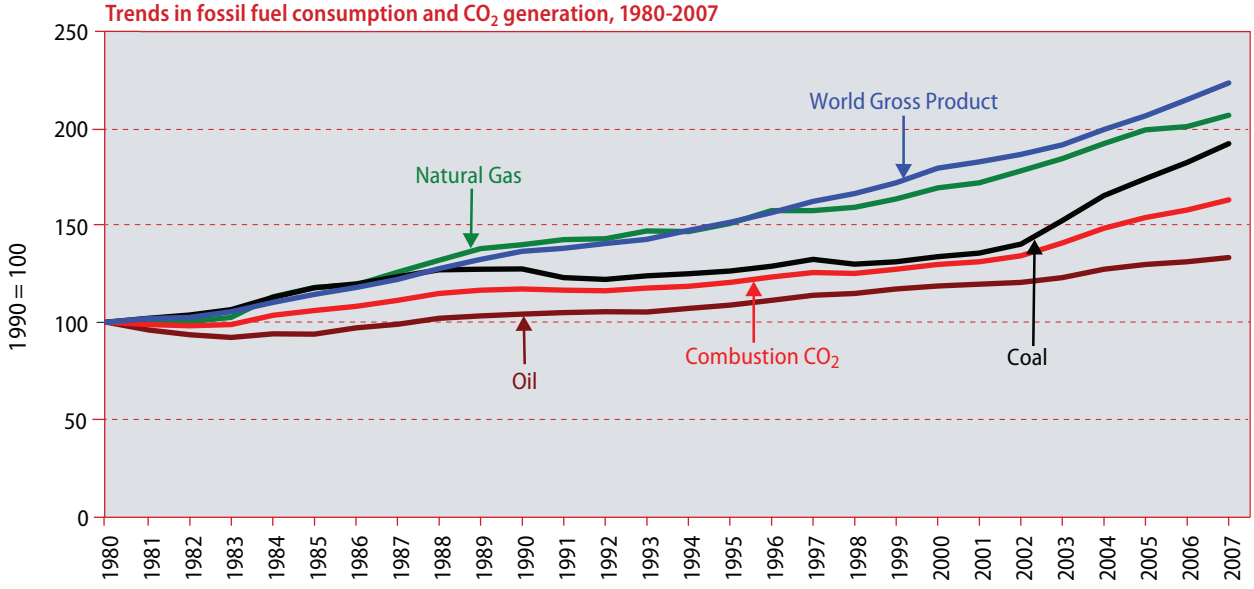
There is some evidence of relative decoupling.[4] However, there is no evidence of absolute decoupling (Jackson 2009, 2010). The total volume of resources used and waste generated continues to increase over time. For example, the total consumption of different types of fossil fuel and of CO_2 generated continues to rise (Figure 3). Similarly, the total consumption of many mineral resources is increasing (Figure 4). It has also been pointed out that the success in "relative decoupling" seen in many developed countries has been achieved at the cost of developing countries, to which developed countries outsourced many of their natural resource- and waste-intensive production operations (Peters and Hertwich, 2008). For example, while GHG intensity of output has decreased in some developed countries, it has increased in many developing countries. This shows that relative decoupling within a country or a region does not imply the same for the world as a whole (Li and Hewitt, 2008).

In view of the above, it is difficult to pin hopes on technological progress alone to ensure that planetary breaches can be avoided (Brookes, 1990; Daly, 1991, 1996; Georgescu-Roegen, 1971; Huesemann, 2003, 2004).[5] As a result, more scholars are calling for a change in the social model.

b. Inadequacy of the current model in reducing poverty and achieving other human development goals

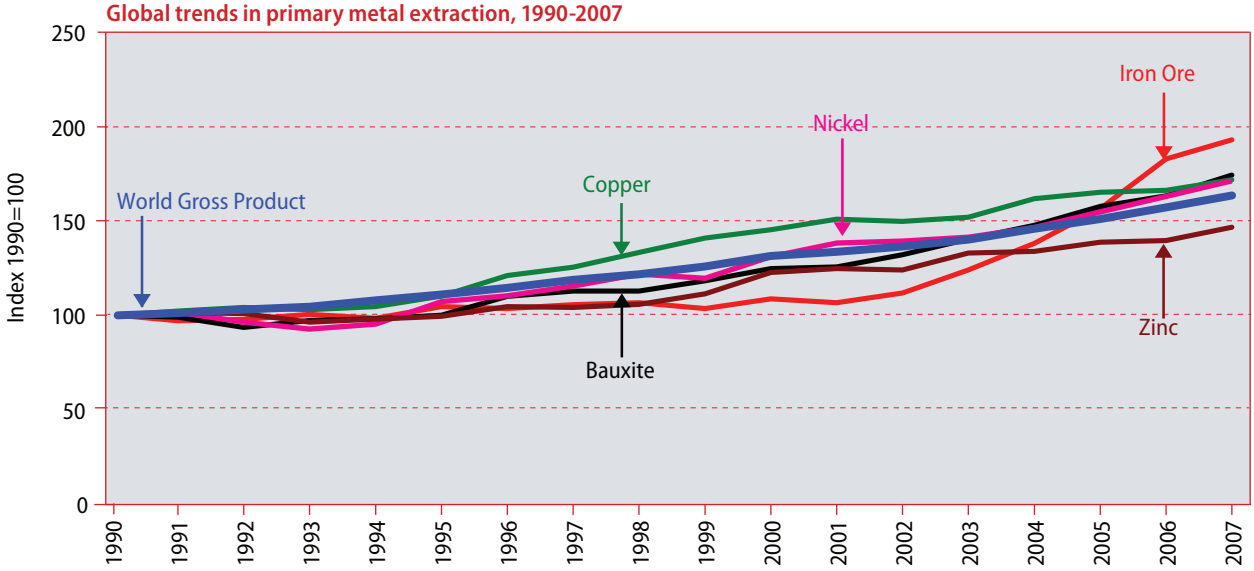
The second argument against the current model is that it is not proving effective in achieving human

Figure 3
Trends in fossil fuel consumption and CO_2 generation, 1980-2007



Source: Figure I.16, WESS 2011.

Figure 4
Global trends in primary metal extraction, 1990-2007



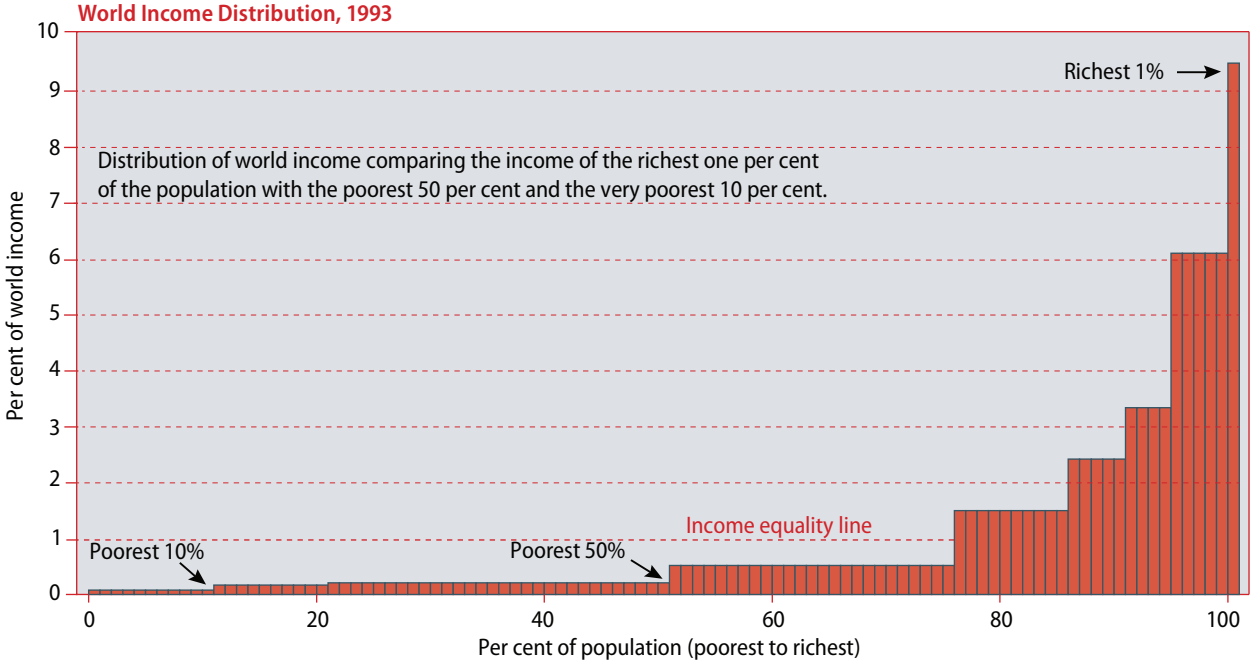
Source: Figure I.11, WESS 2011.

development goals, including the goal of poverty reduction.

Progress in poverty reduction achieved so far is inadequate and uneven. For example, a World Bank study informed that "the developing world is poorer than we thought" (Chua and Ravallion, 2008). In particular, it reported that the number of poor in 2005 was 1.4 billion (using $1.25 of 2005 as the poverty line). Many scholars believe that the poverty line given by $1.25 per capita per day criterion is too low. If a higher poverty line is chosen, the extent of poverty will prove to be much greater. In fact, the above mentioned World Bank study informs that, if poverty is defined by an income level of $2.00 per capita per day, the number of poor in 2005 increases to 2.6 billion (or 47.6 percent of developing world's population).

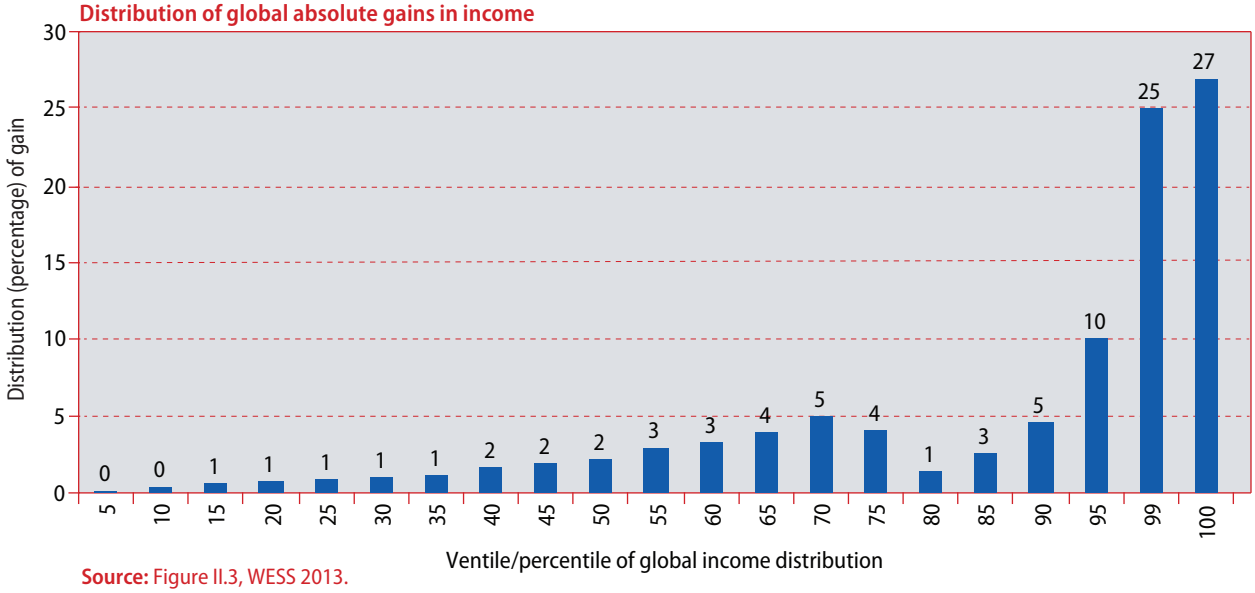
Poverty reduction under the current social model proves difficult, because too little of income growth reaches the poor due to highly unequal distribution of assets and income (Figures 5a and 5b). For example, in the USA, which provides the "aspiration model" for many developing countries, the average real after-tax income of the top 1 percent increased by 176 percent during 1979-2004 while that of the bottom fifth of the population increased by only 6 pct (CBO, 2011) (Figure 6). Given the enormous difference in the base income levels of these two income groups, the corresponding difference in absolute terms is simply staggering.

Figure 5a
World Income Distribution, 1993



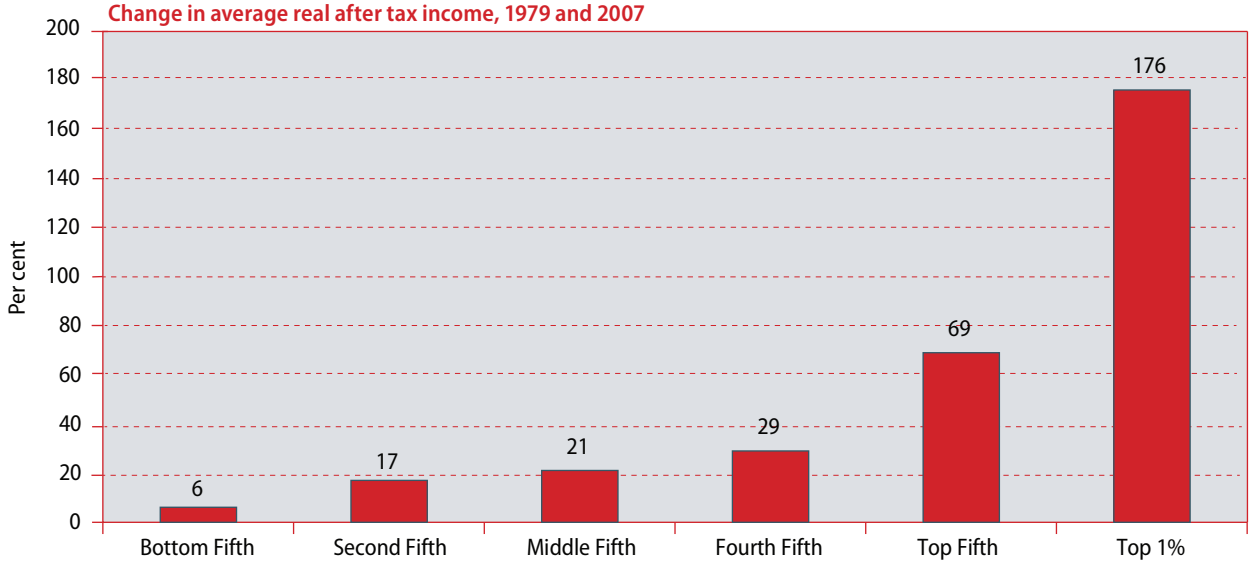
Source: New Economic Foundation (nef) (2006, Growth Isn't Working).

Figure 5b
Unequal distribution in the world
Distribution of global absolute gains in income



Source: Figure II.3, WESS 2013.

Figure 6
Change in average real after tax income, 1979 and 2007



Source: CBO (Congressional Budget Office) (2011), "Trends in the Distribution of Household Income between 1979 and 2007," Washington D. C.

Because of this inequality, the elasticity of poverty reduction with respect to increases in total or average income (of the country) is very low. For example, according to nef (2010a, p. 18; 2006, pp. 16-17), of every $100 worth of growth in the world's per capita income during 1981-1990, the poor received only $2.20. The latter figure decreased to $0.60 during 1990-2001, because inequality increased in the meanwhile, and the poor's share in income decreased further (Figure 7a). As a result, to reduce poverty by $1, it was necessary to raise global production and consumption by $166 during the latter decade. The failure of the current model can also be seen from the fact that the share of the poor in incremental income is less than their share in the base income (Figure 7b).

One implication of the above situation is that breaches in planetary boundaries will widen long before the poverty challenge can be met. (This reinforces the first argument above.) For example, nef (2010a) reports that, under the current model, for everyone in the world to reach the income level of $3/day, resources equivalent to 3.4 Earths will be needed. Ironically, the poor suffer the most from the environmental stress. Trying to eradicate poverty under the current social model is therefore, in many ways, a 'self-defeating process' (nef 2010a, pp. 3-4).[6]

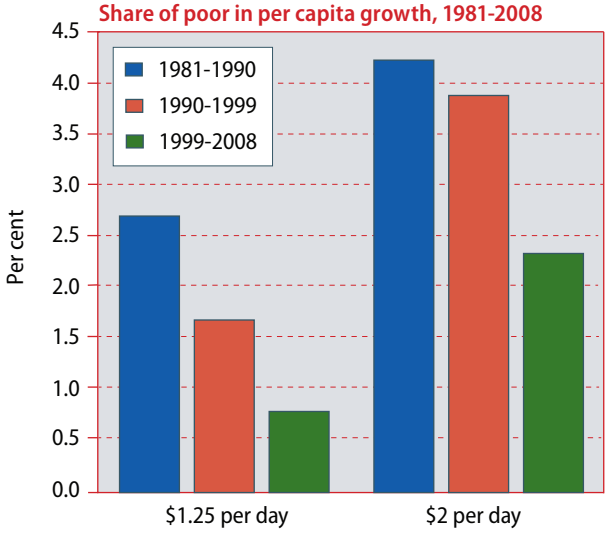
Meanwhile, data show that more effective poverty eradication can be achieved through redistribution. According to nef (2006, p. 19), redistribution of only 1 pct of income of the richest 20 pct can provide as much poverty reduction as would be achieved from per capita income growth rate of between 8 and 25 percent in majority of developing countries, including almost all countries of Latin America and Sub-Saharan Africa. These results show that poverty reduction becomes easier if there is more equality of distribution, one of the attributes of the new social model.

c. Inadequacy of the current model to improve quality of life and life satisfaction

The third argument for a new social model is that the current model is failing to improve life satisfaction even in developed countries, where people have already reached high levels of material consumption. The main recipe under the current social model for improving well being is to increase material consumption. However, evidence suggests that increase in material consumption beyond a threshold level often does not improve welfare.

Figure 7a

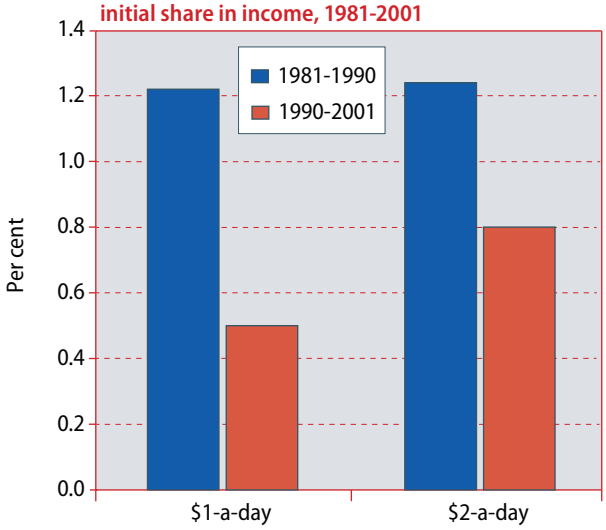
Share of poor in per capita growth, 1981-2008



Source: Figure II.4, WESS 2013.

Figure 7b

Share of poor in per capita growth relative to initial share in income, 1981-2001



Source: New Economic Foundation (nef) (2006, Growth Isn't Working)

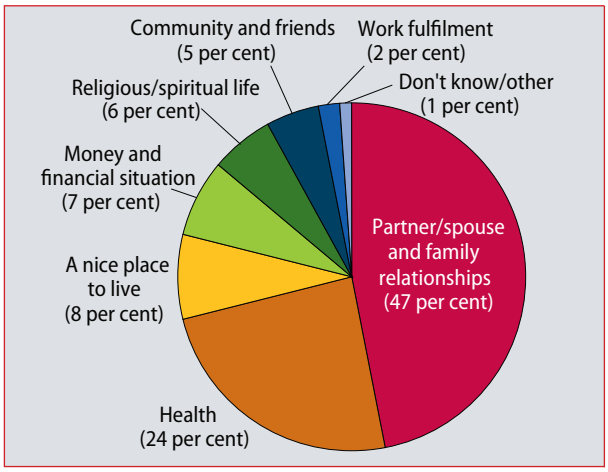
Just as boundaries of the planet are fixed, human beings are also bounded in terms of their physical parameters. There is a limit to the amount of food a person can consume, number of clothes she can wear, and physical space he can use for living. Once those limits are reached, further increases do not always increase well being, instead may cause new problems. An example can be seen with regard to food consumption. Excessive calorie intake in many rich countries has now led to the problem of obesity, with negative consequences for health. Obesity in many of these countries has spread among children, harming their development.

In addition to the physical, there is a psychological element playing a role here. This phenomenon is often referred to as the "hedonic treadmill" (nef, 2010a, p. 20), which works as follows. People raise their material consumption to be happier. However, by the time they increase consumption, expectations change, requiring them to raise consumption even further to maintain their satisfaction level. One reason why the expectations change is the phenomenon of "Keeping up with the Jones," which refers to the fact that people's consumption is often driven not by what they genuinely need but by the desire not to lag behind others in terms of the level and items of consumption. In others words, often it is not the *absolute* level of consumption that matters, but the *relative* level (compared to that of others).

Another reason why higher levels of material consumption often fail to have the desired effect is that happiness does not depend on material consumption only. Instead, much depends on relationships, on one's standing in family, community, and society (Jackson, 2009, 2011; Lyubormirsky, Sheldon, and Schkade, 2005) (Figure 8). According to a survey of 35, 000 Europeans, variation in consumption across a range that would require 1 to 7 planets' worth of resources did not change the level of satisfaction with life (nef, 2010a, pp. 20-23) (Figure 9). It may be noted that increase in material consumption is often achieved at the cost of family, community, and society, resulting in a "social recession" (Jackson, 2009). For example, the community life may suffer due to rising inequality, so that people may remain unhappy even though material consumption at the individual level (at least of some) might have increased.

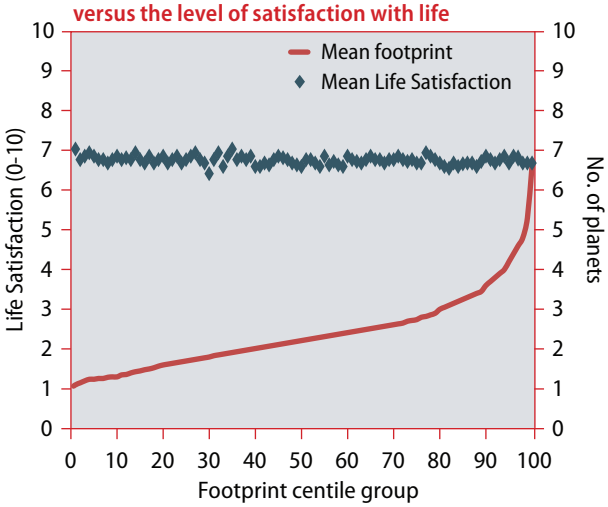
Cross-country studies provide another set of evidence for the argument above (Abdallah, Thompson, Michaelson, Marks, and N. Steuer, 2009; Jackson, 2009, 2010). These studies show that after a threshold level, increase in ecological footprint does not lead to commensurate increase in Human Development

Figure 8
Factors influencing subjective well-being



Source: Figure II.8, WESS 2013.

Figure 9
Variation in consumption in Europe versus the level of satisfaction with life



Source: nef, 2010a, Growth Isn't Possible.

Index (HDI). Similar evidence can be seen from cross country data on index of life satisfaction and per capita income level. It is found that beyond a threshold level, increase in per capita income does not increase the index of life satisfaction by that much (Figure 10). It may be argued that life satisfaction measures are subjective and hence are not reliable. However, similar relationship can be seen on the basis of life expectancy, which is an objective measure of the overall quality of life. Figure 11 shows that life expectancy does not increase by that much after a threshold level of per capita income has been reached.[7]

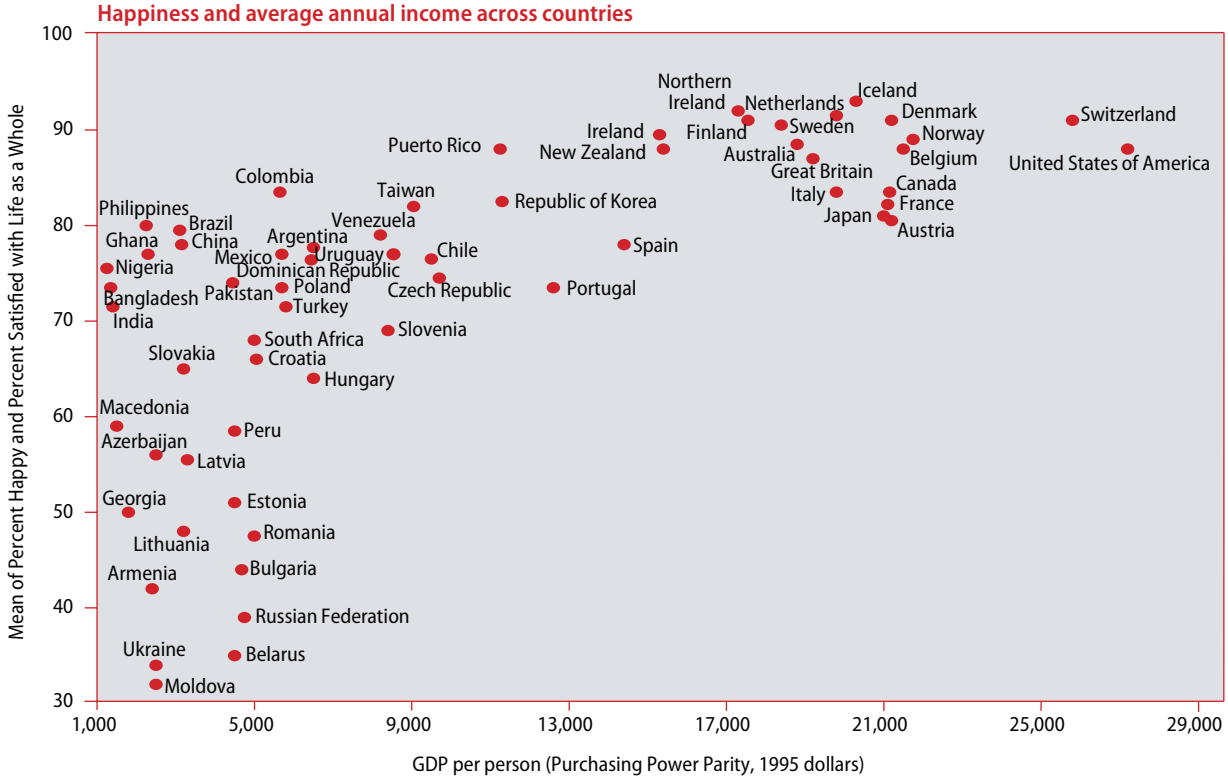
d. The current model and the goal of sustainable development

The above three arguments show that the current social model is not conducive to sustainable development. It is failing to protect environment, to increase rapidly the material standard of living of those who desperately need such increase, and to improve life satisfaction of those who already enjoy high material standard of living.

It should be noted that the Classical economists also did not think that growth could go on forever. Adam Smith distinguished between 'progressive state' and 'stationary state' and thought that the former ends with the latter. Malthus and Ricardo thought that they found in the so-called 'iron law of wages' a rigorous explanation of why 'progressive' state ends with 'stationary state.' The iron law of wages was based on the notion of limited extent of arable land and diminishing returns to land and a crude theory regarding human fertility behavior. They thought that interplay of these two forces would also keep the total population size in check. Subsequently technological progress disproved their concerns regarding the limited extent by which food production could increase. However, the idea that 'progressive state' should end with 'stationary state' had a more general basis, as was evidenced in John Stuart Mill's writings, who in 1848 expressed the view that, "the increase in wealth is not boundless: that at the end of what they term the progressive state lies the stationary state." However, for him this was not so much due to compulsion from limited extent to which output could increase, as owing to superfluity of consumption growth, after a certain level of consumption has already been reached. "It is only in the backward countries of the world that increased production is still an important object: in those most advanced, what is economically needed is a better distribution (John S. Mill 1848)."[8]

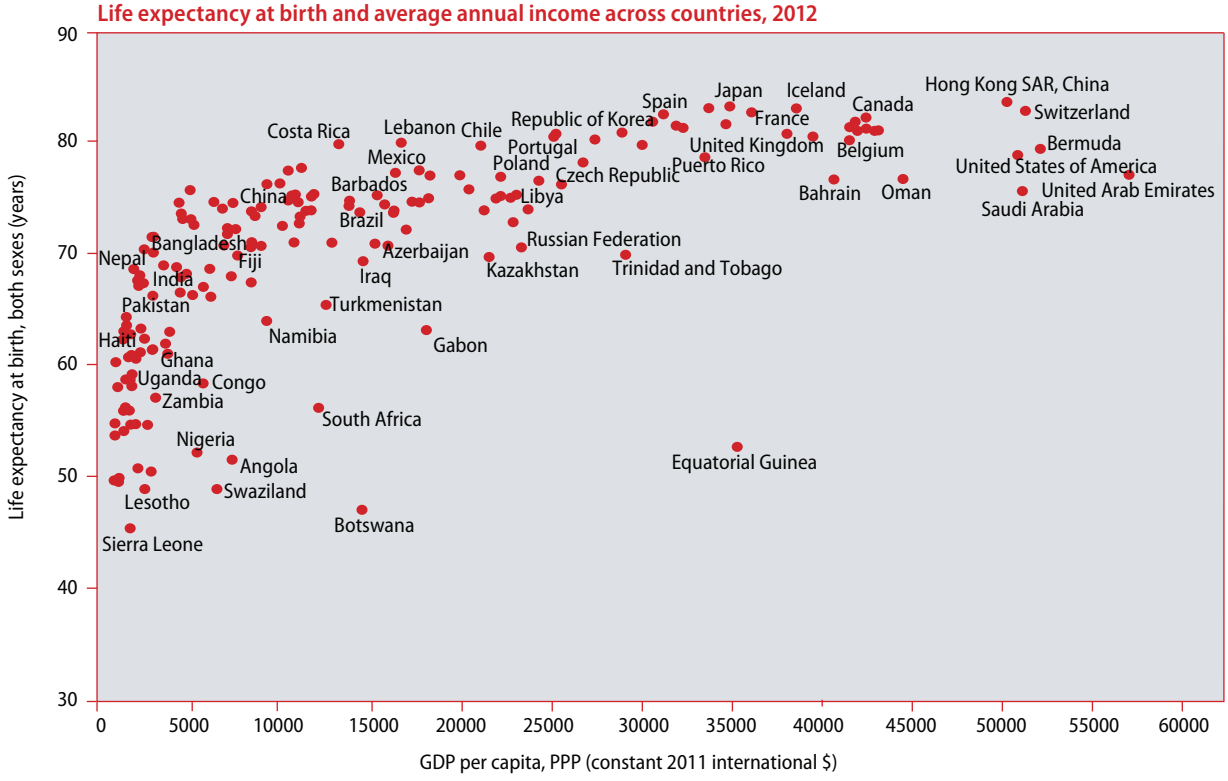
It is therefore not surprising that more scholars are calling for a new social model. The question is what such a model can be. To answer this question, it is necessary to distinguish between the "long-run" and the "short-run."

Figure 10
Happiness and average annual income across countries



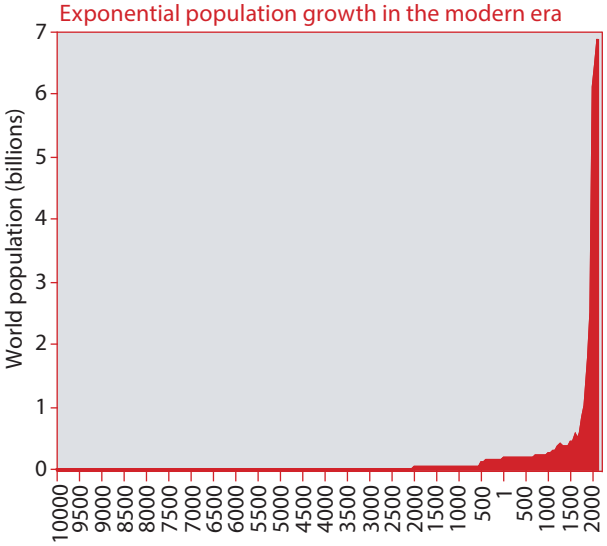
Source: Jackson 2009, Prosperity without Growth.

Figure 11
Life expectancy at birth and average annual income across countries, 2012



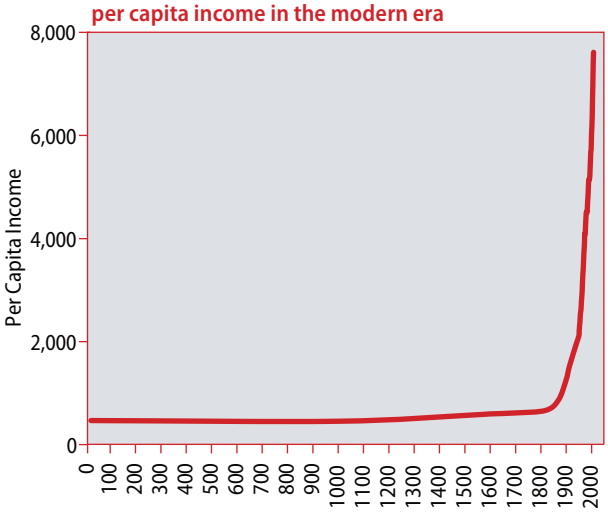
Source: World Development Indicators, World Bank.

Figure 12
Exponential population growth in the modern era



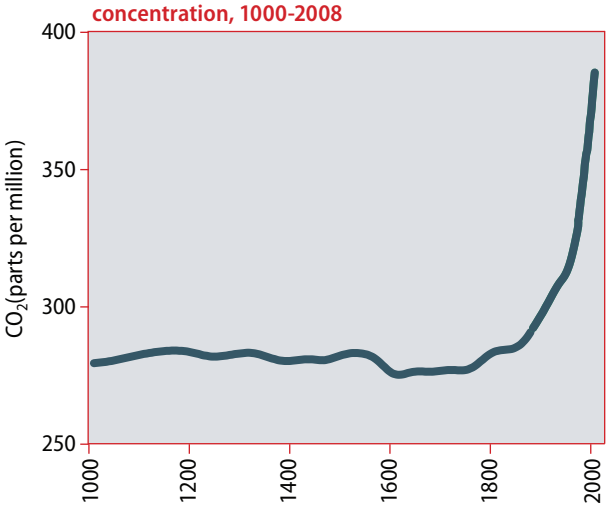
Source: Fig. I.1, WESS 2011.

Figure 13
Accelerated growth of world per capita income in the modern era



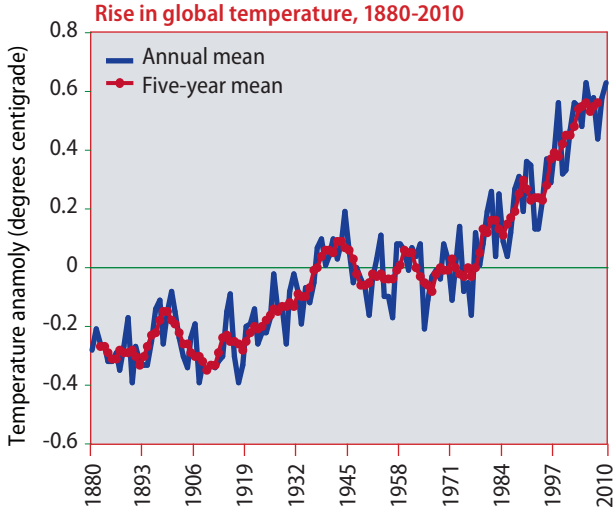
Source: Figure I.2, WESS 2011.

Figure 14
Rise in atmospheric carbon dioxide concentration, 1000-2008



Source: Figure I.6, WESS 2011.

Figure 15
Rise in global temperature, 1880-2010



Source: Figure I.7, WESS 2011.

3 Sustainable model in the long run

The sustainability problem that human society faces now is not the result of some recent events. Instead, it is the outcome of processes that began with the Industrial Revolution (IR). Prior to the IR, human society was on a relatively horizontal trajectory. The IR catapulted it on to an almost vertical trajectory, triggering exponential growth in population, per capita income, amount of resources consumed and the volume of waste generated (Figures 12-15). The IR was indeed a watershed event in the entire human history.

Needless to say, Industrial Revolution was a multifaceted phenomenon. From the narrow technological point of view, it represented transition from small-scale production based on human and animal

muscle power to large-scale production based on machines run by non-animated power (obtained mostly from fossil fuel). No wonder therefore that Industrial Revolution led to unprecedented increase in the volume of production and consumption. It ushered the era of, what is often called the era of "modern economic growth" Kuznets (1967).

However, Industrial Revolution also represents a major social upheaval. It reshaped human society. Classical economists, who witnessed the process either themselves or from close distance (in time), offered ample commentary on this upheaval. More recently Karl Polanyi (1945) offered a penetrating analysis of this upheaval.[9] He showed that while previously "economy was embedded in social relations," following the Industrial Revolution "social relations (became) embedded in the economic system" (Polanyi, p. 57). In plain terms, while previously society controlled economy, now economy gained control over society.[10] Society became an adjunct of the market.[11] The distinctiveness of this new economy (that came to dominate the society) was that it was the "market economy," motivated by "private material gain."[12] As a result, what emerged was a "market society." Polanyi noted that markets had existed from before. But, previously, markets were mere additions to the society and economy. With industrial revolution, markets became dominant over societies.[13]

Polanyi showed that the specific way in which this fundamental transformation came about is through conversion of people, nature, and the medium of exchange into commodities. Thus, people became 'labor,' nature became 'land,' and medium of exchange became 'money.'[14] The process took a particularly brutal form in England, the birthplace of IR. It then continued in other places. The process had its even more brutal counterpart in colonies. Polanyi termed labor, land, and money as "fictitious commodities," noting that these were not really produced as commodities (for sale), so that their conversion into commodities was essentially an artificial act performed through force.[15] This conversion was a requirement of large scale machine-based production in a market.[16]

Polanyi recognized that this new type of economy and society proved extremely productive. But he noted that "miraculous improvement in the tools of production" was accompanied by "a catastrophic dislocation of the common people (Polanyi 1945, p. 33)." He noted that the transformation disjointed "man's relationships" and "threaten(ed) his natural habitat with annihilation (Polanyi 1945, p. 42)." He noted that the main reason why people and nature were saved from annihilation by market forces was the protective measures that were undertaken. He saw examples of such protective measures in England's Speenhamland Law, Factory Laws, various protest movements, various reformist and utopian projects (such as of Robert Owen), etc.

However, Polanyi thought that to protect people and nature, it was necessary to reestablish control of society over economy, or to re-embed economy in society. The way to do so, in his view, was through disestablishment of the commodity status of labor, land, and money, and restoring them as people, nature, and the medium of exchange (Polanyi 1945, pp. 253-4). He thought that Adam Smith's dictum that pursuits based on self-interest lead to beneficial social outcomes had only limited applicability. Instead, for the society to be viable in the long run, it is necessary to abandon private gain/self-interest as the motive force of the economy and adopt social welfare as the direct guiding force.[17]

It is not necessary to agree with all of Polanyi's analysis and recommendations. For example, his symmetric treatment of money with that of labor and land may be questioned. Similarly, his suggestions about disestablishment of the commodity status of labor, land, and money need further discussion. The operational specifics and consequences of substitution of private material gain by social welfare as the driving force of the economy need to be discussed and worked out in the light of the world experience with regard to central planning and widespread instances of "government failures," which in many cases may be worse than "market failures." However, there is no escape from the fact that sustainability requires climbing down from the vertical trajectories

to which human society was put by the IR. It is true that total population size is expected to stabilize by 2050 at around 9 billion. However, vertical trajectories in other dimensions are likely to continue and aggravate breaches in planetary boundaries unless societal changes are made.

Of course, re-embedding economy in society does not mean going back to pre-industrial societies. It also does not mean abandoning markets all together. Polanyi himself noted that "disestablishment of the commodity fiction does not mean elimination of all markets: The end of market society means in no way absence of markets (Polanyi 1945, p. 252)." He emphasized that markets would continue, "in various fashions," to ensure "the freedom of the consumer, to indicate the shifting of demand, to influence the producers' income, and to serve as an instrument of accountancy (Polanyi, 1945, p. 252)."

Polanyi was aware that many have misgivings about the idea of embedding market in society. Some are worried about loss of freedom.[18] He tried to show that reestablishment of society's primacy over markets would actually enhance freedom. He expressed the conviction that "an industrial society can afford to be free. … The passing of market-economy can become the beginning of an era of unprecedented freedom (Polanyi, 1945, p. 256)."[19] Polanyi also noted that re-embedding economy in society would be helpful in preserving the domestic diversity across nations and at the same time improve relationship among them.

a. Disembodiment of financial sector from the real economy

While Polanyi was concerned about disembodiment of market from society, there has been in recent decades a further disembodiment, namely that of the financial sector from the real sector of the economy. As Polanyi noted, preservation of the society in the face of the onslaught of the market required many countervailing measures. Similarly, there were barriers erected to ensure some degree of separation of the real sector from fluctuations of the financial markets.[20] However, many such barriers crumbled in recent years, allowing the financial sector to extend its sway on the real sector in a much more pronounced way.

Several factors contributed to this process. One of these was the general retreat, beginning in the 1980s, of countervailing measures and forces protecting society from market. As a result, inequality rose. A second factor has been the new stage of globalization. Introduction of "container shipping" revolutionized transportation of goods, reducing shipping costs, and making it possible for companies of developed countries to offshore labor-intensive production operations to low-wage developing countries. Such off-shoring led to rise in profit income, while depressing wages in developed countries.

The above two processes led to concentration of unprecedented amounts of surplus in the hands of capital owners, who looked for new investment opportunities for the surplus. There was therefore a push for deregulation of the financial sector. For example, in many countries, barriers that have prevented commercial banks from engaging in investment banking were weakened or removed. In the international arena, a similar push led to the opening up of capital accounts of many developing countries. The opening up, in some cases, increased developing countries' access to capital. However, the resulting capital inflows were often pro-cyclical and focused on short-term gains, leading to misallocation of capital and bubbles. Also, these capital flows dried up and reversed direction *en-masse* whenever the international capital market perceived risk to be more than they were willing to accept. As a result, developing economies became vulnerable to the whims and machinations of the international financial and currency markets.

At the same time, the lack of growth of income and purchasing power of the common people led to a huge expansion of credit-financing of consumption. In particular, credit-financing led to the housing-bubble in the United States. Accumulation of huge surplus in the hands of the rich and growth of indebtedness of the rest led to "over-financialization"

of the economy, reinforcing inequality further (Galbraith 2012).

In his time, Keynes drew attention to the casino feature of financial markets. This feature has always been a characteristic of stock and debt markets. However, with the ballooning of the financial sector, emergence of exotic derivatives, removal of barriers between commercial and investment banking, the susceptibility of the real sector to the casino feature of the financial markets increased greatly. Emergence and bursting of bubbles have become more prevalent and pervasive. Re-embedding financial sector in the economy therefore has to precede re-embedding of the economy in the society.

b. Control of politics

Adult franchise was one of the important countervailing measures against the assault of the economy on the society. The egalitarianism of adult franchise is supposed to counteract the inegalitarian outcomes of the economic sphere. However, in recent years this countervailing measure has also come under pressure. Stiglitz (2012), for example, thinks that "one dollar, one vote" is replacing the "one person, one vote" principle of democracy. In some cases, the effective income tax rates for people belonging to higher income brackets are *lower* than that for people belonging to lower income brackets. In other words, politics is serving to reinforce the inegalitarian outcome of the market, instead of ameliorating it.[21] This feedback effect of economy on politics has made the task of re-embedding economy in society more daunting and, at the same time, more important.

c. Re-embedding: A long run goal

Re-embedding of the economy in society; disestablishment of land, labor, and money as commodities; substitution of private gain by social welfare as the motive force of the economy; abandonment of relentless increase in material consumption as the goal of life; substitution of individualism by solidarity and collectivism; etc. can provide the direction toward a sustainable social model. However, this can only be a long-run goal. Just as the Industrial Revolution and the social upheaval that it brought about unfolded over a long period of several centuries, the negation of some of its outcomes (which with time have become irrational and unsustainable) and achieving a sustainable social model will also be a long-term process. However, as the Chinese proverb goes, even a long journey has to start with a short initial step. What can be these initial steps?

4 Initial steps toward sustainability

Many studies proposing socio-economic changes necessary for sustainability have already adopted the Polanyi perspective as the necessary backdrop and source of inspiration. For example, the nef (2010) study, *Great Transition*, informs that,

> "We have called the process by which this (overcoming the current challenges —NI) could happen the *Great Transition* as a deliberate echo of *The Great Transformation*, written by Karl Polanyi in the 1940s."[22]

It is therefore no wonder that many concrete suggestions put forward in *Great Transition* can be related to Polanyi's ideas.[23] For example, one of the changes that nef suggests is "Great Rebalancing," which refers to enhancing the role of the "public sphere" and the "core economy" vis-à-vis the "market sphere." By core economy nef refers to processes within family and community. It argues that the "market sphere needs to be more tightly drawn and rebalanced alongside the public sphere and the 'core economy.'" This is clearly in the direction of "recovering society" or re-establishment of control by society over economy. Similarly, nef has proposed "Great Revaluing," as a "vital first step" toward sustainability. This is also related to issues of correct choice of indicators of overall performance of the economy and proper ways of computing them. In fact, we may begin the discussion of initial steps towards sustainable social model by examining these issues.

a. Towards proper measures of economic performance

Dissatisfaction with Gross Domestic Product (GDP) as a measure of overall performance of an economy is well known (see Stiglitz, Sen, and Fitoussi (2010) for a recent discussion). There are complaints about both what to include in it and how to evaluate the items that are included in it.

Researchers have pointed out that, instead of gross entities (such as GDP, GNP, or GNI), corresponding net entities (i.e. NDP, NNP, and NNI, respectively) can serve the goal of sustainability better (Pemberton and Ulph, 2000). While these net concepts are well known, they do not receive as much attention as GDP does.

In a series of papers, Weitzman, Dasgupta, and other scholars have demonstrated that NNP can be the equivalent of the current-value Hamiltonian derived from an inter-temporal optimization of utility subject to the production possibilities set. (Asheim and Weitzman, 2001; Dasgupta, 1994; Dasgupta, Kristrom, and Maler, 1997; Hartwick, 1990; Weitzman, 1976, 2000, 2003)[24] In the general case, Hamiltonian represents the sum of the utility derived from consumption and the value (in utility units) of the change in capital.[25] As Weitzman notes, by being proportional to the Hamiltonian, NNP can represent "the sustainable equivalent or the stationary equivalent of the welfare that an optimal program is actually able to deliver." It can therefore accord with the Hicksian definition of income as "the maximum sustainable consumption" (Weitzman, 2003). Weitzman shows that under a wide variety of conditions, changes in NNP can track changes in welfare.

In one sense, NNP's connection with sustainability is straightforward, even though its optimal property (through its above noted correspondence with Hamiltonian) is not that apparent. It is well known that one of the ways in which the concept of sustainable development is operationalized is by defining it as development in which current consumption does not lead to a reduction of future availability of capital per capita. This definition in turn has been interpreted in two ways. The first, known as 'strong sustainability,' postulates that the condition regarding future capital availability pertains to 'natural capital' i.e. capital that is not produced by humans (in other words, resources that can be obtained from the mother-nature). The second, known as 'weak sustainability,' postulates that the condition regarding future capital availability applies to 'aggregate capital' that includes capital produced by humans (i.e., physical and human capital) in addition to natural capital. In other words, weak sustainability allows for substitution of natural capital by other forms of capital, while strong sustainability does not. The growing environmental challenge, particularly the climate challenge, has brought to fore the importance of strong sustainability, though there are some who continue to prefer weak sustainability.

One of the reasons why GDP (or other gross entities) continue to reign is the difficulty in computing depreciation (Rahman 2011). This difficulty applies to physical and human capital too. However, it is particularly true for natural capital, which is yet to be quantified and valued properly.

There have been efforts at conducting inventory of natural capital and estimate its value (see, for example, Nordhaus and Kokkelenberg, 1999). It is encouraging that several UN agencies are working earnestly in this area. For example, the Statistical Division of UN DESA is working on "Environment and Energy Statistics." More importantly, it is working on a "System of Environmental-Economic Accounting (SEEA)" to develop information on "the impacts of economy on environment and the contribution of the environment to the economy." Similarly, UNEP is conducting an inventory of the earth's ecological resources and estimating their value (UNEP, 2005, 2010, 2011). Pointing at their immense value, UNEP has argued for the earth's ecological resources "to have a seat at the table." With more work along this line by both UN and non-UN agencies and scholars, significant progress is expected in future in quantification and valuation of natural capital, paving

the way to an eventual shift to NNP as the main indicator of the overall performance of the economy. The UN played an important role in the development and adoption of the current System of National Accounts (SNA). It may therefore be expected that the UN will play an important role in making NNP computation possible, promoting thereby the goal of sustainability.

Inclusion and proper valuation of non-market activities is another direction in which indicators of aggregate performance of the economy need to be extended. Rearing a family, doing community service, volunteering to mend environmental damage, etc., are no less important than many activities in the private sector and government services that are currently included in GDP.

The current system of national income accounting is rather of recent origin and is based on certain choices that the international community made. It is not something immutable. Its focus on activities that get remunerated in the market is in fact a reflection of the primacy of the market over the society, as noted by Polanyi. Extension of national income accounting to include more activities that currently do not receive remuneration in the market therefore conforms to the goal of embedding economy in society.

A related issue concerns appropriate rates of time discounting. Earlier, the controversy surrounding the Stern (2007) report on climate change brought to fore the importance of time discounting rate (see Ocampo (2009) for a discussion). Use of higher discounting rates leads to neglect of the future. To prevent such neglect, many scholars have proposed that the discounting rate should be zero, implying that the welfare of future generations should receive the same weight as that of the current generation. Weitzman has suggested the idea of using Gamma discounting, i.e. a discounting rate that follows the Gamma distribution, which peters off quickly (Gollier and Weitzman, 2010; Weitzman 2001, 2010). Needless to say that concerns for sustainability would suggest adoption of zero or near zero time discounting rate.

b. Capturing externalities through correction of prices

A complementary process necessary for advancing the cause of sustainability is correction of prices in order to reflect externalities, both positive and negative. As nef's *Great Transition* puts it, "good things need to be made cheap, and bad things need to be made expensive." For example, the market prices of fossil fuels do not take into proper account the damage that GHG does to the environment. Similarly, prices of products containing plastic do not take into account the damage that non-biodegradable waste does to the soil, water, and environment in general (Alire, 2011; Kaeb, 2011). The price of electricity generated by nuclear power plants does not reflect the damage that radio-active waste poses to the environment and human health. Similarly, the price of land currently under forests does not reflect the eco-services that forests provide to the rest of the nature and to humans. These are well known examples of market failure caused by externalities. Yet, sufficient efforts are yet to be made to correct the prices in order to reflect these externalities.

Of course, there are enormous difficulties in making the necessary price corrections. First of all, while the necessity for price correction may be recognized, it is difficult to determine and agree on the exact extent to which prices need to be changed. Second, while many of the price corrections are grounded on global considerations, the national circumstances differ, making it difficult to translate the necessary global correction into corrections at the national level. Third, even if the national level corrections are determined theoretically, it is difficult to implement them, because the jurisdiction over implementation remains at the national level.

Raising global awareness and mobilization of global opinion can gradually overcome these difficulties. The issue of carbon tax can provide an example. Many nations are now voluntarily adopting carbon tax. With global mobilization, it may be possible to achieve global acceptance for similar tax on non-biodegradable plastics. One attraction of correction of prices as a way to promote sustainability is that it allows aligning

interests of private entrepreneurs (or market forces) with that of the society (nef 2010b, p. 5).

c. Changes in consumption pattern

Switch to NNP and changes in prices (to reflect externalities), as discussed above, should be helpful in pushing the consumption pattern toward sustainability. However, these may not be enough. Additional conscious efforts are necessary. Needless to say, the main domain of action in this regard has to be developed countries, where the prevailing consumption pattern is clearly unsustainable.

The implications of this basic proposition were explored earlier in the context of the discussion on climate change and sustainable energy consumption. For example, it was noted that the total sustainable absorption capacity of the earth's atmosphere is about 5 gigaton of CO_2 per annum, and it corresponded to an equilibrium atmospheric carbon concentration level of about 250 ppm. With the world population stabilizing at 10 billion in 2080, this suggests a sustainable per capita level of CO_2 emission of only about 0.5 ton per annum. Reverting back to the pre-industrial levels of carbon concentration and emission is generally thought to be unrealistic, at least in the short run. Based on the generally accepted goal of 450 ppm as the equilibrium level, WESS-2011 (United Nations, 2011) therefore put forward 3 tCO_2 as the per capita emission level that needs to be achieved by 2050, assuming that the population will reach 9 billion in that year. According to this exercise, the 3 tCO_2 emission corresponded to an energy consumption level of 70 Gigajoules (GJ).[26] These levels may be compared with the 2007 *actual* levels of per capita CO_2 emission of 19 tons of tCO_2 in the USA, 10 tCO_2 in France, and 1.4 tCO_2 in India and per capita energy consumption of 340 GJ in the USA, 150 GJ in Denmark, and 15 GJ in India. These data show the enormity of the task that developed countries face if they are to climb down from their unsustainable level of GHG emissions to a sustainable level.[27]

Many scholars have noted that, in addition to inequality across nations, there is huge inequality in consumption within countries. For example, it has been noted that 500 million rich people, living in both developed and developing countries, account for about 50 percent of global GHG emissions, while the poor 3.1 billion people account for only 5 to 10 percent (United Nations, 2011). Thus the process of climbing down and climbing up to the globally sustainable level should apply not only across countries but also across individuals within individual countries. In fact, WESS-2011 (United Nations, 2011) reports that bringing modern energy to 3 billion people would require only 3 percent increase in electricity generation, less than 1 percent increase in oil consumption, and less than 1 percent increase in CO_2 emission by 2030. This again shows that reaching sustainability goals becomes much easier if inequality can be reduced.

The "sustainability principle" illustrated above with the example of energy consumption applies to other items of material consumption too.

However, the "sustainability principle" does not mean extreme egalitarianism across nations with regard to all items of material consumption. Nations differ with regard to their physical and cultural conditions, so that some variation in material consumption has to be allowed.

The goal of climbing down by developed countries to sustainable levels of consumption however gives rise to many questions. Will adjusting downward mean negative economic growth and reduction in income and employment, leading to a crisis? It is questions of this type that has given rise to the "growth dilemma" (Jackson, 2009, 2011).

d. Decoupling employment and income from conventional growth

"Growth dilemma" refers to the apparent paradox that while continued growth of the current type is impossible (if we want to stay within planetary boundaries), life without growth also seems to be impossible, because absence of growth appears to entail reduction in income, employment, and quality of life. It seems difficult to find a resolution to this

growth dilemma under the current socio-economic model.

However, in the context of the sustainable social model and the initial steps toward it, the growth dilemma may disappear or at least turn out not to be as paralyzing as it seems. First of all, adjustment of consumption toward globally sustainable level will itself require a lot of activities, creating a lot of employment opportunities. For example, switching from the fossil-fuel based energy infrastructure to the one based on renewable and less emission-intensive energy sources requires a huge effort. Thus adoption of the sustainability goal may not imply reduction in the level of economic activity and conventional GDP in the short run.

Second, switching from GDP to NNP (more generally, from gross to net indicator) will allow many more activities geared toward preservation and enhancement of natural capital to be counted and reflected in the overall performance of the economy. In fact, growth arising from this type of activities may be more meaningful than and preferable to growth in conventional GDP achieved through, say, cutting down forests or construction of prisons.

Third, downward adjustment of natural resource consumption may not mean reduction of overall consumption, because there may be offsetting growth in non-material consumption and also more efficient utilization of resources. Thus, there may be more consumption of e-books, downloadable music, plays and films, poetry recital, concerts, games, and comedy shows. The material counterpart of growth of consumption of such non-material items may be relatively small, particularly if the social wastage resulting from frequent introduction of essentially unchanged "new" models can be reduced or avoided. The switch from real to virtual objects of consumption may in some cases lead to reduction in labor requirement. However, the new social model may provide a different way of dealing with such "labor saving" processes than what is possible under the current model, as discussed below.

Fourth, steps toward re-embedding economy in society would lead to enhanced importance of community and society and of participation in related activities. Consumption in the collective sphere can become more important than consumption in the individual or private sphere.

Fifth, gradual establishment of the eight hour working day, and eventually the forty-hour working week, has been a major achievement resulting from IR-triggered processes. However, further progress in this regard has basically stalled for a long time now (except for the recent shortening of working week in France). Yet, higher levels of non-material consumption and greater direct participation in community and social life will require more time. Under the new social model, higher productivity and reduction in the time of work for production will complement the need for more time for increased non-material consumption and increased participation in family, community, and social activities.

Sixth, under the current social model, higher labor productivity often leads to unemployment and loss of labor income. However, this does not necessarily have to be the case. The outcome depends largely on the social arrangement that determines how the productivity gains are shared. In a series of papers, Weitzman (1984, 1985) shows that a "share economy" (i.e. an economy in which employees share the profits of the enterprise) can lead to better outcomes with regard to both productivity and employment than an economy in which employees receive only wages. Adoption of the share economy features can therefore be helpful in protecting labor income and raising productivity simultaneously.

In short, the resolution of the "growth dilemma" lies in a different kind of social arrangement in which productivity gains lead to shared income growth and not to unemployment and loss of income by workers. Growth itself has to focus more on expansion

of non-material consumption and increase in direct participation in community and social life. This kind of growth will require more engagement of people and will lead to expansion of their "possibilities set." Thus, it will be necessary to strive for a different type of decoupling, namely decoupling of labor income and employment from conventional growth.

e. The idea of "Social Business Model"

In recent years, Mohammad Yunus (2007, 2010), the pioneer of micro credit and founder of *Grameen Bank*, has been campaigning for what he calls the "Social Business Model (SBM)." The idea is, in a sense, similar to that of non-profit organizations that are already prevalent in many capitalist economies. However, there are distinctions too. First, while existing non-profit organizations are concentrated mainly in the areas of education, healthcare, and cultural services, Yunus thinks his SBM to be applicable to production of material commodities and commercial services. Second, according to Yunus, enterprises following SBM will also earn profits, but these profits will not represent private gains of the entrepreneurs. In other words, the motivation of the SBM entrepreneurs will be social welfare and not their own private material gain.[28] In a sense, this corresponds to Polanyi's idea of substitution of private gain by social welfare as the motive force of the economy.

Yunus is not alone in arguing for a shift in the motive behind running business enterprises. Many in the business world are themselves urging for such a change. For example, Martin Rohner, the Chief Executive of the Alternative Bank of Switzerland (ABS), has recently argued for banking with "triple bottom line of people, planet, and profit" (Rahman F. 2012). He expressed the view that financial institutions around the world should change their "profit mongering mindset" and instead adopt "value-based banking practices for meaningful contribution to the economy." He has put forward the goal of "sustainable banking," which brings us to the issue of the financial sector.

f. Re-embedding the financial sector in the economy

We noted earlier re-embedding of the financial sector in the economy as a necessary initial step toward sustainable social model. Finance is supposed to play a facilitating role for the real economy. In particular, it is supposed to serve as a vehicle for channeling small surpluses of many citizens to those needing fund for investment. In this way, ordinary citizens (who mostly depend on labor income) can have a share in the capital income in the form of dividend. Over time, however, finance became concentrated in the hands of those who were more interested in earning capital gains than in getting dividend income. As a result, speculative operations aimed at enhancing capital gains became the predominant goal of financial market activities. Instead of serving as an equalizing force (through diffusion of profit income among larger sections of the society), financial markets became a force for increasing inequality. As noted earlier, the process led to over-financialization. It also became a source of instability in the economy.

Until recently, the financial sector appeared to be sacrosanct and the epitome of market efficiency (despite its repeated failures even in the recent past, in both developed and developing countries). The financial crisis of 2008, however, destroyed that myth.

Many ideas have been put forward about how to curb over-financialization and re-embed the financial sector in the economy. Among these are: (i) abolition of the fractional reserve system in banking, (ii) prohibition of investment in stock markets using borrowed money, (iii) separation of commercial banking from investment banking, (iv) establishment of public control/ownership over the banking/financial sector, etc. Needless to say, all these ideas deserve to be examined for their pros and cons.

Since the financial sector essentially deals with public money, there is a stronger rationale for putting this sector under greater public scrutiny and control than is the case for other sectors of the economy. It is therefore not surprising that, in many capitalist countries, there is a greater degree of public ownership in the banking sector than in other sectors of the economy. Of course, there are down sides to public ownership too, as manifested in misallocation of capital and other "government failures" observed in many countries with publicly owned banking sector. It is therefore necessary to study the cross-country experience of public control over the banking sector in order to find out the optimal institutional arrangement necessary to re-embed the financial sector in the economy and to ensure that the financial sector serves the real economy and not the other way around.

g. Initial steps toward sustainability and the post-2015 agenda

The initial steps mentioned above does not exhaust the list of ideas that have been put forward regarding how to proceed toward a sustainable social model. These ideas need to be integrated and checked to see whether they add up to be a viable social model or fresh new ideas are necessary to fill the gaps. At the same time, these ideas need to be connected with the actual practice of the international cooperative effort. The most important locus of such effort is the inter-governmental process taking place under the auspices of the United Nations, which is currently engaged with the task of formulating the post-2015 development agenda. It is therefore necessary to draw the implications of the above discussion for this agenda.

5 Implications for the post-2015 agenda

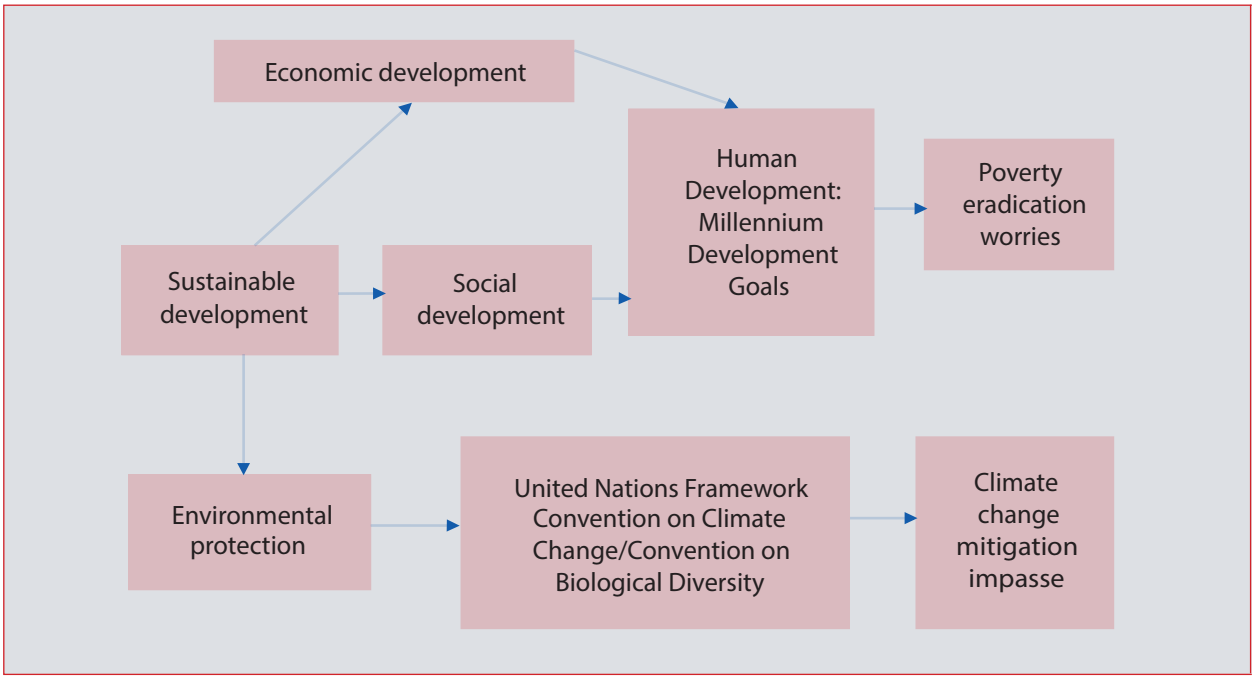
The discussion on post-2015 agenda initially proceeded along two streams. The first of these flows from the MDGs (whose reference period expires in 2015), and it preceded Rio+20 conference (formally the United Nations Conference on Sustainable Development). The UN Task Team (UNTT) was formed with UN-DESA and UNDP as co-chairs to prepare a report based on views from relevant UN agencies about what should succeed the current MDGs. The UNTT report, *Realizing the Future We Want for All* (UNTT 2012), is the outcome of this process. Meanwhile, *The Future We Want* (UNCSD 2012), the outcome document of the Rio+20 conference held in July 2012, called for a set of Sustainable Development Goals (SDG) and initiated a process for this purpose by asking the General Assembly to form an Open Working Group (OWG). Since its formation in January 2013, the OWG has worked vigorously and has now put forward a set of SDGs and corresponding targets. As a result, both MDGs and SDGs have entered the discussion of post-2015 agenda, and a clear understanding of the relationship between them has become important.

a. Bifurcation of the *Agenda 21* implementation process

World Commission of Environment and Development (WCED), also known as the Brundtland Commission, defined Sustainable Development (SD) in general but very meaningful terms as development that "meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (WECD, 1987). This definition provided a very expansive interpretation of SD (Kates, Parris, Leiserowitz, 2005). Over time, as is known, SD came to be understood as having three dimensions, namely (i) economic development, (ii) social development, and (iii) environmental protection.

The expansive understanding of SD however has both advantages and disadvantages. The main advantage is that it allows SD to encompass many different goals that are to be achieved. That is why SD is referred to as the overarching framework for UN activities in the area of development. The apparent disadvantage is that, when the scope is so broad, it is difficult to identify what to focus on and how to measure progress. That may be one reason why, until Rio+20, no attempt was made to formulate sharply a set of sustainable development goals, even though

Figure 16
Bifurcation of the Agenda 21 implementation process



Source: Figure II.1, WESS 2013.

the concept of SD has been around for about three decades now.

However, responding to the approaching new millennium, the world community formulated Millennium Development Goals (MDGs), which represented a conceptual shift from "economic development" to "human development."[29] It is clear that the concept of human development combines many of the goals of economic and social development, two dimensions of SD. From that viewpoint, MDGs could also be thought as SDGs (albeit of partial scope). However, this was generally not the case, mainly because MDGs were weak on environmental protection, which occupies a special place in SD, even though formally all three dimensions of SD are thought to be equally important (UN-DESA DSD 2012). The only MDG pertaining to environmental issues was MDG7, which initially focused on access to drinking water and reduction of slums. It is only later that some other targets, such as the ones with regard to bio-diversity, were included in it. However, MDG7 did not represent a well thought-out goal, with a comprehensive set of targets, and it did not enjoy prominence among MDGs. More importantly, many of targets of MDG7 were not for corrective action, rather for monitoring only.

Thus implementation of sustainable development agenda, as formulated in *Agenda 21*, bifurcated into two tracks (Figure 16). While MDGs focused on human development, the international community responded to environmental challenges through other initiatives, such as the United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biodiversity, Convention on Desertification, etc. The two tracks were also often associated with two opposing domain configurations. For example, MDGs applied to developing countries, with the role of developed countries limited mainly to providing financial assistance. By contrast, the GHG reduction goals under the Kyoto Protocol applied to developed countries, and developing countries were exempt from taking on GHG reduction targets, following the Rio Principle of "Common But Differentiated Responsibility (CBDR)."

b. Consequences of bifurcation of the *Agenda 21* implementation process

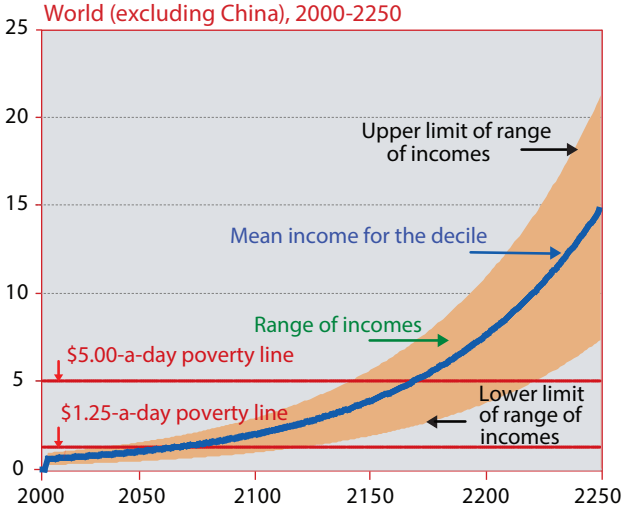
While the above bifurcation of the *Agenda 21* implementation process had its advantages, it did not serve either environment or development goal well, in the long run. In fact, it led to a conflict between these two goals.

This disappointing outcome can be seen more clearly in the impasse regarding climate change mitigation efforts under the Kyoto Protocol. Several major emitting countries did not ratify this protocol. Some countries that signed and ratified it later withdrew from the Protocol. Many countries that signed and ratified the protocol, failed to achieve the targets that they took on. The GHG reduction that was achieved in Economies in Transition (EIT) owed mainly to collapse of their economies (industrial production, in particular) and not to conscious efforts to reduce GHG. Finally, as mentioned earlier, GHG reduction in many developed capitalist countries was achieved through off-shoring GHG-intensive production operations to developing countries. As a result, the global total of GHG emissions increased rapidly in recent years, frustrating the goal of climate change mitigation.

Similarly, the record of MDG achievement is mixed. As noted earlier, the success in poverty reduction is uneven and mostly driven by East Asian countries. The threshold used to measure poverty is very low. Even those who climbed above poverty line remain very close to it, so that negative shocks can push them below the line easily. There are important quality issues with regard to measured achievements in education and health. There are issues of policy coherence too. In particular, there are concerns whether emphasis on achieving MDGs led to neglect of investments necessary to sustain the achievements (for example, creation of jobs for greater number of graduates from schools).

It was noticed earlier how unequal distribution of wealth and income is making poverty reduction difficult, leading poverty reduction efforts to hit planetary boundaries. In fact, based on the average growth rate of incomes in the lowest decile (of

Figure 17
Poverty eradication predictions
Income of the poorest decile,
World (excluding China), 2000-2250



Source: Figure II.2, WESS 2013.

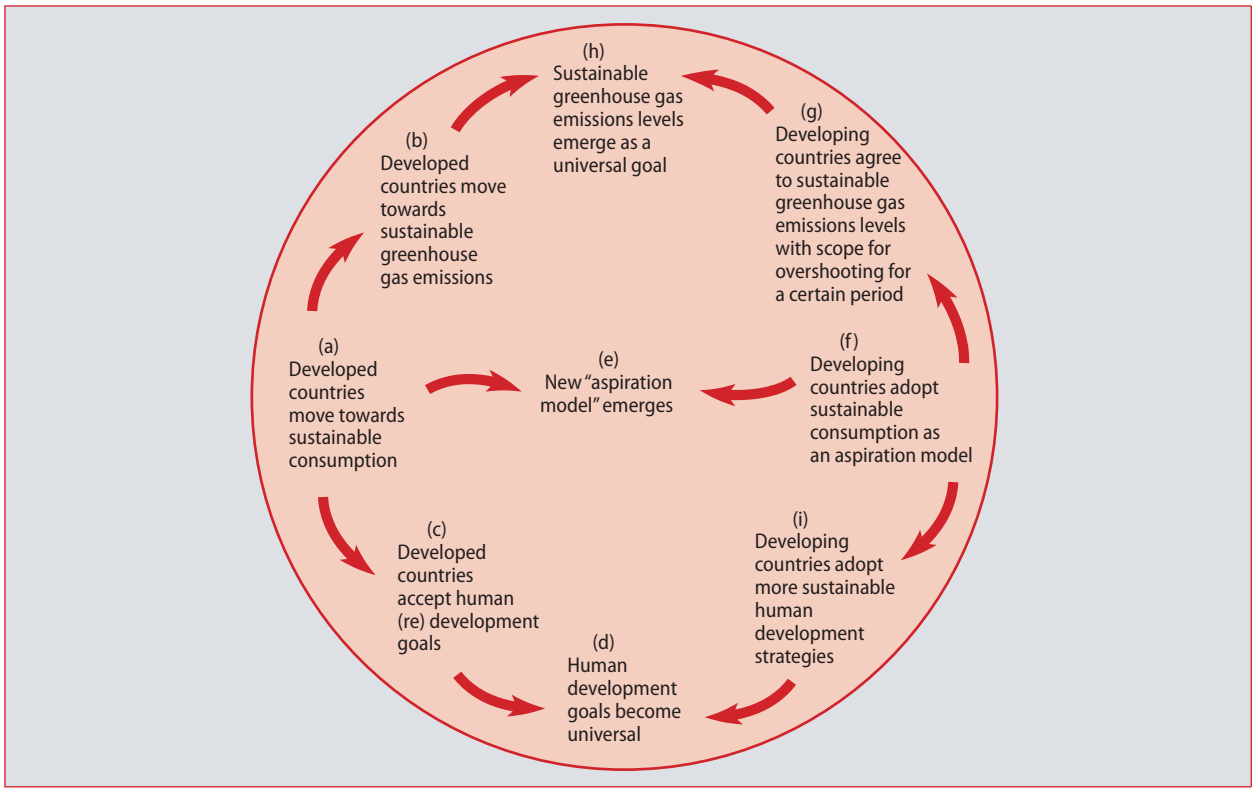
income distribution) from 1993 to 2005, Woodward (2013) finds that, humankind will have to wait till 2140 for eradication of poverty (measured by $1.25/day poverty line) and till 2265 for eradication of poverty measured by $5/day poverty line (Figure 17). These findings show again (in a somewhat dramatic form) that an impasse has been reached with regard to human development too.

The experience therefore shows that it is necessary to end the bifurcation in order to overcome the impasses with regard to both human development and climate change. The emergence of the proposal to formulate SDGs at a time when there was already an on-going discussion on post-2015 phase of MDGs is a reflection of this necessity. The question is how the bifurcation may be ended and development and environment can be brought together.

c. Sustainable social model and integration of development and environment

Figure 18 presents a framework for integrating development and environment, overcoming the twin impasses, and making them both universal goals.

Figure 18
Bringing development and environment together



Source: Figure II.5, WESS 2013.

The initial move has to come from developed countries. They have to demonstrate their commitment to sustainable development by making genuine moves toward it. For example, this would mean acceptance by them of the 3 tCO_2 per capita annual emission goal, and adjustment of their consumption pattern to reach that goal in a reasonable time frame.

As noted earlier, progress toward the 3 tCO_2 goal will require transformative changes in the economy, infrastructure, and lifestyle. These changes will therefore imply for developed countries a new stage of human development, focused on moving away from material and private consumption to non-material and social consumption, from unequal to more equitable distribution of wealth and income, and from self-aggrandizement to greater priority given to community and society. Thus the human development goal will become universal, though its focus will be different in developed and developing countries. While in developing countries the focus of human development will continue to be on poverty eradication and on raising the material standard of living, in developed countries, it will focus on switching to sustainable consumption and lifestyle. The domain of the human development goal will thereby encompass both developing and developed countries.

A genuine move by developed countries toward sustainable consumption pattern will also free up more environmental and resource space for developing countries for raising their material standard of living. It is also likely to change the "aspiration model" for many developing countries. Instead of striving for the unsustainable consumption pattern currently observed in developed countries, developing countries too may take sustainable consumption pattern as their goal. Furthermore, they may feel encouraged to offer more cooperation in solving global environmental challenges, including the climate challenge. As a result, the current impasse regarding climate change may be overcome, and the domain of action

for climate change mitigation may cover both developed and developing countries.

The framework of Figure 18 therefore shows how both environment and development goals may become universal and be integrated. In fact, many developing countries are not waiting for developed countries to take initiatives both toward sustainable consumption pattern and toward offering greater cooperation in solving global environmental problems. For example, several Latin America countries have put forward the concept of *Buene Vivir* (Good Life), which postulates that a better life can be achieved with less material consumption, giving more importance to community life, and putting less pressure on the environment. Ecuador has added to its new Constitution a section on "Right of the Nature," granting nature the right to exist and flourish, and allowing individuals and communities to seek redress on behalf of nature if its rights are violated. This is similar to making it a crime to harm the environment, but on the basis of a more elevated approach. Bhutan has been advocating "Gross Happiness Index" as a measure of wellbeing that does not rely on conventional GDP and material consumption. These examples, show that there is a real possibility of reciprocal moves by developing countries to moves by developed countries toward sustainable consumption and lifestyle.

The Brundtland Commission report indeed noted that "SD is a goal not just for developing nations, but for industrial ones too (WCED, 1987, p. 4)." It recognized that "the concept of sustainable development does imply limits."[30] It noted that "the distribution of power and influence within society lies at the heart of most environment and development challenges (ibid, p. 17)." It therefore called for more equitable distribution. It is unfortunate that these calls of the Brundtland Commission report have largely been ignored so far. However, time has come to pay attention to these calls and to realize that only genuine acceptance of a sustainable social model can bring environment and development goals together in post-2015 agenda and generate the kind of cooperation between developed and developing countries that is needed to achieve those goals.

6 Conclusions

Preoccupation with current activities often makes it difficult to pay attention to the larger picture and longer horizon. Earlier, the advent of the new millennium provided an occasion for the international community to undertake a comprehensive stock taking of the progress achieved so far and the tasks that remained ahead. The exercise resulted in the *Agenda 21* (UNCED 1992) as a comprehensive action plan covering all three dimensions of sustainable development. Unfortunately, the implementation process of *Agenda 21* bifurcated into two tracks. While aspects of economic and social development found reflection in the *Millennium Declaration* and got channeled along the MDG track, the international response to environmental concerns moved along a different track, represented by the UNFCCC, Convention on Biodiversity, etc. While this bifurcation had its advantages, it created in the end an impasse with regard to both environment and development and, in fact, generated a conflict between the two.

It is in part a reflection of the above conflict that the Rio+20 conference put forward the idea of formulation of Sustainable Development Goals (SDG) when the international community was already engaged in a discussion of the post-2015 phase of the MDG process. The initiative has now presented the United Nations the task of integrating human development and environmental protection into a common post-2015 agenda. The question is how this integration can be achieved.

The underlying factors causing the impasse with regard to climate change and human development do not go away just because a different discussion process under the rubric of SDGs has been launched. Instead, it is necessary to face these underlying difficulties squarely, and to realize that bringing environment and development together requires a fundamental switch from the current social model to a different, sustainable social model.

Despite its stupendous successes, the current social model, arising from the Industrial Revolution, is now proving deficient in protection of environment, promotion of human development in developing countries, and improvement of quality of life in developed countries. Industrial Revolution has catapulted human society from a largely horizontal trajectory on to an almost vertical trajectory. Such a vertical trajectory is however unsustainable. It is necessary to climb down from this vertical trajectory while preserving the productivity gains achieved and the scope for further progress. For this to happen, it is necessary to re-embed the economy in society, and replace private gain by social welfare as the motivating force behind the economy. This can be however only a long term goal.

However even a long journey has to start with a short initial step. Among such initial steps are moving toward better measures of performance of the economy, correction of prices to capture externalities, switching to sustainable consumption pattern, decoupling of employment and income from conventional growth, changing the motivation behind entrepreneurship, re-embedding the financial sector in the economy, restoring and upholding the integrity of the adult franchise as the basis of political egalitarianism necessary to countervail the non-egalitarian outcomes of the market, etc.

These steps towards the sustainable social model can help bring environment and development together and lead to an integrated post-2015 agenda. Genuine moves by developed countries toward sustainable consumption pattern can create more environmental and resource space for developing countries to grow and inspire them to adopt sustainable consumption pattern as the goal and to offer more cooperation in solving global environmental problems. The fact that many developing countries are taking commendable initiatives toward environmental protection without waiting for examples from developed countries only strengthens this expectation. Thus environment goal can become universal.

On the other hand, the switch to sustainable consumption pattern by developed countries will require transformative changes in economy, infrastructure, and life style. These changes will amount to entering a new stage of human development in these countries. Thus human development goal will also become universal, with different concrete focus in developed and developing countries.

Both environmental protection and human development goals may thus become universal and be integrated in a way that the original Brundtland Commission report envisioned. A new political atmosphere may emerge facilitating the kind of global cooperation that is necessary to implement such an integrated post-2015 agenda.

Notes

1 Based on data compiled by World Resources Institute (WRI), Wikipedia reports the following regional per capita annual GHG emission for 2000 measured in tons of CO2 equivalent: Oceania (24.2), North America (23.1), Europe (10.6), South America (11.1), Central America and the Caribbean (6.3), Middle East and North Africa (5.7), Asia (4.5), and Sub Saharan Africa (4.5). http://en.wikipedia.org/wiki/List_of_countries_by_greenhouse_gas_emissions_per_capita (accessed on September 13, 2013)

2 "Ecological footprint" refers to "the amount of biologically productive land and sea area necessary to supply the resources a human population consumes, and to assimilate associated waste." The concept originated with the work by Rees (1992) and first implemented in a Ph. D. thesis by Wackernagel (1994). Since then the concept has gained popularity. The method for calculating it varies, but there are now attempts to standardize the methodology so that results could be consistent and comparable. (See http://www.footprintstandards.org/.)

3 See http://www.footprintnetwork.org/en/index.php/GFN/page/data_sources/. Retrieved 2012-03-17.

4 For example, according to nef (2010a/GIW, p. 5), "Globally, real GDP grew at 3.0 per cent per year over the period 1980 to 2001. World energy consumption grew but at the lower rate of 1.7 per cent per year. In non-OECD countries, real GDP rose 3.5 per cent per year and carbon dioxide emissions, 1.8 per cent. Although the rates of growth differ, the pattern of rise and fall, the rate of change is clearly linked" (http://en.wikipedia.org/wiki/Ecological_footprint).

5 Herman Daly (1991, 1996) argued for limits to growth or a 'steady state' economy proceeding from a more general, philosophical position. He noted that the human economy and society is only a subset of the planet earth. Since the earth is not growing, it is not possible for a subset (the human economy) to grow indefinitely. Roderick Smith of Imperial College, London, has drawn attention to the fact that "each successive doubling period consumes as much resource as all the previous doubling periods, combined, just as 8 exceeds the sum of 1, 2, and 4 (nef 2010a/GIP pp. 7-8)."

6 "A system has emerged in which the already wealthy become both relatively and absolutely wealthier, receiving the bulk of the benefits of growth. At the same time, the poorest slip further behind economically, and have their well-being and prospects further undermined by environmental degradation (nef 2006/GIW, pp. 3-4)."

7 Wellbeing goes beyond material consumption: "From at least the time of Aristotle, it has been clear that something more than material security is needed for human beings to flourish. Prosperity has vital social and psychological dimensions. To do well is in part about the ability to give and receive love, to enjoy the respect of your peers, to contribute useful work, and to have a sense of belonging and trust in the community. In short, an important component of prosperity is the ability to participate freely in the life of society (Jackson, 2009, p. 30)."

8 In view of the above, it is not unreasonable to ask, as nef did, "So why is it that over 160 years after Mill wrote those words, rich nations are more obsessed than ever with economic growth (nef 2010a/GIP, p. 8)?"

9 "The transformation to this system from the earlier economy is so complete that it resembles more the metamorphosis of the caterpillar than any alternation that can be expressed in terms of continuous growth and development (Polanyi 1945, p. 41)."

10 "The role played by markets in the internal economy of various countries, it will appear, was insignificant up to recent times; and the changeover to an economy dominated by the market pattern will stand out all the more clearly (Polanyi 1945, p. 44)." "Market economy is an institutional structure which, as we all too easily forget, has been present at no time except our own, and even then was only partially present (Polanyi 1945, p. 37)."

11 "The control of the economics system by the market is of overwhelming consequence to the whole organization of the society: it means no less than the running of society as an adjunct to the market. Instead of economy being embedded in social relations, social relations are embedded in the economic system (Polanyi 1945, p. 57)."

12 "All types of societies are limited by economic factors. Nineteenth century civilization alone was economic in a different and distinctive sense, for it chose to base itself on a motive only rarely acknowledged as valid in the history of human societies, and certainly never before raised to the level of a justification of action and behavior in everyday life, namely gain (Polanyi 1945, p. 30)." "In spite of the chorus of academic incantations so persistent in the nineteenth century, gain and profit made on exchange never before played an important part in human economy (Polanyi 1945, p. 43)." "The transformation implies a change in the motive of action on the part of the members of the society: for the motive of subsistence that of gain must be substituted (Polanyi, 1945 p. 41)."

13 "No society could, naturally, live for any length of time unless it possessed an economy of some sort; but previously to our time no economy existed that, even in principle, was controlled by markets. Though the institution of the market was fairly common since the later Stone Age, its role was no more than incidental to economic life (Polanyi 1945, p. 43)." "Never before our own time were markets more than accessories of economic life. As a rule, the economic system was absorbed in the social system (Polanyi, p. 68)." "Human society had become an accessory of the economic system (Polanyi, p. 75)."

14 "A market economy must comprise all elements of industry, including labor, land, and money. But labor and land are no other than the human beings themselves of which every society consists and natural surroundings in which it exists. To include them in the market mechanism means to subordinate the substance of society itself to the laws of the market (Polanyi 1945, p. 71)."

15 "The crucial point is this: labor, land, and money are essential elements of industry; they also must be organized in markets; in fact, these markets form an absolutely vital part of the economic system. But labor, land, and money are obviously not commodities; the postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them. In other words, according to the empirical definition of a commodity, they are not commodities. Labor is only another name for human activity which goes with life itself, which in its turn is not produced for sale but for entirely different reasons, nor can that activity be detached from the rest of life, be stored or mobilized; land is only another name for nature, which is not produced by man; actual money, finally, is merely a token of purchasing power which as a rule is not produced at all, but comes into being through the mechanism of banking or state finance. None of them is produced for sale. The commodity description of labor, land, and money is entirely fictitious (Polanyi 1945, p. 72)."

16 "Machine production in a commercial society involves in effect no less a transformation than that of the natural and human substance of society into commodities. …The dislocation caused by such devices must disjoint man's relationships and threaten his natural habitat with annihilation (Polanyi 1945, p. 40-42)."

17 "The transformation implies a change in the motive of action on the part of the members of the society: for the motive of subsistence that of gain must be substituted (Polanyi 1945, p. 41)." "The true criticism of market society is not that it was based on economics – in a sense, every and any society must be based on it – but that its economy was based on self-interest. Such an organization of economic life is entirely unnatural, in the strictly empirical sense of exceptional (Polanyi 1945, p. 249)."

18 "Yet shifting of industrial civilization onto a new nonmarket functioning basis seems to many a task too desperate to contemplate. They fear an institutional vacuum or, even worse, the loss of freedom (Polanyi 1945, p. 250)."

19 "Every move towards integration in society should thus be accompanied by an increase of freedom; moves towards planning should comprise the strengthening of the rights of the individual in society (Polanyi 1945, p. 255)."

20 An example of such barrier is the Glass-Stegal Act that barred commercial banks from engaging in stock market operations. However, under pressure from the financial market, many of the provisions of this act were weakened during the Clinton administration. Removal of these barriers between commercial banking and investment banking has been an important step that ultimately led to the financial meltdown in 2008.

21 In another expression of the assault of the economy on the society, social spaces are increasingly taken over by forces representing the market.

22 The nef (2010b/GT) study, *Great Transition*, explains that "the scale of the change we need to see is at least the equal of the changes he described. … Polanyi analysed how market processes in the industrial revolution had created severe ruptures in the fabric of social life, and argued strongly that we needed to reverse this and find a balance between the market and the non-market; the private and the public; the individual and the community. We couldn't agree more, and the need to achieve this is all the more pressing now given the huge environmental problems we face, problems that Polanyi could not have foreseen in 1944… (nef 2010b/GT)."

23 Changes suggested by nef in its report *Great Transition* are put under the following headings: (i) Great revaluing; (ii) Great redistribution; (iii) Great rebalancing; (iv) Great localization; (v) Great reskilling; (vi) Great financial irrigation; and (vii) Great interdependence.

24 "It has been known for some time now that the current-value Hamiltonian of an optimal growth problem represents in welfare terms the level of stationary-equivalent future utility. It is also apparent that a current-value Hamiltonian is essentially comprehensive NNP expressed in utility units. Somewhat less apparent is how actually to use the above insights in a world where measurable NNP is expressed in monetary (rather than utility) units (Asheim and Weitzman 2001)."

25 "Let V represent the maximized value of the objective function, subject to the constraints. It is V that we are really interested in, because it is measuring welfare. A natural definition of 'utility income' here is the Hamiltonian expression. The fundamental relationship between wealth or welfare and income is here: H = rho*V (Weitzman 1976)."

26 It should be noted that the level of energy consumption corresponding to a particular level of carbon emission depends on energy technology. Improvement in the latter (for example greater use of solar energy) can allow more energy consumption for the same level of carbon emissions.

27 These data also show that many developing countries are much below the sustainable global level, and they can be asked not to raise their carbon emission beyond the sustainable global level only when developed countries are making genuine moves to climb down. For example, it may be noted that with a per capita energy consumption of about 70 GJ, China has already reached the globally sustainable level. However, it is difficult to ask China to refrain from further increasing its energy consumption, unless developed countries themselves provides credible proof that they are on a path to reducing their per capita energy consumption to the globally sustainable level.

28 SMB of Yunus therefore differs from cooperative banks and other cooperative enterprises which also earn profit to be distributed among members of the cooperatives.

29 This shift also found reflection in UNDP's Human Development Report (HDR) and Human Development Index (HDI). First of all, it was noted that increases in a country's average income do not always translate into increases of income of the poor (as noticed earlier in discussing the poverty reduction experience). Second, inspired by Sen's (1999, 2000) notions of 'capabilities' and 'functionings,' it was noted that human well-being depends on 'end-outcomes' (such as health status, education level, voice, participation, etc.), and the link between income and these end-outcomes is not always robust and encompassing (Layard 2005; Nussbaum 2011). Therefore, instead of income, it is necessary to focus on the end-outcomes themselves. These arguments led to MDGs focused on goals regarding poverty, health, education, gender parity, disease control, etc.

30 "The concept of SD does imply limits – not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities (Brundtland Report, p. 6)."

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