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Growth is Failing the Poor: The Unbalanced Distribution of the Benefits and Costs of Global Economic Growth*David Woodward and Andrew Simms*

Abstract

During 1990-2001, only 0.6 per cent of additional global income per capita contributed to reducing poverty below the \$1-a-day line, down from 2.2 per cent during 1981-1990, and barely half the poor's share of global income. Coupled with the constraints on global growth associated with climate change, and the disproportionately adverse net impact of climate change on the poor, this casts serious doubt on the dominant view that global growth should be the primary means of poverty reduction. Rather than growth, policies and the global economic system should focus directly on achieving social and environmental objectives.

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Growth is Failing the Poor: The Unbalanced Distribution of the Benefits and Costs of Global Economic Growth¹

David Woodward and Andrew Simms

This paper questions an idea which has become almost unquestionable in mainstream economics—that a growing global economy is the indispensable foundation for solving all with regard to reducing poverty. The Governments of the world have committed themselves to meeting the Millennium Development Goals (MDGs), the first of which, MDG1, is to halve the proportion of the population of developing countries living below the \$1-a-day poverty line from its 1990 level by 2015.

How can this best be achieved? The answer, we are told, is growth. Poverty reduction, according to the orthodoxy, requires rapid economic growth in developing countries; economic growth in developing countries in turn requires rapid growth in the global economy; therefore, poverty reduction requires the fastest possible growth in the global economy. If this creates environmental problems, conventional wisdom puts faith in technology to reduce the damage.

However, the rate of technological improvement is much too slow, given the severity of current environmental problems, such as climate change, and their impact, which is greatest on the poorest. This appears to give rise to serious tension between the objectives of human development and poverty reduction, on the one hand, and environmental sustainability, on the other. Is this tension inevitable, however, or does the world view underlying it rest on false logic?

The extreme inequality in the global distribution of income and assets seriously undermines the effectiveness of global growth in reducing poverty. The corresponding inequality in the use of natural resources, particularly energy, is one of the biggest barriers to progress on international environmental issues. Based on statistics from the International Energy Agency, the average resident of the United States generates as much of the chief greenhouse gas, carbon dioxide, in a single day as someone in China does in more than a week, while the average Tanzanian takes about seven months to generate the same amount.

This paper, therefore, considers the extent of the inequality in the distribution of the benefits of growth and the possibility of resolving the tensions between human development and environmental objectives by shifting the focus from growth to income distribution at the global level.

The growth dilemma: poverty reduction versus the environment?

The two greatest challenges facing the global economy are eradicating poverty and achieving environmental sustainability. Even on the basis of World Bank data, 45 per cent of the world's population—some 2.8 billion people—live below the “\$2-a-day” poverty line; and more than 1.1 billion—more than the total population of the developed world—below the “\$1-a-day” line.

¹ This paper is based on Woodward and Simms (2006), to which readers are referred for more detailed results and some additional analysis. Except where otherwise specified, all poverty data are taken from the World Bank's PovCalNet computational tool, accessible at <http://iresearch.worldbank.org/PovcalNet>.

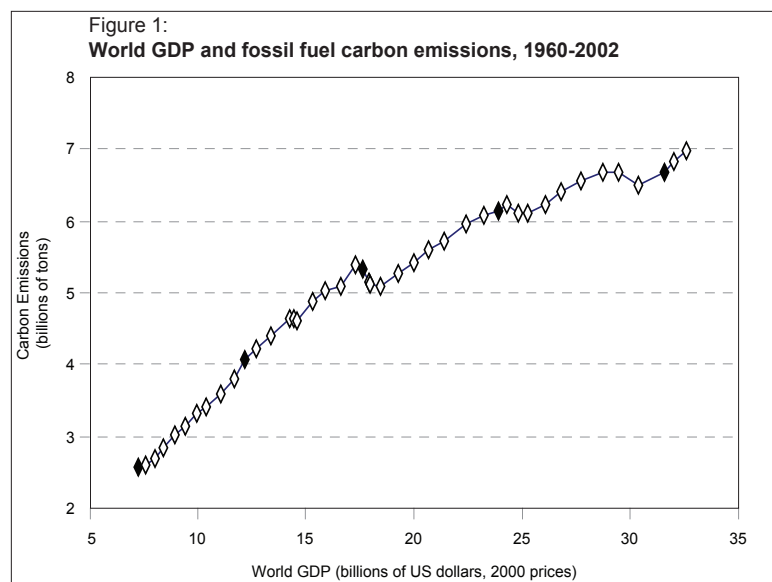
Since the \$1-a-day line is based on purchasing power parity (PPP), in principle, it represents the level of consumption of a single earner in the United Kingdom at the minimum wage, with 36 dependents paying tax but receiving no benefits (and in most contexts, with no access to free health care or education) (Woodward and Simms, 2006: box 1).

The interquartile range of child mortality rates at the \$1-a-day line is one in six to one in twelve, and that for the rate of stunting in survivors between one third and one half. In Niger, the under-five mortality rate at the \$1-a-day line is more than one in three (Wagstaff, 2003). This compares with an overall rate in developed countries of around one in one hundred and fifty. That nearly half the world's population should live in the twenty-first century in such poverty that up to one third of their children die before they reach the age of five, at a time of unprecedented wealth among the world's rich, can only be described as a moral outrage.

If poverty reduction is a moral imperative, resolving our current environmental crises is, in many respects, a practical necessity. The concentration of greenhouse gases in the atmosphere has been rising steadily since the Industrial Revolution as a direct consequence of burning fossil fuels to power economic activity. Emissions have risen dramatically as the global economy has grown over the last few decades (see figure 1).

According to UK Prime Minister Tony Blair's International Climate Change Task Force (2005), the growth rate of greenhouse gas concentrations associated with current economic growth rates could, within a decade, lead to a level commensurate with environmental feedbacks that, in turn, could make the process irreversible. Even current levels of warming can seriously undermine the livelihoods of the poorest people (Simms, 2005).

Poverty, we are told, can only be reduced through continued—and ideally faster—growth of the global economy. This message, often linked with injunctions to follow orthodox economic policies, has become a mantra of the international financial institutions: “No country has achieved the sustained rapid growth needed to reduce poverty without opening up its trade with the rest of the world.... Economic growth is the principal route to lasting poverty reduction” (Krueger, 2004a); “Of course, the poor have yet



Sources: Marland and Boden (2005), World Bank (2005a).

to benefit as much [from growth in India] as they—or we—would like.... But the solution is more rapid growth—not a switch of emphasis towards more redistribution. Poverty reduction is best achieved through making the cake bigger, not by trying to cut it up in a different way” (Krueger, 2004b).

At the same time, however, there are serious and growing concerns about the effects of global economic growth on the environment, particularly in terms of climate change, but also with regard to the exhaustion of natural resources. Paradoxically, the latter concern applies particularly to oil, whose rising price undermines the economies of oil-importing poor countries—although our current closeness to key climatic thresholds and the plentiful availability of other fossil fuels means that oil depletion will not resolve climate change.

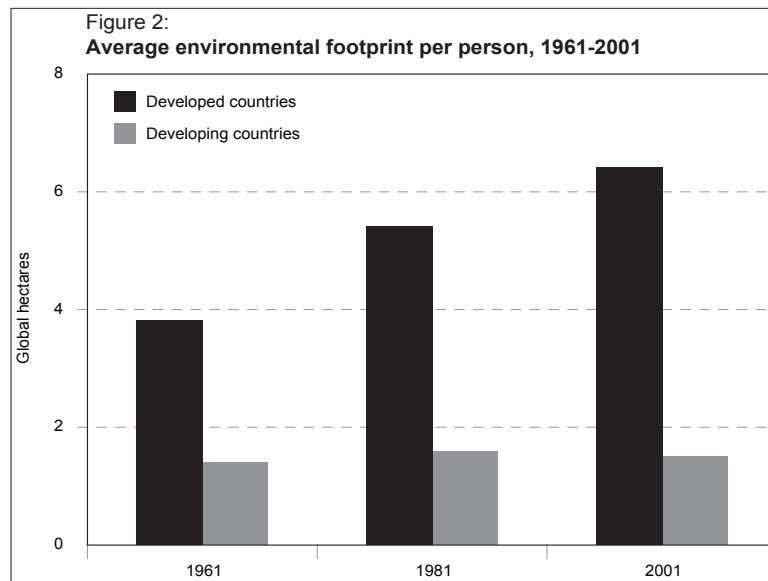
Assessing the literature on growth and environmental degradation, the World Bank (2000) concluded that “A growing economy imposes even greater demands on natural resources and makes management interventions crucial.” It is sometimes argued that, beyond a certain point, increasing income turns from worsening to improving environmental conditions such as air and water quality. However, relying on this is dangerous because “many developing countries cannot reach the turnaround income level for decades”. Moreover, as the Bank also observes, any growth rate leads to an absolute depletion of natural resources, such as forestry, fisheries, soil and the natural capital of coastal regions. Thus “neither rapid nor slow growth is an automatic ally of natural capital”, and fast growth especially creates pressure causing a decline in its “quality”.

Who’s costing the earth, and who’s paying the price?

According to the most recent assessment of humanity’s ecological footprint, in 2002, human demands on the planet, transmitted through our growth-based economies, exceeded the biosphere’s regenerative capacity by more than 20 per cent. While nature can tolerate certain degrees of overexploitation, persistent overburdening leads to the collapse of ecosystems and natural resource availability. Diamond (2005) attributes historical collapses of civilizations to human inability to identify the stage at which societies pass the ecological point of no return.

Our environmental demands are also very unevenly distributed. The world’s total available biocapacity consists of 11.5 billion hectares of biologically productive space –grassland, cropland, forests, fisheries and wetlands. Since there are approximately 6.4 billion people on the planet, this gives an average of 1.8 hectares of “environmental space” per person. Europe, on average, requires 4.7 global hectares to produce the resources it consumes and absorb the wastes it generates—a figure which has nearly doubled since 1961 (Global Footprint Network, 2005). Since it only has 2.3 global hectares available per person, more than half its footprint effectively falls outside its borders. Based on 2002 data, the figure is even higher in the UK (at 5.4 global hectares per person), only slightly lower in Japan and twice as much in the US (EEA, forthcoming; Wackernagel and others, 2005).

As the world economy grows, so does its footprint, taking us ever further away from living within our environmental means and the target of real sustainability. In per capita terms, the footprint of the developed countries has grown much faster than that of the developing countries. The footprint per person in the former grew from 3.8 global hectares per person in 1961 to 5.4 in 1981 and 6.4 in 2001—an overall increase of 68 per cent. In developing countries, the increase over the same period was just 7 per cent—one tenth as much—from 1.4 global hectares per person in 1961 to 1.5 in 2001; the footprint actually *decreased* between 1981 and 2001 (Wackernagel and others, 2005; see figure 2).



Source: Global Footprint Network.

Moreover, increasing consumption in Europe and the US sets an aspirational model for the rest of the world to follow. However, for everyone on Earth to live at the current European average level of consumption, more than double the bio-capacity actually available would be required—the equivalent of 2.1 planets the size of our Earth; for everyone to consume at the US rate, five would be required.

While rich countries are disproportionately *causing* environmental problems, however, it is the poor countries—and especially the poorer people within them—who suffer the most serious consequences. The problem is one of inverse dynamics: while the poorest receive very little of the benefit of global growth, as discussed below, they bear a disproportionate share of its costs—for example, the consequences of global warming.

As a result, the pursuit of poverty reduction through a strategy based primarily on global economic growth quickly becomes perverse: the already wealthy become both relatively and absolutely wealthier, while the poorest both slip further behind economically and have their well-being and prospects further undermined by environmental degradation.

The climate barrier

Recent US research has shown that, in the second half of the twentieth century (with some variation), “the Sahel, the transition zone between the Saharan desert and the rainforests of Central Africa and the Guinean Coast... experienced a severe drying trend.” The models used by the researchers predict a drier Sahel in future, primarily due to human-caused rising greenhouse gas emissions, with “far-ranging implications for the economy and ecology of the region” (Held and others, 2005). Research from the US National Oceanic and Atmospheric Administration describes a 20 per cent drop in rainfall in drought-prone southern Africa in the second half of the last century and predicts “much more substantial ongoing drying” (Marty Hoerling, quoted in BBC Online (2005)).

The potential consequences of such trends are indicated by recent experiences in the region. Since 2001, consecutive dry spells in southern Africa have led to serious food shortages. According to the United Nations Office for the Coordination of Humanitarian Affairs, the drought of 2002–2003 resulted

in a food deficit of 3.3 million tonnes, with an estimated 14.4 million people in need of assistance (IRIN, 2005).

Globally, natural disasters, most of which are related to the earth's hydrological cycle and are therefore directly affected by climate change, devastate the lives of the poorest people most, according to the World Bank Hazard Management Unit. The poor are more likely to occupy dangerous and vulnerable sites, such as flood plains, river banks, steep slopes and reclaimed land. According to the Red Cross *World Disasters Report*, the frequency and cost of natural disasters will increase due to a combination of environmental degradation, climate change, urban population growth and economic globalization (IFRC, 1999). Of all deaths from natural disasters, 96 per cent occur in developing countries (World Bank, 2004).

No quick fix: why technology isn't the answer

It is clear, therefore, that we need to resolve our environmental crises but that we also have a moral obligation to eradicate poverty. However, if eradicating poverty requires economic growth, and economic growth will make our environmental problems still more insoluble, how can we achieve both? To the extent that this question is even asked at present, the answer proposed is to seek a technological fix—to develop new technologies which will enable us to go on growing by reducing the environmental impact of each \$1-worth of goods and services we produce and consume.

Globally, real GDP grew at 3.0 per cent per year over the period 1980 to 2001 (World Bank, 2005a), while energy consumption grew at 1.7 per cent per year (EIA, 2004). Although the rates of growth differ, the two are clearly linked (figure 1). If the link between growth and rising emissions could be severed to such an extent that the change in emissions not only slowed substantially but became sufficiently negative, the clash between growth and global warming could potentially be reconciled. This would require a carbon Kuznets curve² showing greenhouse gas emissions sufficiently delinked from global economic growth to prevent greenhouse gas concentrations passing about 450 ppmv (parts per million by volume) of CO₂ equivalent—the level at which irreversible feedback effects could well occur.

However, there are several reasons to doubt that this scenario is likely or even possible. First, there are technical criticisms of the possibility of the neat hill-shaped relationship hypothesized by the carbon Kuznets curve, showing income and emissions rising together before emissions drop off (Müller-Fürstenberger and others, 2004). Second, while economists tend to assume that increases in economic growth are limitless, there are strict limits, governed by the laws of thermodynamics, on efficiency increases in how we burn fossil fuels.

While fuel efficiency has increased substantially over the course of the last century, driven by technological development, there are serious questions about how much further it can go. Even in the most optimistic scenario—a global political consensus on action, immediate and comprehensive application of the most efficient technologies available and a massive shift towards the least polluting fossil fuel (natural gas)—the result would be a delay of only 24 years in reaching a given higher concentration of greenhouse gases in the atmosphere. In a more probable and recognizable political future, with continued economic growth, fuel efficiency measures could deliver only negligible delays in higher concentrations (di Fazio, 2000). As a result, none of the standard International Panel on Climate Change (IPCC) scenar-

2 By analogy with the Kuznets hypothesis on the relationship between income inequality and overall income levels in the course of development, a Kuznets carbon curve hypothesizes that carbon emissions rise with increasing income up to a certain level of income, but decline as income rises beyond this point.

ios for the emissions arising from global economic activity show their concentrations being restrained to anything like the degree sufficient to prevent dangerous human interference in the climate system (Intergovernmental Panel on Climate Change, 2001).

Finding the right question

Regardless of how reliable or reckless such technological optimism may be, those who appeal for a purely technological solution are asking the wrong question. Development of new technological solutions could be pursued equally in contexts of rapid, slow, zero or even negative growth. Rapid growth may generate more resources for investment, but it also creates a greater need for those resources to be invested in increasing the volume of production to meet growing demand. This means that its effect on the availability of resources for investment in environmentally friendly technologies is ambiguous.

Moreover, given the scale of impending environmental disasters such as global warming, the rate at which we are approaching them, the limited scope for resolving them with a purely technological approach and the long time lags inevitably entailed, it seems clear that we need *both* slower growth *and* as much technological progress as we can achieve. Technological improvement is necessary, but alone it represents no more than a small step in the right direction. It does not offer a viable solution to the growth dilemma.

Growth and poverty reduction: a necessity or a diversion?

If attempts to delink environmental damage from growth do not provide an answer, could delinking poverty reduction from growth then provide a more viable alternative? Because, strange as the proposition may sound to economic orthodoxy, poverty can indeed be reduced without growth.

Changes in the incomes of poor households can be seen as a product of two variables: economic growth (increasing overall income) and changes in the share of poor households in total income (distribution of income). It would thus be entirely possible to offset a slower rate of growth—or even a decline in total income—by increasing the share of poor households in total income. There is growing recognition that distribution is important to poverty reduction as well as growth. For example, Wade (2001) noted that:

“It is remarkable how unconcerned the World Bank, the IMF and other international organisations are about these trends [towards increasing polarization of global incomes]. The Bank’s *World Development Report* for 2000 even said that rising income inequality ‘should not be seen as negative’ if the incomes at the bottom do not fall and the number of people in poverty falls. Such lack of attention shows that to call these world organisations is misleading.”

Perhaps stung by such criticisms, the World Bank has recently increased its attention to distributional issues, devoting its 2006 flagship *World Development Report 2006* to “equity and development” (World Bank, 2005b). However, it insists that “from an equity perspective, the distribution of *opportunities* matters more than the distribution of *outcomes*” (p. 4) and appears concerned with equity primarily because a) “with imperfect markets, inequalities in power and wealth translate into unequal opportunities, leading to *wasted productive potential* and to an *inefficient allocation of resources*” (p. 7), and b) because “unequal power leads to the formation of institutions that perpetuate inequalities in power, status and wealth—and that typically are also *bad for investment, innovation and risk-taking that under-pin long-*

term growth” (pp. 8–9). In short, while paying lip-service to “intrinsic motives” for promoting equity, the Bank’s main concern is with the possibility of inequity undermining economic growth. When it comes to substance, there is no sign, as yet, of any concern with equity being translated into changes in the economic policies pressed on developing country Governments. Thus, the Epilogue to the 2006 *World Development Report* says “recognizing the importance of equity... implies the need to *integrate and extend existing approaches* [to development]” (emphasis added) (World Bank, 2005b: 226).

However, there is a fundamental logical problem in this whole approach. The conceptual separation of income growth and the income distribution on which it rests assumes, often implicitly, that growth and distributional change occur independently of each other, so that growth can be pursued with one set of policies, leaving distribution to be adjusted by a separate set of redistributive measures. This is conceptually incoherent. Economic changes (including policies) act on individual incomes in different ways, according to how each person earns and spends his or her income. Average income and income distribution are two ways of summarizing the same set of variables—the individual incomes of the population—so, if one changes, the other will almost certainly change too. Moreover, how distribution alters will be critically dependent on the policies implemented in pursuit of growth.

In 2000, the World Bank published a paper by David Dollar and Art Kraay, entitled “Growth is Good for the Poor”. This purported to prove statistically that the income of the poor (defined as the poorest fifth of the population) increased one-for-one with overall income and that standard “pro-growth” policies and openness to trade were therefore beneficial for the poor. However, the paper—as well as subsequent versions (Dollar and Kraay: 2001; 2002)—has been robustly criticized, and its findings (particularly on policy and trade openness) are widely seen as discredited by serious flaws in methodology, compounded by the inevitable problem of data quality (Oxfam, 2000; Weisbrot and others, 2001; Amman and others, 2002).

In any case, to investigate the relationship between growth and distribution, or even to make assumptions about it, is to ask the wrong question. The question is not whether *growth* affects distribution (or *vice versa*), but whether *economic policies designed to promote growth* affect distribution. The worst outcome of all, in terms of poverty reduction, is to pursue policies which sacrifice distribution to prioritize growth but which in practice fail to generate faster growth. This has been the story of most developing countries for most of the last 25 years (Weisbrot and others, 2001).

Ironically, free-market economists are among the first to assert the existence of a connection, albeit a negative one, between growth and policies designed to promote redistribution. For example, they argue that tax/transfer-based redistribution measures weaken growth by undermining incentives—even though economic theory is ambiguous on this and the evidence is inconclusive (Klasen, 2003). To say that policies for redistribution impede growth, however, is inconsistent with asserting that policies to promote growth do not affect distribution—particularly as these may include the reversal of policies designed to effect redistribution.

Economic growth: the wrong measure

In light of these considerations, there is no fundamental reason to pursue economic growth as a primary objective of policy, or indeed, to consider it as the key indicator of economic performance. Economic growth does not, in itself, make people’s lives any better or necessarily reflect changes in well-being.

Generally speaking, growth takes account only of paid work (with some exceptions, notably subsistence agriculture). The exclusion of unpaid work within the home, in particular, is a major distortion: though contributing considerably to well-being, it is not considered production. Suppose, for example, that Parent A takes a paid job looking after the children of Parent B and in turn pays Parent B the same amount to look after his/her children. Both incomes will then add to national income, and to economic growth, even though nothing additional is being produced and no one is any better off financially. Thus a shift away from self-reliance generates economic growth without necessarily reflecting any increase in well-being. In countless, more complex, real-life examples, from household maintenance and decorating to cooking and cleaning, this scenario is played out over and over again.

National income accounts do not take account of non-financial aspects of well-being, such as working time, either. Thus if production were increased by 10 per cent as a result of everyone working 10 per cent longer, people would not be 10 per cent better off, because of the extra time they were working. The measured growth rate is the same, however, whether working time is increased or not. Similarly, no account is taken of the effects of changes in uncertainty or financial insecurity. Equally, in the childcare example, neither the immediate social and psychological costs of separating young families nor any longer term effects, e.g., on crime or health, are counted.

National accounts also include defensive consumption, without taking account of the social problems which give rise to it. Thus, the additional spending required to clean up pollution, to maintain security in the face of increasing crime or social unrest or to ensure national defence in response to increasing international tensions all *add* to national income and growth.

Most importantly in the present context, growth calculations take no account of the distribution of income. National accounts treat \$1 of income identically, whoever receives it. This is clearly unrealistic and counter-intuitive: the effect of an additional \$100 on the well-being of a household with an income of \$100 is clearly far greater than for a household with an income of \$1 million. As a result, the effect of a given change in aggregate income on well-being is critically dependent on *whose* income is increased.

This means that from a well-being perspective, the incomes of the rich are systematically overvalued at the expense of the incomes of the poor. If we set economic growth, rather than well-being, as our policy objective, it institutionalizes this serious distortion, so that policies will inevitably result in a lower level of well-being than could otherwise be reached by biasing policies towards the worse off.

The myth of “pro-poor growth”

The World Bank has responded to distributional concerns by shifting its language from growth promotion to the promotion of “pro-poor growth”. One might reasonably conclude that this change represents a step towards increasing emphasis on poverty reduction and greater efforts to ensure that the poor benefit more from growth—a rather overdue change of focus given the Bank’s self-proclaimed mission to reduce poverty. The term is potentially misleading, however, as the shift in language is greater than the shift in the underlying reality. There are two main contenders for the definition of pro-poor growth:

- that the percentage increase in the income of the poor should be no less, on average, than that of the non-poor—that is, that growth should not be accompanied by a reduction in the income share of the poor (Baulch and McCulloch, 1999; Kakwani and Pernia, 2000; White and Anderson, 2001); or

- that growth should result in some increase in the incomes of the poor, however small (Ravallion and Chen, 2003; Ravallion, 2004; DFID, 2004).

The latter definition makes the term “pro-poor growth” extremely misleading, as it considers economic growth that is accompanied by a considerable increase in inequality as pro-poor. For example, to define growth as “pro-poor” when the annual income of the average rich person increases from \$10,000 to \$11,000, while that of the average poor person rises from \$100 to \$100.01, would seem to render the term virtually meaningless.

However, even the first of the definitions seems unduly lax. At first sight, it might seem reasonable to consider growth as “pro-poor” if the incomes of the poor rise at least as much as those of the rich. However, the criterion is the *percentage* change in income, not the *absolute* change. This means only that the share of the poor in the proceeds of growth should be no less than their initial share in income—which, by definition, is relatively small.

Even in a relatively less unequal society such as the UK, the share of the poorest 10 per cent of the population in income—or pro-poor growth—is only 2.8 per cent, while that of the richest 10 per cent is 28 per cent—ten times as much (ONS, 2005). This means that, even by the stronger definition, “pro-poor” growth may benefit the richest 10 per cent ten times as much as the poorest 10 per cent. In many other countries—the US as well as most developing countries—inequality is much greater, and so, therefore, is the pro-rich bias of “pro-poor” growth.

This suggests a serious discrepancy between the rhetoric of pro-poor growth and the reality. This arises because the language of pro-poor growth presupposes a growth-focused strategy. As a quantifiable target of policy to be maximized, the increase in the overall incomes of the poor may be appropriate (although it would be desirable to temper this, e.g., by taking account of income distribution *among* the poor, effects on non-financial well-being, etc.). However, the phrase “pro-poor growth” implies that the question being asked is how pro- (or anti-) poor a given rate of growth is in a particular context, and this definition is entirely incapable of addressing that question.

This raises the question of why the concept of maximizing the increase in the incomes of the poor should be termed “pro-poor *growth*” when it is quite conceivable that it could best be achieved in some contexts through policies which entail *negative* growth, with substantial redistribution. In other words, referring to this concept as pro-poor *growth* (rather than, for example, income poverty reduction) implies, quite erroneously, that it necessarily *requires* growth.

The discrepancy also arises partly because of the implicit assumption that it is only the *absolute* incomes of the poor which matter. Absolute changes in income are undoubtedly much more important at the bottom of the global income distribution than they are to the majority of the population of developed countries. In the latter case, around 85 per cent of people live above the level at which absolute income ceases to affect well-being. Even among the poor, however, the effect of relative incomes (e.g., through effects on social status and self-worth) may also be significant.

What increases the importance of relative incomes immeasurably, however, is the very considerable *cost* attached to growth, in a world which is approaching—and may even have reached—certain environmental constraints. This applies particularly to limits on carbon emissions, which, if transgressed, will rebound

most devastatingly on some of the world's poorest people. In this real-world context, the question of how much poverty reduction is achieved *relative to overall economic growth* becomes a critical consideration.

This is illustrated in table 1 for a selection of developing countries with different levels of income per capita and inequality. For the countries with the highest overall income levels—the World Bank upper-middle-income category—poor households account for no more than 3.5 per cent of national income. This means that, even if inequality does not increase, it takes between \$29 and \$125 of economic growth, with all the associated environmental costs, to achieve each \$1-worth of poverty reduction.

For the middle-income group (the World Bank lower-middle-income category) the share of the poor in income is only 3.5–7.5 per cent. In that case, \$14–\$28 of growth is required per \$1 of poverty reduction. Even in the poorest and most unequal country in the group, the Central African Republic, where more than 80 per cent of the population lives below the \$2-a-day poverty line, the poor receive less than one quarter of the income or the benefits of growth.

Thus, a third definition of “pro-poor growth” is required:

- that the poor should have a greater-than-average share in the additional income generated by growth in absolute terms.

Although this represents a better intuitive interpretation of the concept of pro-poor growth, it is generally ignored or explicitly discounted as unrealistic, principally because it would require the incomes of the poor to grow much faster in percentage terms than those of the rich (White and Anderson, 2001; Klasen, 2005).

However, if our objective is to reduce poverty while remaining within environmental constraints, this is precisely what we want to measure—how much of the absolute increase in production and consumption associated with growth actually contributes to poverty reduction? Concerning ourselves only with the share of the poor in the benefits of growth *relative to their already seriously inadequate share in income* becomes an irrelevance.

Table 1:
Growth required for poverty reduction in selected developing countries

<i>Income</i>	<i>Inequality</i>		<i>Population below \$2/day poverty line (percentage)</i>	<i>Share of poor households in income/growth (percentage)</i>	<i>\$ growth required per \$ of poverty reduction</i>
Low	High	Central African Republic	82.5	24.0	4.16
Low	Medium	Cameroon	50.6	9.6	10.38
Low	Low	Kyrgyzstan	27.2	12.3	8.10
Medium	High	Namibia	53.9	4.5	22.39
Medium	Medium	Philippines	46.9	7.3	13.65
Medium	Low	Ukraine	21.5	3.5	28.45
High	High	Botswana	45.0	3.5	28.85
High	Medium	Malaysia	32.1	2.5	39.92
High	Low	Latvia	9.2	0.8	124.67

Sources: Authors' estimates, based on World Bank (2005a) and PovCalNet.

This logic becomes considerably more compelling if we extend it to the global level. The combination of inequality *within* countries with the extreme inequality *between* countries gives rise to a quite extraordinary degree of inequality among the population of the world as a whole (see figure 3). In fact the world distribution of income is substantially more unequal than even the most unequal country. The highest Gini coefficient recorded by the World Bank for any country is 74.3 per cent, for Namibia in 1993 (World Bank, 2005a), compared with 80 per cent for the world as a whole (Milanovic, 1999).

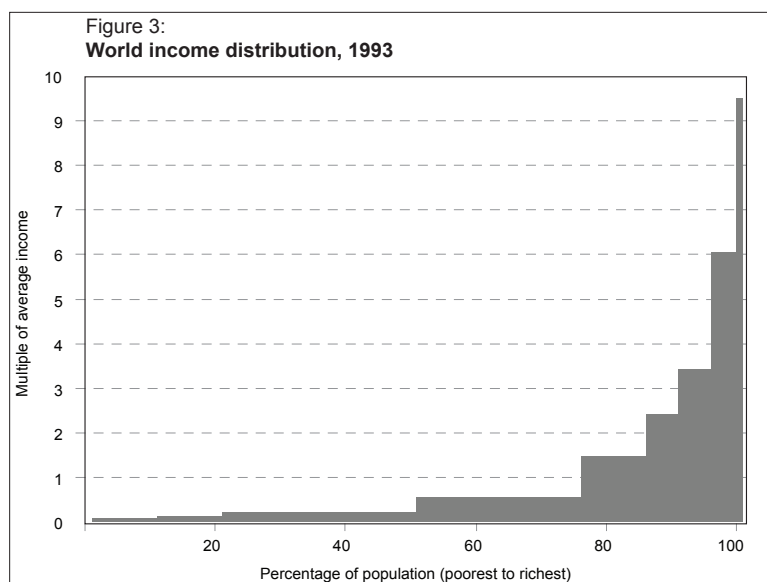
In 1993, the poorest 10 per cent of the world's population accounted for just 0.8 per cent of world income, compared with 50.8 per cent for the richest 10 per cent. The richest 1 per cent alone accounted for 9.5 per cent, implying an average income for this group some 120 times the average for the poorest 10 per cent (Milanovic, 1999). This means that the average benefit of global growth to someone in the richest 1 per cent of the population could be 120 times more than that of someone in the poorest 10 per cent, and yet it would still be considered "pro-poor" even by the more progressive of the two definitions. This is, to say the least, counter-intuitive.

In fact, even this figure understates the scale of the difference. Any increase in global inequality since 1993 will have widened the gap still further, as would using market exchange rates. Extrapolating the trend from 1988 to 1993 (an annual increase of 2.8 per cent) would increase the ratio to around 170 in 2006, and the differences between market and PPP exchange rates in low-income countries (typically a factor of between 2 and 5 (World Bank 2005a)³ would increase the ratio by a factor of around 3. Combining these effects could potentially increase the ratio to around 500.

Comparing growth and poverty reduction

If we line up the population in order of income from the poorest (on the left) to the richest (on the right), and measure their incomes, we get a picture such as the curve in figure 4. Superimposing the poverty line, the total income of poor households is the shaded area below the curve.

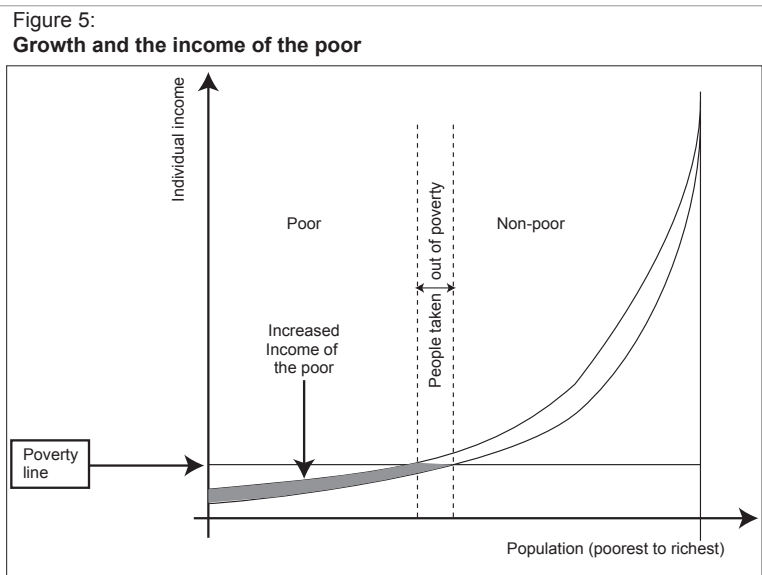
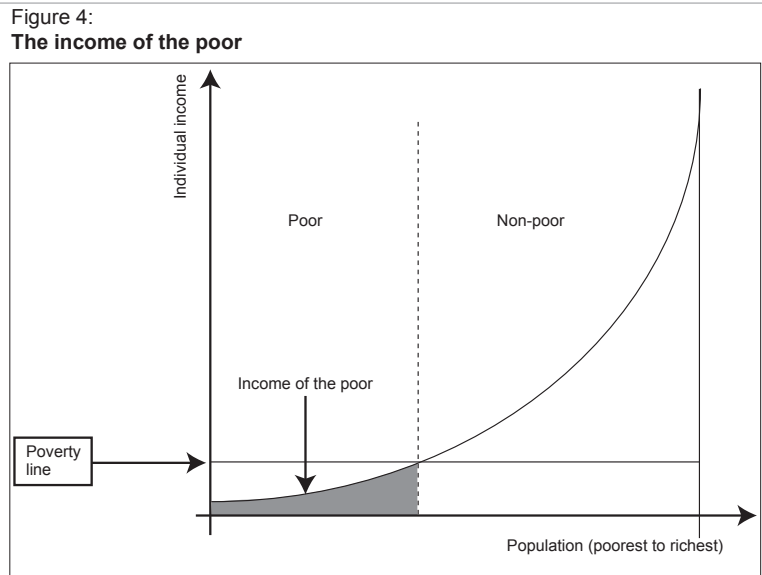
3 The Gini efficient for the global economy in 1993 was estimated at 80 per cent at market exchange rates, but at only 60 per cent at PPP rates (Milanovic, 1999).



As incomes increase, so the income line rises, as shown in figure 5. Comparing the income of the poor as defined in each year is misleading, as the incomes of those who escape poverty will then appear as a reduction in the income of the poor. Partly due to the form in which the data are provided by the World Bank, we therefore include increases in the incomes of those escaping poverty up to, but not beyond, the poverty line—that is, the shaded area in figure 5. By comparing this with the total increase in income (the total gap between the two lines), we can measure how much of the additional income generated by economic growth contributes to reducing poverty.

Growth-led poverty reduction: how efficient?

Even accepting, for the sake of argument, the idea that global growth could be a viable route to poverty reduction, there is a serious question about how *efficient* it is in achieving this objective. This can be assessed by comparing the change in incomes below the poverty line with the increase in total global in-



come over the same period. The results of this analysis, using the methodology outlined above, are shown in table 2. (More detailed results are shown in Woodward and Simms, 2006: tables 2-4.)

Between 1981 and 2001, world GDP (PPP in 1993 prices) increased by \$18,691 billion. Of this, only \$786 billion, or 4.2 per cent, went to poverty reduction as defined by the \$2-a-day poverty line—slightly *less* than the share of the poor in GDP at the beginning of the period (4.35 per cent)—even though the poor represented the majority of the world population. These figures are potentially misleading, however, as a substantial part of both the change in GDP and the change in the total income of the poor reflect the increase in the world population rather than increased output and income per person. Adjusting for this reduces the proportion of GDP contributing to poverty reduction slightly further to 4.1 per cent.

While the \$2-a-day level may be a more realistic, if still very low, definition of poverty, attention currently focuses on the \$1-a-day line, which provides the basis for MDG1. Almost inevitably, the extent of poverty reduction based on the \$1-a-day poverty line between 1981 and 2001 was even smaller than that below the \$2-a-day line, at \$278 billion—just 1.5 per cent of GDP. More worryingly, it was also five times further below the share of the poor in GDP in 1981 than on the basis of the \$2-a-day line (one sixth less, as compared with one thirtieth). Again, adjusting for population growth makes the situation substantially worse, reducing the share of GDP growth contributing to poverty reduction to just 1.3 per cent, between one quarter and one third less than the share of the poor in GDP.

		"\$2-a-day" poverty line			"\$1-a-day" poverty line		
		1981-2001	1981-1990	1990-2001	1981-2001	1981-1990	1990-2001
Poverty reduction		786	371	388	278	151	95
WITHOUT population adjustment	Change in GDP	18 691	7 512	11 179	18 691	7 512	11 179
	Poverty reduction as percentage of GDP	4.21	4.94	3.48	1.49	2.01	0.85
	Income of poor as percentage of GDP	4.35	4.35	3.94	1.80	1.80	1.18
	Ratio of share in growth to share in GDP	0.97	1.13	0.88	0.83	1.12	0.72
Poverty reduction		335	187	148	104	76	28
WITH population adjustment	Change in GDP	8 160	3 443	4 717	8 160	3 443	4 717
	Poverty reduction as percentage of GDP	4.11	5.45	3.13	1.28	2.20	0.60
	Income of poor as percentage of GDP	4.35	4.35	3.94	1.80	1.80	1.18
	Ratio of share in growth to share in GDP	0.94	1.25	0.80	0.71	1.22	0.51

Source: All figures are calculated from Woodward and Simms (2006: tables 2 and 3).

To put it another way, of every \$100 of growth in income per person in the world as a whole between 1981 and 2001, just \$1.30 contributed to reducing poverty as measured by the \$1-a-day line and a further \$2.80 to reducing poverty between \$1-a-day and \$2-a-day lines. The remaining \$95.90 went to the rest of the world population above the \$2-a-day line.

Is it getting better?

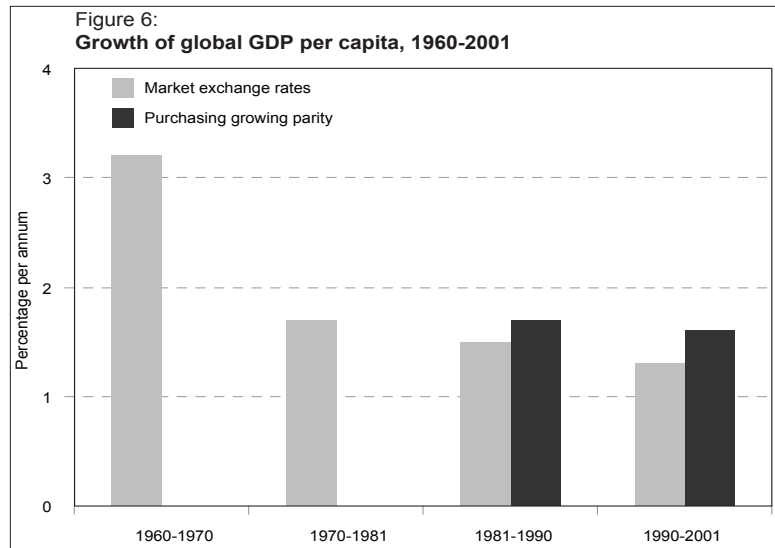
The 1980s were widely described as “the lost decade for development”, especially for Latin America and Africa. Much of the developing world was plagued by the debt crisis; interest rates were exceptionally high; commodity export prices collapsed; aid fell ever further below the 0.7 per cent of national income level to which developed countries had committed themselves in 1970; and most developing countries were going through the most painful initial phase of structural adjustment. It seemed things could hardly get worse.

The 1990s should have heralded a much more favourable environment for development. Aid levels were expected to benefit from a peace dividend following the end of the cold war; the debt crisis was over in most middle-income countries; and debt cancellation was increasingly available for poor countries. Interest rates had fallen back to more normal levels, and, after a decade of structural adjustment, developing countries should have been poised to enjoy the promised economic recovery meant to result from their painful sacrifices in the 1980s. The World Trade Organization was established in 1993 to create the more open international trading system seen as necessary for growth, and the World Bank rediscovered its mission to reduce poverty. Markets were freer and more deregulated, States were smaller, economies were more open and macroeconomic policies were tighter. All in all, if the mainstream economic story is to be believed, the stage was perfectly set for growth-led poverty reduction.

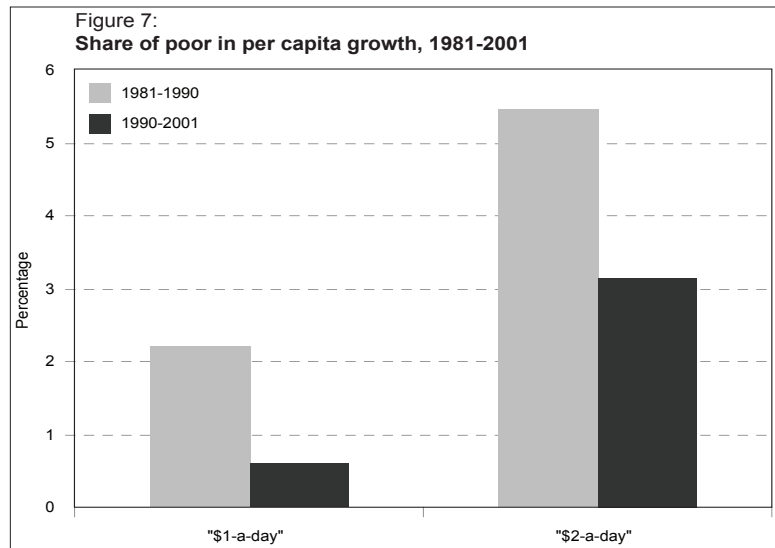
The reality, however, was very different: performance in terms of growth-led poverty reduction was much worse in almost every respect in the 1990s than in the 1980s. In PPP terms, global growth actually *fell* slightly, from 1.7 per cent per annum in 1981–1990 to 1.6 per cent per annum in 1990–2001 (figure 6). While PPP data are not available prior to 1980, global growth at market exchange rates had already slowed down by nearly half, from 3.2 per cent per annum to 1.7 per cent per annum between 1960–1970 and 1970–1981, slowing further to 1.5 per cent per annum in 1981–1990, and still further to just 1.3 per cent per annum in 1990–2001 (World Bank, 2005a).

Worse still, global growth also appears to have become much *more* anti-poor between the 1980s and the 1990s. Based on the \$2-a-day poverty line, the proportion of growth contributing to poverty reduction fell from nearly 5 per cent in the 1980s to just under 3.5 per cent in the 1990s. This represents a decline from one eighth *more* than the initial share of the poor in GDP to one eighth *less*. Adjusting for population growth further worsens performance in the 1990s and accentuates the deterioration between the 1980s and the 1990s. By this measure, the share of poverty reduction in growth fell from 5.5 per cent (one quarter *more* than the share of the poor in initial GDP) to 3.1 per cent (one fifth *less*) (see figures 7 and 8).

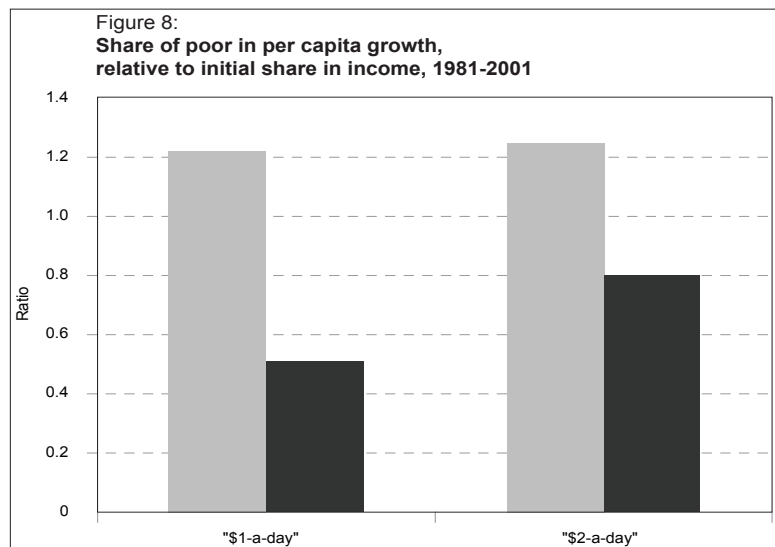
Based on the \$1-a-day line, poverty reduction fell still more sharply, from \$151 billion (2.0 per cent of the increase in GDP) in the 1980s to \$95 billion (0.8 per cent) in the 1990s. The latter figure is one quarter less than the initial share of the poor in world GDP, compared with one eighth more in the 1980s. Again, adjusting for population growth makes the picture still worse. The contribution of per capita



Source: World Bank (2005a).



Source: Table 2.



Source: Table 2.

growth to poverty reduction fell from \$76 billion to \$28 billion—from 2.2 per cent of the population-adjusted increase in GDP to just 0.6 per cent, barely half the initial share of the poor in GDP. This means that in the 1990s, it took \$166 of global per capita growth, with all the associated environmental costs, to achieve just \$1 of progress towards MDG1.

Growth and distribution: a comparison

If global growth is an inefficient and environmentally dangerous solution to the problem of global poverty, how does changing the distribution of income compare? Redistributing just 1 per cent of the income of the richest 20 per cent of the world's population to the poorest 20 per cent would benefit the latter as much as distributionally equal growth of around 20 per cent. Even expanding the target group to the poorest 50 per cent of the world's population—equivalent to a poverty line of around \$2.50 per day at 1993 prices—and the source group to 25 per cent (roughly the level at which the well-being literature indicates that further increases in income cease to raise well-being), a 1 per cent redistribution is equivalent to economic growth of 7.4 per cent. This is more than four times the average 1.7 per cent per capita growth rate of global GDP (in PPP terms) since 1981 (Woodward and Simms, 2006).

The argument that poverty should or could be tackled through redistribution, rather than growth, tends to be dismissed by orthodox economists on the grounds that redistribution is unsustainable. Redistribution, they argue, can only continue for a limited period, as incomes will eventually be equalized, so that there is no further scope for redistribution. By contrast, they contend, growth can continue indefinitely.

Apart from the fallacy of the contention that growth can be sustained indefinitely, a simple analysis demonstrates the invalidity of this argument, at least at the global level. The total amount going to poverty reduction below the \$2-a-day line between 1981 and 2001 (population-adjusted) came to \$335 billion in real PPP terms. Based on the estimated global distribution of income in 1993, the income of the richest 10 per cent of the world's population was \$14,543 billion.

This means that the rate of poverty reduction achieved between 1981 and 2001 could have been achieved through the redistribution annually of just 0.12 per cent of the income of the richest 10 per cent of the world's population. This rate of transfer could be sustained for 300 years before the world as a whole even reached the average level of inequality in European Union countries.

Why growth? The “positive-sum game” fallacy

If growth is so meaningless as an objective and so inefficient in reducing poverty, and if it gives rise to such serious tensions between poverty reduction and environmental sustainability, why is it so prominent in the economics discourse?

Trying to reduce poverty through redistribution of income alone in a no-growth global economy is, by its nature, a zero-sum game in terms of its financial effects. The incomes of the poor can only be increased by the same amount as those of the rich are reduced. Growth, on the other hand, means that there is more income available in total, so that the rich can get richer even as the poor get less poor. Moreover, since the rich are generally more powerful than the poor (World Bank, 2005b)—globally as well as at the country level (Jubilee Research, 2005)—this is seen as presenting a more politically feasible approach than redistribution.

However, there are three fundamental problems with this argument. First, looking beyond the financial effects to take account of environmental impacts means that growth is no longer necessarily a positive-sum game. Every \$1 of growth comes with an environmental price tag, so \$1 of extra income generated through growth brings less than \$1 in actual benefits.

Second, as noted earlier, the benefits associated with an extra \$1 of income depend critically on who receives it. Thus looking at effects on economic and social rights and well-being—which are objectives in their own right—rather than at financial effects—which are only a means to an end—redistribution *is* a positive-sum game. By taking \$1 away from a millionaire and giving it to a pauper, we have no perceptible effect on the rights or well-being of the millionaire, but a much greater effect on the life of the pauper. While *income* may be no higher as a result, well-being and the fulfilment of rights are improved—without necessarily generating additional consumption or production which might have environmental costs.⁴

Thirdly, the zero-/positive-sum game argument is based on a false dichotomy between growth and redistribution—in effect, returning to the conceptual separation between the average level and the distribution of income. In practice, the question is not whether our policy objective should be economic growth or no growth, or whether we should or should not take steps to redistribute the income arising from this growth. Rather, the question is whether economic policies should aim to maximize *total* income in the hope that poverty will fall as a by-product, or whether they should aim more specifically to increase the incomes of poorer households and treat *growth* (or the lack of it) as a by-product—that is, whether distributional effects should be integrated into the design of economic policies as a whole.

Policy implications

If growth does not offer the prospect of reconciling poverty reduction and environmental sustainability, then what is the alternative? While a greater emphasis on redistribution policies as an add-on to growth-oriented policies would help at the country level, it is insufficient to resolve a problem which arises at least as much from inequalities *between* countries as from inequalities *within* them.

Intercountry inequality has been recognized as a fundamental problem since the colonial era, giving rise to the developed country Governments' 1970 pledge to provide 0.7 per cent of their national income in aid. However, this commitment has failed miserably: the shortfall of aid from this target was \$140 billion in 2004.

World Bank analysis suggests that each extra \$1 billion of aid provided by the International Development Association (IDA) in 1997–1998 lifted 434,000 people permanently out of poverty, as defined by the \$1-a-day line (Goldin, Rogers and Stern, 2002). On this basis, if all the OECD countries had met the 0.7 per cent target in every year since 1970, and the additional aid had had a similar poverty-reduction effect, this would, in principle, have been sufficient to eradicate poverty below the \$1-a-day line in 1999—the very year the MDGs were adopted.

Moreover, despite their failure to deliver more than a fraction of the promised aid, the developed country Governments have extracted a considerable price for what they have provided. They have used

4 While the change in the patterns of consumption and production associated with changes in the distribution of income may have environmental effects, these may be either positive or negative.

aid to prop up sympathetic, but undemocratic, deeply unpopular and often corrupt Governments, to secure policy changes that favour their national and commercial interests at the expense of the population of the recipient country and to persuade Governments to sign up to international agreements which bind them and their successors to flawed policies for the indefinite future.

Patronage aid thus confers power on the developed country Governments and international institutions like the World Bank and the IMF, thus helping to entrench the inequitable structures of the global economic system which underlie the more fundamental problem. It is the products of this power imbalance—the continuation of the debt crisis in many of the poorest countries for nearly 25 years, the imposition of neo-liberal policies across the developing world, the chronic decline in commodity export prices and international trade agreements which lock developing countries into an unbalanced market paradigm—which reinforce and exacerbate global income inequality.

The alternative is to move decisively away from the current top-down approach, in which policies are largely determined at the global level, ostensibly, at least, to promote global growth. Instead, we need to move definitively towards a system in which national policies are designed explicitly and directly to achieve social and environmental objectives; and in which the global economic system is designed to promote, foster and support such policies, treating *growth* as a by-product, and putting the interests of the poor majority of the world's population first. In short, we need to move definitively away from what is, in effect, no more than a global variant of the long-discredited idea of “trickle-down” to a concept of income “bubbling up” from poverty reduction. This might include the generation of additional resources for development at the global level, through, for example:

- introducing international taxation (for example, on foreign exchange transactions, air travel and transport, fuel, etc.);
- assigning countries tradable, revenue-raising entitlements to emit greenhouse gases on a globally equal per capita basis; and
- introducing a new global currency, so that money creation generates new public resources at the global level (also limiting the potential for financial instability arising from irresponsible economic policies in the US).

It might also entail international collaboration, for example:

- to promote local investment, strengthen public finances and allow more progressive tax systems, e.g., through coordinated measures to control capital flight, tax havens and tax competition;
- to limit the supply of agricultural commodities produced primarily by developing countries, so as to reverse the long-term decline in prices;
- to ensure that royalties and other payments from extractive industries reflect the full cost of natural resource depletion, by increasing transparency and controlling competition between countries; and
- to focus research and development investment on developing technologies which fulfil social and environmental needs, rather than those which maximize corporate profits.

At the country level, as well as implementation of such collaborative measures, it might mean, for example:

- using resources generated at the global level and strengthened public finances to provide high-quality, free and universal education and basic health services; pensions, child benefits and social safety nets; and the infrastructure needed for the development of micro, small and medium enterprises;
- favouring local suppliers in low-income areas in procurement for these and other public programmes;
- targeting income-generation programmes so that the additional production generated broadly matches the increase in demand resulting from the associated poverty reduction (based on consumption patterns revealed by household expenditure surveys); and
- strengthening agricultural extension programmes, focusing particularly on crops consumed locally by low-income consumers (so that the price effects of increased supply will also contribute to poverty reduction as well as the income effects).

Without such changes, it appears extremely unlikely that we can reconcile substantial poverty reduction—let alone eradication—with the need for environmental sustainability. However, any significant progress will require two further fundamental changes:

- a change in the way we think about and discuss economic issues, allowing us to break out of the confines of mainstream economic discourse; and
- a shift in power relations, both globally and nationally, to move power from developed countries, elites and commercial interests to the majority of the world's population who still live on less than \$2.50 per day (at 1993 PPP).

Conclusion

We have, in recent years, become fixated on economic growth. This is partly just one component of a broader fixation on the macroeconomy and partly a result of the tyranny of numbers—a growing obsession with quantifiable indicators of policy performance and a failure to make what is important measurable, rather than making what is measurable important.

It is also partly a product of political pragmatism, on the grounds that the rich are too powerful to allow redistribution of their income or wealth. While this may have some justification, it is noteworthy that the economists, politicians and opinion makers who express this view are themselves among the elite to which they ascribe such power—and not generally at the forefront of efforts to rectify the imbalance of power at the global level. It is difficult to escape the conclusion that there is more than a little self-interest in such arguments.

More generally, the pro-growth view is critically dependent upon a number of implausible or counter-intuitive assumptions: that it is aggregate income that matters, rather than people's quality of life; that growth and distribution are separable, both conceptually and practically; that economic growth has no unmanageable environmental costs; and that power relations are immutably fixed. In other words, this view is critically dependent on the mindset of orthodox economics.

Our analysis indicates that global economic growth is an extremely inefficient and environmentally dangerous way of achieving poverty reduction—particularly MDG1—and is becoming even more so. Between 1990 and 2001, for every \$100 worth of growth in the world's income per person, just \$0.60 contributed to reducing poverty below the \$1-a-day line, 73 per cent less even than in the lost decade for

development, the 1980s. Each \$1 of poverty reduction thus requires \$166 of additional global production and consumption, with all its associated environmental impacts which adversely affect the poorest most.

This suggests that reconciling the objectives of poverty reduction and environmental sustainability requires a decisive shift away from the blind pursuit of global economic growth and the fallacious economic orthodoxy and grossly skewed global governance structures which underlie it. In effect, the global growth model amounts to sacrificing the environment on which we all depend for our very survival to give yet more to those who already have too much, in the hope that a few more crumbs will fall from the rich man's table. The scale of growth this model would require to eradicate poverty—surely our ultimate goal—would generate unsupportable environmental costs, which would fall disproportionately and counterproductively on the poorest, rendering the process self-defeating.

In the growth debate, for all its theoretical sophistry, orthodox economics repeatedly falls back on a few tried and tested metaphors to defend its growth obsession—that a rising tide lifts all boats, or that it is better to bake a larger cake than to cut the existing one more equally. Ironically, however, sea levels really are rising, as a result of the global warming driven by economic growth itself, and millions of the poor have no boats to rise in, literally or metaphorically. As for the cake analogy, even the massed ranks of orthodox economists have yet to find either the recipe or the ingredients to bake a spare planet to share among the world's population.

If we are serious about increasing well-being and eradicating poverty within our environmental constraints, then it is our progress towards doing so, not growth of aggregate income, for which we should design our economic policies and institutions and by which we should judge our progress. This means designing national policies to achieve our ultimate social and environmental objectives and changing the global economic system, not only to accommodate, but to foster and promote, these policies. Maximizing economic growth, and hoping that we will make some progress towards our ultimate objectives as a by-product, has not, will not, and cannot work.

References

- Amann, E., N. Aslanidis, F. Nixson and B. Walters (2002). Economic growth and poverty alleviation: A reconsideration of Dollar and Kraay. Paper presented at the Annual Conference of the Development Studies Association, University of Greenwich, 9 November.
- Baulch, R., and N. McCulloch (1999). Tracking pro-poor growth. *ID21 Insights* 31. Institute of Development Studies, Sussex. September. <http://www.id21.org/insights/insights31/insights-iss31-art03.html>.
- BBC Online (2005). Climate change will dry Africa, 29 November. <http://news.bbc.co.uk/2/hi/science/nature/4479640.stm>.
- DFID (2004). What is Pro-poor Growth and Why Do We Need to Know? Pro-Poor Growth Briefing Note 1, Policy Division, Department for International Development, London.
- di Fazio, A. (2000). *The Fallacy of Pure Efficiency Gain Measures to Control Future Climate Change*. Astronomical Observatory of Rome and Global Dynamics Institute, Rome.
- Diamond, Jared (2005). *Collapse: How Societies Choose to Fail or Survive*. Penguin/Allen Lane, London.
- Dollar, David, and Aart Kraay (2000). Growth is good for the poor. Development Research Group, World Bank, Washington, DC.
- Dollar, David, and Aart Kraay (2001). Growth is good for the poor. Policy Research Working Paper 2587, World Bank, Washington, DC.
- Dollar, David, and Aart Kraay (2002). Growth is good for the poor. *Journal of Economic Growth* 7: 195-225.
- EEA (2006). *The European Footprint: How the Planet and the World's Largest Economy Interact*. Forthcoming, European Environment Agency, Copenhagen.
- EIA (2004). World energy use and carbon dioxide emissions. Energy Information Administration, US Department of Energy, Washington, DC. <http://www.eia.doe.gov/emeu/cabs/carbonemiss/chapter1.html>.
- Global Footprint Network (2005). *Ecological Footprint Assessment*. www.footprintnetwork.org.
- Global Footprint Network & WWF (2005). *Europe 2005: The Ecological Footprint*. By M. Wackernagel, D. Moran, S. Goldfinger, C. Monfreda, A. Welch, M. Murray, S. Burns, C. Königel, J. Peck, P. King and M. Ballasteros. Global Footprint Network & WWF. www.footprintnetwork.org.
- Goldin, Ian, H. Rogers, and Nicholas Stern (2002). The Role and Effectiveness of Development Assistance: Lessons from World Bank Experience. Processed, 18 March, World Bank, Washington, DC. <http://siteresources.worldbank.org/DEC/Resources/roleofdevelopment.pdf>.
- Held, I.M., T. Delworth, J. Lu, K. Findell, and T. Knutson (2005). Simulation of Sahel drought in the 20th and 21st centuries. *Proceedings of the National Academy of Sciences*, 102, 1 December: 17891-17896.
- IFRC (1999). *World Disasters Report 1999*. International Federation of Red Cross and Red Crescent Societies, Geneva.
- International Climate Change Taskforce (2005). *Meeting the Climate Challenge*. International Climate Change Taskforce, London. www.ippr.org.uk.
- InterGovernmental Panel on Climate Change (2001). *Third Assessment Report: Climate Change 2001*. Cambridge University Press, Cambridge.
- IRIN (2005). Rising Indian Ocean temperatures will bring escalating drought. 25 May, Integrated Regional Information Networks, UN Office for the Coordination of Humanitarian Affairs, Johannesburg.
- Jubilee Research (2005). Physician, heal thyself! The World Bank's *World Development Report, 2006: Equity in Development*. 27 September. www.jubileeresearch.org/analysis/articles/worldbank280905.htm, 27 September.
- Kakwani, Nanak, and E. Pernia (2000). What is pro-poor growth? *Asian Development Review* 18 (1): 1-16.
- Klasen, S. (2003). In search of the Holy Grail: How to achieve pro-poor growth. In B. Tungodden, N. Stern and I. Kolstad (eds). *Toward Pro-poor Policies: Aid, Institutions and Globalization. Proceedings of the Annual Conference on Development Economics Europe Conference 2003*. World Bank, Washington, DC: 63-92.
- Klasen, S. (2005). Economic Growth and Poverty Reduction: Measurement and Policy Issues. Working Paper No. 246, September, Development Centre, OECD, Paris.
- Krueger, Anne (2004a). Expanding trade and unleashing growth: The prospects for lasting poverty reduction. Remarks at the IMF Seminar on Trade and Regional Integration, 6 December, Dakar, Senegal. <http://www.imf.org/external/np/speeches/2004/120604.htm>.
- Krueger, Anne (2004b). Letting the future in: India's continuing reform agenda. Keynote speech to Stanford India Conference, Stanford University, Stanford, CA, 4 June. <http://www.imf.org/external/np/speeches/2004/120604.htm>.

- Marland, Gregg, and Tom Boden (2005) Global CO2 Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2002. Carbon Dioxide Information Analysis Center (CDIAC), Oak Ridge, Tennessee. http://cdiac.esd.ornl.gov/ftp/ndp030/global.1751_2002.ems.
- Milanovic, Branko (1999). True World Income Distribution, 1988 and 1993: First Calculations, Based on Household Surveys Alone. Policy Research Working Paper 2244, November, World Bank, Washington, DC.
- Müller-Fürstenberger, G., M. Wagner, and B. Müller (2004). Exploring the Carbon Kuznets Hypothesis. Oxford Institute for Energy Studies, Oxford.
- ONS (2005). Social Trends 2005. Office for National Statistics, London.
- Oxfam (2000). Growth with Equity is Good for the Poor. Oxfam, Oxford.
- Ravallion, Martin (2004). Pro-poor Growth: A Primer. Policy Research Working Paper 3242, World Bank, Washington DC.
- Ravallion, Martin, and Siahua Chen (2003). Measuring pro-poor growth. *Economics Letters* 78(1): 93-99.
- Simms, Andrew (2005). Africa—Up in Smoke? The Second Report from the Working Group on Climate Change and Development. New Economics Foundation and International Institute for Environment and Development, London.
- Wackernagel, M., D. Moran, S. Goldfinger, C. Monfreda, A. Welch, M. Murray, S. Burns, C. Königel, J. Peck, P. King and M. Ballasteros (2005). Europe 2005: The ecological footprint. Global Footprint Network and WWF. www.footprintnetwork.org
- Wade, Robert (2001). Winners and losers. *The Economist*, 26 April.
- Wagstaff, A. (2003). Child health on a dollar a day: Some tentative cross-country comparisons. *Social Science and Medicine* 57: 1529-1538.
- Weisbrot, Mark, Dean Baker, Robert Naiman, and Gila Neta (2001). Growth may be Good for the Poor—but are the IMF and World Bank Policies Good for Growth? Center for Economic Policy Research, Washington, DC.
- White, H., and A. Anderson (2001). Growth vs. redistribution: Does the pattern of growth matter? *Development Policy Review* 19(3): 167-289.
- Woodward, David, and Andrew Simms (2006). Growth isn't working: The unbalanced distribution of benefits and costs from economic growth. New Economics Foundation, London. January.
- World Bank (2000). The Quality of Growth. World Bank, Washington, DC.
- World Bank (2004). Natural disasters: Counting the cost. 2 March. World Bank, Washington, DC. www.worldbank.org
- World Bank (2005a). World Development Indicators Online.
- World Bank (2005b). World Development Report, 2006: Equity and Development. World Bank, Washington, DC.
- World Bank and WHO (2004). World report on road traffic injury prevention. World Bank, Washington, DC, and World Health Organization, Geneva.