COUNTING POWER

The Disaster of the GDP Bottom Line and the Need for Green Accounting

By Dirk Philipsen

> Crisis alone is not enough ... scientists normally [do not] aim to invent new theories, and they are often intolerant of those invented by others.
> (Thomas Kuhn, *The Structure of Scientific Revolutions*)

It is a new and vexing problem: we have reached the limits of environmental exploitability and thus of economic growth at the same time as we face mounting debt and a global financial system in disarray. All of this is further aggravated by growing global inequality. A key question emerges: do we have the data that can lead us out of this dilemma? Do we have, in the words of Joseph Stiglitz, "the right 'signals' about what to do?"[1]

All modern economies are organized around central performance indicators—sets of data that are intended to tell us whether what we are doing is successful or not. Stiglitz' question is important because the outcome of economic activity can only be as good as the standards that guide it. We follow what we measure. In that sense we can say that power knows how to influence what we count. But the reverse is also true: what (and how) we count itself holds immense power.

How good are our most predominant economic performance measures? And what is their history? What do they tell us about what values we cherish, and why?

Imagine an obese smoker who crashes his SUV into a school bus because he is texting his broker about an impending derivatives trade. He survives, pays his many legal and medical bills, and continues to consume expensive gas, harmful cigarettes, and unhealthy food. He is the prototype of the modern economic hero—someone who purchases a lot of goods and requires a lot of services, including medical care, lawyers' fees, and financial advice. According to prevailing assumptions, his reckless path is adding to "economic growth" and therefore contributing to our collective "well-being." After all, he has added more than his share to the GDP.

GDP stands for "Gross Domestic Product" and is effectively our global economic master compass. It points all modern economies in the direction of more economic growth. Presumably we are successful if we are growing. If we fail to grow, we find ourselves in the midst of what we call a recession or depression.

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[1] Joseph E. Stiglitz, „GDP Fetishism," in *Project Syndicate*, September 7, 2009, http://www.project-syndicate.org/commentary/stiglitz116/English

But what exactly is GDP? And where did it come from? The easy answer is GDP measures the totality of goods and services in a given economy. The problem with that answer is that it conceals far more than it reveals. National income accounts have a long history, going back to 17th century Britain. Until recently, only a handful of nations had attempted to put together such accounts. They had done so only unofficially and sporadically. In no case did estimates of national income have significant policy making implications. This changed amidst the greatest economic calamity to date: the Great Depression of the 1930s. Since World War II, national income estimates have become an "indispensible tool for macroeconomic analysis, projections, and policy formulation," and what many economists have argued are the "most important contributions to economic understanding in this century."[2] In order to understand the creation of the GDP, one needs to pick up the thread in the early 1930s in the United States.[3]

As the relative economic stability of the 1920s gave way to chaos, confusion, uncertainty, and suffering, neither the captains of industry nor political leaders had access to basic economic figures. Business leaders knew about their own bottom lines, but not about what was happening in the economy at large. Elected officials received reports—increasingly urgent in tone—about unemployment, homelessness and despair in their districts, but had no concrete data about how widespread this situation was. Policy makers groped in the dark when thinking about what the government could or should do to intervene and help. Faced with the devastating results of economic collapse, the U.S. Senate set up a commission in June of 1932 to answer basic questions about an economy in dire straits. Providing data on previously unknown key characteristics of the Great Depression, the commission's first national income accounts were published in January of 1934. Later, these accounts became known as GDP. With the 1946 Employment Act, national income and product accounts (initially called GNP for Gross National Product) became codified in law in the U.S. as a central instrument of economic policy-making. In 1953, the United Nations resolved to use a GNP-modeled accounting system as the standard for measuring economic performance throughout the capitalist world. In little more than a decade after their adoption in first the U.S. and then Great Britain, GNP had effectively become an internationally accepted one-stop indicator for social well-being. By the time the Soviet Union collapsed, and with it the only large-scale accounting system that was substantially different, GDP had become the key economic indicator of literally every developed country in the world. It is not surprising, therefore, to find that one of the most famous American economists, Paul Samuelson, called the development of the GDP "truly among the great inventions of modern times."[4]

More than half a century later, GDP serves as the single determinant of economic success. For instance, the way that economists measure "growth" or identify

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[2] John Kendrick, "Introduction and Overview," in John W. Kendrick, ed., *The New System of National Accounts* (1996, 1); Robert Eisner, "Expansion of Boundaries and Satellite Accounts," in ibid, 91.
[3] For the most detailed study to date of these developments, see Paul Studenski, *The Income of Nations* (1958).
[4] Paul A. Samuelson and William D. Nordhaus, *Economics*, 19th ed., 2010: 386.

“recession” relies almost solely upon GDP. The performance of entire nations is evaluated by “per-capita GDP,” the implicit assumption being that economic growth as measured by GDP and social well-being move in the same direction. Indeed, as the period following the recent deep recession demonstrated, unemployment can remain high (what pundits call, without irony, a “jobless recovery”) while general economic conditions remain flat and long-term dilemmas multiply. The environment can continue to deteriorate, increasing numbers of citizens can continue to lose health care, high-tech jobs can continue to be exported, the gap between rich and poor can continue to widen, but as soon as total output is growing, as defined by GDP, a national economy is again deemed “healthy.”

In short, the values and criteria embedded in GDP accounts largely determine both the content and direction of the government’s economic policy-making, and, by extension, decision-making in the much larger private sector as well. This, it turns out, is no small problem for reasons that are readily apparent and steadily ignored. GDP accounts, after all, merely measure the totality of goods and services. They do not differentiate between good and bad growth. They ignore all non-market activities. They do not address questions of distribution and social justice. And, probably most importantly, they fail to account for any ecosystem depletion. “They measure everything, in short,” as the lone voice of Robert Kennedy pointed out as early as 1968, “except that which makes life worthwhile.”[5]

Hindsight, as they say, is always 20/20. Borrowing from a political leader who saw a massive crisis brewing when others still had their heads stuck in the sand, we can confidently say this about our current moment in history: “owing to past neglect, in the face of the plainest warnings, we have now entered upon a period of danger ... The era of procrastination, of half measures, of soothing and baffling expedients, of delays, is coming to its close. In its place, we are entering a period of consequences.” The consequences Winston Churchill described were not only world war with unprecedented levels of destruction and death, but also the annihilation of freedom, rationality, and democracy, crushed under the boots of Hitler’s forces.

Though almost impossible to conceive, the consequences we face now may well be even more serious. It is hard to deny mounting evidence that human existence itself is in peril. If anything, however, our collective response has been even more inadequate than British slumber in the face of the escalating Nazi death machine. One may thus be excused when quoting one more time Churchill’s increasingly impassioned plea, for it is an apt reminder of today’s dilemma: “I have been staggered by the failure ... to react effectively against those dangers. That, I am bound to say, I never expected. I never would have believed that we should have been allowed to go on getting into this plight, month by month and year by year.

[5] Robert F. Kennedy, campaign speech, Ohio State University, January 4, 1968.

... I say that unless [we] resolve to find out the truth, [we] will have committed an act of abdication of duty without parallel in history."[6]

Like it or not, we are all followers—followers of a massively dysfunctional compass. We march to its tune, work for its values, worship at its throne. You may have never thought about it, may not realize how much it guides your daily activities and choices. Even if you are well aware of it, what is worse is that many of us can't help following the compass anyway.

History / background

> Society must be remade before it can be the object of quantification. Categories of people and things must be defined, measures must be interchangeable; land and commodities must be conceived as represented by an equivalent in money.
> (Theodore M. Porter, "Objectivity as Standardization")

Scholars agree that the main impetus for the creation of national economic accounts has been taxation. It is a way for central governments, independent of goal or purpose, to determine how much is available to skim off the top.[7] In more recent history, national governments need reliable information about the productive capacities of their respective economies during times of real or impending war, and during times of economic depression. It is not surprising, therefore, to discover that the first official national income statistics were published in the U.S. in early 1934 (at the height of the Great Depression), and in the UK in 1941 (in the midst of depression and war). This was done in direct response, in the words of one participant, to the "almost complete lack of reliable data upon which to make major policy decisions regarding what the government could and should do to improve the economic outlook."[8] By the end of World War II, national income and product accounts (NIPAs) in both the U.S. and the UK had become an indispensable instrument of their respective national governments for planning, mobilizing and directing resources. Indeed, concept and instrument went hand in hand: without reliable, up-to-date national accounts, the economic theory that had ascended to predominance in both the

[6] Winston Churchill, Debate in Parliament, 12 November 1936 vol 317 cc1081- 155 *http://hansard.millbanksystems.com/commons/1936/nov/12/debate-on-the-address#S5CV031P0-03560*. As Churchill was talking about parliament, I have slightly altered the last quote. The original reads: "I have been staggered by the failure of the House of Commons to react effectively against those dangers. That, I am bound to say, I never expected. I never would have believed that we should have been allowed to go on getting into this plight, month by month and year by year, and that even the Government's own confessions of error have produced no concentration of Parliamentary opinion and force capable of lifting our efforts to the level of emergency. I say that unless the House resolves to find out the truth for itself, it will have committed an act of abdication of duty without parallel in its long history."

[7] See Studensky, ibid; see also a more fully developed conceptualization in James C Scott, *Seeing Like a State*¸1998: 22-33.

[8] letter from E. A. Tupper, January 9, 1970, as quoted in Carol S. Carson, "The History of the United State National Income and Product Accounts: the Development of an Analytical Tool," *The Review of Income and Wealth: Journal of the International Association for Research in Income and Wealth* 25, 1975, p. 156.

U.S. and the UK during the Great Depression, namely Keynesianism, would have largely remained theory, an idea without tools for implementation. Keynes' fundamental insight that government had an essential role to play in boosting economic demand, particularly during times of economic distress and war, was in dire need of much more sophisticated data sets. While Keynes himself was not a statistician, he fully realized the need for essential economic data without which his central ideas could not be implemented. Keynesianism, in short, provided the necessary fuel for the rapid expansion and refinement of national accounting practices. The creation of up-to-date and increasingly comprehensive national income accounts, in turn, allowed Keynesianism to turn into a practical public policy tool.

In the aftermath of World War II, based in large part on the desire to monitor and control Marshall Plan aid, the Organization for European Economic Cooperation (OEEC, the forerunner of the OECD), under the leadership of the U.S. and the UK, developed an international system of national accounts. Officially approved in 1953 by the United Nations, the System of National Accounts (SNA) was soon adopted by all capitalist nations worldwide. Following several, albeit relatively minor, alterations over the years, it today represents the basic economic scorecard for every major economy, and provides the foundation for virtually all transnational and cross-historical economic comparisons. As observers have pointed out, it would be an understatement to call National Income and Product Accounts, and the GDP in particular, the "800-pound gorilla of economic indicators." Nationally and internationally, NIPAs provide the very foundation for economic policy-making—interest and tax rates, subsidies, regulations, foreign aid, tariffs, investments.

As a *political reality*, the GDP has become the one-stop indicator for economic health—as we shall see, a big problem in itself. As a convenient, seemingly reliable and presumably objective hard number, however, the GDP is also used as a surrogate for more comprehensive measures of social well-being. As any listener to news programs can attest, well-being is routinely portrayed as some function of "per-capita income" or "per-capita GDP." The higher the figure, so the assumption goes, the better off the person, or the group of people.[9]

This was not by design, however. Simon Kuznets, generally recognized as the creator of the American system of national income accounts, warned that GDP should not be used to measure social progress. In his very first report to Congress in 1934, he tartly noted that the "welfare of a nation can scarcely be inferred from a measurement of national income."[10]

Subsequent generations have largely ignored his warnings. Soon after World War II, GDP came to be used increasingly not only to capture personal well-

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[9] A claim long since disputed by an array of studies. For an early example of what became known as the "Easterlin Paradox," see Richard Easterlin, "Does Money Buy Happiness?" (1973).
[10] U. S., Congress, Senate, ***National Income, 1929-32,*** Senate Document 124, 73rd Congress, 2d session, 1934, p. 7.

being, but also to measure the progress of entire nations or sociological groups of people by "per-capita" growth. Along the same lines, governments as well as national and international organizations routinely use per-capita income or per-capita GDP to make comparisons between different groups ("black/white," or "male/female"), between today and years past, or between wealthy and so-called "poor" nations. Indeed, underlying this widespread use of GDP as a welfare measure is a conceptual understanding with immense ramifications: among observers and theorists across the ideological spectrum, a widely-believed assumption is that economic growth (as measured by GDP) and social well-being generally equate and move in the same direction. More, in short, is always assumed to be better. Not only that, MORE is considered to be the necessary precondition for progress. The idea that a community or society with a lower per-capita GDP may possibly be better off—perhaps because people work less, are sick less, have a cleaner environment, have depleted their resources less, or enjoy more equality—is a culturally alien concept from Washington to Bejing as it is from New Delhi to Moscow. Acknowledging that LESS can also be MORE, and with increasing environmental distress may necessarily be more, runs counter to basic assumptions of much of neo-classical and Marxist economics alike.

Panning back the camera and reviewing the larger economic and social landscape, I would argue that the GDP can be seen as both cause and symptom of a much larger malaise. Above all, it is beginning to threaten what little advances toward collective prosperity we have historically made. As a narrow and fundamentally irrational benchmark, the goal of largely indiscriminate growth embodied by GDP also undermines future prospects for development and progress. By pushing for the monetized market colonization of all aspects of life, GDP cheapens life itself. By incessantly commodifying not just manufactured goods, but also natural capital, the ecosystem, and even social relations, the indiscriminate growth promoted by GDP helps wreck the planet and destroy what is left of the commons. It relentlessly undermines social communities. Initially created as an instrument for a very limited purpose of providing essential information about a severely depressed economy, the indiscriminate growth mantra informing GDP accounts has taken on a life of its own and literally turned into a benchmark for the direction of future economic activity.

Effects of National Accounts on Society

Activities throughout developed societies are geared toward increasing the numbers of the GDP scorecard. Americans, for instance, work for economic "growth" without asking: what, exactly, are we growing? Is what we are counting as "success" really promoting welfare, or is it actually undermining it? As an indicator, the GDP is blind to all such questions, providing no qualitative data distinguishing between growth that increases well-being versus growth that diminishes well-being. Nor does it distinguish between growth that is sustainable versus growth that is not sustainable. To the extent that we value what has a price, and work for what pays, Americans—as producers, consumers, citizens—

pursue (virtually indiscriminate) GDP growth as the preeminent goal. Like it or not, national economies tend to become what they measure.

The social and environmental implications of a performance indicator like the GDP are difficult to exaggerate. By attaching value to certain things (the car ride but not the walk; the pollution clean-up but not the clean river; the burning of fossil fuel but not the oil in the ground; the war campaign but not the stable peace), the GDP literally affect all aspects of life in modern economies. Even people who never think or know anything about the GDP, are profoundly impacted. One follows the course of the road without having to know road-building techniques, technical specifications of the vehicle used, or even a clear awareness of the destination. More often than not, the end result is service to the proverbial “bottom line” as defined by GDP at the cost of virtually everything else citizens would ordinarily consider important: the stimulus package intended to add jobs without asking what kind of jobs are being created; the student signing up for a course of study based on earning potential, not on potential satisfaction or usefulness (and the college investing based on projected tuition returns rather than on quality of education); the architect or city planner cutting corners to satisfy goals of short-term investment rather than of quality, community, or sustainability; the citizen forced to allocate scarce personal funds to retirement plans and neighborhood projects based on potential financial return, not based on any quality of life criteria. The list is virtually endless.

As anyone who has ever tried not to follow the course of the road quickly realizes, alternative paths are fraught with peril. Off-road economic activities receive none of the usual market rewards, but plenty of punishment, and, in the larger world of business, the constant threat of bankruptcy and financial ruin.

If the GDP was our only gauge, all of the following would not “count” toward improving well-being: the child raised at home; the home-made meal; the tree in the forest; clean water; walking to work; stable marriages; reducing hours worked to be with one’s family; relative equality of incomes/wealth between CEOs and workers, or between men and women, or between whites and blacks, or between rich nations and poor nations. GDP, in short, not only does not reward health or peace or equality. It does not even reward long-term care of resources or good environmental stewardship. GDP does, however, promote and reward the breadwinner working overtime; the child raised by daycare facilities and nannies; the take-out meal; the tree cut and turned into lumber; contaminated water that requires filtration and allows a blossoming bottled-water market; many miles commuting by car (or, better yet, SUV); divorce; burgeoning corporate incomes and bonuses, job insecurity; sickness; natural disaster; war.

To be clear: while the primary motive of individual businesses, large and small, is to make a profit (rather than feed the GDP), the course and direction of that profit directly follows what we measure. If it was profitable to keep trees uncut in the forest, people would do it. If it was profitable to make home-cooked meals, fast-food would go out of business. If it was profitable to provide sustainable energy or self-sufficient homes or zero-carbon emission public transportation, BP would build wind mills rather than spill oil in the Gulf of Mexico. Simply by determining what is (and what is not) considered "final output" or "investment" or "consumption," and by establishing the ground rules for what is valued and priced, the GDP defines the parameters of what can or cannot be profitable. To see how much this matters, consider measuring resource depletion or pollution not as an income, but rather as a cost: prospects for profitability (as well as losses) would dramatically change across the entire economy.

By today's GDP standards, the more goods and services being produced, marketed, sold, and consumed, the better. What is coveted by the priced values included in GDP is not only more of the same, however. An increasingly crucial component to growing the amount and value of goods and services is to find new ways to monetize things that previously did not have a price. The more *natural* goods can be turned into monetized commodities (clean water, uncontaminated soil, oil), the better. The more *social* goods can be turned into monetized commodities (advice, friendship, play, safety) the better. This includes the burgeoning industry of "defensive costs:" everything from locks and security systems to regain some measure of safety, to increased mortgage payments in order to be close to functioning schools, or Superfund clean-ups to re-establish some semblance of a clean environment.

As a steadily growing number of critics of the GDP system began to point out in the 1960s, our premier economic gauge is not only broken, but badly misleading. As far as the environment is concerned, continuing the values and measures as defined by the GDP may be catastrophic.

Originally intended as an objective measure of volume of economic output, today's GDP accounts are far from either objective, or rational. While sophisticated tabulations of values and numbers that flow into GDP appear straightforward and neutral, in reality they have come to be used in ways that promote a system that is both frivolous and reckless. To summarize: according to GDP, the person we are taught to be in grade school—caring, honest, sharing—is of very limited economic value (and very unlikely to be economically successful). On the contrary, the GDP actively promotes short-term over long-term thinking, quantity over quality, personal gain over communal health, recklessness over social responsibility. Above all, by rewarding us for turning everything into a commodity to be bought and sold, and by valuing only that which has a price, the GDP functions like a virus injecting itself into the central DNA of a system that first colonizes, then transforms, and finally destroys everything in its way.

Economic growth has come to be the foundation of Western Civilization, and currently reigns supreme across the globe. It is a story we have all learned in school—a story of hard work and determination, of discoveries, inventions, and development, and, of course, of rising standards of living and immense wealth creation. And let's declare right up front: no one can deny a basic fact—much progress has happened. No conservative romanticism of the past (wholesome communities, stable families, traditional gender relations, etc), nor environmentalist longing for the old days (pristine forests, clean rivers, a multitude of wildlife), can dispute this. One could fill volumes with advances in health care, increases in agricultural yields, technological inventions and scientific breakthroughs. Directly or indirectly, those developments translated into much longer average life expectancies, better education, increased job safety, improved opportunities—at least for most born in so-called "developed nations."

The tale of progress would be lacking historical veracity without mention of its persistent and ugly underbelly--exploitation, discrimination, war. Tens of millions have lost, and continue to lose, life and limb on the path of progress. Whether in capitalist America, communist Russia, social-democratic Sweden or Apartheid South Africa, it is important to realize that development's central component, in all cases, was economic growth. Growth provided foundation, rationale, and direction. And it served a wide range of purposes: it provided unprecedented amounts of wealth for elites, it paid for conquering armies, it frequently helped buy silence and social harmony, and it facilitated scientific and technological development.

Of course the GDP did not invent economic growth any more than the barrel invented gun powder. But it did supply the data and framework that eventually turned economic growth into the supreme goal of policy making. By providing measure and direction of economic growth, the values embedded in GDP accounts became so pervasive, so much part of our everyday lives, that they also became almost invisible. Measuring value by price and believing that more is better has become second nature, so much so that progress itself has become virtually synonymous with economic growth. In the end the circle has closed: more GDP means progress; progress requires more GDP. It is what economist and Nobel laureate Joseph Stiglitz has called "GDP fetishism."[11]

Difficult Alternatives

Among economists, the GDPs fundamental flaws as a welfare measure are beginning to be recognized. Some are even questioning the GDPs validity as an economic indicator. Today, nearly all trans-national organizations concerned with global economic matters have produced reports and summoned commissions to address the many flaws of GDP accounts. The OECD, the World Bank, the World Resources Institute, the European Union, the French government, as well as think tanks and dozens of non-profit and educational institutions around the world have criticized the nature and uses of GDP. Many have also generated possible alternatives: most either reject the "one-indicator" model and provide a spectrum of social, economic, and environmental measures (such as the Sustainable Development Indicators), or they re-conceptualize the

[11] Joseph E. Stiglitz, ibid.

one-indicator model to include social and environmental considerations (such as the Genuine Progress Indicator, or the Happy Planet Index).

Notably, most economists have stayed away from such efforts. They argue that GDP was never intended to measure well-being (but presumably does a fine job measuring economic output). Or they claim that GDP is not, in terms of daily economic decision-making, very important (yet GDP growth routinely ranks on top when the success of our economic system is hailed). Oddly, then, GDP is presumably both: the most important "economic accomplishment of the twentieth century" and a very narrow instrument; an indispensible economic indicator yet insignificant to business decisions.

Essentially unnoticed by the public, Congress has held two hearings on the validity of the GDP in the last twenty years, acknowledging major problems, but providing no legislative policy follow-up. Those directly involved in tabulating the massive volume of data that flows into the calculation of the GDP point to its global preeminence as an economic indicator, and its success in becoming the premier measure for national and trans-national comparisons and evaluations. Changing the measure, the argument goes, would "sharply diminish its usefulness," in the words of BEA director Steven Landefeld, by robbing policy makers of a much needed comparative indicator. Or as senior Hoover Institution economist Michael J. Boskin put it, "economists and statisticians should be wary of confusing limitations in the GDP accounts ... with invitations to contaminate them with fuzzy feel-good (or bad) numbers purporting to measure 'happiness' or 'satisfaction'."[12]

To this day, none of the critical evaluations, and none of the attempts to generate alternative models, have gained much political traction. Widely recognized and supported, the need for change is obvious to many but no one in position of authority has stepped forward to advance specific plans for implementation. Most importantly, though, with the exception of Bhutan, no country or trans-national organization has yet adopted an alternative set of indicators as the official basis for economic policy-making. While we increasingly know more about peoples and nations around the world, what determines their economic decisions has changed very little.

The result is curious, and potentially tragic. Major mainstream publications in the U.S. and Europe such as the New York Times, Der Spiegel, or The Economist now feature articles and discussions on the various flaws of GDP.[13] The general agreement that appears to be emerging is that GDP is not an adequate welfare measure. But what is the response? According to the most highly publicized effort, the French *Commission on the Measurement of Economic Performance and Social Progress*, led by such luminaries as Nobel laureates Amartya Sen and

[12] Michael J. Boskin, *The Economist*, April 26, 2010.
[13] See, for instance, "The Rise and Fall of the GDP," *The New York Times Magazine*, May 16, 2010: 60-71; "This House Believes that GDP is a Poor Measure of Improving Living Standards," *The Economist.com*, April 20-30, 2010; "Der Kult ums BIP," *Der Spiegel*, September 21, 2009.

Joseph Stiglitz, the predominant idea is to generate a "dashboard of indicators," based on the realization that no single measure can possibly capture progress or welfare. This in turn has also led to a host of initiatives around the world to generate more sophisticated, more varied, and more timely indicators, measuring everything from per capita resource use to job satisfaction, equality, savings and homeownership rates, to the correlation between social security and religiosity. Some of these initiatives have borne fruit. The United Nations, for instance, officially adopted the so-called Human Development Index (HDI), adding two factors to GDP, namely literacy and mortality rates, in order to achieve a fuller and more accurate measure of the welfare of nations.

So we do now have a dashboard, even one with lots of gauges. We possess a wealth of information. The problem is not all gauges are created equal. In fact, what drives the economy continues almost exclusively to follow one indicator—growth as measured by GDP. It is as if the driver of a car, aware of things like the oil gauge and the engine temperature gauge, only follows the speedometer, for his one and only overarching goal is speed. Nothing else matters—not that the engine is running low on oil, not that the pistons are overheating, not that the car is racing out of control.

The problem is not that the person behind the wheel of the car is a bad person. Or even a bad driver. The problem is that the driver's performance is determined by speeding up, no matter what he may personally think about the condition of the engine, the risk of speeding, or the world outside his window. He learned in school that what mattered is speed. He was chosen as driver for his ability to speed. He is paid in direct correlation with his ability to speed up. Indeed, he is legally obligated to the owners (stock holders) of the car to speed up (for, by GDP standards, their dividends depend on speed). And driving instructors in highly ranked universities and in the pages of reputable journals and newspapers continue to tell him not to worry about speed. On the contrary, they claim, increasing speed is still the promise of a better future.

In the real world of everyday business and community life, on the other hand, the mantra of more and faster is rapidly running up against its social and natural limits.

No "Green" in National Accounting

As currently configured, the environment appears in the national income accounts only in one of two ways: either when natural resources are exploited and turned into priced commodities (turning trees into lumber, well-water into bottled water, crude oil into gasoline), or when environmental pollution and degradation require compensatory market activity (installing filters, cleaning toxic waste sites, purchasing cap-and-trade permits). An oddity even by neo-classical economic standards, the environment, as the very foundation of all economic activities, does not represent a capital asset. While the Net National Product, for instance, is specifically calculated by subtracting depreciation from

GDP, this depreciation concerns only manufactured capital, but not natural capital. As any accountant understands, equipment suffers from wear-and-tear and gets used up, and therefore depreciates in value. Inconsistent with this basic logic, depletion of natural resources is not counted, any more than the degradation of millions of other vital services nature provides to the economy and human welfare in general.

Again, many observers understand how such accounting standards can send fundamentally flawed, and potentially catastrophic, signals to national and international markets. Economists who deal with the social and environmental consequences speak of "market failures." Countries are beginning to confront the reality that the short-term gain of natural resource exploitation and depletion is followed by long-term degradation and poverty. A much-cited World Resource Institute study documented that the impressive GDP growth rates of Indonesia in the 70s and 80s were essentially bought with clear-cutting its forests and exhausting its topsoil with intensive cash-crop farming.[14]

Degrading, depleting, and despoiling the very plot of land one stands on, while perhaps improving one's economic income accounts in the short term, inevitably fails to sustain well-being. In response, a few countries have implemented so-called environmental satellite accounts ("satellite" because they are add-ons that circle around the main account, which is GDP). But since such satellite accounts are recorded outside the income and production accounts, they have remained without any affect on the conventional indicators of cost, income, product and capital formation, and thus largely without consequence on markets and economic policy-making. The United Nations issued in 1993, and revised in 2003, its call for national accounts that include environmental depletion and degradation. This, too, has yielded no substantive results to date.

Given dominant national accounting standards, all environmental efforts directed toward protecting the eco-system face a fundamental dilemma: what is good for the environment and the community is frequently not good for the bottom line. The problem is that depletion and pollution make multiple contributions to what is tabulated in national accounts, while environmental protection and conservation come at a cost to potential economic activity. This is a problem originating from how the GDP was created and developed in a very specific historical time and place. It is not an inevitability.

The point must be made: governments, accounting agencies, businesses and NGOs treat the GDP as if it were ahistorical. As if it were somehow the logical indicator system of a market economy. Nothing could be further from the truth. One increasingly irrational consequence of not knowing the history of the GDPs creation is that environmental problems actually continue to be promoted by the dominant national accounting system: as currently configured, economic and ecological goals are brought into inevitable conflict. This is true in corporate boardrooms as much as in the stereotypical logger vs. tree-hugger debates visible

[14] See Robert Repetto et.al, *Wasting Assets* (1989).

worldwide. Rather than recognizing the existential significance of a stable and healthy environment to long-term economic success, national accounts instead reward consumption, waste, and degradation of the ecosystem.

As a most immediate result, green or sustainable business practices still occupy a relatively marginal existence, despite increasing public awareness and subsequent growing consumer demand for greener, more sustainable business practices. In the broader context, this artificially created calculation of GDP means environmental stewardship of any kind—personal, corporate, political—will forever try, and inevitably fail, to catch up with production and consumption patterns geared toward quantity, not quality, toward more, rather than better and sustainable. The occasional public policy victories for the environment—the clean air and water acts, gas-mileage requirements, recycling programs, superfund clean-ups, and even subsidies for alternative energy sources—fall well short of altering the direction of the economy. The bottom line still is: by national accounting standards, it continues to pay to neglect environmental stewardship. It pays to waste resources, pollute, deplete, and degrade. At a minimum, what is needed instead are accounting practices that reward rather than punish good stewardship. Even in the context of capitalist market economies, environmental sustainability holds promise once there is money to be made with it.

Today, good environmental stewardship is profitable only to the extent to which it either can create cost-savings (less waste and resource use), or successfully respond to niche demands of consumers willing to pay higher prices for things like organic food or sustainable energy. Better education, heightened awareness, or public appeals about the environmental crisis are not very likely to change this. What would instantaneously and drastically change the direction of business in America, however, are basic, logical corrections of economic performance indicators. To name two that have been widely discussed: (1) allow for natural capital depreciation; and (2) include "externalized" costs in the pricing of goods and services. Though it is difficult to determine with precision, the results would undoubtedly produce significant economic and behavioral shifts. One relevant example: according to several studies, if gasoline immediately cost something in the range of $10 to $20 a gallon, this would extensively alter consumer choices. As a comparison between the U.S. and more environmentally advanced European economies already shows, we'd have smaller cars, people would move back to urban cores, we would produce less waste, and more people would build using green construction techniques. If applied to larger economic zones, it would also free up large amounts of investment capital for everything from sustainable energy resources to conservation efforts to a wide variety of green technologies, and fundamentally revise economic cost-benefit analyses. Businesses with a focus on sustainable operations and products might suddenly face virtually endless opportunities to accomplish both: make money and protect the environment.

When we historicize economic indicators, it becomes obvious that there is nothing natural or free about what we measure, or how we measure it. All national economic systems in history have been a product of political decisions, of rules and laws regulating what players in the marketplace can and cannot do. The creation of national income and product accounts, and its subsequent spread around the globe, is a perfect example for a design that, according to its founders, is full of subjective choices and value judgments. In a tragic inversion, the result today is that we don't measure what we value. All people want to be happy, and want to be economically secure. Instead, we value what we measure—namely, production and consumption of more products and services regardless of how they impact well-being, resource allocation, or long-term security. If someone said "eat more fast food, drink more alcohol, and smoke more cigarettes, for it will greatly improve your health," we would immediately recognize that we are in the presence of a fool. Or, at best, a joker. But if one says: "we need to increase economic output and raise the GDP for it will improve people's well-being," most of us nod in consent, roll up our sleeves, and get to work. The presumed benefits of economic growth as defined by GDP have literally become an article of faith. Conservatives and tea-baggers believe in it as much as liberals and socialists do. This faith, in turn, has had a profound impact on the world, generating unprecedented material output while pushing the globe to the brink of environmental and social collapse. It has been a process fundamentally guided by the goals and performance indicators embedded in the GDP, which is not a universal given, but is itself a creature of its own unique history.

Possible Conclusion, Directions, Alternatives

Creating alternative goals and performance indicators that account for both social and environmental impact is not only possible, but has by now become necessary. The precise nature of such goals and indicators may not yet always be clear. But before concluding with some very concrete steps toward green accounting, I would like to offer some thoughts on what can, in fact, already be said with quite some certainty:

- growth in GDP does not equate social progress (much less well-being or happiness)—and perhaps never has.[15] Statistically, we work harder, we spend more, we have less time—but economists tell us all is well, because we are "growing" (i.e. GDP is growing). Reality is that most of economic growth over the last forty years has (1) benefitted the top 10 percent of income earners (in both rich and poor countries), and (2) has, in the aggregate, contributed to, rather than alleviated, misery and poverty around the globe. It turns out that pollution, resource depletion, ecosystem degradation, and community destruction, while all inevitable

[15] Importantly, this is not to say that growth of a certain kind, in certain conditions, may not indeed be necessary, particularly given current levels of world poverty and population growth.

by-products of indiscriminate growth, inevitably wreak havoc on the opportunities of poor people.

- The indiscriminate growth paradigm traverses traditional dividers of ideology or place. Majorities of people from right to left have embraced it, but one can also find voices from right to left who express serious problems with it. Every major economy in the world today is securely in the grip of the indiscriminate growth paradigm—from the U.S. to China, from Russia to Sweden. While the global empire of growth has clearly outgrown its national origins, much of its corporate embodiments still require the legal framework and physical enforcement of the nation state.

- While pricing goods such as clean water or safety or health may be an important first step in protecting the ecosystem, communities, and lives, in the long run it may turn out to be the inoculation that first protects you against a seasonal illness before killing you by crippling your autoimmune system. There is no doubt that much of life is, and should ideally remain, priceless. It is also apparent that equating value with price (or "no price, no value") reveals as stunted and simplistic of a conception of human society as the construct of "homo economicus" reveals a primitive conception of human nature. Nevertheless, given the current structure of our economy, not pricing otherwise priceless values such as a functioning ecosystem or human health may well consign the commons, and all who depend on it, to the dustbin of history. For the time being, what doesn't count (because it is not priced) will not be protected.

- A single indicator (like the GDP) will never be able to capture either the totality or the complexity of modern societies. There are, however, single indicators today that are far superior to GDP, such as the Genuine Progress Indicator (or GPI). While the GPI starts with the same personal consumption data that the GDP is based on, it then provides crucial adjustments not present in the GDP. GPI adjusts for factors such as income distribution, adds factors such as the value of household and volunteer work, and subtracts factors such as the costs of crime and pollution. Using GPI, especially if it replaced GDP, would provide a much clearer evaluation of both performance and sustainability of a society. It would also channel, even within the parameters of the existing profit-driven market economy, much needed capital toward protecting the commons.

- There has been much debate about how realistic or unrealistic alternative economic systems may be. Much of this discussion is necessarily confined to unsubstantiated speculation. There is, however, one very clear conclusion to which all evidence points: the only thing we can demonstrate to be utterly unrealistic is to remain on the path we are currently on, namely virtually indiscriminate growth-driven capitalism. Even some of the most optimistic observers and scientists agree: if the latter path is what we choose, the question is no longer *if*, but only *when* we will run into problems of a truly global, and truly existential nature (some would argue we have already passed that point).

- In the end, the unprecedented economic growth of the last two centuries, unleashed primarily by the combined forces of fossil-fuel-driven capitalism, has served two critical functions: (1) it created the foundation for human liberation, and (2) it provided global cover for massive social inequalities and unmatched wreckage of the ecosystem. On the first point, the record is impressive: global life expectancy has doubled, literacy is now a characteristic of a global majority, basic education is mandatory in most countries, in half of the world women have achieved legal, if not political, parity, and child labor is largely a thing of the past in all but the poorest countries. On the second point, the record is equally impressive: among the many tools historically used to achieve acquiescence among disempowered people, providing them with a tiny slice of the growing economic pie, increasingly in the form of flashy and dependence-generating gadgetry, surely ranks at the very top. Listening to i-tunes while texting our friends we have, as a human collective, largely been quiet in the face of the highest number on record of people living in poverty and hunger, at the same time as wealth has grown by leaps and bounds and obesity has become a modern epidemic (what the WHO calls "globesity"). We have also witnessed, again largely without making much noise, the depletion and spoilage of much of the planet, literally wasting away the very foundation upon which all life depends. In the case of oil, we are in the process of burning up in a matter of little more than one century what required millions of years to develop.

- No amount of pseudo academic sophistication or alleged practical realism can cover up the fact that what we are doing is cheating—cheating the laws of physics, cheating logic, and cheating our children out of many of the convenient benefits the planet provided for us. We are breaking that most basic rule of human decency learned in the kindergarten classroom: leave it the way you found it. From right to left the mantra still is: growth, development, new technologies will offer solutions to our most pressing problems. This, in turn, effectively prevents us from asking more serious questions about essential things like our interaction with the planet, or how to realize some level of social justice on a global scale.

- The final irony, it seems to me, is this: the distance, the yawning gap, between *what is* and *what could be* has never been greater in history. We can couch it in spiritual terms: we have the means to create paradise on earth (at the very moment we stand at the gates of hell). We can put it in ideological terms: we can pursue the ultimate freedom – freedom from want. Or we can put it in economic terms: we have largely passed the realm of necessity and arrived at the point at which we can realize the realm of freedom. It is a broadly acknowledged idea that much of history is a history of scarcity, a struggle of too many over too little. Clearly, that no longer describes reality. Yet what does describe reality is almost too hard to acknowledge: we have everything we need to feed, house, educate, and provide health care for every man, woman, and child on earth (and we even know how to do it in a sustainable fashion). We can create a good standard of living for everyone, including a level of safety and security thus far reserved only to the privileged few. Yet reality is something altogether different: we inhabit a world in which 2 billion people live in hunger, violence and insecurity are rampant, inequality has reached all-time highs, and the ecosystem is rapidly reaching the point of no return. The downside: the dangers may well be higher than at any other point in history. The upside: collectively we clearly have more opportunities for liberation than ever before.

The obvious conclusion needs to be stated bluntly: the era of indiscriminate growth is over (or, more precisely, is clearly no longer sustainable). We can still debate whether economic growth of some as of yet undiscovered sustainable kind is possible with a global population of roughly 9 billion by the year 2050. But whatever the answer will turn out to be, some of the key challenges from here on out will revolve around the following issues, all necessarily involving some version of "green accounting":

- The income and wealth gap between the world's richest and poorest has to decline significantly. Based on generally acknowledged figures by the World Health Organization and the United Nations, it would require less than ½ of the wealth of the world's richest 1 percent to provide for all essentials to the world's poor—food, housing, education, health care. If done in a way that would empower women and communities, a more equitable distribution of resources and opportunities would also provide for much healthier economies.
- By the same token, the gap in amount of resource and energy use has to radically shrink. Above all, people in so-called highly developed countries (primarily North America, Europe, Japan, Australia) will have to find ways to reduce their resource and energy use by upwards of 80 percent.
- While much of science, technology, education etc. (the information economy) should continue to develop in an increasingly global and interconnected network, the economy of tangible goods will have to become much less globalized, and much more community centered. There is no resource and energy sustainable way to ship grapes or sneakers or microchips around the world from producers to consumers. Production and consumption will have to move back together. Critical political functions like peace keeping or environmental regulations will have to be increasingly centralized. Yet the fundamentals of creating and re-creating life (work, food, health, education, living) can only be organized sustainably and democratically on a decentralized community level.

- In order to be able to protect essential functions of the ecosystem, all consumption of natural capital needs to be accounted for in full as a cost, and not as income or benefit. Until we can reach a post-fossil powered economy with near zero waste production levels, both the costs of resource depletion and pollution need to be fully accounted for in the pricing of goods and services.
- Governments will continue to need large sums of money to cover essential services, ranging from education to health and defense. Traditionally, the majority of this money has been generated by taxing labor and income.[16] Consistent green accounting would entirely shift away from this model toward taxation of consumption (with a heavy emphasis on taxing extraction and pollution). As in the case of income taxes in most wealthy nations, taxation on consumption should be progressive, ranging from negative taxes (subsidies for basic needs) to increasingly heavy taxation for conspicuous and environmentally unsustainable consumption. Aside from encouraging full employment, this would create an incentive structure effectively promoting three core services: (1) productivity maximization of natural resources used; (2) investment in the increase of renewable resources; and (3) eventual discontinuation of non-renewable resources.[17]

Though rarely articulated in such clarity, the end goal of every economy must be to sustain itself. Most basically, this entails ending poverty, conserving the biosphere, and leaving behind an ecosystem that will provide as many opportunities to present and future generations as for past generations. More than anything else, such a collective purpose will require a fundamental shift in thinking about economics—away from counting products & services, away from thinking more is better, and away from pretending that existing markets are an adequate expression of consumer choices. What we measure matters. It matters so much that we, as developed societies, have largely become what we measure—accumulators of stuff (and, in the process, depleters of resources and polluters of the planet).

We can re-ignite the dialogue by once again asking the most basic question: "what is the economy for?" Wherever these conversations take place, they have already produced much better answers than merely "economic growth" or "wealth." Young people in particular realize that if sustainability is supposed to be more than window dressing, it includes social and economic justice, uncompromising environmental protection, and a democratic commons in which the volume of your voice is not determined by the amount of your wealth. As many commentators have pointed out, the world's poorest have been, and will increasingly be the hardest hit by resource depletion, pollution, and climate

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[16] According to the Congressional Budget Office 2009, over 81 percent of Federal Tax Revenue comes from individual income and payroll taxes (revenue from the corporate income tax fell from between 5 and 6 percent of GDP in the early 1950s to 2.1 percent of GDP in 2008); see . http://www.taxpolicycenter.org/briefing-book/background/numbers/revenue.cfm (accessed 10 May 2010)

[17] Several of the suggestions made in this list are informed by Herman Daly's work, and particularly his essay "Five Policy Recommendations for a Sustainable Economy" (2002).

change. Only with a sense of global responsibility, and greater equity of burdens and benefits, will sustainable development be more than sloganeering or the illusory comfort of little ecological islands in places like Denmark or San Francisco.

But as I have suggested in this presentation, it is equally critical that we have clear indicators—local, national, and global—that can actually tell us whether we are succeeding or failing. Along the lines of what Daniel Goleman suggested in his book *Ecological Intelligence*, we need, and we can by now fairly easily accomplish, what he calls "radical transparency." Bad and insufficient information not only cripples free markets, it also leads citizens and consumers down the path of bad and destructive choices. Easy accessibility of good and valuable information on product content and environmental impact, on the other hand, would allow everyone to make far superior choices.[18]

Above all, the criteria by which we measure success and failure matters because, inevitably, the measure becomes the goal. As long as our collective measure of success is MORE (i.e. a growing volume of goods and services), what we will articulate as our goal is also MORE.   The biggest challenge will be to translate the inevitably qualitative criteria of sustainable development into quantitative and comparable values. Green accounting standards as outlined above are a necessary beginning. A more complete answer will most likely lie beyond the horizons of a profit-driven economy based on private property.

Tracing the historical emergence of what became in the post World War II era the undisputedly predominant economic indicator is thus much more than, and something very different from, studying the development of an accounting tool. Above all, the GDP is both symptom and cause for a worldwide growth mythology, a symbol for an age of fossil burning and ecosystem depleting global expansion. GDP is also a historical icon for a singular focus on quantitative accumulation at the expense of qualitative development in modern economies—accumulation of wealth in the case of capital owners, accumulation of stuff in the case of citizens in the industrialized world, and increasing dependence and destitution for the rest.

A sustainable model it is not.

[18] Daniel Goleman, *Ecological Intelligence* (2009): 235-238.

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