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RIO+20 POLICY BRIEF

#7

A green economy for a planet under pressure



PHOTO: CREATIVE COMMONS / PATRICK CIEBILSKI

Moving away from the utopian ideal

Humanity is at a crossroads. Social, economic and environmental crises that have played out in recent years offer a unique opportunity for a step change in the way humanity does business. Although the concept of the 'green economy' was introduced to address today's challenges, its continued dependence on traditional – and questionable – trickle-down economic growth theory has rendered it inadequate. A fast-growing population, rapidly diminishing resources and planetary boundaries are forcing humanity to find innovative ways to use resources more efficiently, to work within the limits of the Earth's natural capital, and to make fundamental changes to our economic systems. This policy brief sets out the guidelines for the social and technological transformations needed for a new economic system, as well as the new ways in which we will need to measure and monitor this system.

Rio+20 Policy Briefs

One of nine policy briefs produced by the scientific community to inform the United Nations Conference on Sustainable Development (Rio+20). These briefs were commissioned by the international conference *Planet Under Pressure: New Knowledge Towards Solutions* (www.planetunderpressure2012.net).



Summary of key points and policy recommendations

- We cannot continue to assume that the planet is an infinite source of resources and an infinite sink for our waste. To do so will condemn us to transgressing critical planetary boundaries. The planet is a necessarily self-sufficient system with finite boundaries and the time has come to think beyond sustainable development to global sustainability within the context of global responsibility.
- Technology and investment in science must be approached as a social transformation process rather than just a process of technology transfer.
- More efficient use of resources is necessary but not sufficient to reduce total resource use. Efficiency gains must be used to build the productive base of countries. This can be achieved by redirecting gains, which would otherwise have resulted in increased consumption, towards investments in natural, social and human capital.
- Inequality destabilizes societies and leads to environmental degradation through 'keeping up with the Joneses' and the hedonic treadmill effects. We must strive for a post-consumerism and post-materialist society.
- The new Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) should undertake a thematic assessment on the green economy and the social, ecological and economic consequences of such a future.
- Governments to provide resources to an international consortium of science and technology centres. Commission this consortium to research new technologies using a bottom-up approach to finding solutions for ecological and societal boundaries.
- Governments, multilateral agencies and banks to work together to design and implement economic incentives to technical innovation and to improve efficiency of resource. At the same time, such institutions must design economic instruments that factor in gains from efficiency improvements and encourage their use for the maintenance and management of the 'global commons'.
- The international scientific community, spearheaded by the United Nations and its various organizations, to provide recommendations to redesign trade rules, financial flows and investment within the context of planetary boundaries and the well-being of all people.
- National research foundations to support a 10-year research programme on behavioural change to facilitate the social transformation to global sustainability.
- Government and multilateral agencies to together establish targets for achieving the six key instrumental freedoms by 2030 as part of the post-2015 Framework for Global Sustainability.
- The United Nations Statistics Office to support countries to move beyond gross domestic product and develop Inclusive Wealth Accounts as a new macroeconomic indicator to measure progress in human well-being.



RIO+20

**United Nations Conference
on Sustainable Development**

THE GREEN ECONOMY CHALLENGE

Economics has been both a cause of and a solution for our present day problems. It has brought material prosperity to some, but at the expense of others both within and across national boundaries. The growing inequality among societies and the ever increasing frequency of extreme environmental events calls us to take a critical look at our economic and social systems and ask if the present economic paradigms can provide solutions. The traditional trickle-down economic growth theory, enshrined within the present dominant economic paradigm, is increasingly being questioned and renounced. This is witnessed by the growing level of dissent observed not only in developing countries, but also in the developed world. An urgent need for a new economic model exists, but its precise form remains open for debate.

The United Nations Environment Programme (UNEP) has addressed this urgent need by proposing a 'green economy'. This has been defined as an economy that results "in improved human well-being and social equity, whilst significantly reducing environmental risks and ecological scarcities. In a green economy, growth in income and employment is driven by public and private investments that

reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services."

Current proposed models for a green economy encompass the following key points:

- growth in income and employment are the key components for human well-being;
- it is possible to reduce carbon emissions and pollution, improve energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services while at the same time increasing employment and income;
- investment in green technology sectors will implicitly produce sustainable outcomes including social equity;
- investment sectors that are traditionally dominated by the poor, such as agriculture and fisheries, will help reduce poverty and improve social equity;
- enabling conditions such as national regulations, policies, subsidies and incentives, as well as international market and legal infrastructure, trade, and technical assistance focused on green technology will lead the way for a sustainable society.

In economic jargon, the green economy suggested above is a technology-driven supply-side solution. Though this is surely part of the equation, it is not the complete solution. To state it bluntly, the current green economy models remain trapped in the underlying and often invisible assumptions of the 18th and 19th centuries. In the following ways, this vision is unsuitable for the current era:

1. the purposes of the economy have been too narrowly conceived, and reduces to a mechanistic level the understanding of the complex coupling of humanity and Earth's functioning;
2. the role of demand management is vastly underplayed and provides no understanding of how we can maintain human well-being outside the economic growth paradigm;
3. the assumptions about the nature of reality are inconsistent with contemporary science;
4. the current economic framework is mired in a complex discourse about measurement that fails to recognize that all economies are bound by Earth's biogeochemical constraints;
5. it addresses poverty but ignores the growing inequality within and across nations, which is unsustainable and is frequently leading to social chaos.

GREEN ECONOMY AND GLOBAL SUSTAINABILITY: CHALLENGES FOR RIO +20

The green economy will be a major theme at the Rio +20 summit in Rio de Janeiro, Brazil, on 20–22 June 2012. Governments and other stakeholders, including business, UN agencies and non-governmental organizations, will be

seeking guidance on the way forward. A green economy must account for and work within the social and ecological conditions of each country while at the same time respecting the global commons shared by all countries, co-

existing as they do on a finite planet. Nevertheless, a one-size-fits-all model will not work. It is crucial that the global community comes away from Rio equipped with an action plan that can make the green economy a reality.

MEETING THE CHALLENGE

New economics and governance for the global commons

There is a need to carefully consider the long-term, aggregate impact of human activities on those Earth system processes – such as climate regulation, water regulation and nutrient recycling, among others – that constitute our environmental life-support systems. Science tells us that Earth system processes are dominated by non-linear feedbacks and complex interactions between the living biosphere (species and ecosystems), physical processes and humans. A recent article in *Nature* highlights a number of planetary boundaries that we are in danger of crossing.¹ Protection of planetary life-support systems is clearly a new category of scientifically defined commons that demands new economics and new kinds of governance.

Technology is socially and ecologically embedded

To attempt to separate technology from its social and ecological foundations is foolhardy. Whereas the technological–ecological relationship is understood and accepted, only recently is there a realization, however slight, of the technological–societal relationship. Technology is largely responsible for such large-scale changes as the increased and rapid urbanization of society, and higher population because of less disease and lower infant mortality.

An obvious example of such technological influences on social

transformation is the industrial revolution, which was itself as much a social transformation as a technological process. However, the industrial revolution emerged predominantly from the West and the social structures in these countries evolved concurrently as new technologies were introduced and adopted. This co-evolution of technological progress and social transformation offers an important lesson. More recent attempts to transfer technology to developing countries failed to bring with them the crucial social developments. The small minority in these developing countries who were trained and educated in industrialized countries prospered, but the masses were left behind. This dichotomy between the pace of technological and social change has been one of the key factors behind social disruptions in recent decades.

Efficiency gains can backfire

“The problem with efficiency gains is that we inevitably reinvest them in additional consumption.”

Owen (2010)

Initial reductions in pollution and resource use are often lost when reduced prices caused by technological innovations lead to an increase in overall demand for goods and services, which in turn results in an overall increase in resource use and pollution. Similarly, efficiency increases accruing from technological innovations can become perverse incentives to consume more. Compounding this, increased energy efficiency and reduced energy prices can cut the price of other goods and services, which results in complex economy-wide adjustments in energy use.

Behavioural change and demands

“... social structures can and do shift people’s values and behaviours”

Jackson (2011)

Technology-driven changes to energy supply are not sufficient to bring about a green economy. Parallel to technological innovations, there is also a need to influence the demand for goods and services. This means targeting consumer behaviour specifically, and understanding human behaviour in general. In reassessing consumerism at the individual and societal levels, we will need to address the social structure of the particular consumer society, as it is this structure that shapes people’s values and behaviours. For example, social structures that reward self-enhancement and novelty must be favoured over structures that reward self-transcending and selfish behaviours. Appropriate social outreach and dissemination programmes would foster sustainable behaviour while simultaneously establishing new structures that allow people to flourish and which take account of the society’s well-being.

Inequality and the race to the bottom

“... the biggest challenge for development ... is to find more ways in which those with more wealth and power will not just accept having less, but will welcome it as a means to well-being, to a better quality of life.”

Chambers (1997)

¹ Rockström J. et al. (1999) A safe operating space for humanity. *Nature* 461, 472–475 (24 September 2009) | doi:10.1038/461472a; Published online 23 September 2009.

Much effort and many gains have been made in reducing absolute poverty, especially in developing countries. Although this must continue with renewed effort, equal emphasis must be placed on reducing inequalities within and across nations. Reducing inequality is not simply a moral imperative; it also is major factor in solving many of the problems of the world. High levels of inequality promote conflict within and between ethnic groups, classes and societies and drive unmanageable international immigration.

Finally, inequality motivates unsustainable behaviour. Large gaps between groups of communities within a society erode trust and motivate non-cooperative behaviour as groups strive to gain the highest economic pay-offs. This zero-sum game prevents

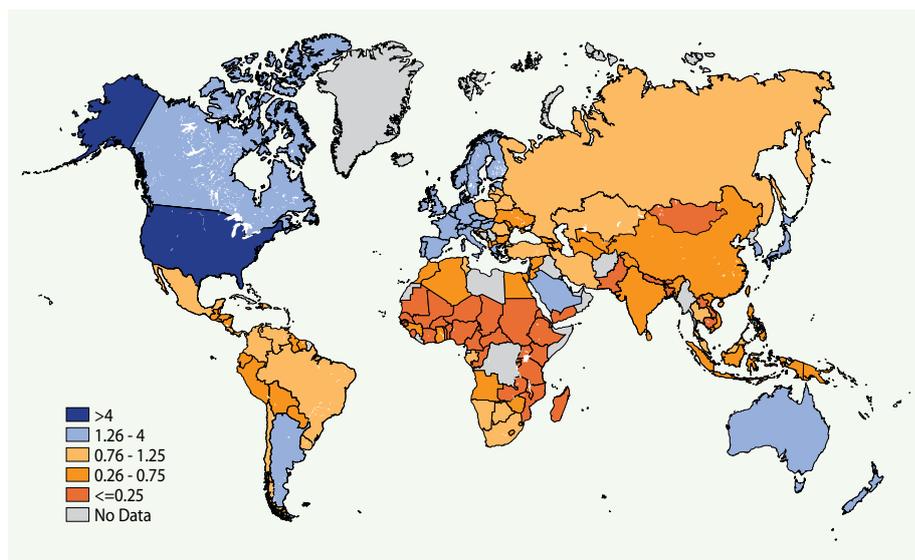


Figure 1. Income ratio* 2000.

*The ratio of a country's GDP per capita to the world average GDP per capita.

Source: Adapted from World Bank Data Source, World Development Indicators 2002 CD-ROM.

individuals from considering the well-being of society and the environment. In short, inequality must be addressed

before humankind can negotiate and implement the changes needed for a transformation to sustainability.

MEASURING PROGRESS TOWARDS A GREEN ECONOMY MEANS MEASURING WELL-BEING

"We can't manage what we can't measure."
old management adage

If a green economy is to deliver on its objectives, we will need new measures of progress. Designing a green economy while still using GDP per capita to measure progress will doom us to failure. First, we need a measure that reflects well-being of the present generation as well as that of future generations. Second, the measure must not only reflect economic factors but also include social and environmental components, as well as their interdependencies. Third, this measure should provide information for policymakers involved in designing investment mechanisms and incentives. At the macroeconomic level, the move from measuring GDP per capita to

inclusive wealth – which measures the productive base of a country while keeping track of changes in natural, social, human and produced capitals – offers a new measure to evaluate progress, as illustrated in Figure 2.

At the individual level, measures on the availability and access to six so-called "key instrumental freedoms" need to be incorporated into a green economy (Figure 2). These freedoms are crucial if societies are to pull themselves out of poverty and close the inequality gap. Equally important, they also serve to foster the green economy. For example, economic facilities allow individuals to access loans to start small businesses as well as to gain access to markets

that otherwise would be closed to them. Similarly, education (a social opportunity) increases the human capital of a country, meaning that the development and adaptation of technology will be more socially driven and sustainable. Moreover, safety nets – in the form of unemployment benefits or work programmes that build natural capital – yield a double dividend that provides employment and increases natural capital.

Figure 3 presents an overview of the changes in per capita wealth, including its three main components: human, manufactured and natural capital. GDP is additionally displayed as conventional measure of progress. Changes

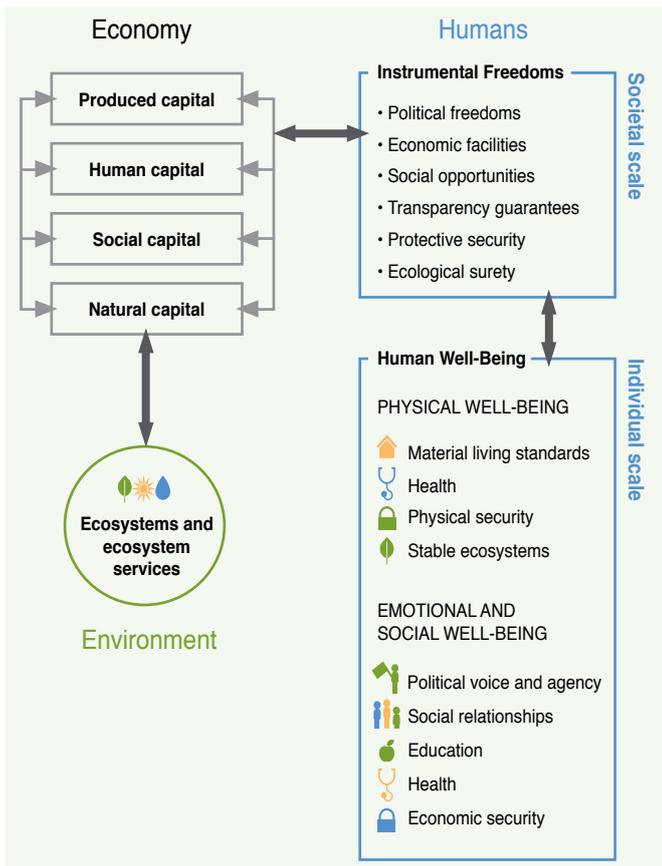


Figure 2. Capital freedoms and well-being.
Source: IHDP, updated 5 March 2012.

are presented having a fixed base year (1990). Although GDP per capita grew by 34% and 120% between 1990 and 2008 in Brazil and India, respectively, the Inclusive Wealth Index increased by a mere 3% and 9%, respectively. Furthermore, natural capital (i.e. ecological assets) declined by 46% in Brazil and 31% in India. These negative trends were however offset by increases in produced and human capital in both countries. Nevertheless, this trend offers a warning

to policymakers on the extent to which natural capital can decline before we transgress environmental and ecological thresholds from which there is no return. It is important to note that these are preliminary figures of the Inclusive Wealth Report (IHDP, forthcoming), and reflect only some aspects of each capital form. For example, changes in natural capital assets are basically measured by the following four categories: (1) agricultural and pasture

land; (2) forest; (3) fossil fuels and; (4) minerals. Therefore it might not necessarily capture the full picture of the environmental changes. Indeed, one of the main purposes of the figure is to suggest that we may not be progressing as fast as other indicators state, for example GDP, but another, more important, purpose is to show where investment should be directed so as to maintain the productive base of an economy.

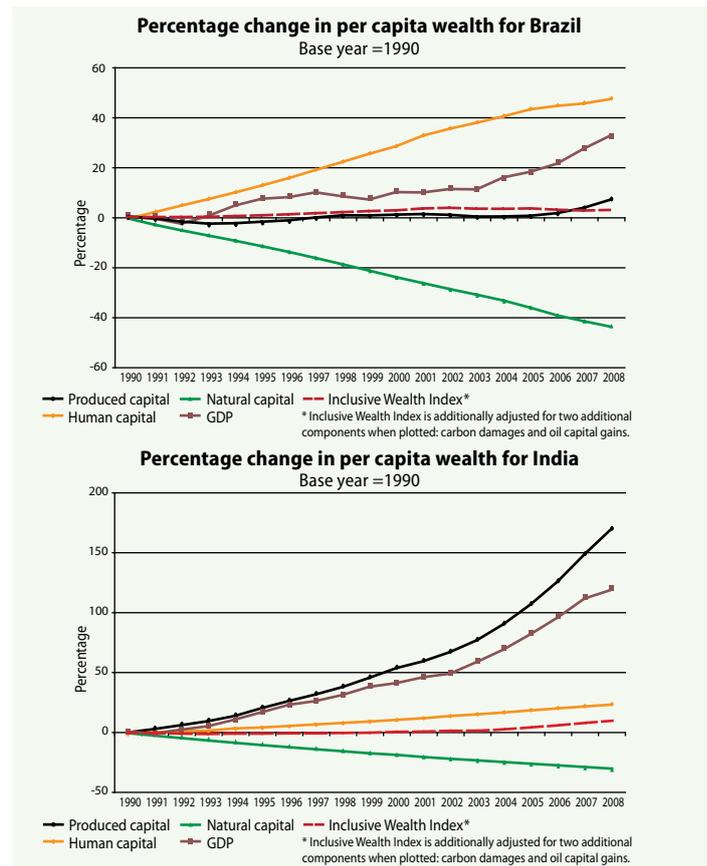


Figure 3. Percentage change in per capita wealth for Brazil and India.
Source: IHDP, updated 5 March 2012.

WHY IS A GREEN ECONOMY IMPORTANT?

The simplest answer to this question is that the well-being of a nation is irrelevant if Earth's life-support systems are degraded to the point where human existence is threatened. A more complex answer would have as its first premise the relationship between sustainability and economics. Two key points flow from this relationship.

First, sustainability aims to cultivate an environment in which the well-being of individuals is balanced with the ecological limits of a finite planet. Second, economic success brings social stability. Thus, pushing against the planet's environmental limits would see us fall short of sustainability, while economic failure that prevents well-being would have the same result.

As we live in a world with finite resources, it is no simple matter to economically develop – i.e. grow – the poorer nations so as to realize their well-being, while at the same time maintaining the (often accelerating) economic growth of richer nations. The green economy, along with its steps towards sustainability, could provide the answers to this dilemma.



PHOTO: CREATIVE COMMONS/THINKGEENERGY

Green Energy: Steam from this geothermal field is used for district heating in the area and for the Kísiliðjan Diatomite Plant, Iceland.

ACHIEVING THE GREEN ECONOMY

A global social contract

The global nature of many of our environmental problems coupled with our closely interlinked global economic and social systems mean that solutions require cooperation among nation states. This suggests a global social contract will need to be drawn up, and must be underpinned by the idea that the planet is a finite system within which all citizens need to co-habit. With a rising population, dwindling natural resources and growing social unrest, any failure of countries to look beyond their own interests will be economically inefficient and socially disruptive in the long run. Covering five key areas, the global contract would be the following:

1. Find common agreement on an agreed set of planetary boundaries that the global society should not cross. Countries must shift away from seeing this as a zero-sum game, and consider it a cooperative endeavour through which all citizens of the planet benefit. We need to set boundaries for, among others, climate change and our use of water, biodiversity and nitrogen.
2. Establish a common set of rules for the global economic system that emphasizes not short-term monetary benefits, but long-term sustainable well-being. This would mean rewriting the current economic models and investment opportunities so as to encourage a move away from the irrational idea of perpetual growth, with consumption and consumerism the engines of this growth. These would be replaced with new models that emphasize employment and avoid the productivity trap, which focuses on improving productivity while ignoring the impact it has on both employment and the ecological boundaries within which it must operate.
3. Allow all countries to give their citizens access to the six key instrumental freedoms. Instead of attempting to achieve equality, countries should strive to design and implement the institutional structures for providing the instrumental freedoms for all people. For example, education should be seen as a global public good rather than as a commodity to be sold as a private good, with the best quality going to the highest bidder.
4. Establish a set of rules on technology transfer and development, which would enable technology to be either developed or adapted locally. Such a framework will allow citizens within each country to determine the type of technology they use, and the pace at which they use it, to improve well-being. The rules must promote innovation while at the same time prevent exclusion and monopolization of technologies.
5. Measure country progress by establishing a new set of accounts that track well-being and not just economic performance. A portfolio of indicators should place special emphasis on macro-level indicators such as one for inclusive wealth. These indicators should provide information on how each country is using its productive base as well as summarize countries' impacts on each other. Thus we can gain an overview of global sustainability and not just sustainability within national borders.

CONCLUSION

The current confluence of crises offers us a unique opportunity to fundamentally change our economic system. This change must be accompanied by a social transformation that is driven by the new system itself. The technological transformation must be a bottom-up approach driven by capacity within countries and taking into account the social and cultural conditions unique to each country. Measurement of progress

must move away from an economics-based yardstick to a multidimensional indicator. There also needs to be a move away from production and consumption towards inclusive wealth at the macro level and instrumental freedoms at the individual level. Lastly, the notion of global responsibility for improving the well-being of all individuals across the planet, irrespective of country or region, needs to be the doctrine of a new international order of governance.



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Looking at Green Economy through new glasses.

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