



Inclusive Wealth Report 2014

Measuring progress toward sustainability



UNEP



UNU-IHDP

Secretariat of the
International Human Dimensions Programme
on Global Environmental Change

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Foreword

National accounts are descriptors. They describe the state of an economy and form the raw material for both assessing performance and prescribing policy. National accounts are meant to contain the kinds of information that are essential for economic evaluation. The system of national accounts currently in use throughout the world, however, suffers from extreme narrowness. Vast quantities of information relevant for economic evaluation do not appear in them. Some don't because the appropriate data are hard, even impossible, to collect; but others don't because until recently the theory and practice of economic evaluation didn't ask for them. The demand for "green national accounts" has arisen because of a growing recognition that contemporary national accounts are an unsatisfactory basis for economic evaluation. The qualifier, "green", signals that we should be especially concerned about the absence of information on society's use of the natural environment.

The IWR 2012

The inaugural publication on inclusive wealth (the IWR 2012), issued jointly by UNU-IHDP and UNEP, provided an account of what would ideally be needed for a comprehensive set of national accounts. The procedures recommended there were put to work in estimating changes in inclusive wealth per capita during 1990-2008 in 20 countries that represent various stages of economic development. The publication revealed that national governments and international agencies ought to go beyond even green national accounts, by reclassifying certain classes of goods and services and adding others that are currently missing. For the present, the ideal can be approximated at best crudely, which is what the IWR 2012 achieved. Data on many items that ought to be included will of necessity appear only in physical terms for some time yet, while many other items of significance (ecosystems other than forests, for example) will continue to be missing even in physical terms. Economic evaluation inevitably involves cutting corners. But it is essential for good practice to know where the corners that are being cut happen to be. That is why

the authors of the IWR 2012 went extensively into the conceptual foundations of economic evaluation.

The IWR 2012 offered a set of capital accounts for each of the 20 countries on its list, akin to balance sheets of private firms. Inclusive wealth is the social value of an economy's capital assets. The assets comprise (i) manufactured capital (roads, buildings, machines, and equipment), (ii) human capital (skills, education, health), and (iii) natural capital (sub-soil resources, ecosystems, the atmosphere). Such other durable assets as knowledge, institutions, culture, religion – more broadly, social capital – were taken to be enabling assets; that is, assets that enable the production and allocation of assets in categories (i)-(iii). The effectiveness of enabling assets in a country gets reflected in the shadow prices of assets in categories (i)-(iii). For example, the shadow price of a price of farming equipment would be low in a country racked by civil conflict, whereas it would be high elsewhere, other things being equal.

The system of national accounts (SNA) that are still being developed by the United Nations and their affiliated international agencies do not yet contain several of the additions and reclassifications that were made in the IWR 2012. That is why the empirical estimates reported in the IWR 2012 were of significance. Being a first attempt, the estimates were conducted mainly with natural capital in mind. Even within that category, attention was paid to forests, land, sub-soil resources, and the atmosphere as a sink for carbon. Estimates of human capital were restricted to education, whose measurement has a long history in economics.

The present publication extends the IWR 2012 in three ways: (a) the coverage is 140 countries; (b) the basis for the estimates of education as a capital asset is the more sophisticated approach developed by Dale Jorgenson and his collaborators; and (c) health as a form of capital asset receives attention in the main body of work. Health poses special problems of estimation, so it is worth explaining why.

Health capital

Health is a capital asset and should be seen as a component of a person's human capital. In order to compare the relative significance of an economy's various capital assets with one another, they have to be expressed in a common currency. That common currency is typically monetary, say, dollars. But the currency could have been any chosen commodity, or a basket of commodities, for example, a basket of consumption goods. Health capital is health status expressed in that common currency.

Good health brings three benefits to a person:

1. It adds directly to the person's well-being (she feels good);
2. It enables the person to be productive (a healthy person works better and can work for longer hours than an unhealthy person);
3. It contributes to her longevity (a healthy person can be expected to live longer than an unhealthy person).

Items (1) and (3) are direct benefits (they constitute aspects of a good life), while item (2) is an indirect benefit (a means to a better life). It is humanity's good fortune that good health offers the three benefits jointly (they are not in competition!). Economists have developed elaborate methods for estimating the value of each type of benefit. Some involve asking people to report their willingness to pay for the benefits ("reported preference"), while others estimate the value of the benefits to people by observing their behavior ("revealed preference"). One way to estimate the combined benefit of improved health is by recording people's willingness to pay for better health (e.g., observing how much people spend on health). Some studies estimate the benefits enjoyed from item (2) by the output lost when workers are absent owing to illness (the costs of air pollution are often estimated on the basis of lost days of work owing to bronchial congestion).

Unfortunately, there are no systematic studies of items (1) and (2) that could be used to cover the 140 countries in question. The present study confines itself to item (3), by using tables that have been prepared by economists reporting the value of a statistical life in various countries. The approach is not without its weaknesses, but a first step had to be taken, and the authors of the IWR 2014 are to be applauded for inaugurating in an official

publication what is likely to be a long process of evaluation of health as a form of capital asset.

That said, I do not believe that a central finding of the publication will be overturned, no matter how refined the valuation exercise becomes in future. It is that health is the most significant component of the wealth of nations. The authors show that it swamps the value of all other forms of capital assets by an order of magnitude and more. This will come as a surprise to all of us who have thought that in a reasonably well-ordered society the various forms of capital assets are on a par with one another; after all that is what the theory of economic development tells us to expect. The estimates in the IWR 2014 tell us otherwise.



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Preface

There can be no doubt that, over the past two decades, many countries have done much to improve their citizens' well-being. Of course, some have a better record than others, but overall the trend has been positive. Gross domestic product (GDP), although stagnant in some highly advanced economies, has risen steadily across most of the world. Human Development Index (HDI) scores have also improved for a substantial number of countries over the same time period. A cursory glance at these two trends might suggest that we are on the right track; that we should continue with business as usual.

That first glance would be misleading. Over the past twenty years we have seen, it is true, enormous gains in economic activity and output, and indeed as well in many of the quality of life indicators comprising the HDI.

On the other hand, serious questions have arisen as to the equitability and – more importantly – the sustainability of those gains. As Thomas Piketty demonstrated in his groundbreaking *Capital in the Twenty-First Century*, inequality is steadily growing, and will continue to as long as returns on capital exceed the rate of overall growth. In the era of globalization and instant communication, such levels of inequality, both within and across nations, are unsustainable.

Meanwhile, these gains have, as they have since the onset of Industrialization, come at a massive cost to ecosystem health, biodiversity, air quality, and climate resiliency.

One of the welcome key outcomes of the Rio+20 Conference on Sustainable Development was the agreement by countries to focus explicitly on sustainability in crafting the post-2015 development agenda. It is thus that the successors to the Millennium Development Goals will be known as the Sustainable Development Goals.

But how will we know when we are developing sustainably?

GDP growth still dominates policy planning, implementation, and evaluation for countries of all levels of development. Yet we have no way of knowing whether that growth is sustainable and inclusive – whether the activities that generate that growth will be possible in five years or fifty; whether they enrich the few at

Countries have spent decades chasing production, consumption, and employment at all costs as the ticket to well-being.

the expense of the many. Countries have spent decades chasing production, consumption, and employment at all costs as the ticket to well-being. But there is more to well-being than GDP, and it is time countries have approached policy planning strategically, and over the long term.

We hope that policy-makers will see the IWR 2014 as a useful tool, and as encouragement ...

We have seen, since the seminal Brundtland Report in 1987, successive efforts call for audacity and ambition in tackling sustainability, but with only limited success. We will continue to see only limited success so long as our definitions of economic success and socioeconomic well-being continue to be based on GDP.

The case against GDP as a metric for economic success and socioeconomic well-being can be distilled into three main points: The first relates to the extent to which income alone is conflated with well-being. Although it is undoubtedly a necessary condition for well-being, it is not a sufficient one. As the World Bank's Voices of the Poor study found, poor people themselves define well-being not only in terms of income, but as "peace of mind, ... belonging to a community, ... safety, ... [and] good health", among others.

Second, GDP measures gains in production and output at market prices, but ignores the environmental externalities produced through the production process. Nor does GDP reflect scarcity arising from dwindling natural resources, which are often public goods with no market prices.

Third, GDP represents flows only for a specified, generally short, time period. It does not provide information on the state of those capital stocks necessary to generate the income measured. Equally important, it provides no insight into whether those capital stocks – what we call inclusive wealth – are sufficient to generate consumption flows for future generations.

The Sustainable Development Goals are thus destined for only limited success as long as we are missing an adequate framework to measure progress, and do so in an integrated and holistic manner.

The Inclusive Wealth Report (IWR) aims to provide a comprehensive overview of the status of capital stocks of three key assets for nations. These assets are tracked over the past 21 years, and the sustainability implications of trends and changes in these assets are appraised. The report does not attempt to provide a comprehensive overview of human well-being. Instead, it provides guidance and insight for policy-makers on how their economies are generating income, how depreciation and reinvestment are affecting capital stocks, and whether system trajectories are sustainable.

The IWR 2014, while still suffering from incomplete data in some areas, is a significant improvement over the IWR 2012 in

both breadth and depth, particularly in the areas of education and health capital stocks. We hope that policy-makers at the international, national, and state level will see the IWR 2014 as a useful tool, and as encouragement to take the steps necessary to close gaps in data and to utilize the inclusive wealth accounts presented in the report as guidance.

We acknowledge that it may be early to use the report for practical policy-making; however, this was also the case 60 years ago, when nations began designing economic policies based on an incomplete set of GDP accounts. We are confident that countries will recognize the need for a comprehensive and integrated picture of the three pillars of sustainability, and the benefit of a tool to monitor and assess it. The report, however, should not only be useful for policy-makers but also our education systems, educators, and students – providing an understanding of the productive base available to societies and how it has to be managed to ensure sustainability of human well-being. We hope countries find the IWR 2014 useful as they gather in 2015 to finalize the post-2015 development agenda and the Sustainable Development Goals. It is time to plan – and measure – the future we want holistically, and inclusively.



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Science Advisory Board

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Reviewers

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IWR Team

As an initiative hosted by UNU-IHDP Secretariat, the IWR has involved many people that devoted much time and energy. Anantha Duraipappah, Executive Director of IHDP, who conceived of the idea for an IWR as early as 2008, took the lead as the IWR Director. Pablo Muñoz, Academic Officer at IHDP, who coordinated and oversaw scientific inputs to the report, is the IWR's Science Director. Elorm Darkey, Cecilia Fernandes, and Kira Petters provided analytical and quantitative support. We are equally grateful to our interns who devoted their time to this project, including Sergio de Marco and Muzaffar Yunusov. Special thanks to Katja Cloud and Louise Schenk, art and layout designers, as well as our consultants John Tkacik and Carmen Scherkenbach. We are also grateful to Sabrina Zwick for her technical and logistical support. And we would like to thank Terry Collins for helping disseminate the report through press releases and other media forums.

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Abbreviations

| | | | |
|-----------------------|---|--------------|--|
| BAU | business as usual | HTA | health technology assessment |
| BMI | body mass index | IALS | International Adult Literacy Survey |
| CGE | computable general equilibrium | IEA | International Energy Agency |
| CLA | physical amount of total cropland area of country | IW | inclusive wealth |
| CO ₂ | carbon dioxide | IWI | Inclusive Wealth Index |
| DSB | Dispute Settlement Body | IWIadj | Adjusted Inclusive Wealth Index |
| ECE | estuarine and coastal ecosystems | IWR | Inclusive Wealth Report |
| EDF | expected damage function | KPMG | Klynveld Peat Marwick Goerdeler |
| EGP | Egyptian Pound | MA | Millennium Ecosystem Assessment |
| EIA | Energy Information Administration | MW | megawatt |
| EPA | United States Environmental Protection Agency | NAFSA | Association of International Educators |
| ESVD | Ecosystem Service Valuation Database | NC | natural capital |
| ESW | ecosystem service wealth | NCC | Natural Capital Committee |
| EU | European Union | NDP | net domestic product |
| EU KLEMS .. | EU level analysis of capital (K), labour (L), energy (E), materials (M) and service (S) inputs on a detailed activity level: statistical and analytical research project to analyse productivity and growth across Europe | NIA | national income account |
| FAO | Food and Agricultural Organization of the United Nations | NPV | net present value |
| GBM | geometric Brownian motion | NRC | National Research Council |
| GDP | gross domestic product | NTFB | value of non-timber forest benefits |
| GHG | greenhouse gas | NTFP | non-timber forest products |
| GIS | geographical information systems | OECD | Organisation for Economic Co-operation and Development |
| GTAP | Global Trade Analysis Project | ONS | Office of National Statistics |
| GTAP | Global Timber and Forestry Data Project | PC | produced capital |
| HAD | High Aswan Dam | PCE | personal consumption expenditure |
| HC | human capital | PIAAC | Programme for International Assessment of Adult Competencies |
| HDI | Human Development Index | PIM | perpetual inventory method |
| HS | crop classification | PISA | Programme for International Student Assessment |
| | | PLA | physical amount of pastureland area available |
| | | PPI | per capita income, adjusted by a private consumption |
| | | PPP | purchasing power parity |
| | | REDD | Reducing Emissions for Deforestation and Degradation |
| | | RICE | Regional Integrated Climate-Economy |
| | | RPA | rental price per hectare |
| | | SEEA | System of Environmental and Economic Accounts |