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POLICY BRIEF

Why We Don't Really Measure Natural Capital but Really Should

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Executive Summary

In Canada, we know how important natural capital is to our country, yet we invest little in its measurement. This is both hard to explain and at odds with what is routinely measured in the business world. Every CEO tracks the value of both corporate assets and income. Finance ministers, in contrast, focus almost exclusively on national income (GDP) and have done so for decades. While this single-minded focus on GDP growth might have been justified in the 1940s when the world was at war and memories of the Great Depression were fresh, it no longer reflects today's realities. In fact, the slowing of growth in many countries in recent years may actually be the result of inadequate attention to national wealth.

Wealth has traditionally been understood to be the value of a nation's produced and financial assets, but is today defined much more broadly. **Inclusive** wealth, an emerging integrative concept, identifies it as the sum of produced and financial assets along with the value of natural, human and social capital. The notion behind this is that every nation has a portfolio of five asset classes at its disposal, and governments play a key role in ensuring that the value of this portfolio is growing over time. If it is, development is likely sustainable. If not, it certainly isn't.

What if nations focused on a more balanced approach to development with one in which management of their inclusive wealth portfolios is seen as equal in importance to hitting targets for income growth? How might decision making be different?

First, there would be a shift from the current fixation on short-term results to a greater interest in the future. Second, governments would be reminded of the connection between income and assets and the need to invest in the latter to generate the former. Finally, decision-makers would, at long last, have a single framework that offered the promise of integrated decision making across the three pillars of development: the economy, the environment and society. Given the all-too-evident failures of current decision making, which tends to see these three pillars in competition, an integrative framework would seem very much in need.

While no country has fully embraced inclusive capital as a concept, tentative steps are being made in this direction. For one, Statistics Canada regularly measures the value of Canada's natural capital—though its reports on the topic largely go unnoticed. Their efforts are world class and deserve greater support. Norway, the country where this kind of thinking has most strongly taken hold, has applied the principles of inclusive wealth to the great benefit of its citizens. A long-standing policy of reinvesting a part of the revenues from North Sea oil resources in financial assets has resulted in a US$740 billion sovereign wealth fund. Norwegians are, as a result, among the wealthiest people on earth.

For its part, IISD believes strongly in the principle of inclusive wealth and intends to pursue work related to it more actively. The Institute will argue for inclusive wealth as one of the underpinnings of the United Nation's new **Sustainable Development Goals**, which will help steer the global development agenda from 2015 forward. Recognizing that existing macroeconomic forecasting models are rooted in a worldview out of touch with today's realities, the Institute will build capacity to undertake modeling and forecasting of inclusive wealth. Finally, IISD will capitalize on its new involvement in the Experimental Lakes Area and earlier efforts related to ecosystems to establish the Institute as a world-class centre of expertise in the definition and measurement of ecosystem goods and services.

Why We Don't Really Measure Natural Capital but Really Should

Why is it that in a country like Canada governments put so little effort into measuring natural capital? We know how important our rivers, forests and wetlands, minerals and energy resources are. They are, at once, the stuff of national legend and economic success. We know they are at risk from overexploitation and pollution. Yet we devote to them only a fraction of the effort we invest in measuring other matters of national importance. Not only is this hard to explain—it is at odds with what is routinely measured in the business world.

Ask any CEO what financial information he or she tracks and high on the list will be the value of the assets owned by his/her company. These might include "hard" assets like tools, machinery and buildings and "soft" ones like patents. The CEO will want to know their value because he/she realizes these assets underpin any company's future earning potential.

Of course, assets are not the only things the CEO will want to track. Equally important will be regular information on how much money the company is actually earning by using its assets.

These two accounts—an income statement and a balance sheet—form the basic information that every CEO wants at his/her disposal. They provide a view of how things are going for the company at the moment (income) and how it is positioned for growth in the future (assets).

Now, ask the same question of a Minister of Finance. No matter where he or she hails from, the answer will be pretty much the same: "My primary concern is how much income the nation produces and, for that, I turn to our measures of Gross Domestic Product. I pay a lot of attention when GDP comes out every quarter. We have a target for its growth and our Government is fully committed to meeting that target. "

If pressed, the Minister might admit to paying some attention to the nation's balance sheet as well—if there is one. Many national statistical agencies don't actually produce national balance sheets (though, for the record, Statistics Canada does). Every statistical agency measures GDP however. The South Korean Central Bank even goes to the trouble of estimating GDP for another country, the secretive North Korea. It's considered *that* important.

Even if a Minister of Finance has a national balance sheet at his/her disposal and pays some attention to it, it's unlikely there will be much political or bureaucratic effort directed toward increasing the value of the nation's assets, known formally as *national wealth*. In just about every country economic and fiscal policy is focused on creating the conditions for GDP growth. Politicians and their officials are fully engaged in that pursuit. They are happy if income is growing and unhappy if it is not. Scant attention gets paid to national wealth in the world of economic decision making. As a result, journalists also pay little attention to the national balance sheet and nearly all that the general public hears about is how GDP is doing. When it comes to the economy, everyone, it seems, is fixated on GDP.

Why is this so? Why does every CEO pay attention to both income statements and balance sheets while finance ministers focus nearly all their attention on income alone? Why do statistical agencies invest so much effort in measuring GDP but relatively little in measuring national wealth? The answers to these questions are complex but important. To find them, it is helpful to return to the early days of national accounting.

When statistical agencies first began measuring GDP in the 1940s, two questions weighed on every Western leader's mind: how to avoid the kind of economic depression the world experienced in the 1930s and how to finance the effort to fight the Second World War. Both of these questions boiled down to one thing: ensuring that economies produced as much income as possible. To measure just how much income was being produced, statisticians devoted mammoth efforts to compiling the first GDP estimates. There were not a lot of statistical resources left over to work on other things, including national balance sheets. On top of this, substantial challenges were faced in estimating the value of assets. Statisticians were not as comfortable with the quality of these estimates as they were with their income data; this remains largely true today.

Statisticians might have spent more time trying to work out the kinks in national balance sheets if there had been more demand. But the truth is that there wasn't – and isn't. Governments were—and still are—largely content to set targets for GDP growth and work toward meeting them . . . and meet them they have. The period since the end of the Second World War has seen unprecedented growth in national income (distributional issues notwithstanding). With nearly continually rising income, assuming that asset values were coming along for the ride seemed a safe bet. The relative lack of national wealth data was not especially pressing under the circumstances.

AIR POLLUTION IN HARBIN, CHINA

In October 2013, smog levels in Harbin—a northern Chinese city of more than 10 million people—reduced visibility to less than 10 metres. Schools had to suspend classes, traffic snarled and the airport was closed. The air pollution index in the city stood at the highest possible reading.

Chinese authorities estimate that life expectancy in its northern cities is more than five years less than in the south due to severe air pollution, especially in winter when coal use for home heating increases.

While China's air quality concerns are extreme, other rapidly developing countries face similar concerns.

That assumption (that national wealth numbers are nice to have but not essential) if it ever was valid, is due for reassessment. Income growth has slowed and even stopped in much of the world in recent years. Where it has continued—notably in a few developing countries—it has been accompanied by environmental and social consequences that have some asking if it is worth the cost (see box) and, more importantly, whether it can be sustained.

Which brings us to the crux of the matter. The growth that much of the world has known for the last six decades might be ending, at least in the West, partly because we have not been paying sufficient attention to the sustainability of national wealth.

Economists have long understood there is a connection between wealth and income (which is why CEOs are so keen to track them both). Assets are what entrepreneurs build up so they can generate income. More assets, more income. It's pretty simple, in theory.

For a long time, economic research focused only on the connection of income to *produced* assets (tools, machinery, buildings, etc.) and financial assets (stocks, bonds, etc.). Produced and *financial* assets fit nicely within the economist's analytical framework. Machines and bonds, though very different from each other, can both be measured conveniently in monetary terms, making them straightforward to study along with other so-called economic "factors of production."

Beginning in the 1980s, though, some economists began to argue that other things behaved like assets and could be added to the framework along with produced and financial assets. One of these was the environment.

Robert Costanza, Herman Daly, David Pearce, Robert Repetto, Peter Victor and a few other researchers began writing serious articles in the 1980s in which they argued that the environment could be thought of as a suite of "natural capital" assets. Forests, mineral deposits and wetlands, they wrote, all share the essential features of assets: they endure over long periods of time and they generate flows of goods and services that are valuable—even critical in some instances—from a human perspective. (An interesting historical note to this is that the earliest academic reference to the environment as a form of capital was actually made by the noted University of British Columbia resource economist, Anthony Scott—*in 1956*. Alas, Professor Scott was several decades ahead of his time.)

Around the time that natural capital was gaining currency among academics, Statistics Canada embarked on a program to develop "environmental accounts" that would link the economy and the environment through statistics. One of the goals of this work was to measure natural capital and include its value on Canada's national balance sheet. The work was a success, and Statistics Canada today publishes annual estimates of the value of Canada's energy, mineral, timber and land assets. Those numbers show that these assets account for around 40 per cent of Canada's national wealth—an impressive figure by any standard, and one that garners practically no attention when it is released each year.

Statistics Canada is one of only a handful of statistical agencies that regularly compiles a national balance sheet and one of an even smaller number that measures natural capital. It is truly a world leader in these areas. The figures the agency puts out clearly demonstrate the significance of natural capital to Canada's wealth and, therefore, its well-being. And yet they attract little attention.

What if this were not the case? What if officials took more interest in national wealth? And what if the fact that almost half of Canada's wealth is bound up in the environment attracted the attention it deserves from the media, from Canadians and from their leaders? How might decision making be different?

First, a focus on wealth would necessarily nudge our collective viewpoint from its fixation on the present toward greater interest in the future. Wealth is not what makes us well off today (that's income). Rather, wealth is what makes us confident that we, and our kids and grandkids, will have the income to be well off in the future. A concern for wealth is, therefore, a concern for the future.

Second, a focus on wealth reminds us of the connection between income and assets. It helps us remember that we must maintain our assets if they are to be there for us (and our kids and grandkids) in the future. This is essentially the argument of sustainable development. Live as well as you can today, but not so well that you run down the assets future generations will need to live well themselves.

There is no better illustration of these first two points than Norway's remarkable sovereign wealth fund. Built up over the last few decades by investing oil revenues in financial assets, mostly outside of Norway, this fund is currently worth some US$740 billion – about US$150,000 for every Norwegian. This massive store of wealth will serve to maintain all Norwegians' well-being when their North Sea oil runs out, as it inevitably will.

Third, and perhaps most importantly, the concept of wealth offers the promise of integrated management of the three pillars of development: the economy, the environment and society. Current approaches to decision making tend to emphasize the distinctions between these three, and the outcomes of such non-integrated decision making are all too evident.

As mentioned above, the environment was just one of several "new" categories of capital that began to receive attention in the 1980s. The others were **human capital** and **social capital**. Human capital is about the value of the education and skills possessed by the workforce. Social capital is about the value of the networks and institutions that constitute the fabric of society. Together with produced, financial and natural capital, these five asset classes make up an emerging integrative concept called "inclusive wealth."

The notion of inclusive wealth is that every country has at its disposal a portfolio of assets upon which it relies for well-being and that a key role of government is to create the conditions necessary for the total value of this portfolio—inclusive wealth—to grow over time. If it is growing, or at least stable, in per capita terms, the nation is on a sustainable path; future generations will inherit what they need to ensure their well-being. Otherwise, development is unsustainable, and generations to come will face challenges not of their making.

Integrated management of the five asset classes in the inclusive wealth portfolio offers an important opportunity to shift development toward sustainability. Today's focus on income growth would give way to a more balanced approach in which progress was defined as stable or growing inclusive wealth combined with a sustainable level of national income.

Needless to say, creating the statistics to support such a framework would be difficult. For one, not all assets can or should be measured in monetary terms, so aggregation across the five assets in the inclusive wealth portfolio is not obvious. For another, many of the data needed to measure the "new" forms of wealth are missing altogether. These and other challenges are not to be underestimated, a point that is taken up further below.

First, though, recall the earlier comment that the West might be witnessing the end of growth because of a failure to pay sufficient attention to wealth. If this is the case, the reasons for moving to manage inclusive wealth may be more than just academic.

Beyond the obvious connections of slowing growth to the ongoing global financial crisis (which, after all, was caused by a failure to track and react to distortions in financial asset markets), a number of the challenges faced by Western and non-Western governments are, at their root, the result of assets that have been allowed to decline.

The social unrest of Occupy Wall Street and the Middle East uprisings can be attributed in large part to the disintegration of social networks and loss of faith in institutions. High unemployment in Spain and Italy, not to mention in the United States and Canada, represents a drop in the value of human capital that only investments in education and training will reverse. Climate change, perhaps the gravest threat to sustainability, can be seen as a failure to understand the atmosphere as a global asset that must be maintained if we are to continue to enjoy the benefits of a relatively stable and predictable climate.

It would be facile to suggest that a shift toward more balanced management of income and wealth alone would solve these problems. At the same time, it is clear that the current focus on income growth above all else is not consistent with today's realities. Going beyond GDP to measure inclusive wealth would be an important step toward improved decision making. Fortunately, tentative moves in this direction have already been taken.

Statistics Canada, along with a few other leading statistical agencies, has made important strides in measuring natural capital and, to a lesser extent, human capital. The figures they produce deserve greater attention. And the efforts to compile them, which are incomplete and underfunded, deserve greater support. The list of areas where further work is needed before inclusive wealth could be robustly measured alongside GDP is long. Canada's basic data on water, pollutants, ecosystems and other environmental issues remain inadequate. Methods for valuing non-market environmental assets are still experimental. Human capital measurement is not systematized. Social capital measures remain largely the subject of basic research.

Statistics Canada and other statistical agencies and organizations around the world are working on these issues. The International Institute for Sustainable Development, for its part, has long been involved in such work and believes strongly in the goal of measuring inclusive wealth. For this reason, the Institute is increasing its efforts in the area.

IISD is already engaged in work related to the United Nation's **Sustainable Development Goals**, which will replace the **Millennium Development Goals** when they expire in 2015. One of the key resolutions of the 2012 Rio+20 Conference on Sustainable Development, the Sustainable Development Goals will, once established, play a crucial role in shaping the global development agenda. The Institute's view is that the concept of inclusive wealth is fundamental to the assessment of sustainability and needs, therefore, to be integrated into the Sustainable Development Goals. Institute staff will be bringing that perspective to the table as they engage in this important process.

In addition, the Institute is planning to build capacity for inclusive wealth modeling and forecasting. Existing macroeconomic forecasting models are focused almost entirely on measuring GDP and related variables. IISD's view is that the time has come for such models to adapt to the new realities of the world and began measuring inclusive wealth as well. To this end, we will invest resources toward the development of new models, focusing our efforts particularly on the measurement of natural and social capital where we have a comparative advantage. Partnerships with other organizations better equipped to measure produced, financial and human capital will be established.

The work the Institute is supporting in the Experimental Lakes Area will contribute to IISD's already considerable expertise in the measurement of ecosystem services. Building on this unique combination of activities and expertise, IISD aims to become a world-class centre of expertise in the definition and measurement of ecosystem services. The objective will be to clarify and improve the concepts and methods needed to measure ecosystem services in both physical and monetary terms. Shortcomings here are one of the major hurdles standing in the way of measuring inclusive wealth today.

In conclusion, it is useful to recall that before the national accounts were created economic data in Canada and elsewhere were widely viewed as inadequate. It took a global depression and a world war to provide the motivation, but the financial resources and political will to compile the statistics needed to guide the post-war growth effort were found. The need for new statistics to guide new decisions is equally compelling today. Our hope is that it does not require crises of those proportions to bring us to action again.

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IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the International Development Research Centre (IDRC), from the Danish Ministry of Foreign Affairs and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.