Accounting for Natural Capital in the Private Sector

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Background into Natural Capital Valuation

Throughout history, mankind has haphazardly used Earth's resources as though they were boundless and free. Little thought was put into accounting for the various ecosystem services that are available to us from the surrounding environment. But now, these goods and services are being gradually recognized as essential forms of natural capital. Natural capital can be defined as the stock of renewable and non-renewable natural resources (e.g., forests, plants, water, land, minerals, soils, air, oceans) which allow for ecosystem services that add benefit to society and business ventures.[1]

Valuing ecosystem services is not a new phenomenon. Economists have been trying to value externalities for decades, but still no standardized way has been agreed upon considering the many complexities that go into weighing the costs and benefits.[2] Some argue that it is an impossible feat and that nature is priceless.[3] A study done by Trucost (now part of S&P Global Market Intelligence) in 2013 analyzed that primary production (agriculture, forestry, fisheries, mining, oil and gas exploration, utilities) and primary processing (cement, steel, pulp and paper, petrochemicals) have unrealized natural capital costs of approximately $7.3 trillion, which equates to 13% of the global economic output in 2009.[4,5] This lack of a valuation creates an absence of a market signal and the subsequent overuse and misuse of resources. Market failures to account for natural capital can be best illustrated by the oil and gas industry, where BP's Gulf Coast spill in 2010 ended up raising, rather than lowering, GDP for the US economy because cleaning up the spill created jobs for those unemployed.[6] Nonetheless, it has been estimated that the environmental damage to the Gulf of Mexico as a result of this spill totaled $17.2 billion.[7]

Companies who exploit resources are increasingly scrutinized as greater emphasis is being placed on the negative impacts, such as pollution and deforestation, that result from business-as-usual activities. Although negative externalities are not accounted for on balance sheets, they can increase financial costs, operational disturbance, and reputation risk. As a result, many of the financial institutions that invest in, lend to, and insure said companies are starting to take notice. Last April, the Natural Capital Coalition (NCC) released The Finance Sector Supplement to their NCC Protocol providing guidance for banking, investment, and insurance to identify, measure, and value their direct and indirect impacts and dependencies on natural capital.[8] The financial supplement to the Natural Capital Protocol aims to help financial institutions understand risks and opportunities associated with natural capital while also guiding them to make more informed decisions.

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[1] https://naturalcapitalcoalition.org/natural-capital/
[2] https://e360.yale.edu/features/putting_a_price_on_the_real_value_of_nature
[3] https://www.nytimes.com/1997/05/20/science/how-much-is-nature-worth-for-you-33-trillion.html
[4] https://www.trucost.com/wp-content/uploads/2016/04/TEEB-Final-Report-web-SPv2.pdf
[5] https://www.credit-suisse.com/corporate/en/articles/news-and-expertise/gdp-assumes-natural-resources-are-free-201807.html
[6] https://blogs.wsj.com/economics/2010/06/15/oil-spill-may-end-up-lifting-gdp-slightly/
[7] https://news.mongabay.com/2017/04/bps-deepwater-horizon-oil-spill-caused-17-2-billion-in-environmental-damage-to-the-gulf-of-mexico/
[8] https://naturalcapitalcoalition.org/finance/

Impacts from Companies' Misuse and Overuse of Natural Resources

A 2017 Trucost study estimated the environmental damage of 1,200 of the largest companies as a percent of net income (Figure 1, Trucost 2017).[9] If companies were to internalize this cost, most of them would not be as profitable as their income statements indicate considering their natural capital costs are estimated to be nearly two times higher than their net income.

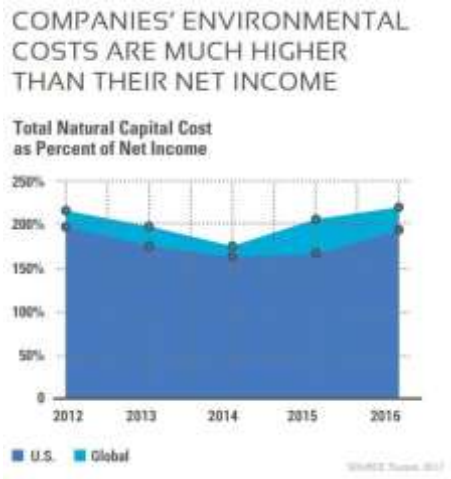

Figure 1

The largest impacts on natural capital by business originates from direct greenhouse gas emissions and as well as land and water pollution (Figure 2, Trucost 2017). Many businesses depend heavily on natural resources and when these dependencies are monetized, this quickly exposes hidden trade-offs.[10] As the media brings unethical business practices to light and consumers become more informed, the importance of intangible assets such as brand value also comes to light and pushes companies to become more transparent.[11]

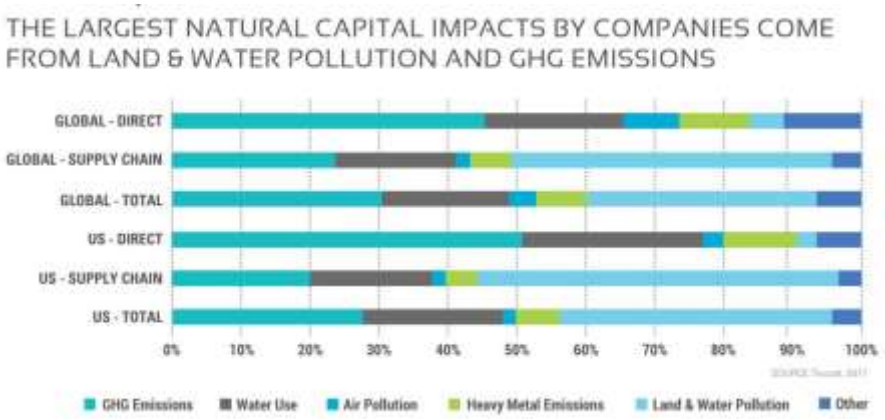

Figure 2

[9] http://info.greenbiz.com/rs/211-NJY-165/images/StateofGreenBusinessReport2018.pdf
[10] https://www.ey.com/Publication/vwLUAssets/Accounting-for-natural-capital/$File/EY-Accounting-for-natural-capital.pdf
[11] http://www.oceantomo.com/intangible-asset-market-value-study/

Many financial institutions are developing and utilizing methodologies and tools which analyze the environmental, social and governance (ESG) aspects of companies. These tools often enable forward-looking analysis for environmental pricing scenarios and evaluation of financial risk exposure.[12] The risks vary by industry and include but are not limited to operational disturbance, stranded assets, increase in liabilities, and brand reputation/equity devaluation. An example from the agriculture industry might include a risk of default or reduced profits due to changes in weather patterns affecting product yield that a company may not be prepared for.[13] However, there are also opportunities present in being the first in identifying and addressing such risks. Opportunities are not only present in decreasing such risks but also include potential new revenue streams such as carbon offsets or green bonds, more integrated resource management, and the chance to have a competitive advantage as a leader.

Calculating the True Value of Water

Current measurement done by financial valuation focuses on quantities of natural resources used as inputs to productions (water, energy, etc.) or the outputs of business activities (emissions, discharges, etc.). Natural capital valuation goes a step further by considering the local context of these inputs and outputs enabling the mapping of hotspots. A case study by Yes Bank applies the Natural Capital Protocol in this way to calculate the true value of water for a theoretical beverage company with bottling plants in a water-stressed area in Chennai, Tamil Nadu.[14]

In carrying out the analysis according to the Natural Capital Protocol guidelines, Yes Bank started with identifying the natural capital risks and opportunities in five categories: Operational, Legal and Regulatory, Reputational and Marketing, Financial, and Societal. Then, they defined their scope. They limited it to a materiality assessment of impacts and dependencies on water for its largest manufacturing unit in Chennai with the objective to improve disclosures available to stakeholders. Finally, they assessed only their water dependency in monetary terms and were able to infer from the results that a significant portion of the facility's revenue could be at risk. Using the Water Risk Monetizer developed by Trucost, Microsoft, and Ecolab[15], which links the direct and indirect use values of water to water scarcity in the river basin, they calculated the true value of water at ₹316.16/m^3 of water (1 USD = ₹64 at time of study). Meanwhile, the company had only paid ₹15/m^3 for water.[16]

Economist and philosopher, Adam Smith, defined value in two ways: value that can sometimes express the "utility of some particular object" and value that can other times be the "power of purchasing other goods which the possession of that object conveys". The first is a "value in use" while the other is a "value in exchange".[17] This is the paradox of value, where things with a high value in use, such as water, often have little value in exchange. This results in companies taking advantage of collecting water from water-scarce regions and bringing it to where there is purchasing power for water as a commodity. As illustrated through the Yes Bank case study, there is disregard for risks at the local-context. A real-world example where such risk was ignored was in 2016 when Coca-Cola shut down 3 bottling plants in India due to groundwater depletion and pollution in the region.[18] If scenario analysis and proper valuation had been done prior, the company may have realized the imminent risks involved before opening the sites.

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[12] https://www.forbes.com/sites/georgkell/2018/07/11/the-remarkable-rise-of-esg/#1692c2131695
[13] https://feedingourselvesthirsty.ceres.org/water-risks-food-sector
[14] https://www.yesbank.in/pdf/valuing_natural_capital_applying_the_natural_capital_protocol
[15] https://www.ecolab.com/sustainability/water-risk-monetizer
[16] https://www.yesbank.in/pdf/valuing_natural_capital_applying_the_natural_capital_protocol
[17] http://geolib.com/smith.adam/won1-04.html
[18] https://www.wsj.com/articles/coca-cola-closes-plant-in-india-1455122537

Perhaps a price for water at this stage will not be unanimously agreed upon, but the fact that many organizations are realizing the need to account for such externalities is what truly matters and inspires action.

What Lies Ahead

Identifying issues and dependencies, determining the impacts within a local context, and ensuring those issues that are material are reflected in the financials is no easy feat for many companies. One barrier financial institutions encounter is a lack of mandatory disclosures for them to pull accurate and relevant data that would enable a proper valuation. According to the 2017 KPMG report on Corporate Responsibility Disclosures, 72% of N100 companies (which is a global sample of 4,900 companies comprising the top 100 companies by revenue in 49 countries) fail to acknowledge climate change as a financial risk and even fewer attempt to quantify it.[19] This statistic is only in relation to climate-related risks, thus even fewer companies have begun assessing natural capital usage across their supply chains. By not doing so, they also fail to realize the opportunities in revenue growth, brand value, innovation, and risk reduction.

The Task Force on Climate-Related Financial Disclosures has been leading the way in providing companies with recommendations on items they should disclose that will be useful in decision-making and enabling financial markets to respond to climate-related financial risks and opportunities.[20] Currently, over 513 organizations are behind this as of September 26, 2018.[21] These companies are realizing the non-diversifiable risk in the form of extreme weather events including floods and droughts that can impact business operations and an increasing amount of greenhouse gas emissions contributing to sea-level rise and air pollution. The TCFD recommendations sparked an interest on the part of investors to push for regulation on company disclosures around climate change risk to inform investment decisions. Furthermore, TCFD has also been working on pilot projects with sixteen of the world's leading banks to create stress-testing scenarios and metrics around portfolio exposure to climate-related risks.[22]

Including the organizations mentioned here that are working on creating useful metrics and tools to account for natural capital, this topic still needs to be better understood and more clearly standardized by industry and sector. Moreover, there is a larger role for peer-reviewed science data to play amidst sometimes selective, self-disclosed reporting. This is especially true for developing countries which are often the areas most vulnerable to environmental and societal impacts and where much of the raw material extraction, processing, and production takes place. Competition for scarce resources in such areas is also increasing as we face a growing population and urbanization. Despite these challenges, increasing disclosures, forward-looking scenario analysis, and on-the-ground implementation will help pave the way towards more robust natural capital valuation. All of this aims to increase transparency for the global economy by more accurately pricing risks and more appropriately allocating capital towards more sustainable companies and projects.

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[19] https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2017/10/kpmg-survey-of-corporate-responsibility-reporting-2017.pdf

[20] https://www.bloomberg.com/professional/blog/deciphering-task-force-climate-related-financial-disclosures-tcfd/

[21] https://www.fsb-tcfd.org/tcfd-supporters/

[22] http://www.unepfi.org/tcfd-for-banks

Other organizations are also hard at work in natural capital valuation, just to name a few: Stanford University's InVest, WBCSD's Corporate Ecosystem Valuation, and Wealth Accounting and the Valuation of Ecosystem Services (WAVES).