

Accounting for Climate Change Part II

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To meet the challenges of climate change and other social and environmental problems we need to have a more comprehensive understanding of costs. The goal is completing the market by including all relevant costs (Anderson and White, 2009). This will require changes in accounting and will be reflected in the terminology used in accounting.

Let's start with external costs, first clearly described by Arthur C. Pigou almost 100 years ago. He identified the importance of external (currently ignored or uncounted) costs including the example of damage and costs caused by wild fires started by sparks from locomotives. Today wildfires caused by equipment failures of utility companies lead to catastrophic external costs. In 2018 for example, Pacific Gas and Electric equipment started the Camp Fire that destroyed the town of Paradise and cost 85 lives (Penn and Eavis, 2020). All told, PG&E faced \$30 billion in external costs from wildfires in its bankruptcy hearing. People who lost their homes and loved ones were promised restitution; but it has not, will not, happen (Kasler, 2022; Blunt, 2021).

These enormous external costs are not unique. Billion-dollar climate related events of 2020 included a record 7 disasters linked to tropical cyclones, 13 to severe storms, 1 to drought, and 1 to wildfires (Smith, 2021). The 22 events cost the nation a combined \$95 billion in damages. Both environmental and social costs are important. The external health costs related to smoking-cost another \$400 billion each year (CDC, 2021).

Trillions of dollars in external costs are ignored every year. Transferring these costs to others has enabled many corporations and individuals to become very wealthy. But companies have also led the way in improving accounting. As the CEO of Interface Carpet put it, "Only when all these 'externalities' appear in prices, profits, and losses can an honest market function responsibly (Andersen, 2009). We can no longer allow profit to be concentrated in the hands of a few, while many costs are uncounted and spread across Society and future generations.

These costs fall disproportionately on the less affluent families, communities and nations.

Madagascar for example, is being slammed by climate change with drought in the south and cyclone after cyclone in the north. In February 2022 northern Madagascar was hit by the fourth cyclone in a month (UN, 2022). Even though the country contributes only 0.001 percent of climate change gases (Olivier and Peters, 2020; USAID, 2016), it is on the brink of experiencing the world's first climate change famine. Tens of thousands of people are already suffering catastrophic levels of hunger and food insecurity after four years without rain. The worst drought in four decades has devastated farming communities in the south, leaving families to scavenge for insects to survive. These famine-like conditions are being driven by climate not conflict (Thakral, 2021).

The worst climate change gas emitting companies and countries, like the US, should be held accountable and pay remediation fees to provide more sustainable markets and lifeways for these poorer nations. If the US charged the same fee for CO₂e emissions as Sweden, the account for climate change protection and reduction would grow by almost 800 billion dollars a year. Half might be spent in the US, half abroad.

One of the current challenges is agreeing upon the methods and name for more comprehensive cost accounting including environmental and social costs. This has been called: Full Environmental Cost Accounting, Total Cost Accounting, Total Cost Assessment, Environmental Accounting, Ecological Accounting, Full Cost Accounting, True Cost Accounting and many other terms (Bainbridge, 2006, 2007; Bebbington et al., 2001; Epstein, 1996, Jasinki et al., 2015; Zhou et al., 2016). Full Cost has been used, but this term is confused by its traditional meaning in accounting (EPA, 1995; Indeed, 2021). This historical definition of full cost in accounting is for detailed analysis and allocation of internal costs, not counting environmental and social costs. This may also be referred to as gross cost.

Surprisingly, full cost accounting isn't always done very well. Incomplete accounting for internal costs is not uncommon in many businesses, industry, farming and forestry; but is almost universal in public/semi-private partnerships. Water and sewage utilities are a perfect example. They almost all fail to do full cost accounting. A Canadian study found that the cost of water supply and sewage treatment in Ontario was understated by a factor of 16%–55% (Renzetti and Kushner. 2004). Failure to do full cost accounting has helped the City of San Diego build a backlog of \$4 billion dollars in repairs needed for infrastructure (Garrick, 2022).

I used to call the comprehensive accounting for all costs True Cost Accounting. (Bainbridge, 2008; 2021); but this raises the problem of who's truth. I now prefer the more neutral term Complete Cost Accounting. This tells us exactly what we need to do. A detailed methodology will be included in my book out later this year. Many excellent articles and guides are being developed or are now available. The Sigma accounting guidelines developed by Forum

for the Future are very helpful (Bent and Richardson, 2003). They include a broader range of sustainability factors by expanding the traditional profit and loss accounts and balance sheets.

Our long term goal is to internalize the external costs. This will not be easy because the special interests and powerful individuals that receive the benefits of incomplete accounting act quickly and aggressively to protect their entitlements and freedom from responsibility. The public at large is also reluctant to confront the external costs of their choices in products, food, housing and transportation. Every product we buy has these external costs, even a pair of blue jeans (Impact Institute, 2019).

We can start by agreeing on terms and definitions. The second step needs to be an intensive effort to improve our accounting practices, with a much better understanding of external costs and who pays them (Bainbridge, 2021a,b). The discussion of ecological costs has been particularly weak, and is an area where funding is needed to better identify data gaps and improve cost estimates. In many calculations of complete costs the key environmental factors are listed but not costed. Even rough estimates help. Then the challenge becomes how best to recover these costs. This involves the discussion and distinction between taxes and impact fees. A fee is for service or impact, a tax is a levy unrelated to impact or service. The income tax, for example, is based on income not impact. A fee, like the monthly charge for water and sewer, is based on service provided, and an external cost recovery fee is based on external impacts or loss of service costs. The courts have generally upheld this distinction. In *Griffith v. Pajaro Valley Water Management Agency*, the 6th District Court of Appeal ruled that fees to divert stormwater to coastal wells in California to prevent salt water intrusion into the groundwater was fundamentally “water production.” This exempted it from the onerous voter approval process for taxes included in Proposition 218 (CASQA and SCY, 2017). More detail about external cost recovery fees in a future article.

When proper accounting is done and complete costs are known or estimated and paid for, many current transactions will not occur. Accurate accounting, combined with social action (Porritt, 2020), education (Hawken, 2021), and moral persuasion (Francis, 2015) may enable us to stabilize the climate in time. In addition the environment will be cleaner and safer, we will be healthier, and facing a more hopeful and sustainable future. Ray Anderson and Interface have demonstrated the value of complete cost accounting (Anderson and White, 2009; Interface, 2021). Anderson started his company on the path to complete cost accounting in 1994 and it helped the company survive and thrive. In the beginning a square yard of carpet was responsible for 20 kg of CO₂ emissions. The redesign, rethink, reengineer with complete cost accounting enabled the company to drop the impact to 12, 9, 6, carbon neutrality, and now it is a carbon sink. The same could and will be done by most companies and organizations when complete cost accounting is done.

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