

Why we need environmental accounting

Editor's note: At press time the situation in the Gulf of Mexico was as described below.

By DANIEL BLAKE RUBENSTEIN

The need for consistent, decisive environmental accounting principles has been argued in professional circles for some time, but perhaps never better illustrated than right now as thick black oil continues to gush out of a broken British Petroleum pipe a mile beneath the pristine waters of the Gulf of Mexico.

The environmental effect has obviously been calamitous as television screens record images of marine wildlife floating in a brown blob of oil in Chandeleur Sound off Louisiana's coast. This represents a loss of nature's carrying capacity, which also entails damage from an accounting perspective, and illustrates why environmental accounting, based on generally accepted accounting principles, ought to matter a great deal.

While the issues raised by an environmental disaster of this magnitude have naturally generated headlines, the lessons learned from an environmental accounting perspective, especially a failure to adequately match the potential risks versus rewards of taking certain actions before tragedy strikes, need to be widely heeded. An ominous legacy of the *Deepwater Horizon* catastrophe is that BP has agreed to establish, under pressure from the United States government, a \$20 billion compensation, or escrow fund in damage costs for a fragile coastline, including clean-up and compensation costs to the shrimp fisheries and tourist industries.

Management and shareholders of other firms that extract natural resources from a variety of large-scale ecosystems, such as Canada's boreal forests, the tropical rainforests of Brazil, or the cold, biologically rich waters of the Arctic Ocean, could also potentially be affected some day.

Traditional accounting records the monetary transactions of a



business in a market economy, but largely excludes nature from the books of a company. Readers can pore over hundreds of pages of corporate annual reports, and other documents such as prospectuses and stock exchange filings and learn all about financial ratios and other important details, but get scant understanding of environmental and financial risks associated with activities such as deep-water drilling, or cutting down forests.

Environmental accounting, which entails a subset of GAAP, presents additional, valuable information about non-monetary transactions to provide a more holistic picture of both financial activity and associated risks. The principles are similar. For example, environmental accounting would entail the entity principle (defining the complete scope of activity); conservatism (taking into account the worst-case scenario); and the matching principle (matching all revenues and expenses in the appropriate reporting period).

Take one of the fallouts from the Gulf of Mexico disaster as an example. Immediately after the explosion of BP's oil rig, the *Deepwater Horizon*, in the Gulf of Mexico on April 20, BP investors were stunned as share values on the London Stock Exchange began

to plunge. Nearly two months after the explosion, BP stock had shed about \$100 billion, approximately half its aggregate value. Aside from the massive paper value hit to investors' pocketbooks, this dramatic drop in share value also represented a poor matching of costs and revenues from an accounting perspective.

Environmental accounting would require additional disclosure to cover environmental contingencies; thus creating better awareness of a firm's overall financial position, and better educating management, the board and shareholders about the potential consequences associated with an ecological catastrophe. Perhaps such entries might also make it more likely that prompt, preventive action is taken before a catastrophic event takes place.

Environment accounting might also avoid huge, but predictable swings in revenue and expenses. Before a drilling accident occurs in the oil industry, for instance, environmental accountants could estimate the potential costs of a catastrophic failure of a deep-water rig and disclose this supplementary information in interim and annual securities filings.

The cost-benefits associated with pre-emptive spending on equipment such as shut-off valves at the wellhead, drilling of a sec-

ondary hole to relieve pressure, or establishing technical specifications for efficient installation of a concrete cap in an emergency, might therefore be better understood and acted upon as a result of such information.

Investors might therefore be less likely to be blindsided by the financial consequences of a possible disaster. Perhaps regulators might even be prompted to raise the bar on safety standards; all of these factors could potentially make a disaster less likely.

The \$20 billion escrow fund that BP has established — which might ultimately go significantly higher — is very much a mainstream accounting, or financial cost; but it is also what economists call an externality, or social cost, based on drilling for oil amidst the Gulf of Mexico's natural systems.

Another, larger picture item is that ecological economists have developed techniques for computing dollar values for the ecosystem services that sensitive areas provide.

For example, wetland and estuarine areas provide habitat for turtles, insects and migratory birds. Ocean ecosystems sequester carbon dioxide, and provide habitat for migratory species of fish and large and small mammals. Canada's boreal forest also sequesters carbon, and supports many fragile ecosystems. All of these services have a dollar value, which accountants can incorporate into their work.

Using the Gulf of Mexico as an example, environmental accountants, in consultation with other experts in the scientific field, could compute an annual cost for the human use of this vast ecosystem, upon which natural resource companies are economically dependent, the same way they account for any fixed asset, by using traditional accounting and disclosure principles.

Experts such as environmental economists are, in fact, already attempting to place a value on nature's services, something that a generation or two ago might have been considered unquantifiable, or

worse, limitless. For example, Mark Anielski and Sara Wilson calculated in a March 2009 report for the Pembina Institute that Canada's northern boreal forest provides more than \$700 billion in ecological services.

To illustrate how environmental accounting entries might work in relation to large-scale ecosystems, let's say the Gulf of Mexico's ecosystems are valued at \$750 billion. An accounting entity could be set up for the Gulf of Mexico, showing assets of \$750 billion, offset to an equity account. Environmental accountants could then compute an annual cost for the human use of these vast ecosystems, akin to an annual rental payment, or risk premium to cover the risk versus reward scenarios that need to be calculated before a disaster strikes.

Assume that works out to 10 per cent, or \$75 billion. This \$75 billion figure could then be apportioned to different categories of the Gulf's ecosystems users, such as land developers, tourism, the fisheries industry, and oil and gas, based on the proportionate pressure and degradation they contribute to the large-scale ecosystem.

In the same fashion as a prudent landlord would expect a damage deposit for a valuable rental property, a damage deposit to cover an ecological disaster such as an oil well rupture or the over-fishing of shrimp stocks could also be recorded in each company's books, thus increasing transparency.

While experts in various scientific fields provide the necessary technical information for many critical environmental valuations and estimates, accountants are the natural leaders for a team of professionals necessary to incorporate all of this valuable environmental data into a financial reporting package. The accounting profession needs to grasp this new challenge by the horns.

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