

How do you place monetary value on the world's oceans? How do you determine the return on investment, or ROI, of an ocean? In addition to revenue from fishery, natural resources and tourism, how do you assign less tangible value, like leaving a healthy living system for future generations? How do you assign value to a sunset or the sound of the rolling tide?

The concept of the ocean as "capital," or in other words, an asset that can produce income in the future, is not something that most people consider everyday. But consider this: The value of marine ecosystem goods and services, in addition to traditional human uses like transportation, resource extraction and waste disposal, annually adds up to 63 percent of the total estimated value of all systems on earth. And yet, this money-maker that we call the ocean, is treated like a service for hire, to be extracted and used as needed, rather than invested in and protected as a partner in the development of a long-term economic future for our people and planet. Why is this?

One may argue that the ocean is the best example of the classic [Tragedy of the Commons](#), a social theory set forth by Garrett Hardin in 1968 that describes a situation in which multiple individuals, acting independently, and solely and rationally consulting their own self-interest, will ultimately deplete a shared limited resource even when it is clear that it is not in anyone's long-term interest for this to happen. How do you personalize the ocean to a species of innately self-interested mammals? Well, in the age of capitalism, why don't we take a look at the bottom line and explore an economic argument for its existence.

Like our industrial economy, the ocean economy comprised of goods and services that are dependent upon each other. We need a healthy system of coral reefs, kelp forests, mangroves, salt marshes, mud flats, estuaries, rocky shores, sandy beaches, sea mounts, abyssal plains and open oceans if the ocean is to produce tangible value for its human users.

Tourism, recreation and leisure are probably the most human-centric activities that contribute to the ocean-economy. With 898 million arrivals to the marine environment in 2007 and an annual growth of 5 percent worldwide, revenues from coastal tourism amount to over \$161 billion globally. Certainly nobody can argue that oceans draw a crowd. But this is a double-edged sword, as coastal communities are incentivized to both protect and develop their resources, often opposition to one another. It is this complex paradox that constantly pushes and pulls the economics of coastal protection, but in general, most would agree that tourism is one of the best ways to humanize the ROI of the ocean. But what about the less human-centric activities that make up ocean economics?

Feeding Life

Consider Ocean as food. There are some startling economic dilemmas that arise:

1. Oceans provide over 157 million tons of food per year
2. Fishing is a \$90+ billion industry
3. 75 percent of world fish stocks are exploited or overexploited (meaning that the max wild capture potential from the world's oceans is about tapped)
4. 200 million people fish for their livelihoods
5. 16 percent of the global population depends on fish as a primary source of protein.

We want and need fish and the myriad industries it supports (ship building, fish meal and other byproducts, culinary arts...). Yet while we are dependent on fish in so many ways, the unending pursuit of a quick profit, with no consideration to the carrying-capacity of the source of the product, has resulted in over-exploitation, and in many cases the destruction of fragile breeding grounds such as coral reefs.

By only looking at short-term gains, instead of the long-term sustainability of our fishing stocks, we are endangering the goose that lays the

golden egg. We're ensuring that this robust and important economic system that feeds us and the global economy, is on its way to fulfilling the 2006 prediction that [global fisheries will collapse by 2048](#). Although this prediction has been criticized for being exaggerated and alarmist, there is little doubt that we are dependent upon an unsustainable industry, both economically and environmentally speaking. To give a real world example of the kinds of backwards and short-term economics at play, consider that blast fishing in Indonesia brings earning of about \$15,000/per square kilometer over a 20-year period, but generates losses to society ranging from \$91,000 - 700,000/persquare kilometer. Certainly some food for thought. No pun intended.

Sustaining Life

Besides supporting life through sustenance, marine life is also proving to be more and more valued in the business of saving life.

Between 1960 and 1982 about 16,000 chemicals from marine plants and animals were analyzed for their anti-cancer effects. Over the years, compounds found in marine plants and animals have proven to possess healing qualities that support cardiovascular health, nervous system health and immunity as well as demonstrating anti-bacterial, anti-fungal, anti-viral and anti-inflammatory properties.

Yet the human and economic benefits of marine biotechnology are just beginning to be realized. To date only 4 marine-based drugs are on the market (it takes an average of 10+ years from discovery to market), yet these 4 represent an annual market of more than \$50 million. With a long pipeline of drugs in the research phase, the economic and human opportunities of marine-drugs are enormous.

One example of a marine based healthcare product, Macro-algae (think sushi and skin care) makes up

a \$6 billion market, while another \$6 billion comes from the fast growing micro-algae market (think supplements). In today's world you can't walk down the aisles of Whole Foods without seeing ads highlighting the digestive benefits of spirulina or the soothing affects of seaweed-infused lotions.

A Wise Investment

The above only highlights a few of the assets that make up our economic investment in the Ocean. We have been given a set of highly valuable assets, that whether we want to or not, makes us all investors in the world's oceans. We're investors because we all personally have something to gain or lose. Unfortunately, we are not paying proper attention to the long-term sustainability of our investments. Maybe we can learn a thing or two from our most recent economic crisis. When complicated deals are being made that systematically externalize risk, don't be surprised when you end up footing the bill. There's a reason why they call it the Tragedy of the Commons.

Possibly the BP oil spill will begin to wake people up to the fact that even if they don't have a beachfront view, the ocean is inextricably tied to their everyday lives. We see this happening as communities, long dependent on fishing run out of healthy product, tourist destinations lose bookings to tar blobs, and (as happened to me last week) lump crabmeat is no longer available on the bistro menus of Brooklyn. This may be the wake-up call that we need to realize that the ocean, so long taken for granted, is at the heart of our everyday lives. But how many crab cakes will it take before it hits home? That's going to be up to you.

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