

A TECHNOLOGICAL RECIPE FOR MAKING NATURE THE FRIEND OF CAPITAL

Sian Sullivan explains the role of technology in putting the world up for sale.

By 2030, carbon will be the largest commodity market in the world: \$1.6-2.4 trillion, about the same as the current oil market.¹

The first UK project allowing builders to buy 'credits' in conservation schemes, to offset the damage they are doing elsewhere, has been launched... experts believe the industry could become worth billions of pounds in Britain... shares are being sold by the Environment Bank, a company that helps deliver 'mitigation and compensation schemes associated with planned development'.²

Quotes like these are now, as the Americans say, a dime a dozen. They illustrate current optimism about trading 'units' of environmental health and degradation in new environmental markets. These markets are promoted as generating multiple 'win-win-win' scenarios, by aligning environmental conservation with market expansion (*aka* economic growth) and also, in 'developing country' contexts, with poverty reduction and local empowerment. In this piece I trace the 'recipe' for this realignment, and question the appropriateness of these new markets for orienting societies globally towards more sensitive human-with-nature relationships.

The Recipe

Take a global environmental crisis, preferably a 'self-evident' one marked by broad agreement over data, corroborated by media spectacle and popular concern. Anthropogenic climate change, linked with industrial emissions of greenhouse gases hooked particularly to CO₂, is ideal. No one knows definitively in what direction this might pull specific communities and localities, but there is overwhelming agreement that this is something to worry about.

Next, decide that people behave primarily to enhance financial gain and that, given appropriate incentives, the sum of profit-seeking behaviours on markets produces the best social and environmental outcomes. In other words, assume that markets where goods and services can be profitably traded are the most efficient way of managing and averting environmental crisis.

Then, create a simple global referent for the selected environmental crisis. This should be a neat unit that can easily be conveyed in numbers. Assume that this referent can represent all possible measures of the selected environmental crisis, together with all geographical complexity and ecological diversity. Carbon is perfect: it is a simple word, and in its elemental form can be measured and conveyed in numerical units. By reducing the diversity of productive processes and life forms to the constituent element of carbon, exchanges between different things and localities can be imagined and created. Industrial emissions in Europe can be seen as tradable with the carbon stored in the biologically and culturally diverse forests of Indonesia or Tanzania.

Next, permit the environmental-crisis-referent to assume prices, through manufacturing a market for trade in the newly priced units. For example, allocate permits for production of the bad version of this unit (ie industrial emissions). Introduce some regulated scarcity into the market so as to enhance both competition and the price of the unit. Launch the market by creating varied possibilities for exchange of the bad version of the environmental-crisis-commodity. These might include trade with the good version, namely carbon stored elsewhere, such as in tropical forests. In this way, profit can be made from leaving forests standing, as a dumping ground for carbon emitted elsewhere. The market might even include measures of apparently avoided future production of the bad version, through present investment in different development trajectories.

Do all this in a financial landscape where commodity prices can proliferate by being distilled and filtered through a creative array of derivative product forms.

Add a very large helping of contemporary information technology, to facilitate fast exchanges of the newly created and priced environmental-crisis-commodity between traders in varied geographical localities and at different geographical scales.

Press go. Watch the numbers flicker and fluctuate, and the money move and manifest.

Stock exchanges servicing trade in carbon credits and derived products already exist in London and Chicago, and are emerging in Montreal, China and Australia (where 'biodiversity credits' can also be traded). The organisation running these exchanges, Climate Exchange plc, is itself a company whose shares are listed and traded on the London Stock Exchange, and which was recently purchased for US\$ 395 million by the US-based energy and futures trader InterContinental Exchange (ICE).³ Capital has been created from environmental crisis.

SpeciesBanking.com

Repeat for a new domain of environmental concern. Take species extinction, for example. Create a regulatory framework that allows developers to transform a location where protected species dwell, on the understanding that they compensate for, or 'offset', any harm done to protected species by investing in



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conservation elsewhere. This conservation activity currently relates to the same species (known as 'in-kind'). But if international offsetting transactions become possible, trade may occur between different countries, and possibly even in impact and conservation measures for different species (known as 'out-of-kind').

Enable both harm to, and conservation of, protected species to be reduced to a simple quantifiable unit - a 'species credit'. Again, encourage 'price discovery' of these credits to arise from the trading of species harm in one location against the purchase of species conservation credits awarded to a different location — a 'species bank'.⁴

Use high tech networking and exchange possibilities to create an online platform for registering and sharing species bank information, and possibly facilitating the trade of species credits between developers and traders. The relevant one here is www.speciesbanking.com. This was launched in 2008 as a project of the Ecosystem Marketplace (www.ecosystemmarketplace.com) and, from a focus on the US, 'went global' in March 2011. It has been promoted by Ricardo Bayon, a co-founder of the Ecosystem Marketplace, and currently co-founder of EKO Asset Management Partners, a 'merchant bank' for investing in new environmental markets.

This leads to the next step, namely: call on the advice and investment of finance experts such as Bloomberg ('the standard bearer' in proprietorial financial information for the global finance industry), Mission Markets (currently operating a private exchange for social and environmental capital markets), and Markit (a leading global financial information services company expanding into an array of 'environmental assets'), to make speciesbanking.com an online platform that may permit credits to be tracked, managed and traded electronically and in real-time.⁵

Once again, press go, and watch nature's new prices rise, fall and move. Species banking was estimated to be worth between \$100 million and \$370 million per annum in 2008.⁶ It is inspired by, and complements, wetland mitigation banking, occurring in the US since the early 1970s and priced at over US\$ 3 billion annually.⁷ Environmental crisis has been made a friend of capital.

Making Nature the Friend of Capital

Through these market-based and increasingly financialised possibilities, capitalism's propensity for environmental crisis — for degradation of the 'natural resources' that fuel its growth — is

apparently resolved. Capital seems to mutate from being 'the enemy of nature', as Joel Kovel put it⁸, to being nature's friend. In a massive masking of contradictions, we are asked to believe that venture capital, the financialisation of 'environmental assets', and the profit motive can all befriend nature, producing futures that are both equitable and ecologically sustainable.

In fact, through a bewildering array of complex techno-finance conceptualisations, conserved nature is becoming the friend of capital. Through creation of a new ecology of derived conservation commodities, it is becoming possible for celebrated indices of environmental health to fuel financial growth and speculation, for those able to participate in the ensuing new markets. But the 'value' of these conservation commodities is development-led. They *require* the transformation and degradation of ecosystems in development-affected localities, in order to assume the prices that will encourage their trade on markets.

The new currency-commodity of carbon, for example, assumes monetary value because of the desire to capture industrial emissions. The context is one of manufactured scarcity in carbon credit markets. To date, the performance of these innovations in reducing emissions has not paralleled the money that has been made.⁹ This seems predictable, given that in carbon credit trading it is the money attaching to financialised exchanges of credits that is deemed to 'incentivise' changed behaviour on the part of carbon producers and traders. (The 'science' of carbon metrics is in any case routinely riddled with accounting errors.) Such structures and conditions motivate against co-operation, and lessen the attractiveness of choosing to actually reduce emissions.

Similarly in conservation markets such as species banking, environmental degradation through development is assumed. Here, development pressures create and maintain the *scarcity* of conservation credits, which boosts their 'value' as priced and tradable assets. At the same time, newly created conservation commodities also become vulnerable to other economic drivers once they are traded on markets.

Where is Nature?

There are some perhaps predictable outcomes of all this. Since conservation markets require development, it is unlikely that no net loss of habitats or protected species will occur. What will happen instead is a consolidation of conserved nature in particular privately owned lands. Landowners, who may well be investing in development elsewhere, will be able to accrue

increasing layers of value from enclosed land that they already own. Conserved nature will become increasingly enclaved, situated in high value conservation landscapes that can be accessed only by a globally mobile elite.¹⁰ Current inhabitants of landscapes increasingly valued for the global 'ecosystem services' they provide will find themselves jostling with these newly monetised values, under pressure to modify relatively autonomous food-production practices and alternative biocultural value practices, and to become further incorporated into the most impoverished spheres of the world economy.

New information and communication technologies (ICTs) play a critical role in the making of these innovations and patterned outcomes. The current design of new environmental markets is facilitated and transformed by technological innovation in ICTs, particularly the connectivity and networking possibilities of the internet.¹¹ ICTs permit ease of transactions between buyers and sellers, at the same time as shaping the sorts of 'products' that can be marketed and traded via electronic exchanges. They are providing the right online environments for the existence and 'scaling up' of nature trading.

One key effect is that the opportunity of environmental crisis is becoming managed as if by 'remote control'.¹² This happens through emerging online exchanges for trading in environmental-crisis-commodities (such as those described above), as well as in a plethora of remote sensing and mapping initiatives for bringing new conservation 'values' into focus as numerical measures amenable to pricing.¹³ In this virtualising impetus, the realm of human experience and decision-making seems to become more separate and removed from non-human nature than ever. Nature meanwhile is further abstracted, distanced, flattened and somehow dematerialised into the transcendent zeros and ones of easily manipulable (and financialisable) digital information.

These approaches are profoundly unecological. Ecosystems are embedded in places. Species are assembled with, and dependent on, relationships with other species and biophysical factors in those localities. Environmental trading instead assumes that ecosystems, and the entities from which they are assembled, are interchangeable. It then creates methods of abstraction to allow this to be so. Numbers are not nature, however, and as recent events in Japan have shown, nature has dynamics and temperaments of its own that are hard to predict. What is happening in conservation markets is that nature is being conceptualised

in such a way that it can be traded on commodity markets, like any other commodity. The rationale is that this will attract private sector investment to environmental conservation, and that if conserved nature is able to assume prices then markets will be the most efficient means of making conservation happen.

Corporations and other investors in effect are becoming nature's 'shareholders'. And nature's newly monetised value is becoming the shareholder value of these investors. But investors invest to make a return on their investment. Many do this by making astute decisions regarding when to 'exit' with the most money. Is this what we want for the increasingly commoditised, financialised and exchangeable measures of environmental crisis?

The Luddites, in contesting the mechanisations of the early 1800s, knew well that their struggle was 'a moral one', as Kirkpatrick Sale puts it.¹⁴ They understood that technology, in effecting particular mediations of social relationships, was shaping society in ways consistent with enclosure and capital. The innovations described above are suggestive of an equivalent techno-transformation of social-ecological relationships, placing nature in the realm of the virtual and effecting rationalisations that accord with capital by creating 'environmental derivatives' of nature.¹⁵ As noted elsewhere in this issue, the information technologies powering all this have significant environmental effects of their own, never mentioned in the optimism surrounding new online nature-trading opportunities. This is in itself indicative of the inconsistencies infusing this orientation to nature management.

When nature is transformed into money, it is the monetary price that is valued. This directs us away from appreciating nature's intrinsic value, or the possibility of being in direct and communicative relationship with the non-human natures that are our companions in this life. And it renders mute the cultural and ethical diversity represented by other ways of experiencing and valuing nature. So if you feel weird when hearing about new environmental and conservation techno-markets, I would trust that feeling. These approaches are unintuitive and unecological. They are lifting us further away from the ground beneath our feet, at a time when we would do well to become more grounded.

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