

Carbon Trading, Space, Time and Eco-Social Contestation

Patrick Bond

School of Development Studies and Centre for Civil Society,
University of KwaZulu-Natal, Durban, South Africa

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ABSTRACT

There is a central strategy within the 1997 Kyoto Protocol and its follow-up treaty anticipated for negotiation at Copenhagen in 2009: addressing climate change through the market mechanism known as emissions trading. Based upon government issuance and private trading of emissions reductions credits and offsets, this approach has become controversial in its most advanced pilot - the European Union's Emission Trading Scheme - as well as in its proposed application in the United States through 2009 legislation, and in the Third World through the Kyoto Protocol's "Clean Development Mechanism". Moreover, the ongoing world financial crisis has undermined market faith in derivative investments such as carbon credits. They have suffering extreme price volatility, including the European carbon price crash of 70 percent during 2008. The linkages between financial market and emissions market problems are, indeed, revealing in spatio-temporal terms, especially in the context of deeper overaccumulation crisis and investors' desperate need for new speculative outlets. But even before the recent market crashes, there emerged a "double movement" in the Polanyian sense: if commodification of society and nature over-reaches, the reaction in civil society is to resist, deflecting devaluation of overaccumulation and in the process offering decommodifying alternatives. In that spirit, the Durban Group for Climate Justice was founded to oppose carbon trading in 2004, followed by the broader-based Climate Justice Now! movement in 2007 at the Bali climate negotiations, in addition to many other sites of direct action against fossil fuels extraction and power generation. It is in the nexus of the spatial and

temporal aspects of carbon financing amidst resistance by adversely affected peoples, that we learn broader-based lessons for global/local environmental politics and climate policy.

(About the author: Patrick Bond received his PhD in Geography and Environmental Engineering from Johns Hopkins University. Among numerous books and articles on local and global environmental problems, he coedited *Climate Change, Carbon Trading and Civil Society*, published by Rozenberg Press in Amsterdam, 2007.)

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The political-economic branch of geographical knowledge offers insights into the last decade's policy reactions to climate change, particularly because of its unique critique of mainstream economic approaches to greenhouse gas emissions mitigation. Systematically cutting emissions is vital to avoiding climate chaos, thereby maintaining the world's average temperature rise below 2 degrees centigrade this century. The radical tradition, as articulated most forcefully by David Harvey (1985, 1989, 1996, 2003, 2005), has tackled socio-economic phenomena including urbanisation, postmodernism, liberatory epistemology, imperialism and neoliberal public policy. What does this tradition warn us when contemplating the use of a market "solution" – carbon trading – to address a market problem: greenhouse gas emissions as an externality?

Matters are complex because the market does not map readily onto natural phenomena that are only now being understood by the world's leading climate scientists, e.g. sequestration of carbon in forests, oceans and grasslands. Thus Harvey (2006) warns when considering "Space as a key word", that "the spatio-temporality required to represent energy flows through ecological systems accurately, for example, may not be compatible with that of financial flows through global markets. Understanding the spatio-temporal rhythms of capital accumulation requires a quite different framework to that required to understand global climate change." The challenge presented by the increased commodification of nature is that financial markets and economic logic now claim public policy leadership in addressing global climate change, even in the wake of neoliberalism's crises, revisions, delegitimation and attempted re-legitimation (Fine 2008, Foster and Magdoff 2009, Peck 2008).

Carbon trading and overaccumulation crisis

The rise of carbon trading over the last decade is most compellingly understood through Marxian political economy. The two primary ways Harvey (1982) adds to Marx's crisis theory are through understanding space and time in part as displacement strategies during capitalist "overaccumulation crisis." This perspective allows us to track several processes which overlapped, very dangerously, during the early 21st century (Bond 2009):

- the global economic slowdown that began during the late 1960s – in which world GDP/per capita growth shrunk from 3.6 percent during the 1960s to 2.1 percent during the 1970s to 1.3 percent during the 1980s to 1.1 percent during the 1990s - witnessed a momentary reversal in the late 2000s, but only on the basis of untenable credit expansion, asset speculation and trade in (vastly overpriced) commodities, ultimately causing a potentially long-term world depression;
- the spatial shift in industrial capital's location, to East/South Asian and Latin American emerging markets, also shifted the source of greenhouse gas emissions dramatically;
- the financial explosion in various kinds of derivative investments permitted virtually any notional value to be marketed as a credit for packaging and onward sale, including emissions of sulphur in the US and carbon in Europe;
- the commodification of the environmental commons proceeded apace, with water privatization, biopiracy, genetic modification and other processes controlled by multinational corporations generating expectations for what became the world's largest artificial market, i.e. carbon emissions (with \$200 billion traded in 2008);
- the geographical overextension of financial capital during the 1990s-2000s included the diversification of investment portfolios into distant, risky areas and sectors under the rubric of (inadequate) global financial governance, leading to corruption in asset values ranging from sub-prime housing mortgages to illegitimate emissions credits;
- likewise, geopolitical tensions emerged over which sites would be most vulnerable to the devalorization of overaccumulated capital after 2008, i.e. which regions or countries would bear the brunt of the deep financial sector and real economic downturns;

- the global class politics of neoliberalism, so aptly characterised by World Bank chief economist Lawrence Summers (1991) in a memo he signed - “I believe the economic logic behind dumping a load of toxic waste on the lowest wage country is impeccable and we should face up to that” - became so dominant that even the Keynesian financial bail-out and public works strategies adopted in the North from 2008 onwards were not permitted in the South, generating ever greater desperation for financial capital inflows (including emissions mitigation investments) as private portfolio capital and Overseas Development Aid suffered large-scale withdrawal; and
- the resulting rise of a “double movement” of civil society forces against excessive commodification included organisations and networks dedicated to addressing climate change not through market mechanisms but instead through direct action based on opposition to fossil fuel extraction, and advocacy for national command-and-control emissions reduction strategies.

The application of historical-materialist-geographical analysis to the world economy provides crucial contextual understandings for the climate mitigation debate, in this manner, and allows a more critical perspective to emerge about how space and time are mediated through financial markets when applied to greenhouse gases. The early evidence suggests that the externalities of market-created climate damages are not readily internalized through market mechanisms, but are instead *displaced*. The spatial displacement of overaccumulation entails new investment arenas at long geographical distance and in new configurations of the built environment; while temporal displacement entails recourse to credit markets which permit payment later, for the sake of present consumption (Harvey 1982). Prior to the 2008 ETS collapse, carbon trading offered an attractive, fast-growing bubble because of these spatio-temporal features, in a context of fading momentum in overpriced property, equity markets (dot.coms in particular) and other exotic, speculative investment instruments. The hope of carbon traders is that the attractiveness of the carbon market’s still evolving spatio-temporality will again generate

high returns, to the extent that emissions trading achieves the tens of trillions of dollars per annum in coming decades often predicted. In addition, carbon trading fits the rubric of “accumulation by dispossession” that Harvey (2003) utilises as an explanation for the desperate penetration of non-market spheres by capital under circumstances of both overaccumulation crisis and imperialist power.

However, unintended environmental and social consequences invariably emerge, along with devastating breakdowns that bedevil financial markets as stores of wealth in such turbulent periods. Indeed, financial markets which most acutely combine space and time actually *amplify* uneven development when they operate more flexibly in geographical and temporal terms, under conditions of overaccumulation crisis (Bond 1999). To some extent this is a consequence of excessive financial deregulation, especially applied to the “commodification of risk”, as Larry Lohmann (2009a, 2009b) puts it. The invention of derivatives for energy-related investments that bear little relation to underlying “real” values was witnessed in the Enron disaster, yet carbon trading incentives have permitted new waves of overinvestment in risky emissions reduction outlets, followed by crashes. As environmental finance critic Michelle Chan (2009, 3) argues,

The financial crisis was sparked by bad mortgages, and U.S. carbon markets could pose similar problems through the creation of “bad carbon” or “subprime carbon.” Subprime carbon contracts — called “junk carbon” by traders — are contracts to deliver carbon that carry a relatively high risk of not being fulfilled and may collapse in value.

The point, ultimately, is that the deep-seated contradictions in industrial capitalism invariably bubble up into both financial and carbon markets. Hence, we will conclude, carbon trading represents at best a shifting of the deck chairs on both the climate and economic Titanics, and at worst major new holes in the ships.

The carbon market’s rise and fall

Although the point of this article is that dynamics of capital accumulation are creating a carbon space-economy based upon the “enclosure” (in 19th century terms) of non-polluted air – with air pollution now treated as a property right traded mainly in London and Chicago financial markets - there is also a serious intellectual argument undergirding the carbon trade. John Dales (1968, 85) wrote “Pollution, Property, and Prices” to lessen water pollution through waste quotas plus a market in “transferable property rights . . . for the disposal of wastes” interchangeable amongst firms. However, it was only in 1990 that the Environmental Protection Agency’s *Clean Air Act* was amended by Congress so that sulphur dioxide could be capped and traded, so as to reduce acid rain damage, although command-and-control strategies in Europe had faster and more decisive results. Seven years later, the Kyoto Protocol allowed “Annex 1” countries – wealthier states accepting binding constraints – to buy emissions credits if their emissions were higher than the modest target of a 5.2 percent reduction on 1990 emissions levels by 2012. This allowed the sale of the “hot air” – excess credits - that Eastern Europe enjoyed because their industrial economies were reduced by 40 percent after 1990, during the transition to capitalism, and in turn allowed the Protocol to come into effect in 2005 after it was ratified by Russia (Prototype Carbon Fund 2005: 45).

In addition to a general carbon trading framework which got its start in the European Union’s Emissions Trading Scheme (ETS), two techniques were added so that particular emissions-reducing projects could be financed: Joint Implementation between Annex 1 countries (with exceptions in the EU), and the Clean Development Mechanism (CDM) for Annex 1 country investors to fund emissions reduction or sequestration projects in non-Annex 1 countries, if those projects require “additional” finance beyond what can be done on a profitable basis without the CDM subsidy. A Designated National Authority – sometimes a state agency and sometimes a trusted consultancy - in each participating non-Annex 1 country reviews and approves such projects (most CDM applications have come from companies in India, China and Brazil, with the African continent severely underrepresented). If successful there, a CDM project moves to approval by a private-sector Designated Operational Entity which again verifies and certifies reduction claims, at which point a CDM Executive Board decision is made on a rubber-stamp basis aside

from problem cases. Amongst the major catalysts of the CDM market is the World Bank's Prototype Carbon Fund. Most of the CDM certified emissions reduction credits have come from projects that reduce nitrogen and hydrofluorocarbons, which are much more extreme greenhouse gases than CO₂ (Prototype Carbon Fund 2005). Landfill methane-to-electricity projects are most prevalent, but also controversial since the dumps sourced for methane often have dangerous incineration systems as well as informal-sector wastepickers whose livelihoods are threatened in the process.

The roles of wastepickers, indigenous people, dam-affected communities, critical environmentalists and others threatened by enclosure processes associated with the carbon trade are diverse and even contradictory at times. In contrast, there are market-oriented environmental organisations which have endorsed carbon trading as a step forward. According to Sierra Club Canada director Elizabeth May, for example, "I would have preferred a carbon tax, but that is not the agreement we have. The reality is that Kyoto is the only legally binding agreement to reduce greenhouse gasses. When you're drowning and someone throws you a lifeboat, you can't wait for another one to come along" (Athanasίου 2005). There are also African countries whose own future industrial development prospects are limited by eventual capping of CO₂ emissions, amongst which South Africa looms large given that as a measurement of carbon intensity, the energy sector's CO₂ emissions per unit of per capita GDP was twenty times that of the United States by the time of Kyoto (Bond 2002). One advocacy position that seeks to unite market environmentalists and Third World states is the demand for a notional per capita pollution rights grant, which in turn can be traded (e.g. Greenhouse Development Rights, and Contraction and Convergence).

The most important force in the market, however, will be the US government's new commitment to carbon trading through what began as the Waxman-Markey legislation, aiming to cap and trade emissions. The law includes a pollution rights give-away, as well as a change to the *Clean Air Act* (which critics argue will gut the important law by exempting carbon as a pollutant from Environmental Protection Agency oversight and regulation) plus a generous allowance of offsets which would potentially delay actual US

CO2 reductions by two more decades. Such legislation stems from a firm belief in the efficacy of markets. As a presidential candidate, Barack Obama promised,

We would put a cap and trade system in place that is as aggressive, if not more aggressive, than anybody else's out there... So if somebody wants to build a coal-powered plant, they can; it's just that it will bankrupt them because they're going to be charged a huge sum for all that greenhouse gas that's being emitted. That will also generate billions of dollars that we can invest in solar, wind, biodiesel and other alternative energy approaches (*San Francisco Chronicle* 2008).

In July 2008, the ETS price of carbon was 29.33 euros/tonne, which probably gave Obama confidence in lucrative funding opportunities for renewables. But by election day in November that year, the price had sunk to less than 9 euros/tonne (when, for example, 40-60 euros/tonne was required to activate investments in carbon capture and storage - by which coal-fired stations could, theoretically, bury liquefied carbon emitted during power generation). Moreover, Obama dropped his promised "full auction" of emissions credits, meaning that polluters would have bid against each other for a bigger share of the emissions allowed under an agreed cap, which in turn they could trade to each other so as to improve economic efficiency. Whether market forces could discipline polluters in the manner envisaged soon became academic, as Waxman-Markey reduced the auction amount to just 15 percent of credits.

The intrinsic problem in setting an artificially-generated market price for carbon had already been revealed when the ETS crashed in 2006 thanks to the EU's overallocation of pollution rights. The market regulators had miscalculated on how to set up the ETS from scratch, with electricity generation firms granted far too many credits (roughly 50 billion euros worth of pollution rights, measured at 30 euros per tonne, were transferred to large European CO2 emitters annually through the ETS). In April 2006, the carbon spot market price lost over half its value in a single day, destroying many carbon offset projects earlier considered viable investments.

Even after a price recovery, by 2007 it was apparent that Europe's carbon trading pilot was not working. As Peter Atherton (2007) of Citigroup conceded, "ETS has done nothing to curb emissions . . . [and] is a highly regressive tax falling mostly on poor people." Asking whether policy goals were achieved, he answered: "Prices up, emissions up, profits up . . . so, not really. Who wins and loses? 'All generation-based utilities – winners. Coal and nuclear-based generators – biggest winners. Hedge funds and energy traders – even bigger winners. Losers . . . ahem . . . Consumers!'" A *Wall Street Journal* (2007) investigation in March 2007 confirmed that emissions trading "would make money for some very large corporations, but don't believe for a minute that this charade would do much about global warming." The paper termed the carbon trade "old-fashioned rent-seeking... making money by gaming the regulatory process." Carl Mortished (2008) wrote in *The Times of London*, "The ETS is making a mockery of Europe's stumbling attempts to lead the world in a market-based carbon strategy. It is causing irritation and frustration to the armies of advisers and investors who seek to cajole utilities into big investments in carbon reduction." As *The Guardian* (2008) revealed, the ETS provided "hundreds of millions of pounds to some of Britain's most polluting companies, with little or no benefit to the environment". Added Jonathan Leake (2008) in the *London Times*,

The incongruity of proposing that a brand new financial market might be able to save the world – when faith in every other kind of financial market is tumbling – needs no underlining. But there are plenty of other reasons for scepticism, too. Jim Hansen, director of the Nasa Goddard space centre and a renowned critic of global measures to combat climate change, believes carbon trading is a "terrible" approach. "Carbon trading does not solve the emission problem at all," he says. "In fact it gives industries a way to avoid reducing their emissions. The rules are too complex and it creates an entirely new class of lobbyists and fat cats."

Specific carbon offsets and CDMs fared no better in these investigations. *The Economist* (2008) hosted a debate on carbon offsets in December 2008, in which Michael Wara of Stanford and Kevin Smith of Carbon Trade Watch argued the proposition that they

“undermine the effort to tackle climate change” – and by a readers’ vote of 55-45, defeated Henry Derwent of the International Emissions Trading Association and carbon trader Mark Trexler. Not only were voluntary offsets increasingly dubious, but verified CDM projects in the Third World were also considered counterproductive. According to a *Newsweek* (Vencat 2007) magazine investigation in March 2007, the CDM concept “isn’t working... [and represents] a grossly inefficient way of cutting emissions in the developing world.” Notorious projects like the Bisasar Road toxic landfill in Durban and Plantar monocultural timber in Brazil were promised vast funds, with deleterious consequences for local communities and ecosystems. *Newsweek* (Vencat 2007) called CDMs “a shell game” which has already transferred “\$3 billion to some of the worst carbon polluters in the developing world.” In early 2009, the *London Times* (2009) uncovered problems in Mozambican tree planting investments supported by high-profile celebrities (e.g. Ronnie Wood of the Rolling Stones and actor Brad Pitt), including that “it is almost impossible to guarantee that the trees will survive the length of time needed to offset any significant carbon emissions.” As a TransNational Institute Carbon Trade Watch (2009) report remarked,

These failings are not caused by teething problems, but are symptomatic of the extreme difficulties of assessing the value of “carbon,” which is a commodity that bears little relation to any single real world object. More generally, the scheme over-estimates the capacity of price to achieving structural change in energy production and industrial practice

Eco-social justice alternatives

Beyond the newspaper scandal investigations, it is interesting to consider just how far the critique of markets goes within the environmental and social justice communities. Perhaps the highest-profile environmentalist critic of carbon trading is Hansen (2009):

Cap-and-trade is the temple of doom. It would lock in disasters for our children and grandchildren. Why do people continue to worship a disastrous approach? Its

fecklessness was proven by the Kyoto Protocol. It took a decade to implement the treaty, as countries extracted concessions that weakened even mild goals. Most countries that claim to have met their obligations actually increased their emissions. Others found that even modest reductions of emissions were inconvenient, and thus they simply ignored their goals.

Already a half-decade earlier, a first generation of carbon trade critics – affected communities (from Indonesia, Thailand, India, South Africa, Brazil and Ecuador), academics and researchers, and radical environmentalists - issued the “Durban Declaration” in October 2004 to sound the alarm about ethical and economic shortcomings. The analysis was foregrounded in the TransNational Institute’s Carbon Trade Watch (2003) report *The Sky is Not the Limit*, and was then produced as a seminal book, *Carbon Trading*, by Larry Lohmann (2006) for the Dag Hammarskjold Foundation. Although campaigning was set back by the July 2007 death of Durban host Sajida Khan, who battled a CDM methane extraction proposal that kept open the Bisasar Road toxic dump next to her home and that caused the cancer that ultimately killed her, the movement joined forces with broader global justice activism in the Climate Justice Now! (CJN!) network formed at Bali in December 2007. As the CJN! (2007) manifesto put it, “Climate Justice Now! will work to expose the false solutions to the climate crisis promoted by these governments, alongside financial institutions and multinational corporations - such as trade liberalisation, privatisation, forest carbon markets, agrofuels and carbon offsetting.”

Would the kind of carbon tax Hansen advocates satisfy the activist critics? Many have expressed ambivalence about the potential for a tax on greenhouse gas emissions, because this market-related approach would take the production system as given and alter the demand structure. According to an assessment by the US Congressional Budget Office (2008),

A tax on emissions would be the most efficient incentive-based option for reducing emissions and could be relatively easy to implement. If it was

coordinated among major emitting countries, it would help minimize the cost of achieving a global target for emissions by providing consistent incentives for reducing emissions around the world.

But major problems with taxation are tax avoidance capacities of influential industries, and incidence: who will pay the bill. There are certainly means of designing a tax system with a strongly redistributive outcome, and in the process incentivizing transformative economic strategies. However, a dramatic shift in political power is required for such an outcome. And if such a shift in power is achieved, there would quickly also arise more rapid alternatives to such market-based strategies. These typically fall into state-oriented *command-and-control*, and fence-line/grassroots “direct action”. Command-and-control strategies for emissions reductions include some important victories such as the banning of ChloroFluoroCarbons in the 1996 Montreal Protocol in order to prevent ozone hole destruction, and many European emissions regulations. Moreover, a national state strategy known as “leave the oil in the soil” (and “leave the coal in the hole”) entails both state prohibition of fossil fuel extraction and direct grassroots action against greenhouse gas emission points. Direct actions are increasing: environmentalists in dinghies harassing vast coal ships in Newcastle, Australia; blockaded British power plants; campaigns against the Alberta Tar Sands in Canada; and sit-ins against coal extraction in West Virginia and coal-based power generation in Washington, DC in 2009. This crucial step in Northern environmentalism followed Al Gore’s remark in August 2007: “I can’t understand why there aren’t rings of young people blocking bulldozers and preventing them from constructing coal-fired power plants” (cited by Kristoff 2007).

The South also offers very serious leadership, such as indigenous people and environmental and community activists in the Niger Delta and Ecuadoran Amazon. Accion Ecologica helped persuade Ecuadoran president Rafael Correa to consider an oil-in-the-soil plan to prevent drilling in the Yasuni National Park in 2007, which by June 2009 was rewarded with a \$50 million/year commitment by the German government. Most spectacularly, Niger Delta activists kept vast amounts of oil in the soil through both non-violent and armed struggle. In the former category, Environmental Rights Action in

Port Harcourt insisted on an end to extraction and exploration. In the latter, the Movement for the Emancipation of the Niger Delta continued to kidnap foreign oil workers, demanding they vacate the Delta for good. Thanks in part to organising by the Ogoni Solidarity Forum, Shell Oil was kicked out of Ogoniland in June 2008, 13 years after the company arranged for Ken Saro-Wiwa's execution, an act for which they settled an Alien Tort Claims Act lawsuit out of court in June 2009 for \$15.5 million. In South Africa, the Pietermaritzburg NGO groundwork linked OilWatch to several dozen anti-oil activists' groups from across the continent at a September 2008 conference, and a month later, citing climate concerns, the South Durban Community and Environmental Alliance began a legal appeal to the national government, aiming to reverse a \$2 billion Durban-Johannesburg pipeline investment which would double oil refining in the polluted community. These are examples of serious strategies in place to halt climate change at the supply side, and proponents believe that though they are still microscopic in nature, these strategies and tactics could be much more effective than carbon markets. Many have been inspired by Alaskan and Californian environmentalists' ability to withstand US oil company pressure to drill in the tundra and off the coast.

Climate Justice Now! emerged with these kinds of strategies in mind, in December 2007, issuing five demands:

- reduced consumption;
- huge financial transfers from North to South based on historical responsibility and ecological debt for adaptation and mitigation costs paid for by redirecting military budgets, innovative taxes and debt cancellation;
- leaving fossil fuels in the ground and investing in appropriate energy-efficiency and safe, clean and community-led renewable energy;
- rights based resource conservation that enforces Indigenous land rights and promotes peoples' sovereignty over energy, forests, land and water; and
- sustainable family farming and peoples' food sovereignty.

No matter that the CJN! component movements are disparate, these are the kinds of

arguments that link spatio-temporal resistances amongst diverse eco-social forces during a period of austerity, civil society weakness and repression. The agents of social and environmental change can take advantage of neoliberalism's discredited ideological status, and demand from the next global negotiations a strategy not based upon commodifying carbon, but to do so they still need to generalize an innovative critique that has emerged over time, as emissions trading

Correspondence: School of Development Studies and Centre for Civil Society, University of KwaZulu-Natal, Durban 4001, South Africa, email: bondp@ukzn.ac.za

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