

## Carbon Trading, Climate Justice and the Production of Ignorance: Ten examples

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**ABSTRACT** *Larry Lohmann briefly sketches ten processes of ignorance-creation facilitated by the new carbon markets, focusing particularly on the Kyoto Protocol and the European Union Emissions Trading Scheme. He queries what could be the quest for climate justice once it is incorporated into a development or carbon market framework.*

**KEYWORDS** *Western development; emissions; sustainable systems; knowledge systems; climate politics*

### Introduction: development and ignorance

Of all the effects and products of development, ignorance is one of the most pervasive (Dove, 1983; Ferguson, 1990; Hobart, 1993; Fairhead and Leach, 1995; Lohmann, 1998a, b). Not only do the familiar accoutrements of development – export of machines and expertise, market construction, debt finance, structural adjustment, titling, surveying and mapping, dam-building, extension, rural income programmes and so forth – necessarily often ignore, displace, supplant or even eradicate knowledge possessed by their ‘target populations’. The practices accompanying such projects, in positing backward masses pressed in by nature, also help keep developers themselves ignorant of others’ knowledge. Villagers become those who ‘do not understand’ (Pigg, 1992: 507), those whom it would be unfair to deprive of the benefits of Western development, but above all those whose existing knowledge is irretrievably ‘local’ in some sense that the experts’ is not. That reinforces a further kind of ignorance among developers: that of the background conditions for their own (local) knowledge. When a development institution invests in the dissemination of narratives, technology or expertise, which are problematic outside its local experience, it acquires an incentive to slight the salience not only of other contexts but also of its own. Ignorance spreads still further as various institutions – ministries, schools, statistical and mapping bureaus, economics and forestry departments – collectively enact a dualism according to which social action is the implementation of disembodied theories. The denial that power and knowledge are situated and that reality might not be an object for centralized, hierarchical management comes to form a part not only of development professionals’ defense of their class position, but also of middle-class self-description generally. As agency becomes identified with planners, the disasters and resistances that development meets are accordingly dealt with as if they were the result of either faulty theory or incorrect

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## *Development 00(0): Thematic Section*

implementation. The further mishaps that follow on are confronted in the same way, engendering an unending cascade of failed technical and other fixes that expand the range of both the expertise and the ignorance that development generates and both the powers and the impotences that it makes possible.

Critiques of development play a key part in this drama when they are translated into quests either for better implementation or for alternative models, theories or frameworks. 'Damage control', 'sustainable development' and 'reform of development institutions' become watchwords of one school; 'development as if people mattered', 'an alternative development', 'replacing the capitalist model' slogans of another. The one pictures development's failures and falsehoods as someday coming to an end through negative feedback loops: development institutions are seen as lumbering supertankers on the wrong course but which will nonetheless respond in a linear fashion, if slowly, to warning signs from instruments and approaching landmarks so that they can gradually swing around to the right heading. The other school of critique also desires to see development institutions as steerable vessels on a journey to somewhere, but pictures the current ones as unseaworthy and ripe for replacement. Both continue to obscure the localness and embodiedness of planners and theorists, misreading the untruths, failures and unanticipated consequences generated by development as theoretical errors or technical mistakes rather than structural features of development at all levels. Efforts to purify development of ignorance by correcting its 'errors' inevitably lead to the further manufacture of ignorance, as each falsehood that development generates, when exposed, can be used as raw material for further corrective actions reflecting elite claims to apply power and knowledge at a distance. Far from being a problem for development, this endlessly spiralling process constitutes its normal functioning (Lohmann, 1998b).

### **The relevance to climate politics**

These conclusions bear crucially on current climate politics. Not only have development

institutions such as the World Bank taken a prominent role in climate mitigation (Redman, 2008). In addition, governments and activists alike frequently claim that there is a need to address climate and international development concerns together, whether to head off global social unrest or to address the issue of social justice. International climate negotiations themselves largely consist of a series of deals about capital flows, trade and other economic issues that have come to define the development concept. Yet the historical reality of development is seldom considered in this discussion (a fact which is itself part of the development dynamic), least of all its role in the creation of widespread ignorance – an increasingly important concept in an age of global warming.

Since the advent of the global warming crisis, institutions and practices associated with development have played a large part in the co-production of knowledge and ignorance about a range of climate issues. One example is the way that both climate change denialists and many climatologists rightly concerned about global warming have fitted much of their scientific reasoning about atmospheric processes to the norms of international investment, risk assessment and rational choice theory (Lohmann, forthcoming). More significant for the politics of knowledge, however, is the way high-level international and national policy responses to climate change have been dominated for the last decade by carbon trading – the construction of markets that use the earth's carbon-cycling capacity as a commodity (Lohmann, 2006). Just as the ex-mining executive Hernando de Soto pioneered, in the 1990s, the idea that poverty could be addressed by relatively simple legal and financial reforms turning the 'dead' assets the poor already possess in the form of their houses into 'live' capital by treating them as collateral, or bringing them 'inside the capitalist economy' (De Soto, 2000), so, during the same period, was born the idea that global warming could be addressed by the benign and relatively painless process of turning hitherto 'unpriced' greenhouse gas pollution into a tradable, ownable commodity. Both ideas are untenable, but in a sense it is not their function to be tenable. Rather, both 'form part of the

equipment for neoliberal projects', providing a 'means of mobilizing certain facts of neoclassical economics in alliance with the planning of development agencies, the resources of property developers, and the political powers of local regimes' (Mitchell, 2007: 269) to facilitate the introduction of more extensive powers of dispossession and physical control as well as speculation, rent-seeking and the redistribution of wealth from poor to rich and from the future to the present. A central aspect of this process has been the creation of new domains of ignorance.

### **How carbon trading creates ignorance: ten examples**

*First*, carbon markets are designed to make government regulation of emissions cheaper by abstracting from how the cuts are made. Corporations that find it too expensive to meet their emissions targets through their own efforts can buy the further emissions cuts they need from firms that are able to overshoot their targets cheaply and thus have a surplus of pollution credits to sell. Carbon markets thus automatically gloss over what kind of technology is used to make the cuts, what kind of industry is using it, and whether the cut made in the place where it is cheapest today will lead in fact to a historical trajectory of the least emissions in the future. Yet these are areas requiring the most serious research and policy attention. How cuts are made now, and who makes them, will have an influence on how much can be cut in the future; the cut made by a factory in Tomsk may be the result of an energy technology or way of organizing social life that will stimulate vastly multiplied future cuts, whereas a quantitatively equal cut made by a firm in Toledo may be a routine efficiency improvement that should have been made long ago and leads to little else. Drawing attention away from the type of innovation, long-term investments and broad restructuring that are crucial to speeding the transition away from fossil fuels, carbon trading tends to prioritize scattered stop-gap measures that are merely likely to delay the structural change required. While emissions trading provides financial incentives for one class

of polluters to innovate, it simultaneously provides financial incentives for the industries at the very centre of the global warming problem, including electricity generators, chemicals, iron and steel, cement, oil and gas, aviation and so on, to delay the sweeping changes they will have to undertake. Because it is based on the false assumption that all numerically identical emissions cuts are the same in terms of climate history, carbon trading is ill-designed to stimulate sociological, political and historical inquiry into how societies achieve radical change of the kind required to handle the climate crisis. Instead it reinforces the current overemphasis among policymakers on finding clever means of making a fossil fuel-dependent system slightly more efficient and of calculating timelines for achieving numerical atmospheric concentration targets that, without attention to social and political processes, are purely aspirational.

*Second*, in de-emphasizing how emissions cuts are made, and in seeking new things that might be considered cuts, carbon trading has also encouraged intellectuals to posit equivalences that are scientifically dubious. For example, in order to be able to trade cuts in carbon dioxide for cuts in other greenhouse gases, the climatic hazards associated with each gas must be commensurated with the others. Figures for 'CO<sub>2</sub> equivalences' emanating from the Intergovernmental Panel on Climate Change, the UN's scientific climate advisory panel, however, are admitted to be gross oversimplifications: the effects and lifetimes of different greenhouse gases in different parts of the atmosphere are so complex and multiple that any straightforward equation is impossible. The original carbon dioxide equivalence figure for HFC-23 of 11,700 originally put forward by the IPCC in 1995–1996 was revised in 2007 to 14,800, and the error band of this estimate is still an enormous plus or minus 5,000 (MacKenzie, forthcoming). The practical effects of this oversimplification of reality are considerable: HFC-23 destruction is the largest single credit earner in the Kyoto Protocol's Clean Development Mechanism, accounting for 67 percent of the credits generated in 2005 and 34 percent of those generated in 2006 (World Bank, 2007: 27).

## Development 00(0): Thematic Section

*Third*, if carbon markets necessarily abstract from *how* emissions cuts are made, they also abstract from *where* they are made – again in the cause of maximizing cost-effectiveness. But this abstraction systematically obscures the significance of place. This gap is likely to be damaging to social equality, since the industries most firmly locked into fossil fuel exploitation or use, and most likely to be carbon pollution right buyers, tend to have a disproportionate adverse effect on poorer and disadvantaged communities. Carbon trading also requires downplaying the different ecological effects that pollution can have in different biomes. Another way carbon trading encourages ignorance has to do with the way it discounts the enormous distances between, on the one hand, carbon-credit figures appearing on computer screens in the urban offices of carbon consultants, UN officials, bankers, hedge fund managers and ministries and, on the other, the complex politics, biology and physics of hydroelectric dam or wind farm sites in less industrialized countries, together with the social and technological arenas in which flows of carbon dioxide and other greenhouse molecules are imagined and negotiated by scientists and technicians. British buyers of offsets from a company that has contracted with an elite conservationist organization in Rajasthan to provide biogas cooking stoves for rural villagers near a remote tiger reserve 7,000 kilometres away are unlikely ever to have the chance to verify what effects the project is having on local wood-gathering practices or class relations, much less its climatic effects (Ghosh and Kill, forthcoming). Yet they are encouraged to believe that they can understand all factors relevant to the transaction.

*Fourth*, in a classic instance of ignoring their own background assumptions, carbon trading proponents have overgeneralized the lessons of the sulphur dioxide trading system that has been in place in the US since the 1990s – the only pollution market to date that has not been an unambiguous failure, and the main model for the carbon market set up by the Kyoto Protocol of 1997. The US SO<sub>2</sub> market was made possible by the relative simplicity of the regulatory task (achieving modest numerical cuts in a single industrial pollutant emitted by a comparatively small group of

sources), the possibility of establishing clear property rights in pollution dumps (which were handed over free to polluting corporations) and the recent invention of continuous emissions monitoring equipment capable of transmitting emissions data to Washington, DC in near real-time. Carbon traders are compelled to make the false assumption that similar property rights arrangements, measurement systems and enforcement will be available for global carbon trading. This assumption is demonstrably false on numerous grounds. First, the sulphur dioxide trading system was not complicated by the presence of offsets, or special pollution-saving projects designed to inject additional pollution rights into the market; most carbon markets are. This is important since, second, measurement of offsets is impossible even in principle (Lohmann, 2001, 2005). Third, even without taking offsets into consideration, the measurements necessary to support a credible carbon market are not being made, even in many technically advanced European countries. Fourth, the highly centralized enforcement systems that carbon trading requires are absent in most countries of the world. Fifth, the question of who owns the world's carbon dumps, and how they gain that ownership, is becoming increasingly contested in a way that ownership of sulphur dioxide dumps in the US was not. For instance, European governments' free gift of carbon pollution rights to their biggest industrial polluters under the European Union Emissions Trading Scheme has become an international scandal in view of the windfall profits being made by fossil fuel-fired power generators under the system.

*Fifth*, most existing and contemplated carbon markets trade both in emissions allowances and in carbon credits produced by offset projects, which then are exchanged for each other. It is even written into the Kyoto Protocol that offsets *are* emissions reductions. However, this is false. Offset projects involve planting trees, fertilizing oceans to stimulate carbon-gobbling algae, burning methane from landfills to generate electricity or setting up wind farms – none of these things can be verified to be climatically equivalent to each other or to reducing one's fossil fuel

consumption (Lohmann, 2006). The carbon markets' UN-approved mandate to 'make them the same' (MacKenzie, forthcoming) has led to the creation of an enormous technocracy producing thousands of pages of forbiddingly technical documents every month dedicated to refining arcane metrics for concealing this reality (Lohmann, forthcoming).

*Sixth*, in a pattern reminiscent of much that goes under the name of development, carbon markets are actively undermining much of the knowledge base required for tackling global warming. One example is the local low-carbon irrigation system of Sarona village along the fast-flowing Bhilangana river in mountainous Uttaranchal, India. The system uses porous rock dams to divert water gently into small canals while letting silt through. The water then flows into still smaller channels feeding terraced rice and wheat fields that then discharge any remaining water back into the river. This well-established, sustainable system, like many others in the region, is now under threat from a 22.5 megawatt run-of-the-river hydropower system being built by Swasti Power Engineering with prospective Kyoto Protocol carbon finance. Knock-on effects would include loss of livelihoods, migration and loss of a type of knowledge that, ironically, will be especially valuable in a greenhouse world. Sarona residents were never consulted and first learned about the project only in 2003 when construction machines arrived. Conflict, police brutality and arrests followed. In the mountainous river valleys of Uttaranchal, some 146 similar dam projects are proposed or underway, with hundreds more hydroelectric schemes seeking carbon finance across the world (Ghosh and Kill, forthcoming). Nor is the threat only to long-established knowledge. In February 2008, for instance, two dozen California environmental justice organizations released a strongly worded statement condemning carbon trading as a 'charade to continue business as usual' that would block investment in creating new renewable energy know-how needed to help stop the 21 new fossil fuel-fired power plants planned for the state under its carbon-trading advocate governor (*Los Angeles Times*, 20 February 2008).

*Seventh*, in a pattern that is not coincidental, one after another carbon trading institutions can be heard naively repeating neocolonialist and racist shibboleths of development discourse. In a recent *New Yorker* magazine, for example, Richard Sandor, Chicago commodities trader, inventor of interest rate derivatives and one of the principal architects of pollution markets, is approvingly quoted endorsing schemes to commodify native forests in the global South for use as sinks for industrial carbon dioxide: 'They are slashing and burning and cutting the forests of the world. It may be a quarter of global warming and we can get the rate to two per cent simply by inventing a preservation credit and making that forest have value in other ways. Who loses when we do that?' (*New Yorker*, 25 February 2008, emphasis added.) Ignorance of this stamp, which has long been publicly exposed by the patient research of networks such as the World Rainforest Movement, damages the struggle for a liveable climate not least because of the way it nourishes the general process of knowledge destruction exemplified in the Bhilangana river project mentioned above.

*Eighth*, carbon offset companies offering the spurious commodity of 'carbon neutrality' to individual consumers necessarily design their market in a way that hides the roots of climate change – that is, the historical overuse and skewed use of the earth's carbon cycling capacity by a global minority – as well as other systemic social and technical processes. Offset advertising teaches that the climate change problem is due to, and can be addressed by, individual consumer choices. It encourages northern consumers to consider part of their emissions to be simply 'unavoidable' rather than as part of a pattern of energy use that can only be tackled through political and social organizing. It conceptualizes global warming primarily through complex calculations of guilt over individual 'carbon footprints' rather than, for example, the study of international oil politics or the history of social movements that have achieved structural change of the magnitude required to alleviate global warming (Smith, 2007).

*Ninth*, the cloud of jargon that is inevitable with the highly centralized, quantification-heavy regulatory apparatus that constitutes carbon trading

## Development 00(0): Thematic Section

keeps even many journalists and environmentalists ignorant about how little governments and the UN system are actually doing about climate change. Few members of the general public have any inkling of how far the attempt to set up a giant global carbon market has gone, much less of the meaning of carbon market acronyms and technical terms such as additionality, model rules, meth panels, supplementarity, leakage, AAUs, CERs, ERUs, DNAs, DOEs, NAPs, PDDs, AIEs, SBIs, SBSTAs, COPs, MOPs, COP/MOPs and so on. This indirect but highly effective suppression of public discussion is precisely the opposite of the wide-ranging grassroots debate and political mobilization that the climate crisis calls for.

*Tenth*, this same regulatory apparatus also functions to recast heavy fossil fuel polluters as protagonists of the climate battle while concealing the contributions of ordinary communities and progressive social movements. Under the Kyoto Protocol and elsewhere, carbon credits necessarily go mainly to well-financed, high-emitting operations with official and UN connections and the money to hire professional carbon consultants capable of documenting what pollution 'savings' are being made, but not to non-professional actors in already low-emitting contexts or social movements actively working to reduce use of fossil fuels. As a result, heavy polluters and local corporate 'bad citizens', such as India's Tata Group, ITC, Birla, and Jindal, Korea's Hu-Chems Fine Chemical, Brazil's Votorantim and South Africa's Mondi and Sasol, become stars of heroic green narratives while the contributions of villagers in places like the Bhilangana river remain a static, unrecognized background.

### **Conclusion: carbon trading, development and climate justice**

Within the past few years, there has been increasing talk about climate justice, not only among

grassroots activists but also among environmental organizations, policymakers, governments, UN delegates and trade associations. However climate justice is defined, it is often assumed that it is all about re-energizing or reforming development and investment in the global South to steer it in a low-carbon direction, harnessing the potential of carefully constructed green markets, or making capital flow from North to South, instead of from South to North, as part of a global warming mitigation package. What is less discussed are the lessons gained from more than a half-century's popular and institutional experience of what development – neo-liberal or otherwise, reformed or otherwise – actually does. What does the project of a just solution to the climate crisis become once it is associated with or incorporated into an economic development or carbon market framework?

This article has suggested that carbon trading, as part of the 'climate development' package that has become entrenched at national and international levels over the past ten years, is organized in ways that make it more difficult even to see what the central issues of climate justice are, much less to take action on them. By concealing and undermining the knowledge and analysis needed to respond to global warming, by obscuring how needed social and technological changes will take place, by generating new and dangerous equivalences, by participating in neo-colonial mythologies and by befuddling the concerned middle-class public, carbon markets are interfering with effective and democratic approaches to global warming. Calls for pursuing climate justice within a carbon trading framework, like other essentially glib calls for combining 'environment' and 'development', neither help clarify the problems nor provide a useful framework for addressing them. It is time to bring this discussion back down to earth.

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