

The **CDM** in Africa

Cannot Deliver the Money

Why the carbon trading gamble won't save the planet from climate change, and how African civil society is resisting

A report by the University of KwaZulu-Natal Centre for Civil Society and
Dartmouth College Climate Justice Research Project



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The CDM in Africa Cannot Deliver the Money

Summary

At a time the carbon markets face a profound crisis, this report provides critical policy analysis and case documentation about the role of the Clean Development Mechanism (CDM) in Africa. Instead of providing an appropriate flow of climate finance for projects related to greenhouse gas mitigation, the CDM has benefited large corporations (both South and North) and the governments they influence and often control. South Africa is a case in point, as both a victim and villain in relation to catastrophic climate change.

Many sites of emissions in Africa – e.g., methane from rotting rubbish in landfills, flaring of gas from oil extraction, coal-burning electricity generation, coal-to-liquid and gas-to-liquid petroleum refining, deforestation, decomposed vegetation in tropical dams – require urgent attention, as do the proliferation of ‘false solutions’ to the climate crisis such as mega-hydro power, tree plantations and biofuels. Across Africa, the CDM subsidizes all these dangerous for-profit activities, making them yet more advantageous to multinational corporations which are mostly based in Europe, the US or South Africa.

In turn, these same corporations – and others just as ecologically irresponsible – can continue to pollute beyond the bounds set by politicians especially in Europe, because the Emissions Trading Scheme (ETS) forgives increasing pollution in the North if it is offset by dubious projects in the South. But because communities, workers and local environments have been harmed in the process, various kinds of social resistances have emerged, and in some cases met with repression or cooptation through ‘divide-and-rule’ strategies.

Chapter One sets the context for the carbon markets and the CDM mechanism, revealing its continuing price collapse and gloomy future prospects. Chapter Two maps the players in CDM markets and voluntary schemes.

Chapters Three through Eight are the case studies, beginning with South Africa’s pilot CDM fraud and environmental racism in Durban’s Bissasar Road landfill methane-electricity project, along with similar trends in Egypt. Chapter Four dissects the case of Nigerian CDM corruption of local governance, especially where oil companies are receiving subsidies for reducing their Niger Delta gas flaring – an act which by law they are prohibited from doing in the first place. Chapter Five addresses the emergence of trees, plantations and forests within CDM financing debates, with cases from Uganda, Mozambique, the DRC, Tanzania and Kenya. Chapter Six is about two failed CDM proposals both involving exploitation of Mozambique’s gas reserves. Chapter Seven discusses the way mega-dams are being lined up for CDM status, with case studies from Ethiopia and the DRC. Chapter Eight considers the rise of the Kenyan and Mozambican *Jatropha* biofuel industries.

All these cases suggest the need for an urgent policy review of the entire CDM mechanism’s operation (a point we made to the United Nations CDM Executive Board in a January 2012 submission), with the logical conclusion that the system should be decommissioned and at minimum, a moratorium be placed on further crediting until the profound structural and implementation flaws are confronted. The damage done by CDMs to date should be included in calculations of the ‘climate debt’ that the North owes the South, with the aim of having victims of CDMs compensated appropriately.

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Chapter 1

Climate financing crisis and the CDM's crash

By Patrick Bond and Khadija Sharife

Introduction

Africa is being drawn into a climate policy framework and project funding based on failing financial markets that have mainly enriched speculators and impoverished the continent's poor people. In the wake of South Africa's unsuccessful hosting of the December 2011 world climate summit, where negotiators again postponed decisions to save the planet from catastrophic warming and ever more extreme weather events, the newest signals from the United Nations, World Bank and European Union suggest that *rising fears of – and resistances to – carbon markets in Africa are well grounded.*

The context is crucial, prior to any investigation of the mechanics of carbon markets. Africa will be 'cooked', as Nnimmo Bassey of the Niger Delta NGO Environmental Rights Action, puts it in a new book.¹ According to UN Intergovernmental Panel on Climate Change director R.K. Pachauri, Africa's 'crop net revenues could fall by as much as 90 percent by 2100.'² Climate damage to Africa will include much more rapid desertification, more floods and droughts, worse water shortages, increased starvation, floods of climate refugees jamming shanty-packed megalopolises, and the spread of malarial and other diseases. The danger is imminent, for eight of the twenty countries which the Center for Global Development expects to be most adversely affected by extreme weather events by 2015 are African: Djibouti, Kenya, Somalia, Mozambique, Ethiopia, Madagascar, Zambia and Zimbabwe. In the Horn of Africa, those affected by 2015 by these storms or droughts are anticipated to include 14 percent of Djiboutis, 8 percent of Kenyans, 5 percent of Ethiopians, and 4 percent of Somalis.³

In 2009, former UN secretary general Kofi Annan's Global Humanitarian Forum issued a report worth citing at length, 'The Anatomy of a Silent Crisis' provided startling estimates of damages already being experienced:

An estimated 325 million people are seriously affected by climate change every year. This estimate is derived by attributing a 40 percent proportion of the increase in the number of weather-related disasters from 1980 to the present to climate change and a 4 percent proportion of the total seriously affected by environmental degradation based on negative health outcomes... Application of this proportion projects that *more than 300,000 die due to climate change every year* – roughly equivalent to having an Indian Ocean tsunami annually... Climate change ... means deterioration in environmental quality, such as reduction in arable land, desertification and sea level rise, associated with climate change.⁴

1. Nnimmo Bassey, *To Cook a Continent*, Oxford, Pambazuka Books, 2011.

2. R.K. Pachauri, 'Summary of testimony provided to the House Select Committee on Energy Independence and Global Warming,' US Congress, Washington DC, 2008, globalwarming.house.gov/tools/assets/files/0342.pdf.

3. David Wheeler, 'Quantifying vulnerability to climate change,' Center for Global Development Working Paper 240, Washington, DC, <http://www.cgdev.org/content/publications/detail/1424759>, p.15.

4. Global Humanitarian Forum, 'The human impact of climate change,' New York, 2009, http://www.global-humanitarian-climate-forum.com/uploads/An__Impacts.pdf.

Figure 1.1: Africa as climate change victim



Source: United Nations Framework Convention on Climate Change

What can be done to prevent this? Our own answer – drawing upon the April 2010 Cochabamba, Bolivia climate justice conference declarations – includes the decommissioning of the CDM mechanism and its replacement with a suitable climate debt payment system that directly channels resources to climate victims without corrupt aid-agency and middlemen or venal state elites.

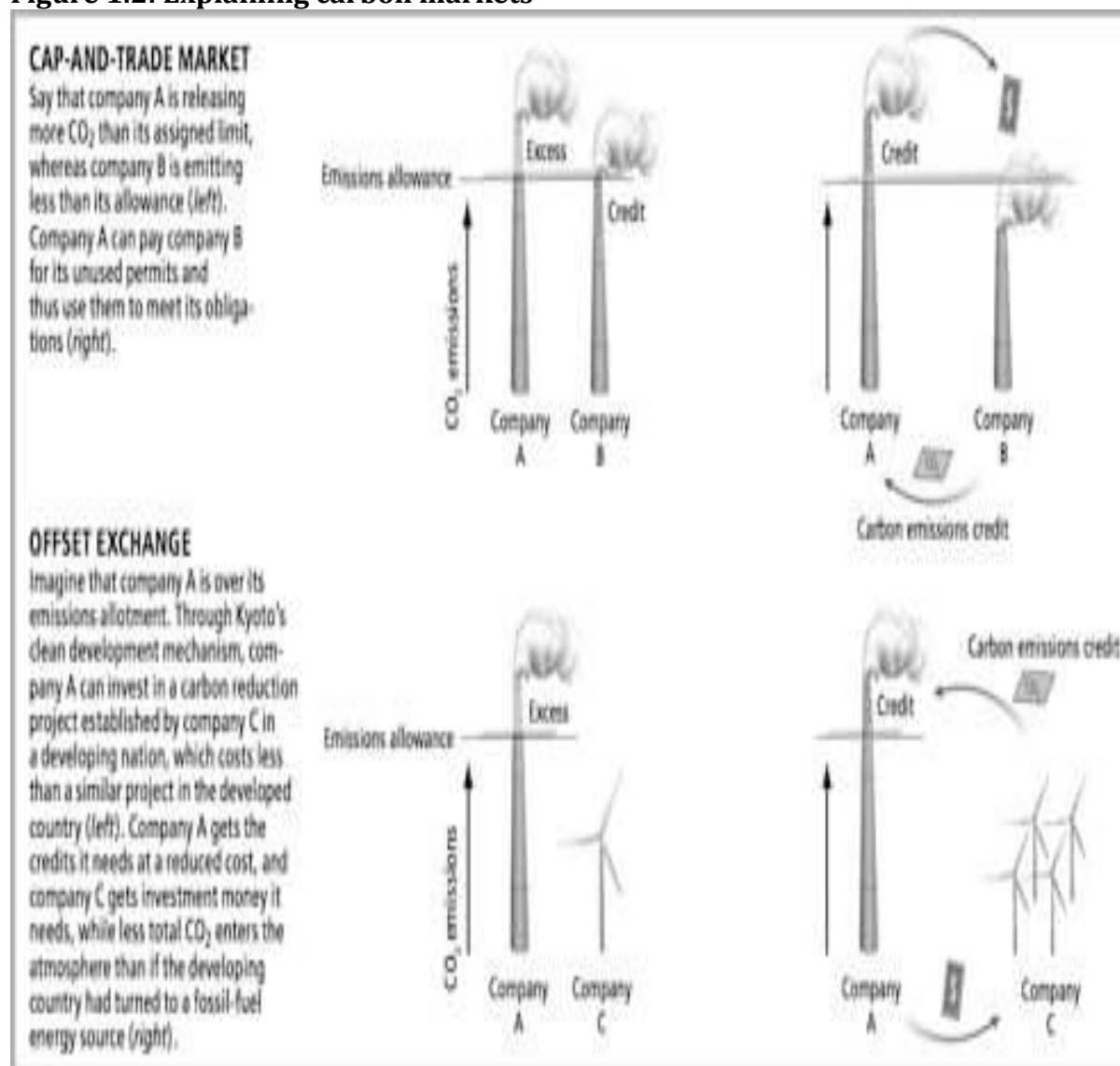
Instead, those who followed the Durban United Nations Framework Convention on Climate Change Conference of the Parties 17 (COP17) in December 2011 heard that the solution to climate crisis must centre on markets, in order to ‘price pollution’ and simultaneously cut the costs associated with mitigating greenhouse gases. Moreover, say proponents, these markets are vital for funding not only innovative carbon-cutting projects in Africa, but also for supplying a future guaranteed revenue stream to the Green Climate Fund (GCF), whose design team co-chair, Trevor Manuel (South Africa’s Planning Minister), argued as early as November 2010 that up to half of the GCF revenues would logically flow from carbon markets.

If we take this logic seriously, of most interest for Africans is one small but important component of the emissions market, the Clean Development Mechanism (CDM). The CDM’s size as a percentage of total carbon trading volume has been around just 5 percent, and the vast bulk of financing has gone to just four countries, as noted below. The strategy was established within the Kyoto Protocol in 1997. It aims to facilitate innovative carbon-mitigation and alternative development projects by drawing in funds from northern greenhouse gas emitters in exchange for permitting their continuing pollution. CDMs generate Certified Emissions Reductions (CERs) that act as another asset class to be bought, sold and hedged in the market.

The European Emissions Trading Scheme (ETS) is the main site of trading, following a failed attempt at a carbon tax in Europe due to intensive lobbying from resistant companies. Originally Europe ‘didn’t want the emissions trading,’ according to EU environment advisor Robert Donkers. ‘We were quite cynical about it, but we have implemented it.’⁵

5. *Washington Post*, ‘Kyoto credits system aids the rich, some say,’ 11 March 2005, <http://www.washingtonpost.com/ac2/wp-dyn/A28191-2005Mar11?language=printer>

Figure 1.2: Explaining carbon markets



Source: <http://www.slideshare.net/yycorner/20071112scientificamerican2007-12-11217319>

CDMs were created to allow wealthier countries classified as 'industrialised' – or Annex 1 – to engage in emissions reductions initiatives in poor and middle-income countries, as a way of eliding direct emissions reductions. Put simply: the owner of a major polluting vehicle in Europe can pay an African country to not pollute in some way, so that the owner of the vehicle is allowed to continue emitting. In the process, developing countries are, in theory, benefiting from sustainable energy projects.

The use of such 'market solutions' will, supporters argue, lower the business costs of transitioning to a post-carbon world. In a cap and trade system, after a cap is placed on total emissions, the high-polluting corporations and governments can buy ever more costly carbon permits from those polluters who don't need so many, or from those willing to part with the permits for a higher price than the profits they make in high-pollution production, energy-generation, agriculture, consumption, disposal or transport.

Durban COP17 was utterly useless for committing to the vital greenhouse gas emissions cuts of 50 percent by 2020, for ensuring the North's climate debt to the South

covers the sorts of damages Annan specified under a 'polluter pays' logic, and for establishing a transition path to a post-carbon society and economy. Even within the very limited, flawed strategy of carbon markets, there were mixed outcomes from the Durban COP17. In spite of Trevor Manuel's efforts to bring emissions trading into the GCF, where it does not belong, and in spite of the United Nations CDM Executive Board's decision to allow 'Carbon Capture and Storage' experiments to qualify for funding, the most profound flaw in the existing market was not addressed. Without an ever-lowering cap on emissions, the incentive to increase prices and raise trading volumes disappears.

Worse, in a context of economic stagnation in Annex 1 countries, financial volatility and shrinking demand for emissions reduction credits, the world faces increasing sources of carbon credit supply in an already glutted market. And fraud continues, including in Durban's own celebrated pilot CDM project, the Bisasar Road landfill, which converts dangerous methane emissions into electricity.

As carbon market specialist Payal Parekh of climate-consulting.org concluded:

Since there is now a second commitment period under the Kyoto Protocol, the CDM is still alive. The problem is that there are still no targets in the second commitment period; Japan, Russia, Canada and USA will not be participating, while Australia and New Zealand are mulling over participation. Given the current low price of the carbon credits coupled with economic downturn in Europe, there is unlikely to be a demand or need for carbon credits. ... The EU would like to have a new market-based mechanism designed under the auspices of the COP to ensure a harmonised global market. Since the EU has also banned the use of CDM credits from projects registered after 2012 in non-LDC countries (projects in non-LDCs that have their crediting period renewed post-2012 remain eligible), it would prefer a new market mechanism under the UNFCCC rather than having to make bilateral agreements with a number of countries... Rather than strengthen commitments to reduce greenhouse gas emissions, the carbon markets are being used to further weaken action on climate change. Given that pledges are so weak, it is quite incomprehensible why developed countries are even putting so much energy into expanding markets, instead of increasing ambition by committing to deeper emission reduction targets and closing accounting loopholes.⁶

In sum, Durban left the world's stuttering carbon markets without a renewed framework for a global emissions trading scheme. Durban turned the Kyoto Protocol – which is now applicable to only 14 percent of world greenhouse gas emissions – into a 'Zombie' (walking-dead) because its heart, soul and brain (binding emissions cuts) all died, as former Bolivian ambassador Pablo Solon put it.⁷ All that appears to be moving is the stumbling and indeed crashing commitment to CDMs.

These markets can be expected to die completely if Qatar's COP18 does not generate more commitments to legally-binding emissions cuts. And judging by Washington's threat, it won't be until 2020 – the COP26! – when the United States will review its own targets: the Copenhagen Accord's meaningless 3 percent cuts offered from 1990-2020. By then it will be too late, because the Kyoto Protocol's mistaken reliance on financial markets means that the period 1997-2011 will be seen as the lost years of inaction and

6. Payal Parekh, 'What Durban means for carbon markets', 13 January 2012, <http://www.climate-consulting.org/2012/01/13/what-durban-means-for-carbon-markets/>

7. Pablo Solon, Wolpe Lecture at the University of KwaZulu-Natal, Durban, 2 December 2011, <http://ccs.ukzn.ac.za>.

misguided financial quackery – when we urgently need the period going forward from 2012 to be defined as an era in which humanity took charge of its future and ensured planetary survival.

To do so, requires understanding, first, why carbon markets are crashing, then why CDMs ‘can’t deliver the money’ to Africa using a variety of case studies to make the case, and finally why an alternative ‘climate justice’ strategy should be adopted instead. That is the objective of the pages that follow.

Faith in markets dashed by Durban

For those hoping Durban would provide a better global-scale negotiating terrain, the opportunity has been lost. The balance of forces will not improve in Qatar in December 2012, given the prevalence of irresponsible major powers – best represented by Canada’s withdrawal from the Kyoto Protocol just after the COP17 – and the probability that in Washington, Republican Party rightwing climate deniers will prevent further concessions. There are no prospects that the European Union’s Emissions Trading Scheme will turn around in the near future. Only the \$100 million World Bank-European Union ‘Partnership for Market Readiness’ continues the myth that markets are an appropriate strategy, through grants to gullible officials in Chile, China, Colombia, Costa Rica, Indonesia, Mexico, Thailand, Turkey and Ukraine. As even the pro-trading Point Carbon news services remarked just after the Durban COP17 ended,

such initiatives are essential to ensure new markets get off the drawing board because a nervous private sector has little appetite to invest in new programmes without further political guarantees that someone will buy the resulting credits... while a lot of the focus of the last fortnight of UN meetings was on supply of carbon credits, not one country deepened its carbon target, leaving international carbon offset prices languishing at near record lows – something unlikely to entice investors.⁸

Reuters news service concurred:

Carbon markets are still on life support after [the COP17] put off some big decisions until next year and failed to deliver any hope for a needed boost in carbon permit demand... Many traders and analysts said the agreement will do little for carbon prices which are at record lows, as the two main EU and UN-backed markets are stricken by flagging investments, an oversupply of emissions permits and worries about an economic slowdown. ‘It’s a sedative situation, in which a sick market needs a cure and instead of deciding which cure to use, the doctors keep using pain relief to gain more time to make the final prognosis,’ said CO2 carbon trader Jacopo Visetti.⁹

The EU system was meant to generate a cap on emissions and a steady 1.74 percent annual reduction, but the speculative character of carbon markets gave perverse incentives to stockpile credits, since large corporations as well as governments like Russia (with ‘hot air’ excess emissions capacity subsequent to their 1990s manufacturing collapse) gambled that the price would increase from low levels to

8. Susanna Twidale, ‘Durban deal delays debate on new markets’, *Point Carbon*, 13 December 2011.

9. Reuters, ‘Carbon markets still on life support after climate deal’, 13 December 2011.

doubled or trebled prices (as promoters continually predicted). Instead, now, with the market collapsing, the next perverse incentive is to flood the market so as to at least get some return rather than none at all when eventually the markets are decommissioned, as happened to the Chicago climate exchange. Those who held shares in the Chicago exchange subsequently sued the high-profile founder, Richard Sandor, for misrepresenting the value of their assets – a strategy that should be repeated across the world given the prolific false claims associated with carbon markets.

A month after Durban's denouement, it was evident to the French bank Société Générale that 'European carbon permits may fall close to zero should regulators fail to set tight enough limits in the market after 2020' – and without much prospect of that, the bank lowered its 2012 forecasts by 28 percent.¹⁰ The 54 percent crash for December 2012 carbon futures sent the price to a record low, just over €6.3/tonne.

Worse, an additional oversupply of 879 million tonnes was anticipated for the period 2008-2020, partly as a result of a huge inflow of UN offsets: an estimated 1.75 billion tonnes. This glutting problem is not only due to the demand deficit thanks to the COP17 negotiators' failure to mandate emissions cuts, but is also in part due to the lax system the UN appears to have adopted. All manner of inappropriate projects appear to be gaining approval, especially in Africa. According to Professor David Victor, a leading carbon market analyst at Stanford University, *as many as two-thirds of registered carbon emissions reductions do not constitute real cuts*.¹¹

For example, more than 70 per cent of accredited CDM projects CERs were to cut nitrous oxide and trifluoromethane (HFC-23), a greenhouse gas used as a refrigerant, primarily derived from Indian and Chinese projects.¹² It was estimated by the CDM Secretariat that a tonne of HFC-23 in the atmosphere has the same effect as 11,700 tons of CO₂.¹³ Yet according to Benjamin Sovacool and Marilyn Brown, a great deal of the HFC-23 cuts were gamed by Asian producers who produced the gas *in order to get CERs by claiming to make cuts*. Before it ended in 2011, the value of this scam exceeded €4.7 billion. Sovacool and Brown's study also evaluated 93 randomly selected CDM projects and found that 'in a majority of cases, the consultants hired to validate CERs did not possess the requisite knowledge needed to approve projects, were overworked, did not follow instructions, and spent only a few hours evaluating each case.'¹⁴ This problem appears widespread in Africa.

The additional problem, in the wake of Durban, is that many credits issued by middle-income countries are destined to become 'junk assets' with national governments writing them off by 2013. After assessing UN Data, Bloomberg news noted both the glut in the market as well as the consequences for 'phased' out stocks: 'A UN program that encourages reductions in greenhouse gases awarded almost twice as many credits this year as in 2010 for projects that destroy industrial gases known as HFC-23 and nitrous oxide...With Europe set to stop recognizing some credits in little

10. Catherine Airlie and Matthew Carr, 'EU, UN carbon prices could fall 'close to zero', SocGen says', Bloomberg, 17 January 2012.

11. John Vidal, 'Billions wasted on UN climate programme,' *The Guardian*, 26 May 2008, <http://www.guardian.co.uk/environment/2008/may/26/climatechange.greenpolitics>

12. *China Daily*, 'China to suffer from fluctuations in EU's emission trading policy', 10 December 2010, http://europe.chinadaily.com.cn/europe/2010-12/10/content_11682657.htm

13. ENS Wire, 'China Threatens Deliberate Release of Potent Greenhouse Gas', 9 December 2010, <http://www.ens-newswire.com/ens/dec2010/2010-12-09-01.html>

14. Benjamin K. Sovacool and Marilyn A. Brown. 'Scaling the policy response to climate change', *Policy and Society*, 27, 4, March 2009, pp. 317-328.

more than a year, investors are ‘racing to beat’ the ban.’¹⁵ This junk-sale mentality just adds to the underlying glut. Bloomberg cited investment analyst Geoff Sinclair, head of carbon trading at Standard Bank Plc, who described it as a future ‘junk market’. But until the ban, both credits had racked up over 500 million CERs worth more than €2.5 billion.¹⁶

Unlike soft and hard tangible commodities such as corn or gold, the carbon credits exists purely on the basis of ‘authorisation’ on the part of national governments. If ‘deauthorised’, the entire credit market – and the justification of hundreds of billions of dollars worth of carbon trades – becomes pure fiction. Chances are that methane – yet another consistently gamed gas – will also soon become a junk asset.

To be sure, the fact that the Kyoto Protocol was nominally extended a few years means that CDMs will continue to be traded, even though from 2007 to 2010 the volume of activity fell by 80 percent. Jonathan Grant, director of carbon markets and climate policy at PricewaterhouseCoopers stated: ‘Thanks to Durban, the CDM will live to see another day, but demand for credits for these projects is lackluster. Carbon markets are expected to stay in the doldrums, because of oversupply in the (European carbon) market as a result of the recession.’¹⁷ According to Barclays Capital’s lead carbon researcher, Trevor Sikorski, there are vast surpluses of credits – at least a billion carbon credits’¹⁸ That problem will be exacerbated by pressure on the voluntary markets from new Reducing Emissions through Deforestation and Forest Degradation (REDD) offsets as well as by the UN Executive Board’s decision to include Carbon Capture and Storage experimentation in CDMs.

Together, these factors have wrecked the European market for CDMs. In the words of emissions trading lawyer Rutger de Witt Wijnen in April 2012, ‘We all know there are too many [carbon] allowances around, too many credits, too few emissions, too few market players who are willing to make the market.’ And worse, he continued, ‘People and companies are leaving the markets; companies are closing their carbon trading desks, the same for law firms and advisors... You’re losing the infrastructure: people who have the know-how of how environmental markets work... something we’ve built up together in the past ten years.’¹⁹

The critique from the Durban Group for Climate Justice

These concerns have been expressed for many years by civil society opponents of carbon trading. Frustration with CDMs in Africa reached a critical mass as early as 2004 when the Durban Group for Climate Justice gathered for an historic meeting. A global civil society network, the Durban Group²⁰ was formed to oppose carbon trading’s ‘privatization of the air’. From the vantage point of an austere Catholic mission on Durban’s highest central hill, the Glenmore Pastoral Centre, a score of the world’s critical thinkers and activists for environmental justice convened by the Swedish Dag Hammarskjöld Foundation, deliberated over the neoliberal climate fix for several days.

15. Bloomberg, ‘Carbon credits turning ‘Junk’ as Ban shuts door,’ 7 December 2011, <http://climate-connections.org/2011/12/07/carbon-credits-turning-junk-as-ban-shuts-door-energy-markets/>

16. *Ibid.*

17. Reuters, ‘Carbon markets still on life support after climate deal’, 12 December 2011, <http://www.reuters.com/article/2011/12/12/us-climate-carbon-idUSTRE7BB0QT20111212>

18. *Ibid.*

19. FS Insight, ‘Global uncertainties denting the carbon market’, 13 April 2012, <http://fsinsight.org/insights/detail/global-uncertainties-denting-the-carbon-market>.

20. <http://www.durbanclimatejustice.org/>

We worried that the main test case, the EU's Emissions Trading Scheme, not only failed to reduce net greenhouse gases there, but suffered extreme volatility, an inadequate price, the potential for fraud and corruption, and the likelihood of the market crowding out other, more appropriate strategies for addressing the climate crisis. The critique can be summed up in eight points:

- the idea of inventing a property right to pollute is effectively the 'privatization of the air', a moral problem given vast, growing differentials in wealth inequalities;
- greenhouse gases are complex and their rising production creates a non-linear impact which cannot be reduced to a commodity exchange relationship (a tonne of CO₂ produced in one place is accommodated by reducing a tonne in another, as is the premise of the emissions trade);
- the corporations most guilty of pollution and the World Bank – which is most responsible for fossil fuel financing – are the driving forces behind the market, and can be expected to engage in systemic corruption to attract money into the market even if this prevents genuine emissions reductions;
- many of the offsetting projects – such as mono-cultural timber plantations, forest 'protection' and landfill methane-electricity projects – have devastating impacts on local communities and ecologies, and have been hotly contested in part because the carbon sequestered is far more temporary (since trees die) than the carbon emitted;
- the price of carbon determined in these markets is haywire, having crashed by half in a short period in April 2006 and by two-thirds in 2008, by another 50 percent during 2011, thus making mockery of the idea that there will be an effective market mechanism to make renewable energy a cost-effective investment;
- there is serious potential for carbon markets to become an out-of-control, multi-trillion dollar speculative bubble, similar to exotic financial instruments associated with Enron's 2002 collapse (indeed, many former Enron employees populate the carbon markets);
- as a 'false solution' to climate change, carbon trading encourages merely small, incremental shifts, and thus distracts us from a wide range of radical changes we need to make in materials extraction, production, distribution, consumption and disposal; and
- the idea of market solutions to market failure ('externalities') is an ideology that rarely makes sense, and especially not following the world's worst-ever financial market failure, and especially not when the very idea of derivatives – a financial asset whose underlying value is several degrees removed and also subject to extreme variability – was thrown into question.²¹

21. The analyses of emission market contradictions authored by Larry Lohmann are probably the best, Lohmann, L. 2006. *Carbon Trading: A critical conversation on climate change, privatisation and power*,

With Europe as the base, world emissions trade grew to around \$140 billion in 2008 and although markets then went flat due to economic meltdown, increasing corruption investigations and Copenhagen-induced despondency, the trade in air pollution was at one point projected to expand to \$3 trillion/year by 2020 if the US were to sign on. The \$3 trillion estimate didn't even include the danger of a bubbling derivatives market, which might have boosted the figure by a factor of five or more.²²

In November 2010, a new estimate of up to \$50 billion/year by 2020 in North-South market-related transfers and offsets emerged from a United Nations High-Level Advisory Group on Financing for climate mitigation and adaption, including South African planning minister Trevor Manuel, later a co-chair of the Green Climate Fund.²³ World climate managers evidently hope to skimp on grants and instead beg business to push vast monies into CDMs instead.

As discussed later, Durban is an important guinea pig, not only for hosting the COP17, but for initiating SA's lead CDM pilot, the Bisasar Road landfill. There, methane from rotting rubbish is converted to electricity and fed back into the municipal grid. As argued by Khadija Sharife, the CDM was set up illegally because it fails the crucial test of its validity for raising international funding, 'additionality'. It was always assumed that the R100 million estimated cost of the project would not be justified by the small amount of electricity fed into Durban's municipal supply, and hence that the R100 million would have to come from external sources. But as noted by journalists who visited Bisasar during the COP17, at least one relevant Durban official now concede that the Bisasar Road methane-electricity project would have gone ahead without the external credits. This is scandalous.

After helping set it up, the World Bank refused in August 2005 to take part in marketing or purchasing Bisasar Road emissions credits. The reason was growing awareness of Durban's notorious environmental racism, via activism and an environmental impact assessment challenge. In March 2005, just as the Kyoto Protocol came into force, a *Washington Post* front-page story revealed how community organizer Sajida Khan suffered cancer from Bisasar Road's toxic legacy.²⁴ Back in 1980, the landfill – Africa's largest – was plopped in the middle of Durban's Clare Estate suburb, across

Development Dialogue, 48, September,
http://www.dhf.uu.se/pdfiler/DD2006_48_carbon_trading/carbon_trading_web_HQ.pdf; Lohmann, L. (2009a), 'Climate as investment', <http://www.thecornerhouse.org.uk/pdf/document/Climatepercent20aspercent20Investment.pdf>; Lohmann, L. (2009b), 'Neoliberalism and the calculable world: The rise of carbon trading', in K. Birch, Mykhnenko, V. and Trebeck, K. (eds.), *The Rise and Fall of Neoliberalism: The Collapse of an Economic Order?*, London: Zed Books; Lohmann, L. (2009c), 'Regulatory challenges for financial and carbon markets', in *Carbon & Climate Law Review*, 3(2); Lohmann, L. (2009d), 'Toward a different debate in environmental accounting: The cases of carbon and cost-benefit', in *Accounting, Organisations and Society*, 34(3-4): 499-534; and Lohmann, L. (2010), 'Uncertainty markets and carbon markets: Variations on Polanyian themes', <http://www.thecornerhouse.org.uk/pdf/document/NPE2high.pdf>

22. See Nina Chestney and Michael Szabo, 'Emissions traders expect US carbon market soon,' Reuters, May 28, 2009, <http://www.reuters.com/article/GCA-GreenBusiness/idUSTRE54R4YP20090528>, last accessed October 11, 2009.

23. United Nations, Report of the Secretary-General's High-level Advisory Group on Climate Change Financing, New York, 5 November 2010, http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/AGF_reports/AGF_Final_Report.pdf

24. Shankar Vedantam, 'Kyoto credits system aids the rich, some say,' *The Washington Post*, 12 March 2005.

the road from Khan's house, thanks to apartheid insensitivity. Instead of honoring African National Congress politicians' promises to close the dump in 1994, the municipality kept it open when \$15 million in emissions financing was dangled. After Khan died in mid-2007 after her second bout with cancer – which she believed was landfill-induced – Clare Estate civic pressure to close Bisasar subsided and Durban began raising €14/tonne for the project from private investors.²⁵ More discussion on this case can be found in Chapter Three.

Similar controversy surrounds the Reduced Emissions from Deforestation and forest Degradation programme. In theory, REDD sells investors forest protection. But at Cancún, notwithstanding disagreements in civil society, it was seen as a boon to voracious commercial forestry and a danger to indigenous peoples, given that proper safeguards were not adopted. And everyone from EU climate commissioner Connie Hedegaard (a Danish conservative who hosted the 2009 Copenhagen summit) to Greenpeace warned that REDD could wreck fragile carbon markets, not only due to socio-ecological forest controversies but because a fresh glut of credits would again crash the price.²⁶ As Hedegaard put it, REDD 'could undermine the entire carbon market.'²⁷ Likewise, an emerging idea (mainly promoted by the World Bank) that soil-related carbon sequestration should be rewarded with carbon credits (see Chapter Eight) would also flood world markets at a time of oversupply and receding demand.

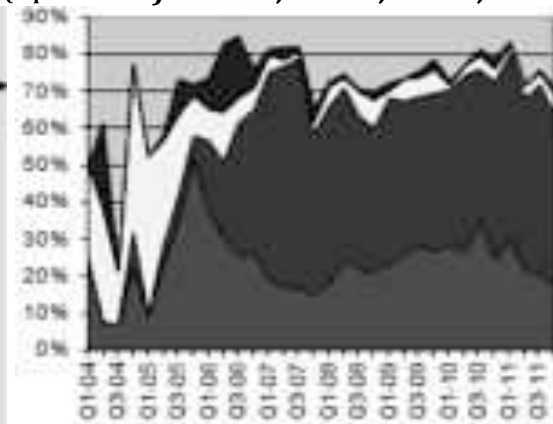
Figures 1.3 and 1.4 below show the concentration of CDM projects in a few countries, a problem further analysed in the next chapter.

Figure 1.3 Concentration of projects
(each dot is a CDM project)



Source: <http://cdmpipeline.org/cdm-projects-region.htm>

Figure 1.4 Four countries get most funds:
(top-to-bottom) Mexico, Brazil, China, India



Never-ending market failures

In short, the return of market mania to climate negotiations is a dangerous diversion from a daunting reality: the US, China, South Africa and most other big emitters want to *avoid* making the binding commitments required to limit the planet's temperature rise, ideally below the 1.5°C that scientists insist upon. Naturally the (binding) Kyoto

25. Patrick Bond, 'True cost of Durban's waste strategy', *The Mercury*, 2 February 2010.

26. Chris Lang, 'New Greenpeace report: Trading in forest carbon would crash carbon markets', *REDD-Monitor*, April 1 2009, <http://www.redd-monitor.org/2009/04/01/new-greenpeace-report-trading-in-forest-carbon-would-crash-carbon-markets/>

27. Jessica Cheam, 'Ministers expected to speed UN climate talks, forest deal could be delayed', *Ecobusiness.com*, December 7, 2010, <http://www.eco-business.com/news/ministers-expected-speed-un-climate-talks-forest-d/>

Protocol is a threat to the main emitting countries, which have been working hard since early 2010 to replace it with the voluntary, loophole-ridden Copenhagen Accord. This is the easiest way to understand the procrastination and lack of ambition in the December 2011 Durban deal.

And naturally, the North's failure to account for its vast 'climate debt' continues. The total on offer from the North to the whole world was just \$30 billion for 2010-12, according to promises made in Copenhagen. By the time of the Durban COP17, there was no realistic chance that \$30 billion in North-South flows would actually be delivered.

Climate negotiators should have known that carbon trading was a charade that would do nothing to reduce global warming. What was an incentive scheme meant to provide stability and security to clean energy investors had become the opposite. A low and indeed collapsing carbon price – futures at around €4/tonne in mid-December 2011, down from a peak seven times higher six years earlier – was useless for stimulating the kind of investment in alternatives needed.

For example, an estimated €50/tonne is required to activate private sector investments in 'carbon capture and storage', the as-yet-non-existent (and dangerous) technology by which coal-fired power stations could, theoretically, bury carbon dioxide emitted during power generation. Substantial solar, tidal and wind investments would cost more yet. The extreme volatility associated with emissions trading so far makes it abundantly clear that market forces cannot be expected to discipline polluters, given how long it will take to drive the European price up that high.

The only real winners in emissions markets have been speculators, financiers, consultants (including some in the NGO scene) and energy sector hucksters who made billions of dollars in profits on the sale of notional emissions reduction credits. As the air itself became privatized and commodified, poor communities across the world suffered and resources and energy were diverted away from real solutions. But one of the most powerful set of critiques came from the inside: internal contradictions which created a tendency to repeatedly crash the market and prevent it from carrying out actual emissions reductions.

These problems were sensed, to some extent, by the very founders of the notion of environmental markets. Canadian economist John Dales (who died in 2007) first justified trading in emissions rights by applying market logic to water pollution in a seminal 1968 essay, 'Pollution, Property, and Prices.' Waste quotas were to be imposed along with a market in 'transferable property rights... for the disposal of wastes', interchangeable amongst firms.²⁸ Thirty-three years later, he expressed doubts about carbon markets in a *Wall Street Journal* interview: 'It isn't a cure-all for everything. There are lots of situations that don't apply. It is not clear to me how you would enforce a permit system internationally. There are no institutions right now that have that power.'²⁹

Also in the late 1960s, in the US, graduate economics student Thomas Crocker had famously advocated emissions trading for discrete problems, but in 2009 told *The Wall Street Journal*, 'I'm skeptical that cap-and-trade is the most effective way to go about

28. Dales, J. 1968. *Pollution, Property and Prices: An essay in policy-making and economics*, Toronto: University of Toronto Press, p.85

29. Hilsenrath, J., 2009, 'Cap-and-trade's unlikely critics: Its creators – economists behind original concept question the system's large-scale usefulness, and recommend emissions taxes instead,' *Wall Street Journal*, August 13.

regulating carbon.’³⁰ And a leading financier with intimate knowledge of financial fraud and market failure, George Soros, argued in 2007 that carbon trading would be ineffective: ‘The cap and trade system of emissions trading is very difficult to control and its effects are diluted... It is precisely because I am a market practitioner that I know the flaws in the system.’³¹

On the other hand, market advocates claimed a degree of success, especially in a US pilot aimed at tackling acid rain. A 1990 amendment to the *Clean Air Act* legalized trade in sulphur dioxide. A cap was imposed and polluters gradually reduced to the levels required to mitigate emissions so as to avoid acid rain. They traded their permits. However, on closer examination, this approach was less successful than the parallel European ‘command-and-control’ environmental policy on SO₂ based on agreed periodic reductions on ‘critical loads’ allowed in different territories.

Critics of emissions trading insist that, had governments instead applied command and control strategies – such as the 1999 EPA’s ‘New Source Review’ imposition of scrubbers on older plants (with a 95 percent SO₂ removal record) – the results in the United States would have been far more impressive. Technical changes (use of more natural gas and less lignite for electricity production) also helped to reduce SO₂ emissions. Command-and-control strategies in Europe had faster and more decisive results.

Moreover, in the US by addressing only a part of the SO₂ from high-emissions sources (about 43 percent emissions reduction from 1990-2007), there were ongoing adverse local impacts of co-pollutants (e.g. mercury, lead, dioxin, nitrous oxide), especially in geographical areas with high concentrations of people of colour.³² For this reason, the charge of ‘environmental racism’ has been levelled (in the courts) at carbon trading and offsets that permit plants in low-income areas to remain open, especially in Southern California, a factor that delayed implementation of California’s carbon trading scheme in 2010-11.

In spite of the calls for carbon taxes or for the more effective command-and-control alternative, in 1997, the Kyoto Protocol was negotiated to include carbon trading as a core strategy. This was because then US Vice-President Al Gore threatened that his Congress would only sign up if corporations gained the ability to continue emitting above set limits by paying to buy someone else’s right to pollute. After co-opting critics in Kyoto, the Clinton-Gore Administration and Congress did not keep their word and, later George W. Bush pulled out of Kyoto. But the idea of carbon trading stuck and the European Emissions Trading Scheme (ETS) was launched in January 2005.

30. *Ibid.*

31. Hugh Wheelan, ‘Soros slams emissions trading systems: Market solution is ‘ineffective’ in fighting climate change’, *Responsible Investor*, October 18, 2007, http://www.responsible-investor.com/home/article/soros_slams_emissions_cap_and_trading_systems/ In early 2010, Soros U-turned and supported carbon trading in the US Senate out of desperation to see some kind of climate legislation pass – but was not reported to have retracted his earlier skepticism about regulation. Instead, he was cited as merely desiring ‘a price on carbon’: *Business Green*, ‘Soros calls for US cap-and-trade scheme: Billionaire promises to get ‘more engaged’ with efforts to tackle climate change’, New York, 15 January 2010, <http://www.businessgreen.com/bg/news/1801852/soros-calls-us-cap-trade-scheme>. In late 2010, he enthusiastically supported forest-related carbon trading in Indonesia.

32. The coal industry initially succeeded in grandfathering in plants built before 1977 so as to avoid CAA regulation, and these old plants were later brought into the cap and trade arrangement. Hence they were allowed to stay open longer by virtue of buying pollution allowances, from more efficient plants. Activists at the US Public Interest Research Group and Clear the Air showed how ongoing environmental health hazards from these beneficiaries of SO₂ cap and trade have a class/race bias (Howard Ehrman, [no-offsets] listserve correspondence, 22 January 2010).

Emissions trading's flawed friends

One reason for carbon trading's acceptance was the extraordinary support found in the world's most powerful circuits of capital: finance. As Goldman Sachs critic Matt Taibbi warned in a *Rolling Stone* article six months before Copenhagen,

Instead of credit derivatives or oil futures or mortgage-backed CDOs, the new game in town, the next bubble, is in carbon credits – a booming trillion dollar market that barely even exists yet...The new carbon-credit market is a virtual repeat of the commodities-market casino that's been kind to Goldman, except it has one delicious new wrinkle: If the plan goes forward as expected, the rise in prices will be government-mandated. Goldman won't even have to rig the game. It will be rigged in advance...

Goldman wants this bill...Goldman started pushing hard for cap-and-trade long ago, but things really ramped up last year when the firm spent \$3.5 million to lobby climate issues. (One of their lobbyists at the time was none other than [Mark] Patterson, now Treasury chief of staff.)... The bank owns a 10 percent stake in the Chicago Climate Exchange, where the carbon credits will be traded. Moreover, Goldman owns a minority stake in Blue Source LLC, a Utah-based firm that sells carbon credits of the type that will be in great demand if the bill passes...

Goldman is ahead of the headlines again, just waiting for someone to make it rain in the right spot. Will this market be bigger than the energy-futures market? 'Oh, it'll dwarf it,' says a former staffer on the House Energy Committee. Well, you might say, who cares? If cap-and-trade succeeds, won't we all be saved from the catastrophe of global warming? Maybe – but cap-and-trade, as envisioned by Goldman, is really just a carbon tax structured so that private interests collect the revenues. Instead of simply imposing a fixed government levy on carbon pollution and forcing unclean energy producers to pay for the mess they make, cap-and-trade will allow a small tribe of greedy-as-hell Wall Street swine to turn yet another commodities market into a private tax-collection scheme. This is worse than the bailout: It allows the bank to seize taxpayer money before it's even collected..³³

In an August 2009 report about Enron alumni in the carbon markets, the *Financial Times* offers not a hint of irony:

'People who were attracted to Enron and its desire to open new and cutting-edge businesses are also likely to be attracted to the carbon market,' says Lynda Clemmons, who started the emissions trading desk at Enron in 1994. It also innovated in the electricity, gas and coal markets, to which carbon is highly correlated, which makes former Enron traders particularly suited to trading carbon. 'They bring a breadth of cross-product coverage that makes them natural candidates to look at emissions,' according to one industry insider.³⁴

33. Matt Taibbi, 'The Great American bubble machine', *Rolling Stone*, July 9-23, 2009.

34. Markus Sommerauer, 'A strange alliance making profits for a cleaner cause', *Financial Times*, August 5, 2009; and Solomon Lawrence, 'Enron's Other Secret', *Financial Post*, May 30, 2009, <http://network.nationalpost.com/np/blogs/fpcomment/archive/2009/05/30/lawrence-solomon-enron-s-other-secret.aspx>.

Europe's bad example

Mirroring Enron's 2001 crash, by the end of 2009, with Copenhagen hosting the COP15, it was clear that the ETS had failed in its main objectives. Severe price swings showed how erratic and unreliable these markets can be. Each of at least five major spikes up and down from 2006-09 can be explained by specific factors, such as the extreme 2006 crash when it was revealed that the ETS had over-allocated free permits, or the 2008 onset of both generalized financial chaos and economic recession (hence lower-than-normal emissions to offset), or the 2009 post-Copenhagen decline.

But even discounting the ETS's extreme volatility, the more general data began to show a trend towards increased traded emissions. In mid-2009, *Grist* columnist Gar Lipow explained,

During the three year period where we have verified emissions, emissions among traded entities rose by 1.8 percent. During that same period emissions for the EU as a whole fell... The overwhelming evidence is that the European Trading Scheme is retarding rather than driving emission drops.³⁵

Prospects for the ETS were bad because of economic decline and deindustrialization in Europe. The continent's 2008-09 year-on-year GDP fall was 4.1 percent and industrial output was down 12 percent. The carbon-intensive construction sector was also adversely affected by the real estate bubble's burst. Given these economic trends, the medium term outlook for the ETS was grim, with even Lord Adair Turner – chair of the UK Climate Change Committee – admitting, 'the existing particular form of liberalised market structure has reached the end of its road... Prices [will] struggle to reach €20-30/tonne of CO₂e by 2020.' Just a year earlier, Turner's committee had optimistically assumed a price of €50 by 2020, high enough to support many alternative energy projects.³⁶

But faith in the ETS was shaken again and again by more than these economic factors. Unending tales of scandals and market mishaps emerged from dismayed financiers and business journalists. The intrinsic problem in setting an artificially generated market price for carbon was revealed with the April 2006 ETS crash, thanks to the over-allocation of pollution rights. The EU had miscalculated how to set up the market and granted electricity generation firms far too many credits. Carbon lost over half its value in a single day, destroying many carbon offset projects earlier considered viable.

By 2007, the European Commissioner for Energy had admitted the ETS was 'a failure.' Peter Atherton of Citigroup conceded: 'ETS has done nothing to curb emissions...[and] is a highly regressive tax, falling mostly on poor people.' Had it achieved its aims? 'Prices up, emissions up, profits up... so, not really.' Who wins, who loses? 'All generation-based utilities – winners. Coal and nuclear-based generators – biggest winners. Hedge funds and energy traders – even bigger winners. Losers...ahem...consumers!'³⁷ The *Wall Street Journal* confirmed in March 2007 that

35. Gar Lipow, 'Cap-and-trade: filling up the political space that should be used for real solutions,' *Grist*, May 31, 2009 <http://www.grist.org/article/cap-and-trade-filling-up-the-political-space-that-should-be-used-for-real-s> <http://tinyurl.com/suckLemon>, last accessed October 11, 2009.

36. *Ibid.*

37. Atherton, P. 2007. Powerpoint, Citigroup, January. <http://www.sinkswatch.org/pubs/2007percent20Lessonspercent20frompercent20thepercent20Europeanpercent20Emissions>

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.’³⁸ In October 2008, with the market crashing, Carl Mortished 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.’³⁹

Specific carbon offsets and CDMs fared no better in these investigations. *The Economist* 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.⁴⁰ Not only were voluntary offsets increasingly dubious, but verified CDM projects in the Third World were also considered counterproductive. According to a *Newsweek* investigation in March 2007, ‘it isn’t working... [and represents] a grossly inefficient way of cutting emissions in the developing world.’

Notorious projects like the Plantar timber monoculture in Brazil secured vast funds, with dreadful consequences for local communities and ecosystems. *Newsweek* called the trade ‘a shell game’ which has already transferred ‘\$3 billion to some of the worst carbon polluters in the developing world.’⁴¹ In early 2009, the *London Times* uncovered problems in Mozambican tree planting investments supported by celebrities (including Ronnie Wood of The Rolling Stones and actor Brad Pitt): ‘it is almost impossible to guarantee that the trees will survive the length of time needed to offset any significant carbon emissions.’⁴² Remarked the TransNational Institute’s Carbon Trade Watch,

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.⁴³

The ETS was delegitimized further in September 2009 when the UN’s main verification contractor was disqualified for repeated procedural violations, and in December 2009 when Europol discovered that up to 90 percent of trades in some EU countries were

percent20Trading percent20Scheme percent20_2_.pdf, accessed 22 July 2009.

38. *Wall Street Journal*. 2007. Cap and charade: The political and business self-interest behind carbon limits. 3 March. <http://www.opinionjournal.com/weekend/hottopic/?id=110009740>

39. Mortished, C. 2008. Policy leap vital for any serious cut in carbon emissions. *The Times* (London), 5 November. <http://business.timesonline.co.uk/tol/business/columnists/article5083880.ece>

40. *The Economist*. 2008. Carbon offsets, 24 December. <http://goliveinternet.economist.com/debate/overview/136>

41. Vencat, E. 2007. Global warming: No easy fix. *Newsweek International*. 12 March. <http://www.climos.com/news/articles/thecarbon.pdf>

42. *London Times*. 2009. EU denounces socialite’s carbon offset project, 4 January. <http://www.carbonoffsetsdaily.com/top-stories/eu-denounces-socialite-percentE2-percent80-percent99s-carbon-offset-project-3524.htm>

43. Carbon Trade Watch, ‘Submission to Environmental Audit Committee Inquiry on the role of carbon markets in preventing dangerous climate change’, Amsterdam, March 2, 2009, http://www.carbontradewatch.org/index.php?option=com_content&task=view&id=257&Itemid=256

flagrant tax scams.⁴⁴ The tide turned further and faster against carbon trading after the Copenhagen fiasco. The failure of the Copenhagen Accord to confirm financing was a major blow to the market, which crashed by 10 percent from December 17-21 2009 as it appeared there would be a serious legitimacy deficit. As *The Guardian* reported in January 2010, 'Banks are pulling out of the carbon-offsetting market after Copenhagen failed to reach agreement on emissions targets.'⁴⁵

Moreover, due to over-allocation of permits and the ongoing economic slump, the ETS would face further declines in price and so, as Anthony Hobley of the law firm Norton Rose reported, 'We are seeing a freeze in banks' recruitment plans for the carbon market. It's not clear at what point this will turn into a cull or a rout.'⁴⁶

By March 2010, the *New York Times* observed of carbon trading:

The concept is in wide disrepute. Obama dropped all mention of cap and trade from his current budget. And the sponsors of a Senate climate bill likely to be introduced in April, now that Congress is moving past health care, dare not speak its name... It was done in by the weak economy, the Wall Street meltdown, determined industry opposition and its own complexity.⁴⁷

According to US Senator Maria Cantwell (a Democrat from Washington State who fruitlessly offered her own non-trading alternative bill to Congress), cap and trade was 'discredited by the Wall Street crisis, the Enron scandal and the rocky start to a carbon credits trading system in Europe that has been subject to dizzying price fluctuations and widespread fraud.'⁴⁸

Shortly afterwards, yet another example of corruption was the Hungarian government's resale of carbon credits, which when exposed, drove the price of a ton down from €12 to €1 and crashed two emissions exchanges.⁴⁹ In December 2010, even the ordinarily pro-trading World Wide Fund for Nature and Öko-Institut attacked steel producers ThyssenKrupp and Salzgitter as fraudulent carbon profiteers, demanding that 'the EU put a halt to the use of fake offsets.'⁵⁰ In late January 2011, the EU ETS was suspended for more than two weeks due to theft of emissions reductions credits from the Austrian and Czech governments. Some of the better-functioning market regulators – e.g. Finland and Sweden – required a full two months before resuming operations.⁵¹

To underline the market's fragility and vulnerability to fraud, the country that has been the biggest supplier of emissions reductions credits, Ukraine, was suspended by the United Nations from carbon trading in August 2011. The move blocked delivery of more than 78 million units from carbon-reduction projects through 2011, because

44. Europol. Press statement. December 3, 2009.

<http://www.europol.europa.eu/index.asp?pag=news&news=pr091209.htm>

45. T.Webb, 'Copenhagen dampens banks' green commitment', *Guardian*, January 24, 2010.

46. *Ibid.*

47. J. Broder, 'Cap and Trade' Loses Its Standing as Energy Policy of Choice', *New York Times*, March 25, 2010.

48. *Ibid.*

49. Pointcarbon, 'Hungary lifts lid on controversial CER deal', May 14, 2010, www.pointcarbon.com

50. World Wide Fund for Nature, 'ETS credibility at stake as industrial polluters profit yet again', December 14, 2010,

http://wwf.panda.org/fr/wwf_action_themes/politique_europeenne/?uNewsID=197955

51. EULib.com, 'Update on transitional measure: EU ETS registries of Finland, Romania, Slovenia and Sweden to resume operations on 21 March,' March 18 2011, <http://www.eulib.com/18march-2011-update-transitional-measure-registries-13743>

according to the ICIS Heron consultancy, Ukraine's government 'under-reported its greenhouse gas emissions. Experts advising the enforcement branch said Ukraine had failed to act on earlier warnings and it was in non-compliance. The Ukraine argues that many of its actions have stalled due to lack of funding since the recession.'⁵²

By that time, it was obvious that emissions markets were in crisis and many credits now represented 'zombie carbon', as Carbon Trade Watch's Oscar Reyes put it:

Proposed emissions trading schemes in the USA, Japan, and Canada have stalled indefinitely; new markets in Australia and South Korea face significant delays; and climate justice activists have successfully blocked the start of a planned scheme in California. Trading has become ever more concentrated around the EU ETS, which could well see carbon permit prices drop to zero if the 27-country bloc adopts stricter guidelines on energy efficiency. Overall carbon trading volumes were lower in 2010 than in the previous year. The CDM, the carbon offsetting scheme at the heart of the Kyoto Protocol, has declined for four years running, with fewer credits purchased from new projects than at any time since the Protocol came into force in 2005. The price of CDM credits continues to fall, and they are now 'the world's worst performing commodity.'⁵³

The 2012 crash of another 20 percent, to a record low of €6.14/tonne in early April, was sufficiently serious that panic set in. On April 18, EU environment ministers discussed a new set of subsidies and techniques such as removing 1.4 billion emissions credits from the market (a 'set aside') in order to boost the price. They did so in a closed meeting with leaders of Enel and Eon (representing EU electricity association Eurelectric); Alstom on behalf of the EU Corporate Leaders Group on Climate Change; Shell; Deutsche Bank; and BusinessEurope.⁵⁴ We take up the EU ETS crisis in the concluding chapter.

These sorts of flaws did not prevent the new 'sectoral markets' from being proposed for Durban. For governments from the EU, Japan, Australia and Canada – those advanced economies meant to reduce emissions most under Kyoto but which largely failed to do so – the ideal outcome of Durban would be retention of the Kyoto Protocol's carbon trading mechanism without its emissions-reduction targets. But without the US taking a lead on promoting carbon trading in its vast financial markets, the other major emitters would not do so.

With the resurgence of Congressional climate deniers in 2010, the US elite debate over the optimal technical fix to climate change ended, apart from California where it was delayed by community activists who argued the state's Air Resources Board had not considered other (non-trading) options to comply with state climate legislation. But before the debate had died, even pro-trading economists conceded that the US could well repeat Europe's market and state failures. Denny Ellerman and Paul L. Joskow observed how the ETS's disastrous mismatches of money, permits and polluters logically follow the EU's uneven regulations between countries, and 'the differing effects

52. ICIS Heron, 'UN suspends Ukraine from carbon trading', 12 August 2011, <http://www.icis.com/heren/articles/2011/08/26/9488161/un-suspends-ukraine-from-carbon-trading.html>

53. Oscar Reyes, 'Zombie carbon and sectoral market mechanisms', *Capitalism Nature Socialism*, 22, 4, December 2011.

54. Sonja van Renssen, 'The fate of the EU carbon market hangs in the balance', *European Energy Review*, 12 April 2012, http://www.europeanenergyreview.eu/site/pagina.php?id_mailing=267&toegang=eda80a3d5b344bc40f3bc04f65b7a357&id=3642

of allocation and auctioning decisions on a partially liberalized electricity sector are likely to be at least as contentious and complicated in the US as they have been in Europe.⁵⁵ (The Value-Added Tax fraud was made possible through the buying and selling of permits between jurisdictions and making fake claims.)

In several other areas where the EU ETS remains flawed – political lobbying, inadequate revenue generation, ‘rent-seeking activity’ and high administrative costs – the danger remained that these would be repeated in the US, according to MIT economists Sergey Paltsev, John Reilly, Henry Jacoby and Jennifer F. Holak. For example, some inefficient coal-fired facilities should urgently be closed, but won’t be thanks to EU ETS rules:

The cheapest abatement option may be to simply shut down some of the highest emitting facilities, but this rule [trading rights for grandfathered permits] in the ETS creates an incentive to keep them operating at a low level, or to install more expensive abatement technology so that they do not have turn back in valuable allowances.⁵⁶

As for dangers associated with the ETS’s Cap and Giveaway of free permits to pollute, the MIT authors warned, ‘If the allocations are distributed on some ‘grandfathering’ principle to firms at the point of regulation [which was the case in the main 2009 US congressional legislation], then these firms receive the asset value or scarcity rent.’ This would mean that the US follows the disastrous EU lead in ‘paying the polluter for past pollution.’⁵⁷ Tragically, US legislators and policy-makers knew of such problems in the EU ETS case and yet still promoted a similar scheme, rather than finding an urgent route to cutting emissions directly. The tragedy is even deeper when one moves to Africa for evidence of faith-based not evidence-based assessment of carbon commodification.

Africans ‘build faith in the carbon market’

Notwithstanding the chaos and corruption, the frauds and frequent market failures, there are prominent African supporters of the emissions trade. For some, this follows the endorsement of carbon trading by international luminaries seen to be friendly to the continent’s interests, of whom the highest profile may well be former Irish president Mary Robinson, who was also the United Nations Human Rights Commissioner and now heads up the Trinity University ‘Mary Robinson Foundation – Climate Justice’. In March 2011, Robinson argued in a London School of Economics lecture that carbon trading is ‘finally starting to reap dividends for Africa and least developed countries...’ and that ‘The experience gained through the design and implementation of successful regional cap-and-trade programs is hugely valuable if shared with developing country regional

55. Denny Ellerman and Paul Joskow, ‘The European Union’s Emissions Trading System in perspective’, 2008, Pew Center on Global Climate Change, Arlington, www.pewclimate.org/docUploads/EU-ETS-In-Perspective-Report.pdf

56. Gilbert E. Metcalf, Sergey Paltsev, John Reilly, Henry Jacoby and Jennifer F. Holak, 2008, ‘Analysis of US greenhouse gas proposals’, National Bureau of Economic Research, Cambridge, Working Paper 13980, <http://www.nber.org/papers/w13980>

57. Sergey Paltsev, John M. Reilly, Henry D. Jacoby, Angelo C. Gurgel, Gilbert E. Metcalf, Andrei P. Sokolov and Jennifer F. Holak, ‘Assessment of US cap-and-trade Proposals’, 2007, Joint Program on the Science and Policy of Global Change, http://web.mit.edu/globalchange/www/MITJPSPGC_Rpt146.pdf, last accessed October 11, 2009.

groups.’⁵⁸ She provided no justification for these claims, and several efforts made in 2011 to discern what evidence lies behind her optimism came to naught.

For other African carbon trading proponents, their support can also be attributed to substantial conflicts of interest, which arise due to actors with joint roles as climate cooling advocates and carbon traders. As Michael Dorsey wrote:

After more than a decade of failed politicking [on behalf of carbon trading], many NGO types... are only partially jumping off the sinking ship – so as to work for industries driving the problem. Unfortunately, many continue to influence NGO policy from their current positions, while failing to admit to or even understand obvious conflicts of interest.⁵⁹

For example, there were certainly self-interested reasons for Valli Moosa, South Africa’s former environment minister (1999-2004), to promote carbon trading as minister at the critical 2002 World Summit on Sustainable Development. In the latter half of the 2000s, Moosa went on to preside over the International Union for the Conservation of Nature (IUCN), headed the South African branch of the World Wildlife Fund, and chaired the board of the continent’s largest energy company and CO₂ emitter, Eskom. In that capacity in 2007-08, he was implicated, as a member of the African National Congress (ANC) financing committee, in unethically channeling tens of millions of rands in earnings to the ruling party by signing Eskom purchase orders for Medupi’s new boilers in a way that directly benefited the ANC, which in turn was financed by the controversial World Bank loan. The SA government’s Public Protector acknowledged that his role was ‘improper.’⁶⁰

Moosa’s successor as South Africa’s minister of environment and tourism, Marthinus van Schalkwyk, a youth spy for the white apartheid regime during the 1980s, took control of the National Party in the late 1990s and then dissolved it into the ANC in exchange for the ministerial position. In 2009, he was demoted to tourism minister. An enthusiastic proponent of the carbon trade, Van Schalkwyk argued in 2006 that ‘The 17 CDM projects in the pipeline in Sub-Sahara Africa account for only 1.7 per cent of the total of 990 projects worldwide. To build faith in the carbon market and to ensure that everyone shares in its benefits, we must address the obstacles that African countries face.’⁶¹

At the International Emissions Trading Association Forum in Washington a year later, he insisted, ‘An all-encompassing global carbon market regime which includes all developed countries is the first and ultimate aim.’⁶² Van Schalkwyk was nominated by South Africa to replace Yvo de Boer as UN climate negotiations director in early 2010, but his candidacy failed at the last moment, as Costa Rican carbon trader Christiana Figueres got the position.

58. Mary Robinson, ‘Protecting the most vulnerable,’ Speech at the London School of Economics Centre for the Study of Human Rights, London, 10 March 2011.

http://www.mrfcj.org/news_centre/2011/mary_robinson_lecture_lse.html

59. Patrick Bond, ‘A timely death? Obama and carbon trading’, *New Internationalist* 419, January 2009.

60. Ernest Mabuza, ‘Valli Moosa-Eskom ‘Conflict of Interest’, *Business Day*, February 19, 2009.

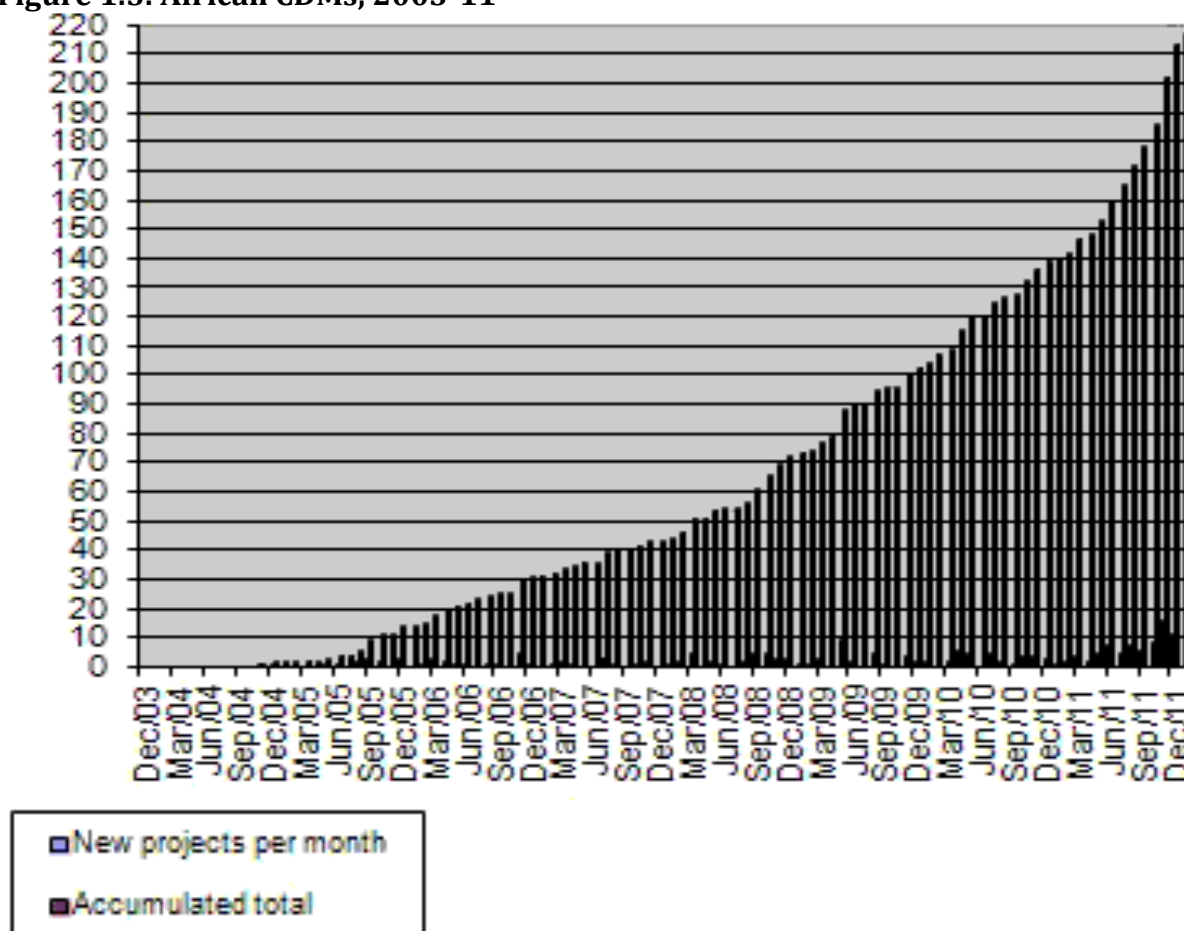
61. International Environmental Governance dossier,
<http://www.stakeholderforum.org/index.php?id=11sept>

62. Marthinus van Schalkwyk, ‘Speech to the International Emissions Trading Association,’
<http://www.polity.org.za/.../sa-van-schalkwyk-international-emissions-trading-association-forum-26092007-2007-09-26>

In the highest-profile African case of NGO support for carbon markets, the late Wangari Maathai, the former Kenyan deputy environment minister and Nobel Peace Prize laureate, such conflicts were not a factor. Prior to her death in 2011, Maathai, also promoted carbon trading through her own Greenbelt Movement in the expectation that CDMs and emerging proposals for REDD would reward tree-planting in both her indigenous strategy as well as mono-cultural timber plantations. She was also the leading proponent of the document 'Africa speaks up on Climate Change', which fed into the 'African Climate Appeal', a statement which insists upon more CDM finance with fewer strings attached, especially for afforestation:

African governments should ensure that there is equity in geographical distribution of CDM projects and that this is entrenched in the international policy process. They should negotiate for the requirement of upfront funding of CDM projects to be waived for many African countries who cannot afford it. The appeal calls upon African countries to embark on the development of CDM capacities and projects including capacity building and development of centers of incubation for CDM projects. African governments should explore possibilities of accessing grants to provide upfront funding for CDM projects and also project development and financing through bilateral arrangements.⁶³

Figure 1.5: African CDMs, 2003-11



Source: <http://cdmpipeline.org>

63. Wangari Matthei, 'African climate change appeal', Nairobi, 2009, <http://www.ecobuild-africa.com> p.4

Figure 1.6: Africa's CDM relative share is 1/6th Latin America's and 1/5th Asia's

Total in the CDM Pipeline	Number of small-scale		Number of full scale	
Latin America	431	13.0%	663	15.2%
Asia & Pacific	2743	82.6%	3469	79.3%
Europe and Central Asia	29	0.9%	55	1.3%
Africa	85	2.6%	132	3.0%
Middle-East	32	1.0%	53	1.2%
Less developed World	3320	100.0%	4372	100.0%

		For all projects			Popu- lation	2012 CER per cap.
Number of all projects		kCERs	2012 kCERs			
1094	14.2%	114898	373727	13.8%	449	0.83
6212	80.8%	826166	2151146	79.3%	3418	0.63
84	1.1%	21096	41394	1.5%	149	0.28
217	2.8%	60243	106928	3.9%	891	0.12
85	1.1%	14946	39539	1.5%	186	0.21
7692	100%	1037349	2712734	100%	5093	0.53

Source: <http://cdmpipeline.org/cdm-projects-region.htm>

Maathai criticized three existing funds – the Special Climate Change Fund, the Least Developed Countries Fund and the Bali Adaptation Fund – because these funds have not been able to address concerns of African countries on adaptation, namely:

Access, adequacy and equitable geographical distribution. The funds are largely inadequate and inappropriately structured; currently relying on a 2 percent levy on CDM projects. Access to the funds has been made difficult, among others, by bureaucratic bottlenecks of the Global Environmental Fund and the World Bank.⁶⁴

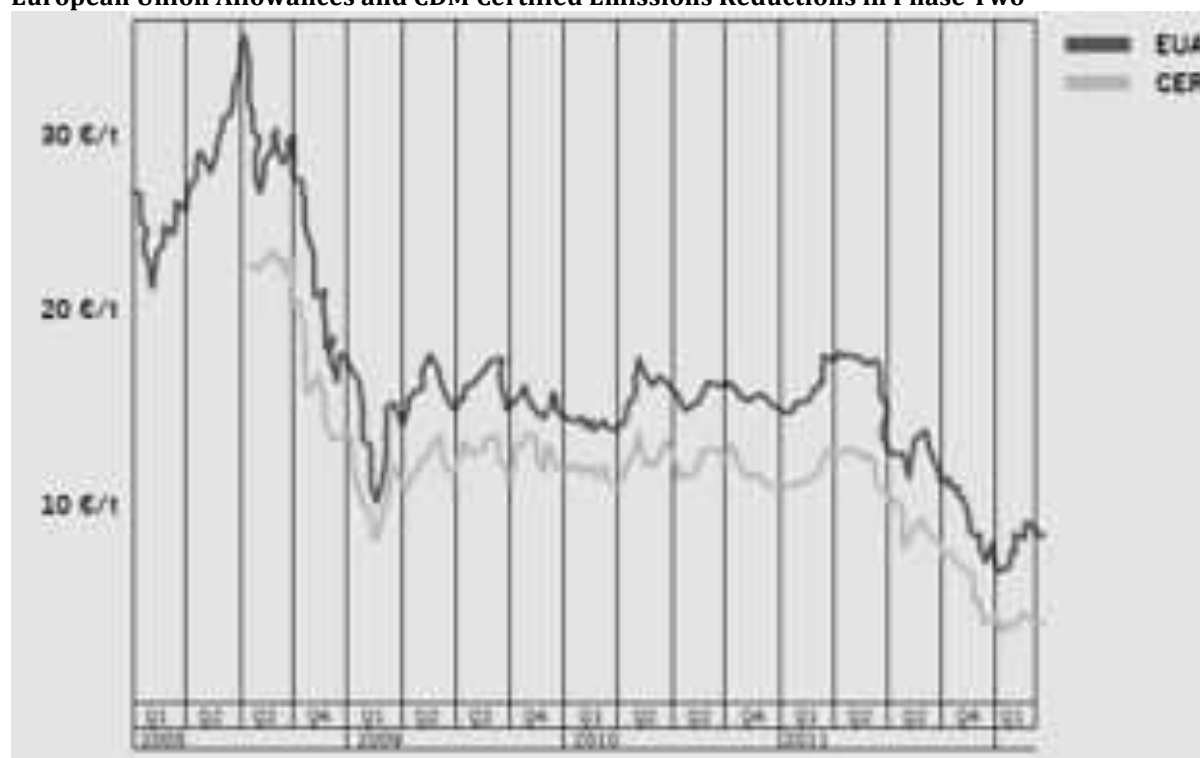
Maathai's appeals for a more generous and efficient system for Africa were never properly satisfied, for the Bank continues to play the most critical role in carbon market stimulation (see BOX 1). A proliferation of new Bank funds has not changed the basic calculus: CDMs 'can't deliver the money' to Africa. This report shows, in sum, that the emissions markets were the wrong idea (a neoliberal strategy) in the wrong place (financial markets) at the wrong time (the 2000s era of repeated bubbles and bursts).

After a review of market players in Chapter Two, the following pages spell out these problems in great detail using case studies from across the continent. We begin in Chapter Three with South Africa's pilot CDM fraud and environmental racism in Durban's Bisasar Road landfill methane-electricity project, alongside similar trends in Egypt (where wastepickers, the *zabbaleen*, have learnt to claim with reason that their recycling activities 'cool down the earth'). Chapter Four explains the case of Nigerian CDM corruption of local governance, especially where oil companies are receiving subsidies for reducing their Niger Delta gas flaring – an act which by law they are prohibited from doing in the first place. Chapter Five addresses the emergence of tree plantations and forests within CDM financing debates, with cases from Uganda,

64. *Ibid.*

Mozambique, the DRC, Tanzania and Kenya. Chapter Six is about two failed CDM proposals both involving exploitation of Mozambique's gas reserves. Chapter Seven discusses the way mega-dams are being lined up for CDM status, with case studies from Ethiopia and the DRC. Chapter Eight considers the rise of the Kenyan and Mozambican Jatropha biofuel industries which are supposed to decrease carbon dioxide emissions. It also mentions the new 'soil carbon' scams considered in BOX 1 (below). Chapter Nine concludes. An Appendix shows how lack of or biased information – especially coverage of CDMs in South Africa's pro-business media – helps to achieve extremely distorted, adverse outcomes.

Figure 1.7 Carbon price crash, from Bali (2007) to Durban (2011)
European Union Allowances and CDM Certified Emissions Reductions in Phase Two



BOX 1: Tracking the World Bank at COP17

By Keith Brunner, Global Economic Accountability Research and research associate of the Global Justice Ecology Project

As well as funding massive fossil fuel intensive projects – such as last year's three and a half *billion* dollar loan to build one of the planet's largest coal-fired power plant complexes in South Africa – the World Bank has been ramping up its portfolio of 'Climate Investment Funds' and is jockeying for leadership roles in most of the aspects of the UN climate change proceedings.

So: is the World Bank *really* turning over a new clean, green leaf, ready to help the world's poor contend with the climate chaos caused by the same fossil fuel-intensive development patterns which the Bank has championed? Hardly. Instead, under the leadership of President Robert Zoellick, a former head honcho at Goldman Sachs, the Bank is moving at full speed towards laying the groundwork for a colossal new financial services sector based in environmental products, while using the UN process as a legitimizing cover. This brilliant scheme (note that all the environmental market initiatives are called 'schemes') will simultaneously provide a new investment frontier for the pools of stagnant capital controlled by the 1 percent in this slumping world-economy, as well as provide an offsets-based shell

game which allows the planet's biggest polluters to continue with business-as-usual, while giving the appearance that they're 'going green.'

Potentially the most interesting part of tracking the Bank was observing how it functioned in partnership with the US negotiators, and in fact seemed to be generating the policy language which Todd Stern and Jonathan Pershing (the US reps) would later echo impeccably. Repeat after me: 'Private sector engagement...public sector finance as guarantor of private sector loans...catalyzing investment...markets, markets, markets.' It was essentially like watching a game of telephone, as other government delegations would parrot the US/World Bank line, with mainstream NGO's such as World Wildlife Foundation following suit like puppies eager to please.

The first event I attended at COP17 was the launching of a new Climate Investment Fund (CIF). As of 2011, the World Bank's Carbon Finance Unit hosts 15 of these funds, which taken together are capitalized to the tune of \$2.3 billion.

The Carbon Initiative for Development, or the 'Ci-Dev Fund', was launched in Durban with the goal of helping 'the least-developed countries access financing for low-carbon investments and enable them to tap into carbon markets after 2012... [t]he Bank wants to ensure that its suite of financial instruments, including private sources of capital via carbon markets, is accessible to all country clients so they can invest in their sustainable development.'

The key words here are 'financial instruments' and 'private sources of capital via carbon markets.' The Ci-Dev fund exists to fast-track the generation of carbon offset credits from projects such as cook stoves in Africa, and household biogas systems in Nepal. These offset credits will then be sold on international carbon markets, and can be purchased by polluting firms eager to meet emissions targets without actually changing their high-polluting behavior.

So the claim that Ci-Dev finance will aid in 'sustainable development' is a wee bit of a misnomer- for how can development be 'sustainable' if it is de facto allowing for the continued frying of the planet, with the poorest and most marginalized regions to be hit the hardest?

Another set of World Bank side events which I had the pleasure of attending at COP17 dealt with what the Bank calls 'Climate Smart Agriculture.' As with forest carbon initiatives such as the controversial Reducing Emissions from Deforestation and forest Degradation (REDD+) UN program, 'Climate Smart Agriculture' is just a recognition that good agro-ecological practices can actually sequester carbon from the atmosphere, and store it semi-permanently in the soil. This is precisely what the global federation of peasant farmers La Via Campesina has been saying for years, with their slogan 'Small farmers (Campesinos) cool the planet.'

However, while Via Campesina sees in this another reason to protect the land, food, and other rights of peasant farmers worldwide, the World Bank sees an immense new investment frontier, through the creation of agriculture-based carbon offsets which can be bought and sold on global markets.

The Bank led an all-out push to get agriculture included under the UNFCCC's carbon mitigation proceedings, building momentum for the decision by hosting agriculture-focused panels which featured UN dignitaries, finance and agricultural ministers, and of course, the ubiquitous private sector representatives. Thanks partly to heavy organizing and a letter signed by over 100 civil society organizations from Africa and around the world calling for the UN to reject efforts to consider agricultural soils within carbon markets, it didn't happen. At least, not yet. In the Durban Platform outcome from COP17, agriculture is found not under markets-focused mitigation, but under the Scientific and Technical body, a relative backwater. We'll see if this moves forward at COP18

The delay is good news, considering how the inclusion of soil carbon into offset markets has played out so far. During the question and answer session at the launch of the Bank's third 'tranche' of its BioCarbon Fund (which finances soil and forest-based initiatives), a young woman spoke up who had worked for a Bank-funded soil carbon project in Kenya. She referenced a report from her organization which revealed how the focus on carbon finance and mitigation has posed real dangers for food security and rural community livelihoods, with most of the finance ending up in the pockets of private companies and project developers. A representative from CARE International working in Africa piped up and said that they are facing soil carbon projects where the financial break-even point for the farmers won't be reached *for 10 years*.

Celebrating one year in operation for its Partnership for Market Readiness, the World Bank hosted a panel discussion which included finance ministers from Mexico, Brazil, Denmark, and South Africa. Connie Hedegaard, the European Union's Commissioner for Climate Action, opened the panel:

'[The Partnership for Market Readiness] brings together developed and developing countries with a shared interest to further the development of the next generation of multilateral carbon market mechanisms...We need to succeed in developing functioning new market mechanisms at the multilateral level. The alternative will be a world of fragmented crediting mechanisms and a multitude of carbon

currencies that would move us away from a seamless international carbon market with a single carbon price.'

After reflecting on the new market initiatives announced in the past year by California, China, Denmark, and Australia, Hedegaard concluded 'So, the good news is the carbon market family is definitely growing.'

Here's where the interesting part comes in- the carbon price, in actuality, has collapsed. So is it good news that more countries are headed down this policy cul de sac?

Over the past year, the EU's Emissions Trading Scheme (ETS)- the largest carbon market on the planet – has seen its carbon price lose over half its value, currently trading at about 7 Euros per tonne of CO₂. The carbon price in the UNFCCC's Clean Development Mechanism, which generates carbon offset credits that are accepted in the EU ETS, has fallen to under 4 Euros/tonne. Economically speaking, at this price, there is zero incentive for polluting firms to invest in low-carbon technologies. At this price the market is useless – a playground for speculators.

In fact, this June Andrew Steer, the World Bank's Special Envoy for Climate Change, was quoted in the Guardian saying: 'The [carbon] market is failing us. It has done very good things in the past but is not delivering what we feel is necessary.' And in August (when the price was even higher than it is now!), Reuters proclaimed carbon to be the 'world's worst performing commodity.'

This was the elephant in the room at all of these World Bank events. The panelists danced around it, making references to the 'too-low carbon price' (Hedegaard) and fluctuating markets, yadda yadda. But when confronted with the basic reality that the planet's future is being handed over to jumpy Wall Street traders and unstable and untested financial schemes, the room would get silent.

'I've been waiting for someone to ask that question,' was the measured response Rachel Kyte, VP of Sustainable Development at the World Bank, gave to a query about the carbon price and long-term viability of carbon markets. Responding to my question about when the Bank saw the 'carbon market bubble bursting,' the Mexican undersecretary at the Ministry of Environment and Natural Resources chuckled and leaned forward to speak into the mic: 'It already popped.'

I spent my afternoon one Wednesday at a presentation which reviewed the recent World Bank publication, prepared at the request of G20 Finance Ministers, entitled 'Mobilizing Sources of Climate Finance.' Featuring an all-star cast of representatives from the French Finance ministry, the US Treasury Department, the World Bank, and the International Monetary Fund, panelists discussed different methods of finance generation and emissions pricing instruments.

In the Question and Answer segment, I raised the point that the documents we'd been handed by the IMF, as well as the majority of the comments made by the presenters, claimed that there was no real difference between a carbon tax or emissions trading. As I pointed out, experience shows otherwise. Each of the presentations had acknowledged the major difficulties faced by emissions trading schemes, but then went on to advocate for the expansion of these complex schemes, equating them with a simple tax levied on carbon dioxide emissions.

The IMF rep took my question, and proceeded to lay out three detailed arguments of why a carbon tax is far more simple to implement, and more effective in bringing about structural changes than an emissions trading scheme. He was nonchalant, and it was clear that this was his personal opinion, having been engaged in policy-making and having studied the matter. But this contrasted with the 'official line' we'd been fed only ten minutes earlier. What gives?

What was clearly left out was mention that a carbon tax goes against the 'official religion' of the IMF or the World Bank, and increasingly, the United Nations environmental agencies. Favoring the deregulation of business and financial activity, the opening up of borders to international trade, and the removal of 'market-distorting' subsidies (for housing, agriculture, or food, for example), neo-liberal economic policy and corporate globalization has been the dominant policy package of capitalism for over two decades, enforced through supra-national entities like the World Trade Organization, the IMF, and the World Bank. Through this lens of 'market fundamentalism,' any kind of tax is immediately seen as creating 'market distortions,' which will presumably cause the ghosts of Adam Smith and Milton Friedman to rise from the dead, not to mention those of Ronald Reagan and Margaret Thatcher. 'There Is No Alternative' Thatcher, who were essential in implementing neoliberal policies in the 80s in their home countries and abroad.

So, Question: How does the neoliberal economic religion approach the climate crisis, which has been dubbed 'the greatest market failure the world has seen' by one prominent economist?

The answer, of course, is to create more markets. From the Emissions Trading Scheme, or 'Cap and Trade' approach, which dices up our common atmosphere into a patchwork of invisible property rights ('rights to pollute'), then hands them over for bargain deals – although most of the time, for free – to the biggest polluters on the planet, to the nascent markets in financial securities backed by 'ecosystem services,' the priests of the neoliberal religion are spinning out increasingly desperate ways to maintain

business as usual, while building the facade that they're 'solving the climate crisis.' It would be humorous if it wasn't all so depressing.

So, by now, one can see what some of the implications of a World Bank-controlled Green Climate Fund could be. I've only touched on one aspect of the 'green' investment schemes getting underway, which run the gamut from new and improved GMO trees and organisms, to geo-engineering, agrofuels and nanotechnology, all the way to money for more good-ol' massive dams, mega wind farms, and super-sized solar arrays. And, of course, we'll be sending Haliburton to rebuild infrastructure after that next super-typhoon, financed through the GCF's Private Sector Facility using 'adaptation' finance.

Luckily, there's a growing movement against the Bank's involvement in global ecological finance and policy, information around which can be found here: www.worldbankoutofclimate.org. As we move towards Rio+20, this issue will certainly gain more traction and energy. Occupy the World Bank?

Chapter 2

A critical geography of the global CDM

By Michael K. Dorsey and Gerardo Gambirazzio

Introduction

This chapter considers the main carbon market players and their geographical constellations: host countries, buyers, consultants, validators and verifiers. With a mapping of these actors, we can more critically examine emerging carbon markets, especially the Clean Development Mechanism (CDM) and the European Union Emissions Trading Scheme (EU-ETS). These are the forces that draw Africa into the market, and simultaneously into the myth that emissions trading can appropriately address the present and future crises of global warming, extreme weather events, and rising socio-economic and political repression from North to South.

As early as 2000 European Union watchdog organizations cautioned against the utilizing the 'the three market based 'solutions' enshrined in the [Kyoto] Protocol – emissions trading, joint implementation (JI) and the Clean Development Mechanism'. Referencing the troubles of offsetting, enshrined in the Clean Development Mechanism, over a decade ago, critics added: "The hypothesis that such a scheme will be efficient on the international level is also flawed. One must not forget the absolute impossibility of monitoring emissions from millions of sources spread all over the world, not to mention the lack of a binding regulatory system to enforce emissions limits."¹ Unsurprising, an emergent late 20th century class of: scholar-investors, offered the contrary two years earlier, 'implementation of activities aimed to mitigate global greenhouse gas emissions is more cost-efficient in developing countries than in most of the industrialized world.'²

This is a crucial moment for Africa. After a decade of catastrophic market failures and the recent collapse of the multilateral climate talks, the EU-ETS is a zombie of its once beleaguered self. As the *Financial Times* reported in February 2012, 'The [EU-ETS]

1. Corporate Europe Observatory (CEO). (2000). Greenhouse market mania: UN climate talks corrupted by corporate pseudo-solutions. Amsterdam, The Netherlands.

2. Dutschke, M. and A. Michaelowa. (1998). Creation and Sharing of Credits through the Clean Development Mechanism Under the Kyoto Protocol. HWWA Discussion Paper 62. Institut für Wirtschaftsforschung, Hamburg. The rise of the scholar-investor (or scientist-investor) is by no means rare in the scientific-capitalist driven circuitries of the United Nations Framework Convention on Climate Change (UNFCCC). 'Scientists' (although not called officially called 'scientist-investors' or 'scholar-investors') are given special access as an officially designated 'stakeholder' class at UNFCCC negotiations. The 'scientist' category, let alone the amalgam of 'scientist-investors' or 'scholar-investor' is an understudied formation. Some (many?) UNFCCC registered 'scientists' are also known to have investment or capital accumulation stakes in myriad aspects of the UNFCCC outcomes – including the Clean Development Mechanism. This is true of Michael Dutschke and Axel Michaelowa, cited above. Prior to serving as an IPCC, Working Group III 'Lead author' (which subsequently resulted in his co-receipt of the Nobel prize with other IPCC lead authors) Dutschke was an 'Auditor' for TÜV-SÜD one of the three largest validator-verifiers of Clean Development Mechanism Projects. Similarly Michaelowa, between 1997-2000, served on the advisory board of the World Bank's AIJ-Programme – the pilot programme for CDM/JI investments. What is notably missing from many of the 'scholarly' contribution of these authors (and others) are disclosures of their affiliations, especially where they have financial interest or stand to gain financially. To be clear, the authors herein, do not, for one second believe in the empty rants or claims of those denying the existence of climate change. On the contrary we believe climate change is indeed upon us, and for a variety of scientific reasons, maybe be unfolding in ways that are heretofore unstoppable. We do believe that 'scientists' with investment (or professional) interests in the outcomes must disclose such ties.

market has suffered other indignities in its brief history, from value added tax frauds worth billions of euros to the cybertheft of millions of permits from companies' electronic accounts. But, because it calls into question the fundamental workings of the market itself, the price slide may be its most serious affliction.'³

This chapter disentangles the web of firms and states involved in one portion of the world's largest formal, state-mandated carbon marketplace, by deploying an extended set of multi-methods research techniques. These findings include the results of more than three field seasons of ethnographic data collection at United Nations Framework Conventions on Climate Change (UNFCCC) conference of the parties (COPs) meetings and related satellite events (i.e., annual IETA meetings, myriad NGO side-events, *inter alia*). The ethnographic data gives nuance and context to the competitive intelligence-driven analysis of publicly available data focused on CDM projects, disaggregated by type, carbon credits obtained, geographical location of firms, projects and various participants involved. We purposely restrict the analysis to 'very basic' structural and non-statistical assessments, to underscore an 'any-one-can-do-this' mandate. Such 'simple' analyses also fortify and legitimate our arguments for basic changes in the collection of data to better enable subsequent analysts to innovate on our path-breaking. Network Analysis theories inspire the methods and approach herein.

We believe this to be the first multi-method, actor-network assessment of the formal carbon market industrial complex. The findings are disturbing. For example, in one data snap-shot, we learn nine actors from a space of more than 5000 control 50 percent of EU Certified Emission Reduction Credits (CERs). The world's largest 'free-market' experiment to manage the atmosphere by creating a new commodity for trade is emerging as an 'oligonomy', a combination of an oligopoly in which there are only a few sellers, and an oligopsony in which there are only a few buyers.

In this context, prospects for Africans to negotiate are terribly adverse, which is one reason why Africa has recorded so few CERs compared to other regions. Numerous other challenges and problems abound and are considered.

Setting the stage

Proponents of the establishment of a global carbon market argue such a market can and should play a role in reducing carbon emissions to the degree necessary to stave off the harmful effects those emissions are having on the global climate and vulnerable communities across the globe.⁴ Complicating matters further, global carbon market proponents also expect the carbon market to be a key instrument capable of addressing and solving complex environmental and economic problems.⁵ In effect the carbon market is charged (or burdened) with the dual mission of assisting developing nations to establish sustainable economies while simultaneously reducing carbon emissions globally.

3. Chaffin, Joshua. 2012. 'Emissions trading: Cheap and dirty. Financial Times (UK): 13 February 2012.

4. Aldy, J. E. and R. N. Stavins (2007). Architectures for agreement: addressing global climate change in the post-Kyoto world. Cambridge; New York, Cambridge University Press; Figueres, C. (2000). CDM: Theory and Reality. Carbon Finance Conference. New York, NY, Center for Sustainable Development in the Americas; Tietenberg, T. H. (2006). Emissions trading: principles and practice. Washington, DC, Resources for the Future.

5. Giddens, A. (2009). The politics of climate change. Cambridge; Malden, MA, Polity; Yamin, F., Ed. (2005). Climate Change and Carbon Markets: A Handbook of Emissions Reduction Mechanisms. London, UK, Earthscan; Ackerman, F. and E. A. Stanton (2010). The Social Cost of Carbon. Washington, DC, Economics for Equity and Environment; Ackerman, F. (2009). Can we afford the future?: the economics of a warming world. London, Zed Books.

In an idealized neoliberal capitalist form, the global carbon market that some interlocutors desire exists at a transcendental level, and operates without workers and without geographic location. As Jos Delbeke, the European Commission, Director General for Climate Action, describes the role of the state: 'Our role is to keep the regulatory structure as simple as possible and let the market play.' Such desires-as-edicts ignore the realities that define markets at various local to global scales. Carbon market advocates variously seek to create a global market system that is structured to maximize investment returns, while minimizing risk, and have it be subject to minimal, if any, governmental regulation of labor, finance, and trade.⁶

Nascent research to date, however, on both trading schemes and offset projects reveal a significant gap between the desires of traders and what is currently happening with regard to the development of policies to reduce greenhouse gas emissions. As economist Michael Grubb of the University of Cambridge observes:

Having created a market-based mechanism to cut carbon a lot of people seem to expect it to behave in a non-market way and deliver poverty alleviation, deliver sustainable development co-benefits. But fundamentally, you create a market, it's behaving the way markets do, it chases where are the most cost effective things, where can they make the most profits and I think that anyone who didn't expect a market instrument to behave in that way didn't understand what they were doing.⁷

As research on carbon markets and the commodification of nature shows, the global reality is that the emissions market and its investors across the globe are finding that countries are developing a mismatch of policy proposals to address climate change and (energy consumption) that attempt to serve their national interest against the interest of global investors.⁸ This is felt strongly at the local level where communities are resisting national reforms imposed by government elites and global institutions such as the World Bank. And some of those local solutions, as in the case of China, may not be ideal for those who wish to develop a global carbon market and its investors.⁹ The risk level is tremendous and the possibility exists that financial returns are held to a minimum.

Beyond hegemonic ideals, proponents of a global carbon market have turned time and again to the structure and (dys)function of the EU-ETS, which has been pedestalized by the global market proponents, *inter alia*. In this chapter we analyze that market. The data we collected help us shed light on how the EU-ETS market is structured both geographically and by sector, among participating private firms and states. The data also elaborate how the market is funded, how financing is accomplished, the sources of this financing, and where the financing is directed (i.e., the types of projects funded). Moreover, studying the financing structure of the market help us identify and understand the relationships among the various scales in this market, which include

6. Harvey, D. (1993). 'The Nature of Environment: The Dialectics of Social and Environmental Change.' The Socialist Register 29; Harvey, D. (2005). A brief history of neoliberalism. New York, Oxford University Press; Labatt, S. and R. R. White (2007). Carbon finance: the financial implications of climate change. Hoboken, N.J., John Wiley & Sons; Smith, N. (1991). Uneven development: Nature, capital, and the production of space. Oxford, UK, B. Blackwell; McCarthy, J. and S. Prudham (2004). 'Neoliberal Nature and the Nature of Neoliberalism.' Geoforum 35: 275-283.

7. See: www.cop17carbonmarkets.com.

8. Harvey, D. (2006). Spaces of global capitalism. London, Verso.

9. Allan, A. (2010) UN Turns Up Heat on Chinese CDM. Pointcarbon News

corporations, private investors, international firms, local firms, labour/workforce, the United Nations, and supranational, national and regional entities and organizations.

In the twenty years since the UNFCCC was established and the nations of the world agreed that there was a need to stabilize greenhouse gas concentrations in the atmosphere at a level that will avoid dangerous rates of climate change, the understanding that something must be done about climate change has become widely accepted globally.¹⁰ In fact, the agreement that something needed to be done about carbon emissions unleashed a tidal wave of actors of every conceivable stripe into the arena of climate change management. From governance to market forces, activists and scholars, from scientists, to environmentalists, to private sector actors, to NGO's, an entire industry was created to manage climate change.¹¹

Although controlling carbon emissions was identified as the goal in the UN's findings in 1992, all environmental fields impacting some element of nature including water, air and land saw a surge in advocacy and became industries in their own right. Thus the end of the 20th century was characterized by the rise of the terra-markets – environmental or eco-markets that seek to commodify and control formerly common property matter: water, ecosystems, the atmosphere, by the rules, confines and dictates of a neoliberal market ethos.¹² The outcome of these efforts have their genesis in the debt-for-nature swaps of the 1980s and manifest today not just in carbon markets, but also in programs like payment for ecosystem services, to the latest instantiations of Reduced Emissions from Deforestation and Degradation (REDD) and REDD+, as well as more complex forward markets in emissions trading credits to biodiversity derivatives, habitat trading and beyond.¹³ Despite the fact that traditionally governments have regulated air, water and ground pollution, neoliberal forces and advocates have had a strong influence on the management of environmental problems on a global scale resulting in the privatization of environmental management.¹⁴

In sum, the private sector has swept in and, in many cases, governments have given control over these areas to the private sector and market-based solutions. However, in spite of the recognition that the need to address carbon emissions was dire in 1992 and despite the significant international interest in addressing the issue, little of significance has been accomplished and carbon emissions have not been reduced. To the contrary,

10. Agrawala, S. (1998). 'Context and early origins of the intergovernmental panel on climate change.' *Climatic Change* 39: 605-620.

11. Boykoff, M. T., A. Bumpus, et al. (2009). 'Theorizing the Carbon Economy: Introduction to the Special Issue.' *Environment and Planning A* 41: 2299-2304.

12. Gómez-Baggethun, E., R. de Groot, et al. (2010). 'The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes.' *Ecological Economics* 69(6): 1209-1218; Lohmann, L. (2006). *Carbon trading: a critical conversation on climate change, privatisation and power*. Uppsala, Sweden; McCarthy, J. and S. Prudham (2004). 'Neoliberal Nature and the Nature of Neoliberalism.' *Geoforum* 35: 275-283; Martinez-Alier, J. (2007). 'The distributional effects of environmental policy.' *Ecological Economics* 63: 246-247; Castree, N. (2003). 'Commodifying What Nature?' *Progress in Human Geography* 27: 273-297.

13. deGroot, R. S., M. A. Wilson, et al. (2002). 'A typology for the classification, description and valuation of ecosystem functions, goods and services.' *Ecological Economics* 41(3): 393-408; Costanza, R., R. d'Arge, et al. (1997). 'The Value of the World's Ecosystem Services and Natural Capital.' *Nature* 387: 253-260; Boyd, J. (2007). 'Nonmarket benefits of nature: What should be counted in green GDP?' *Ecological Economics* 61(4): 716-723.

14. Bakker, K. (2009). 'Neoliberal nature, ecological fixes, and the pitfalls of comparative research.' *Environment and Planning A* 41(8): 1781-1787; Igoe, J. and D. Brockington (2007). 'Neoliberal Conservation: A Brief Introduction.' *Conservation and Society* 5(4): 432-449; Robertson, M. (2007). 'Discovering Price in All the Wrong Places: The Work of Commodity Definition and Price Under Neoliberal Environmental Policy.' *Antipode* 39(3): 500-526.

only economic stagnation or crises have been shown to be effective against the growth of emissions.

Despite that, the appetite for a market approach to environmental problems is stronger than ever and has grown out of several international agreements that can trace their origin to the UN 3rd Conference of Parties (COP 3) in Kyoto, Japan in 1997. In the early 2000s, the seeds of a carbon market blueprint were planted across several European nations, which in conjunction with private industries and utilities, established pilot programs to test the idea of the establishment of a carbon market to address environmental concerns¹⁵ (the UK and Denmark – EU adopted it as a result of the US rejecting it). The creation of the emission reduction scheme as a market place has since been the axis upon which all international agreements on climate change and emission reduction turn. It should not then be surprising that the International Emissions Trading Association¹⁶ (IETA) would spearhead global efforts to create a global market and that it would host dignitaries, investors and bankers to have these discussions at multiple COPs and other international venues.

After the collapse of the global financial markets in the last few years, the reality that decisions made by investment bankers on Wall Street can have a devastating effect on a pensioner's ability to survive not only in Michigan but also in Ireland, for instance, has led many economists and others to study how reality fails to meet those expectations of continuous growth. Driven by a growing global economy, two key markets experienced incredible booms followed by devastating busts that were felt internationally because of the ever growing interconnectivity of markets due to globalization.

The first recent instance of the boom-bust cycle we speak of resulted from the 'new economy' of the 1980s which gave birth to the 'dot.com' economy that made the US' Silicon Valley rich for the first time, followed by a collapse that left paper-millionaires paupers overnight. Venture capitalists lost the capital they invested in the dot.com market depleting the funding available to help start-up companies find the capital needed either to become established or to expand and grow.¹⁷

The effect of the collapse of the dot.com economy was also somewhat softened by the emergence of what former President George W. Bush characterized as 'the economy of responsibility' through which the global real estate market experienced a historic boom as investors from around the globe rushed to loan anyone and everyone money to buy real estate and build houses that were overpriced and that they could not afford. The result of this irresponsible growth was a collapse in 2008. The effects of this recent collapse are still unfolding as the world struggles to find its bottom. What has made the effects of the housing market collapse so devastating is the nature of the investors.

15. The extensive research of Jon Sjaereth and Jørgen Wettestad on the policy making process of the EU-ETS details the transformation that occurred in the European Union from 1997 to 2010. This transformation, they argue revolves around the EU's skepticism in matters of market approaches to solving environmental problems. They attribute this reluctant acceptance of markets on emissions to the United States' rejection of the Kyoto Protocol under the Bush Administration. Skjærseth, J. B. and J. Wettestad (2008). *EU emissions trading : initiation, decision-making and implementation*. Aldershot, Hampshire, England ; Burlington, VT, Ashgate; Skjærseth, J. B. and J. Wettestad (2009). 'The origin, evolution and consequences of the EU emissions trading system.' *Global Environmental Politics* 9(2): 101-123; Skjærseth, J. B. and J. Wettestad (2010). 'Making the EU Emissions Trading System: The European Commission as an Entrepreneurial Epistemic Leader.' *Global Environmental Change* 20(2): 314-321.

16. IETA is the leading emissions trading organization. It is a non-profit organization that serves as the representative of emission trading interests across the globe. For more information please see: <http://www.ieta.org/>

17. Henwood, D. (2005). *After the New Economy: The Binge . . . And the Hangover That Won't Go Away*. New York, New Press.

Many of those who poured money into the mortgage market were institutional investors investing public pension fund assets into the market. Thus, the debacle of the housing market has impacted not only home owners and banks, but municipalities, states and other public investors who now have to make up the losses experienced as a result of the housing market's collapse.

In both instances described above, the structure of each market was characterized by the geographic location of the institutions involved and by the far-reaching impacts of each market on the financial sector and on the global economy, particularly the case of the housing market. In attempting to understand how the global financial crises developed, economists and others who study markets have spent a considerable amount of time examining those markets and comparing them to the economic models that were developed to predict outcomes in an attempt to identify where the market failed to comply with the economic model.

Citing the work of Garcia-Parper and the argument she presents in her study of a strawberry auction market established in France, MacKenzie, Muniesa and Siu¹⁸ observe in the introduction to their book *Do Economists Make Markets?*, that economic sociology and anthropology should focus on how markets are constructed and maintained (and on the role of economic theory, material devices, procedures, physical architectures, linguistic codes, and so on, in the construction and functioning of markets), rather than focusing simply on demonstrating ways in which concrete marketplaces differ from economists' 'abstract' markets.' We interpret MacKenzie, et al. to mean that how market's work (or not) in the real world is often not the same as how the models that economists create 'predict' they should work.

Carbon market oligopoly and oligopsony

The aim of this chapter is to present a critical analysis of the structure of the EU-ETS carbon market by drawing on the work of economic geography theories on space and finance capital,¹⁹ and most significantly, by examining the actors involved in the IETA gatherings from Poznan, Copenhagen and Cancun. Specifically, we use the work of MacKenzie²⁰ on the creation of the emissions markets and we seek to advance to his insightful work on the creation of these markets by adding a few critical elements that contribute to the understanding of how the structure of the market has developed since its inception in 2005. Moreover, MacKenzie's work is important as a decoder of the myth of the success claimed by economists of the sulphur market in the US.²¹ For MacKenzie, the sulphur market implemented by the EPA was not a success because it reduced emissions, but rather because it dealt with the political conditions which heavily subsidized those industries and enforced strict emission standards before entering the trading market.

Over the past two decades, concern over anthropogenic carbon emissions and their impact on the environment and the world population, has given rise to a global effort to mobilize emission abatement measures under the auspices of the United Nations to counter the climate crises in accordance with United Nations' own scientific body, the

18. MacKenzie, D., Muniesa, F., & Siu, L. (2008). *Do Economists Make Markets? On the Performativity of Economics*. Princeton, NJ: Princeton University Press.

19. Martin, R. (1999). Money and the space economy. Money and the space economy. R. Martin. Chichester, NY, John Wiley; Harvey, D. (2006). The limits to capital. London, Verso; Lee, R., A. Leyshon, et al. (2003). Alternative economic spaces. London; Thousand Oaks, Calif., Sage Publications.

20. MacKenzie, 2007 *Op. cit.*

21. Dorsey, M. K. 2007. Carbon trading won't work. *Los Angeles Times*. April 1, p. M4.

IPCC's recommendations. The analysts' focus has been primarily on three main fronts. The first being globalization of finance capital, focusing specifically on the development and/or the credit boom of the past decade. Second, researchers have emphasized the commodification of nature as part of the neoliberal mantra.²² While their knowledge has contributed to our understanding of the process of neoliberalization of capital and nature, we have yet to understand a separate aspect of the engine of social relations and accumulation, namely specifically, how these actors and institutions involved in the carbon market are transforming the economic and social geographies across the globe. The third front of analysis is the global environmental justice movements formed by the conjunction of academics and activists.

The invisible hand is often rather visible. We seek to show the nuts and bolts of the entire carbon market, the social interactions and connections that influence the formation and functioning of those markets. Jasper, Spash, Callon, and MacKenzie et. al., to some extent, examine social and political relationships in the development and operation of the sulfur and carbon markets. However, the social relationships as they elaborate them are still looked at on a global level without a close examination of the actors in the market and their connections and relationships at lesser scales. At the end of their analysis we still do not know who the players in the market are, how they relate to one another, how the actors relate to the other complex governance processes, nor do we understand the geographical impact of the market, i.e., the tensions and contradictions that emerge from the global markets.

The research question is: How does one move beyond the abstract discussion about markets, specifically the EU-ETS, to better understand market (dys)function in a political economic context? As such, we developed a series of questions and methodologies designed to understand how this market has developed across time and space and how emission reductions and sustainable development, the twin objectives of the CDM, fit into the scheme of international policies drafted at various scales and global investors. As such we wanted to reveal and expose bare the structure of the market into its most elementary components: the players involved in project development, investment, trading, verification and certification of emission reduction/offsets.

One of the most revealing findings of our research is that this market is a series of markets operating in various geographical and economic scales. It is remarkably small and is controlled by a small number of players with little competition among them to be found. A very small number of market actors control very large portions of overall market activity, in dollar terms and/or in terms credit allocation. We suspect this may have a deleterious effect on overall competition in the market.

Moreover, despite an expectation that the market would be organized and interconnected with the actors working in concert to assure market efficiencies, what we found is that the actors involved tend to be working in completely different spheres and scales with some projects being funded through private financing, some being funded through state support and some finding their financial support through institutional investors, with all of the market working across a landscape of different national rules and uneven and differential state rules (e.g. China). Moreover, we found that the most ardent supporters of emissions trading are the ones controlling the largest share of the market.

22. Bakker, K. (2009). 'Neoliberal nature, ecological fixes, and the pitfalls of comparative research.' *Environment and Planning A* 41(8): 1781-1787; Castree, N. (2008). 'Neoliberalising Nature: The Logics of Deregulation and Reregulation.' *Environment and Planning A* 40: 131-152.

Market abstractions from market power

The market serves its purpose by allowing economic theorists to understand economic transactions in a purely abstract way. The institutions and individuals and the relationship of the actors that make up the market are not studied in neoliberal economic theory. The only thing that is analyzed is the transaction.²³ Because the constitution of a market itself is not studied, there are chasms between markets in the abstract and the actual markets. The economic approach ignores race, class, ethnicity, gender and other sociological factors that affect markets.²⁴ This lack of understanding of the various actors that constitute a market and how that market works, particularly in the context of the carbon market is the void we seek to fill with our research.

Noel Castree notes the need to analyze the constitution of a market governing an economic transaction. Neoliberalism cannot be properly applied nor understood if it is assumed that it is a single principle or policy. Instead, actors 'are operative at different geographical scales – all the while attending to the myriad connections between markets, states, quasi-state actors, civil society, workers, the natural environment and other things besides.'²⁵ We agree with Castree that adequate analysis requires a more complex view, not glossing over geography, scales of governance, and firm/project locations. Thus, building upon studies of the carbon markets by MacKenzie²⁶ and the sociological studies of the market by John Lie,²⁷ as well as David Harvey's²⁸ economic geography, our understanding of the carbon market structure comes not from looking at the structure of the markets itself but rather at the players across space and time.

What we find should be a warning to anyone at the April 2012 Africa Carbon Forum in Ethiopia, which is just the place where some European investors are searching for African counterparts to invest their dimes and participate in a space many have firmly pronounced dead. These are the crude political economic forces of multilateral climate policy run wild that draw African institutions, civil servants and even civil society sympathizers into 'dead' markets – after the fact, and simultaneously into the myths that emissions trading can address the present and future crises of global warming, extreme weather events, and rising socio-economic and political repression.

What we conclude from considering the broader terrain in these pages, is that the domain of clean development governance is uncoordinated, incoherent, uneven, full of blind-spots, networked and weak on process.²⁹ The question for remains is: *For whom and against whom is clean development governance uncoordinated, incoherent, uneven, full of blind-spots, networked and weak on process?* Our analysis reveals that Africa has been left out of clean development. In the end of the day this structural oversight might not be such a bad thing, since a growing number of studies reveal that the CDM contribution to sustainable development has been exceptionally meager, in the best cases and antithetical to it in the worst cases. The only comment to African institutions, civil servants and civil society sympathizers regarding the CDM is: *caveat emptor*.

23. Lie, J. (1997). 'Sociology of markets.' Annual Review of Sociology 23: 341-360.

24. *Ibid.* at 344

25. Castree, N. (2007). Neoliberal environments: a framework for analysis. Centre for the Study of Political Economy. Manchester, UK, Manchester University, 10.

26. MacKenzie, D. (2007). The Political Economy of Carbon Trading. London Review of Books. London, London Review of Books: 29-31; MacKenzie, D., F. Muniesa, et al. (2008). Do Economists Make Markets? On the Performativity of Economics. Princeton, NJ, Princeton University Press.

27. Lie, 1997 *Op. cit.*

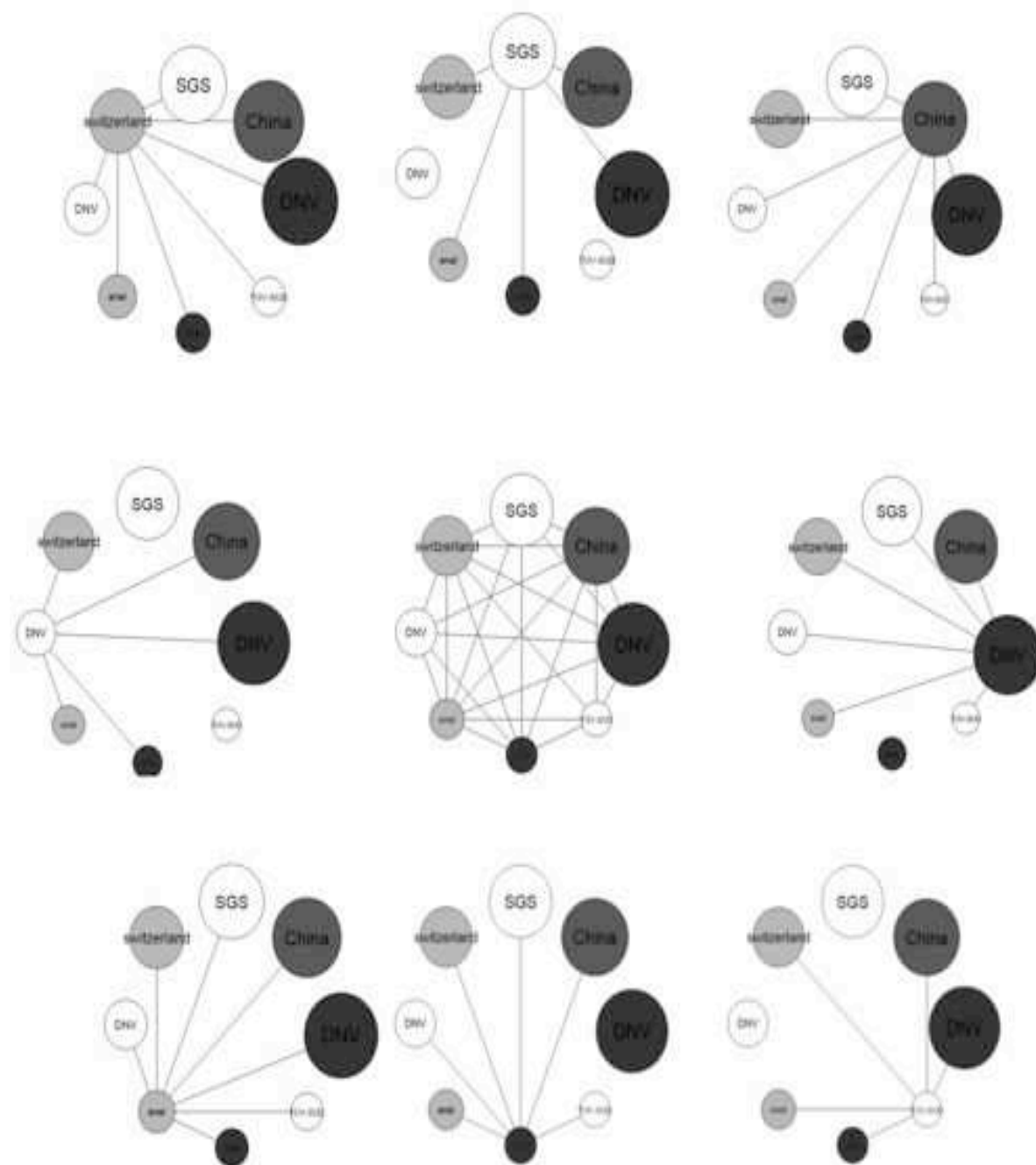
28. Harvey, 1993, 2005, 2006 *Op. cit.*

29. Newell, P., N. Jenner and L. Baker. 2009. Governing Clean Development: A Framework for Analysis. The Governance of Clean Development Working Paper Series. Norwich, UK.

APPENDIX: The data

In Figure 2.1 and Table 2.1, we provide representations of the top piece of the CDM market. The roles the entities play in the market are denoted by color: host countries are darkest, buyers are next darkest, validators are next lightest and verifiers are white. The size of the circles is proportional to the percent of the credits that the entity is party to. The precise percentages are shown in Table 2.1. The central graph shows all possible connections; the eight pictures surrounding the central one show individual entities.

Fig. 2.1 Carbon market entities which control more than 20% of credits



Source: Dartmouth College Climate Justice Project

Table 2.1: Players in the carbon market, by percentage share

Player	Percentage share
European Union	45%
United States	35%
China	15%
Japan	5%
South Korea	5%
India	5%
Other	10%

Source: Dartmouth College Climate Justice Project

Chapter 3

South Africa's landfill, fraud, division and racism

By Khadija Sharife and Patrick Bond

Figure 3.1: Bisasar Road seen from above



Introduction

South African corporations and government agencies have had a recent history of attempted – and in the case of the Bisasar Road landfill, successful – abuse of the Clean Development Mechanism. In April 2010, after a long debate about the merits of constructing the world's fourth-largest coal-fired energy facility, the Medupi power plant was proposed by Eskom officials as a potential CDM project, but by early 2012 had not been taken to formal application stage.¹ In the same spirit, in 2009, an attempt by Sasol to claim that a gas pipeline investment was 'additional' to pre-existing plans (hence deserving emissions reductions credits) was ridiculed by the Johannesburg activist group Earthlife Africa based on an admission by a company official, and did not pass muster in the UN vetting process.²

But the most controversial CDM project is the country's leading pilot: a methane-electricity conversion at Bisasar Road dump in Durban's Clare Estate residential neighborhood, celebrated by everyone in power from the municipality to the UNFCCC. Methane is a potent greenhouse gas. It escapes from landfills. Through burning, it turns to carbon dioxide whose potential as greenhouse gas is lower than that of methane. Following introductory information, the subsequent pages detail environmental racism, intra-community conflict, municipal fraud, United Nations incompetence, and a failure of the methane extraction system even on its own terms.

1. Jocelyn Newmarch, 'Eskom seeks Medupi carbon credits,' *Business Day*, April 28, 2010.

2. Earthlife Africa, 'Press Release: South Africa's emissions offer,' Johannesburg, 10 December 2009.

For John Parkin, deputy head of engineering at the municipal agency Durban Solid Waste, 'What makes (the Bisasar Road CDM project) worthwhile is the revenue that can be earned from carbon credits, estimated at 3.1 million certified emissions reduction credits, worth about \$15 million, along with some 6-8 megaWatts of electricity over a 20 year lifespan.'³ In late 2006, the French Development Agency pledged long-term loans of \$8 million to Durban's landfill gas projects (Bisasar is by far the largest of three), alongside \$1.3 million extended by South Africa's Department of Trade and Industry.

The landfill is Africa's largest. One of three fully permitted landfill sites in Durban, Bisasar was opened for business in 1980 by the apartheid regime. The Group Areas Act, a crucial pillar of the apartheid government's segregation agenda, meant that Bisasar Road would 'import' waste from privileged white areas to impoverished and working-class black areas deprived of basic human rights.

Bisasar was emblematic of 4000 disposal dumps created across the country (of which, the government acknowledged, only 200 met minimum environmental standards). Clare Estate – classified as an 'Indian' and 'coloured' area but with a large African shack settlement from the mid-1980s – lacked access to political, economic and legal recourse. Residents' attempts at mobilising dissent were ignored, although the African National Congress pledged in 1994 that the new democratic municipal government would close the racist dump.

Despite ongoing opposition to the dump from residents, and promises by the government to close and rehabilitate the dump, Durban Solid Waste supported the continued use of the dump, as two other sites – in wealthy Umhlanga and impoverished Umlazi township – were shut instead. Described by the municipality as 'favourably placed with respect to central Durban, close to a major artery connecting the city to the West, North and South,'⁴ the dump processes 3000 to 5000 tonnes of waste daily, including hazardous waste such as sewage sludge and medical waste. In spite of vehement calls for closure, of the dump's significant leachate and of respiratory problems in the community, the national Department of Water Affairs and Forestry extended the landfill's life cycle in 1996.

Although the permit issued was for general waste only, a meeting between the municipality and national water officials in 1995 resulted in the site's operators being 'granted a permit without a buffer zone' even though (as Condition 5.7 of the permit put it), 'the permit holder shall accept obnoxious sewage sludge.' Hosting 19 million cubic metres of waste, the dump was described by Carl Albrecht, research director of the Cancer Association of South Africa, as a toxic 'cancer hotspot' where residents 'are like animals involved in a biological experiment.'⁵

Bisasar holds a further four million 'available' cubic metres of fully permitted landfill space before critical mass is reached, hence there is potentially another decade more of potential dumping.

3. Interview with Khadija Sharife, October 10, 2009.

4. Durban Municipality, 'Landfill Disposal'

<http://www.durban.gov.za/durban/services/cleansing/gastoelec/disposal> Page since removed: See cached version:

<http://webcache.googleusercontent.com/search?q=cache:kzulAppFhl0J:www.durban.gov.za/durban/services/cleansing/gastoelec/disposal+favourably+placed+with+respect+to+central+Durban,+close+to+a+major+artery+connecting+the+city+to+the+west,+north+and+south+percentE2+percent80+percent99&cd=1&hl=en&ct=clnk&gl=za>

5. Patrick Bond and Rehana Dada, 'Putting a price on fresh air,' 17 January 2005,

<http://www.mg.co.za/article/2005-01-17-putting-a-price-on-fresh-air>

Figure 3.2: Bisasar Road CDM entrance



Source: Jason Hickle

Figure 3.3: Bisasar Road CDM turbines



Source: Jason Hickle

Municipal racism and community conflict cemented by climate finance

Bisasar was opened for business in May 1980 by South Africa's apartheid regime. The primary factor informing the site's selection process, situated in Clare Estate's nature valley, was the Group Areas Act, a crucial pillar of the apartheid government's agenda to legally segregate races through the specific allocation of residential areas determined by race. The systematic exclusion and dehumanization of the majority included gross environmental racism. The politics of waste was taken up by the African National Congress (ANC), the liberation movement that would later come into state power, following the country's first non-racial democratic elections in 1994. But their well-advertised promise to close the landfill after liberation was broken.

The struggle against this project was mainly led by Sajida Khan (1952-2007), a self-taught ecologist. Attempting to shut the dump that ultimately killed her, Khan dedicated half her life to a contest with municipal bureaucrats and the World Bank.⁶ Khan was raised in what was the traditionally Indian neighbourhood within Clare Estate, astride a nature reserve that spanned a small valley. In 1980, when Khan was 28, her surroundings were suddenly destroyed by apartheid officials. The peaceful reserve became an unending, stinking heap of rubbish, which until the late 1990s also included a medical waste incinerator. Khan believed that the neighborhood's involuntary receipt of wealthy white Durbanites' droppings was the root cause of her two cancer cases, the latter of which was fatal. The reason that Bisasar Road dump was not closed in the early 2000s notwithstanding a very substantial pressure campaign by Khan and 6000 residents, was a commitment by the World Bank to invest a potential \$14.4 million grant to convert landfill methane emissions into electricity.⁷

Community opposition to the Bank's CDM and demands for Bisasar Road's closure were not universal. The Khan family built their middle-class house in the 1950s on Clare Road. Some members of the family still reside in the house overlooking (to the west) the dump, directly in the path of prevailing winds which continually coat the area with light landfill dust and disease-carrying flies. As logical as her closure demand was, given the history of environmental racism, there were nevertheless conflicting opinions about how to handle this menacing neighbor.

Starting in early 2005, the Abahlali baseMjondolo shackdwellers' movement of Kennedy Road – also directly adjoining the landfill, to the north – did an extraordinary job struggling against adverse conditions and police repression (until in September 2009 many of the leaders were driven away after violent attacks). But throughout the 2000s, the Kennedy Road shackdwellers welcomed the opportunity to have several dozen of their members pick rubbish and informally recycle it while on the dump. Scores more shackdwellers once informally picked materials from the dump, until the municipality's Durban Solid Waste (DSW) limited access due to safety and health dangers.

Kennedy Road leaders accused Khan of threatening livelihoods and sabotaging the city's offer of a handful of jobs and bursaries in the event the CDM project got off the ground.⁸ Khan had used the word 'informals' to describe the shack settlement residents and once advocated that they be compensated and moved to areas nearby (as she herself desired for her family), sufficiently far from the dump (she recommended a buffer for all residents of 800 meters) to be safe from the windswept dust. At the nearby

6. Patrick Bond, 'Privatization of the air turns lethal,' *Capitalism Nature Socialism*, 18, 4, 2007.

7. Khadija Sharife and Patrick Bond, 'False solutions to climate crisis amplify eco-injustices,' *Women in Action*, 2009, 2.

8. Aiobheann O'Sullivan, *Carbon Credits*, Centre for Civil Society CCS Wired #1 video, Durban, 2005.

clinic, health workers confirmed that Kennedy Road residents suffer severely from asthma, sinusitis, pneumonia and even tuberculosis. The toxic body load is unknown, but heavy metals and other dangerous substances penetrate the water, air and shifting soils. Khan had a profound empathy for people in the same proximity as cancer-causing and respiratory disease particulates, as she noted in an interview: 'Recently a woman was buried alive. She died on the site [picking rubbish, killed by a dump truck offloading]. I could have saved her life.'⁹

Figure 3.4: Sajida Khan, 1952-2007



The leader of Abahlali baseMjondolo, S'bu Zikode, later argued that Durban municipal officials manipulated these socio-racial divisions: 'We were used. They even offered us free busses to protest in favour of this project ... to damage those who oppose this project.'¹⁰ The promised jobs and bursaries that justified the group's earlier support for the CDM never materialized. The leading KwaZulu-Natal based environmental NGO, GroundWork, argued against the municipality's divide-and-conquer politics in a 2008 report, *Wasting the Nation: Making trash of People and Nations*:

Closing down illegal picking was not possible without their cooperation. But in return for that cooperation they wanted to secure the recycling and site cleaning jobs exclusively for people from Kennedy Road and take over the labour-broking contract with DSW for site cleaners. There are not, in fact, many of these jobs left at

9. Interview with Rehana Dada, 25 September 2005.

10. groundWork, *Wasting the nation*, 2008, <http://www.groundwork.org.za/Publications/gWReport2008.pdf>

Bisasar Road. The commercial recyclers employ 15 people on piece rates at the recycling pad established by DSW, while there are 25 people employed as site cleaners.¹¹

In spite of the project's environmentally racist past and present, Ken Newcombe declared Bisasar to be 'operated and maintained on a world-class level.'¹² Replied Sajida Khan, 'Unlike me, he does not live across the road from Bisasar.' As Khan argued, 'The community would not have marched and demonstrated; blocked the entrance to the site; handed a petition with 600 signatures to the mayor; written press articles and voiced our dismay on national television if we had accepted the Bisasar dumpsite.' The World Bank was apparently intimidated, and it pulled out of the Bisasar Road project, although two other much smaller methane-electricity CDM projects were funded at the same time. But by July 2007, having been twice struck by the cancer she believed came from particulates that floated across the road into her life-long home, Khan had died.

CDM as necessary 'additional' finance – or part of a multifaceted fraud?

With Khan gone and her personal lawsuit against the city null and void, the municipality then went to the markets, without the World Bank. The French Development Bank assisted with a US\$8 million loan, and municipal officials soon constructed the full system of extracting methane, burning and flaring it (with associated incineration hazards given the GHGs and heavy metals that coexist with the methane, including nitrogen oxide, lead, cadmium and other toxics), powering the turbines, and connecting the generated electricity back into the municipal grid. According to Parkin, 'What makes it worthwhile is the revenue that can be earned from carbon credits.'¹³

The World Bank had backed off in 2005 when Khan's fame was at her height – e.g. the lead paragraph in the *Washington Post's* analysis of the Kyoto Protocol when it came into effect that year: '[Sajida] Khan who has fought for years to close an apartheid-era dumpsite that she says has sickened many people in her predominantly brown and black community outside Durban, South Africa, was dismayed to learn recently that she faces a surprising new obstacle: the Kyoto global warming treaty.'¹⁴ In 2008, the Bank was replaced by an investment company, Tradings Emissions, which acquired the right to purchase one million emissions reduction credits. The firm's investment advisor Simon Shaw termed Bisasar and the other two landfills 'an important project, it is operational, it has a long-term future and we anticipate registration shortly. These credits will be a useful addition to our portfolio.'¹⁵

In March 2009, the municipality registered it on the United Nations list of CDM projects, as active through at least 2014. The four million cubic meters of potential Bisasar Road rubbish that is today's remaining capacity – on top of 19 million cubic meters in the dump that are already exuding methane – will allow extraction of methane and damaging on-site conversion of electricity for many years to come. Khan believed that the gas should indeed be removed, but through nearby gas pipes, not burned and

11. *Ibid.*

12. Ken Newcombe, 'Letter to Durban Mayor,' <http://www.carbontradewatch.org/pubs/skyeng.pdf>

13. *Financial Mail*, 'Hope for recovery process', 17 October 2008

<http://free.financialmail.co.za/report08/green08/qgreen.htm>

14. Shantar Vedantam, 'Kyoto credits system aids the rich, some say,' *Washington Post*, March 12, 2005.

15. See reports at: <http://www.engineeringnews.co.za/article/ethekwini-cdm-project-sells-cers-to-uks-trading-emissions-2008-11-21>; <http://free.financialmail.co.za/report08/green08/qgreen.htm>; <http://www.investigate.co.uk/article.aspx?id=2008112107001164631>

flared on site. Khan's goal of Bisasar Road's immediate closure with conversion of the gas for industrial use a long way from residential areas could have been achieved were there better financing systems available than the unstable carbon market.

In contrast, Christiana Figueres, a leading carbon trading expert who in mid-2011 was named Executive Secretary of the United Nations Climate Change Conference, gave Durban's electricity-from-landfill gas project accolades during the COP17.¹⁶ She declared that the United Nations had selected the initiative as one of the world's 'top ten renewable energy projects'. Likewise, a World Bank Prototype Carbon Fund website claimed in 2004 that this project:

may be a first of its kind for Africa... 'I think the example we are setting in Durban, working with the World Bank to deal with landfill, is a huge innovation. We are turning dirt and garbage into a raw material that we could grow wealth from. If you wanted to say to yourself, 'we want to be the cleanest city in the world', waste, in my view, is the best place to start,' said Obed Mlaba, Mayor of Durban.¹⁷

At the time of writing, Mlaba – who served as mayor from 1995-2011 – is being investigated by the 'Hawks' national crime authorities for alleged hijack of a tender and preferential tendering treatment, given that his daughter's company received a tender worth more than \$70 million to operate a major incineration project at Bisasar Road. Describing it as his post-retirement 'hobby', Mlaba, along with his two daughters Thabiso and Thandeka, acted as directors of the newly created entity Own Environmental Waste Solutions, the company that allegedly hijacked the tender from the previous preferential bidder: Environmental Waste Solutions (EWS).

That company's founder, Richard Wardrop, a Durban businessman who was initially the majority shareholder, found himself sidelined after Mlaba's entity, incorporated in November 2009, allegedly stole the bid. (Thandeka resigned from being a listed director in EWS the following day, while Thabiso remained on board).¹⁸ Indeed, prior to Mlaba's alleged coup of EWS's preferential status, Mlaba himself had acted as a sleeping partner in EWS. Wardrop explained, 'Sixty percent of the company belonged to me, 20 percent to the Obed Mlaba Family Trust – Obed was one of our silent partners – and 20 percent to Bheki Mtolo, who was introduced to me by Mlaba.'¹⁹ This was a readily observable fraud, which because of a business professional's objections, was followed in early 2011 by a South African police investigation, and which may lead to prosecution against the former mayor and if so, possibly conviction and jail time.

But a deeper fraud appears to have been committed: the Bisasar Road project was known by key municipal officials to be ineligible for CDM status because it did not satisfy 'additionality' requirements, which specify that if the project does not need the additional CDM funds – if it would have gone ahead in any case without the funding – then it does not qualify. This is a highly subjective area for CDM officials to evaluate, especially when an authority as familiar with the project as Parkin testified (on this

16. Independent On Line, 'Cities urged to upscale clean energy plans,' 2 December 2011, <http://www.iol.co.za/scitech/science/environment/cities-urged-to-upscale-clean-energy-plans-1.1191514>

17. World Bank Prototype Carbon Fund 2004 website. Durban'

18. Independent On Line, 'Mlaba and the great tender hijack,' 10 April 2011, <http://www.iol.co.za/news/south-africa/kwazulu-natal/mlaba-and-the-tender-hijack-1.1041199?showComments=true>

19. *Ibid.*

occasion in 2008 just before going to the UN for certification), 'What makes it worthwhile is the revenue that can be earned from carbon credits.'²⁰

Yet Bisasar Road should not qualify as a CDM project. According to the chair of the CDM Executive Board, Lex de Jonge, 'Additionality is the cornerstone of any credible CDM project.'²¹ That is, without qualification as an additionality, the CDM shouldn't be approved.

As Parkin revealed in late 2011, 'We started the project prior to CDM. We were already down the road, (it) just made it come faster because the funding was there. If the funding wasn't there, we may have had to delay the project until funding could be found through other means.'²² He continued, 'As the City, if we can make some money out of it, I don't see why it shouldn't be done and the whole moral issue is separate from the project.'²³

When asked to explain his statement, Parkin responded,

Just remember, it started off as an environmental project in 2003. The Kyoto Protocol was only signed up to 51 percent by 2005. We already started the project and we were going ahead no matter what, so *whether CDM became a reality or not, the project was going to go ahead.*

I don't see that there is a moral issue to make it a more beneficial project... I am a technocrat – I accept there are moral issues... (But) the objection to this project was that they said they will approve the project if you close the landfill site. That was the link. It wasn't 'we were against the project', it was, 'we're against the landfill site'. There is no link to the project and the landfill site. In terms of the landfill site, it will continue for the city's benefit until it is full. (emphasis added)²⁴

In short, Parkin admitted that the project would have gone ahead, with or without CDM status – in theory, disqualifying it from CDM status – for the purposes of flaring gas in an economically 'positive' manner.

When asked how CDM as justification facilitated the development of the project through City investment, Parkin revealed, 'Because when you motivate to the city, you say this will eventually be an income source and won't be a drain... We have 480,000 credits in the pipeline and issuances waiting for 65,000, so we already have half a million carbon credits at 7 euro.'²⁵

Does Bisasar Road work as advertised?

Just as important as all the other criticisms of Bisasar Road is that the project was excessively hyped and, according to a December 2011 presentation by Parkin, the methane reduction was just half of that predicted at the small Marianhill landfill (Component 1) that had initially been approved by the World Bank, while Bisasar Road was only using gas at around 80 percent the rate anticipated (Component 2). The

20. *Financial Mail*, 'Hope For Recovery Process,' 17 October 2008, <http://free.financialmail.co.za/report08/green08/qgreen.htm>

21. L. de Jonge, 'Development of the CDM over time and in the future,' 2009, <http://climate-iiisd.org/guest-articles/development-of-the-cdm-over-time-and-in-the-future/>

22. *Africa Report* and Pacifica News journalists taped interview during Durban municipal tour of Bisasar Road landfill, 30 November 2011.

23. *Ibid.*

24. *Ibid.*

25. *Ibid.*

landfill at La Mercy was such a failure – due to low-pressure gas flow – that the World Bank methane-to-electricity generator constructed there was abandoned and the equipment moved to Bisasar. For Bisasar the CO₂-equivalent tonnes reduced were predicted to be 270,000 while in reality only 218,000 were reduced in 2009 (the last available year for which data are available), according to Parkin.²⁶

Would donors such as the French Development Agency (AFD) still have invested in Bisasar, knowing the facts on the ground? Denis Vasseur is a representative of the AFD, a public institution specializing in the financing of sustainable development projects. Asked about investment preferences and cost differentials, he responded that composting projects far outperformed landfill gas initiatives across the board as they facilitated greater complementary ecological, social and community benefits, and he stated that composting projects were ideally suited to countries in sub-Saharan African with humidity and high levels of organic waste in landfills.²⁷

Beira in Mozambique, with 80 percent organic waste (currently being converted into fertilizer by Terra Nova), was identified by Vasseur as one successful project. Bisasar – with 59.9 percent methane richness (the product of decomposing waste) – was another. ‘We should invest in composting first,’ he stated, describing already functioning initiatives in Bangladesh. Given that AFD previously invested nearly \$10 million in the project, Vasseur’s overall response, strongly leaning towards composting in similar circumstances, was revealing.

Others, like Cathy Lee of Lee International, a company specializing as Emissions Trading Consultants, strongly advocated in favor of Bisasar as a successful carbon trading project. ‘There is no way to close this dump, right now. If recycling, composting, waste avoidance programmes were extremely successful, it would be far less needed. But right now that is just not reality,’ she said.²⁸ Later, on the phone, she would concede that everything she knew about the Bisasar dump was learned from newspapers. When asked by a representative of Global Alliance for Incinerator Alternatives (GAIA) whether recycling and other alternative methods such as waste diversion should be utilised, Lee stated vehemently, ‘The problem is those are rich countries. You can’t do here, what you can do in Europe.’²⁹ Similar problems arise in other countries, e.g. Egypt (see BOX 2).

In other words, a more climate-appropriate approach could have been considered, but was constrained by two factors: a CDM which locked in municipal environmental racism, intra-community conflict, fraud and ineligibility; and adequate financing to pursue a different route. It is because of this dual problem of CDMs – they amplify problems, and they forego alternative options – that this mechanism should be discontinued, especially if the pilot project for South Africa, even one lauded such as Bisasar, exhibits such extreme contradictions.

BOX 2: Egypt’s CDMs: fertilizer, protesters, landfill gas and wastepickers

By Will Nham

During the 2000s, under Hosni Mubarak’s dictatorial, corrupt regime, Egypt became a prime candidate in a worldwide search for carbon investments. Investors searching for ideal conditions to design and implement CDM projects found Hosni Mubarak’s Egypt an enticing place. With its proximity to the EU,

26. John Parkin, ‘Durban’s gas-to-electricity project’, Durban Solid Waste powerpoint, 7 December 2011.

27. *Ibid.*

28. *Africa Report* and Pacifica News journalists taped interview during Durban municipal tour of Bisasar Road landfill, 30 November 2011.

29. *Ibid.*

close economic ties, and authoritarian government, Egypt was an ideal candidate for Annex I funds. It already builds upon strong economic connections with the European Union, which is Egypt's biggest trading partner at 11 billion euros³⁰. Furthermore, its large economy is second on the African continent, only behind South Africa³¹. This creates a large pool of potential industrial projects for emissions reductions in the country.

By late 2011, Egypt hosted ten CDM projects, involving financing from Canada, France, the Netherlands, Denmark, Austria, Germany, Japan and the UK.³² With almost three million tons of carbon emission reductions per year, Egypt is the largest host of CDMs in Africa. Energy and agriculture are the two major sectors available for CDM projects³³. Current projects vary from gas abatement to wind power generation, with the largest CER source coming from the Abu Qir fertilizer plant just outside of Alexandria. This plant generates over a million CERs per annum: one of the largest on the continent.

Egyptians are alert to the environmental dangers of fertilizer production on the local environment. In Damietta, 150 km down the coast, protestors have been vocal against the setup of MOPCO-Agrium's fertilizer factory. Most recently, citizens escalated their grievances into a battle with the governorate of the region. This confrontation led to a shutdown of the city by blocking roads and the city's port where the MOPCO facilities are located³⁴. Nada Hussein Rashwan writes, '[n]ot only do these plants cause chemical contamination, but they also allegedly use great amounts of Nile water while operating, as the nearby villages suffer severe water shortages'. Given this type of mobilisation against big industries, this has the potential to carry over to Abu Qir's fertilizer production in Alexandria.

Another CDM project in Alexandria has been subject to much scrutiny by the public. The Onyx Alexandria landfill gas recovery and flaring plant is just one example of the failure of CDM projects in Africa. The technical mechanism for CERs mirrors many other CDM projects, most notably the Bisasar landfill in Durban, South Africa. They all extract latent methane gas from the landfills to burn and classify it as emissions reductions. Gas harvesting uncovers a hidden profit potential in landfills, often parading business interests as environmental ones. However, most gas recovery processes require unrealistically high methane recovery rates to make them environmentally beneficial.³⁵

Onyx is a wholly-owned subsidiary of Veolia Environnement, a French multinational. They were brought in by the Alexandria governorate to take over the removal of solid waste in the municipality. The \$446M contract to Onyx was granted by the Egyptian government in 2001, at a value ten times more than what they were paying previously³⁶. They calculated that approximately 13 million tonnes of waste were to be removed during the contract period, thereby generating 7 million CERs in the ten year period³⁷. The large scale of the project made it attractive to the World Bank and Egyptian government to invest in. However, in reality the project is much more modest. The initial rate of recovery of 'fugitive gasses' is set at 20 percent. These figures are far below environmentally beneficial standards³⁸. The low projections for methane recovery suggests an initial period where the gas is not fully gathered, thereby potentially doing more harm than good. Therefore, the acceptance of such programs publicises the attractive economic aspects of carbon trading, while sidelining the environmental mandate of the CDM.

The project designs have also been a disaster for the local economy. Privatisation led to increased consumer costs, in addition to the loss in public finances. Door-to-door waste collection prices also went up. Residents complained that 'paying LE50 for the garbage clean-up is simply unbelievable'³⁹. Further, the failure of the stakeholder analysis within the UNFCCC project design phase was apparent in the case of the Onyx Alexandria landfill. 'The *zabbaleen* were not included in negotiations or mentioned in the contracts that were signed between the municipality and the private firms,'⁴⁰ writes Rachel Leven.

30. Koths, Dagmar and Wolfgang Sterk. 2006. Country Profile: Egypt. Wuppertal Institute for Climate, Environment, and Energy

31. IMF. 2011. World Economic Outlook Database.

<http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/index.aspx>

32. <http://cdm.unfccc.int/Projects/projsearch.html>

33. Koths and Sterk. 2006. Country Profile: Egypt. Wuppertal Institute for Climate, Environment, and Energy

34. Rashwan, Nada Hussein. 2011. Angered Damietta citizens reject Cabinet decision to suspend construction in polluting factory. AhramOnline, Nov 14.

35. http://epa.gov/lmop/documents/pdfs/conf/9th/anderson_abs.pdf

36. Rashed, Dena. 2002. Capital Collection. Al ahram Weekly, February 28.

37. UNFCCC. 2006. Project design document: Onyx Alexandria Landfill Gas Capture and Flaring Project.

38. http://epa.gov/lmop/documents/pdfs/conf/9th/anderson_abs.pdf

39. Rashed, Dena. 2002. Capital Collection. Al ahram Weekly, February 28.

40. Leven, Rachel. 2006. Pharaoh's Garbage. NIMEP Insights.

Stakeholder consultations ignored actual residents of Alexandria and focused input from Onyx and the Alexandria governorate. The *zabbaleen*, who are the traditional waste collectors in the community, were not recognized. They were previously accredited and paid by the government to perform the garbage removal alongside municipal workers⁴¹, so they had the most at stake with the privatisation of the waste management system, but the process ignored their economic position and importance.

The new landfill site built at Borg al-Arab was negotiated between the city and the company, and was subsequently built in close proximity to the city's northern resorts and Bedouin population⁴². The location of the site violated Egyptian zoning laws. This is an example of the lack of accountability to community members. Veolia handles 63 million tonnes of waste in 28 different countries⁴³. However, in the context of Alexandria, *zabbaleen* do the jobs better than these corporations. The contracts given out only required 20 percent recycling rates, while the *zabbaleen* have been documented to recycle up to 80 percent of the materials⁴⁴. In fact, this is quickly what the contracted corporations came to realise. Local door-to-door donkey driven-carts were more efficient and effective than the motorised alternatives offered by Onyx given the local geography and the culture of waste disposal. Therefore, these companies eventually subcontracted the work back to the *zabbaleen* to continue in their old capacities, but only offered them a fraction of what they were earning before privatisation⁴⁵. One member gripes, 'LE500 is not acceptable. I make around LE1,000 per month from garbage collection. It is the bare minimum. I support a big family and have already been forced to take my children out of school' ⁴⁶.

Finally, if we look at the actual function of the *zabbaleen* collection, we find that they are far more efficient at reducing gaseous emissions. The gas recovered by these advanced waste management systems are only caused by the lack of separation between organic and non-organic waste. The *zabbaleen* have been known to take most of the organic waste out of their collections⁴⁷; the degradation of organic waste is the primary source of methane gas emissions from landfills. While methane reduction through gas flaring appears to be a technical advance from the perspective of the UNFCCC, Alexandria government, and Onyx, it is a huge failure on the part of the city residents: there should be no organic material and hence methane in the landfills. The UNFCCC did not pick up on these sorts of socio-ecological relations and political struggles as they only really acknowledge the relationship between the government and Veolia. This exemplifies the lack of thoroughness in the UNFCCC accreditation process and review.

The example of the Onyx Alexandria landfills CDM project highlights not just the environmental failure, but also the economic failure of landfill-based CDM projects. The CDM project did nothing but put a green face on a dirty use of public funds and space. Recently, Veolia announced that it would leave its Egyptian operations due to large reported losses in the last year⁴⁸. This is a victory for the municipalities who will hopefully sensibly return to a public system that employs the *zabbaleen* at a fair wage. According to the Egyptian example, CDM projects fail because they support industries that do not necessarily clean up their act and only serve to hide further injustices.

41. CID Consulting. Economic Aspects of informal sector activities in solid waste management

42. Leven, Rachel. 2006. Pharaoh's Garbage. NIMEP Insights.

43. Patel, Tara. 2011. Veolia to leave 37 countries as loss spurs quicker revamp. Bloomberg, August 4.

44. Samson, Melanie. Confronting and Engaging Privatisation. In Refusing to be cast aside: waste pickers organizing around the world.

45. Rashed, Dena. 2002. Capital Collection. Al ahram Weekly, February 28.

46. Rashed, Dena. 2003. Trashed Lives. Al Ahram Weekly, February 6.

47. Fahmi, Wael and Sutton, Keith. 2006. Cairo's Zabaleen Garbage Recyclers: Multi-nationals' Takeover and State Relocation Plans. *Habitat International*, Vol 30.

48. Patel, Tara. 2011. Veolia to leave 37 countries as loss spurs quicker revamp. Bloomberg, August 4.

Chapter 4

Niger Delta oil flares, illegal pollution and oppression

By Fidelis Allen

Introduction

When oil is extracted, it comes out with water and with associated gas. In the Niger Delta, this associated gas is flared in situ with grave damage to the environment and to the neighbouring communities. The practice is forbidden but companies like Shell and others have been doing this for decades.

Oil companies have been at the forefront of pushing for CDM projects for the utilization of oil-associated gas, mainly in the form of avoidance of flaring. A typical feature of the process of oil extraction is the subordinate position of host communities. This causes conflicts that led groups in the Niger Delta to take up arms against the state and oil companies between the late 1990s and 2009. The CDM projects are not a solution to such conflicts, on the contrary.

Figure 4.1: Gas flaring at Kwale, Niger Delta, Nigeria



Source: Ebriador Kentebe

The residents of the Niger Delta are neither beneficiaries from the profits of CDM projects nor able to extract concessions from the companies' facilities (such as reliable electricity, hospitals, good drinking water, education). The problems are evident in the case of Kwale-Okpai and Asuokpu/Umutu gas recovery and utilization CDM projects – whose very existence is decried by environmental justice activists in the Delta, since what companies are being rewarded for, reduced flaring, is in any case illegal.

The Kwale-Okpai CDM project is in Ndokwa land in Delta State. The clan is made up of three local government areas, namely, Ukwuani, Ndokwa-East and Ndokwa-West. This suggests the vastness of the area in which the common language is Kwale. Being mainly peasant farmers and fishers by occupation, the land, forest and water as well as the rich biodiversity have remained precious and indispensable for their survival. The oil industry has done great damage to the environment and its resources. And like many communities in the Niger Delta, the community is without a hospital, electricity, schools and good roads to compensate for the damage done to the environment.

Out of five Nigerian CDM projects already registered with the UNFCCC, two are for the recovery of associated gas that would otherwise be flared at Kwale, Delta State and recovery of marketing gas that would otherwise be flared at Asuokpu/Umutu Marginal Field Nigeria. The projects are claimed to have annual gas emissions reductions of 1,496,934 and 256,793 equivalent of CO₂ metric tonnes respectively.¹

As early as 2006, when then president Olusegun Obasanjo announced in Washington that the avoidance of flaring of gas by oil companies would be counted as CDM investment projects, it attracted the anger of the environmental justice movements.² Not only was there inadequate consultation in the affected communities, for leaders were only casually told that at some point a project would bring electricity to the community through the CDM. Yet more irksome is that fact that these CDMs represents a substantial reward provided to oil companies for mitigating an activity which they should not be doing in any case. As Environmental Rights Action (ERA) activist Asume Osuoka argued, 'Gas flaring is a criminal activity the culprits of which should not be able to profit from. Oil companies in Nigeria can end gas flaring profitably without CDM credits. Those that need compensation are the community victims and not corporate culprits as the Nigerian authorities are suggesting.'³

Rewarding illegality

Experts across the world have confirmed the inequity and corruption of the legal system implied in this arrangement. According to Peter Roderick from Britain's Climate Justice Project, 'In our view, the acceptance of an associated gas flaring project in Nigeria as a CDM project cannot be justified. If CDM credits were to be granted in respect of activities that are violations of human rights, this would also bring the CDM process into disrepute.'⁴ From the Institute for Policy Studies in Washington, Daphne Wysham agreed, 'This proposal by Nigeria should be regarded as a fraud by the CDM methodology board... to tell companies they will be paid for doing something they should have done decades ago by law is to encourage corporate abuse everywhere.'⁵

Although awareness about climate change is currently inadequate and not well spread in grassroots organisations, the environmental justice movement in Nigeria rejects the argument that CDM projects in oil and gas will reduce greenhouse gas emissions. As Nnimmo Bassey argues:

1. By way of comparison, a third CDM project, Efficient Fuel Wood Stoves for Nigeria, is tiny, involving import of about 12,500 fuel efficient stoves from a German manufacturing firm and will result in annual greenhouse gas emissions reductions of just 31,309 equivalent CO₂ metric tonnes. This project has been criticized for importing stoves which could easily have been produced locally.

2. Carbon Trade Watch, 'Groups slam Nigeria's submission of gas flare reductions for carbon credits', Amsterdam, 29 March 2006.

3. Now an academic at York University in Toronto, Osuoka was at the time working for Environment Rights Action/Friends of the Earth Nigeria.

4. <http://www.carbonwatch.org>

5. <http://www.seen.org>

The Nigerian government's embrace of CDM projects means mortgaging the country's future energy sovereignty and ability to compete in energy production and supply equations in the future. It also gives approval to the continued pumping of greenhouse gases (from burning oil) into the atmosphere, thus deepening the climate crisis.⁶

Many critics object to this rewarding of today's unethical corporate practice of gas flaring in violation of Nigerian law. Gas flaring was outlawed in 1984 through legislation and amended subsequently, most recently through the Gas Flaring Prohibition and Punishment Bill of 2009. Despite these efforts, about 18.9 billion cubic meters of gas is flared annually in Nigeria, nearly 20 percent of the world's total. Conservative estimates put the contribution of CO₂ by the Nigerian oil industry at 45 million tonnes/year. A recent report released by ERA/Friends of the Earth argues that it is unethical to pay oil companies to end gas flaring which ought to have been complied with several years back.⁷

Moreover, based on studies carried out by the organisation's researchers, the report argues that even on its own terms, the claim of potential reduction in greenhouse gas emissions from gas recovery CDM project in Kwale, Delta State has failed.⁸ In the case of the Pan Ocean project, the project design document claims capture of 75 million standard cubic feet of gas daily at Ovade-Ogharefe oil field, but it is difficult to assess the validity of claims of 98 percent success in emission reductions when monitoring reports do not provide actual levels of oil production within a definite period of review. Only by knowing the level of production, can one logically calculate standard cubic feet captured daily since the common approach in the oil sector is that a barrel of oil is associated with about 1000 standard cubic feet of gas.⁹ ERA argues that actual emissions reduction in this case was up to 60 percent less than what is contained in the project design. As reported, 309,907 tonnes of CO₂-equivalent emissions was recorded instead of 754,282. This gap speaks volumes about the efficacy of the rationale of carbon trading.

The Kwale CDM project is jointly owned by the Nigerian Agip Oil Company (20 percent), Phillip Oil (20 percent) and the Nigerian National Petroleum Corporation (NNPC 60 percent). Environmental Rights Action insists that they have failed, as has Shell, which currently has a non-CDM gas recovery and utilization project in Afam – in their claim of extremely high CO₂ emissions reductions, employment creation, transfer of technology and sustainable development through these projects in Kwale. Instead, Shell recorded a 30 percent increase in emissions in 2010. Explaining this failure, ERA and other researchers question whether these companies use associated gas or cheaper non-associated gas in their gas recovery and utilization projects. The continuing drops in the price of carbon in the international emissions markets, as explained in previous chapters, may also be a factor in the use of cheaper non-associated gas in gas utilization projects. If this is true, then it is another dimension to the deceit behind Nigeria's oil and gas CDM projects.

6. Nnimmo Bassey, 'Foreword', in *Mired in a Fossil Trap, the Nigerian CDM Report*, Benin City, Environmental Rights Action/Friends of the Earth, May 2011.

7. Environmental Rights Action/Friends of the Earth, *Mired in a Fossil Trap, the Nigerian CDM Report*, Benin City, Environmental Rights Action/Friends of the Earth, May 2011

8. *Ibid.*

9. *Ibid.*

Shell has announced its intention to upgrade its gas recovery and utilization project in Afam to a CDM project shortly, and is also at an advanced stage for securing CDM status for a similar project in Adibawa, Joinkrama in the Niger Delta. For both projects, Shell claims in its Project Design Document (PDD) to have the potential for sustainable development of local communities with regards to social, economic and environmental improvement. If registered as expected, Shell will gain an additional \$7,799,508 in revenues over a 10-year period from a project which ought to have been in existence and paid for as part of internal Shell extraction costs, since gas flaring was banned almost 30 years ago.

Ongoing community suffering

The need to ban gas flaring relates to broader climate change considerations as well as local public health. However, contrary to expectations, Kwale communities are still confronted with the regular flaring of gas. As ERA argues, 'CDM projects in fact create perverse incentives for oil companies to continue gas flaring ad infinitum and as would be apparent later stultify implementation of relevant laws.'

It is noteworthy that even the claim of potential poverty alleviation or positive socio-economic impact within the community of the project appears to be a gimmick. Only a handful of the people have gained employment in the main CDM projects. The heat and noise from the flaring of gas has not been reduced. And in both Kwale and Shell's Afam reinjection project, electricity supplies which these gas utilization projects are expected to improve have, for neighbouring communities, remained deplorable. More than 80 percent of rural dwellers are not even connected to electricity lines, and if the projects generate electricity, this benefits primarily the wealthier urban communities within Nigerian cities.

As Kwale-based writer Majirioghene Bob argues:

When the people of Kwale fetch water from the rains, the containers they use collect oil residue as well as contaminated water. All the fish in Kwale and Uzere are gone, something that is reflected in one of the stories, *Common Identity*, in my new book, *Deep Sighs*. The air around the oil facility in Kwale is putrid and dank. Politically, the major oil companies supposedly championing CDM issues were actively involved in arming fratricidal warfare between communities, and fighting with groups opposed to the devastating effects of their activities in the Niger Delta, particularly in Kwale, Ogoni and Uzere. As for environmental-economic issues, the oil companies together with officials of the UNFCCC and the Nigerian government of that time were playing all sorts of games with the CDM as it affects these communities.¹⁰

The traditional ruler of the Kwale community, Chief Emeka Uwaka, warned in the *Daily Independent* newspaper of Lagos, of continued criminal neglect of Kwale's socio-economic needs.¹¹ For example, six years after the CDM process began, no community in Kwale has been connected to electricity. The traditional community demand is for at least 50 MW of electricity in compensation for regular gas flaring and the heat associated with it that they have suffered. Even pressure from the presidency – both

10. Majirioghene Bob is an independent researcher in Kwale, Delta State. He sent the note in quotation via email to me during the research that produced this paper, on 26 October 2011.

11. Francis Onojiribholo, 'Kwale Chief laments plight of communities', *Daily Independent*, 16 August 2011.

Umaru Musa Yar' Adua¹² and his successor Goodluck Jonathan – and the National House of Assembly have failed. Neither NAOC nor the government's electricity company, Power Holding Company of Nigeria, have yet connected electricity to these communities in spite of CDM promises. In the meantime, huge financial benefits have accrued to the shareholders and managers of these companies and to the Nigerian government – at the expense of Niger Delta communities.

In sum, the oil-related CDM projects in Nigeria have no prospects for success given the context in which they have been initiated. Such projects are characterized by fraud, exclusion, the destruction of natural habitats, and the degradation of the livelihoods of local communities, and of soil and water resources. For these reasons, Nigeria's leading environmental advocacy group, Environmental Rights Action and its allied community organisations are providing leadership against the oil companies, the government and the CDM process.

12. The president instructed then Minister of Petroleum Resources to respond to a letter of complaint by the people of Kwale dated 13 November 2009.

Chapter 5

East African trees and the Green Resource Curse

By Adrian Nel and Khadija Sharife

Introduction

East African forests are now under attack by governments and corporations, mostly based in the North, aiming to protect them from local inhabitants. The relevance of forests as a means of ‘sinking’ carbon was recognised by the Kyoto Protocol’s Articles 6 and 12, related to project activities and emissions trading. Article 6 articulates that Annex 1 (or developed/industrialised nations accounting for more than 80 per cent of historical emissions), may transfer to, or acquire from, any other Annex 1 country, carbon credits – the result of projects aimed at reducing man-made emissions or enhancing carbon sinks.¹ Included in Article 6 are two key provisions stipulating that any claimed emissions reductions be ‘additional’ to emissions that would have otherwise occurred.²

Meanwhile, Article 12 concerns the role of non-Annex 1 nations (developing countries) by defining the role of CDM initiatives, enabling – in theory – developing nations to move forward sustainably through technology transfer (for example, solar and wind power) from developed nations.³ CDM in return facilitates compliance for continued CO₂ emissions on the part of developed nations through purchasing carbon credits generated via the lack of fossil-fuel use in developing nations. Afforestation (A) and reforestation (R) projects were adopted by the 9th Conference of the Parties (COP) in December 2003.⁴ But what is the reality of CDM projects, particularly pertaining to forest plantations?

This chapter examines the incursion of private interests, and in particular forestry multinationals, into the East African forestry landscape. Examining the involvement of Green Resources Ltd, Africa’s largest forestation company, we track the motivations driving registrations for A/R CDM projects and examine some of the asymmetries of interaction that characterize this element of the broader carbon forestry sector. A/R CDM projects ostensibly seek to provide investment for ‘forests’, yet investment for wood, as the UN’s Food and Agricultural Organization (FAO) concedes, is ‘driven by demand for wood products’⁵ – and CDM initiatives, appear to be no different. The obvious implication of this distortion is vulgarly evident in tree plantations as ‘forests’, where ‘alien pine or eucalyptus trees planted in biodiverse grassland are nothing more than industrial timber plantations with no biodiversity value.’⁶ (Timberwatch Coalition 2011, 13).

Expanding upon the issues made visible through the lens of Green Resources LTD we broaden our view to include a series of case studies of A/R CDM projects in various

1. Winrock International (1999) ‘Guidelines for Inventorying and Monitoring Carbon Offsets in Forest-Based Projects’ Arlington, VA, Winrock International.

2. *Ibid*

3. *Ibid*

4. Republic of Tanzania (2007) ‘A Handbook for Clean Development Mechanism Projects (CDM) Activities in Tanzania’.

5. UN FAO (2009), ‘Global Demand for Wood Product’,
<ftp://ftp.fao.org/docrep/fao/011/i0350e/i0350e02a.pdf>

6. UN FAO (2009), ‘Global Demand for Wood Product’,
<ftp://ftp.fao.org/docrep/fao/011/i0350e/i0350e02a.pdf>

stages of implementation (some are operational and a number are still in the ‘pipeline’) across East Africa. They flaunt additionality criteria and lack Free and Prior Informed Consent from local, forest dependent communities. These projects in many cases simply amount to little more than green washing or ‘box ticking’ through techno-centric project evaluations, and lead to outright evictions of local communities. The preponderance of plantation interests in A/R CDM projects effectively supports corporate financial accumulation whilst marginalizing and obscuring the voices of local communities, and the cases below highlight some of the negative biodiversity impacts, concerns over water use and damage to land and biodiversity

Afforestation/Reforestation CDMs

When it comes to CDM projects, Green Resources Ltd, Africa’s largest forestation company, appears at first blush to endorse a sustainability mission. After the UN Framework Convention on Climate Change’s (UNFCCC) Kyoto Protocol was adopted in 2005, the company (then known as Fjordglott) increased its capitalisation from US\$98,000 to US\$1.4 million, later extending invitations to private investors, such as Norwegian corporation TRG, to acquire shares.⁷ These days, Green Resources’ activities include plantations, carbon offsets, forest products and renewable energy. The company’s wood production in Africa is pegged at 14,000 ha of forest plantations of a total 610,000 ha under process for future development.⁸ The company, primarily operating in East Africa, with 3500 employees holds 12,000 ha in Uganda as well as significant areas in Tanzania (34,000 ha of land, with a further 120,000 ha in the process of acquisition), Mozambique (172,000 ha) and Sudan (179,000 ha).⁹ It also owns East Africa’s largest sawmill, Sao Hill, and remains one of the continent’s largest producers of transmission poles required for electricity, amongst other products such as wood for housing.¹⁰

The company’s current major shareholder structure¹¹ includes major investors such as Phaunos Timber Fund, New Africa, Steinerud, as well as Macama , Storebrand ASA , Verben Investment Ltd. , TRG , and Preben Invest AS. Unlike the company’s competitors, Green Resources has the advantage of already having significant experience in land acquisition, which is described as a ‘significant entry barrier’ by the company. Competitors include the Global Forest Solidarity Fund¹², a private initiative active in Mozambique, funded to the tune of US\$100 million from investors such as Harvard University, having planted 5,000 ha in the past decade. Other competitors include New Forest, financed by UK capital, operating in Uganda and Mozambique, planting 1,500 ha in 2007; Actis/CDC, controlling 7,000 ha of teak plantations in Tanzania, as well as logging rights in Sudan; Raiply, East Africa’s largest forest industry company, owning 12,000 ha in Tanzania, with operations in Kenya; and Rift Valley Holdings, self-described as ‘one of the largest investors in agriculture and forestry in sub-Saharan Africa.’

As Mutuma Marangu, chairman of a Green Resources subsidiary explained, a tree that takes 70 years to grow in Norway, takes just 17 years in Tanzania. Given the

7. Norwatch (2000) ‘Norwegian Tree Plantations, Carbon Credits and Land Conflicts in Uganda’: p. 4.

8. Green Resources (2009) ‘CCA Africa Agribusiness Sector Presentation’, p. 2 (available from: <http://tinyurl.com/268jfuy>)

9. *Ibid*

10. *Ibid* p 4

11. *Ibid* p 2

12. *Ibid* p 4

location of East Africa, and the rising need from emerging nations such as China for wood, Marangu believes that with major forests coming online, Chinese, Japanese and other major users of wood in the near- and far-East will move toward East Africa as opposed to Brazil, Argentina and Chile – their traditional mainstay suppliers for lumber.¹³

‘There is a shorter shipping voyage from China to East Africa than from China to Brazil,’ he stated. ‘There is ample opportunity here. We have the least penetration of forestry and forest cover in the world, the greatest possibility for growing trees. We are leading by example.’ During his recent interview with Canada’s Business News Network (BNN), Marangu said that each year wood is required for 300,000 homes in three different East African countries, with population growth at ‘one million people, per year’ in Kenya, Tanzania and Uganda.¹⁴

‘In terms of power and demand, there is an extreme need for both (wood) production and (carbon) offsets. At present, there is not much multinational or foreign investment in the sector,’ he said. Currently, ‘high cost’ producers such as the US (producing over 600 million cubic metres of wood per year) and Russia (which produces over 400 million cubic metres yearly) amongst others like Uruguay, Brazil, Indonesia and South Africa, account for 80 per cent of supply.¹⁵ The company notes that Russia’s new log wood export tariffs (€50 per cubic metre) exceeds Tanzania’s stumpage costs (the residual costs after subtracting various allowable costs such as transport). Meanwhile, emerging nations such as South Africa are increasing local consumption of wood products. Marangu’s assessments of China and India are correct: from 2002 to 2006, the latter’s imports doubled as did China’s since 2006.

Plantations are seen as a profitable means of mitigating climate change under the umbrella of the Kyoto Protocol’s Clean Development Mechanism (CDM) projects. Africa has been the smallest recipient of climate funds even though the continent emits just three per cent of all greenhouse gases (GHG) worldwide.

Despite studies by Stanford University’s Program on Energy and Sustainable Development which reveal that between one-third and two-thirds of CDM projects ‘do not represent real carbon reductions’¹⁶ CDM projects rose to 20 per cent of the total carbon market¹⁷, valued at US\$17.5 billion out of a total US\$94 billion (in 2009). The European Union carbon market comprises 77 per cent of this (US\$72 billion).¹⁸

Green Resources has declared that existing projects will generate over 60 million tonnes of carbon ‘capture’¹⁹ during the next decade, with total forestation carbon capture expected to peak at 2 million tonnes per annum for existing projects under development (in 2009). Additional projects are estimated to generate 9 million tonnes (by 2020 when ‘net growth in biomass is the highest’). The Norwegian government, eager to offset emissions²⁰ has already acquired carbon credits from Green Resources.²¹

13. Business News Network (2010), Interview with Green Resources’ Mutuma Marangu, 28 April (available from: <http://tinyurl.com/2f34wg9>)

14. *Ibid*

15. Green Resources (2009) ‘CCA Africa Agribusiness Sector Presentation’, p. 6.

16. Christian Aid (2009) ‘The Role of Carbon Markets In Countering Climate Change’ (as cited by Victor, David. (2008) ‘A Realistic Policy on International Carbon Offsets’, CITY, Stanford University Press).

17. Green Resources (2009), ‘CCA Africa Agribusiness Sector Presentation’ p. 5.

18. *Ibid*

19. Green Resources (2009) ‘CCA Africa Agribusiness Sector Presentation’, p.5.

20. TimberWatch (2009) ‘Potential Impacts of Tree Plantation Projects under the CDM An African Case Study’

21. Green Resources (2009) ‘CCA Africa Agribusiness Sector Presentation’, p. 5.

BOX 3 : Fake eco-certification and the timber racket

According to the WWF²², 'as many as a fifth of the CERs in a global primary CDM market estimated to be worth around €6.5bn last year had originated from 'non-additional' projects that should not have been approved as they would have gone ahead even if they had not received extra income by selling carbon credits.'

The primary problem, highlighted by Kristy Clough, climate change officer at the WWF, was that, 'verifiers are paid by the project operators, so there is a vested interest to approve as many projects as possible. We would like to see the scheme changed so that the CDM Executive Board randomly appoints the verifiers to the projects.'²³

The precedent for greenwashing via entities like SGS has already been meticulously documented in other critical environmental initiatives such as the Forest Stewardship Council (FSC). More than half of the world's tropical forests have been devoured through market-driven consumption. But preventing global deforestation is not as easy as it sounds: the global supply chain from origin to disposal is rarely accounted for by self-regulated multinationals, from logging corporations to retailers.

Yet the tide appears to be turning. Pressurised by consumer demand, companies such as Lidl, a leading German food retailer, have begun using 'green' certified wood fibre to manufacture products.

The movement that appears to have catalysed the paradigm shift, specifically targeting the vast ecological footprints of 'first world' consumers, is the Forest Stewardship Council (FSC), an international non-profit organisation founded in 1993. Trained to interpret reality not as humans or even citizens but consumers, global populations have responded to the call through the only political tool accessible: their wallets. The brand, adorning myriad products from toilet paper to books, is now worth US\$20 billion – a massive increase from the US\$5 billion estimated just three years ago.²⁴ FSC signifies a voluntary market-driven vehicle designed to introduce and implement a new value system structured around sustainability. There is even a day to commemorate the event – FSC Friday on 24 September.

The system, present in over 50 countries, operates through services ranging from standards to trademarks and accreditation.²⁵ Purchasing products branded 'green' by the movement, we're informed, constitutes a conscience choice to be 'part of the solution'. Given that as much as 80 per cent of timber is illegally harvested in many developing nations, FSC's unique forest certification standard is not only backed by major 'green' muscle such as Greenpeace International and the World Wildlife Fund (WWF) but oftentimes it is perceived as the only acceptable system by organisations such as the American Green Building Council.

FSC is self-described as a membership organisation, comprised of concerned individuals and organisations. Members constitute the general assembly (GA), allegedly the decision-making body whose policies and standards are unanimously adopted by the FSC board of directors. The GA is divided into three chambers: environmental, social and economic, with representative directors reflecting equal status of all chambers.²⁶ According to the FSC, 'all policies and standards go through at least two rounds of public consultations.

In these consultations everybody interested in the fate of the world's forests can comment.

'Buying FSC certified products is the only way to be certain that the interests of the forests, the species that live in them, and the people that rely on them to make a living are being considered,' stated Colin Butfield, head of the WWF-UK campaign.²⁷ As far off as Romania and Bulgaria, timber-producing countries are acutely aware that first-world 'consumers' are increasingly active. To date, 120,052,350 ha have been certified (4.3 per cent of global forested land), an increase of 11 per cent since October 2009.²⁸

22. Murray, James (2009), 'Carbon market under fire as UN suspends British CDM project accreditor' Sep 14. <http://www.businessgreen.com/bg/news/1806434/updated-carbon-market-un-suspends-british-cdm-project-accreditor>

23. *Ibid.* See: Mohr, L & Schneider, L. (2009), 'A rating of Designated Operational Entities (DOEs) Accredited under the Clean Development Mechanism (CDM)' Report for WWF.

24. Wall Street Journal (2007), 'FSC's 'Green' Label for Wood Products Gets Growing Pains', Oct 30.

25. Forest Stewardship Council (2011), 'About FSC', < <http://www.fsc.org/about-fsc.html>>

26. Forest Stewardship Council (2011), 'FSC Governance', < <http://www.fsc.org/governance.html>>

27. Green Biz (2010), 'Half of U.K. Consumers Don't Know Wood Purchases Could be Illegal', Sep 21.

<<http://www.greenbiz.com/news/2010/09/21/half-uk-consumers-dont-know-wood-purchases-illegal>>

28. WWF Asset Panda, < <http://assets.panda.org/downloads/>>

Romania, for instance, now seeks to certify 40 per cent of forested land by 2011, with Bulgaria hitting slightly lower at 30 per cent.²⁹ 'If a European client is demanding an FSC certificate, timber companies are very motivated to get certified,' said Neli Dontcheva, head of Bulgaria's Forestry Certification Information Centre.³⁰

In former Francafrigue territories, French corporations exploited more than five times the legal concessions. According to one senior official at the Cameroonian Centre for Environment and Development based in Yaoundé, 'the police shy away from investigating the matter...because those who are profiting illegally from logging allegedly include senior police officials.' As one French national involved in the logging industry revealed to IPS, 'We're asked for bribes amounting to millions of CFA francs, and we often pay these out.' France remained a key importer of illegally logged timber from Liberia during the reign of former president and warlord Charles Taylor. Taylor himself would admit that timber, logged by Dutch arms dealer Guys Kouvenhoven, generated 'more than half the gross national product', through Kouvenhoven's Oriental Timber Company (OTC).

In 2001, for instance, OTC (accounting for 41 of 60 timber-loaded vessels departing from Liberia), exported timber to foreign buyers including France and China, two primary objectors to timber sanctions. Since 1996, in fact, half of all timber logged from Central Africa has been exported to Asia, namely China and Taiwan, making inroads into traditionally European strongholds through 'political non-interference'.³¹ Taylor conceded during his trial that millions in 'covert' sums had been deposited into bank accounts from Taiwan. Beneath the emerging 'Asian' face of resource-hungry investors, lies the same old market driven logic, structured around comparative advantage, 'legality' in property rights, and the notion of the market as the most 'efficient allocator' of resources.

The company SGS states, 'SGS Qualifor is the world's leading and most recognised forest certification program. Since 1994, wood processing enterprises and wood product producers have achieved the SGS Qualifor certification in 60 countries around the world.'³² SGS, a Geneva-based auditing firm specialising in inspection and certification, supplies the forestry industry with both training as well as a chain-of-custody certification system including, 'audit of the transport and transformation of wood-based products from the forests, through processing, to final product at consumer outlets'.³³ But who watches the watchers?

SGS was already a 90 year old business by the time the IMF and World Bank came knocking in the early 1980s via the pre-shipment inspection (PSI) industry. By the early 1990s, one quarter of SGS's revenues, reported at US\$1.2 billion, was generated from PSI and the company maintained a presence in 140 countries, with just 40,000 staff. SGS would later be retained by the Bank, this time in an official capacity, as the Bank's 'global auditor' to conduct 'spot audits' in Kenya and other countries to sniff out corruption.³⁴

By 1997, SGS admitted to paying 'substantial commission' – conservatively estimated at US\$15 million – to Pakistan's President Benazir Bhutto and her husband. Pakistani officials believe that, cumulatively, Bhutto made off with US\$1.5 billion in total from a variety of sources. SGS payments were remitted in true SGS-style through shell entities incorporated in secret jurisdictions such as the British Virgin Islands. Two years later, SGS was banned from operating in Ethiopia for similar reasons. Of course, SGS was interlocked with, and even represented by systemically powerful interests and persons such as James Woolsey, a former CIA Director who listed SGS as a client.³⁵ Following the boom and bust of SGS's PSI industry, SGS shifted to certification targeting private industries rather than countries. More crucially, it also began focusing on eco-certification.

Despite mass deforestation through illegal logging and commercial and monoculture development taking place across the continent, Africa hosts a minute presence with just 2.9 per cent of forest cover certified by the FSC. Countries experiencing mass deforestation such as Cameroon and the Republic of

29. WWF Panda.Org (2010), 'Markets force Romania and Bulgaria to catch up on forest certification', Sep 24. < http://wwf.panda.org/who_we_are/wwf_offices/bulgaria/?194550/Markets->

30. *Ibid*

31. WWF (2000), 'Implications for the Sustainable Management and Conservation of Tropical Forests'.

32. SGS (2010), 'Group Systems and Services Certification', <http://www.sgs.com/fsc_qualifor?serviceId=8697&lobId=5554>

33. *Ibid*

34. The Corner House (2000), 'Exporting Corruption: Privatisation, Multinationals and Bribery', <<http://www.thecornerhouse.org.uk/resource/exporting-corruption-0#box-03->>

35. Henry, James (2011), 'Blood Bankers: Sub-emerging Markets', <http://bloodbankers.typepad.com/submerging_markets/>

Congo, chiefly through supplying timber to China and France, have certified just 2.7 per cent and 3.3 per cent of land. South Africa, with 17.8 per cent (1,567,811 ha) of forest certified, accounts for one-fifth of the continent's overall FSC certification.

Within South Africa 80 per cent (2005) of FSC-certified forests constitute industrial timber plantations (ITPs) initially developed by the apartheid regime as a means of independently sourcing wood products.³⁶ The initiative began with state-led plantations between 1920 and 1960. The government established a tax incentive system, such as the general export incentive scheme, later voided by the ANC liberation government in 1994.³⁷ During that time expansion accounted for 45,000 ha annually (1990s), five times that of indigenous forests. By 1996, the Natal Agricultural Union reported an 82 per cent reduction in stream flow over a 20 year period in areas where grasslands were 'developed' by commercial plantations.

The ANC government further emphasised the importance of plantations to growth, gender income and employment. 'Forestry makes a significant contribution to the economy,' revealed Lindiwe Hendricks when Minister of Water Affairs and Forestry. 'In 2006 this contribution amounted to approximately R14 billion and 170,000 people were employed in the sector, which includes about 30,000 small scale growers, most of whom are women. With forestry being a rural activity, this sector has enormous potential to contribute to the economy and to job creation.'

The two giants dominating the industry are Mondi and SAPPI. Mondi, formed by Anglo-American in 1967, manages over 450,000 ha with 35,000 employees in more than 30 countries. SAPPI, a global paper and pulp company incorporated in 1936, holds 465,000 ha in SA, with a further 75,000 ha in Swaziland (in 2007). By 2007, the company manufactured five million tonnes of paper and three million tons of pulp.

Water intensive plantations, covering 1.2 per cent of land, far outweigh natural forest cover (0.3 per cent). Mpumalanga holds 42 per cent of plantations, followed by Kwa-Zulu Natal, which accounts for 38 per cent, and the Eastern Cape, which accounts for 11 per cent.

Damages are not limited to communities living in close proximity to the plantations. In 2010, Mondi was named one of the top three polluters in south Durban, thanks to the company's paper mill. 'This is not normal air,' said Zodumo Mbuli, a spokeswoman for the Ministry of Environmental Affairs in 2003.³⁸ Meanwhile, in 2010, SAPPI came under fire in Durban for polluting a critical conduit between sea and land, the Thukela River, with highly toxic chemicals.

According to Timberwatch, a South African civil society organisation, 'The first FSC 'forest' certification in South Africa was awarded in 1997. According to the timber industry, SA now has a far higher percentage (80 per cent) of its plantation area certified than most countries, but this is misleading. If the areas under illegal plantations and unmanaged feral trees were taken into account, it would be under 40 per cent.'³⁹

The consequences, claims the organisation's report 'Life As Commerce', have been to grant respectability to historical and current destructive aspects of the timber industry, including: Community displacement, land dispossession, social disruption, destruction of biodiversity resources and the natural landscape, impacts on water resources, drying out of wetlands and aquifers, pollution of rivers, streams and wetlands with pesticides, oils and fertilizers, the contamination and compaction of soil within plantation areas, and accelerated soil loss on site and increased downstream erosion. The report cites the example of Hans Merensky Holdings (HMH) in two provinces – Kwa-Zulu Natal (Singisi Forest Products) and Limpopo (Northern Timbers). Both are certified by SGS Qualifor (2003 and 2000).

Nonetheless, FSC certification – and auditors like SGS – are blind to these externalised realities.

Market-driven eco-certification often times has the opposite effect. As a net exporter of forestry products, South Africa's procurement of new markets and securing of existing markets were critical. The forestry industry saw certification as a marketing tool and accepted it fairly easily.

The real question is whether certification delivers a solution for the environment, communities and consumers, or a green-washed veneer enabling corporate criminals and governments to engage in business as usual.

36. Timberwatch, 'Certification: FSC Greenwash', <<http://www.timberwatch.org.za/index.php?id=44>>

37. Lang, Chris (2007), 'South Africa', Jun., <<http://www.pulpmillwatch.org/countries/south-africa/>>

38. Lang, Chris (2006), 'South Africa: Mondi and Environmental Racism', Apr. <<http://chrislang.org/2006/04/27/south-africa-mondi-and-environmental-racism/>>

39. Timberwatch, 'Certification: FSC Greenwash', <<http://www.timberwatch.org.za/index.php?id=44>>

Tanzanian trees

The 1997 Kyoto Protocol was established under the umbrella of the UNFCCC. Tanzania ratified the agreement in 2002.⁴⁰ The UNFCCC's approval is vital as is the approval of the host country via the Designated National Authority (DNA). In order to 'speed up' and simplify the process for small-scale CDM initiatives, the government of Tanzania has implemented 'faster registration, only four weeks after submission, exemption from registration fee', as well as entities that are, 'validated, verified and certified by the same designated operational entities' (DOE). DOE's are responsible for checking that CDM projects conform to proper regulations. To achieve DNA approval, 'project idea notes' (PIN) – identifying the 'additional' nature of the project without which it would not qualify for CDM status – and project design documents (PDD) are required, while DNA involvement from the project start date is preferred. Projects earmarked for rural areas are also preferred and technology transfer remains one of four key conditions pending approval by the DNA. Green Resources's Idete Forest Project (IFP) is one such CDM initiative. 'The objective of Idete is to grow trees for carbon storage and to harvest forestry products for sawn timber, utility poles and renewable energy,' according to Green Resources. Green Resources AR and the Idete and Makungu Village Government in the Mufindi District of Tanzania Idete Forest Project (IFP) proposed the CDM project to sequester 3, 059, 200 tCO₂-e in an industrial plantation model that is also designed to 'contribute to meeting the growing demand for quality wood products from well managed plantation forests, while contributing to sustainable environment management, community development and poverty alleviation in Tanzania'.

A study by the South African NGO Timberwatch took issue with the way that Green Resources framed the project, finding that Green Resources Ltd failed to describe its 'Reforestation at the Idete Forest project in the Southern Highlands of Tanzania accurately, given that land being converted to tree plantations at Idete is original grassland in a healthy condition, and therefore characterising the project as 'reforestation' is a falsity. This distortion is taken further in calling the tree plantation a 'forest' when alien pine or eucalyptus trees are planted in bio-diverse grassland. The result is nothing more than industrial timber plantations with no biodiversity value.'⁴¹

Following a lack of substantive Free and Prior Informed Consent, this Tanzanian case highlights some of the biodiversity concerns and problematic definitional understandings that are possible within A/R CDM projects and shows how many amount to little more than green washing. According to Dr Blessing Karumbidza of the Institute of Economic Research and Innovation (EIRI) it is Norway – one of the world's leading oil producing nations – rather than Tanzania that stands to benefit.

'The Idete project was allegedly underwritten by Norway's Ministry of Finance. The Norwegian Prime Minister, who was present at the time of the launch, articulated the importance of carbon credits as a means of offsetting Norway's emissions. Tanzania was at the heart of the deal,' says Karumbidza. The irony is that wood plantations are not forests but monocultures and thus should not receive FSC certification. 'Green Resources claimed that the acquired Idete land was degraded through fire, but unlike wood plantations where fire can destroy wood products, grasslands fires serve a very natural and quick process of maintaining the ecosystem by removing dead herbaceous materials, recycling nutrients and other important factors,' he says.

40. Republic of Tanzania (2007) 'A Handbook for Clean Development Mechanism Projects (CDM) Activities in Tanzania', p. 4.

41. (Timberwatch Coalition 2011, 13)

Figure 5.1 National parks and reserves in Tanzania



Species are primarily composed of potentially invasive eucalyptus (59 per cent), and pine (40 per cent). The forest, situated in the Mufindi district, Iringa region, is located at an altitude of between 1,100m and 1,550m. The rainy season extends from November through May.⁴² By 2008, 1,600 ha of a 8,000 ha plantable area (from a total of 11,600 ha of Idete land acquired by Green Resources) had been developed, generating a potential 172,471 temporary certified emission reductions (tCER) per annum.⁴³

The company estimates that total production over 20 years will generate almost 2.6 million tCER from Idete alone. In 2009, Green Resources revealed that potential tCERs of over 6 million by 2020, sold at US\$6 per estimated emissions reduction would generate US\$36 million in revenue for the crediting period (under CDM rules, the accumulated carbon can be sold every five years).⁴⁴

42. *Ibid*

43. Green Resources (2008) 'Overview of Plantation/Certification Development in Tanzania', p. 9.

44. Green Resources (2009) 'CCA Africa Agribusiness Sector Presentation', p. 5.

‘While there are large amounts of funding available for forestry and carbon activities, very little of this benefits private companies,’ Green Resources revealed. ‘We estimate that private companies receive less than two per cent of the public funding available for forestation and carbon. In order to increase all the activity aimed at combating climate change, in particular in Africa, funding agencies should provide much increased grants to the private sector.’⁴⁶ While the company stated that project costs per hectare ranged from US\$400-US\$600⁴⁷ land is leased for a 99-year period from the Tanzanian government at just 2.3 Norwegian krone per hectare– (less than US\$0.36), generating just under US\$4200 for Idete’s lease⁴⁸. ‘What Green Resources is doing is exporting the problem of pollution generated abroad to Africa. Tanzanians are receiving little in the process. This will become more evident in ten or 15 years when groundwater is depleted by wood plantations. The exploitative nature of the deal is

48. Norwatch (2009), 'Climate Project on Cheap Ground', (available from: <http://tinyurl.com/2wyhobq>)

especially evident in the fact that it was negotiated not in hard currency but Tanzanian shillings subject to currency depreciation,' Karumbidza explains. 'Tanzanian communities can expect to receive several million Tanzanian shillings from the carbon credit revenue in 15 years – whatever that is worth.'

Though Green Resources – the first company to receive Voluntary Carbon Standard (VCS) certification outside of the USA, has claimed that thus far the company has reaped no profits after 12 years of operation in Africa, the plantations will soon be fully grown and ready to harvest.⁴⁹

Figure 5.3 Photo from Iringa



Ugandan plantations and the New Forests Company

Perhaps the most notorious controversy regarding CDM forestry projects is in Uganda's Namwasa planation, run by the New Forests Company (NFC). NFC is a British forestry company (with a 20 percent stake owned by HSBC bank), and the CDM project, initially funded by the World Bank Bio-Carbon Fund, in the Kiboga and Mubede districts comprises 6,500 ha of 'protected area' within which 400000tCO₂-e are said to be sequestered during the project lifecycle. The media focus on the project began after an Oxfam report in September 2011 alleged that up to 22,500 people were evicted from their land in Kiboga and Mubende districts by the Ugandan National Forestry Authority to make way for the NFC plantation, with Oxfam's work with the communities concluding that many have been left destitute (Grainger and Geary 2011). Testimonies from villagers suggest that no consultations were undertaken prior to eviction, and that some people were even violently forced from their land (Institute for Security Studies, 2011).

These allegations concern the manner in which illegal encroachers were moved from the central forest reserves of Namwasa and Luwunga. Oxfam claims that the government failed to consult the encroachers and that violence was used during the

49. Carbon Positive (2010) 'Reforestation Vital for Africa & Climate Developer'.

evictions (Oxfam's term) / vacations (the government term) (Institute for Security Studies (ISS) 2011). Oxfam claims that interviewees state that they did have lawful entitlement to the land, upon some of them had lived there for more than 40 years, far pre-dating the inception of the incumbent government or even the onset of democracy in the state. Others too claimed to be Second World War veterans and their descendants who were 'allocated the land in recognition of service' (Redd-monitor 2011). That land claims are often hotly contested in Uganda's history of land disputes.

The NFC however describes itself as a 'sustainable and socially responsible' company contributing jobs, revenue, and the timber products countries need as they develop which would otherwise be logged from natural forests, whilst at the same time attracting revenue from carbon. It disputes Oxfam's claims, 'strongly denying' that they had any involvement in any Ugandan evictions or violence, (New Forests Company 2011).

In the Ugandan case the NFC claims to be an innocent bystander to government-led evictions, but the incentives such potential investments offer effectively displaces, delegitimises and depoliticises complex and often unresolved social and legal histories such as land tenure claims. This process recasts landscapes as merely 'degraded land' to be utilised for the purposes of carbon sequestration for the 'global good' and marginalises local claims and interests.

Busoga Green Resources AS (Norway) Plantation

The Busoga Forestry Kachung Forest Project, begun in 2006, aims for the afforestation of 'degraded lands' into a commercial plantation run by Green Resources AS (Norway) with the Busoga Forest Company as its local subsidiary, after they acquired the Norwegian Afforestation Group in 2007. The 7000 ha of rented land in Uganda for the plantations, at a cost of US\$ 3 per hectare for a period of 50 years, is aimed at planting fast growing species (Eucalyptus, Pinus and several native species) to sequester 810 000 tCO₂-e and contribute to 'sustainable environmental management' (Green Resources 2011).

Once again we see the polarizing nature of CDM activities with the creation of winners and losers from the process. A legacy of contestation over land rights, with 10,000 of the total 100,012 ha of forest reserve in the eastern region cleared of illegal encroachment in 2006 by the law enforcement arm of the National Forest Authority (NFA). A Friends of the Earth Report, in cooperation with the World Rainforest Movement and FERN, entitled 'Tree Trouble: A Compilation of Testimonies on the Negative Impact of Large-scale Tree Plantations' outlines the details of the deal and the benefits accruing to Green Resources.

According to the agreement, a one-off sum (500,000 Ugandan shillings, approx. USD 312) is paid to the authorities when the contract is signed, regardless of how large the leased area is, and the authorities receive an annual rent of 5,000 shillings (approx. USD 3) for each hectare planted with forest, inflation adjusted every ten years (Friends of the Earth International 2011). The report concludes that the 'carbon plantation' lands are leased to the private interests at a bargain price and that the authorities have virtually no capacity to assess what value the companies plan to generate through carbon trading.

This, they assert, amounts to neo-colonialism as Uganda gives away the option of changing land use in the future, as well as the carbon rights to the units sequestered which cannot be double counted toward Ugandan national carbon accounting or potential emissions reductions commitments (Friends of the Earth International 2011).

Again, in the Ugandan case companies fall back on arguments that it is the government mandating and carrying out the evictions but it is clear that CDM projects provide incentives for the further de-politicisation and suppression of complex land struggles and claims, generating both winners and losers (in the form of foreign plantation companies and evicted local residents respectively).

Rehabilitation of Mt. Elgon and Kibale National Parks

The FACE (*Forests Absorbing Carbon Dioxide Emission*) foundation was created in 1990, as an initiative of four major Dutch electricity companies of the *Dutch Electricity Generating Board* (SEP).⁵⁰ The company has two projects at Kibale national park and at Mount Elgon National Park. Both have had particularly turbulent project histories including human rights abuses which have marred their implementation processes.

Started in 1994 and receiving initial USAID funding in collaboration with the Uganda Wildlife Foundation (UWA) the objectives of this carbon project were to implement forestry regeneration in the Mt. Elgon and Kibale National Parks, through the planting of twenty native tree species over a total area of 27 000 ha, sequestering 700 000 tCO₂-e over its 17 year tenure (FAO Forest Division 2011). Although these are as yet unverified by the CDM board (the projects have submitted PDDs) and are currently transacted under the Voluntary Carbon Standard(VCS) (for example, on the website <http://www.greenseat.nl>) with Forest Stewardship Council (FSC) accreditation, the incentives created by the CDM have formed a large part of the motivation for their implementation. As the CDM must be considered a nascent, and perhaps in the African case a largely failed endeavour, it is important to consider the scope of projects in emergence such as Kibale and Mt Elgon.

In both locations of the projects there have been evictions. In 1992, 30,000 forest dwellers and peasant settlers in Uganda were expelled without warning from a strip of land between the Kibale Forest Reserve and the Queen Elizabeth National Park. They lost most of their livestock and belongings so that a wildlife corridor could be created between the Reserve and the National Park. The expulsions took place under the Kibale Forest and Game Corridor Programme, part of the World Bank's Forestry Rehabilitation Project which was co-financed by the European Community (Global Justice Ecology Project 2011). At the Mt Elgon site similar evictions took place in 1993 in which there were no consultations or compensation and in 2002, UWA evicted 550 families from Mount Elgon and destroyed their houses and crops (Guide for Africa 2011). There have since been protracted and on-going resistances and contestations by park boundary inhabitants to get their land back as they see it. Connor Cavanagh in a REDD+ Earth blog article chronicles the 'weapons of the weak' utilised in resistance against conservation tactics within and bordering the protected area of Mt. Elgon.

Despite the efforts of conservation authorities to frame illegal activities as purely self-interested and profit-seeking, Connor suggests something quite different than mere criminality; nothing less than a new form of resistance: guerrilla agriculture (Connor Cavanagh 2011), actions such as boundary marker moving, negotiating and bribing officials and park enforcers, and the dissemination of 'hidden transcripts' – narratives that subaltern individuals use to interpret their own experience of domination or oppression, to give meaning to their resistance, and to frame alternatives. At Mount

50. FACE's activities planting pines in Ecuador since 1990 have become very controversial also. Larry Lohmann, Carbon Trading, Climate Justice and the Production of Ignorance: Ten examples, *Development*, 51(3), Sept. 2008, pp. 359-36.

Elgon, the most common 'hidden transcripts' refer to alternative constellations of interaction between humans and their 'natural' environment, which either condemn modern conservation altogether, or imagine it in ways that are radically inclusive of humans (Connor Cavanagh 2011). Thus whilst A/R CDM and other carbon forestry projects seek to reshape local geographies and externalise their project costs there is always a natural 'push-back' and contestation to undermine or delegitimise project efforts, not through revolution, but through subtle and variegated strategies of resistance.

Nile Basin Reforestation Project

The Nile Basin Reforestation Project is a deal between the Ugandan Government represented by the National Forest Authority and the World Bank BioCarbon Fund, detailing improved conservation management practices in the Rwoho Central Forest Reserve gazetted woodland, including the reforestation of degraded grasslands to create 341.9 ha of timber plantations (pine and mixed native species) and sequester 29795 t CO₂-e. A central dynamic of CDM projects that this project exposes is the relationship between financial capital and local institutions and the scalar and spatial re-arrangements (or misalignments) that arise in attempts to commodify carbon and the resultant power relationships.

The Ugandan NFA, the lead national institution involved in the process, is a statutory body which is run as a business entity; however its other mandate is to ensure the survival and sustainability of the central forest reserves. The institute for security studies produced a report examining the NFA at this nexus and its actions in the Nile Basin project, alerting to how roles can conflict when motivated by investment opportunities, posing a danger to effective forest conservation. (Institute for Security Studies (ISS) 2011, 68).

Central to the sustainable management of forests, especially in Tanzania, which has a community based focus to its forestry resource management, is community 'involvement'. Since the project protected area was established, grazing (which used to take place on the approximately 50 percent of deforested land now used for tree planting) has been criminalised, but by its own admission, the NFA's efforts to police the plantations have not worked and have given rise to conflicts with communities that have protested against their 'denial of access' to forest resources by local communities, insensitive management styles, failure to deal with vermin and problem animals, and a lack of opportunity for communities to voice their concerns'. This precipitated the NFA decision to enter into collaborative forest management (CFM) both to quell dissent and to protect the plantations developed by private investors (Institute for Security Studies (ISS) 2011, 69). However the ISS report questions the sincerity of the community participation, concerning rights to grazing, the overstating of potential economic benefits to communities and failing to accommodate community concerns. While expected to establish at least 20 per cent of the area (or about 400 hectares), only 70 of the 250 members (28 per cent) of the Rwoho Environmental Conservation and Protection Association (RECPA) have joined the project (Institute for Security Studies (ISS) 2011, 70). There have been limited employment benefits but there have been complaints that the contractors employing community members receive about 60 per cent of the payments, and there are allegations of corruption and conflicts of interest in regarding how local contracts for plantation work are awarded to outsiders (although these claim have not been verified by the research).

Mozambique – Green Resources AS Niassa Project

One of the more recent CDM entrants in the A/R sphere is the Green Resources AS (Norway) forestry plantation and sequestration project in Lurio and Sanga districts in Niassa Province of Mozambique, which has also achieved FSC certification in October 2011. The 2009 agreement with the Mozambican government gives permission to develop a 126,000 hectares forest plantation (Green Resources will assist in the establishment of 54,000 ha forests by local smallholders and companies) over a 15 years project period, set to be the largest forestation project approved in Africa (Green Resources 2010).

Kenneth Lia Solberg, a contributor to REDD+ EARTH.org, completed several months of fieldwork researching socioeconomic impacts of the private carbon offset forestry planation. He cited a number of grievances with the relationship between Green Resources and local inhabitants (Kenneth Lia Solberg 2011).

The feeling of many villagers that they had no say in the land acquisition process, frustration with the nature of the temporary jobs provided and the unfulfilled developmental promises on the part of GR and a lack of a community development plan with specific goals and deadlines and contracts with the community are central concerns (Kenneth Lia Solberg 2011). Solberg concludes that if the company wants to be welcomed by the people in Sanga, they should clearly define and follow through with initiatives to show positive results on the ground for otherwise, they risk more incidents in Malica.

Democratic Republic of Congo – Ibi Batéké Carbon Sink Plantation

This A/R CDM project under the direction of Nova Cell (DRC), and with finance from CASCADE Africa, a multi-lateral conservation fund, seeks to sequester 2400000 t CO₂-e through fast growing plantations on savannah grassland and to supply the capital Kinshasa with charcoal through sustainable fuel wood production (UNFCCC CDM 2011). The World Bank BioCarbon fund has agreed to purchase 500 000 tCERs (temporary certified emission reductions), supposedly derived from converting 4 000 ha of grassland to tree plantations and as such Ibi Batéké is widely promoted as a success despite not yet being registered by the CDM. However, a 2006 case study describes how the Batwa people in the DRC were exploited and excluded from consultation, according to the report entitled the Impacts of the Carbon Sinks of Ibi-Batéké' Project on the Indigenous Pygmies of the Democratic Republic of the Congo by Sinafasi Makelo (Timberwatch Coalition 2011, 14).

Conclusion

There are a number of salient points to draw out from the experience of A/R CDM projects in East Africa. The first is how the predominant driver of the process has been private capital in the form of Forestry multi-nationals (most of them coming from Europe). The evidence of the role and impact of Green Resources LTD serves as an important yardstick by which to evaluate motivations behind A/R CDM funding projects with drive for profit, and asymmetries of benefit between the extractive company and the host country being some predominant characteristics.

As the case studies have shown, the circumvention of supposed 'safeguards' to ensure additionality and the interests of local communities is rife. At the project specific level it is clear that techno-centric project implementation strategies linked to this finding. No project exists in isolation from its socio-economic context. Projects are as

much contingent upon the variety of local socio-economic factors (e.g. land rights claims) as they are upon the land cover types they are seeking to reforest or 'regenerate.

The difference between de facto and de jure land rights is evident in the CDM cases, and methodologies which de-politicise this fact for the purposes of implementation run the risk of creating or exacerbating land conflicts or contestations, with patterns of eviction and criminalisation of alternative livelihoods. In conclusion, the particular orientation of the CDM mechanism leads to projects which privileges the logic of commercialisation over explicitly conservationist or developmentalist approaches to natural resource management. The high number of plantations (wrongly defined as forests) and the emphasis on enforcement of protected areas is a result. If projects can be said to require a balance between community and conservation interests to achieve success, the majority of AR-CDM projects' relative exclusion or de-legitimisation of community rights and interests not only marginalises local peoples but simultaneously undermines conservation agendas through resistances and contestations (through the weapons of the weak). The overall outcome is certainly not one that leads to either 'clean development' or a substantive climate mitigation solution.

Chapter 6

Manipulating gas in Mozambique

By Ruth Castel-Branco

Introduction

This chapter profiles two separate but related CDM projects: the South African synthetic oil company Sasol's gas pipeline CDM and the Cimentos de Mocambique-Matola Gas Company (MGC) fuel-switch project. Both projects are connected to the expanding natural gas industry in Mozambique. Both were submitted for approval to the UNFCCC Executive Board around the same time.

Gas has always been controversial, not least because it is still a fossil fuel (albeit less destructive than burning coal), and in some instances, such as the fracking-based extraction proposed in several South African and other African settings, likely to do far more environmental damage given the associated water despoliation and use of chemicals. In 2008 and 2009 respectively, Sasol and the MGC applied to register their gas projects under the UNFCCC CDM, in both cases arguing they qualified under amendments to the Kyoto Protocol made in Bonn in 2001 (which required a construction cut-off date of after 1 January 2000), allowing CDM funding for gas development.

But both applications were, for different reasons, rejected. By profiling these projects together, we can understand the ways in which some of the world's worst polluters attempt to manipulate the Kyoto Protocol to expand production and maximize profit. These two projects also call attention to the important role of the environmental justice movement in challenging corporations and winning victories.

The exploding Mozambican gas industry

The commercial production of gas is relatively new to Mozambique. While gas was first discovered in Pande in 1961, its exploration is recent, and has been driven primarily by South Africa's energy needs. As early as 1998, the South African energy and mining giant Sasol proposed a pipeline from the gas field of Pande and Temane in the province of Inhambane, to their petrochemical plants in South Africa. In the early 2000s, after purchasing the gas exploration rights from ENRON, Sasol formed a partnership with Mozambique's Empresa Nacional de Hydrocarbonetas (ENH), private investors, and the Government of the Republic of South Africa, to invest US\$ 2,1 billion in the production, processing and transportation of gas via a 865 km pipeline to South Africa.

In exchange for favourable macro-economic conditions, Sasol guaranteed a market for the natural gas produced in Pande and Temane for a period of 25 years. As part of the investment, a Central Processing Facility, operated by Sasol, was developed in Temane. As its operator, Sasol has a 70 percent share, Mozambique's public ENH maintains a 25 percent share, and the International Finance Corporation (IFC) got a 5 percent share in the two fields. Meanwhile for the pipeline, Sasol maintained a 50 percent share, while the government of South Africa got a 25 percent share. In order to be able to take advantage of natural gas imports, Sasol converted its petrochemical plants from coal to gas at Sasolburg, and supplemented the coal feedstock with gas at Sasol's larger facility in Secunda. The first gas arrived in Sasol's Secunda plant in February 2004. Figure 6.1 illustrates the route of the pipeline.

Figure 6.1 Mozambique gas fields



Source: Pesa News, www.pesa.com.au

The fields of Pande and Temane currently produce 147 million gigajoules¹ of natural gas a year. This is well above the estimated 120 million. The vast majority of this natural gas is exported to South Africa. Currently a plant is being developed in Ressano Garcia, on the border with South Africa, to convert gas into electricity. The contract between the state and Sasol stipulates that Mozambique has the right to 5 percent of production. Despite attempts by the IFC to identify local markets for natural gas, Mozambique currently consumes 3 million gigajoules a year – less than half its allotted share. Local consumption is limited to a small number of industries, as well as 20 natural gas-run busses in Mozambique's capital city of Maputo.² Ironically, the country is entirely reliant on imports of cooking gas from South Africa.

The transportation of natural gas to local industries is done via the Matola Gas Company (MGC). MGC was set up in 2004 as a joint venture between the Mozambican government and private investors. It buys gas from the main pipeline at Ressano Garcia

1. Diario de Mocambique. Sáb, 20 de Agosto de 2011. Central eléctrica a gás natural constrói-se em Ressano Garcia

2. Diario de Mocambique. Moçambique poderá produzir gás doméstico a partir de 2013. Qui, 23 de Setembro de 2010. For comparison, energy consumption per capita (all sources) in the EU is about 150 GJ per person.

and pipes it to Matola, an industrial suburb of Maputo. The primary recipient is the aluminium smelter Mozal, but the gas is piped to smaller industrial enterprises, including Cimentos de Mocambique.

6.2 Mozambique smelter



Source: groundWork

Sasol's CDM scam

In 2008, Sasol, one of the biggest corporate carbon emitters in South Africa, and the world, applied to the UNFCCC for the right to produce and sell carbon credits. The company claimed that it needed a new source of fuels and had the option of choosing between opening a new coalmine and building a pipeline. Ultimately it decided to invest in producing, transporting and processing gas from the Pande and Temane gas fields in Mozambique, to its coal-to-liquids plant in Secunda, South Africa. Sasol argued that without the option of selling carbon credits, it would not have built a pipeline. Estimated emission reductions hovered around 6,4 Mt of greenhouse gases a year. The value of the carbon credits is around R1.1 billion a year³⁴ – a considerable amount, given that Sasol has the world's single worst carbon emissions site, at Secunda.

However, according to the Mozambican government, Sasol had been considering building a profitable pipeline since 1998, well before the UNFCCC rule changes that would have allowed it. Sasol's annual report from 1999 corroborates this:

3. Climate change, development and energy problems in South Africa: another world is possible. Earthlife Africa Jo'burg

4. 1 euro is equivalent to approximately 10 rand.

Sasol has progressed significantly with the planned project to bring natural gas from Mozambique to South Africa. The pre-feasibility study for the transmission pipeline has been concluded, while route engineering and environmental impact assessments are continuing. The envisaged project would entail a 925-kilometer pipeline, measuring 71 centimetres (28 inches in diameter, with free-flow capacity of 120 million gigajoule per year... The gas purchase agreement with Arco for gas from the Temane field in central Mozambique are progressing well. (1999, 70)⁵

In fact Sasol was considering building the pipeline before the option of selling carbon credits was even on the table. Sasol had already costed the operation and found it acceptable. According to the UNFCCC guidelines, CDM approval can only be applied retroactively for projects that were developed after January 1, 2000. The company claimed that its operations in 2001 indicated it was attempting to factor in CDM credits.

Yet Sasol had to prove additionality, by which a project would be funded for CDMs only if it provided the *additional reduction in carbon emissions* (obviously something Sasol could not do, as it had already built the pipeline). Sasol's Gas Supply Manager Peter Geef was interviewed by Graham Erion, from the Center for Civil Society, Durban, in 2005:

Yes we are indeed trying to get some carbon finance for this pipeline...(But) we have this problem of additionality; we think there's a case to be made for that, we're in discussion with the South African government now and we're trying to make the case for it...The biggest issue is additionality; we would have done this project anyway.

When asked why they were applying for carbon credits they were not eligible for, Geef admitted, 'mainly financial reasons; you get a lot of payback in term of dollars per tonne.'⁶

When environmental justice organizations heard about Sasol's application, they immediately began to mobilize. In mid-February 2009, Members of the Vaal Environmental Justice Alliance (VEJA), Earthlife Africa, waste-pickers and other activists gathered outside Sasol's office while Sasol officials presented their Environmental Roadmap, to demand that the company withdraw its application.

Soon after, Earthlife Africa Johannesburg and the South Durban Community Environmental Alliance submitted a formal objection with the UNFCCC to Sasol's application for CDM credits. According to Tristen Taylor, Energy Policy Officer with Earthlife Africa⁷:

A highly carbon intensive petrochemical giant, with a CTL (coal to liquid) plant that is the world's highest single point emitter of carbon dioxide, not only receives funding under CDM but is aiming to use the CDM mechanism to generate cash to be reinvested in more CTL plants... In effect, Sasol is being paid to pollute. If the fate of

5. Sasol Annual report 1999

6. Erion, G. (2005) 'Low-Hanging Fruit Always Rots First', Centre for Civil Society, Durban and Earthlife Africa (2009), 'Climate change, development and energy problems in South Africa: another world is possible', Johannesburg.

7. Press Release: SASOL's CDM and Greenwash Earthlife Africa Jhb 17th of February 2009

the entire planet wasn't in the balance, the absurdity of this distortion of the Kyoto Protocol would make fine comedy.⁸

Pointing out Sasol's 'questionable credibility after price-fixing scandals in Europe and South Africa,' Taylor further explained, in the Earthlife Africa submission to the UNFCCC, that local community activism was central to the 1990s shift from coal to gas: 'there was strong local opposition to a proposed new coal mine for the Secunda plant, and Sasol's other option of trucking in coal from Sasolburg to Secunda was proving to be unprofitable.'

At the time, Sasol was in the process of building an additional three coal to liquid plants in Indonesia, China and South Africa. In early 2009, the UNFCCC's methodology panel recommended that the project be rejected. The reasons for rejection were poor organization of the proposal, miscalculation of the emission reductions, and the lack of a plan for leakages. Environmental justice organizations had hoped for a stronger statement against companies that were patently manipulating the CDM system.

Figure 6.3 Gas CDM in Mozambique **Figure 6.4: Cimentos de Mocambique factory**



Source: MacauHub



Source: Insittec

Fuel switching by Cimentos de Mocambique-Matola Gas Company

In 2009, six months after the Sasol project was rejected, Cimentos de Mocambique-Matola Gas Company applied with the UNFCCC for the right to produce and sell carbon credits under the CDM. Two years earlier, Cimentos de Mocambique had signed an agreement with the Matola Gas Company (MGC) to fuel the clinker kiln with natural gas, rather than coal. MGC argued that at current production levels, the fuel switch project would reduce emissions by 37,153 tonnes of CO₂ a year.

This fuel switch project is so far the only registered CDM in Mozambique. International Financial Institutions (IFIs) and donor states have been actively marketing the CDM framework. According to a recent UNDP report, Mozambique has a limited capacity to engage with carbon markets. Obstacles include the fact that carbon emissions are low to begin with because energy production is based on hydroelectric power, South Africa and Mozambique operate as a single grid, installations are too small so the revenue from CERs do not offset investments, there is limited awareness regarding CDMs, and there is a lack of trained personnel and the absence of financing upfront.

Fuel-switch projects have been heavily marketed by IFIs as a way to achieve energy security, reduce fuel costs and lower carbon emissions. Companies receive financing to switch from less efficient fuels such as coal, to greener alternatives like natural gas. In

8. Sasol & CDM: The Developed World Pays Sasol to Increase its Carbon Emissions

exchange, financiers receive Certified Emission Reduction Credits (CERs). According to the International Finance Corporation, fuel-switch projects are good for business. They open the doors to untapped markets, earn reputational capital with policy makers and consumers, and because of the savings incurred from greater energy efficiency, have the potential to finance themselves over time. Despite these apparent benefits, fuel-switch projects comprise only a tiny fraction of registered CDMs. Furthermore, the majority are concentrated in Brazil, Israel and India. Africa, for the most part, has been left behind.

In 2004 Mozambique ratified the Kyoto protocol and became the first Portuguese-speaking country to establish a Designated National Authority (DNA). The Minister of the Environment was appointed to lead the team and criteria were developed for CDM projects. The criteria included environmental, social and economic factors. Evaluation criteria however, have not been disclosed to the public. The government identified many potential CDMs including the Hulene Landfill Gas Capture in Maputo City, sugarcane ethanol production and the Nampula reforestation project by Green Resources⁹. However, so far only Cimentos de Mocambique-Matola Gas Company has been able to register.

The fuel-switch project should have come as music to residents' ears. For years Matola's residents suffered the consequences of air pollution caused by the cement factory, Cimentos de Mocambique. CM became a subsidiary of the Portuguese cement giant Cimentos de Portugal (CIMPOR) in the 1990s when the Mozambican state privatized its most profitable enterprises as part of the structural adjustment programs. With an output of roughly 240,000 tonnes of clinker, and 400,000 tonnes of cement per year, the Matola plant, located just a few kilometres from Mozambique's capital city Maputo, is the largest cement producer in the country.

In 2000, the plant began to let out plumes of smoke, visible from kilometres away. This smoke caked surrounding neighbourhoods in a fine white dust, which penetrated every possible receptacle – from furniture and food, to the drinking water stored in tubs. According to Centro Terra Viva, residents lodged numerous complaints with the Ministry of the Environment (MICOA) and the Matola municipality. Despite clear evidence that the factory's filters were not working properly, neither MICOA nor the Matola municipality took action.

Protests came not only from local communities and environmentalists, but also from neighbouring factories such as Mozambique's food processor, Companhia Industrial da Matola (CIM). While Mozambicans joked that locally produced foods had a special cement 'seasoning,' for residents living in the area, the elevated levels of pollution were no joke. As a result of the fine dust particles, they often suffered from respiratory problems, coughs and frequent colds.

In July 2006, the environmental organization, Livaningo, organized a hearing on pollution in the area. At the hearing, Cimentos de Mocambique's representative, Jorge Machado, acknowledged that the filters were not working. According to Machado, the national electricity company, Electricidade de Mocambique, was to blame: 'We want to hold back all that dust but due to the constant oscillations in current, the electro-filters don't last very long. This obliges the company to import spare parts and this has not been a very easy exercise.'

The community, who felt that the factory should close until spare parts could be sourced, met the remarks by Machado with outrage. Given that Cimentos de Mocambique is a subsidiary of CIMPOR, community leaders and activists further

9. Capacity building for CDM in Mozambique (2009) Econ Poyry

questioned whether such elevated levels of pollution would have been acceptable in Portugal. Furthermore, they called on the Mozambican government to develop adequate monitoring mechanisms to determine the impact of pollution on residents' health.

In response, the former Minister of the Environment, Luciano de Castro, announced that the government would be closely monitoring the plant:

It's been proven that Cimentos de Mocambique is polluting the environment, though they've tried to deny it. The particles the factory releases may not be toxic, but they can have an impact on people's lungs and cause respiratory problems. Furthermore, that dust also damages the vegetation in the surrounding area. We think it's pollution, and we are working with the factory management to repair the damage caused.

Shortly afterwards, Cimentos de Mocambique agreed to install new filters. In interviews with Centro Terra Viva, residents said that pollution had improved as a result. Large plumes of white dust no longer belled from the plant's chimneys on a regular basis. However, there was no data to show how much air quality had improved because the Mozambican state did not have mechanisms in place to measure air pollution. Furthermore, the company did not undergo a complete upgrade. Given that the kilns date back to the 1920s, a full rehabilitation would have closed the factory for an extended period of time. MICOA argued that this was not a viable option since Cimentos de Mocambique is the primary producer of cement in country, and preferred instead to negotiate a phased approach with the company.

In 2007, Cimentos de Mocambique signed an agreement with the Matola Gas Company (MGC) to fuel the clinker kiln with natural gas, rather than coal. The potential of a fuel switch project at Cimentos de Mocambique had been on the table since 2004 when the Matola Gas Company undertook a feasibility study, funded by the IFC, to determine the potential of fuelling clinker kilns with natural gas. However, the idea gained new traction in the context of rising coal prices. Between 2005 and 2007, the price of coal skyrocketed as the result of a volatile South African coal market. Cimentos de Mocambique experienced annual increases in the price of coal of 29 percent during this period. The fuel switch project therefore was not only a strategic way to create a market for the country's booming gas industry, but also a way of reducing fuel costs.

The Matola Gas Company and Norway's Carbon Limits were authorized by the UNFCCC to develop this project, but the project was rejected at the level of the UNFCCC Executive Board and is currently pending. The Norwegian DNV, one of the world's biggest CDM auditors, is responsible for this project. In 2008 the UNFCCC Board suspended DNV after spot checks found there were flaws in the auditing process and that one individual in particular, had signed off reports on five separate projects without actually surveying them. Shortly after DNV was allowed back. The fuel switch project has yet to be registered and carbon credits have therefore not been issued – yet. Nonetheless, Cimentos de Mocambique did go ahead with the fuel switch project. In addition, in 2009, the plant inaugurated a new filter to reduce emissions. The Minister of Industry and Trade, Antonio Fernando, congratulated the company on the measures to reduce emissions and held it up as a model for other companies in the country.

Levels of pollution are falling, and we encourage the company to continue along this line. What we want is that there should be no pollution, and a lot of production, while always protecting the environment. We want this example to be followed by

other factories, since we know that if we do not take care of the environment, the water, the trees, and other natural resources will disappear, wrecking the future of generations yet to come.

However, it is unclear to what extent levels of pollution have fallen. While plumes of white dust no longer bellow out of the plant's chimneys, a recent 3-week study by Groundwork and Justiça Ambiental/FOE in 3 different locations, found that pollution in the area is still well above the acceptable levels established by the World Health Organization (WHO). While according to the WHO, acceptable rates lie between 25ug/cm² in 24 hours, particles reached more than 100 ug/cm². This represents the highest registered concentration of pollution in the country. Cimentos de Mocambique is surrounded by other industries including the aluminium smelter, Mozal. Therefore, it is impossible to isolate one culprit. However in the study conducted by Groundwork and JA!, the site closest to Cimentos de Mocambique (Figure 6.2) registered the highest level of dust particles in the air. These particles are very small and have the potential to cause serious respiratory problems, especially among people with asthma and children.

The plant announced that it would be expanding its factories to double production. Mozambique's construction boom has increased the demand for cement. In 2010, cement sales rose by 12,7 percent.

Chapter 7

Disempowering hydropower: Ethiopia, DRC and Egypt

By Khadija Sharife and Baruti Amisi

Introduction

Since the dawn of time, the greatest civilisations were born on the fertile banks of ancient river systems, ranging from Mesopotamia's Tigris and Euphrates to Egypt's Nile, China's Yangtze or Yellow river, and the Indus. Yet the rise of these scientific, economic and commercial powerhouses has not only resulted in technologies seeking to harness the power of rivers as an economic force for good, but also exclusively to dominate this vital source of life through centralised control. Nowhere is hydric injustice so obvious as in Africa, nowhere is the game of hydropolitical poker so lethal and receptive to drought, conflict and corruption as in Africa.

Presently, more than 60 per cent of Africa is dependent on mega-dams as a source of hydroelectric power, this includes Zambia (96 percent), Uganda (99 percent), Mozambique (91 percent), Ethiopia (89 percent) and the Democratic Republic of Congo (99 percent), in conjunction with a host of states including South Africa, Zimbabwe, Togo and Benin. This is mainly because, in Africa, water is a shared affair, with waterways composing at least 40 percent of regional borders.

Since 2007, drought has begun to grip the continent, from the East to the South, bringing chaos in its wake. Currently, Africa supplies just 5 percent of global electrification but hosts more than 500 million people who survive solely on biomass, sunlight, paraffin and candles. 'Most of the Nile states are dangerously dependent on hydropower, including Burundi, DRC, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda,' according to Lori Pottinger, head of Southern African programmes at International Rivers (IR). 'When a serious drought strikes, a hydro-dependent country also has to cope with water shortages, and reduced agricultural production.'

And drought is certainly on the cards – geologists predict a 10-20 per cent decline in rainfall over the next 50 years, estimating that 75 percent of African countries with annual rainfall of 400-1000 mm are partially located in environmentally unstable zones. The UN's Intergovernmental Panel on Climate Change (IPCC) has declared Africa, 'the continent most vulnerable to the impacts of projected climate change', described by geologist Maarten de Wit as, 'like erasing large sections of the rivers from the map.'

Despite the reality that drought, a climatic reality throughout much of Africa, will be severely affected by altered hydrological cycles, development experts at the World Bank have declared Africa 'under-dammed'. The World Bank's energy specialist in recent years, Reynold Duncan, urged Africa to consider 'riskier' assets such as hydropower, stating that just five percent of the continent's hydropower has been explored.

'In Zambia, we have the potential of 6000 MW, in Angola, 6000 MW, and about 12,000 MW in Mozambique – we have a lot of MW down here before we even go up to the Congo,' he said. The DRC's Grand Inga, the world's largest proposed hydropower scheme, is estimated to possess 40,000 MW – enough to power the continent. Its potential as a CDM project should be resisted on various eco-social grounds (see BOX 4). The West Nile CDM is a good example of the kinds of supposed renewable energy hydropower projects that are destructive in multiple ways.

This move, promoting mega-dams as development, is backed by development and commercial banks, foreign governments, African initiatives such as the New Partnership

for African Development (NEPAD), presently motivating for 13 dam projects, as well as 'resource-hungry' large countries such as China.

Though Africa already has more than 1270 dams, the benefits have yet to positively impact on the majority. Mozambique, lauded as a success model, generates enough electricity to power the country, but less than 9 percent of Mozambicans have access to electricity. The bulk of the country's 2000 MW, is exported to neighbouring regions and utilities such as South Africa's parastatal Eskom – via cost-intensive, high voltage transmission lines that account for as much as 50 percent of the total construction costs. The remainder is utilised by domestic-based corporations such as aluminum smelter Mozal, operated for exports by BHP Billiton, one of the largest mining concerns in the world.

'Most often, large dams provide electricity for foreign-owned industries, water for foreign mining companies, and irrigation for large-scale farms,' said Pottinger. 'Distribution lines are the most needed but least cost-effective parts of an African grid system. Priority is given to big consumers, cities and industries, over poor households, and low density or rural areas.' Long-range, high voltage transmission lines are meant to connect two end points, requiring costly substations to reduce the voltage and distribute along the way. But these lines end up passing over thousands of villages.

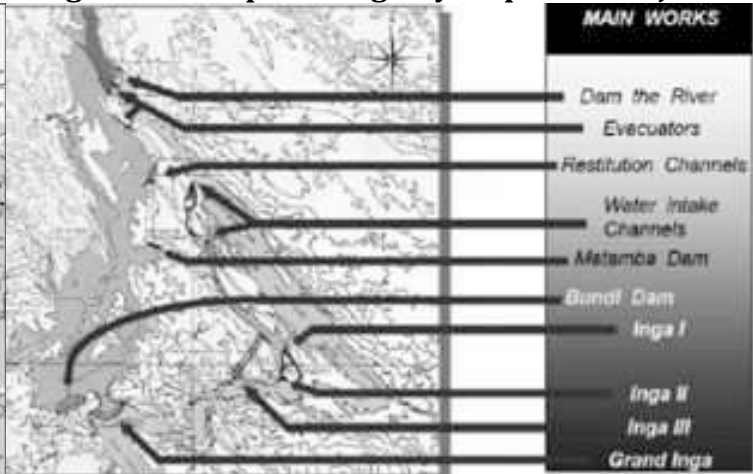
The destruction caused by mega-dams appears to be receiving new financing lifelines in the form of CDMs, through massive subsidies offered to hydropower developers¹, claims International Rivers. In 2007, over 650 hydro-projects had received or applied to receive carbon credits from CDM mechanisms, and if approved, would facilitate a windfall for developers, amounting to over \$1 billion annually. According to their report titled *Failed Mechanism: How the CDM is subsidizing hydro developers and harming the Kyoto Protocol*, 'The CDM is blindly subsidizing the destruction of rivers, while the dams it supports are helping destroy the environmental integrity of the CDM.'

More than one third of the hydro projects approved for credits by the CDM's Executive Board were completed prior to CDM approval; 89 percent were projected to be completed within a year and over 95 percent, within two years – especially telling of the mentality underpinning hydro-projects, given that construction is usually multi-year (between 4-10 years).

For each CDM credit sold from a 'non-additional' source, one extra ton of CO₂ is released into the atmosphere. Seen in this light, the hydropower projects in the pipeline currently requesting over 60 million credits annually, constitute a tremendous 'greenwashing' of environmentally-lethal projects.

'Money that should be supporting decarbonization in developing countries is flowing into the coffers of hydropower developers with the only effect on carbon emission levels being to increase them,' said Barbara Haya of IR. 'Hydro developers are repeatedly justifying their applications to the CDM with surreal arguments, such as that projects that are already completed will only be completed if they receive CDM revenue. Even worse is that the companies supposed to audit the developers' claims and the CDM's Executive Board seem prepared to endorse such Alice in Wonderland arguments.'

1. International Rivers (2007), 'Failed Mechanism: Hundreds of Hydros Expose Serious Flaws in the CDM' Press Release <<http://www.internationalrivers.org/node/2326>> and see also analysis by Terri Hathaway in *World Rivers Review*, 20, 2, p. 6-7.

Figure 7.1 Congo River basin**Figure 7.2 Proposed Inga Hydropower Project****BOX 4: Grand Inga, grand illusions**

By Terri Hathaway

Grandiose plans are being made to develop the world's largest hydropower project in one of the most politically volatile and corruption-plagued areas of Africa. In 2009, Reuel Khoza, the chairman of South Africa-based electricity provider Eskom, announced plans to develop the massive Grand Inga hydropower project in the Democratic Republic of Congo (DRC) 'Hydroelectricity from the Congo could generate more than 40,000 megawatts, enough to power Africa's industrialization with the possibility of selling the surplus to southern Europe...'

Inga's centralized grid system is likely to do little to 'light up' Africa for the 90 percent of people now living without electricity, most of who live in rural areas outside the reach of power grids. Grid expansion is quite costly, and trying to reach scattered rural communities would significantly increase project costs as well as the cost of electricity. Long transmission and distribution lines also increase electricity losses (older systems can lose up to 30 percent through transmission and distribution losses). Based on historical trends, the trickle-down effects in the form of jobs and taxes will likely be minimal for Africa's poorest, while also increasing unsustainable national debt loads. Potential direct impacts to locally affected peoples are unknown at this time, but remain of concern.

While run-of-river projects can have less damaging consequences than storage dams, they are often far from environmentally benign. The term 'run-of-river' is undefined, and is often therefore used to 'greenwash' projects. In fact, many run-of-river dams have large dam walls, major social and environmental impacts, and even reservoirs.

The extent of barriers and diversion canals involved in this colossal project is still unclear, but the cumulative impacts of Grand Inga's 52 turbine installations, as well as Inga 3, on the river's flow could be considerable. Impacts to fisheries, riverine forests and river ecology will need careful study. As more studies of GHG emissions from hydropower are conducted, scientists are finding increasing evidence that emissions from dams, especially methane, are a legitimate concern, particularly in tropical areas. The Inga projects will also need careful, independent study of their emissions impacts.

Project proponents have indicated they hope to gain a revenue stream for Inga 3 from the Clean Development Mechanism (CDM). Projects like Inga 3 turn the CDM into a subsidy mechanism for hydro developers and a carbon accounting loophole for industrialized countries, instead of a tool for climate protection.

CDM credits for Inga 3 would also be a double blow to renewable energy in Africa. First, project investment attracted by CDM credits would divert potential investment from renewable energy such as wind, solar, and geothermal to large hydro. Second, revenue from CDM credits would divert additional CDM investment from truly sustainable projects, effectively crowding out funds for new renewables in Africa.

Development of Inga could also reduce the planet's ability to absorb carbon emissions which cause global warming. The Congo river is an important planetary source of nutrient flows into the ocean, which feeds microscopic organisms that consume carbon, then die and sink to the bottom of the ocean. A 2009

study on the Grand Inga Complex says that ‘plans to divert, store or otherwise intervene in Lower Congo River dynamics are truly alarming’ and ‘ignore the river’s significant influence on the equatorial Atlantic, which, in turn, is central to many climate change models.’ Despite its potentially huge impact on this carbon drawdown cycle, Grand Inga’s proponents hope to garner carbon credits to offset some of its huge price tag.

Political instability is a very real concern across the region where the transmission grid would be built. The ongoing violence in DRC was recently rated the world’s most forgotten crisis by Reuters. Over three million people have died since 1998 as a result of the civil war and ongoing strife in DRC. The Inga mega- project would centralize much of Africa’s electricity source and require a grid of transmission lines through many of Africa’s most politically unstable regions. Dams, power plants, and transmission lines are often made targets in political conflicts. The dependence of more countries’ economies on Inga would increase its attractiveness as a target for sabotage by rebel groups. In 1998, rebels seized Inga II and cut its power to Kinshasa, the capital of DRC.

Gibe III in Ethiopia

A mega-dam, affecting over 500 000² people is to be financed in Ethiopia, extending to nations such as Kenya: Gilgel Gibe III. But the dam, whose height will reach 240m, with a 151 km reservoir, and with a storage capacity of 11.75 billion m³, is marked by clumsy corruption and irregularities. In 2004, several weeks after the Ethiopian Electric Power Corporation (EEPCo) granted a no-bid contract³ to Italian firm Salini Costruttori for the construction of Gibe II, Italy cancelled €367 million in bilateral debt, followed by a loan from the Italian Development Corporation (IDC). Italy’s Ministry of Finance was still under investigation for €220 million in loans provided by the IDC for Gibe II when construction of Gibe III began in July 2006.

This was before the Environmental Protection Authority received the Environmental Impact Assessment (EIA) – a report that would be completed only in 2009. Thus far, three monster-contracts have been granted to Salini through a no-bid process, and as of late 2009, the Italian government was still considering financing Gibe III to the tune of €250m. Gibe III’s contract, currently pegged at \$2.1 billion – an increase of 11 percent from original estimates, violated Ethiopia’s procurement policies for public works as well as that of the World Bank and African Development Bank. In 2008, when Gibe was granted the ‘license to kill’, the criminal case against the IDC was closed with no conclusive results.

Gibe III is estimated to generate 1,870 MW⁴, with about 50 percent (900 MW) proposed for export to Djibouti, Sudan and Kenya. This will be a major component of Ethiopia’s 25-year national energy master plan, with Gibe III earning a projected €300 million annually in profits from exported energy. Investment in cost-intensive transmission lines required to ‘export’ energy to Kenya, Sudan and Djibouti⁵ have yet to be secured. The cost for Kenya alone is \$800 million, as per the terms of the 2006 Memorandum of Agreement signed between Kenya and Ethiopia for the purchase of 500 MW. But given the recurrence of drought in Ethiopia – plaguing the country for

² Bosshard, P (2010), ‘China’s Biggest Bank ‘Not A Mercenary’ in Africa’ Huffington Post, August., < http://www.huffingtonpost.com/peter-bosshard/chinas-biggest-bank-not-a_b_676434.html>

³ International Rivers (2009), ‘Fact Sheet: Gibe III Dam, Ethiopia’ < assets.survival-international.org/.../Gibe3_IRN_Fact_Sheet_final.pdf>

⁴ *Ibid*

⁵ *Ibid*

months at a time, at a cost of \$200 million⁶ a stretch, the project is characterised by energy insecurity. Meanwhile, within Ethiopia, less than 11 percent of Ethiopians have access to electricity.

'The plan excludes from its investment requirements those costs related to 'distribution, rural electrification and network reinforcement resulting from demand growth,' said a report by NGO International Rivers (2008). In 2008, eight hydropower dams accounted for 85-89 percent of Ethiopia's electricity, with five more dams⁷, including Gibe III, currently under construction, estimated to generate a combined capacity of 3,125 MW. EEPCo currently generates about 1000 MW from six dam projects, with hydropower contributing 89 percent to Ethiopia's electricity production.

China – via the Industrial and Commercial Bank of China (ICBC) – has stepped in to provide a \$500 million loan to finance the requirements of Dongfang Electric Machinery Corp, supplying machinery for the project. Goldman Sachs, American Express and Germany's Commerz Bank have cumulatively invested \$3.7 billion in ICBC; Sachs holds the largest share at 5.75 percent or \$2.6 billion, injected just prior to ICBC going public on the Hong Kong Stock Exchange.

In recent years, China's Sinyhydro has captured 50 percent of the world's hydropower market, chiefly through the barter system ie: 'resources-for infrastructure',. In this way, China's funds are returned to sender through tenders allocated to 'home' countries, while exploiting the resources of host countries. And as infrastructure is almost selectively geared to facilitate easier exploitation of resources – as a substitute for resource revenues remitted to host governments, China essentially liquidates African resources at a huge bargain. It is also worth noting that over 3000 of dams constructed by Chinese companies within China have collapsed⁸ due to substandard materials, hasty construction, grossly unsuitable geographic locations, amongst other fatal flaws – leaving aside socio-ecological impact on ecosystems, displaced – resettled peoples, host communities and downstream populations.

China itself does not subscribe to international environmental frameworks and China subscribes only to the environmental framework of host countries. Ethiopia, experiencing gross deforestation under the rule of lifetime dictator Meles Zenawi, is unlikely to care about the dam's impacts so long as it brings in the cash that Ethiopia's rent-seeking state – 90 percent dependent on strategic aid (foreign aid) – seeks to attract.

But though China remains the primary driver behind the construction of mega-dams in Africa – a move since backed by the World Bank under Robert Zoellick's leadership, there are other, more 'respectable' actors involved.

According to Salini's spokesmen, criticisms leveled against the project have already been assessed and denied by authoritative international organizations, such as EIB and the African Development Bank (ADB). The European Investment Bank, having partially financed Gibe I and II, as well as the African Development Bank, considered investment at €250 million.

The efforts of civil society movements, particularly the IR network, as well as Friends of Lake Turkana (FoLT) and others resulted in the EIB financing the EU-Africa

⁶ *Ibid*

⁷ *Ibid*

⁸ Independent UK (2010), 'Desperate Battle To Shore Up Quake Dam' April 15, <
<http://www.independent.co.uk/news/world/asia/desperate-battle-to-shore-up-quake-dam-1945227.html>>

Infrastructure Trust Fund, which has earmarked € 1.2 million for two extensive studies investigating the dam's impact on Lake Turkana as well as Ethiopia's Omo River.

Why does this matter? Gibewill affect three regions (including the flammable Ilemi Triangle, located at the juncture where Southwestern Ethiopia, Southeastern Sudan and Northwestern Kenya cross geographies), an area characterized by conflict rooted in food and water insecurity. A 60 percent reduction in river flow means that impacted populations include not only the displaced – the EIA deliberately underestimated the number of people to be displaced in order to fast-track the project – but also those located downstream, usually marginalized to the periphery of 'cost benefit analysis'.

Affected peoples include: 100, 000⁹ peoples located in Ethiopia's Lower Omo Valley, engaged in flood-recession agriculture as well as further 100 000¹⁰ peoples dependent on grazing livestock or trading with farmers dependent on flood-recession agriculture; 500, 000¹¹ rural peoples inhabiting Ethiopia's South Omo zone, and 300, 000 peoples sustained by Kenya's Lake Turkana fisheries. Increased salinity would additionally impact the quality of potable water for humans and livestock.

Over 200,000¹² agro-pastoralists and pastoralists directly dependent on flood-recession agriculture in the lower Omo basin will immediately face severe impoverishment, leading to conflict, famine, disease, as well as the artificial creation of almost a quarter million 'environmental' refugees. This compounds the already strained heavily-armed status of marginalised and disenfranchised ethnic groups in regions like Southern Sudan, set to be devastated by the dam.

Damming the Omo River will drastically reduce inflow to Turkana as the former supplies 90 percent of input with an estimated 10-12 meter drop. Scientists state that a 5 meter drop would result in the elimination of flooding in the Omo Delta, located mostly within Kenya. Filling Gibe III's massive reservoir will further reduce 50 percent of the flow to Turkana, while fractures due to cracks in underlying rock formations, revealed IR, would siphon 50-75 percent of dammed reservoir water. The Omo River, flowing 500km south from the dam's proposed site, feeds the Omo National Park, an area of critical biodiversity, populated by 15 different ethnic groups, all sustained by the river.

According to the Africa Resources Working Group (ARWG), comprised of US, European and African academics and other scholars specializing in large hydro-dam and river basin development initiatives, 'The quantitative [and qualitative] data included in virtually all major sections of the report were clearly selected for their consistence with the predetermined objective of validating the completion of the Gibe 3 hydro-dam.'¹³

The proposed rain-fed cultivation as well as planned flood simulation established in the EIA deliberately mischaracterizes the reality of the region's climate, as well as the history of mega-dams in Africa, noted for ineffective and corrupt management and maintenance (the pattern already evidenced in the Gibe posse). As Professor Thayer Scudder, one of twelve commissioners at the World Dam Commission, and one of the World Bank's former principal resettlement officers said, 'planned flooding is rarely, if

⁹ International Rivers (2009), 'Fact Sheet: Gibe III Dam, Ethiopia' < assets.survival-international.org/.../Gibe3_IRN_Fact_Sheet_final.pdf>

¹⁰ *Ibid*

¹¹ *Ibid*

¹² *Ibid*

¹³ BBC (2009), 'The Dam That Divides Ethiopians', 26 March < <http://news.bbc.co.uk/2/hi/africa/7959444.stm>>

ever, successfully implemented in Africa.’ This summary excludes the impact of seismic activity due to the immense weight of the reservoir catalyzing the risk of seismic activity – a reality deliberately discounted from the EIA.

One of semi-arid Africa’s largest rivers, Omo (and Lake Turkana) sustains a correspondingly large population, because – despite Gibe I and II, it remains a resource held ‘in common; that is managed by farmers, herders and traders, utilizing centuries of region-specific knowledge and practices.’ On the issue of utilization of the ‘commons’, Nobel laureate Prof Elinor Ostrom has claimed¹⁴, ‘The myth that I have tackled is that the users of common-pool resources would always be helplessly trapped in overuse,’ said Ostrom. The means of stable organization of common-pool resources, is primarily composed of eight design principles: clearly defined boundaries; collective-choice arrangements; congruence between appropriation and provision rules and local conditions; monitoring; graduated sanctions; conflict resolution mechanisms; minimal recognition of rights to organize; and finally, where common-pool resources ‘are part of larger socio-ecological systems’, nested enterprises.

‘Markets and states are hardly the full set of relevant institutions for people in contemporary society. GDP is an important indicator, but it is not the only measure of economic activity that we should be thinking about. GDP gives us no understanding of the successful efforts to sustain resources. We need to be thinking about how small cities can organize, how local communities can organize, and how regions such as the areas along the Nile crossing country lines need to find ways of organizing,’ said Ostrom¹⁵.

But the opacity web comprising the Gibe initiative has little to do with community organization given that the community itself presents the greatest threat to the project – designed to export-orient Ethiopia’s ecosystems in order to cash in ‘resource revenue’.

In this sense, the dam – against the backdrop of Ethiopia’s national energy ‘master-plan’ has been packaged as just another lucrative commodity negotiated via a ‘secretive development agreement’ – as evidenced in the fabrication and obfuscation informing the ‘public consultation process’ as well as the new law designed to restrict and limit the activities of civil society.

An estimated 90 percent of the \$7 billion¹⁶ in electricity investment will be derived from loans – a considerable portion earmarked for export, rather than the poverty reduction initiatives that should constitute loan demands.

Ironically, in a 2006 report, EEPco itself outlined wind as a sustainable consistent source of energy for nine months of the year, as opposed to water tables, peaking after June. EEPco revealed that hydro-dependency presented a tremendous obstacle to energy generation consistency in light of drought (such as occurred in 2008, from May to September during peak water tables), resulting in decreasing reservoir levels, and thus recommending diversification. By marginalizing the cheap job-intensive sustainable source of wind energy, Ethiopia’s ‘rentier’ government has collateralized the country’s future, setting in motion an ‘eco-genocide’ that will initiate brutal famine and Africa’s worst water-war yet.

¹⁴ Interview with author, Feb 2010

¹⁵ *Ibid*

¹⁶ International Rivers (2009), ‘Fact Sheet: Gibe III Dam, Ethiopia’ <assets.survival-international.org/.../Gibe3_IRN_Fact_Sheet_final.pdf>

Overall, mega-dams have yet to provide the progress promoted by foreign policies, investors and agencies, and assumed by local governments. Scudder's study of 50 dams – including 13 African dams – revealed¹⁷:

- 79 per cent of displaced communities depend on agricultural production as a primary or vital secondary economic activity for external markets
- Living standards improved in only seven per cent of cases
- The resettlement process was completed in just 18 per cent of cases
- A positive outcome was achieved in one case. Political will on the part of the government was inadequate in 54 per cent of cases
- Scudder reveals that one official stated the displaced should be sterilised
- Lack of opportunity characterised 88 per cent of cases
- Landlessness or lack of arable land affected 86 per cent of cases
- Joblessness affected 80 per cent of people
- Lack of food security impacted heavily on 79 per cent of people
- 89 per cent of planners were adversely unaware of the importance of common property, such as fertile land, and access to surface water
- 92 per cent were negatively impacted by economic, social, environmental and other factors of resettlement
- 43 per cent were unable to compete with immigrants and 32 per cent with host communities
- 100 per cent were marginalised.

Conclusion

International Rivers, a hydric justice group, reports that by 30 January 2012, 2125 hydro projects with an installed capacity of 94,825 MW had applied for carbon credits, more than two-thirds of them in China. Yet, the group also cautions: 'A European Union law called the Linking Directive regulates the use of CDM credits within the EU's internal carbon trading system. The directive states that large hydro credits entering the European Trading System must comply with the criteria and guidelines of the World Commission on Dams (WCD). To date, none of the large hydros in the CDM pipeline.'¹⁸ have proven WCD compliance.' However, Europe is marginal to such decisions.

The idea of making major dams central to a supposed renewable energy strategy (even gaining carbon credits) for Africa is dubious for all the reasons spelled out above. Yet this idea predominates and, with the growing climate crisis, has been given additional emphasis in multilateral agencies in recent years. The dam building industry, despite all the criticisms spelled out in the official report of the World Commission on Dams of 2000, continues its march unabated.

To combat this problem, the most important dilemma for African policy-makers and environmental (hydric) justice organisations, is how to avoid the push of finance into mega-dams. The strategies so far have involved advocacy against multilateral financing, e.g. the World Bank in Ethiopia. However, the African Development Bank and Chinese investors have far fewer qualms about investing in destructive infrastructure.

For those courageous civil society activists in various mega-dam sites in recent years – the Lesotho Highlands Water Project, the Bujagali Dam in Uganda, the Mpande Nkuwa

¹⁷ Sharife, K (2009), 'Damnation for Africa's Big Dams', African Business magazine, June.

¹⁸ International Rivers, 'The CDMs: Kyoto's Carbob Offsetting Scheme', <
<http://www.internationalrivers.org/global-warming/cdm-kyotos-carbon-offsetting-scheme>>

projects in Mozambique, the Himba people fighting a dam on the Namibia-Angola Kunene River, and DRC, Ethiopian/Kenyan critics of the dams considered in this chapter – there is now ever greater evidence from CDM applications of the urgency of winning these battles.

Chapter 8

'Climate-smart' agriculture in Kenya and Mozambique

By Baruti Amisi and Khadija Sharife

Introduction

Global warming and biofuels projects which intend to solve global warming affect the rich and poor differently. Indeed, whereas the poor and marginalised communities which pollute less remain adversely affected by perceived sustainable solution to climate, the rich who pollute more have sufficient mechanisms to cope with climate change. They dispossess the poor and women of the land for subsistence farming and grazing animals, water for domestic consumption and irrigation, firewood for cooking and warming, and communal sense of belonging and consequently become poverty production processes created and implemented by the same institutions which have a social obligation and self-proclaimed international mandate of addressing poverty.

As a result, this chapter argues victims of the perceived and real threats of both global warming and the biofuels projects organise to debunk the promises of 'sustainable' biofuels projects, even more when they become CDM projects. They seek to resist and protect their livelihoods wherever political opportunities provide a space for organising and freedom of expression.

The impacts of these projects on the poor, and of *Jatropha* in particular which is one of the focuses of this chapter, may compromise the economic progress and socio-political stability gained since the 2008 contested elections and ethnic violence that followed in Kenya on the one hand; and decades of civil wars of Mozambique on the other hand. The selection of the two countries was based on their history of socio-political instability.

The main argument of this chapter is three-fold. First, *Jatropha* plantations represent a short-sighted approach to climate change because they do not address the root causes of the problem: political will to reduce carbon footprint, and investment in truly renewable energy (solar energy and wind power). Second, these projects increase and perpetuate the vulnerability of the poor and women through expropriation of natural resources and by replacing subsistence crops and land for grazing as permanent sources of income by cash crops that offer fewer and unsustainable benefits to women, marginalised communities, and small scale-farmers. Third, the new drive for so called 'climate smart' agriculture (of which biodiesel and ethanol are only one aspect – BOX 5) must be watched carefully. It is true that food producing, small scale agriculture is key in the fight against climate change, but the call from international finance to include carbon in the soil into CDM, spells further trouble for small farmers and peasants. The same dilemma exists because of hype over 'biochar', as the watchdog NGO Biofuelwatch has been documenting (BOX 6).

The biofuel projects and *Jatropha* in particular, are part of poverty production processes introduced to satisfy short-sighted policies from developed countries at the expense of the poor and subsistence farmers in developing countries. They produce and perpetuate poverty by dispossessing the poor of their land, water, and sense of belonging through forced removal with little or no consultation and compensation. They also aggravate the vulnerability of women who are often excluded from property rights and bear the cost of source of energy supply, water provision, and care of family members and the sick in particular.

In fact, new forms of dispossession are being created through biofuel projects based on projections that European transport fuels should contain 5.75 percent mix from agrofuels in 2010 and production targets of 35 billion gallons of agrofuels a year in the USA. The subsequent need for farmland means the poor have been and will continue to subsidise many activities which benefit the rich, as the following case studies demonstrate.

Local communities' response in Kenya

Kenya is the most industrialised country in eastern Africa. It has 39 million inhabitants. The agriculture sector employs 80 percent of the population and accounts for 50 percent of exports, accounting for 25 percent of GDP. The agricultural sector is afflicted by periodic droughts that negatively affect investments in it¹. The Kenya Bureau of Statistics observes that '46 percent of the total population is absolutely poor i.e. below poverty line whereas 49 percent of the rural population is absolutely poor'. Moreover, the 'richest 20 percent of rural and urban populations earn 62 percent and 51 percent of income respectively.'²

Jatropha has been sold as a wonder crop for climate change and alleviation of rural poverty in this impoverished country. Proponents of this wonder plant contend that Jatropha is a win-win solution because the plant makes use of marginal land not suitable for food production and does not compete with food production. It is resistant to diseases and droughts. As a result, Jatropha benefits the farmers, biofuel producers and consumers, and the environment.³ Estimates that one half of a hectare of Jatropha can produce 1,900 litres of fuel⁴ have fuelled dreams of a new investment which will create 13 000 new jobs⁵ for a country with a record of 30,000 deaths of malaria and 19,000 deaths in childbirth in 2005.⁶ Such promises were warmly welcomed by socio-political elites and the private sector in a country where almost half of the population is poor.

The development-affected communities disagree, according to interviews by a *Guardian* journalist.⁷ They argue that Jatropha and biofuels in general occur with land grab and land dispossession as well as forced removal of the communities from ancestral land that they occupied for decades, as the quotes below demonstrate:

They told us we would be burned out if we didn't go [...] They drove machinery round and round the village all day and all night to drive people out. No one understood why, as the village had been there for more than 25 years [...] The irony is that most of the land is being taken for allegedly environmental reasons – to allow private companies to grow water-thirsty sugar cane and Jatropha for the biofuels so much in demand in the west, where green legislation, designed to

1. <http://www.fco.gov.uk/en/travel-and-living-abroad/travel-advice-by-country/country-profile/sub-saharan-africa/kenya/?profile=today>.

2. Suri, T., Tschirley, D., Irungu, C., Gitau, R., and Kariuki, D. 2008. 'Rural Income, Inequality and Poverty Dynamics in Kenya.' Nairobi: Tegemeo Institute of Agricultural Policy and Development.

3. Mattavel, D.R.N. 2009. 'Jatropha! A socio – economic pitfall for Mozambique'. Maputo: *Justiça and União Nacional de Componesses*.

4. Tim Padgett, 'The Next Big Biofuel?' TIME MAGAZINE ONLINE, January 29, 2009, *available at* <http://www.time.com/time/magazine/article/0,9171,1874835,00.html>.

5. 'New Investments to Create 13,000 New Jobs,' THE NEW VISION, April 6, 2009.

6. DFID (Department for International Development) Kenya. 2011. 'Operational Plan 2011-2015'.

7. McVeigh, T. 2011. Biofuels land grab in Kenya's Tana Delta fuels talk of war. *Guardian.co.uk*. 2 July. [Online], available: <http://www.guardian.co.uk/world/2011/jul/02/biofuels-land-grab-kenya-delta>. Accessed on 12/11/2011.

ease carbon dioxide emissions, is requiring they are mixed with petrol and diesel...

On the quality of land and conditions of resettlement processes, one local elder contended:

This is not a good place. Children have died; we have typhoid and malaria now. We were healthy before and our children went to school. This river is now the drainage for pesticides from all the big farms. The proper river has been diverted to irrigate them and now we just get their poison. When we were evicted they showed us the maps, and we saw many more villages who don't yet know they are to be evicted too. Where will they all go?

In addition, in the Tana Delta, there is both *Jatropha* plantations and sugar cane plantations (for ethanol) being planned.

The eviction of the villagers to make way for a sugar cane plantation is part of a wider land grab going on in Kenya's Tana Delta that is not only pushing people off plots they have farmed for generations, stealing their water resources and raising tribal tensions that many fear will escalate into war, but also destroying a unique wetland habitat that is home to hundreds of rare and spectacular birds.

Opposition to the *Jatropha* project in Kenya's Tana Delta by local activists and the affected communities caused the British firm G4 Industries Limited to pullout from a 28,000 hectare biofuel. This project would have destroyed a wetland ecosystem crucial for regional wildlife in this specific area.⁸ Mike Pond, the Executive Director of the G4 Industries Limited, paradoxically agrees with local activists on the harmful impact of the project on the ecosystems. He explained the reasoning behind the company's pullout from the project arguing: 'We have become increasingly concerned about the environmental implications of operations in the Tana Delta and we have now decided to withdraw from the region.'

Response in Mozambique

Mozambique is another interesting case regarding biofuel projects, and *Jatropha* in particular. Mozambique is rich in natural resources including arable land, mineral resources, hydropower potential from its many rivers, forests, fisheries, gas and subsoil assets such as coal and heavy sands. Mozambique is also one of the poorest countries in the world despite its high annual rate of economic growth. Life expectancy was 48 years in 2002-2008. The country is one of the lowest on the Human Development Index, ranked 172nd out of 182.⁹

Froger, Paz and Vissers' report findings on 'Selection of a Sustainability Standard for Pilot' debunk the myths and promises of *Jatropha* as wonder crop and solution to GHG and rural poverty. These findings call for a careful consideration of biofuels as responses to climate change and poverty even though 7,000 ha of *Jatropha* was already

8. Cernansky, R. 2011. UK Company Pulls Out of Controversial Kenya Biofuel Project. 26 October. <http://www.treehugger.com/renewable-energy/uk-company-pulls-out-controversial-kenya-biofuel-project.html>. Accessed on 30/10/2011.

9. Froger, E., Paz, A. and Vissers, P. 2010. 'Selection of a sustainability standard for pilot assessments of *Jatropha* producers in Mozambique – final report activity 1 – May 2010'. Amsterdam: *Jatropha* Alliance and GEXSI.

planted in 2008, 35,000 ha by 2010, and 170 000 ha would be planted by 2015. In fact, the biofuels' entrepreneurs contend that *Jatropha* is a wonder crop for four main reasons.

- First, '*Jatropha* grows well on marginal land and can produce high yields on poor soils'. There is not supporting studies from any of these communities, industry experts or individuals interviewed in the study to support this claim in Mozambique. Instead, *Jatropha* is planted in arable land with fertilisers and pesticides.
- Second, '*Jatropha* requires low water use and minimal maintenance'. This study revealed that irrigation was required during early development phase. In addition, this is only true for areas where rainfall is between 800 mm and 1400 mm. In contrast, a region with lower rainfall of 600mm and 800mm requires constant irrigation for *Jatropha* to grow and produce expected results.
- Third, '*Jatropha* is resistant to disease and pests'. The study revealed that the wonder plant is vulnerable to diseases and has problems with fungi, virus, and insect pests. In addition, severely attacked plants would stop producing leaves and stay in a state of stress, which left the farmer with no choice other than to remove the plants and consequently lose crops and income.
- Fourth, '*Jatropha* does not present any risk to food security but is a development opportunity for subsistence farmers'.

Yet in Mozambique, *Jatropha* competes with food crops. It is planted in direct replacement of food crops by around 87 percent of subsistence farmers. In addition, the land law designed to protect local communities has been manipulated by the government through unconstitutional decrees weakening communities' land rights. The law should identify and emphasize the importance of local community leaders in dealing with community rights and the prevention and resolution of conflicts at the local level.

In practice, the investors and government undermine the law through bribes to leaders to gain community consent without community consultation. In rare cases when community consultations occur, they are often not transparent and they are loaded with unfulfilled promises. Weak dissemination and a lack of translation of documents into local languages that people can understand sustain these abuses because knowledge is power.

In summary, the situation of *Jatropha* as a food-security safe biofuel crop, a source of additional income, and a tool for rural development in Mozambique is 'misinformed at best and dangerous at worst'. As a result, *Jatropha* remains a threat to socio-economic stability and peace in Mozambique because sooner or later, it will lead to socio-political instability and upheavals.

BOX 5: Climate-'smart' agriculture and soil-carbon credits

The push behind the newest agricultural 'revolution' – known as climate smart agriculture – is driven by many factors ranging from multinationals such as Monsanto, eager to embed the money-making intellectual property of genetically modified seeds, to that of mega-dam proponents. But we would not be

wrong to identify its most visible proponents: the World Bank and South Africa.

The momentum of both, in fact, is closely intertwined: in September 2011, three months after she collided with 'climate smart' ways at the UN Food and Agricultural Organization's (FAO) event in Rome, Agriculture Minister Tina Joemat-Pettersson began advocating the 'climate smart' concept, she organized the Bank-funded meet and greet with Africa's agricultural ministers. The UN's FAO would have been a good ambassador: in their document on the concept, the FAO states, 'Climate-smart agriculture is rooted in sustainable agriculture and rural development objectives which, if reached, would contribute to achieving the Millennium Development Goals (MDGs) of reducing hunger and improved environmental management.'¹⁰

According to this FAO report, not only is the agricultural sector the most vulnerable – in Africa, over 90 percent of small farmers will experience drastic crop reduction in the next few decades – but it is also one of the leading producers of GHG, estimated at 14 percent, and 'a key driver of deforestation and land degradation, which account for an additional 17 percent of emissions.'

The concept extends, in many instances, to the entire economy, including 'environmental issues, for example energy and water, as well as social issues, such as gender, and economic issues. Achieving the four dimensions of food security (availability and access to of food, utilization of food for adequate nutrition, and stability of food supply) needs to be the overall goal of food production and distribution systems in developing countries.'¹¹

The Trojan horse is green-wrapping well-established and known practices such as conservation, within the context of the key solution: 'Financial mechanisms ...that can blend and coordinate funding from different sources, including public, private, agricultural development and climate financing.'¹² As South Africa's Department of Agriculture revealed that 'considerable finance will be needed to rapidly implement climate-smart agriculture.'

The country, the gateway facilitating exposure, particularly through the recent COP17, irrevocably backs the concept, using justice-speak ('agriculture is the economic foundation...employing about 60 percent of the workforce and contributing an average of 30 percent of gross domestic produce...') to motivate for the location of solutions in neoliberal market-mechanisms.

How will this be realized? 'The whole proposal of Climate-Smart Agriculture was developed around the possibility of developed countries offsetting their carbon via international carbon market – REDD, REDD+ and soil carbon market. (The UN-REDD Programme is the United Nations Collaborative initiative on Reducing Emissions from Deforestation and forest Degradation (REDD) in developing countries.) Climate-Smart Agriculture comes packaged with carbon offsets,' writes ActionAid.¹³

Unpacking the reasons why initiatives such as 'climate-smarts' soil market won't work, 'there is no soil carbon market currently, if there were a market, it would not provide revenues to farmers, the system will be biased against smallholders, to sustain finance from an offset market, developed countries must keep emitting, soil carbon markets are a distraction from addressing real adaptation needs and mobilizing real funding to support adaptation', and that 'soil carbon markets are a diversion from real obligations of rich countries: to reduce emissions and to provide substantial, stable, predictable, new and additional public finance.'¹⁴

But before any of these issues can be considered, – and aside from the fact that many African farmers, cultivating just one or two hectares of land for subsistence would earn perhaps \$3 per annum – most African farmers don't hold legal rights to the land on which the banking scheme is intended to take place. Smuggled through in the process – as solutions – are high-cost environmentally destructive 'inputs' such as fertilizer and pesticide, genetically modified seeds, mega-dams and ill-designed irrigation projects,

10. FAO, 'Climate Smart Agriculture: Managing Ecosystems for Sustainable Livelihoods', Undated., <<http://www.fao.org/docrep/015/an177e/an177e00.pdf>>

11. South Africa, Department of Agriculture, Forestry and Fisheries (2011), 'Policy Brief: Opportunities and Challenges for Climate-Smart Agriculture in Africa', <http://www.nda.agric.za/doaDev/topMenu/ClimateChange/PolicyBrief_OpportunitiesChallenges.pdf>

12. *Ibid.*

13. ActionAid (2011), 'Agriculture: From Durban to the World', <<http://www.actionaid.org/2011/12/agriculture-durban-world>>

14. ActionAid (2011), 'Agriculture: From Durban to the World', <<http://www.actionaid.org/2011/12/agriculture-durban-world>>

geared to sustain not Africa's food needs, but rather, commercial crops.

The process is already under way: Inter-Press Service (IPS)¹⁵ detailed the venture: 'The very first project to sell soil carbon credits in Africa is underway in Kenya. Funded by the World Bank, some 15,000 farmers and 800 farmer groups are changing their practices to sequester carbon for a 20-year period. The costs to set up the Kenya Agricultural Carbon Project along with the costs involved in measuring the carbon and marketing the credits are estimated at more than one million dollars, said Anne Maina of the African Biodiversity Network in Kenya.'

BOX 6: Biochar for Africa?

By Almuth Ernsting, Biofuelswatch

Biochar, which is fine-grained charcoal (mainly carbon) applied to soils, is being touted as a solution to climate change, soil degradation, low crop yields and much else. Advocates, represented globally by the International Biochar Initiative (IBI) are calling for carbon offsets, subsidies and other private and public finance in order to produce large quantities of biochar to be tilled into soils.

They claim that by adding biochar to soils carbon can be sequestered for hundreds to thousands of years while making soils more fertile and crops grow better. And the same technology – called pyrolysis – can produce both biochar and bioenergy in liquid and gas form.

Biochar advocates describe the process as 'carbon negative'. They falsely consider all bioenergy to be approximately carbon neutral, even though experience with agrofuels and, increasingly, Europe's and North America's massive new demand for wood for power stations shows that the climate impact can be devastating. Ambitions are set high: According to an article published by members of the IBI in Nature Communications, 12 per cent of all greenhouse gas emissions could be 'offset' with biochar – requiring 556 million hectares worldwide to be converted to produce crops and trees to produce it.¹⁶

The fact that the scientific field trials disprove the claims made about biochar has not deterred the IBI and their member companies and researchers. Only 11 peer-reviewed field trials have ever been published and those show that the short-term effects on crops are very mixed – sometimes positive, sometimes negative and sometimes there are no effects. Longer-term effects have not been researched.

The same is true for biochar and soil carbon: In one trial, for example, just one year after large amounts of biochar were added to some plots, those plots contained less carbon overall than plots without any biochar.¹⁷ Outcomes vary greatly between different types of biochar, different soils and soil conditions, different combinations of biochar with fertilisers, etc. The variables are so many that it is impossible to make any predictions, at least based on current knowledge.

So far, biochar lobbyists' efforts have only had very modest success: No biochar carbon offsets are being traded or certified as yet, all projects so far have been small and experimental and only one multinational company currently supports their efforts – ConocoPhillips, who want to develop biochar carbon offsets for their destructive tar sands exploitation in Canada.

Africa has been the focus of many of those organisations and companies investing in biochar 'demonstration' and 'feasibility' projects. A joint briefing by the African Biodiversity Network, Biofuelwatch and the Gaia Foundation, updated in late 2010, found more than 25 different biochar projects having been announced in African countries.¹⁸ A more recent presentation by a representative of the IBI refers to 34 such projects in 11 African countries.¹⁹

Together with Cameroonian researcher Benoit Ndamou, Biofuelwatch has now published a report which investigates one of those projects and its initiator, Biochar Fund. Biochar Fund, based in Belgium, has described itself as a 'social for profit organisation'. In early 2009, they commenced biochar trials involving 75 trial plots in Kumba city and 11 nearby villages in Cameroon's South-West Province.

15. IPS (2011), 'A recipe for carbon farming', Dec 2 < <http://www.ips.org/TV/cop17/a-recipe-for-carbon-farming/> >

16. www.wrm.org.uy/bulletin/159/Biochar.html

17. *For full details and references, see* www.biofuelwatch.org.uk/2011/a-critical-review-of-biochar-science-and-policy/

18. [www.gaiafoundation.org/sites/default/files/Biochar%20Africa%20briefing\(2010\).pdf](http://www.gaiafoundation.org/sites/default/files/Biochar%20Africa%20briefing(2010).pdf)

19. www.biochar-international.org/sites/default/files/IBI_Survey_5-11-11_online.pdf

According to an interview given by Biochar Fund's funding director, Laurens Rademakers in August 2010,²⁰ the trials had been a great success: Crop yields, he claimed, had increased by 240 per cent on average, 1,500 farmers had been represented in this project which was still ongoing, and the success suggested that it was possible to 'produce and apply biochar in a sustainable manner...and make a profit, merely because of the crop yield increase.' He called possible future carbon offsets an 'added bonus'. Biochar Fund's claims about their 'preliminary results' (the only one they ever published, and only on their website), received widespread media attention.

What Benoit Ndameu found when he visited the area and spoke with farmers as well as representatives of Biochar Fund's local partner organisation, Key Farmers, was rather different. Only around 75 farmers had ever been involved in the trials, which had terminated after just one single harvest season in 2009. The drop-out rate during the trials had been high – full data was obtained from only 31 out of 75 plots. Trials involved adding different combinations and quantities of biochar and organic and/or artificial fertilisers to 16 different sub-plots within one larger plot and taking the maize from each of those sub-plots to be measured and weighed after harvesting.

The farmers interviewed in April 2011, who had participated in the trials spoke about their hopes and enthusiasm. According to Key Farmers, they had been told by Biochar Fund that biochar was a proven technique for improving soil fertility. Farmers had been assured, as confirmed by a brochure handed to them at the start of the project, that biochar 'could help us win the fight against climate change' and that funds for them to take part in scaled-up project from 2010 would be sought from the voluntary carbon markets. According to the brochure: 'This expanded project would attract a considerable number of carbon credits'. Some were still hopeful that such funding was forthcoming, even though there had been no sign of Biochar Fund or any activities on their part for a long time. Many expressed doubts and weariness about the project. They had given up considerable amounts of time and labour for free and some even reported having rented plots for the trials, and they had received nothing in return. In the villages visited, no biochar had been made or used since the trials ended, except for one farmer who produced and applied a small amount to a plot of chili peppers. Farmers had not been shown how to make biochar, the technique that had been used involved a 'single barrel method', one of the most inefficient charcoal-making methods. For all of Biochar Fund's public references about biochar production being coupled with affordable and accessible renewable energy, the method they used in the Cameroon trials, like the one being used in another Biochar Fund project in DR Congo, cannot be adapted to capture any energy whatsoever.²¹

For the purpose of science, the trials have yielded nothing: The results have not been published in any journal and have not been peer-reviewed. Only interim results were put on Biochar Fund's website, which has since closed down.

Did Biochar Fund really expect the imminent carbon offsets which farmers had been led to hope for? This seems hard to imagine. Biochar Fund has had close links to the IBI, who listed the Cameroon project as one of their '9 Country Projects', stating that they 'worked with organisations and projects in nine developing countries to help them develop and evaluate cost effective approaches for the widespread introduction of biochar'.²² The IBI has been working for years, so far without any success, to get biochar included into carbon trading schemes or certified for voluntary carbon offsets. Furthermore, an assessment by the Institute of Agriculture and Trade Policy (IATP) of a (non-biochar) soil carbon project promoted for voluntary carbon offsets by the World Bank shows that, given the high transaction costs of such carbon offsets, farmers would at best receive US\$1 a year each – hardly the funds envisaged by farmers in Western Kenya, or in South-West Cameroon.²³

Yet while farmers received no benefits, Biochar Fund's Laurens Rademakers appears to have benefited considerably. He successfully used his claims about the Cameroon trials to obtain a grant for another biochar project in DR Congo from the Congo Basin Forest Fund (CBFF) and also to obtain a second grant from the CBFF for another project not involving biochar. According to his personal website,²⁴ he has managed to create 13 different NGOs, eight of them in Africa since 2006 and has obtained a total of US\$1.325 million in funds for different projects since 2009, nearly all of it from 'public calls'.

Farmers' experience with the Cameroon experiment raises questions about other biochar projects and more widely, about a range of projects designed to demonstrate the 'feasibility' of different soil

20. http://news.mongabay.com/2010/0816-hance_rademakers.html

21. tinyurl.com/brcjuuv (kaltura.endirectv.com)

22. www.biochar-international.org/9country

23. www.iatp.org/documents/elusive-promises-of-the-kenya-agricultural-carbon-project

24. <http://laurens-rademakers.com/>

carbon and agricultural practices for the purpose of future carbon offsets or other finance mechanisms which the World Bank and UN Food and Agriculture Organisation propose for so-called 'Climate-Smart Agriculture'.

These projects claim to be 'trials' but that there is generally no intention to publish findings in any scientific journals. Instead unverified claims, often accompanied by pictures of smiling farmers, are being used to promote biochar and other practices for various finance mechanisms.

Soil carbon markets – promoted by the World Bank, FAO and several governments, including Australia and New Zealand, would create yet another loophole for polluting companies in the North to continue emitting high and even increasing amounts of carbon. However, despite the growing hype and promotion of soil and agriculture carbon markets, there appears to be little prospect of them taking off in the foreseeable future: 97 per cent of all carbon trading worldwide takes place in the EU and the EU Emissions Trading Scheme rules out any land-based 'carbon sequestration' schemes until at least 2020. Some industry analysts are predicting the collapse of the EU's carbon trading scheme, with prices having fallen by 56 per cent already this year. The UN's Clean Development Mechanism has contracted by over 50 per cent since 2009 and its future is also in doubt. Several other countries are planning their own carbon trading schemes but it is not at all clear how those will develop. This leaves the voluntary carbon markets. These only account for around 0.1 per cent of the carbon markets and agriculture for just 2 per cent of credits traded within them.

While project developers such as Biochar Fund have created false hopes amongst farmers as far as carbon offsets are concerned, the IBI and other biochar advocates are looking to take advantage of other possible finance mechanisms promoted for 'Climate-Smart Agriculture'. According to FAO, those could include a redirection of existing funding for rural development and agriculture, including Overseas Development Aid, as well as public-private partnerships for practices claimed to sequester carbon and reduce greenhouse gas emissions. Amongst the practices promoted as 'Climate-Smart' are no-till, which often means mechanised no-till GM crops, more industrial livestock, more money for agribusiness companies to run sugar or palm oil mills on bioenergy, more agrofuels such as sugar cane ethanol, and more industrial tree plantations on farmland. Biochar is so far very much at the margins – just one of many dubious climate-fixes which we will increasingly see promoted and possibly financed through 'Climate-Smart Agriculture'.

Conclusion

This chapter has argued that biofuels, and Jatropha projects in particular, produce and perpetuate poverty and vulnerability of the communities that the projects are intended to benefit. Secondly, the biofuel projects, even if they were sold as CDM projects, do not represent sustainable solutions to climate change and do not address the root causes of problems.

Jatropha takes away natural resources (land, water, communal sense of belonging, and other forest resources) from and increases the vulnerability of the women who look after the sick specifically in the context of HIV/ AIDS. These women are the ones who bear the cost of fetching water and firewood often far from where they live, and other family related issues. Biofuel projects also compete with food crops and subsistence farming. Consequently, these projects become poverty production processes that local communities challenge in Kenya whereas in Mozambique the promises and myths of Jatropha are debunked by a scientific report.

The promises and myths of Jatropha as a wonder crop did not pass the scientific assessment in the more than 32 000 ha planted. These unfounded promises are misleading. They also represent a threat to peace and socio-political climate in these countries. The push for Jatropha in Africa (as in India and in other countries) should be placed in a wider context. There is a general attempt to eliminate or push into a corner food-producing peasant agriculture. This includes the diversion of land for purported climate-change purposes: tree plantations that are supposed to absorb carbon dioxide, Jatropha or ethanol that are supposed to substitute for oil as in the Tana Delta, and also

some forms of 'climate smart' agriculture with payment for soil-carbon. All such trends belong together.

While the Via Campesina rightly claims that 'peasant agriculture cools down the Earth' (because of less use of fossil fuels and more carbon in the soil) this would be perverted by the CDM process into simply another way of controlling farmers, through the creation of another source of profits for intermediaries and another excuse not to reduce emissions of greenhouse gases.

Chapter 9

Conclusion

By Patrick Bond

The conclusion reached by the research team spanning Durban's Centre for Civil Society and Dartmouth's Climate Justice Research Project, is that the CDM experience in Africa is a failure in a double sense. It has not actually contributed to slowing down climate change, and it has caused negative side effects. *In short the mechanism known as the CDM simply 'Cannot Deliver the Money' required for either ensuring African emissions mitigation, a transformative energy/transport/ production system for Africa, or the North's payment of its climate debt to Africa.*

This is especially true when CDMs are sold not within an open market with countless buyers and sellers, but instead within an oligopoly-oligopsony (Chapter Two) that is hostage to the whimsies of world financial markets. Those markets continue to crash, especially the European Union's Emissions Trading Scheme. In this context, the emissions markets were the wrong idea (a neoliberal strategy) in the wrong place (financial markets) at the wrong time (the 2000s era of repeated bubbles and bursts).

Moreover, there are a great many micro-project problems that this report has unearthed, in the seven core case studies in the prior chapters. Emblematic is that the 'additionality' that the CDM supposedly requires before money is granted – so as to prevent gaming of the system – was violated in the leading South African project, Bisasar Road, according to the project manager, just as the UNFCCC secretary Christine Figueres called it one of the ten best such projects in the world. (If there were justice, Bisasar Road would be deregistered as a CDM and the dump closed immediately, for the benefit of its neighbouring residents.)

Given such naivety, can the UNFCCC properly regulate CDMs? As this report goes to press, South Africa's former environment minister Valli Moosa – implicated in what the government's Public Protector called 'improper' conduct in relation to conflicts of interest when he chaired Eskom and sat on the ruling party's Finance Committee – is chairing a public policy review of the CDM for the UNFCCC. This raises big questions about that review's bias. Not a single member of the panel Moosa heads has questioned CDMs; the UNFCCC panel members have conflicts of interest insofar as they will personally benefit if the CDM mechanism receives further taxpayer-funded bailouts. Likewise, the failure of the CDM mirrors the overall failure of carbon trading, as discussed in detail, and on 18-19 April, European environment ministers deliberate on the potential bailout of those markets through artificial withdrawal of permits. In other words, the carbon trading gamble has failed miserably both on its own terms, and with respect to delivering benefits to Africa, the main victim of climate change.

As this study was being finalized, three additional reports emerged that back up the message that Africa should not rely on CDMs or carbon markets more generally. First, Alain Bellassen and Valentin Cornier of CDC Climate embarked on a lengthy study of CDM successes and failures, concluding that although accredited CDM status has been given to over 7000 projects, of the 1.8 billion in expected CERs that were expected to mature by April 2011, only 576 million – about 30 percent – were actually issued.¹

1. Alain Bellassen and Valentin Cornier, 'The risks of CDM projects: How did only 30% of expected credits come through', Working Paper Jan., CDC Climat < <http://www.cdclimat.com/The-risks-of-CDM-projects-how-did-only-30-of-expected-credits-come-through.html?lang=en> > Non-delivered or unrealized CERs

Second, there were in early 2012 reports of a potential European Commission intervention to save the EU ETS. According to Alexander Jung in *Der Spiegel*,

Emissions trading, the European Union hoped, would limit the release of harmful greenhouse gases. But it isn't working. The price for emissions certificates has plunged, a development that is actually making coal more attractive than renewable energy... The European Parliament's Industry Committee plans to vote later this month on whether Brussels should reduce the number of carbon certificates it provides. A vote in favor would see the EU auctioning off 1.4 billion fewer credits than planned during the next trading period from 2013 to 2020. The cut of roughly 8 percent, it is hoped, will push prices back up. Yet this type of market intervention reveals the system's central design flaw: politicians determine the total amount of CO₂ that industry in the EU may emit, a limit that applies years into the future, without any way to know how the economy – and thus the demand for trading certificates – will develop during that period... Bit by bit, the business of emissions certificates is losing its purpose and incentive. In hindsight, it's clear that introducing a CO₂ tax – another alternative discussed initially – would have been more feasible and more effective. Another option would have been to establish limits and then tighten them every year. A battle raging between the EU and the rest of the world over the decision to require airlines flying to or from Europe to purchase carbon certificates is not exactly generating extra support for emissions trading. For the EU, at this point, it's become purely a matter of saving its prestigious project.²

The big question, however, is whether this sort of emergency financial-system bailout would be any more successful than all the other post-2008 bailouts, which transferred sums from taxpayers to bankers with negligible changes in either financial institution behaviors or performance, resulting in increasing rather than decreasing systemic risk and ongoing moral hazard. The *Financial Times* addressed this in an article, 'Emissions trading: Cheap and dirty', which included some scathing quotes about how far the ETS has degenerated both in policy and market terms:

Johannes Teyssen, chief executive of Eon, the German energy group that is one of Europe's largest, stunned an audience in Brussels last week when he pronounced the market broken. 'Let's talk real,' he said. 'The ETS is bust, it's dead... I don't know a single person in the world that would invest a dime based on ETS signals.'...

The market has suffered other indignities in its brief history, from value added tax frauds worth billions of euros to the cyber-theft of millions of permits from companies' electronic accounts. But, because it calls into question the fundamental workings of the market itself, the price slide may be its most serious affliction. 'The carbon price is far lower than we estimated it to be when we adopted the whole system,' says Martin Lidegaard, climate and energy minister for Denmark, current

were primarily due to negative validation or withdrawn projects (29 percent), delays experienced during the approval process (12 percent), delays at issuance (27 percent), and underperformance (1 percent). Risk factors that create uncertainty included primarily technologies used, followed by location and size of project. Minor risk factors included auditors and consultants. Delays at issuance, comprising the second largest risk category, largely correlated with location.

2. Jung, A., 'Hot air: The EU's Emissions Trading System isn't working', *Der Spiegel*, 15 February 2012, <http://www.spiegel.de/international/business/0,1518,815225,00.html>

holder of the EU's rotating presidency. 'I think it's fair to say that the situation is not sustainable in the long term.' ...

'The ETS is a joke,' says Per Lekander, a UBS analyst who estimates that the market is saturated with 35-48 per cent more permits than are needed to meet this year's compliance requirements. It will remain awash in excess permits at least until 2025, he predicts.³

In short, potential reforms in Europe appear incapable of stopping the rot in the ETS, the core financing source for African CDMs.

Third, in spite of the African media's near-blackout on the carbon trading crisis and the failure of the CDM mechanism, there is growing awareness of the problem at the climate activist base and amongst serious researchers. In late 2011, the Pan African Climate Justice Alliance (PACJA) in Nairobi and Institute for Security Studies (ISS) in Cape Town issued an extensive report on African CDMs. One of the contributors, Yacob Mulugetta of Surrey University, expressed the problem succinctly:

The argument that carbon trading offers real benefits to the poor in Africa is simply not credible. What is puzzling is the persistence of the proponents of carbon markets, who continue to cling onto these ideas in the face of mounting evidence that carbon trading does not deliver results commensurate to the effort invested in it... Fundamental inequality is behind the climate problem, and the search for solutions must involve industrialised societies making fundamental structural changes to their lifestyles, energy practices, and their production and consumption systems.⁴

The PACJA/ISS report was scathing of using subsidies meant for supporting Africans, to instead prop up the world carbon market, especially via the African Development Bank's African Carbon Facility:

It promises to buy post-2012 credits in order to 'maintain private sector confidence' in the ailing carbon market, as well as providing debt financing for the development of new projects. The AfDB is also offering an African Carbon Support Programme, which was launched in November 2010. This is supported by the Fund for African Private Sector Assistance, a joint initiative of Japan, Austria and the AfDB to promote private sector development. The aim is to support potential project developers throughout the whole CDM process, from formulating the original project idea through to advice on credit sales. The running of the programme has been outsourced to Carbon Limits, the Norwegian consultancy which developed the Pan Ocean Gas Utilization Project.⁵

In addition, PACJA/ISS expressed concern about the African Carbon Asset Development Facility (a joint venture of the United Nations Environment Programme, Standard Bank of South Africa, and the German Federal Environment Ministry), which provides

3. Chaffin, J. 'Emissions trading: Cheap and dirty,' *Financial Times*, 13 February 2012, <http://www.ft.com/cms/s/0/135e1172-5636-11e1-8dfa-00144feabdc0.html#axzz1mSynDDzc>

4. Mulugetta, Y., Climate change and carbon trading in Africa, in T.Reddy (ed), *Carbon trading in Africa: A critical review*, Cape Town, Institute for Security Studies, 2011.

5. Reddy, T. (ed), *Carbon trading in Africa: A critical review*, Cape Town, Institute for Security Studies, 2011.

technical support and small grants for project developers to establish 15 CDM projects. As PACJA/ISS argue, this strategy ‘diverts scarce public resources away from directly addressing climate change.’

Another result, as shown in many of the case studies in the pages above, is that projects with highly adverse social, environmental and economic outcomes are being promoted. A ‘Resource Curse’ exists insofar as inappropriate, highly undemocratic and underdevelopmental activities are being carried out through financing that ostensibly should address the climate crisis.

An appropriate alternative, instead, is to finance African adaptation, mitigation and climate debt repayments from North to South through a genuine Green Climate Fund. The proceeds of such funding should include a Basic Income Grant mechanism that ensures ordinary African who are victims of climate change benefit, not the kinds of often malevolent, corporate-subsidised projects we have considered above.

Only then would a genuine step be taken towards making a Clean Development Mechanism for Africa worthy of the name, instead of a nickname that might become more popular in coming months and years: *Cannot Deliver the Money*. As argued by the PanAfrican Climate Justice Alliance and Institute for Security Studies, the CDM is diverting scarce public resources away from directly addressing climate change, and towards projects that are often highly polluting and socially harmful.

The main purpose of carbon offsets is to help industrialised countries to delay making emissions reductions at source. The CDM is an avoided responsibility mechanism, which counts claimed reductions in developing countries as equivalent to actual cuts in industrialised countries. Instead the rich countries should face up to their ecological debts because of disproportionate emissions of carbon dioxide over many years.

Although the African continent may see an increase in the overall number of projects, its share of the overall market is not likely to alter significantly, and Africa will remain on the margins of the global carbon market. By 2020, the largest number of CDM credits produced across the continent will be related to extractive industries, most notably the oil sector (avoided gas flaring) in Nigeria. Such projects tend to lock in fossil fuel dependence rather than facilitating a transition to more sustainable development paths. Other projects are big dams or eucalyptus or pine plantations (or the novel ‘climate smart’ agriculture), announcing more instance of dispossession with negative effects on humans and nature, as we have seen in previous chapters.

The price of carbon credits is falling. Instead of pushing for Africa’s inclusion in this failing market, policy makers and institutions should be looking to more effective and just forms of financing. To address mitigation needs, meanwhile, the first step remains the adoption of higher, binding emissions targets by industrialised countries.

Appendix

The media's blind faith in markets

One of the most important determinants of markets is the quality of information that participants get. The leading business newspaper on the African continent is Johannesburg's *Business Day*, serving Africa's largest financial marketplace (in Sandton, Johannesburg) and the continent's largest emitters. (Indeed the world's largest single-source CO₂ emissions site is Sasol's Secunda operation.) For that reason, it would be natural for the respected *Business Day* newspaper to pick up a seemingly-limitless supply of news – e.g. from Reuters' pointcarbon.com service – about the world carbon markets, especially given the heavy reliance of Durban's COP17 outcomes on healthy markets.

But while the markets are decidedly unhealthy, in the five weeks following the COP17, at least forty Reuters news stories about market imperfections (including fraud in France and Germany), massive oversupply and outright crashing prices were practically ignored by *Business Day*. The headlines and URLs for those negative stories are supplied in the first BOX, while the second contains the only two stories in *Business Day* corresponding to this news flow (aside from a minor reference to carbon markets and African air transport). The first story in *Business Day*, by Sue Blaine on 15 December 2011, was decidedly positive about carbon markets and is reproduced in full, whereas the second – by two co-authors of this report – was included only after a half-dozen requests were made to *Business Day* editorial page directors, to address the newspaper's intrinsic bias. As illustrated in the third BOX, the six months of reports by *Business Day* prior to the COP17 were also very upbeat about the prospects of South Africa (and Africa) benefitting from a renewed commitment to Kyoto. Contained in the fourth BOX are the only two forthrightly critical analyses about CDMs and the broad carbon trading strategy that we are aware of appearing in mainstream (Independent Newspaper group) periodicals around the time of the COP17, again by this report's authors.

In December 2011, two of the main commentators *Business Day* relied upon for information about carbon markets were former leading officials from Pretoria's Department of Environment: Crispian Olver and Joanne Yawitch. Both were responsible for leading South Africa towards endorsement of market-based strategies and promoting CDMs such as Bisasar Road, and both are lucratively employed in the private sector, suggesting once again that a 'crony capitalist' relationship between the SA state and business has become a significant problem.

BOX 6 : Carbon market headlines missed in Africa's leading business daily

None of the following Reuters stories were covered by *Business Day*, Johannesburg
Carbon kicks off 2012 on bearish note, drops 10 pct European carbon prices began 2012 with a steep fall of almost 10 percent on Tuesday, extending last week's losses on sliding German power prices and a warmer-than-expected holiday period. <http://www.pointcarbon.com/news/1.1709203>

Legal, economic concerns mute aviation CO₂ trade Airlines are taking a guarded approach to carbon trade since joining the European Union carbon scheme on Jan. 1, as ongoing legal challenges and economic concerns hinder their activity, brokers and analysts said on Tuesday. <http://www.pointcarbon.com/news/1.1709414>

Camco warns of writedown amid record low CER prices Camco, a developer of cleaner energy projects and a major seller of U.N.-backed carbon credits, said Tuesday it will have to revise its revenue

forecast downwards because of a plunge in offset prices seen last year.

<http://www.pointcarbon.com/news/1.1709238>

EU carbon dips 2 pct, nears record lows EU carbon prices fell almost 2 percent and neared record lows on Wednesday as a weak German power market offset the bullish influence of a strong rally in crude oil. <http://www.pointcarbon.com/news/1.1709623>

EU Parliament vote on ETS intervention set for Feb 28 A European Parliament vote on a proposal backing intervention to prop up the EU's Emissions Trading Scheme will take place on Feb 28, rather than Jan. 24 as previously expected, a parliament official said on Wednesday. <http://www.pointcarbon.com/news/1.1710233>

U.N. agency ups CER supply outlook 1.6 pct UNEP Risoe on Wednesday raised its CER supply estimate by 1.6 percent following a surge of issuances in December, when the U.N. handed out over 32 million offsets, the third-highest monthly total on record. <http://www.pointcarbon.com/news/1.1710139>

BlueNext agrees to pay 32 mln euro VAT fraud settlement Paris-based carbon exchange BlueNext has agreed to pay 31.8 million euros to the French government to settle liabilities related to VAT fraud that occurred on the bourse between 2006 and 2009, according to regulatory filings. <http://www.pointcarbon.com/news/1.1709829>

CER buyers seek contract rejigs, exits as prices collapse Carbon offset buyers are seeking ways to renegotiate purchase agreements or even nullify them after market prices crashed far below their wholesale credit costs, several sources told Point Carbon News. <http://www.pointcarbon.com/news/1.1712328>

CERs hit record lows, EUAs fall 2 pct Prices of U.N. carbon offsets plunged to a record low on Friday, tumbling around 6.5 percent from the previous close as traders sold CERs amid thin liquidity and hefty issuances. <http://www.pointcarbon.com/news/1.1712044>

ANALYSIS: Passenger fare hike may earn airlines a CO2 windfall Airlines could reap windfall profits from a \$3 passenger surcharge, introduced to cover new costs from an EU law regulating greenhouse gas emissions, because the carriers will receive most of their CO2 permits for free. <http://www.pointcarbon.com/news/1.1713406>

Analysts at odds over supply impact of weak CER prices Analysts are at odds over whether record low prices for U.N. carbon offsets means project developers will postpone requests to get credits issued because they are now unprofitable. <http://www.pointcarbon.com/news/1.1713370>

South Korean emissions bill risks delay South Korea's plan to launch an emissions trading scheme in 2015 risks getting derailed if the government fails to get the bill through parliament ahead of April elections. <http://www.pointcarbon.com/news/1.1712917>

Barcap slashes 2012 carbon price outlook Barclays Capital on Tuesday slashed its price outlook for EU and U.N.-backed carbon for 2012 and beyond, as prospects of a recession could further weaken demand in the oversupplied carbon market. <http://www.pointcarbon.com/news/1.1713909>

Legal setback sparks California CO2 market sell-off A ruling that has put the brakes on California's Low Carbon Fuel Standard (LCSF) program has sparked a sell-off of CO2 permits, pushing prices down 11 percent. <http://www.pointcarbon.com/news/1.1713441>

French court convicts five of carbon VAT fraud A French court on Wednesday sentenced five people to one to five years in jail, and to pay massive fines for evading tax through carbon trading, a lawyer for one of the accused told Point Carbon News. <http://www.pointcarbon.com/news/1.1715144>

EC threatens court action over late phase 3 EUA plans The European Commission has warned 17 EU nations that it could start legal proceedings against them if they don't submit 2013-2020 plans for allocating emissions permits before a March 1 deadline. <http://www.pointcarbon.com/news/1.1714545>

UPDATE 1: ICE suspends CO2 broker CarbonDesk Ltd ICE Futures Europe has suspended the membership of London-based emissions brokers CarbonDesk Limited until further notice, the exchange said, after the firm said it could no longer pay creditors and named administrators. <http://www.pointcarbon.com/news/1.1715072>

CCAs slide 8 pct amid fears of CO2 market challenge California carbon allowances (CCAs) for delivery in 2013 slid 8 percent from the previous week to \$14.10/t on Thursday, as a recent legal decision that halted the enforcement of a low-carbon fuel program in the state has raised fears its carbon market may face a similar fate. <http://www.pointcarbon.com/news/1.1716566>

Rock-bottom AAU prices could spur CER sell-off: sources Several governments and Japanese firms are considering selling U.N.-backed carbon credits and replacing them with cheaper government CO2 permits to meet emission reduction targets, two sources said this week – a move that could pile further pressure on CER prices. <http://www.pointcarbon.com/news/1.1715940>

NZ carbon slides 1.5 pct to fresh record low Spot carbon permits in the New Zealand emissions trading

scheme fell 1.5 percent over the week to close Thursday at a record low NZ\$6.70, amid lingering weak prices in Europe and low market liquidity. <http://www.pointcarbon.com/news/1.1715541>

EC rules out new post-2012 offsets from emerging economies The climate deal struck in Durban last month does not change EU rules on what types of offsets European companies can use to meet emission targets under the bloc's Emissions Trading Scheme, the European Commission said late on Wednesday. <http://www.pointcarbon.com/news/1.1715929>

China ups efforts to meet EU cut-off date for carbon credits China last month approved 139 new Clean Development Mechanism (CDM) projects in a last-ditch effort to maximise offset supply to the EU emissions trading scheme. <http://www.pointcarbon.com/news/1.1717320>

ANALYSIS: EU carbon price outlook for 2012 bleak without intervention European emissions prices are expected to remain low next year as fresh supply of permits will outweigh an uptick in demand from increased utility hedging and the entry of thousands of airlines into the EU's carbon market on January 1. <http://www.pointcarbon.com/news/1.1707845>

EUAs end 2011 down 49 pct yr/yr, CERs lose 63 pct European carbon prices shed nearly half of their value in 2011 on fears about the euro zone's future and a persisting surplus of permits, but analysts see prices recovering somewhat in early 2012. <http://www.pointcarbon.com/news/1.1707836>

Russia exports 1.1m carbon credits, issues 365,000 The Russian government has issued 365,000 Emission Reduction Units in the past 10 days and exported more than 1.1 million credits to foreign buyers as it seeks to cash in on its huge surplus of U.N.-backed carbon credits amid record low prices. <http://www.pointcarbon.com/news/1.1705728>

CCFE traders sue Richard Sandor over exchange rights Twenty four traders have filed a lawsuit against the founder of the Chicago Climate Futures Exchange (CCFE) and its top executives, claiming they mislead them into buying trading privileges, which they now say are worthless. <http://www.pointcarbon.com/news/1.1705108>

ANALYSIS: Ban not enough to bolster NZ carbon prices The New Zealand government's decision to ban the use of U.N.-issued industrial gas carbon credits in its carbon trading scheme is too little, too late to prop up falling prices, but is likely to boost market confidence. <http://www.pointcarbon.com/news/1.1705318>

New Zealand bans industrial gas carbon credits The New Zealand government on Thursday announced it will ban the use of U.N.-issued carbon credits from industrial gas projects in its emissions trading scheme in a bid to bolster weak prices. <http://www.pointcarbon.com/news/1.1705088>

U.N. bans Lithuania from carbon trade A U.N. panel on Wednesday suspended Lithuania from transferring Kyoto permits due to a breach of reporting rules, a verdict that will prevent the country from selling emission rights and issuing carbon credits. <http://www.pointcarbon.com/news/1.1705069>

ANALYSIS: Withdrawal of 1.4bln EUAs unlikely to pass: observers A proposal by the European Parliament on Tuesday to withhold up to 1.4 billion EU allowances during the third phase of the EU ETS, which prompted a 30 percent spike in prices, is likely to be dismantled at a later date, observers said. <http://www.pointcarbon.com/news/1.1704578>

EU report targets CO2 credits from large hydro projects A new report commissioned by the EU into the environmental integrity of the U.N.'s Clean Development Mechanism (CDM) has criticised the use of carbon credits from large hydro schemes in the bloc's carbon market, raising the prospect that they may be banned. <http://www.pointcarbon.com/news/1.1703397>

Revenues fall at Indian utility as it hoards CERs Revenues at Indian clean power generator Greenko fell 20 percent in the six months to Sep. 30 as the company opted to withhold sales of U.N.-backed carbon offsets amid weak prices, the company's results showed Thursday. <http://www.pointcarbon.com/news/1.1702507>

China aviation body urges members not to cooperate with EU CO2 scheme Chinese airlines have been urged not to cooperate with a controversial scheme that will force them to buy carbon credits for all flights entering Europe starting on Jan. 1, the head of the country's aviation industry group said. <http://www.pointcarbon.com/news/1.1701954>

Ontario won't be ready for CO2 trading in 2013: source Plans to build a U.S.-Canadian emissions trading system across four states and provinces have hit a hurdle after it emerged that Canada's most populous province will struggle to meet a 2013 deadline, a source close to the process said, a move that could slash the size of the market by 22 percent. <http://www.pointcarbon.com/news/1.1700825>

ANALYSIS: Durban deal delays debate on new markets Sunday's landmark global climate talks opened the door for the emergence of several new market mechanisms, but the so-called Durban Platform has done little to boost demand by getting countries to further cut emissions, meaning profits for

investors will be slim. <http://www.pointcarbon.com/news/1.1701225>

CERs hit record low, EUAs plummet below 7 euros U.N-backed carbon offsets plunged 9.8 percent to an all-time low Tuesday on the back of continued fears of over-supply in the market, while EUAs fell by 6.6 percent on a weaker euro. <http://www.pointcarbon.com/news/1.1700991>

Australia and NZ may not sign Kyoto: UK's Huhne Australia and New Zealand may not sign a second round of targets under the Kyoto Protocol because their main trading partners are not under a legal commitment to cut emissions, the UK's secretary of state for energy and climate change said Tuesday. <http://www.pointcarbon.com/news/1.1701223>

Durban deal raises doubts over EU offset eligibility The Durban climate deal will likely see EU ETS restrictions lifted on newly registered offsets from emerging economies, according to Barclay Capital analysts on Monday, but other market watchers doubted it would trigger changes. <http://www.pointcarbon.com/news/1.1700747>

EUAs down 3 pct as traders shrug off 'Durban bounce' EU carbon prices fell around 3 percent on Monday as traders reacted to weaker energy prices and gloomy stock markets, wiping out early gains on emissions exchanges related to a positive outcome of U.N. climate talks in Durban. <http://www.pointcarbon.com/news/1.1700516>

German carbon trial prosecutor urges long sentences A German prosecutor on Monday demanded jail terms of up to eight and a half years for six men on trial for fraud involving evasion of taxes on carbon permits, with a verdict possible as early as next week. <http://www.pointcarbon.com/news/1.1700671>

BOX 7 : Carbon market coverage in *Business Day* in five weeks after COP17

Durban agreement keeps SA in carbon market loop

By Sue Blaine, 16 December 2011

SA's carbon market participation has been given a reprieve after the Durban-hosted United Nations climate change talks secured a second commitment period for the Kyoto Protocol.

SA's carbon market participation has been given a reprieve after the Durban-hosted United Nations (UN) climate change talks secured a second commitment period for the Kyoto Protocol.

The European Union had planned to stop carbon trade in all but the least-developed countries if no second commitment period was secured. This would have put SA largely out of the picture in a \$142bn carbon credit market aimed at providing funding in non-industrialised countries for development that either does not emit greenhouse gases, or emits far less than usual.

'The most important one (outcome of the Durban talks) is the securing of the second commitment period ... and the carbon market,' said National Business Initiative CEO Joanne Yawitch.

Under the deal, nations and regional blocs will submit their emission reduction targets to the UN Framework Convention on Climate Change by May 1. Clarifying what the targets mean, and how to quantify them, is part of the negotiators' work for the rest of the year.

Robbie Louw, CEO of specialist South African climate change advisory firm Promethium Carbon, said the business sector expected the Treasury to publish its second discussion document on plans to impose a carbon tax next month.

Australia promulgated a carbon tax just before the Durban talks, and there are carbon markets in Europe, the US, India, Australia and others.

Andrew Hedges, a partner in global law firm Norton Rose, said the importance of the Durban deal went beyond just the carbon market.

'People usually think carbon markets, but that is not making big changes (to emissions rates); the importance of Durban is far broader,' Mr Hedges said.

The Durban talks also saw the establishment of the \$100bn-a-year Green Climate Fund, and funds to help developing and least-developed countries take on 'clean' technology and pay for their adaptation.

Citing a Treasury document, Mr Hedges said there were already pledges of R12,2bn for SA in the 'fast-start finance' fund established ahead of the Green Climate Fund.

SA voluntarily pledged in 2009 to peak, plateau and drop its emissions, and at Durban said it would sign up to yet to be negotiated, legally binding emissions reduction targets.

One of the challenges would be to ensure that potential donors, most of whom had staffing cuts amid

the financial crisis, are sure of SA's governance standards, Mr Hedges said.

This would set donors at ease about handing over money.

Ms Yawitch said one of the larger challenges, globally, was capitalising the Green Climate Fund.

'Clearly, the \$100bn has not been mobilised yet, but an international mechanism has been established and the money will come in over time.'

In the longer term, the conference had got the world's big emitters to recognise they held joint responsibility for climate change, she said.

The exact terms of this agreement would be a tough negotiation 'for some time', she said.

Steer clear of this climate 'Ponzi scheme'

Africa can do better than invest faith and state resources in yet another Ponzi scheme – the 'privatisation of the air'

By Michael Dorsey and Patrick Bond, *Business Day*, 24 January 2012

LAST winter, when carbon prices fell 15 percent in one week, industry analysts called it 'carnage'. Then, in the fortnight before last month's Durban climate summit, carbon prices fell more than 30 percent, with front-year European Union (EU) Allowance permits dropping below €8,50 a ton. And they have crashed even further since.

As Deutsche Bank said during the Durban talks: 'We do not expect the pricing outlook to improve materially in the foreseeable future.' A UBS analyst predicted a price of less than €3 a ton in coming months because the EU's Emissions Trading Scheme 'isn't working' and carbon prices are 'already too low to have any significant environmental impact'.

French bank Société Générale projects that 'European carbon permits may fall close to zero should regulators fail to set tight enough limits in the market after 2020' – and without much prospect of that, the bank lowered its 2012 forecasts by 28 percent. A 54 percent crash for December 2012 carbon futures sent the price to a record low, just more than €6 a ton. An additional oversupply of 879-million tons was anticipated up to 2020, partly as a result of a huge inflow of United Nations (UN) offsets: about 1,75-billion tons.

Those UN carbon credits include Clean Development Mechanism projects, which are notoriously bogus, including SA's pilot in Durban, the Bisasar Road 'waste to energy' site.

Every analyst concedes that carbon prices will be far too low to catalyse the transformative innovations – most costing more than €50 a ton (the EU peak was just more than €30 a ton five years ago) – necessary in energy, transport, production, agriculture and disposal to achieve a solid post-carbon foothold. By all scientific accounts, by 2020 it is vital to wean the industrialised world economy from dependence upon more than half the currently consumed fossil fuels to avert catastrophic climate change.

Yet Africa hasn't received this bad news – the press doesn't report the carbon markets with critical vigour.

The lack of awareness of the carbon market's crash is a travesty – far too often the continent has been looted by faraway financiers selling snake oil.

This week at the Sandton Sun, a conference aims to 'make Africa a major focus for climate finance into the post-Kyoto era', with keynote speakers from Morgan Stanley, Standard Bank, Nedbank, Carbon Check, CDM Africa Climate Solutions, SouthSouthNorth, similar emissions traders, the Johannesburg and Cape Town municipalities and the Department of Energy.

Beware you carbon buyers, sellers and speculators, because climate gamblers have been led astray since 1997, when the Kyoto Protocol was amended to let corporations buy the right to pollute in exchange for endorsing the treaty. Washington has refused to honour this ever since, even though it represents a broken promise, followed logically by US Secretary of State Hillary Clinton's 2009 pledge to raise \$100bn a year for the Green Climate Fund.

Clutching at straws, that fund's design co-chairman, Trevor Manuel, has suggested getting half the revenues from carbon markets. It might have been feasible if the emissions trade reached the anticipated \$3-trillion mark by 2020 but, within a decade, the market has peaked at \$140bn in annual carbon trades. These are mostly in the EU, where the Emissions Trading Scheme was meant to generate a cap on emissions and a steady 1,74 percent annual reduction. Unfortunately, the speculative character of carbon markets encouraged rampant fraud, value-added tax scams and computer hacking, which shut the scheme for two weeks last year.

The EU's carbon trading also included perverse incentives to stockpile credits when large corporations as well as Eastern European states gambled that the price would increase.

With the market now collapsing, the current perverse incentive is to flood supply to at least achieve some return rather than none at all when eventually the markets are decommissioned, as happened in 2010 to the Chicago Climate Exchange.

Africa can do better than invest faith and state resources in yet another Ponzi scheme – the ‘privatisation of the air’. And the north’s ‘climate debt’ to Africa should be paid not through such gambling but in genuine income transfers that reach ordinary people, who are taking the brunt of worsening climate chaos.

BOX 8: Carbon market coverage in *Business Day* in six months before/during COP17

Nedbank unit in forest deal STAFF WRITER 09 Dec 2011

CRISPIAN OLVER: COP-17: Gap in global climate finance will be a disaster THIS week, the report of the Transitional Committee on the Green Climate Fund, co-chaired by our own Minister in the Presidency, Trevor Manuel, was presented to the COP-17 plenary. The report proposes operational arrangements for a global fund to support mitigation and adaptation in developing countries. If agreed to, this will be one of the most successful outcomes of COP-17 and will revolutionise financing for climate adjustment in the developing world. 02 Dec 2011

Carbon plans may hurt outlook for jobs, investment, industry warns Money, like climate, knows few borders and it is imperative that whatever South Africa signs up to at the United Nations climate change talks in Durban, it does not harm its ability to compete globally, or investors will go elsewhere, says Sasol’s senior group operations executive Andre de Ruyter. 22 Nov 2011

Transport key to turning Durban into low-carbon city The eThekweni municipality’s transport sector requires ‘urgent’ attention for Durban to become a low-carbon city and promote the green economy, according to a report released earlier this year by the Academy of Science of South Africa (Assaf). 22 Nov 2011

Report warns of \$45bn climate change funds gap A CLIMATE change funding ‘gap’ that could reach \$45bn is emerging because the world’s major economies can no longer afford previously envisaged levels of investment under current austerity measures, according to a report released by Ernst & Young yesterday. 18 Nov 2011

Joburg struggling to gain carbon credits JOHANNESBURG mayor Parks Tau complains about the long-winded, bureaucratic process the city has been forced to follow after applying for carbon credits for two projects, one of which was the Reya Vaya bus rapid transit (BRT) system. 16 Nov 2011

Australia passes landmark carbon tax laws AUSTRALIA yesterday passed landmark laws to impose a price on carbon emissions in one of the biggest economic reforms in a decade, injecting new impetus into next month’s global climate talks in SA. 09 Nov 2011

Spekboom project to earn SA R250m via carbon credits SA IS ready to sell carbon credits in a project that could bring in R250m towards labour-intensive rehabilitation of degraded agricultural and conservation areas, according to the Department of Environmental Affairs. 24 Oct 2011

EMISSIONS SA HAS benefited more than any other African country from carbon investment facilitated by the Kyoto Protocol’s Clean Development Mechanism (CDM). However, the country’s potential as a player in the market is in danger of coming to an abrupt end. Carbon market investment in SA has been driven primarily by the European Union’s emission trading scheme (EU ETS) and, as this programme enters its third phase, European policy makers are likely to restrict, from entry into the EU ETS, carbon credits from all but the least developed nations. 30 Sep 2011

Carbon – the new world currency EVEN before British economist Nicholas Stern pointed out in his 2006 report that it would be significantly more expensive to adapt to climate change than to try to stop it, the investment world had turned countries’ unused greenhouse gas emissions allowances into a tradable asset. 10 Aug 2011

Slow power regulatory process irks investors SA NEEDS a proper power regulatory process to let companies feed excess power into the national grid as cogeneration becomes the key to fulfilling industry’s energy needs, says KPMG resource economist Rohitesh Dhawan. 27 Jul 2011

SA, China, Brazil, Saudi Arabia ‘likely to delay new carbon shipping measures’ SA, CHINA, Brazil and Saudi Arabia are likely to delay until 2019 adherence to the International Maritime Organisation’s (IMO’s) newly adopted measures on reducing shipping’s greenhouse gas emissions, which come into force in 2013. 20 Jul 2011

SA 'ready to do lots of business on carbon trading market' SA IS well poised to do a lot of business on the \$142bn global carbon credit market, says Adam Simcock, head of Carbon Check, which is accredited to perform verification activities on behalf of the Clean Development Mechanism of the United Nations Framework Convention on Climate Change. 15 Jul 2011

BOX 9 : Critical analyses of carbon markets in the South African press

African climate CDMs 'Can't Deliver the Money'

By Patrick Bond and Michael Dorsey, *Sunday Independent*, 26 November 2011

Africa is being cooked by climate change, and those causing the crisis should compensate the victims. This is probably the only hope for any top-down action at the Durban COP17 next month, with the Green Climate Fund design committee co-chaired by Trevor Manuel now searching for the \$100 billion promised by US Secretary of State Hillary Clinton in Copenhagen two years ago.

One dangerous vehicle for delivering money to Africa is the Clean Development Mechanism, the CDM, which was included in the Kyoto Protocol as a way for Third World projects to get resources. But it isn't delivering the goods, for a variety of reasons that mean Durban should host a rethink.

The aim is to facilitate innovative carbon-mitigation and alternative development projects by drawing in funds from northern greenhouse gas emitters in exchange for their continued pollution. It is the use of 'market solutions to market problems' so as to lower the business costs of transitioning to a post-carbon world. After a cap is placed on total emissions, the idea is that high-polluting corporations and governments can buy ever more costly carbon permits from those which don't need so many, or from those willing to part with the permits for a higher price than the profits they make in production or energy-generating or transport activities.

With Europe as the base, world emissions trade grew to around \$140 billion in 2008 and although markets then went flat due to economic meltdown, increasing corruption investigations and Copenhagen-induced despondency, the trade in air pollution was at one point projected to expand to \$3 trillion/year by 2020 if the US were to sign on. The \$3 trillion estimate didn't even include the danger of a bubbling derivatives market, which might have boosted the figure by a factor of five or more.

In November 2010, a new estimate of up to \$50 billion/year by 2020 in North-South market-related transfers and offsets emerged from a United Nations High-Level Advisory Group on Financing for climate mitigation and adaption, including Manuel. World climate managers evidently hope to skimp on grants and instead beg business to push vast monies into CDMs instead.

Durban is an important guinea pig, for at SA's lead CDM pilot, the Bisasar Road landfill, methane from rotting rubbish is converted to electricity. After helping set it up, the World Bank refused in August 2005 to take part in marketing or purchasing Bisasar Road emissions credits. Local activists say the reason was growing awareness of Durban's notorious environmental racism.

In March 2005, just as the Kyoto Protocol came into force, a *Washington Post* front-page story revealed how community organizer Sajida Khan suffered cancer from Bisasar Road's toxic legacy. Back in 1980, the landfill – Africa's largest – was plopped in the middle of Durban's Clare Estate suburb, across the road from Khan's house, thanks to apartheid insensitivity. Instead of honoring African National Congress politicians' promises to close the dump in 1994, the municipality kept it open when \$15 million in emissions financing was dangled.

After Khan died in mid-2007 after her second bout with cancer – which she believed was landfill-induced – Clare Estate civic pressure to close Bisasar subsided and Durban began raising €14/tonne for the project from private investors.

In 2009 the *Financial Times* reported, 'The CDM inherits the UN's suffocating bureaucracy, so smaller projects struggle to gain approval. But more important than what it keeps out is what it lets in. The criterion of 'additionality' is supposed to rule out projects that would not be undertaken without CDM payments. Not only is this counterfactual approach utterly unverifiable; it is also an ideal target for gaming.'

Since then little has changed, as this week's United Nations Executive Board meeting at Moses Mabhida Stadium will again witness bureaucratic impotence, cronyism, and a handful of powerful countries controlling nearly three-quarters of the credits produced. The CDM is neither reducing emissions nor securing its promised sustainable development.

The Executive Board suffers from inadequate governance. UN rules specify that 'members, including

alternate members, of the [Clean Development Mechanism's] Executive Board shall have no pecuniary or financial interest in any aspect of a CDM project activity or any designated operational entity.'

Despite this rule, CDM Board members often maintain multiple roles at the same time, many of which are lucrative. Board members serve as negotiators during UN climate talks. They represent their countries' national authorities, or act as managers of large government CDM purchasing programs. Yet the NGO CDM Watch reports that 'a conflict of interest is only noted in 4 out of 46 meeting reports of the Board.'

This shyness reflects an overall lack of transparency in decision making. According UN rules meetings of the Board 'shall be open to attendance, as observers, by all Parties and by all UNFCCC accredited observers and stakeholders, except where otherwise decided by the Executive Board.' However, due to a rising number of discussions on individual cases, large parts of the meetings of the Board take place behind closed doors.

The CDM gives primacy to its ties to large corporations while often overlooking and even ignoring its foundational institutional mandate to sustainable development on behalf of Africa. The Global Justice Ecology Project describes CDMs as the 'Corporate Development Mechanism' and the 'Corrupt Development Machine.'

The top four beneficiary countries – China, India, Brazil and Mexico – received three quarters of CDM project support, with China alone generating more than half.

The only real winners in emissions markets are speculators, financiers, consultants (including some in the NGO scene) and energy sector hucksters who make billions of dollars in profits on the sale of notional emissions reduction credits. As the air itself became privatized and commodified, poor communities across the world suffer, and resources and energy are diverted away from real solutions.

This week at Durban's UN CDM meeting, a barrage of reports critical of the UN's CDM strategy will be released by academics (including ourselves) and NGOs, and the credibility that carbon trading needs to gain traction going into the COP itself will erode. This is good, because only by leapfrogging market 'solutions' that depend upon chaotic, unfair financial markets will we get to the genuine solutions so desperately needed to solve the climate crisis.

Durban's climate Zombie tripped by dying carbon markets

By Patrick Bond, *The Mercury*, 20 December 2011

Looking back now that the dust has settled, South Africa's COP17 presidency appears disastrous. This was confirmed not only by Durban's delayed, diplomatically-decrepit denouement, but by plummeting carbon markets in the days immediately following the conference's ignoble end last Sunday.

Of course it is tempting to ignore the stench of failure and declare Durban 'an outstanding success,' as did SA environment minister Edna Molewa.

'We have significantly strengthened the international adaptation agenda,' she explained about the near-empty Green Climate Fund, whose design team was co-chaired by planning minister Trevor Manuel. 'The design of the fund includes innovative mechanisms for bringing private sector and market mechanisms into play to increase the potential flow of funding into climate change responses.'

This is absurd. Because the \$100 billion promised by Hillary Clinton in Copenhagen two years ago is apparently fictional (aside from minor commitments by South Korea, Germany and Denmark), Molewa's two crucial albeit unintended words are 'play' and 'potential.'

In our new book, *Durban's Climate Gamble: Trading Carbon, Betting the Earth*, critical researchers show why emissions markets are as comatose as the Kyoto Protocol. Only a Suncoast Casino drunkard would put money – much less the planet – on the odds of a death-bed resurrection.

Bolivia's former UN ambassador Pablo Solon scolded the hosts for turning Kyoto into a 'Zombie, a soulless undead.' The 1997 treaty's soul was a commitment that emissions cuts would be binding, but several of the richest polluting countries – the US, Canada, Japan, Russia, Australia and New Zealand – won't sign on the second commitment period. To sabotage Kyoto, Washington continues its voluntary 'pledge and review' policy pantomime.

Kyoto's original brain contained a species survival mechanism: a pledge to keep the earth's temperature at a livable level. Now, the Durban Platform contains 'less than half of the necessary cuts to keep the temperature increase below 2°C,' says Solon. 'This will be known as the lost decade in the fight against climate change.'

As the soul-deprived, brain-dead, heartless climate-policy Zombie stumbled off the Durban Platform last week in the direction of Qatar for the COP18 next year, it immediately tripped on the crumpled

carbon markets.

The emissions trade is failing not only in Europe but also in our own backyard. An *Africa Report* investigation unveiled Durban's highest-profile pilot Clean Development Mechanism (CDM) carbon-trading project as a scam. At Bisasar Road landfill in the Clare Estate neighbourhood, the R100+ million methane-to-electricity CDM project was despised because it kept the continent's largest official dump open far beyond the point it should have been closed.

Instead of being burned and flared on-site, methane gas from Bisasar's rotting rubbish should have been piped out for industrial use, far away from residential areas, according to the late community activist Sajida Khan. Before dying of cancer caused by the dump in 2007, she tirelessly campaigned to close Bisasar dump and thus end one of Africa's most notorious cases of environmental racism.

Khan failed, because in 2001 the World Bank promised funding for methane extraction that would keep the dump operational. The crucial factor, according to Durban officials, is that 'Landfill gas offers a viable renewable energy source only when linked to carbon finance or CDM.' Based on the assumption that without outside funds, the project could not be justified, in 2006 the United Nations listed Bisasar Road as an active supplier of CDM credits through at least 2014.

It turns out this was a fib. On an official tour of Bisasar on November 30, journalists from *Africa Report* and San Francisco-based Pacifica News interviewed Durban Solid Waste manager John Parkin, who admitted, 'We started the project prior to the CDM. We were already down the road. It just made it come faster because the funding was there.'

Why is this scandalous? *Africa Report* interprets: 'It is questionable as to whether the project should have been approved as a CDM initiative at all, as approval requires the existence of 'additionality'. According to the UN, 'Additionality is the cornerstone of any credible CDM project, basically answering the question whether a project is additional, or would it proceed anyway, without the CDM.' That is, without qualification as an additionality, the CDM shouldn't be approved.'

Parkin confirmed to the journalists, 'We already started the project and we were going ahead no matter what. So whether CDM became a reality or not, the project was going to go ahead.'

Such a whimsical approach to climate finance is why hopes by Molewa and Manuel for filling the Green Climate Fund with carbon trade revenues will be dashed. CDM trading volumes are down 80 percent from their 2007 peak, and the European Union's carbon futures market – once above €35/tonne – hovered between €11-14/tonne through 2010-11 but crashed to €4.4/tonne on December 13.

Remarked Susanna Twidale of the Point Carbon news service, 'While a lot of the focus of the last fortnight of UN meetings was on supply of carbon credits, not one country deepened its carbon target, leaving international carbon offset prices languishing at near record lows – something unlikely to entice investors.' Reuters news service confirmed, 'Carbon markets are still on life support', quoting a leading trader: 'A sick market needs a cure and instead of deciding which cure to use, the doctors keep using pain relief to gain more time to make the final prognosis.'

Back in Durban, 20,000 carbon credits are being issued from the Bisasar Road CDM each month. According to Parkin, 'We don't have a partner to buy them at the moment. But we'll probably get €8 to €9 if we're lucky.' Durban is unlucky to have Parkin gambling with city finances, the air in Clare Estate, and the planet's health.

What the late Vaclav Havel said once about Soviet-era politics – 'a monstrous, ramshackle, stinking machine' whose worst legacy was a 'spoiled moral environment' – applies equally to Bisasar Road, to the UN's Conference of Polluters and to those who departed Durban without hanging their heads in shame. All they have to show for their work, during this planetary emergency, is creation of a dangerous Zombie.

In this milieu, Parkin was brutally frank, at least: 'As the City, if we can make some money out of it, I don't see why it shouldn't be done and the whole moral issue is separate from the project. The project is successful. The moral issue, I have no influence on that – as a technocrat, I do my job.'