



The Voluntary Carbon Offset Market Inquiry

**Memorandum by the World Development Movement to
the Environmental Audit Committee**

29 January 2007

The Voluntary Carbon Offset Market

Memorandum to the EAC by the World Development Movement

Introduction to WDM

1. The World Development Movement (WDM) campaigns to tackle the root causes of poverty. With our partners around the world, we win positive change for the world's poorest people. We believe that charity is not enough. We lobby governments and companies to change policies that keep people poor. WDM is a democratic membership organisation of individuals and local groups.
2. Climate change is a justice issue. It has overwhelmingly been caused by the richest countries and people in the world, yet it is the poorest who will suffer soonest and most from its effects. WDM thanks the Environmental Audit Committee (EAC) for initiating this inquiry on voluntary carbon offsetting and for the opportunity to submit written evidence. Below we set out the context in which voluntary carbon offsetting has to be set, and then address four of the Committee's specific questions.

Carbon offsetting: An excuse for no action

3. Voluntary carbon offsetting has to be placed within the wider context of the action needed in order to limit climate change. The UK government and European Union currently aim to prevent the increase in average global temperatures from being higher than 2°C on pre-industrial levels.¹
4. The Stern Review on climate change in October 2006 stated that to have a 50 per cent chance of not exceeding a 2°C increase requires greenhouse gas concentrations to stabilise at 450 ppmCO₂eq. This in turn requires global emissions to be cut by 70 per cent by 2050, and 75 per cent by 2100.²
5. The global responsibility for greenhouse gas emissions is highly unequal. In terms of CO₂, the main focus of offsetting, the average worldwide emissions are 4.24 tonnes per person. The UK emits 9.62 tonnes of CO₂ per person, China emits 3.62 and India 1.04 tonnes of CO₂ per person.
6. The only way the global challenge to cut greenhouse gas emissions by 70 per cent by 2050 will happen is if:
 - Rich countries, including the UK, make radical cuts in emissions. The UK needs to cut emissions by at least 85-90 per cent by 2050.
 - Large scale-funds are made available from rich countries to enable developing countries to have adequate energy resources to tackle poverty, without rapidly increasing greenhouse gas emissions.
 - New technologies are developed. When technologies are developed in rich countries which are suitable for developing countries, they need to be easily transferred.
7. Schemes to offset emissions do not form part of this strategy. Offsetting potentially makes funds available in developing countries to assist in reducing emissions, although there is a growing list of examples where this is not the case (see paragraphs 37-52). But at the same time it provides an

The Voluntary Carbon Offset Market
Memorandum to the EAC by the World Development Movement

excuse for rich country governments, companies and individuals not to reduce their own emissions. Funds have to be made available for low carbon development in poor countries. But they have to be made available *in addition* to emission cuts in rich countries, not *instead* of emission cuts in rich countries.

8. In theory, voluntary offsetting could be undertaken in addition to cutting emissions. A public body or company could be on track for making emission cuts in line with a national cut of 90 per cent by 2050, and choose to offset their remaining emissions whilst doing so. However, the reality of offsetting is that it is used as an excuse to continue emitting. Below we list some examples of how offsetting is publicised by companies, offsetting companies and government. These examples are not given to highlight particularly bad examples, but to emphasis how offsetting will inevitably be used.
9. HSBC states on its website that, *"In December 2004, HSBC made a commitment to become the world's first major bank to achieve carbon neutrality by 2006. We achieved carbon neutrality in September 2005 through our carbon neutral pilot project."*³ HSBC's claim to 'Carbon Neutrality' is due to offsetting their emissions for the last three months of 2005 -170,000 tonnes of CO₂.⁴ A closer look within HSBC's website shows that HSBC's CO₂ emissions actually rose from 585,000 tonnes of CO₂ in 2004 to 663,000 tonnes of CO₂ in 2005.⁵
10. In September 2006, Barclay's launched a scheme with Climate Care to promote offsetting to Barclay's customers travelling abroad. Barclay's claimed: *"Carbon neutral flights really need not cost the earth. Offsetting a flight to New York costs around £12. It's so easy and cheap for everyone to get involved, that it could really take off."*⁶ Whilst encouraging their customers to offset CO₂ emissions, the latest figures for Barclay's CO₂ emissions show a rise from 200,145 tonnes in 2004 to 207,650 in 2005.⁷
11. BSkyB claims in its 2005 Corporate Social Responsibility report that carbon emissions are *"0% ... after carbon offsetting"*.⁸ BSkyB further says, *"In May 2006, Sky became the world's first major media company to go carbon neutral, through measurement, reduction and offsetting our carbon dioxide emissions."*⁹ BSkyB reports that its emissions have been cut from 36,491 tonnes of CO₂ in 2003/04 to 29,056 in 2005/06. This has been due primarily to a one-off switch to using renewable electricity.* Other Sky figures suggest further cuts will be difficult to achieve on current policies. Energy consumption has increased from 93 million kWh in 2003/04 to 119 million kWh in 2005/06, and CO₂ emissions from transport have increased from 6,789 tonnes in 2003/04 to 16,157 tonnes in 2005/06.¹⁰
12. In the same way, carbon offsetting companies market their products through the use of words such as 'neutralise', 'balance' and 'cancel-out'.

* The actual carbon emission reduction gained from switching to a renewable energy supplier is another debatable matter.

The Voluntary Carbon Offset Market

Memorandum to the EAC by the World Development Movement

Climate Care states: *“Offsetting means paying someone to reduce CO₂ in the atmosphere by the same amount that your activities add. In this way you can 'neutralise' or 'balance' the CO₂ added by your activities.”*¹¹

13. Carbon Clear says: *“Carbon Clear gives you a convenient way to cancel out the pollution impact of your driving, your flying, home energy use, even your baby’s nappies! We help you work out the amount of carbon dioxide you emit, then we identify projects that prevent the same amount of carbon dioxide from entering the atmosphere.”*¹²
14. Lastminute.com advertises offsetting alongside selling its flights and holidays. It says: *“Offsetting lets you **repair the damage** done by your emissions by funding projects that reduce CO₂.”*¹³ [Lastminute.com’s emphasis]
15. Government ministers and departments also use offsetting as a means to show they are doing something to tackle the emissions from central government. Hilary Benn, Secretary of State for International Development, has said, *“DFID is committed to the new sustainable operations targets which includes a commitment for a carbon neutral central Government office estate by 2012. All Government air travel has been captured under the Government Carbon Offsetting Scheme since April 2006.”*¹⁴ DFID do not include targets for reducing emissions in their sustainable development action plan.¹⁵
16. In a response to a parliamentary question asking what measures the Foreign and Commonwealth Office are taking to reduce carbon emissions, on air travel, Geoff Hoon’s response was; *“the FCO is offsetting the carbon dioxide and other emissions generated by the air travel of Ministers and officials based in the UK starting with our 2004 emissions—one year ahead of the requirement of Government Departments to offset air travel by April 2006.”*¹⁶ No mention is made of action to limit emissions from air travel.
17. The act of publicising offsetting itself shows that offsetting is being used as an excuse not to cut actual emissions. If an organisation were making large-scale emissions cuts, and offsetting the remaining emissions, it is the emissions cuts they would publicise, not the offsetting.
18. Vast numbers of the world’s population cannot be considered as contributing to dangerous climate change. A 70 per cent cut in greenhouse gas emissions means cutting worldwide CO₂ emissions from 4.24 tonnes per person to 1.27 tonnes per person, on today’s population levels. Seventy-three countries, containing 2.5 billion people, currently emit less than 1.27 tonnes of CO₂ per person. It is nonsensical to suggest that climate change can be tackled by cutting emissions from poor people, whilst allowing activities of the rich, such as flying, to continue unabated. Yet this is the basis on which offsetting projects in developing countries are supposed to work.

19. Below we consider four of the specific questions of the EAC's inquiry.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

20. No. As outlined above, offsetting should not be used in order to provide an excuse to making emissions cuts. Making offsetting mandatory would legitimise the emissions of carbon intensive industries, when real action is needed to reduce the emissions of such industries.

21. To take the example of flying, the Tyndall Centre for Climate Change predicts that unless government policy changes, UK CO₂ emissions from aviation will increase from 39.2 MtCO₂ in 2004 to 62.8 MtCO₂ by 2020 and 117.2 MtCO₂ by 2050.¹⁷ If the UK were to cut CO₂ emissions by 85 per cent by 2050, but allow aviation to continue this growth, this would mean aviation accounting for 20 per cent of the UK's CO₂ emissions in 2020 and 135 per cent by 2050.¹⁸

22. It will be impossible for the UK to make the 85-90 per cent cuts in emissions required by 2050 if aviation is allowed to continue growing. The key policy responses to the aviation sector are for the government to reverse plans for airport expansion and to implement proper environmental taxes on aviation to halt the growth in aviation emissions. If offsetting is used as an excuse not to halt the growth in aviation emissions, then the UK will fail to meet its targets for reducing emissions.

23. It would make more sense to halt UK airport expansion until or unless the technology is developed to radically reduce greenhouse gas emissions from aviation, rather than ploughing ahead with expansion and simply hope that such technology will emerge.

24. Furthermore, the scale of offsetting which would be required to cover aviation emissions alone is huge:

- If the UK's current aviation emissions were to be offset, it would be the equivalent of stopping all emissions from Bangladesh.¹⁹ Bangladesh contains 139.2 million people.
- To offset the UK's aviation emissions in 2020 would be the equivalent of stopping all current emissions from Vietnam.²⁰ Vietnam contains 83.1 million people.
- To offset the UK's aviation emissions in 2050 would be the equivalent of stopping all current emissions from Pakistan.²¹ Pakistan contains 154.8 million people.

25. If offsetting were made mandatory, there would be a massive increase in demand for offsetting projects. It is likely that such an expansion in demand would lower the quality of offset projects, both in terms of the actual carbon emissions reduction achieved, and the negative impacts on communities in developing countries of certain offsetting projects [see paragraphs 37-52].

The Voluntary Carbon Offset Market

Memorandum to the EAC by the World Development Movement

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

26. Assuming that voluntary carbon offsetting will continue, there should be a compulsory accreditation scheme for all projects. Individuals, companies and public bodies using an offsetting scheme need to know that the offsetting projects they contribute to are making real reductions in emissions, without negative effects on local communities. The only way this certainty can be provided is if an independent body accredits all schemes.
27. Any project which fails to be accredited should not be allowed to be marketed as an offsetting project. An accreditation scheme would need to ensure that offsetting companies can only market projects which:
- Make cuts in emissions of at least the level specified, *at the same point in time* as the emissions the project is in theory offsetting;
 - Can be proved to deliver all the accredited emissions cuts in addition to what would have otherwise happened;
 - Meet a set of environmental, social and economic sustainability criteria, including having gained the prior informed consent of all involved and affected communities.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

28. There are serious flaws associated with afforestation and reforestation projects which mean they should not be counted as offsetting projects.
29. Afforestation and reforestation do not provide net cuts in emissions *at the same point in time* as the activity being offset. Converting land to forest only has a net effect on taking carbon out of the atmosphere over the time in which it takes the forested area to grow.
30. Once an area has been afforested or reforested, it has to remain so forever to keep the original CO₂ saving. No guarantee can be given that this will happen. Local political decisions may be taken to change land usage, the forested area could burn and not be replaced, or increased temperatures from climate change could lead to the disappearance of forests. Afforestation and reforestation can never guarantee particular emissions savings.
31. There may be other affects on the carbon cycle from humans making changes to land use by afforestation or reforestation. In Ecuador, one study has found that afforestation plantations caused soil quality to deteriorate, releasing carbon trapped in the soil. The net impact of these plantations may well have been to *increase* the concentration of CO₂ in the atmosphere.²²

The Voluntary Carbon Offset Market
Memorandum to the EAC by the World Development Movement

32. One recent scientific study found that outside a thin-band around the equator, forests trap more heat from the sun than they help to get rid of by removing CO₂ from the atmosphere, and thus are no use as an offset.²³
33. For all of the above reasons, afforestation and reforestation should not be counted as offsetting projects.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

34. For the past 35 years, WDM has been highlighting how ‘aid’ money from Western governments and companies can have a detrimental impact on poor people around the world. There is no reason to assume that the carbon offsetting market should be any different. The marketing basis for offset products is their environmental impact, so it is natural for consumers to assume that offset projects are also socially responsible. Yet offsets are sold by private companies which are normally unaccountable to the communities in which they seek to implement offsetting projects.
35. The economic, social and environmental interests of a community have to be fully reflected in decisions on how to undertake an offsetting project. Offsets on sale in Britain have to be regulated to ensure that projects have gained the consent of communities in which they are working, and environmental safeguards exist.
36. We are sure the EAC has been made aware of the negative effects of many offsetting projects. Below we list some examples.

Guatemala²⁴

37. In 1989 the first forestry project funded explicitly for offsetting began in the Western Highlands of Guatemala. The project was run by CARE with the United States Agency for International Development (USAID) and the Guatemalan Directorate General of Forests to offset an 183MW coal-fired power station in Connecticut. The intention of the project was to establish 12,000ha community woodlots, 60,000ha agroforestry, and 2,880km live fences protecting vulnerable slopes in local watersheds.
38. An external evaluation has shown the project has fallen far short of the one million tonnes of carbon it was supposed to offset.²⁵ Problems have included:
- The transfer of previously communal forest into municipal authorities’ control, leading to: conflict between authorities and individual landowners; the criminalisation of subsistence activities such as firewood gathering; and increasing distrust of government forest offices.
 - Promotion of inappropriate tree species for the given climate and degraded land areas used.
 - Damage by animals and sabotage limited the expansion of reforested areas.

The Voluntary Carbon Offset Market

Memorandum to the EAC by the World Development Movement

- Needing to channel more resources into complex ways of monitoring the carbon uptake of the project, rather than improving people's lives, as CARE had a reputation for doing previously.
- A shift of reforestation work from assisting local farmers to working with larger farmers better able to help comply with sequestration commitments.

Ecuador²⁶

39. Forest Absorbing Carbon Dioxide Emissions (FACE) was established by the Board of Management of the Dutch Electricity Generating Companies in 1990 to offset a 600MW coal-fired power station in The Netherlands.

FACE intended to establish 150,000ha tree plantations in developing countries. Since 2000, FACE has been selling carbon credits through Business for Climate and Triodos Climate Clearing House.

40. Programme for Forestation (PROFAFOR) in Ecuador is FACE's largest project, set up in 1993 to plant 75,000ha trees. This was later revised to 25,000ha, which has still to be achieved. Some of the problems with the project are listed here.

- The sites used are *paramo*, high altitude plains without woodlands. The monoculture trees used by PROFAFOR have not been suited to this environment. The plantations have used large amounts of water, threatening the local water supply and carbon storage capacity.
- One study has found that soils are releasing more carbon and trees absorbing less than the firm accounts for. The effect of the plantations on carbon trapped in the soil means that the carbon balance of the project may well be negative.²⁷
- Communities were promised income and employment from the project, with materials and support provided. In reality, the cost of materials and support were deducted from earnings, leaving only half the initial level of income promised. Communities were also charged for the cost of new seedlings to replace those that did not survive their original planting.
- Communities are obliged to maintain the trees for 20-30 years before harvest in order to meet sequestering targets, yet the income they receive does not cover this period, and there is no support for selling the timber.
- The land was previously communal land, assumed by PROFAFOR to be unused or degraded. However, some land had previously been used for family livestock. Where this was the case, the family has had to rent other land or reduce the size of their herds.

Uganda²⁸

41. A forestry project was set-up in Bukaleba in 1995 in a Ugandan government forest reserve by Tree Farms, a Norwegian forestry company, with grant aid from the Norwegian Agency for Development Cooperation (NORAD) to offset emissions from new gas-fired power stations to be built in Norway. The land was gained for Tree Farms on a low cost lease from the Ugandan government.

The Voluntary Carbon Offset Market
Memorandum to the EAC by the World Development Movement

42. Some of the problems are listed here.

- Local people lost access to land which they had in practice been farmed, even though it was official a government reserve. Yet once the plantation began, most jobs were not done by local people. In 2000, only 20 locals were working on the plantation.
- Tree Farms allowed local people to farm between rows in the plantation, until the trees were too big for this to be possible. Most of the work on the plantation, such as weeding, was effectively done by locals without pay. Local farmers were also obliged to pay up to 40 per cent of crops to Tree Farms.
- The offsetting targets were wildly optimistic. Farmers evicted from the land caused emissions elsewhere, particularly where they had to clear new land to farm.

Costa Rica²⁹

43. The Costa Rican government Environmental Service Programme pays landowners to establish plantations, and gets carbon rights in exchange. The Environmental Service Programme then sells these rights on the global carbon market.

44. Some of the problems are listed here.

- Monoculture plantations receive 20 per cent of payments under the Environmental Service Programme. These monoculture plantations have had negative impacts on the soil, water and biodiversity that the programme is meant to protect.
- It is impossible to tell from data on the whole country how much carbon storage has increased in Costa Rica since the 1990s. Before and after studies are too expensive.
- Uncontrollable fires have occurred in new areas containing monoculture plantations. In 1998 over 200,000ha burnt in the humid tropical zone where fires had never been reported before. As soon as a plantation burns, its effect on taking carbon out of the atmosphere is zero.

45. As a result of the problems of offsetting through tree plantations in Costa Rica, the government plans to invest more in non-forestry schemes such as renewable energy. However, companies such as US based Rainforest Credits Foundation are eager to set up new schemes, often without much consultation with the government.

Sri Lanka³⁰

46. A rural solar electrification programme was set up in 1997 to offset emissions in the US state of Oregon by preventing emissions from kerosene lamps used in houses without electricity.

47. Problems have included:

- The project targeted disadvantaged workers, primarily minority Tamils, in the tea plantation sector. Tea plantation owners supported the

The Voluntary Carbon Offset Market

Memorandum to the EAC by the World Development Movement

project, as they hoped it would boost the productivity of their workers. Workers had to use loans, taking five years to repay, to gain access to the solar power systems. They were then required to work extra days to meet the repayments on such loans.

- The solar panels produced insufficient energy to power lamps, so kerosene use was only reduced by around 50 per cent, not replaced. Solar energy was only available for six to nine months of the year in some areas due to monsoons.
- Gaining electricity for the first time meant energy use increased through other activities, such as watching television, and so did not replace kerosene.

48. It can be expected that many offsetting projects which provide local electricity generating capacity to poor communities will not reduce emissions. Where electricity is provided for the first time, it is likely to increase energy use, and so fail to provide cuts in carbon emissions. Providing renewable energy to poor communities can of course be a valuable action in and of itself, and it helps a low-carbon development process. But proving that CO₂ emissions will fall as a result is more difficult.

Durban, South Africa³¹

49. A project has been developed in Durban to extract methane from the Bisasar Road landfill site to use for electricity generation. The electricity generated will replace electricity otherwise generate from coal, and so lower CO₂ production as methane produces less CO₂ per unit of energy than coal.

50. However, local campaigners have been calling for the landfill site to be shut down as it exposes local people to cancer-causing pollution, and infringes their right to clean air. Concentrations of cadmium, lead, hydrogen chloride, formaldehyde, benzene and trichloroethylene are all high. However, the offsetting project has provided finance to enable the landfill site to keep operating.

Guguletu, South Africa³²

51. The British company Climate Care began a project in 2005 to replace incandescent bulbs with energy-efficient ones, where locals would have otherwise been unable to afford to switch.

52. The South African power generator Eskom recently distributed 5 million energy-efficient bulbs to low-income households, negating the claim that without the project such households would not have received energy-efficient bulbs.

The Voluntary Carbon Offset Market

Memorandum to the EAC by the World Development Movement

Contact:

Tim Jones
World Development Movement
66 Offley Road
London, SW9 0LS
020 7820 4900
tim@wdm.org.uk
www.wdm.org.uk

References

- ¹ HM Government. (2006). *Climate change: The UK programme 2006*. March 2006.
- ² Stern Review. (2006). *Stern Review Executive Summary*. Hm Treasury. London. October 2006.
- ³ http://www.hsbc.com/hsbc/csr/environment/hsbc-and-climate-change?WT.ac=HGHC_csr_002 (Downloaded 16/01/07).
- ⁴ <http://www.hsbc.com/hsbc/csr/environment/hsbc-and-climate-change/carbon-neutrality> (Downloaded 16/01/07).
- ⁵ <http://www.hsbc.com/hsbc/csr/environment/environmental-performance> (Downloaded on 16/01/07).
- ⁶ <http://www.newsroom.barclays.co.uk/Content/Detail.asp?ReleaseID=791&NewsAreaID=2> (Downloaded on 17/01/07).
- ⁷ http://www.barclays.com/corporateresponsibility/doclib/0696-080849-data_tables.pdf (Downloaded on 17/01/07).
- ⁸ <http://ccbn.mobular.net/ccbn/7/1930/2119/index.html> (Downloaded on 22/01/07).
- ⁹ <http://ccbn.mobular.net/ccbn/7/1930/2119/index.html> (Downloaded on 22/01/07).
- ¹⁰ <http://ccbn.mobular.net/ccbn/7/1930/2119/index.html> (Downloaded 22/01/07).
- ¹¹ http://www.climatecare.org/about_us/index.cfm?content_id=E168562F-D41F-11ED-A9B906252A24E9C1 (Downloaded 16/01/07).
- ¹² <http://www.carbon-clear.com/> (Downloaded 16/01/07)
- ¹³ <http://www.lastminute.com/site/travel/climatewise/> (Downloaded 16/01/07)
- ¹⁴ Benn, H. (2006). Parliamentary question: Departmental Energy Policy 105752. Hansard Column 746W. 11/12/06.
- ¹⁵ DFID. (2005). *Sustainable development action plan*. Department for International Development. London. December 2005. p. 20
- ¹⁶ Hoon, G. (2006). Parliamentary Question: Department Emissions 81059. Hansard Column 490-91 W. 19/07/06.
- ¹⁷ Data from Bows, A. (2006). Produced in Cairns, S. and Newson, C. (2006). *Predict and decide: Aviation, climate change and UK policy*. Environmental Change Institute. University of Oxford.
- ¹⁸ Calculated by WDM based on global CO₂ cuts of 70 per cent by 2050 and UK CO₂ cuts of 85 per cent by 2050.
- ¹⁹ UK aviation emissions = 39.2 MtCO₂. Bangladesh current total emissions = 37.9 MtCO₂, at a rate of 0.27 tonnes per person.
- ²⁰ UK aviation emissions in 2020 = 62.8 MtCO₂. Vietnam current total emissions = 57.5 MtCO₂, at a rate of 0.70 tonnes per person.
- ²¹ UK aviation emissions in 2050 = 117.2 MtCO₂. Pakistan current total emissions = 106.3 MtCO₂, at a rate of 0.67 tonnes per person.
- ²² Vidal, V. (1999). *La Aplicacion de Politicas sobre Cambio Climatico en el Sector Forestal del Ecuador*. Auttonomous University of Barcelona. October 1999.
- ²³ Jha, A. (2006). Planting trees to save planet is pointless, say ecologists. *The Guardian*. London. 15/12/06.
- ²⁴ Lohmann, L. (2006). *Carbon trading: A critical conversation on climate change, privatisation and power*. Development Dialogue No. 38. Dag Hammarskjöld Centre. September 2006.
- ²⁵ Brown, S. (1999). *Carbon sequestration final evaluation: Final report to CARE Guatemala for PNO3 Agroforestry Project*. Winrock International. Arlington.
- ²⁶ Lohmann, L. (2006). *Carbon trading: A critical conversation on climate change, privatisation and power*. Development Dialogue No. 38. Dag Hammarskjöld Centre. September 2006.
- ²⁷ Vidal, V. (1999). *La Aplicacion de Politicas sobre Cambio Climatico en el Sector Forestal del Ecuador*. Auttonomous University of Barcelona. October 1999.
- ²⁸ Lohmann, L. (2006). *Carbon trading: A critical conversation on climate change, privatisation and power*. Development Dialogue No. 38. Dag Hammarskjöld Centre. September 2006.
- ²⁹ Lohmann, L. (2006). *Carbon trading: A critical conversation on climate change, privatisation and power*. Development Dialogue No. 38. Dag Hammarskjöld Centre. September 2006.
- ³⁰ Lohmann, L. (2006). *Carbon trading: A critical conversation on climate change, privatisation and power*. Development Dialogue No. 38. Dag Hammarskjöld Centre. September 2006.
- ³¹ Lohmann, L. (2006). *Carbon trading: A critical conversation on climate change, privatisation and power*. Development Dialogue No. 38. Dag Hammarskjöld Centre. September 2006.
- ³² Lohmann, L. (2006). *Carbon trading: A critical conversation on climate change, privatisation and power*. Development Dialogue No. 38. Dag Hammarskjöld Centre. September 2006.