

**The Prototype Carbon Fund, a public/private collaboration
in the emerging environmental market.**



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A mini-thesis submitted in partial fulfillment of the requirements for the Magister Legum degree at the Faculty of Law, University of the Western Cape.

The Prototype Carbon Fund, a public/private collaboration in the emerging environmental market.

Abbreviations and Acronyms.

CDM Clean Development Mechanisms
CER Certified Emission Reduction
COP Conference of the Parties
EUETS European Union Emissions Trading System
ER Emission Reductions
GHG Greenhouse Gas
IBRD International Bank for Reconstruction and Development
IPCC Intergovernmental Panel on Climate Change
JI Joint Implementation
NGOs Non-Governmental Organizations
PCF Prototype Carbon Fund
UNFCCC United Nations Framework Convention on Climate Change
WTO World Trade Organisation



Keywords.

Environment / Kyoto Protocol / Gas Emission Reductions / Gas Emissions Reductions Credit / Business Trust / World Bank / Trustee / Private (companies) and public (governments) investors / Trade / Donors / Participant Meeting / Participants Committee / Liability / Developing countries and developed countries.

ABSTRACT

The Prototype Carbon Fund, a public/private collaboration in the emerging environmental market.

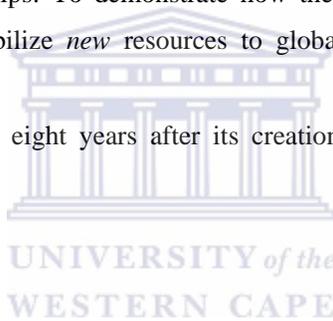
This paper addresses the issue of the primary Prototype Carbon Fund objectives:¹

a- High-Quality Emission Reductions: To show how project-based greenhouse gas emission reduction transactions can promote sustainable development and lower the cost of compliance with the Kyoto Protocol.

b- Knowledge dissemination: To provide parties to the United Nations Framework Convention on Climate Change, private sector, etc..., with learning-by-doing opportunities to develop policies and processes for achieving emission reductions under Kyoto's market mechanisms

c- Public-private partnerships: To demonstrate how the World Bank can partner with the public and private sectors to mobilize *new* resources to global environmental problems through market-based mechanisms.

I will further investigate whether, eight years after its creation, the Prototype Carbon Fund is a success.



January 2007.

¹ See *Instrument Establishing the Prototype Carbon Fund*, Annex 1(A); and the World Bank Operations Evaluation Department, *The Prototype Carbon Fund, Addressing Challenges of Globalization: Case Study* Lauren Kelly and Jeffery Jordan

DECLARATION

I declare that *The Prototype Carbon Fund, a public/private collaboration in the emerging environmental* is my own work, that it has not been submitted before any degree or examination in any other university, and that all the sources used or quoted have been indicated and acknowledged as complete references.

Student



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To my parents, thank you for supporting me and listening to me.

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TABLE OF CONTENTS

	Pages
Title	i
Keywords	ii
Abstract	iii
Declaration	iv
Acknowledgements	v
Table of Contents	vi
Introduction	1
Chapter 1. The link between law, investment and the environment.	4
1- The trade, investment and environment polemic	
a) Environmental degradation for trade growth.	
b) Impulsion from investment to improve the environment.	
2- Modern thinking merging investment, trade and the environment.	
a) How business can positively contribute to communities and the environment.	
b) Examples.	
Chapter 2. The Kyoto Protocol.	10
1-The creation of the Kyoto Protocol, an emergency act to prevent global warming.	
a) Global warming: Human causes and economic consequences.	
b) The international response.	
2- The Kyoto Protocol mechanisms.	
a) The greenhouse gas emission reduction market.	
b) The carbon credits mechanisms.	
Chapter 3. Specificity of the Prototype Carbon Fund.	15
1- A pioneer in the market for project-based greenhouse gas emission reductions.	
a) Creation of the Prototype Carbon Fund.	
b) Prototype Carbon Fund activities.	
2- An environmental fund to promote sustainable development.	
a) The novelty of the Prototype Carbon Fund.	

b) Dissemination of the lessons learned.

Chapter 4. The public/private collaboration.

20

1- The link between the players.

a) The participants.

b) Organization.

2- Conflicts of interest:

a) Between the Trustee and other international organizations.

b) Between the Trustee and the Participants/countries involved.

Chapter 5. The role of the World Bank as Trustee, the liability issue.

24

1- The role of the World Bank Trustee.

a) Reasons for using the Trust Mechanisms.

b) The legal principles governing the Trust.

2- The liability issue.

a) Risks.

b) Remedies.

Chapter 6. First results of the Prototype Carbon Fund.

29

1- The state and trends.

a) After seven years of life.

b) Prototype Carbon Fund, an example followed.

2- Fund imperfections.

a) Controversies.

b) An imbalanced sharing of the projects.

Chapter 7. Conclusion and recommendations.

35

Annex.

37

Bibliography.

40



INTRODUCTION

1. Background of the study.

Although the first hypothesis on the deterioration of the environment due to pollution was at the end of the nineteenth century,² the concept of marriage between environmental concerns and business interests is recent.

The international scene brought to light the environmental problem with the United Nations Framework Convention on Climate Change (UNFCCC), concluded in 1992. Despite it being the first international instrument of a legal nature, there were no firm obligations.³ The countries promised to adopt national policy measures to reduce their greenhouse gas (GHG) emissions to 1990 levels by the year 2000. At the first Conference of the Parties of the UNFCCC in Berlin in 1995, the Contracting Parties reviewed the commitments by the developed countries under the Convention and decided that the commitment was inadequate to achieve the Convention's long-term objective. The Conference adopted the "Berlin Mandate" and launched a new round of negotiations on strengthening the commitments of the Contracting Parties from developed countries. On December 11, 1997, the third Conference of the Parties of the UNFCCC agreed to establish a new Protocol with a timetable and firm targets to reduce greenhouse gas: the Kyoto Protocol.⁴

In July of 1999, the World Bank (a vital financial source for developing countries, with the challenge of reducing global poverty)⁵ launched the first environmental fund: The Prototype Carbon Fund (PCF). The PCF, with the operational objective of mitigating climate change, "aspires to promote the Bank's tenet of sustainable development, to demonstrate the possibilities of public-private partnerships, and to offer a "learning-by-doing" opportunity to its stakeholders."⁶ It is a partnership between six governments and seventeen companies, administered as a trust with the World Bank as Trustee. The PCF invests contributions made by these companies and governments in projects designed

² In 1896, Svante Arrhenius, a Swedish chemist, advances the theory that carbon dioxide emissions from combustion of coal would enhance Earth's greenhouse effect and lead to global warming.

Global Warming: The History of an International Scientific Consensus, Environmental Defense, January 2003.

³ The Convention on Climate Change of 1992 is a framework for intergovernmental efforts to tackle the climate change challenge. It recognizes that the climate system is a shared resource whose stability can be affected by greenhouse gases. The Convention has been ratified by 189 countries. Under the Convention, governments: gather and share information on greenhouse gas emissions, national policies and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries and cooperate for adaptation to the impacts of climate change.

Convention available at: <http://unfccc.int/resource/docs/convkp/conveng.pdf>

⁴ For more information about the Kyoto Protocol evolution, see: *The evolution of a climate regime: Kyoto to Marrakech and beyond*; Mustafa H. Babiker, Henry D. Jacoby, John M. Reilly, David M. Reiner; *Environmental Science & Policy* 5 (2002) 195–206

⁵ See World Bank website, "Challenge" page:

<http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/0,,contentMDK:20040565~menuPK:1696892~pagePK:51123644~piPK:329829~theSitePK:29708,00.html>

⁶ See World Bank website, "Environment" page:

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/0,,contentMDK:20276740~pagePK:210058~piPK:210062~theSitePK:244381,00.html>

to produce Emission Reductions (ERs) fully consistent with the Kyoto Protocol. Projects focus on renewable and alternative energy technologies, including wind, small-hydro, biomass and energy efficiency investments. The Contributors, or "Participants" in the PCF, receive a pro rata share of the ERs, verified and certified following the agreements reached with the respective countries "hosting" the projects.⁷

Two main issues can be identified. First, the relationship between the environment and investment. Merging these two concepts seems unusual; investors do not like the introduction of environmental concerns into their business. Second, the public and private partnership; the advantage is pooling insights and experience from both sectors to mobilize additional resources for sustainable development and to address climate change; but on the other hand, there are some risks related to the possible failure of achieving program or individual project objectives.⁸

The joint participation of investors and countries with opposing concerns suggests that the PCF may have reached a balance between the interests of each party, while contributing to sustainable development. This is a complex issue for which information is still limited and difficult to access in the public domain.

The vast majority of carbon market activity has taken place via project-based transactions, through bilateral programs, government funds and the PCF. The World Bank has played a catalytic role in developing a market for greenhouse gas emission reductions through the PCF. But, as the trustee and intermediary, it is exposed to conflicting interests.

Lastly, statistics show that carbon market volume is growing steadily. The PCF is a \$180 million mutual fund; it has evolved into 24 projects-programs resulting in some \$190 million in Emission Reduction Purchase Agreements.⁹

The PCF will end in December 2012.

2. Purpose of the study.

This research intends to demonstrate the merits of this initiative and the inconveniences due to its experimental nature. The challenge of this project is its novelty; it implies the risk of the unknown and the concept of "learning by doing."

⁷ See Carbon Finance website, "Carbon Funds and Facilities" page, "PCF" page, "About" page: <http://carbonfinance.org/Router.cfm?Page=PCF&FID=9707&ItemID=9707&ft>About>

⁸ *The Prototype Carbon Fund, Addressing Challenges of Globalization: An independent Evaluation of the World Bank's Approach to Global Programs*. The World Bank Operations Evaluation Department; Lauren Kelly and Jeffery Jordan; 2004. p.xi.

⁹ *Mission Accomplished: \$180 Million Prototype Carbon Fund Meets Portfolio Targets*; Sergio Jellinek , Anita Gordon , World Bank Press Release No:2007/359/SDN, May 3, 2007

Another contradiction can be noticed in this topic: The environmental problem involves every country; and global warming is not new, but there is no specific legal framework. The PCF is a pioneer in this area; the issue deserving an investigation is in the research of new legal instruments

The main objective of this research is to study the specifics of the PCF, through the need for its creation, the link between the partners and the expectations of the participants and governments. More specifically, the objectives of the research are to:

a-Demonstrate the urgency of the creation of the PCF regarding the deterioration of the environment, and legally, regarding the Kyoto Protocol.

b-Analyze the complexity of its mechanisms, that is to say the problem of the relationship between governments, companies and the World Bank (which have different goals), and therefore, the link between the environment and investment.

c-Investigate the expectation of predictability, stability, and the professional quality of carbon finance activities and the first results of this fund in the environment and in developing country economies.

3. Scope of the study.

The relevance of the PCF is in its target. Its purpose is to provide financing for projects in least developing countries to be used to cover the costs of making those projects more environmentally friendly than they would otherwise be. Therefore, the PCF integrates environmental and business principles to address everyone's interest regarding cleaner air.

Nevertheless, the PCF is not only a pioneer in the market for project-based greenhouse gas emission reductions; it also integrates a second antagonism: public/private investors. This marriage can become problematic on the legal level in particular in the event of an absence of legal fire walls. Consequently, it would be interesting to study how the PCF would deal with all these different concepts.

This topic has a broad scope: It deals with environmental and developmental issues, the cooperation between states and companies and the involvement of the World Bank as a trustee. The research will focus on the environmental issue and the relationship between the entities. It will not investigate the development side of the Fund because this is already the main function of the World Bank, therefore it will not examine "win-win opportunities" for developed and developing countries

4. Research methodology.

The PCF is a pilot project, even if several other investment Funds are created in later years. The results are not significant enough to merit real critical research. Nevertheless, descriptive research can be conducted regarding the aims, the links between the parties and the consequences (of the disparity between theory and reality).

Chapter 1

The link between law, trade, investment and the environment.

I. The trade, investment and environmental polemic.

a) Environmental degradation for trade growth.

- The traditional arguments.

The criticisms against trade and investment come firstly from an anti-globalization perspective.¹⁰ Current models of economic development have played an important role in the destruction of the environment. The first industrial revolution in the eighteenth century and then, the liberalization of the economies since the Second World War dramatically increased the consumption of natural resources and the establishment of polluting industries.¹¹

The events that occurred in the Republic of China are a good illustration of this relationship: One of the negative consequences of China's rapid industrial development is increased levels of pollution and the degradation of natural resources.¹² While, at the beginning of the century, China had a minimum impact on the carbon dioxide emissions; a World Health Organization report in 1998 on air quality in 272 cities worldwide concluded that seven of the world's 10 most polluted cities were in China.¹³ Therefore, there is a traditional refusal amongst economists and environmentalists to imagine a world where investments and the environment will be merged. The goals of these concepts seem to be different and sometimes conflicts arise. In an anti-globalization perspective, globalization of the market economy and the growth of multinational corporations, presents a conflict to the aim of the sustainable development. In the global economy, owners who may benefit from environmental damages do not live in the communities affected by the environmental harm. Since economic power is owned by people physically separated from environmental harm, less environmental protection might be expected.

- Impacts of trade liberalization on the environment.

Trade liberalization can affect social, environmental and developmental priorities in a number of ways and change the nature of economic activity. It may increase trade in dangerous products such as hazardous waste or toxic chemicals that may threaten human health and the environment in importing countries. The recent EC-Biotech¹⁴ case in the WTO is an illustration of this debate. For the European

¹⁰ The "anti-globalization movement" is a label used to describe organizations around the world opposing to the current rules and institutions which set up economic globalization called "corporate-led globalization." Their aim is to reform international organizations (World Trade Organization, International Monetary Fund, World Bank). *Encyclopedia of Globalization*. Vol.1, A-E, Index. Jan Aart Scholte and Roland Robertson. Routledge.

¹¹ *Something New Under the Sun: An Environmental History of the Twentieth-century World*, John Robert McNeill; Norton, 2001, p.84-87.

¹² China's share of world GDP is nearly four times more than it was in 1980; *Enter the Dragon*, The Economist, March 31, 2007.

¹³ *Environmental matters: the protection of human health from threats related to climate change and stratospheric ozone depletion*. 1998, A57446 EB101.R15.

¹⁴ European Communities - Measures Affecting the Approval and Marketing of Biotech Products -.

Community, products with genetically modified organisms (called biotech products or GMOs) might have a negative impact on human health. Therefore, they restricted imports of agricultural and food products from the countries who authorized the GMOs. Nevertheless, the WTO Panel dismissed their arguments because, among others things, the risk assessment was not accurate enough to justify an importation restriction. With their participation in the WTO, the European Community has the obligation to authorize the selling of genetically modified organisms even though they are worried about their impact on human health.

Generally, environmental standards involve an additional cost (investment to improve the quality of the product; to check the gas emissions...). Governments, fearful of foreign competition, may fail to enforce environmental standards. The European Union showed their concern during the negotiation of the Montreal Protocol in 1989. However, the implementation of the treaty did not affect the European economy.¹⁵ This phenomenon is described as “a race from the desirable levels of environmental quality that states would pursue if they did not face competition for industry to the increasingly undesirable levels that they choose in the face of such competition.”¹⁶

b) Impulsion from trade to improve the environment.

• Dependence of human welfare on monetary health.

Human welfare needs certain elements in order to evolve: Employment, schools, hospitals, clean water, etc. The idea is that the availability of and access to particular goods and services constitute a precondition for welfare and happiness.¹⁷ Typical goods and services are nutrition, housing, health, education, and the quality of the environment. These goods and services need infrastructure (such as hospitals). A nation needs money to build and maintain infrastructures in order to provide these goods and services to its population. And this money comes from the market, which in turn comes from business and investment.

In the table below, the three “classical” social indicators follow the usual separation made between “developed countries” (Canada, France, the UK, the US with high life expectancy at birth, easy access to improved water sources and low unemployment) and the “developing countries” (Argentina, Kenya, Nigeria, South Africa) with a contrary trend. It shows that without economic growth (and therefore, employment) human welfare cannot be improved.

http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds291_e.htm

¹⁵ For more information about the negotiation of the Montreal Protocol, see: *The evolution of policy responses to stratospheric ozone depletion*; Morrisette; Natural Resources Journal 29: 793-820; 1989.

¹⁶ Richard Revesz, *Rehabilitating interstate Competition*, 67 *N.Y.U. L. Rev.*1210.

¹⁷ *Happiness and Economics: How the Economy and Institutions Affect Human Well-Being*, Bruno S. Frey, Alois Stutzer, Princeton University Press, 2002, p.39-43.

	<i>Life expectancy at birth (2003)</i>	<i>Access to an improved water source (2002) % of population</i>	<i>Unemployment Total % of total labor force (2000-2002)</i>
Argentina	74	...	19.6
Brazil	69	89	9.6
Canada	79	100	7.7
China	71	77	4
France	79	...	8.9
India	63	86	...
Japan	82	100	5.4
Kenya	45	62	...
Nigeria	45	60	...
South Africa	46	87	29.5
Switzerland	80	100	2.9
Thailand	69	85	2.6
United Kingdom	78	...	5.1
United States	77	100	5.8

Source: World Development indicators, 2006.

- Investment for efficient use of scarce resources.

The key motivating factor behind the most important trade agreements (like the European Community and the GATT) has an important political purpose: countries that are economically interdependent share common interests and are less likely to resolve differences through armed conflict. In the future, natural resources will be more and scarcer. For these reasons, it appears essential to keep this interdependence in order to be able to peacefully deal with this future problem.¹⁸

In addition, international trade agreements allow investors to participate in foreign economies. It implies an exposition of domestic companies to the discipline of international competition which forces them to innovate, to upgrade and to anticipate demand. Global competition provides a powerful catalyst for improvements in efficiency at all levels of production. Nowadays, numerous international corporations are involved in environmental and sustainable development associations because it implies a good image and “humanizes” the company (e.g. Starbucks, Caterpillar).¹⁹ Economic growth and wealth

¹⁸ *International Environmental Law and Policy*, D.Hunter, J.Salzman, D.Zaelke. Third Edition, Foundation Press, p.1236.

¹⁹ Some company build their business on this promotion, such as Body Shop which claims the non-animal testing, the support community trade, the defense of human rights and the protection of the environment. See website: http://www.thebodyshop.com/bodyshop/values/index.jsp?cmre=default-_-Footer-_-ValuesPassion

generated by trade, particularly in developing countries, is an essential first step towards political demand and capacity for environmental protection. Rising incomes creates more wealth for environmental protection, pollution control and remedial clean-up.

II. Modern thinking merging investment, trade and the environment.

a) How business can positively contribute to communities and the environment.

• Creating opportunity

The private sector is recognized as key to reducing poverty in developing countries by creating opportunities: It sustains families through salaries (job offers), provides products and services; and increases government funds through royalties and taxes.²⁰ The private sector is recognized as key to reducing poverty in developing countries. The private sector, by its investments, initiatives and innovations contributes to economic growth and improved livelihoods. The private sector has the ability to strengthen institutional and investment capacity, mobilize finance, and support the innovative provision of public goods.

Four billion people still earn less than \$1,500 a year.²¹ The private sector has the managerial, organizational, and technological skills to address this challenge. The private sector is already central as a source of employment and as a provider of goods and services. Development institutions, which form a link between government and the private sector can help support initiatives that will deliver increased opportunity for all. It was one of the missions of the World Bank in the PCF: Be a catalyser and create business opportunities in developing countries for investors.²²

• An environmental contribution through an economic investment.

The issue raised by the industrialization of the developing countries is how to protect the environment without sacrificing economic growth? From the traditional point of view, economic growth implies infrastructures, which imply pollution. Nevertheless, the developing world cannot be excluded from economic growth due to environmental protection. A balance has to be found between these two movements. Indeed, incorporating environmental and social attributes into projects can help to ensure their long-term sustainability and enhance their commercial viability.

Dongtan, near Shanghai, is a new eco-city and might be a good illustration of this balance. In 2010, the city should open, with accommodation for 50,000 persons. Dongtan was recently presented at the United Nations World Urban Forum by China as an example of an “eco-city”, and is the first of up to four such cities. The cities are planned to be ecologically friendly, with zero-greenhouse-emission transit

²⁰ For more information, see: *New Horizons and Policy Challenges for Foreign Direct Investment in the 21st century*; OECD Global Forum on International Investment. Mexico City, 26-27 November 2001; Foreign Direct Investment and Poverty Reduction; World Bank, Michael Klein, Carl Aaron, and Bitá Hadjimichael

²¹ *Making a difference, how private enterprise is creating opportunity and improving lives in developing countries.* IFC, World Bank Group. March 2007. p.2.

²² *Monetizing Carbon Credits; International Resources Group; January 2003 Number 4; p.1.*

and complete self-sufficiency in water and energy, together with the use of zero energy building principles.²³ It improves the living conditions, respects the environment and creates jobs.

During the last decade, the global economy has seen more and more socially and environmentally friendly investment projects, successfully taking places.

b) Examples.

The issue in the relationship between environmental goals and trade growth was how to balance society's desire for environmental protection with the economic burden on industry. However, this framework was incorrect because the world is not static: international competitiveness is based on innovation; and current innovations are taking place in the environmental and social fields.²⁴ This concept can be demonstrated by two examples.

- **Balrampur Chini Mills Ltd (BCML).**

In India, industry historically appears to be contrary to the interests of the rural environment. BCML harmonizes these conflicts of interest and since 2002, the company has experienced a 190 percent increase in profits.²⁵

First, during the process of selling cane to sugar mills, farmers are traditionally in a vulnerable position, susceptible to opportunistic price negotiations, and delayed payments. BCML provides technical assistances (training to farmers) and prompt payments. BCML's diversification strategy includes electricity generation: Bagasse, used by BCML is renewable, it reduces BCML's reliance on non-renewable sources of electricity and qualifies the company's electricity-generating operation to create and sell ER credits under the Kyoto Protocol. BCML has a 10-year, \$9 million contract to sell ER credits.²⁶

BCML's strategy also includes the production of ethanol, a cleaner-burning fuel that reduces tailpipe emissions and organic fertilizer. Through its integrated approach to business and its strategy of diversification, BCML offers a sustainable business model to other companies in the sector.

- **Minera Escondida Limitada (Chile).**

The world largest copper mine, Minera Escondida,²⁷ is committed to sustainable mining, employee safety, and community investment. Owned by several corporations, minera Escondida support the development of the region. Escondida's corporate programs and foundation activities contributed

²³ For more information: <http://www.un.org/Pubs/chronicle/2006/issue3/0306p24.htm>

²⁴ Theory highlight by Michael E.Porter and Claas van der Linde, *Toward a New Conception of the Environment-Competitiveness Relation-ship*. Journal of Economic Perspectives, Vol.9, No 4, 1995, p.97-118.

²⁵ *Thinking outside the Cube, Balrampur chini Mills Limited, annual Report 2005-2006*. p.14.

<http://www.chini.com/annual%20report%20bmcl2005-06.pdf>

²⁶ See explication ERs below: Chapter 2, II

²⁷ Minera Escondida is the copper mine with the largest production in the world, representing 8 percent of all world production. Located in the North of Chile in the Atacama Desert, Escondida produces copper concentrate, by means of a flotation process of sulphide ore, and copper cathodes, using a leaching process of oxide ore. All of the ore is extracted from the open pit mine, which moves approximately 350 million tons of material per year. Information available on <http://www.mineraescondida.cl/Escondida/ingles/acerca.html>

more than \$21.5 million to the local community between 1996 and 2004. More than 354,000 people participated in Escondida's social programs in 2004.²⁸

Escondida recognizes that mining entails risks borne by companies and communities. Desiring to be a leader in sustainable mining, Escondida works to improve the environment and the quality of life of its employees and others living in the area surrounding its operation. For instance, Escondida developed several research programs with local universities, emphasizing marine and land biodiversity. In 1998, this research determined that the extraction of water from the local salt-marsh basin had been having negative impacts on the threatened Andean Flamingo. In response, the mine, in collaboration with the local government, established a project to maintain the salt-marsh habitat and develop other tools to ensure the possibility of flamingos' artificial breeding. This conservation effort preserves the surface-water system, helping to protect the flamingo population.²⁹

The examples of BCML and Minera Escondida Limitada demonstrate that the private sector is not only a key to reducing poverty in developing countries but it also can be a helpful player in the current environmental problem. Now, this role must be supported by governments in order to be efficient.

The main global polemic of the twentieth century was the link, or the lack of a link, between investment/trade and human rights. However, the recent climatic disorder has changed this. Nowadays, lawyers, politicians, investors and even citizens have to integrate environmental protection into the debate; especially because environmental protection has traditionally merged with human rights, and now deals with trade and investment. Due to the increase of natural disasters,³⁰ environmental protection has penetrated the traditional bipolar debate as a new branch. In the future, it would be interesting to examine whether the environmental protection issue can be seen as a "bridge" between human rights protection and investment/trade. At the same time, recent international actions, such as the Montreal Protocol and the Kyoto Protocol, demonstrate that environmental protection has to be part of every action that governments and citizens take.

²⁸ *Reporte de sustentabilidad (Sustainability Report) 2004*. Minera Escondida.

http://www.mineraescondida.cl/Escondida/pdf/Reporte_Sustentabilidad_2004.pdf

²⁹ *Making a Difference, How private enterprise is creating opportunity and improving lives in developing countries*; International Finance Corporation Report; 2007; p.52-53.

³⁰ *Climate Change 2007: Impacts, Adaptation and Vulnerability*; Working Group II Contribution to the Intergovernmental Panel on Climate Change; Fourth Assessment Report; p.5-10.

Chapter 2

The Kyoto Protocol.

I. The creation of the Kyoto Protocol, an emergency act to prevent global warming.

a) Global warming: Human causes and economic consequences.

- Human causes

The scientific community has reached a strong consensus regarding the science of global climate change. The world is undoubtedly warming.³¹ This warming is largely the result of emissions of carbon dioxide and other greenhouse gases from human activities (industrial processes, fossil fuel combustion, and changes in land use, such as deforestation). Indeed, global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use changes, while those of methane and nitrous oxide are primarily due to agriculture.³²

For the next two decades a warming of about 0.2°C per decade is projected. Even if the concentration of all greenhouse gases and aerosols was to be kept constant at year 2000 levels, a further warming of about 0.1°C per decade would be expected. According to the range of possible forecasting scenarios, and taking into account the uncertainty in climate model performance, the IPCC projects a global temperature increase of anywhere from 1.4 - 5.8°C from 2000-2100.³³

- Global economic consequences.

Continued greenhouse gas emissions at current rates would cause further warming and induce many changes in the global climate system during the 21st century that would *very likely* be larger than those observed during the 20th century.³⁴

This warming will have important consequences: Glacier retreat, ice shelf disruption, sea level rise, changes in rainfall patterns and an increased intensity and frequency in hurricanes and extreme weather events which involve potential challenges for public health.³⁵ Changes are expected with more intensity, and frequency. Africa, for instance, which is the continent most vulnerable to the impact of climate changes is already experiencing temperature increases of approximately 0.7°C over much of the

³¹ Pew Center on Global Climate Change, *Global Warming Basics, overview*. Available on <http://www.pewclimate.org/global-warming-basics/> See report: Climate Change 101: *Understanding and Responding to Global Climate Change*, 2006.

³² *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change; February 2007; p.2.

³³ *Climate Change 2007: The Physical Science Basis Summary for Policymakers* Intergovernmental Panel on Climate change. UNEP/IPCC WGI Fourth Assessment Report. p.3 and Summary approved at the 10th Session of Working Group I of the IPCC, Paris, February 2007.

³⁴ *Climate Change 2007: Impacts, Adaptation and Vulnerability*; Working Group II Contribution to the Intergovernmental Panel on Climate Change; Fourth Assessment Report; the 8th Session of Working Group II of the IPCC, Brussels, April 2007; p.5-12.

³⁵ IPCC Third Assessment Report: Climate Change 2001, Synthesis Report, p.9

continent, and with predictions that temperatures will rise further. Africa is facing a wide range of impacts, including increased drought and floods. In the near future, climate change will contribute a decline in food production, floods and inundation of its coastal zones and deltas, the spread of waterborne diseases and the risk of malaria, changes in natural ecosystems, and the loss of biodiversity.³⁶

Addressing climate change is not a simple task. To protect the economy and the land from the adverse effects of climate change, carbon dioxide emissions and other greenhouse gases must be reduced. To achieve this goal the way to power the global economy must be transformed, switching from a century of fossil fuel use and its associated emissions to a more efficient and renewable source of energy. Such transformation requires society to engage in a concerted effort, over the near and long-term, to seek out opportunities and design actions to reduce greenhouse gas emissions (GHG).

b) The international response.

The international response to climate change was launched in 1992, at the Earth Summit in Rio de Janeiro, with the ratification of the UNFCCC.³⁷ The Convention established a long-term objective of stabilizing GHG concentrations in the atmosphere “at a level that would prevent dangerous interference with the climate system.”³⁸ It also sets a voluntary goal of reducing emissions from developed countries to 1990 levels by 2000. This goal was not reached.³⁹

At the first Conference of the Parties of the UNFCCC in Berlin in 1995, the Contracting Parties reviewed the commitments by the developed countries under the Convention and decided that the commitment was inadequate for achieving the Convention's long-term objective. The Conference adopted the "Berlin Mandate" and launched a new round of negotiations on strengthening the commitments of the Contracting Parties from developed countries. On December 11, 1997, the third Conference of the Parties of the UNFCCC agreed to establish a new Protocol with a timetable and firm targets to reduce greenhouse gas: the Kyoto Protocol. In 1997, recognizing that stronger action was needed, countries negotiated the Kyoto Protocol, which sets binding targets to reduce emissions 5.2 percent below 1990 levels by 2012. Although the U.S has rejected Kyoto, more than 100 other nations have ratified it and many of the developed countries have begun efforts to meet their emissions targets. The Protocol legally entered into force on February 16, 2005.⁴⁰

On July 20, 1999, the Executive Directors of the IBRD approved Resolution 99-1 authorizing the establishment of the PCF; the first Kyoto Protocol investment fund. It is structured as a closed-end mutual fund serving as a new source of financing for projects in sustainable development in the energy, industrial, waste management, land rehabilitation, and clean technologies, with investment operations

³⁶ *Africa is particularly vulnerable to the expected impacts of global warming*; United Nations Fact Sheet on Climate Change. Conference of Nairobi. 2006.

³⁷ *Id.* Note 2.

³⁸ See article 2 of the United Nation Framework Convention on climate Change, available on <http://unfccc.int/resource/docs/convkp/conveng.pdf>

³⁹ *Upcoming COP 12/MOP 2 Meeting: What to Expect*; National Environmental Trust; October 2006.

⁴⁰ See UNFCCC website, “Kyoto Protocol” page: http://unfccc.int/kyoto_protocol/items/2830.php

expenses entirely funded by participants' annual contributions. The PCF projects generate emission reductions which are expected to be registered for the purposes of Kyoto Protocol Article 12 (Clean Development Mechanism) or Article 6 (Joint Implementation). Originally envisaged as a \$100-110 million fund, the IBRD raised its cap to \$180 million based on perceived demand.⁴¹

II. The Kyoto Protocol mechanisms.

a) The greenhouse gas emission reduction market.

The Kyoto Protocol designed a system called "Cap and Trade". A country caps its carbon emissions at a certain level and then gives to firms and industries the right to emit a stated amount of carbon dioxide over a time period. Firms are then free to trade these credits in a free market. In March 2007, two market places were able to trade carbon emission reduction credits: The European Union market and the Chicago Climate Stock Exchange (the U.S did not ratify the Kyoto Protocol but Americans members/companies can make a voluntary but legally binding commitment to reduce GHG emissions).⁴²

Firms whose emissions exceed the amount of credits will be penalized. The idea behind carbon trading is that firms that can reduce their emissions at a low cost will do so and then sell their credits on to firms that are unable to easily reduce emissions. A shortage of credits will drive the price of credits up and make it more profitable for firms to engage in carbon reduction. In this way the desired carbon reductions are met at the lowest possible cost to society.

Countries are separated into two categories: developed countries (Annex 1 countries) who have accepted GHG emission reduction obligations and must submit an annual GHG inventory; and developing countries (Non-Annex 1 countries), who have no GHG emission reduction obligations but may participate in the projects.⁴³

The carbon transactions are defined as 'purchase contracts whereby one party pays another party in exchange for a given quantity of GHG emission reductions, either in the form of allowances or "credits" that the buyer can use to meet its compliance objectives vis-à-vis greenhouse gas mitigation'.⁴⁴

The novelty in this market is the exchanged product. Indeed, usual markets deal with physical products (companies or natural resources) but GHG emissions are invisible and odorless. It is the air; everybody needs to breathe. Some authors criticize this "appropriation of the air."⁴⁵ They raise the

⁴¹ *The Prototype Carbon Fund, Addressing Challenges of Globalization: An independent Evaluation of the World Bank's Approach to Global Programs*. The World Bank Operations Evaluation Department; Lauren Kelly and Jeffery Jordan; 2004. p.vii.

⁴² For more information, see Carbon Finance website, "Emissions Trading" page: http://unfccc.int/kyoto_protocol/background/items/2880.php

⁴³ See UNFCCC website; "Kyoto Protocol" page; "Background" page: http://unfccc.int/kyoto_protocol/background/items/3145.php

⁴⁴ *State and trend of the carbon market 2006*. Washington DC. IETA and the World Bank. p.3.

⁴⁵ Daniel Tanuro, *Protocole de Kyoto: petit pas compromis, effets pervers garantis (Kyoto Protocol : Small steps compromised, perverse effects guaranteed)*. Le grand soir. 06/08/2005.

question of whether the ‘pure air’ or the ‘polluted air’ can be submitted as a property right. Will citizens have to pay for ‘atmosphere services’ as they now pay for clean water? Will we see a slippery slope akin water problem in the African continent? This theory is realistic and alarmist: Developed countries are initiating environmental projects in developing countries. Considering that investors will look for the better investment; in the future, when developing countries have to undertake ER, project opportunities will be fewer or more expensive than the present. Developed countries will have more difficulty buying credits “allowing them to pollute.” Problems will occur if economic development is blocked by the prohibition to emit carbon dioxide. UNFCCC members have to find an alternative to involve developing countries not only as “hosting” an environmental project; but also as beneficiaries in the carbon market.

b) The carbon credits mechanisms.

While the Montreal Protocol for the protection of the ozone layer (1989) was a “command and control” treaty,⁴⁶ the Kyoto Protocol was organized with market-based and flexible-mechanisms. This flexibility comes mainly from the pressure of governments and companies, who feared the cost of strict mechanisms similar to the Montreal Protocol.

Carbon transactions can be grouped into two categories:⁴⁷

1. Allowance-based transactions: the buyer purchases emission allowances created and allocated by regulators under cap-and-trade regimes.
2. Project-based transactions: the buyer purchases emissions credits from a project that can demonstrate that it reduces greenhouse gas emissions compared with what would have happened otherwise.

This paper will focus on the project-based transactions which include the PCF. The approval of a project by the PCF Executive Board implies a loan from the PCF, and the ER credits are then disbursed to the Participants regarding the ERs accomplished by the projects.

• The Clean Development Mechanisms (CDM).

An industrialized country that wishes to get credits from a CDM project must obtain the consent of the developing country hosting the project that the project itself will contribute to sustainable development. Then, using methodologies approved by the CDM Executive Board, the applicant (the industrialized country) must prove that the project would not have happened anyway, and must establish a baseline estimating the future emissions in absence of the registered project. The case is then validated by a third party agency, a ‘Designated Operational Entity’ to ensure the project results in real,

⁴⁶ The Montreal Protocol on Substances That Deplete the Ozone Layer is an international treaty designed to protect the ozone layer by phasing out the production of a number of substances believed to be responsible for ozone depletion. The treaty was opened for signature on September 1987 and entered into force on January 1, 1989. While the Kyoto Protocol proposes flexible mechanisms, the Montreal Protocol implemented a timetable with a series of stepped limits on substance without creating any flexibility for developed countries.

The Montreal Protocol is available at <http://hq.unep.org/ozone/Montreal-Protocol/Montreal-Protocol2000.shtml>

⁴⁷ *The Prototype Carbon Fund, Addressing Challenges of Globalization: An independent Evaluation of the World Bank’s Approach to Global Programs.* The World Bank Operations Evaluation Department; Lauren Kelly and Jeffery Jordan; 2004. p.2.

measurable, and long-term emission reductions. The Executive Board then decides whether or not to register the project. If a project is registered and implemented, the Executive Board issues credits, called Certified Emission Reductions (one CER being equivalent to one metric tone of CO₂ reduction), to project participants based on the monitored difference between the baseline and the actual emissions, verified by an external party.⁴⁸

- The Joint Implementation Mechanism (JI).

The JI allows industrialized countries with a GHG reduction commitment (Annex 1) to invest in emission reduction projects in another industrialized country as an alternative to emission reductions in their own countries. Countries with relatively high costs for emission reductions can reduce the costs of complying with their Kyoto targets by using credits from JI projects, as costs of emission reductions are significantly lower in some countries. A JI project might involve, for example, replacing a coal-fired power plant with a more efficient combined heat and power plant. Most JI projects take place in the Annex I Parties with economies in transition in Eastern Europe and the former Soviet Union, where the costs of reducing emissions are relatively lower.⁴⁹

Once considered a subject exclusive to environmentalist and non-governmental organizations, the climate change issue has moved up the policy agenda and entered into political negotiations and major global corporations.⁵⁰ As the first legal step in mitigating climate change, the Kyoto Protocol has the benefit to involve politics and companies in the problem. The Flexible Mechanisms of the Protocol are the only carbon trade mechanisms that have been recognized and implemented worldwide.⁵¹ Contrasted to the Montreal Protocol, the Kyoto Protocol is innovative, allowing choices in how to reduce their carbon dioxide emissions for companies. The success of the Protocol will depend on how effectively its mechanisms are implemented by companies and governments, such as the Prototype Carbon Fund; and then, how effectively it assists in decreasing carbon dioxide emissions.

⁴⁸ See article 12 of the Kyoto Protocol and UNFCCC website, “CDM” page:
http://unfccc.int/kyoto_protocol/background/items/2881.php

⁴⁹ See article 6 of the Kyoto Protocol and UNFCCC website, “JI” page:
http://unfccc.int/kyoto_protocol/background/items/2882.php

⁵⁰ *The Challenges of implementing the Kyoto Mechanisms*; D.Freestone, C.Streck; Environment Liability Lawtext; 2007. p.5.

⁵¹ *Id.* p.9.

Chapter 3

Specificity of the Prototype Carbon Fund.

I. A pioneer in the market for project-based Greenhouse Gas emission reductions.

a) Creation of the Prototype Carbon Fund.

The PCF is a \$180 million mutual fund for project-based carbon ERs, formed by the World Bank in response to the Kyoto Protocol. The Fund, owned by a group of 6 public sector and 17 private sector participants, is housed and managed within the Bank's Carbon Finance Group. The Fund is exclusively engaged in the two project-based Kyoto mechanisms, the CDM and JI, described above. Specifically, the PCF intermediates CDM/JI transactions between fund participants and host countries during the markets pilot phase so that parties can gain knowledge, build confidence, reduce risks, and develop capacity. While the PCF is not a formal implementing arm of the Kyoto Protocol, it is *de facto* facilitating the implementation of the Protocol by serving as an intermediary for prototype transactions.⁵²

The Bank received positive feedback from donors and clients throughout the concept phase. The carbon fund was launched in June 1997 at the UN General Assembly Special Session. This announcement was followed by a period of extensive consultations with stakeholders, interested parties and Bank clients to work out issues of fund design, governance structure, rights and responsibilities, project identification, and portfolio criteria. Discussions with members of the nongovernmental organization community also added value to the development of the PCF, particularly in the form of advice on transparency. The PCF was approved by the Bank's Board in July 1999 and was formally launched in January 2000.⁵³

b) Prototype Carbon Fund activities.

Promoting sustainable development is included as the first objective of the PCF's mission: "pioneer the market for project-based greenhouse gas emission reductions within the framework of the Kyoto Protocol and to contribute to sustainable development."⁵⁴

In order to reach this objective, the PCF undertakes several activities:⁵⁵

⁵²*The Prototype Carbon Fund, Addressing Challenges of Globalization: An independent Evaluation of the World Bank's Approach to Global Programs.* The World Bank Operations Evaluation Department; Lauren Kelly and Jeffery Jordan; 2004. p.9.

⁵³ For more information about the creation of the PCF, see: *The World Bank's Prototype Carbon fund: Mobilizing New Resources for Sustainable Development*; David Freestone; Kluwer Law International; 2001; p.280-284. And annex 1: List of the projects where the ERPAs were signed.

⁵⁴ International Bank for Reconstruction and Development, Resolution N'.99-1, *Instrument Establishing the Prototype carbon Fund*, 15 may 2000.

⁵⁵ *The Prototype Carbon Fund, Addressing Challenges of Globalization: An independent Evaluation of the World Bank's Approach to Global Programs.* The World Bank Operations Evaluation Department; Lauren Kelly and Jeffery Jordan; 2004. p.3.

- Serving as intermediary in ER transactions to reduce investors' risks and costs and ensure private sector participation in the market
- Increasing the base of available knowledge on all aspects of ER transactions by pursuing transactions in countries, sectors, and technologies where CDM or JI transactions have to occur.
- Disseminating knowledge broadly and building capacity in host countries, fund participants and other stakeholders, through the training and research activities of PCF *plus*.
- Sharing key lessons learned in implementing CDM and JI projects with policymakers involved in the evolving Kyoto framework
- Enhancing efficiency by working to streamline business processes, standardize carbon asset creation procedures, and, when possible, use intermediaries to bundle smaller transactions.

II. An environmental fund to promote sustainable development.

a) The novelty of the Prototype Carbon Fund.

At the start of the twenty-first century, fighting poverty and protecting the environment were two of the most urgent challenges facing the international community, as highlighted at the Earth Summit in Rio de Janeiro in 1992⁵⁶ and at the World Summit on Sustainable Development in 2002.⁵⁷ Developing countries will bear costs at the rate of 5-9 percent of their GDP (several times higher than the costs that would be borne by industrialized countries) and will have their global level of carbon dioxide concentrations doubled.⁵⁸ For these reasons, in 1997, the World Bank established a Global Carbon Initiative to examine how potential market-based mechanisms could help reduce the global concentrations of GHG and contribute to the sustainable development of its client countries.

To face these two crises, the IBRD of the World Bank launched the PCF. At the beginning of the process, the PCF takes into consideration both of the problems. Indeed, in schedule I of the Instrument establishing the PCF,⁵⁹ the trustee selects the projects (which could be approved during the Participants Meeting) in accordance with the guidelines, modalities and procedures of the UNFCCC and the Kyoto Protocol, the relevant national criteria (the national environment and development priorities of the Host Countries), the IBRD Country Assistance Strategy, the Global Environmental Fund (which implies that the PCF shall not compete with the GEF's long term operational program), and the achievement of National and Local Environmental Benefits. In addition, the project portfolio shall ensure a broad balance.

⁵⁶ UN Briefing Papers/*The World Conferences: Developing Priorities for the 21st Century*. 1997, 112 pp., ISBN 92-1-100631-7, Sales No. E.97.I.5.
<http://www.un.org/geninfo/bp/enviro.html>

⁵⁷ World summit on Sustainable Development (WSSD). Johannesburg, August 26- September 4, 2002.
<http://www.worldsummit2002.org/index.htm>

⁵⁸ The intergovernmental Panel on Climate Change, *Climate Change 1995: The Economic and social Dimensions of Climate Change*, Cambridge, UK: University Press, 1996.

⁵⁹ Schedule I to Instrument: Project Selection Criteria and Project Portfolio Criteria. 15 May 2000.

The Bank has been the first to purchase emission reductions in specific countries, technologies or sectors, or in poor communities. As a development institution, the Bank is committed to continue to pioneer carbon finance transactions but also to expand the frontiers of the market.⁶⁰

b) **Dissemination of the lessons learned.**

- Prototype Carbon Fund assistance.

The PCF's lessons learned have been documented and shared with the PCF Participants and Host Country Committee members, parties to the UNFCCC and other interested parties. However, there was still a lack of knowledge regarding the complexity of the PCF/Carbon Market/ Kyoto Protocol, especially for developing countries that did not take part in the negotiations.

PCF *plus* is a World Bank program that supplements the PCF with activities in the area of outreach, research, and training.⁶¹ The objectives of the program are to build the capacity of host countries and the PCF Participants, and to promote the market, the quality of GHG projects and ER credits by reducing risks and transaction costs. PCF *plus* coordinates closely with the PCF and other World Bank climate change activities.

It is the first comprehensive training program on carbon finance operations. It builds capacity in developing countries and economies in transition to attract investments that will contribute to local sustainable development while reducing GHG emissions or enhancing carbon sinks, and thus combating global climate change. Since its inception, the joint PCF training program developed and delivered training to 228 trainees from 27 countries, for a total of 542 training days. Numerous workshops have taken place. At the same time, other actions have been launched. For instance, the first cooperation in CDM training with a partner institution from a developing country, the Andean Centre for Economics in the Environment, used PCF's lessons learned and business processes as a means of increasing leverage in disseminating PCF knowledge and information.⁶²

PCF *plus* also funds a fellowship program under which negotiators and senior staff of agencies of PCF host country governments can visit the Bank to contribute their experience and to learn from the activities of the PCF. The fellowship program also contributes to the capacity of host countries to identify, plan and negotiate projects that generate GHG ERs in accordance with the Kyoto Protocol. PCF *plus* has also supported the participation of host countries in PCF meetings.⁶³

The PCF *plus* research program has initiated research projects to provide methodological support for PCF activities, such as the use energy service companies as intermediaries, the measurement of methane emissions from wood waste, the streamlining of procedures for very small CDM projects, CDM projects

⁶⁰ See Carbon Finance website, "FAQs" page: <http://carbonfinance.org/Router.cfm?Page=FAQ>

⁶¹ See Annex 2: Example PCF Plus Training Program/Schedule of Events.

⁶² See Carbon Finance website, PCF *plus* documents, "general;" *PCF plus Program, Indicative Work Program for World Bank Fiscal Year 2004*; 2 July, 2003: <http://carbonfinance.org/docs/PCFplusWorkProgramFY04.doc>

⁶³ *Id.*

impact on sustainable development, baseline methodologies, legal and regulatory aspects of implementation, and trends in the carbon market.⁶⁴

In 2004, in order to build the capacity of developing countries, the Bank launched the CF-Assist to provide a unified approach to developing countries and to coordinate all World Bank capacity building and training activities on carbon finance. The Community Development Carbon Fund supports small projects in less developed countries and poor areas of all developing countries and delivers additional environmental and social development benefits to poor communities. The development of these small-scale CDM projects is typically too expensive and often too risky for the private sector to undertake on its own.⁶⁵

- World Bank Carbon facilities assistance.

The UNFCCC took a particular interest in the least developing countries (LDCs). Fifty countries around the world can be classified LDCs.⁶⁶ The Conference of the Parties grants them advantages depending on the geographic situation of the country (low-lying coastal areas, areas which are prone to natural disaster), the fragile eco-system of the country and the economic situation of the country (an economy highly dependent on income generated from fossil fuel and associated energy-intensive products). The actions related to funding, insurance and transfer of technology made by the Participants (investors) shall meet the specific needs and concerns of the LDCs.⁶⁷ Nevertheless, the use of the term “shall” implies that Participants are not under a legal obligation, these are only guidelines; the non-application of this recommendation would not be considered a violation of law.

The National Adaptation Programs of Action (NAPA) gave assistance to LDCs by providing an expertise on the climatic, economic and social state of a country. It “identifies priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change”,⁶⁸ focusing on the development of adaptive capacity to climate variability. So far, fourteen countries have been considered and all of them are available on the internet.⁶⁹ The first NAPA was published on November 2004; however the question of whether it is useful to attract investment in developing countries cannot be answered yet.

The goals of the PCF are not only to mobilize new resources for environmental protection; but also for sustainable development. The keystone of the Fund is the theory of Article 6 and 12 of the Kyoto Protocol: the marginal abatement cost. For instance, the cost of financing an emission reduction in a

⁶⁴ *Supra*, note 61.

⁶⁵ For more information, see Carbon Finance Unite website, “Capacity Building” page: <http://carbonfinance.org/Router.cfm?Page=CapBuilding&ItemID=24674>

⁶⁶ See list at the UNFCCC website.

http://unfccc.int/files/cooperation_and_support/ldc/application/pdf/list-ldcs-30nov06.pdf

⁶⁷ Article 4, paragraphs 8 and 9, of the Convention (decision 3/CP.3)

⁶⁸ See UNFCCC website: National Reports, NAPAs.

http://unfccc.int/national_reports/napa/items/2719.php

⁶⁹ *Id.* List of the fourteen NAPAs.

relatively fuel efficient, industrialized country, will usually be far higher than in a developing country or country with economy in transition, which may have less efficient-fuel technology.⁷⁰

The PCF is an attempt to start the process of implementing the Kyoto Protocol. The size of the Fund and its limited time period are specifically designed to show that the Fund was launched as a prototype for the World Bank to further elaborate such funds.⁷¹ The PCF is designed as a Kyoto Mechanism implementation example for the private sector, therefore it includes a public/private collaboration.



⁷⁰ *The World Bank's Prototype Carbon Fund: Mobilizing new resources for sustainable development*; D.Freestone; Klumer; Liber Amicorum; 2001; p.290.

⁷¹ *Id.* p.272.

Chapter 4

The public/private collaboration.

I. The link between the players.

a) The participants.

PCF answers to two constituencies: the Bank and Participants who “own” the fund.

The PCF uses funds made available by its 23 participants:⁷²

6 governments: Public sectors participants contribute U.S \$10 million.

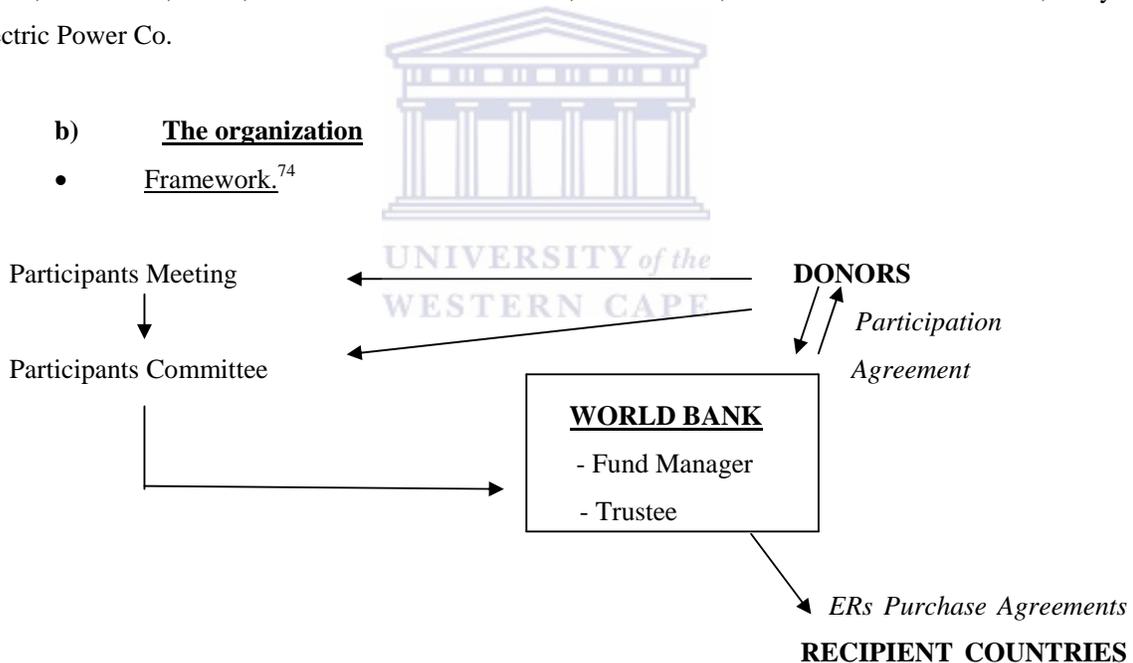
The Netherlands, Finland, Sweden, Norway, Canada, Japan

- 17 companies:⁷³ Private sector participants contribute U.S \$5 million.

British Petroleum-Amoco, Chubu Electric Power Co., Chugoku Electric Power, Deutsche Bank, Electrabel, Fortum, Gaz de France, Kyushu Electric Power Co., MIT Carbon, Mitsubishi Corp., Norsk Hydro, RaboBank, RWE, Shikoku Electric Power Co., Statoil ASA, Tohoku Electric Power Co., Tokyo Electric Power Co.

b) The organization

- Framework.⁷⁴



⁷² See Carbon Finance Unit website, “Carbon Funds and Facilities” page, “PCF” page, “Participants” page: <http://carbonfinance.org/Router.cfm?Page=PCF&FID=9707&ItemID=9707&ft=Partics>

⁷³ British Petroleum-Amoco (Oil) U.K; Chubu Electric Power Co. (Electricity) Japan ; Chugoku Electric Power Co. (Electricity) Japan , Deutsche Bank (Financial) Germany; Electrabel (Energy) Belgium; Fortum (Energy) Finland; Gaz de France (Energy) France; Kyushu Electric Power Co. (Electricity) Japan; MIT Carbon (Trade) Japan; Mitsubishi Corp. (Trade) Japan; Norsk Hydro (Oil) Norway; RaboBank (Financial) the Netherlands; RWE (Electricity) Germany; Shikoku Electric Power Co. (Electricity) Japan; Statoil ASA (Oil) Norway; Tohoku Electric Power Co. (Electricity) Japan; Tokyo Electric Power Co. (Electricity)Japan.

⁷⁴ *The evolving Role of the Trust as a Mechanism for International Development Aid and Philanthropy.* Sophie Smith, April 6, 2006.

- Functions⁷⁵

- The Participants Meeting (Art.5): Held annually, they approve and review the business plan and elect the members of the Participants. The voting structure is ‘one vote for each dollar of its contribution’.

- The Participants committee (Art.6): composed of 5/7 members, it provides advice to the trustee, reviews the operations and authorizes expenditures.

- The Host Country Committee (Art.7): It only provides advice to the trustee.

Contrary to what the Information Memorandum of July 30, 1999 stipulated, the recipient countries have little power in the decisions. Every project requires prior Host Country Approval, nevertheless, the Host Country does not have any competence to change or adapt the project. These non-voting observers can only accept and ‘host’ the project or refuse it.

II. Conflicts of interest:

a) Between the trustee and other international organizations.

- The IBRD and the World Bank as trustee.

Article 17 of the Instrument Establishing the PCF avoids any potential conflicts of interest between the IBRD and the Trustee by discharging the Trustee of any obligation to “prosecute, defend, compromise, negotiate, abandon or adjust, by arbitration, or otherwise, any action, suit, proceeding, dispute, claim or demand or any default or potential default by a Host Country or Project Entity under a Project Agreement or by the UCF Trustee under any UCF Participation Agreement in any way relating to any Project Agreement. If the Trustee determines that it will refrain from taking any such action, the Trustee shall so notify the Participants and the Trustee and the Participants shall use their best efforts to endeavor to agree to satisfactory arrangements for dealing with such a dispute including the assignment and transfer of all or part of the Trustee’s rights and obligations under the relevant Project Agreement or participation agreement to the Participants or to a third party acting on their behalf. The Trustee shall have no liability to the Participants as a result of the Trustee’s determination to refrain from taking any such action in respect of a dispute or as a result of the failure of the Trustee and the Participants to reach such satisfactory arrangements in a timely manner or otherwise.”

Article 17 ensures the respect of some of the principles governing any Trust.⁷⁶ However, while these strong boundaries avoid any conflict of interest, it may prevent intersection between the IBRD actions and the PCF actions which would be useful for some projects.

⁷⁵International Bank for Reconstruction and Development, Resolution N°.99-1, *Instrument Establishing the Prototype carbon Fund*, 15 May 2000.

⁷⁶ See below, chapter 5.1 b)

- The trustee and other carbon funds.

The PCF and the new carbon funds launched since 2000 may involve several conflicts because they are dealing in the same field (investments in environmental projects seeking credits through the Kyoto Protocol), although few (like the Community Development Carbon Fund) are focused on development. These funds were created after the Instrument Establishing the PCF; therefore, it appears that there is a lack of legislation in the case of conflict of interest.⁷⁷

Regarding the Global Environmental Fund (GEF), Schedule I d) of the Instrument makes sure⁷⁸ that the trustee checks that ‘projects are complementary to the GEF and do not compete’ with it. It appears necessary that the IBRD will take some measures to insure the same clearance as the PCF/GEF for the PCF/funds created after 2000.

b) Between the trustee and the participants/countries involved.

- The participants and the host countries.

As trustee and intermediary, the World Bank is exposed to conflicting interests. Participants see it as a mechanism for prototype carbon trading and proprietary knowledge generation within a fund they own. Host Countries see it as a Bank initiative to meet training, capacity building, and market information needs and supports high prices and sequestered carbon volumes. While there are many private voluntary transactions, 90 percent of these are confined to industrialized economies. The PCF is fully established as a credible, unbiased authority to bridge the buyer-seller gap involving developing countries,⁷⁹ particularly the poorest among them, but the dual choice offered to the developing countries to host a project shows a will to involve them as little as possible.⁸⁰

This includes a conflict of interest within the World Bank: As Trustee of the Fund, it negotiates Projects Agreements on behalf of the Participants in Host countries. At the same time, as a World Bank Institution, it conducts its main business as a lender to its developing member countries, including those who became ‘Host countries’ in the PCF.

⁷⁷ The PCF became operational in 2000; the Netherlands CDM Facility in 2002; Community Development Carbon Fund and the Italian Carbon Fund in 2003; BioCarbon Fund, the Netherlands European Carbon Facility and the Spanish Carbon Fund in 2004; the Danish Carbon Fund in 2005. See Carbon Finance website, “Carbon Funds and Facilities” page.

⁷⁸ The Global Environment Facility, established in 1991, helps developing countries fund projects and programs that protect the global environment. It grants support projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.
Website: <http://www.gefweb.org/>

⁷⁹ *The Prototype Carbon Fund, Addressing Challenges of Globalization: An independent Evaluation of the World Bank’s Approach to Global Programs.* The World Bank Operations Evaluation Department; Lauren Kelly and Jeffery Jordan; 2004. p.xii.

⁸⁰ See Art. 7, Sect.2: Powers of the Host Country Committee of the IBRD, Resolution N°.99-1, *Instrument Establishing the Prototype carbon Fund*, 15 May 2000: The Host Country Committee shall have the following powers: “providing advice ...to the Project Selection Criteria and Project Portfolio Criteria; b) providing advice... on the composition of the Project portfolio and providing views on the consistency of the Project portfolio...c) providing advice...on how to effect an equitable sharing between the Participants; d) providing advice... to on Project implementation; e) providing advice...on the development and improvement of vehicles for the dissemination of the knowledge gained by it in the development of the Fund and the implementation of Projects.”

- The trustee and the participants.

The nature of the participants (governments and international companies) engages them in numerous and various national and international activities; therefore, some conflicts of interest can be raised. First, the Trustee has to ensure that Participants have no others financial interests in the project. If this is the case, the Trustee has the ability to decide to exclude the Participant from the Participant Committee's deliberations. There would be sanctions if the Participant does not disclose its interest in a project in a timely manner.⁸¹

One of the objectives of the World Bank was to model the way in which the private sector may set up a similar fund.⁸² The PCF legal documents clearly lay out the duties and powers of each of the participants involved in the Fund. Nevertheless, the legal documents neglect issues which might arise between the PCF and a third party, and gives an symbolic power to the countries hosting projects; which may conduct a dispute (For instance, a country accepts to host a project, advice Participants on it; and the Participant Meeting decides to ignore this advice). In case of a dispute, the PCF legal documents do not provide a clear solution.



⁸¹ Article 17.2, International Bank for Reconstruction and Development, Resolution N°.99-1, *Instrument Establishing the Prototype carbon Fund*, 15 May 2000.

⁸² *The World Bank's Prototype Carbon Fund: Mobilizing new resources for sustainable development*; D.Freestone; Klumer; Liber Amicorum; 2001; p.285.

Chapter 5

The Role of the World Bank as Trustee, the liability issue.

I. The role of the World Bank as a trustee.

a) Reasons for using the trust mechanisms.

- The role of the Bank as trustee of market facilitation and catalyzation.

The main reason for a company or a government to use a fund which includes the World Bank as a trustee is to gain market confidence to mitigate risk. The eight carbon funds that the World Bank currently manages have almost sixty private and public participants. For many of them, participation in the Bank's Carbon Funds enables them to learn business procedures that they can integrate into their own carbon purchasing facilities, thus substantially reducing their market entry risk.

As was stated in chapter 3, the PCF *plus* makes numerous resources available for companies or governments.

From the investor side, this structure also avoids the risk of change and of transfers (the insurance fees as well), and strengthens the reimbursements. And from the developing countries' side, the Trust, by its nature, guarantees the respect of national legislation as well as human rights.

- Assistance in purchasing emission reduction credits.

The Bank encourages the seller to make an informed decision on whether to sell Certified ERs or Verified ERs based on sufficient understanding of the relative risks and price trade-offs between the two assets.⁸³

In fact, the trustee contracts with an independent third party for the verification of the project which includes the determination that the GHG reductions achieved by the Projects have been assessed correctly. It is then the task of the Trustee to seek Certification of the GHG Reductions. When the World Bank carbon fund purchases Verified ERs, payment is made regarding the outcome and whether assets fully meet compliance standards and are converted to Certified ERs. In this case, the Bank seeks to maximize the share of Verified ERs that becomes Certified ERs through its diligence and its work on methodology development. Once the GHG Reductions have been certified, the trustee pay for the ERs and/or share certain of the ERs with the recipients as agreed in the Project Agreements.⁸⁴

⁸³ Verified ERs are units of greenhouse gas reductions generated from CDM projects under the Kyoto Protocol, in developing countries and verified by external, UN-accredited third party verifiers. Certified ERs are also project-based but have undergone registration (e.g. by the CDM Executive Board). Certified ERs can be used for compliance with Kyoto Protocol obligations or to meet emissions caps under the EUETS. It is a European Union wide cap and trade emissions trading system, which trades in "EU Allowances".

⁸⁴ Article 8, International Bank for Reconstruction and Development, Resolution N°.99-1, *Instrument Establishing the Prototype carbon Fund*, 15 May 2000.

b) The legal principles governing the Trust.

- 'Gold's Code of principle'.⁸⁵

The PCF, as with any other trust fund, must follow five rules:

- It is not a legal entity; therefore, does not have a legal personality.
- The rights of property ownership are subject to a trust divided between the trustee and the beneficiaries. The trustee must keep the trust property separate from his own property.⁸⁶
- The care and skill required of the trustee are those that a man of ordinary prudence would exercise. A trustee must also avoid unreasonable risk.
- It may not engage in 'self-dealing' in administering the trust.
- A trustee administers the trust solely in the interests of the beneficiaries and impartially between beneficiaries.

- Functions of the trustee.

In addition to providing opportunities and security business for private companies, governments and host countries (see above), the trustee has several others roles:

- The trustee approves each project proposal prior to the Participants Committee review.⁸⁷
- The trustee seeks the requirements in order to obtain the verification and certification of the GHG Reductions according to the modalities of the UNFCCC.⁸⁸
- The trustee has an administration role: Manages the day-to-day operations of the Fund with its Fund Manager (which includes technical and operational specialists).⁸⁹
- The trustee provides verification and monitoring when the projects are approved.⁹⁰

II. The liability issue.

a) The risks.

- International exposition.

Because of the international nature of the PCF, many risks may arise from participation:

- The activities undertaken by the fund (including the ERs) may not meet the requirements developed under the framework of the UNFCCC or the Kyoto Protocol. If this is the case, the value of the ERs would decrease substantially.
- Article 12.8 of the Kyoto Protocol provides that 'a share of proceeds from certified project activities undertaken under Article 12 will be used to cover administrative expenses and the climate

⁸⁵ *The evolving Role of the Trust as a Mechanism for International Development Aid and Philanthropy*. Sophie Smith, April 6, 2006.

⁸⁶ Art. 2, Sect. 2 and Art.8, International Bank for Reconstruction and Development, Resolution N' .99-1, *Instrument Establishing the Prototype carbon Fund*, 15 May 2000.

⁸⁷ *Id.* Art.3, Sect.3.

⁸⁸ *Id.* Art. 13, Sect. 3.

⁸⁹ *Id.* Art. 8, Sect. 1 and 3.

⁹⁰ *Id.* Art. 8, Sect. 7.

change adaptation costs of some developing countries.’ Without any estimation, there is a risk that the fund will spend an amount higher than expected to acquire Certified ERs from Article 12.

- The fund documents the host country’s approval for each project, but the projects also need voluntary participation and approval of the party involved in the project. There is a risk that the approval would not be obtained.

- In addition, future international agreements might be adopted by the UNFCCC imposing new restrictions.

- The emerging carbon market.

In the initial Kyoto Protocol, the Protocol would have been closed in 2012. Therefore, there was a lack of certainty about the post-Kyoto situation. In November 2006 the Conference on Climate Change in Nairobi decided to continue the Kyoto Protocol, despite lingering doubts about the future of the carbon market and the ERs.⁹¹

The international and national regimes governing the carbon market (sale, transfer, ownership of ERs) are not well developed. Many abuses have occurred, such as the HFC-23 which had an important negative impact on the carbon market.⁹² Due to the high risk, CDM/JI projects need to be supported by strong rule of law⁹³ and to follow the warranties offered by the carbon market instruments. Traditionally, the key to the success of trading markets is defining and quantifying in a transparent and consistent manner. Five elements are essential for emissions trading: markets operating effectively (measurement: Quantifying emissions accurately), transparency (making reporting and program operations publicly available), accountability (holding participants accountable for meeting their goals), fungibility (minimizing constraints on transactions), and consistency (applying fixed rules objectively and automatically).⁹⁴

The carbon market is already highly risky due to the novelty of the exchanged product (the GHG emissions are invisible and odorless),⁹⁵ the flexibility of the actions permitted to reduce emissions, and

⁹¹ For more information about the post-Kyoto issue: *Where to next? Future steps of the global climate regime* Taishi Sugiyama, Kristian Tangen, Henrik Hasselknippe, Axel Michaelowa, John Drexhage, Jiahua Pan, Jonathan Sinton, and Arild Moe; *Briefing Paper*, Institute International for Sustainable Development. December 2004

⁹² The HFC-23 is a substitute of the HCFC which has a negative impact on ozone depletion and a global warming. The HFC was not included in the Montreal Protocol in 1987 but in the Kyoto Protocol. Forbidden in the developed world but not in the developing countries, China has still the right to emit HFC-23. The companies from developed countries prefer to invest to capture the HFC-23 in developing countries because it is cheaper. Nevertheless, it jeopardizes the carbon market by emitting too many cheap carbon credits.

For more informations, see *Concerns about CDM projects based on Decomposition of HFC-23 Emissions from 22 HCFC Production sites*. October 2004. 041008. DOC INTRAS. Othmar Schwank AND *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories. HFC-23 Emissions from HCFC-22 Production 271* by William N. Irving (http://www.ipccnggip.iges.or.jp/public/gp/bgp/3_8_HFC-23_HCFC-22_Production.pdf)

⁹³ The rule of law is a doctrine in which every person is subject to the ordinary law within the jurisdiction, and more exactly, that general constitutional principles are the result of judicial decisions determining the rights of private individuals in the courts. Black’s Law Dictionary. Eighth edition, Bryan A. Garner. Thomson/West.

⁹⁴ *Market Mechanisms and Global Climate Change: An analysis of Policy Instruments*. Prepared for the Transatlantic Dialogues on Market Mechanisms. Peterson, Dudek, Goffman. Environmental Defense Fund in cooperation with the Pew Center on Global Climate change. 27 of October of 1998. Paris.

⁹⁵ Several disturbance hit the Carbon market in 2006 (May, April); it emerged more permits had been allocated in the first phase of the scheme (2005-2008) than businesses needed; the allocations were based on countries’ inflated

the division of the target (developed countries must reduce their GHG emissions but not developing countries). Therefore the carbon trading market must ensure compliance of five traditional key elements and reinforce some of them, such as the accountability factor which must be clear.⁹⁶ For instance, the “additional” principle of a CDM project is described well enough in the guidance. The Conference of the Parties at the UNFCCC should enact regulations in order to provide a more understandable and stable view to keep confidence in the carbon market. In addition, because of the nature of this new market, the legal change would have to respect the flexibility of the developed country initiatives.⁹⁷

- Host country risks.

The PCF’s projects are localized exclusively in developing countries. Many of the developing countries suffer from corruption or political changes, which may jeopardize the projects, especially because of the timing of implementation (investment in projects requires a long-term commitment) and the volume and value of the ERs produced.

Besides that, the project may not generate the predicted amount of ERs (depending on the availability of natural resources, adverse weather conditions etc.). The operation of project facilities and the implementation of energy conservation and efficiency projects involves numerous risks (any failure in these kind of technologies will cost a large amount of money).

- b) The remedies.

- Limits on liability.

Article 12.4 of the instrument establishing the PCF clearly provides that there will be no personal liability. Neither the Trustee, the Bank, the Participants nor any of their agents will have any personal liability to any third party in connection with the activities of the Fund. The Trustee will indemnify the Participants, and will be indemnified against any loss, liability, cost, claim, action, demand or expense which such person may incur arising out of the Fund activity except, for gross negligence or willful misconduct (12.2). In this case, the Participant’s potential liability regarding the nature of the Trust Fund is intended to be limited to the amount of their respective contributions. However, the novelty of the PCF and the uncertainty about the interpretation of the instrument establishing it under a jurisdiction may not guarantee the application of this last affirmation.

projections of expected emissions. For more information, see: *EU orders tougher new emissions targets to meet Kyoto commitments*. Financial Times; November, 30th of 2006. p.6

⁹⁶ For instance, many controversies are taking place regarding the forestry activity within the framework of the Kyoto Protocol; it implies many scientific incertitude as well as legal incertitude. e.g.; the language of article 3.3 of the Kyoto Protocol is confusing and complicated: the omission of forest management, conservation and protection might imply that these activities would not be considered as ER in the future. However, article 6 (the projects can be developed in any sector of the economy) might include the management and conservation of forests for ER credits. Activities, measures and consideration have to be clear in order to avoid any abuses. In addition, there are uncertainties about the benefit of current environmental projects showing a lack of regulations which may affect the quality of the investment. For more information, see: Tree power website, *Planet Power*, Energy and the Environment: *A research commitment on Renewable Biomass Energy & Global Warming by using Nature's own Power Plants!* And Intergovernmental Panel on Climate Change. Twentieth Session. February 19, 2006.

⁹⁷ For other controversies, see Chapter 6: Imperfections of the Fund.

- Dispute settlement.

Article 18.2 provides that any claims, disputes or controversies between the Trustee and a Participant relating to the instrument or a Participation Agreement will be settled by arbitration in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL). In the event of a conflict between the terms of the Instrument/participation Agreement and the rules of the UNCITRAL, the terms of the former prevail.

Nevertheless, the instrument does not provide anything in case of a dispute between the Trustee and a host country or a third party (such as local communities). It is doubtful that the Instrument establishing the PCF would be applied in this last case because local communities are a 'third party', so are not bound by the agreement. Therefore, the dispute would be resolved in the national jurisdiction, in civil law between the third party and the host country that has approved and participated in the project, depending on the country's law. So far, no claims regarding the CDM projects have been brought to any national jurisdiction or international jurisdiction. Regarding the current controversies,⁹⁸ this issue should be resolved.

In the future, if the level of carbon dioxide concentration in the atmosphere should be doubled, developing countries would suffer economic costs of 5 to 9 percent of their GDP, several times higher than industrialized countries. The poorest of the Bank's borrowing countries would be at the greatest disadvantage.⁹⁹ For this reason, "the World Bank has come a long way since the days it was the preferred villain of the environmental movement."¹⁰⁰ The World Bank, with the creation of the PCF and the largest environmental fund, the Global Environmental Facility,¹⁰¹ is now fully involved in the environmental protection movement. In the PCF, its role as a Trustee is to help developed countries, the private sector and developing countries. The carbon market, the novelty of the Protocol and the international exposure of the investment had generated many risks and uncertainties. So far, despite criticism from third parties, the PCF has not faced any dispute settlements between the parties. However, some rules have to be clearer in order to prevent claims and disputes.

⁹⁸ See illustration: The Plantar Project, Chapter 6, II.

⁹⁹ *The World Bank's Prototype Carbon Fund: Mobilizing new resources for sustainable development*; D.Freestone; Klumer; Liber Amicorum; 2001; p.280.

¹⁰⁰ Peter H. Sand, *Trusts for the Earth: New International Financial Mechanisms for Sustainable Development*; Transnational Environmental Law: Lessons in Global Change, 299 (1999).

¹⁰¹ See GEF website, available at: <http://www.gefweb.org/default.aspx>

Chapter 6

First results of the Prototype Carbon Fund.

I. The state and trends of the Prototype Carbon Fund.

a) After seven years in existence.

In 2005, the overall value of the global aggregated carbon markets was over US\$10 billion. The majority of the activity has taken place via project-based transactions – mostly within the context of compliance with Kyoto – through bilateral programs, (via intermediaries like IFC and IBRD) and through the PCF. The market share of CDM credits from developing countries was about 49.2 percent of overall volume transacted globally. In the first three months of 2006, the CDM's market share of the overall carbon market volume was about 27.2 percent. The JI projects remained a very small contributor at about 4.7 percent.¹⁰²

The PCF was originally envisaged as a portfolio of 12 to 15 large projects. However, it closed its portfolio with 24 programs resulting in some \$180 million in ER Purchase Agreements.¹⁰³ The unanticipated demand for funding during the early stages of development resulted in a redistribution of investment across a greater number of smaller projects but the resulting smaller-than-average size has increased transaction costs. The PCF has diversified its regional distribution, moving away from a concentrated deal flow in the Latin American and Caribbean region to portfolio development in East Asia but not in the African continent (only 2 ER Purchase Agreements have been signed).¹⁰⁴

Because the Fund is housed in the World Bank, developing countries had a strong expectation that it would perform a variety of national public good functions they would not expect from the private sector (information and knowledge sharing, training, and institutional capacity building). Thus, although the PCF was not designed as a capacity-building program, the Bank's clients expect institutional capacity building to address specific needs. The realization that host countries and local intermediaries will require long-term assistance to tap into the carbon market has also led to a debate within the World Bank Group about which body is best suited to assist its clients in a broader market development context.¹⁰⁵

The PCF will end in December 2012. Although participants can unanimously continue Fund business after this, PCF's Board-approved proposal states it does not intend to remain a major player in the carbon market. In response to the need for further stimulus to the CDM market, the Bank has developed new carbon-transaction mechanisms. For instance, it launched the Netherlands Clean

¹⁰² *State and Trends of the Carbon Market, 2006*. Washington DC, May 2006. International Emissions Trading Association/ World Bank. Executive Summary, p.1.

¹⁰³ See Annex 1:List of the projects where the ERPA were signed.

¹⁰⁴ See Carbon Finance Unit website ; "Carbon Funds and Facilities" page, "Prototype Carbon Fund" page: <http://carbonfinance.org/Router.cfm?Page=PCF&FID=9707&ItemID=9707&ft=Projects>

¹⁰⁵ *The Prototype Carbon Fund, Addressing Challenges of Globalization: An independent Evaluation of the World Bank's Approach to Global Programs*. The World Bank Operations Evaluation Department; Lauren Kelly and Jeffery Jordan; 2004. p.x.

Development Facility, a bilateral program with the Dutch government to purchase €140 million in emission reductions from projects in developing countries.¹⁰⁶

b) Prototype Carbon Fund: An example followed.

As the first carbon fund, the PCF is a real success. The subjacent objective has been reached: It has been an example and an exceptional impulsion for the creation of numerous other funds. Over the past seven years the carbon finance activities at the World Bank have grown from a \$180 million PCF to include nine carbon funds and facilities, with a total capitalization of about \$1.9 billion. The creation of new funds provides a vital opportunity for Bank clients to benefit from CDM/JI projects.¹⁰⁷

However, these initiatives have generated some controversies. Civil society is worried about programs seen as allowing industrialized countries to shift the burden of reducing emissions to the developing world. For instance, environmental NGOs have been opposed to the inclusion of land use and forestry projects in the CDM, which are included but still limited. In the case of the BioCarbon Fund, environmental NGOs claim that it will promote mono-cropping of tree species, moving the attention away from preserving oldgrowth forests, with their vital biodiversity. There are also complex issues related to the determination and the sustainability of generated benefits, adding to the risks of investments in carbon finance. The PCF seems to be well aware of these controversies¹⁰⁸ and risks but has some difficulties (See below Plantar project, Brazil).

The other Carbon Funds and Facilities:¹⁰⁹

- The Netherlands CDM Facility: Operational in May 2002, with a total capital of \$264.7 million.
- Community Development Carbon Fund: Specialized in projects in the poorer areas in the developing world. The CDCF became operational in March 2003.
- Biocarbon Fund: Created by the World Bank in May 2004, it specializes in forest and agro-ecosystem. With \$53.8 million, over 150 projects proposals have been submitted.
- Italian Carbon Fund: Created in 2003 with a total capital of \$155.6 million.
- Netherlands European Carbon Facility: Operational in August 2004, it only purchases emission reductions from JI projects.
- Danish Carbon Fund: Created in 2005, it only has 6 participants and 2 projects (March 2007).
- Spanish Carbon Fund: With capital of \$278.4 million and 5 projects, operational in 2004.

¹⁰⁶ See Carbon Finance Unit website ; “Carbon Funds and Facilities” page, “The Netherlands CDM Facility” page: <http://carbonfinance.org/Router.cfm?Page=NCDMF&FID=9711&ItemID=9711&ft>About>

¹⁰⁷ *Supra*.note 98.

¹⁰⁸ For example, the PCF has been criticized for the use of the term "environmental additionally" in its official submissions to the CDM Executive Board. Recently, it provides through the Carbon Finance website a description of the context in history and in UNFCCC documents in which the PCF has used this term. PCF recognizes and accepts that this term is not found in official documents of the UNFCCC and no longer uses the term in its submissions to the CDM Executive Board. See *Clarification on the Use of the Term “Environmental Additionally” by PCF*; available at <http://carbonfinance.org/docs/EnvironmentalAdditionalty.doc>

¹⁰⁹ See Carbon Finance Unit website ; “Carbon Funds and Facilities” page: <http://carbonfinance.org/Router.cfm?Page=Funds&ItemID=24670>

- Umbrella Carbon Facility: With \$719 million, its purpose is to pool funds from IBRD-managed carbon funds for the purchase of ER from large projects. One part of the UCF is dedicated to purchasing CERs from widely criticized China HFC-23 projects.¹¹⁰ In March 2007, only 2 ER Purchasing Agreements were signed. Both deal with the HFC-23.

II. Fund Imperfections.

a) Controversies.

- The forestry projects; a dangerous alternative.

Forests are essential to mitigate climate change. They store or emit massive amounts of GHG. Carbon is incorporated into forests through photosynthesis. A forest, composed of young trees, acts as a sink; but mature forests (various aged and dead trees) emit and absorb a neutral amount of carbon dioxide. So, forests are able to challenge global warming, depending on how they are managed. However, the cooling effect of carbon sequestration¹¹¹ is not absolute: New forests may initially be a source of carbon dioxide emissions when the carbon from the soil is released; as well as a reforestation which decreases the reflection of the sunlight. Forests also enhance the biodiversity by providing habitats for many species of plants and animals, and can also provide fuel and energy. Lastly, abundant availability of natural resources close to villages reduces conflicts over those resources. Article 3 of the Kyoto Protocol focuses on the change in GHG emissions by source, and on removals by sinks resulting from forestry activity.¹¹² The forestry activity concerns Annex II countries. Only afforestation¹¹³ and reforestation¹¹⁴ are eligible to create ERs, and only in the first commitment period of the Kyoto Protocol (2008-2012). Forest conservation activities or activities avoiding deforestation (conservation of existing carbon stocks), are not yet eligible. Tree planting includes re-creating natural forests and monoculture (planting crops with the same patterns of growth resulting from genetic similarity). Monoculture tree farming allows the production of biodiesel, a fuel derived from biological sources such as vegetable oils, and logging, a process in which trees are cut down for the wood product industry.¹¹⁵

Costs of forestry activities are lower than for other activities allowed by the Kyoto Protocol. In some tropical developing countries, it costs US\$0.1 to US\$20/metric ton carbon dioxide.¹¹⁶ But the

¹¹⁰ *Supra*. Note 91.

¹¹¹ Carbon sequestration describes processes that remove carbon from atmosphere (it exists many way of artificially capturing and storing carbon: Mineral sequestration, ocean... as well as natural sequestration processes such as forestation). A the contrary, a carbon dioxide sink is a carbon reservoir which increases in size (opposite of a carbon source); the two main natural sinks are oceans and plants.

¹¹² See A/R activity eligibility test for CDM. Legal background to the A/R CDM project activities: FCCC/KP/CMP/2005/8/Add.3. ANNEX. United Nations Framework Conference for Climate Change.

http://cdm.unfccc.int/public_inputs/Eligibility_lands4AR_PA/cfi/A1LQ5WNJ8RVFLJZDNBG8S47J1OBT8A

¹¹³ Afforestation is the process of converting an open land into a forest by planting trees or seeds.

¹¹⁴ Reforestation is the process of restoring areas of woodlands or forests that once existed but were deforested, removed or destroyed in the past.

¹¹⁵ For more information, see Tree power website, *Planet Power*, Energy and the Environment: A research commitment on Renewable Biomass Energy & Global Warming by using Nature's own Power Plants!

¹¹⁶ Intergovernmental Panel on Climate Change. Twentieth Session. February 19, 2006.

language of Article 3.3 of the Protocol is confusing and complicated. For example, the omission of forest management, conservation and protection might imply that they would not be considered as ERs in the future. However, Article 6 (the projects can be developed in any sector of the economy) might include the management and conservation of forests for ER credits. Activities, measures and consideration have to be clear in order to avoid any abuses which affect the quality of the investment. However, the major problem in the use of forestry carbon as a solution to fight global warming is that the carbon sequestered in the newly planted trees will be again released as carbon dioxide when the tree dies (when the wood 'disappears'). Forestry activities imply scientific uncertainty; there are continuous new theories on the relationship between the atmosphere/carbon dioxide and trees/vegetation. The measurable impact of the tree on climate change is still unknown. The only unanimity within the scientific world is that the use of forestry carbon is an inadequate substitute for long term fossil fuel use reduction. The negative impacts are merely delayed. Every tree will die, and civilization will have to plant forests again (every 50-100 years). This solution can only be temporary. "To prevent climate change; we must focus on effective strategies and not just 'feel-good' strategies."¹¹⁷

With forestry activity, companies have managed to acquire cheap ER credits. Therefore, a new debate has taken place in the UNFCCC: The introduction of 'avoided deforestation' activity in the Kyoto Protocol. Deforestation currently accounts for nearly twenty percent of all anthropogenic GHG emissions.

The PCF is involved in three JI forestry activity projects (Romania, Moldavia and Hungary), and two CDM forestry projects in Brazil. One involves monoculture activities which has prompted debate regarding eco-system degradation.¹¹⁸ The other project that has been widely criticized is the Plantar Project.

- The Plantar Project example.¹¹⁹

The Plantar project in Minas Gerais, Brazil is the first carbon sink project seeking credit through the Kyoto Protocol's CDM (in 2002). It involves planting eucalyptus plantations to produce wood used in

¹¹⁷ Ken Caldeira, Co-author from the Carnegie Institution. The Guardian, 2006/12/15. *To plant forests to mitigate climate change outside of the tropics is a waste of time.*

¹¹⁸ The monoculture is called the 'modern commercial agriculture'. The main criticizes claims that negative impacts of monocultures are disastrous: Direct removal of existing ecosystems; reduction of biodiversity; destruction of soils; pollution of the surface and ground waters with agricultural chemicals; pollution of wetlands and the marine environment with silt and agricultural chemicals; contribution to global warming through the loss of trees and generation of methane; and a contributor to landlessness. Under the CDM/JI, these arguments have to be attenuated. For instance, CDM/JI requirements forbid the deforestation of trees in order to plant monoculture and get ERs credits. In the CDM/JI, the biodiversity and eco-system impacts are theoretically monitored.

Even though, only indigenous trees would be planted to promote the return of diverse forests; the use of other species may slow erosion, return organic water to the soil, and build up ground water. However, planting the wrong tree where he is not native species, such the eucalyptus monoculture, can devastate the land of the local community. Nevertheless, it is generally more profitable to outside interests to plant non-native fast-growing tree; even if environmental and biodiversity benefits are not comparable to native forest.

For more information, see *New agriculturist website* at <http://www.new-agri.co.uk/01-1/perspect.html>

¹¹⁹ For more information, see World Bank website; "Plantar Sequestration and Biomass Use" page. Available at: <http://carbonfinance.org/Router.cfm?Page=PCF&FID=9707&ItemID=9707&ft=Projects>

pig iron production instead of coal (which further damages the environment). In addition, the project claims carbon sequestration credits under the Kyoto Protocol for the trees planted.

This project which seemed to be in conformity with the goals of the Kyoto Protocol has not been unanimously accepted worldwide. In 2003, several Brazilians and international NGOs delivered a letter of protest to the World Bank, urging the World Bank to cease its support.¹²⁰ They claimed that the Plantar project is neither clean nor will it contribute to sustainable development. The impacts of the extension of this monoculture have been disastrous, the local population was evicted from the land, water has been contaminated, rivers have dried up and the short-cycle eucalyptus does not support native animals or plants. Although eucalyptus tree can store carbon, their permanence is temporary, and the carbon is released through the forest again.

This letter of protest against this project raises two main issues. First, the alleged violations of human rights (expropriation of the local communities, pollution of water resources) made public by the NGOs might show a lack of communication between the PCF and the local communities and a lack of diligence by the World Bank before accepting the project as “economically viable” and essentially turning it into a carbon sink project. Second, the planting of trees to store carbon dioxide has been widely criticized in respect of its long term effects on global warming. In addition, the resulting negative effects (in this case, the extension of a monoculture plantation caused many changes: Degradation of water quality, draining of rivers etc.) raised the question of whether the new carbon market provide a real solution against global warming.

Without intending to weigh the opposing viewpoints from the NGO protest and the World Bank position (both of them showed different facts in their reports), it is interesting to note that in the documents, the project showed a real win-win opportunity, but the reality might show a deviation from the objectives of the PCF Instrument. The Plantar project is the first project seeking credit through the CDM as a carbon sink. This protest could discredit the PCF, the World Bank and the Kyoto Protocol, harm their reputation and jeopardize the project

b) An imbalanced sharing of the projects.

A report into the state of the carbon market¹²¹ focused on Africa shows the continent that will be hardest hit by climate change is also the continent that has benefited least from the carbon market. In

¹²⁰ First letter from the NGO's, March 2003:

<http://www.fern.org/pubs/ngostats/Planteng.htm>

Second letter from the NGO's, 23rd of May 2003:

<http://www.sinkswatch.org/pubs/Carta%20Plantar%202%20-%20ingles.doc>

Third letter from the NGO's, 21st July 2003:

<http://www.sinkswatch.org/pubs/Carta%20Plantar%203%20-%2020ingl%EAs.doc>

Answer by the World Bank, 18 August 2003:

<http://carbonfinance.org/docs/NoticeConcerningPlantarProject.doc>

Fourth letter from the NGO's, 17 September 2003:

<http://www.sinkswatch.org/pubs/Carta%20Plantar%204%20ingl%EAs.doc>

¹²¹ *State and Trends of the Carbon Market 2006. A focus on Africa.* Washington DC. November 2006.

K.Capoor, P.ambrosi.

2006, the carbon market grew to \$22 billion (double that of 2005) and almost \$3 billion of that was from the project-based market. Nevertheless, Africa represents only 5.1 percent of the total of project-based market (it is the CDM projects involved in Africa and not JI projects). On February 207, 514 CDM projects were registered. More than half are localized in Asia (267), 44 percent in Latin America and only 15 projects (3 percent) in Africa.¹²²

The problem is how to promote a more balanced distribution of CDM projects. Numerous obstacles face the African continent to be part of the CDM. This lack of attraction has many reasons: legal (weakness of rule of law and environmental safeguards), social (non-compliance of the first needs involving a disinterest in environmental protection), economic (lack of infrastructure, a majority of small industries) and political (insufficient transparency). Therefore, the first objective of the PCF: ‘Show how project-based GHG emissions reductions transactions can promote sustainable development lower the cost of compliance with Kyoto’, appears to be a failure for Africa, the continent which has the least capacity to face the climate change consequences.¹²³

The solution for the Chair of the Host Country Committee at the Biocarbon Unit, Washington Zhakata, can be achieved if *“both carbon emission reductions buyers and the African governments play their roles effectively. Africa must ensure that the enabling environment is conducive, i.e., public institutions that deal with the CDM are strengthened, capital markets are developed, adequate security is guaranteed, and bureaucracy is avoided, among others. At the same time, regulators should not deliberately design conditions that make it very difficult, if not impossible, for some developing countries to receive any form of investment through the CDM.”*¹²⁴

So far, only 2 of the 24 PCF projects are located in Africa: The West Nile Electrification Project in Uganda¹²⁵ and the Durban Municipal Solid Waste in South Africa.¹²⁶ Requirements and rules of the CDM have to change in order to encourage investment in Africa.

In regards to its initial objectives, the PCF is an accomplishment. It became the impetus for the creation of new fund. However, being the first fund to implement the Kyoto Protocol Mechanisms, some issues and controversies have been raised: An unclear protection of human rights, the short term solution of forestry activities to tackle global warming and the exclusion of the African continent in the projects. Alternatives have to be proposed in order to resolve these problems.

¹²² <http://cdm.unfccc.int/Statistics/Registration/RegisteredProjByRegionPieChart.html>

¹²³ *State of the African Carbon Market: Despite Increases Africa left behind in the carbon market*; Anita Gordon, Kristyn Schrader; World Bank Press Release No:2007/146/SDN; November 16, 2006.

¹²⁴ *CFU Annual Report 2006*. The World Bank, Biocarbon Unit.

¹²⁵ See Carbon Finance website, “PCF” page, “Projects” page, “Uganda : West Nile Electrification Project ” page: <http://carbonfinance.org/Router.cfm?Page=PCF&FID=9707&ItemID=9707&ft=Projects&ProjID=9616>

¹²⁶ See Carbon Finance website, “PCF” page, “Projects” page, “South Africa : Durban Municipal Solid Waste ” page: <http://carbonfinance.org/Router.cfm?Page=PCF&FID=9707&ItemID=9707&ft=Projects&ProjID=9615>

Chapter 7

Conclusion and recommendations.

More than a century has passed since scientists first began to seriously address the pollution problem facing the world. Even though the answer came late, it seemed to comprehensively consider several parameters: Oblige companies to reduce their GHG emissions, and providing them with flexible mechanisms in order to reach the GHG emission reduction objectives.

While it is too early to measure the overall impact of the PCF on the project-based carbon market, it provides potential investors and countries with a prototype of the operational mechanics and commercial viability of carbon trading, demonstrating the feasibility of carbon markets on a global scale. Nevertheless, chapter 6 demonstrated several problems with the PCF operations:

While it will be hit harder by climate change and less able to face it, the African continent is excluded from the PCF projects, the protest raised from local populations and the power to only advice' on the part of host countries may show a failing of the PCF not to take into consideration developing country needs as well as unresolved questions regarding the dispute settlement.

Article 13 of the Instrument establishing the PCF in 2002 recognizes that the *“regulatory framework of the UNFCCC and/or the Kyoto Protocol relating to the ownership, holding and transfer of Emission Reductions is still under development, and to maximize the likelihood that the Fund may achieve its stated objectives, the Trustee will endeavor to ensure that the contractual arrangements entered into among the Trustee, Participants, Host Countries, Project Entities and other parties will be structured flexibly so as to enable them to conform with the guidelines, modalities and procedures of the regulatory framework of the UNFCCC and/or the Kyoto Protocol if, when and as they are developed.”*¹²⁷

After seven years, the practice made evident that this article should be used in order to get the developing world more involved in the processes, make the dispute settlement rules clearer, propose alternatives for the post-2012 period and reinforce the monitoring and diligence during the realization of the projects. Nevertheless, the UNFCCC has to be cautious as the measures put in place to resolve the problems may spillover and create abuses or pollution in another area. In the current biofuel problem biofuel production is seen as an alternative to oil. The deforestation activity is destroying not only old growth forests but also the indigenous population.¹²⁸

The overall reasons for controversies are that the Kyoto Protocol is the first international, legally binding agreement to reduce GHG and the PCF is the first international investment fund seeking ER credits. Then, regarding the fact the Kyoto Protocol does not define any post-2012 strategy,¹²⁹ the carbon

¹²⁷ Section 13.1: Adaptability to the Requirements of the UNFCCC.

¹²⁸ For more information, see: *Biofuels: An Advisable Strategy?* UAB Science Journal. 03/2007

¹²⁹ Article 3 of the Kyoto Protocol: “...with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.” The Protocol does not refer to any others actions after 2012.

market is highly unstable and the UNFCCC/PCF Committees are reluctant to change the current rules. Agreements are therefore incomplete; numerous elements such as the liability issue and the potential of the Carbon market are missing. However, as the first carbon fund, the PCF is a real success. The subjacent objective has been reached: It has been an example and an exceptional impetus for the creation of numerous others funds.

Now, following the “learning by doing” concept, the challenges for the UNFCCC members and for the PCF Committee, are to understand the current debates and adjust the existing rules to efficiency tackle global warming.



Annex 1:

The following is a list of the PCF projects under advanced preparation:

PCF Projects: Emission Reductions Purchase Agreements (ERPAs) Signed

<i>Country/Project Name</i>	<i>PCF ERPA Emission Reductions tCO₂e**</i>	<i>Total Project Emission Reductions Generation tCO₂e</i>
<u>Brazil:</u> Plantar Sequestration and Biomass Use	1,514,286	1,514,286
<u>Brazil:</u> Lages Wood Waste Cogeneration Facility UNFCCC Reference No.0268	750,000	2,214,447
<u>Brazil:</u> Alta Mogiana Bagasse Cogeneration UNFCCC Reference No.0181	110,000	133,356
<u>Bulgaria:</u> Pernik District Heating	157,000	173,000
<u>Bulgaria:</u> Svilosa Biomass	450,000	500,000
<u>Bulgaria:</u> Sofia District Heating	1,084,000	1,348,575
<u>Chile:</u> Chacabuquito Small Hydro	1,000,000	634,095
<u>China:</u> HFC-23 Destruction (co-purchase) (PCF) ¹³⁰ UNFCCC Reference No.0011,0306	5,000,000	5,000,000
<u>China:</u> Xiaogushan Hydropower UNFCCC Reference No.0378	1,700,000	2,130,912
<u>Colombia:</u> Jeparachi Wind Farm UNFCCC Reference No.0194	288,383	288,383
<u>Costa Rica:</u> Cote Small Hydro UNFCCC Reference No.0251	172,120	133,443
<u>Czech Republic:</u> CEA Energy Efficiency	500,000	648,000
<u>Guatemala:</u> El Canada Small Hydro UNFCCC Reference No.0606	2,000,000	2,452,253
<u>Hungary:</u> Pannongreen Pécs Fuel Conversion Project	1,193,000	2,645,500
<u>Indonesia:</u> Indocement Sustainable Cement Production UNFCCC Reference No.0493,0526	Omitted	5,722,534
<u>Latvia:</u> Liepaja Solid Waste Management	387,933	400,558

¹³⁰ This project has been organized through the Umbrella Carbon Facility with several Funds committing to purchase Emission Reductions.

Moldova: Soil Conservation	1,300,000	3,213,524
Philippines: North Wind Bangui Bay Project - Phase I UNFCCC Reference No.0453	356,000	397,516
Poland: Stargard Geothermal Project	240,000	303,485
Romania: Afforestation	240,000	303,485
South Africa: Durban Municipal Solid Waste UNFCCC Reference No.0545	700,000	757,165
Uganda: West Nile Electrification Project UNFCCC Reference No.0775	Omitted	809,918

Source: The World Bank Carbon Finance Unit. www.carbonfinance.org



Annex 2:

Example of a 6 months schedule of events in the PCF plus:

PCF Plus Training Program/Schedule of Events/Jan – June 2003

1. Workshop: Legal Implications of The Clean Development Mechanism on Host Countries: Legal Nature and Ownership of Emission Reductions, **Washington, DC**, January 23-24, 2003
2. Training Workshop: Standardized Baseline Methodology for the Power Sector, San Salvador, **El Salvador**, February 25, 2003
3. National Workshop on the Clean Development Mechanism and Joint Implementation (organized by Canada's Department of Foreign Affairs and International Trade), Aylmer, **Quebec**, February 27-28, 2003
4. Training Workshop on Efficient CDM for Southeast Asian Countries, Kuala Lumpur, **Malaysia**, April 1-3, 2003 (in cooperation with UNDP, ADB and Government of Canada)
5. Workshop: Managing the National Carbon Asset to Maximize Foreign Investments for EU Accession and Candidate Countries, May 6-7, 2003, Znojmo, **Czech Republic**
6. Workshop: Capacity Development for the Clean Development Mechanism, May 14-16, Mombassa, **Kenya**
7. Training workshop: Introduction to Carbon Finance, May 20-21, Kampala, **Uganda**
8. Workshop: Introduction to the Clean Development Mechanism, June 18, Santiago, **Chile**

Source: www.carbonfinance.org

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