HSSFC/CIDA's COLLABORATIVE PROGRAM ON
SUSTAINABLE HUMAN DEVELOPMENT

CONGRESS OF THE SOCIAL SCIENCES AND HUMANITIES
UNIVERSITY OF TORONTO
1st JUNE, 2002

CONTRACTION AND CONVERGENCE: THE SILVER LINING IN THE CLIMATE CHANGE CLOUDS

Rodney R. White
Department of Geography
&
Institute for Environmental Studies
University of Toronto

Explaining the metaphor.

In Canada, as in many others parts of the world, we are having difficulty wrapping our collective mind around the challenge of implementing the Kyoto Protocol. And the Protocol is only a means to an end – the end being a low (or no) carbon world. Earlier this week I delivered a talk titled 'Building a Global Platform for CO_2 Trading' (White and Labatt 2002) which examined the considerable success achieved by fledgling schemes to reduce SO_2, NO_x, and now CO_2 by trading emission rights. Many people in the environmental movement are suspicious of reliance on trading for meeting any part of our reduction goals (Biello 2002). However, based on the experience so far, I think we should be guardedly optimistic.

Today I am going to take the position that an essential part of a successful implementation phase for the Protocol is a progressive reduction in emissions, moving towards equal *per capita* emissions rights throughout the world. This position is sometimes called 'contraction and convergence'. It may seem like the other end of the traditional ideological spectrum compared with a position that espouses emissions trading. Contraction and convergence is based on equity – in the justice sense. It may seem absurdly optimistic. However, I think it has to be part of the plan, so that we can all share a common sense of direction.

If we set out on this path it will be a historic undertaking. On a technical level, it might be seen as a feat comparable to the European re-discovery of the rest of the world from the sixteenth to the nineteenth centuries. On a moral level, it might rank with the commitment to abolish slavery. It certainly will not be easy.

We all know that Kyoto, alone, will not solve the problem, even if it were implemented 100% by all the Annex 1 signatories. It is merely a change in direction, with CO_2e emissions (from Annex 1 countries) going down, rather than up. Turning the ship around, for those who need another reassuring metaphor. So, where are we going? 'Reduction' is *not* a destination. 'Contraction and convergence' *is* a destination. It is a bio-geophysical 'endpoint'. We will know when we have arrived, and we can measure our progress along the way.

The big issues that stand in front of us are:

1. Under Kyoto, developing countries have no commitment to emissions reduction. Clearly, that will change.
2. There is a huge difference between current per capita CO_2 emissions between richer countries (Annex 1) and poorer countries. (Table 1)
3. The *status quo* (and situations only marginally different from it) is building up a huge '**carbon debt**' for our children and future generations. At best, this implies a warmer and less predictable climate, one that is more prone to extreme weather events. This debt is every bit as real as the national debt, under-funded pension plans, degraded ecosystems, reduced biodiversity, and all the other obligations we will leave behind us when my generation retires and dies.
4. Initially the most vulnerable places to climate change are the developing countries. They are more vulnerable to cyclones, droughts and floods. They have the least capacity to recover.

So where is the 'silver lining' in these 'climate change clouds'? And how does 'contraction and convergence' help us?

The silver lining

GHG emissions can be stabilised, globally, *only* with the co-operation of all significant emitters – which means poor countries, as well as rich. The disagreement between the US and Europe over Kyoto is a trifle compared with the need to bring the

poor countries on side – especially the major emitters such as China, India, Indonesia, and Brazil. The Kyoto Protocol has several weaknesses but it's biggest fiction is the idea that richer countries need to reduce their emissions to 'make room for the (fossil fuel based) development of the poorer countries'. It is imperative that the poorer countries *do not develop as rich countries did*, emitting more GHGs *per capita* every year. Their currently low *per capita* emissions are the best card we – as global society - have to play. Everything possible must be done to encourage rich countries to reduce their emissions in order to meet poorer countries *close to their current level*, rather than encourage the poor to emulate the rich.

Thus, the Clean Development Mechanism is not a side-show in the global response to climate change, it is the centrepiece. Nor should it be regarded as something rich countries support in poor countries, being seen simply as 'aid' by another name. CDM should be the same technology that the rich countries install at home. This is the technical part – emissions contraction to a low-carbon future.

The moral aspect is 'convergence' on global *per capita* annual emission rights. These could be recognised *right now*, based, say, on 1990 population estimates, just as 1990 is used as the baseline for measuring emission reduction targets. We need to agree on the magnitude of this individual right, for example 0.5 tonnes of carbon (about 1.83 tonnes of carbon dioxide), about 10% of what citizens of the United States emit today. (Table 1.) This would be an allowance, just as the GHG trading schemes are based on allowances. One scheme that allocates tradable value to these rights is sketched in Figure 1, CARATS. It is similar to the scheme proposed by Aubrey Meyer's Global Commons Institute, described as 'Contraction, Convergence, Allocation and Trade' (Global Commons Institute, Meyer and Cooper 2000; White 2002). Under CARATS those countries with a *per capita* emission level in excess of the global allowance would transfer funds to those countries below the allowance. The transfer would serve to reward countries that remained below the allowance, while encouraging those above to reduce their level. Part of the levy on the excess emitters would be used to research and implement energy technologies that did not use fossil or nuclear fuels. Thus, the *only* kind of 'development' would be 'clean development'. Within each country, a parallel scheme could be established, coupling a fossil/nuclear energy tax with a rebate paid to users who emitted less GHG emissions than the national norm.

Such a scheme could be criticised for being too complex and hopelessly idealistic. However, it is a great deal less complex than the UK Emissions Trading Scheme that went into operation last month (Environmental Finance 2002). As for being idealistic, that is exactly what we do need to be, in order to envisage and achieve a goal that takes us back to a more stable climate scenario. Without this kind of endpoint to aim for, the present stalemate on climate change could last for a very long time. And is it really that unrealistic? Let me read you a quotation and ask you who might have written the words:

"IMAGINE a world where energy is so clean it causes zero pollution and so simple you hardly know it's there. No sound, no smoke, no CO_2 - just pure power. That world is here now. That world is solar."

Greenpeace? No.

BP Solar – the recently established solar arm of British Petroleum.

So, is there really a silver lining, or is this just wishful thinking?

I think the silver lining is there for the taking, unless someone has a better idea.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Table 1. Carbon Dioxide Emissions by Countries

Grouped by Income, and the Six Largest Emitters in 1996.

	TOTAL IN BILLION TONS		TONS PER CAPITA	
Countries	**1980**	**1996**	**1980**	**1996**
Grouped:				
Low income	2.1	5.1	0.9	1.5
Middle income	2.8	6.9	3.3	4.8
High income	8.7	10.7	12.3	12.3
World Total	13.6	22.6	3.4	4.0
Six largest:				
United States	4.6	5.3	20.1	20.0
China	1.5	3.4	1.5	2.8
Russian Fed	—	1.6	—	10.7
Japan	0.9	1.2	7.9	9.3
India	0.3	1.0	0.5	1.1
Germany	—	0.9	—	10.5

Source: World Bank (2000), Table 10. Energy Use and Emissions. Pages 248-9.

References

Biello, D (2002) Trading under attack, *Environmental Finance*, May, 32
BP Solar, http://www.bpsolar.com
Environmental Finance (2002) Special Supplement: Birth of a market – the UK Emissions Trading Scheme, *Environmental Finance*, April.
Global Commons Institute website: www.gci.org.uk
Meyer, A. and T. Cooper (2000) Why convergence and contraction are the key, *Environmental Finance*, May, 19-21.
White, R. R. and S. Labatt (2002) Building a global platform for CO_2 Trading. Paper delivered at the colloquium 'Dissolving Boundaries: Canada in a Globalizing World', Congress of the Social Sciences and Humanities, University of Toronto, May.
White, R. R. (2002) *Building the Ecological City*. Cambridge, Woodhead Publishing Ltd..
World Bank (2000) *Entering the 21st Century. World Bank Development Report 1999/2000*. Washington DC, World Bank.
filename: Silver Lining

Table 1. Carbon Dioxide Emissions by Countries Grouped by Income, and the Six Largest Emitters in 1996.

	TOTAL IN BILLION TONS		TONS PER CAPITA	
Countries	**1980**	**1996**	**1980**	**1996**
Grouped:				
Low income	2.1	5.1	0.9	1.5
Middle income	2.8	6.9	3.3	4.8
High income	8.7	10.7	12.3	12.3
World Total	13.6	22.6	3.4	4.0
Six largest:				
United States	4.6	5.3	20.1	20.0
China	1.5	3.4	1.5	2.8
Russian Fed	—	1.6	—	10.7
Japan	0.9	1.2	7.9	9.3
India	0.3	1.0	0.5	1.1
Germany	—	0.9	—	10.5

Source: World Bank (2000), Table 10. Energy Use and Emissions. Pages 248-9.