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Cutting greenhouse gas emissions and averting world climatic chaos

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The UN Framework Convention on Climate Change meets for the fifteenth time in Copenhagen on 17-18 December to further its aim of halting the rising concentration of greenhouse gasses (GHG) in the atmosphere. Musician turned environmental activist **Aubrey Meyer** gives his reasons why Contraction and Convergence (C&C) is the only way to achieve this objective and avert the world from climatic chaos.

Integrated approach is needed to solve GHG problem faster than we create it



THE United Nations Framework Convention on Climate Change (UNFCCC) was agreed in 1992 with the objective of halting the rising concentration of greenhouse gas (GHG) in the atmosphere. In 2009, efforts to this end remain insufficient and the danger of 'runaway' rates of global climate change taking hold are increasing.

In December this year, the fifteenth conference of the parties to this convention takes place in Copenhagen. The call for an effective global deal is increasingly urgent.

The science-based, global climate policy framework of Contraction and Convergence (C&C) offers a model for this.

We are all both circumstantially and legally bound by the UNFCCC objective. Compliance is governed by the need for finite answers to the questions: "What is a safe GHG concentration value for the atmosphere?" and "What is the scale of the full term emissions contraction event required to achieve it?"

Because of weakening sinks, analysis now shows that to stabilise GHG concentration in the atmosphere below the level that prevents dangerous rates of climate change taking hold, requires a rate of overall emissions control that is faster than was previously assessed. Instead of 100 years, we now realise that to reduce human CO₂ emissions and other GHGs in the atmosphere to zero globally, we have fewer than the next 50 years [IPCC AR4 and Hadley Centre, 2007].

UNFCCC makes C&C generically true, but C&C is a calculus built on this truth that strategically focuses the negotiations at the UN Climate Convention on two finite, global indicators:

- A trajectory to a safe and stable atmospheric GHG concentration limit, linked to calculations of the future global emissions contraction in carbon emissions consistent with that.

- The calculation of equal rights to the global total of emissions permits to the global total of people consuming within that limit, but allowing for different rates of convergence and even a population base-year to be considered.

So C&C puts the goal focus of the UNFCCC process in a structure of reconciliation. From this it becomes possible to go beyond the merely aspirational character of the current debate around the UNFCCC, to a rational and constitutional global agreement. This is preferable to assuming any inequality of rights.

As the original authors of the UNFCCC understood at the outset, embracing this primary question of the sufficient, and indeed the proportionate response, is fundamental to the whole global engagement. The Kyoto Protocol avoided this.

The Figure shown here charts the UNFCCC Objective and Principles and the

Development Benefits of Growth versus the growth of Climate Change Related Damage Costs.

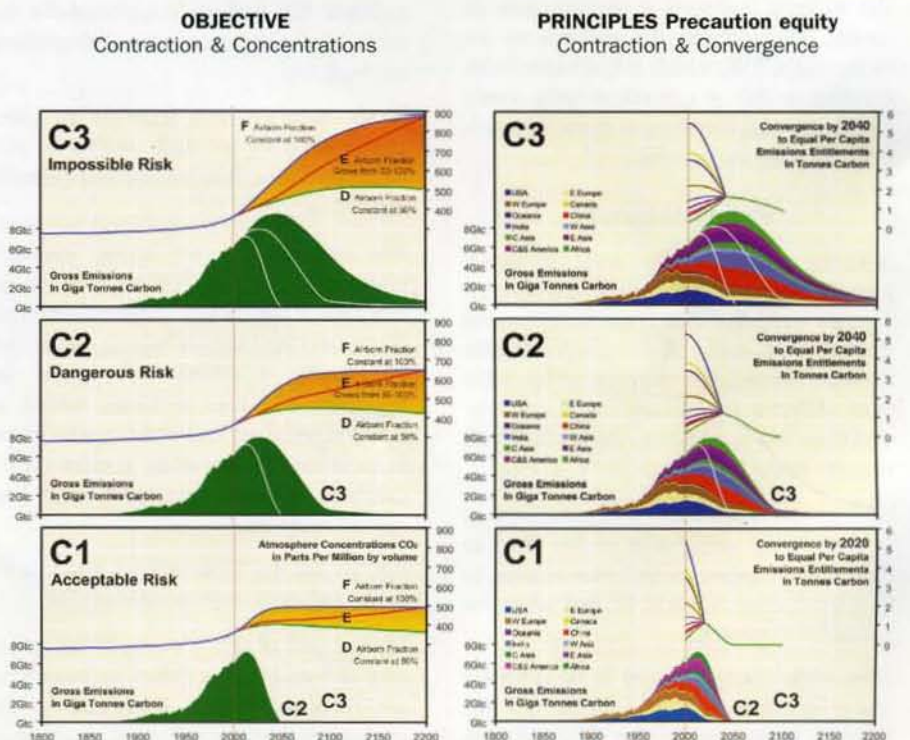
Columns one and two address the objective and principles of the UNFCCC. Columns three and four compare the development benefit of growth with the growth of climate damage and costs.

The left hand side of columns 1 and 3:

- Expanding fossil fuel emissions of CO₂, measured in billions of tonnes of carbon between 1800-2000.
- Rising concentration of atmospheric CO₂ as parts per million by volume (ppmv) between 1800-2000.

Possible 'futures' are on the right, where the key questions are in four columns:

- Column 1: Contraction and Concentration. What is a safe level of concentrations and, in the light of sink failure, how rapid must contraction be to avoid GHG concentration going too high in future?





• Column 2: Contraction and Convergence. What is the rate of the internationally equitable agreement necessary to ensure this level is not exceeded?

• Column 3: Contraction and Conversion. What is the rate at which we must convert the economy away from fossil fuel dependency?

• Column 4: Damage Costs and Insecurity. What is the environmental and economic damages trend associated with this analysis?

Each Row has a different level of Risk projected across the four columns:

• C1 (bottom row): Acceptable Risk. Global GHG emissions contraction complete by 2050, so concentrations end up around 400/450 ppmv with damages potentially still under control.

• C2 (middle row): Dangerous Risk. Global GHG emissions contraction complete by 2100, so concentrations keep going up through 550/750 ppmv with only the illusion of progress maintained, while damages are going out of control.

• C3 (top row): Impossible Risk. Global GHG emissions contraction complete by 2200, so concentrations keep going up through 550/950 ppmv while the illusion of progress is being destroyed, damages costs are destroying the benefits of growth very quickly and all efforts at mitigating emissions become futile.

In each graph, different futures are projected on the right-hand side as

scenarios or rates of change that are linked to the objective of the UNFCCC, where three levels of risk for stabilising the rising concentration of CO₂ are understood in the light of the rising fraction of emissions that stays airborne.

As Column 3 shows, we are caught in trends of causing global climate change much faster than we are mitigating it. Treating climate change as a global emergency is now long overdue and responding proportionately is vital. Unless the risk analysis is focused by this understanding, our best efforts will be in vain.

According to the re-insurers, the weather-related damages trend is growing at twice the rate of the global economy, see Figure column three. To prevent this damage trend from running out of control, emissions need to contract to zero globally by 2050 if it is to be fast enough to stabilise atmosphere GHG concentrations at a level that prevents change accelerating uncontrollably.

This is corroborated by the latest coupled climate modelling results from the UK Government's Hadley Centre, published in the IPCC Fourth Assessment. While the notion of global emissions control is certainly heroic, the only vector of the problem over which we can still posit direct control is our GHG emissions and, thereby, the level to which GHG concentrations and temperature will rise in the future.

With this integrated approach we can more clearly visualise the challenge within a

finite calculus of collective responsibility, and so keep focused on the imperative of solving the problem faster than we are creating it. Communicating and implementing this remains the primary challenge for all of us now.

With the C&C operational framework, we can compare how much must be achieved globally to avoid dangerous climate change, with the widening margins of error in which we are becoming trapped.

There are more complicated 'alternatives to' and 'derivatives from' C&C that defend the 'evolutionary' nature of the politics. They include the Kyoto Protocol, which sought to interpose a partial and random market-based framework in support of the UNFCCC. But there is no evidence supporting claims that guesswork at the margins will generate a sufficient response to be effective.

C&C starts with an integral response to the Convention's objective and allows for a full term "framework-based market" where:

- Equity as collateral is the 100% entirety of the emissions contraction event necessary for concentration stability.

- The social equity as the equal per person claim on the same 100% throughout that event but softened by convergence.

- The commercial equity is the shares pre-distributed this way sum to the same 100% and are tradable, so as to accelerate the positive sum game for the emissions-free economy that must emerge if we are to prosper in the future.

This puts rational principle ahead of stochastic practice, so the former guides the latter. In practice this is flexible, and will create a lucrative framework-based market for the zero emissions industries within a future structure that corrects and compensates for the asymmetric consumption patterns of the past, while saving us all from dangerous rates of climate change.

C&C overcomes the stand-off where a one-sided agreement is not an agreement and where half an argument is not, nor will ever become, a whole solution. It recognises that separate development is not sustainable development.

Many now call for this to be the basis of the post-Kyoto global deal.

- For further details about Aubrey Meyer and his work on C&C, visit www.tangentfilms.com/CandC26jun09.pdf & www.tangentfilms.com/WTCAprmo.wmv

