

REVISED DRAFT

HOW COULD EMISSIONS TRADING BENEFIT DEVELOPING COUNTRIES

*By Cédric PHILIBERT**

Summary

It is generally believed that an emission trading system requires that all involved entities are given – or accept – a firm limit on their emissions. However, such a system will work if some involved entities are allocated an emissions “budget”, even if it is not a limit. A budget will allow them to sell allowances if their actual emissions are less than their budget, but will not obligate them to buy allowances if their emissions exceed their budget.

Two different sets of rules might be considered to make such a system workable – both with advantages and drawbacks. According to the first set, as soon as an entity with an emissions budget starts to sell allowances, it faces a firm limit on its emissions. The second set would stipulate that selling could only occur at the end of any budget period.

Parties to the Convention on Climate Change may wish to consider building a regime where developing countries are allocated emissions budgets, not limits, on some provisions of the Kyoto Protocol and in full respect with the principles of the Convention. In any case such system would be complementary to the Clean Development Mechanism.

This paper shows that the potential benefits of such a system for developing countries would be:

- To provide non Annex-I countries with substantial capital inflows, and stimulate their economic growth
- To allow Annex-I countries achieving their Kyoto commitments at the lowest possible cost
- To achieve global participation while reducing the risk of creating “tropical hot air”.

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Introduction

This paper shows that, from a technical standpoint, it is possible to mix two categories of stakeholders in a single emissions trading system: some participants with firm limits on their emissions, some others with emissions budgets rather than firm limits on their emissions. It shows further that, if the Parties to the Convention wished to elaborate such a system on the Kyoto Protocol provisions, by defining ways to allocate emission budgets to some developing countries, this could be beneficial to:

- Non Annex-I countries, by providing them substantial capital inflows through emissions trading, therefore stimulating their economic growth;
- Annex-I countries, by reducing the cost of achieving their commitments;
- The Climate itself, by encouraging developing countries to abate more emissions through mutually beneficial trading, while not bringing huge amounts of “tropical hot air” in the international trading system.

The idea of emissions budgets is that developing country Parties with such budgets would be allowed to sell allowances if their actual emissions are less than their budgets, but would not have to buy allowances if their actual emissions are more than their budgets.

Emissions trading is an “economic instrument for environmental protection”. Emissions trading should by no means be viewed as an exclusive policy instrument; other policies and measures (command and control, standards, etc.), other economic instruments (taxes, charges, etc...) are also needed for environmental protection. Emissions trading also does not mean that “the markets would solve everything if there were no perverse governmental action”. On the contrary, emissions markets mix governmental or intergovernmental decisions to adopt an environmental objective, and the market's forces to allow societies reach the objective at the lowest possible cost. Although different in many aspects, carbon taxes, another economic instrument, would more or less use the same mixture.

Economic instruments allow us to reach a given environmental objective at a lower cost, or to achieve a better environmental performance at a given cost. Therefore, to broaden the use of economic instruments is a moral obligation. Lowering the cost of achieving a given environmental objective will save scarce resources, which can be used for other urgent needs, especially in developing countries. Enhancing the environmental performance at a given cost is our responsibility to those who suffer the most from a damaged environment: the poor, and future generations. The development and implementation of sound economic instruments for environmental protection is the cornerstone of sustainable development – which is nothing more than reconciling economic development and the environment.

As Climate Change is one of the most important environmental threats today, one must devote all efforts to build an efficient, cost-effective international regime to face this threat through mitigation and adaptation, upon the provisions of the Kyoto Protocol which have been agreed to by all Parties.

In this paper, we first recall the principles stated in the Convention and show how the Kyoto Protocol could fit them (I). We then examine how developing countries could become involved in emissions trading while not taking on any new commitments, through the definition of “emissions budgets”, with two alternative sets of rules, and look at this option in relation to the Clean Development Mechanism (II). We further examine how such emissions budgets could be negotiated for developing countries (III). We then look at some legal issues involved in building such a system under the provisions of the Kyoto Protocol (IV). We finally give some considerations to the relationship between negotiating emission budgets for developing countries and the question of “supplementarity” (V).

I. Common, but differentiated responsibility

The preamble of the United Nations Framework Convention on Climate Change states that the Parties have agreed to the Convention while *“acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions”*.

UNFCCC Article 3 (“Principles”) further stipulates that *“The parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change”*.

The principle of “common, but differentiated responsibilities” has been reflected first in the different commitments for all Parties (Article 4.1) and those for Annex-I Parties only (Article 4.2). It is also reflected in the creation of the financial mechanism of the Convention (see Article 4.3 and Article 11). Moreover, Article 4.5 states that *“the developed country Parties (...) included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. (...)”*

Article 4.7 is equally worth recalling: *“The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.”*

The principle of “common, but differentiated responsibilities” is explicitly recalled for in the Kyoto Protocol Article 10: *“All parties, taking into account their common but differentiated responsibilities and their specific national and regional circumstances,*

without introducing any new commitments for Parties not included in Annex I, but reaffirming existing commitments under Article 4, paragraph 1, of the Convention, and continuing to advance the implementation of these commitments in order to achieve sustainable development, taking into account Article 4, paragraphs 3, 5 and 7 of the Convention (...)”

Common, but differentiated responsibilities are finally reflected in the Kyoto Protocol by the difference between the commitments of all Parties, and those for Annex-I Parties only. Article 10 states in particular that all Parties shall “*formulate, implement, publish and regularly update national, and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change (...)*”, while Kyoto Protocol Article 3 indicates that Annex-I Parties shall, individually or jointly, ensure that their aggregate greenhouse gas emissions do not exceed their assigned amounts as specified in Protocol Annex-B.

As will be shown below, the establishment of the Clean Development Mechanism, after that of the Financial Mechanism, already provides some means – although limited – for the “*widest possible cooperation of all countries*” while not “*introducing any new commitment*” for the developing ones. However, what we are looking at here is a means to further widen that cooperation in full respect to the above-recalled principles of the Convention and the Protocol – through emissions trading.

II. Emission budgets and emission limits: where they differ

“*Without introducing any new commitments for Parties not included in Annex I*”, reads Kyoto Protocol article 10 (see above), recalling a former, almost identical, decision of the Conference of the Parties (the Berlin Mandate). Therefore the question arises: would it be possible for developing countries to be involved in emissions trading without introducing any new commitments?

At first sight, this seems to be impossible. In all existing tradable permit schemes, all participants do have a commitment. They have a limit on their emissions, and this is why they can trade emission allowances – they can buy some allowances if their actual emissions are above their allowed level, or sell allowances in the opposite case. This is also the reason why such systems are often called “cap-and-trade” systems. And obviously, an entity could not enter an allowance trading system with an unlimited amount of allowances which it could put on the market, without destroying the system itself.

A. The concept of an emission budget

However, one may distinguish the tradable allowance allocation, on the one hand, and the imposition of a limit on actual emissions, on the other hand. Some entities could be given a finite number of allowances for trading purposes, while not being given a true limit on emissions. Provided that some other entities – at least one - were given or accepted some limits, therefore creating potential buyers, as well as sellers. Any entity with no cap on its emissions would not be a potential buyer, only a potential seller – if its actual emissions were less than its allocated amount. And if its actual emissions are more than its allocated

amount, it will not enter the trading market, for it will not be in a position to sell anything, and will not have to hold allowances for its emissions.

Therefore, it seems technically possible to conceive a tradable permit system where some entities are given a true limit on their emissions, or take a firm, legally-binding commitment regarding their emissions, while others, through a negotiating process, are eventually given an “emissions trading budget”.

Parties to the Convention may wish to consider such a system which could be elaborated under the provisions of the Convention and the Kyoto Protocol, for involving developing countries in emissions trading while not “*introducing any new commitment*” on their behalf.

The most important difference between negotiating emissions limits and negotiating emissions budgets arises from the fact that there must be some period of time between negotiating budgets and their coming into existence. Abatement options, investments and policies will take some time to produce their effects; therefore, defining very short-term budgets would be meaningless.

We detail below in (III) some important consequences of this difference. For now, let us just consider, for example, that such budgets are negotiated in 2000 or 2002 for a “budget period” 2008-2012. Many developing countries would refuse to negotiate a firm, legally binding limit on their emissions at that time because they fear a potential restraint on their economic development. The key point here is the uncertainty on the effects and costs of abatement policies and options.

However, the same countries may wish to consider negotiating emission budgets. They would then have an incentive to develop sound abatement policies, with the possibility of being able to sell some allowances if their actual emissions in the budget period turn out to be less than their budget. But they will not face any “non-compliance” procedures or even be blamed if their actual emissions turn out to be more than their budget.

One important advantage in negotiating emission budgets, rather than limits for developing countries, in full respect with the principles of the Convention, might be to ease the negotiation of these allocations, as will be shown below in (III). This would help prevent the formation of potentially huge amounts of tropical hot air that would otherwise undermine the Protocol itself.

Parties may also wish to consider the option of defining such budgets for years earlier than 2008, as is already the case with the Clean Development Mechanism, although a minimum period of time between negotiating such a budget and the actual budget period should be considered.

B. Two alternative sets of rules

A difficulty may arise from the length of the “budget period” envisioned in the example above, modelling the “commitment period” for Annex-I country Parties under K.P. Article 3. What if a developing country starts selling allowances at the beginning of a budget period but then faces an increase in its emissions and ends the period with more actual emissions than its (diminished) budget?

In such a case, it is necessary that, as soon as a country with an emission budget starts to sell some allowances, it should face a real limit on its emissions. If this were not the case, an unlimited amount of allowances could be put on the market. The whole system would collapse, and its environmental purposes would be lost.

Therefore, it seems that emissions budgets must become emissions limits when countries that adopt them start to sell allowances. These countries should then face the same non-compliance procedures as Annex-I countries, for if this were not the case, the compliance procedures of the whole trading chain would have the strength of its weakest link¹. However, buyers might be held, at least in part, responsible for the failure of the seller. This is the question of *liability*. This question is already raised by the provisions of the Protocol for trading amongst Annex-I countries (see e.g. Haites, 1998 and Kerr, 1998), but could become more important if emissions trading with developing countries were developed with multi-year budget periods.

Therefore, a first possible set of rules would keep the concept of multi-year periods but would make very clear that, as soon as a developing country with an emission budget starts to sell allowances, this budget becomes a firm limit. It would face non-compliance procedures if it fails to respect its limit.

An alternative set of rules avoids the risk of emissions exceeding a budget after selling of some allowances, and the difficulties regarding compliance procedures and liability.

Consider first the economic and environmental rationales behind the multi-year commitment period. The former is to allow Annex-I countries to smooth short-term economic cycles or climate variations – and therefore short-term emissions variations. The latter is that the precise level of emissions at a particular point of time does not matter much for the Climate.

Since developing countries with emissions budgets will not face emissions limits, they do not need a multi-year budget period and one should consider the option of defining these budgets on a yearly basis.

Moreover, to prevent any trading of false abatement, one could stipulate that trading could only occur at the end of each period. For the last budget period corresponding to the end of the commitment period for Annex-I countries, the “true-up” period suggested by some analysts might be a valid option. Trading allowances would thus become possible only after it appeared that the country they had been allocated to would not use them to cover its own emissions.

An advantage of this second set of rules is that the emissions budgets would never turn out to be firm limits on developing countries' emissions. The drawback is that it would be

¹ Let us suppose, that financial incentives for compliance be established, as suggested by OECD/AIE (1997), with different prices for developed countries (say, 100\$/tCO₂) and developing ones (say, 10\$/tCO₂). Then, a developed country short of allowances, rather than paying its due, will prefer to buy allowances to some developing country at any price under 100\$/tCO₂. Selling allowances at any price above 10\$/tCO₂ will allow the seller to pay its due while making profit. Eventually, the maximum cost paid by all countries will be 10\$ and not 100\$. Only emission abatements less costly than 10\$/tCO₂ – and not 100\$ as intended – will occur.

of little help for financing up-front abatement investments although this may be a very important problem for developing countries, due to their lack of financial resources.

To understand this, let us suppose a developing country negotiated an emissions budget, and further allocated a part of this budget to its industries, leaving another part for housing, transport and so on. When evaluating an abatement investment, a plant manager will not know if the emission reductions will have the value of the international price of carbon allowances or the value of the local price of carbon allowances. This will depend on whether the country as a whole is allowed to sell allowances or not. He will therefore face some difficulties in gathering the up-front money needed to finance the investment – especially if the local price of a carbon allowance is much lower than the international price.

This drawback also exists with the first set of rules, to a lesser extent. After the country has committed itself to a firm limit by starting to sell allowances, investors will know that emission reductions occurring before the end of the budget period will have the value of the international price².

This weakness of the budget concept (as compared to “normal” emissions trading with firm limits from the onset) is precisely the strength of the Clean Development Mechanism. And the reverse is true as well, as we will see now.

C. *Relations between emissions budgets and the CDM*

The establishment of the Clean Development Mechanism (Kyoto Protocol Article 12) might be seen as an attempt to implement the preamble of the Convention that “*the global nature of climate change calls for the widest possible cooperation by all countries*” while fully taking into account the principle of common, but differentiated responsibilities.

However, the scope of the Clean Development Mechanism is limited by the fact that it is limited to “project activities”. Moreover, a baseline needs to be established for each project activity, to ensure that the reductions in emissions are “*additional to any that would occur in the absence of the certified project activity*” (K.P. Article 12). The latter raises numerous difficulties, but is needed to prevent the formation of “tropical hot air” – although there might be some ways to simplify the issue (see e.g. Hargrave et al, 1998, Matsuo et al, 1998, Philibert, 1998, Puhl, 1998).

This involves transaction costs, which may be relatively low for large projects, but may be too high for small projects. Moreover, estimating emissions reductions may be very difficult for some projects in certain sectors like transportation, housing or small businesses. Therefore, the Clean Development Mechanism will be in position to deal with emissions from large industries and the power sector more easily than those from other sectors. Depending on the countries, the emissions the C.D.M. could address represent between 15 to 40% of the emissions of a country.

² For that reason, countries having benefited from emissions trading in one period with an emission budget, may further consider moving to the Annex-I list for subsequent periods, as this will eliminate this drawback of the budget concept.

Thus, although the Clean Development Mechanism might become a multi-billion dollar business (Vrolijk, 1998), the full involvement of key developing countries in emissions trading would remain a very important option.

On the other hand, for some large projects at least, the lack of financial resources of developing countries may make the Clean Development Mechanism a more attractive option than emissions trading under the “budget concept”, for it may provide up-front financing of investments. This would be particularly true if the rules established that trading will only occur after the reductions have been monitored at a country level, (“second set of rules” above).

Therefore, negotiating emissions budgets for developing countries should not be seen as an alternative to the Clean Development Mechanism. Rather the instruments should be considered as complementary options, each having its own merits and limits – the strengths of the former covering the weaknesses of the latter, and vice-versa. This means that one must consider how both could work in parallel in a developing country, while avoiding potentially problematic interference. But it seems that this problem could be dealt with easily, by deducting any certified emissions reduction under the Clean Development Mechanism from the country’s emissions budget.

III. Negotiating developing countries emission budgets

A. Growth Targets

Kyoto Protocol itself gives three Annex-I countries, assigned amounts above their actual 1990 emissions. The European Union reached an agreement in March 1998 that will provide, under the provisions of Kyoto Protocol Article 4, assigned amounts above their actual 1990 emissions to five of her member states which are also Annex-I Parties. And for obvious reasons, developing countries' emissions budgets – if any - will be above their actual emissions during the reference year, 1990³.

It seems that this view is largely shared by analysts and governments, at least implicitly. As an example, the US administration, while analysing the Kyoto Protocol and its impacts for the US economy (see United States, 1998), assessed an option including emissions trading with key developing countries. It reads: “*Key developing countries are assumed to adopt emission growth targets equal to their 2010 business as usual emissions level and participate in international emissions trading.*” In this case, the hypothesis is not only a “growth target”, it goes further by assuming that this growth target is nothing but the business as usual emissions level.

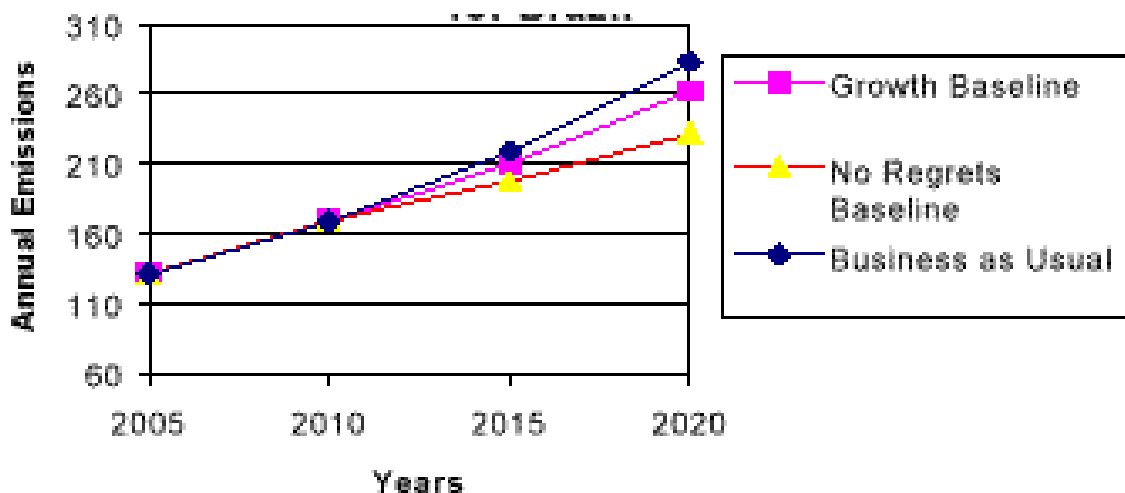
A different view is proposed by the Center for Clean Air Policy (see Hargrave, 1998 a), and picked up by Tietenberg et al (1998) in a report for Unctad. Let us go through the CCAP proposal: “*Under this approach, developing country emissions would not be*

³ The choice of 1990 here is only one possibility, as everything will have to be decided by the Conference of the Parties, if it wishes to do so. One must recall that the Kyoto Protocol allows for some flexibility in the choice of a reference year for economies in transition for all greenhouse gases, and for all countries in the choice of reference year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

capped in absolute terms. Instead, they would be allowed to rise above current levels, but countries would have to make sure that their GHG emissions grew at a slower rate than their economies. Developing country economic growth thus would not be restrained, but countries would commit to reducing their emissions relative to business as usual levels by improving the ‘carbon efficiency’ of their growth.”

Here a distinction is introduced between the “baseline” (in fact, the commitment), and the “business as usual” level: *“To simultaneously ensure that developing countries were allowance sellers and carbon emissions were reduced, it would be necessary to set developing country baselines below what emissions would have been otherwise, but high enough so that countries could make reductions below target levels through “no regrets” measures – those that have no net cost or even provide a savings.”*

This is illustrated by this picture (from Hargrave, 1998):



According to this proposal, the “Business as Usual” line is nothing but the prolongation of recent past, with no abatement measures or policies at all. The “No Regrets Baseline” is what would happen if all negative or zero-cost options were used by the country. They could come from removing energy subsidies, information programs, small abatement investments with short-term paybacks from energy savings and so on.

The “Growth Baseline” the Center for Clean Air Policy is advocating, would be somewhere in between. However, this “somewhere” is not arbitrary, nor entirely left to a negotiating process: *“In practice, developing country emissions targets could be established by tying emissions budgets to improvements in the ratio of carbon emissions to gross domestic product.”* The rationale for this is the same as for involving developing countries in emissions trading in general: although their per capita emissions are low

compared to those of Annex-I countries, their carbon intensity, measured by the ratio of carbon emissions to Gross National Product units, is usually higher.

The proposal from the CCAP – of which details might be found in the original Hargrave paper – is probably one of most interesting proposals made thus far in the context of involving developing countries in emissions trading with negotiating firm limits on their emissions. However, it has the important drawback of allowing large amounts of tropical hot air to enter the global system. This drawback could be dealt with in an easier manner if we consider negotiating emissions budgets, not limits, for developing countries, as shown below.

B. The case of “no-regrets” policies

The CCAP “Growth Baseline” proposal would eventually lead Annex-I countries to buy no-cost reductions from developing countries. These reductions, sometimes called “win-win” would then become “win-win-win”. However, one may note first that this goes beyond the requirements or even the principles established by the Convention or the Protocol. Moreover, one should say that, from an economic standpoint, profitable investments or actions, as soon as they have been identified with some certainty, should be performed for their own merits. If this were the case, giving allowances for emissions that could be reduced at no cost would lead to an increase in global emissions compared to what would have been the case otherwise. This is usually called “hot air” by negotiators to the Convention – and “tropical hot air” or “tropical air” if it originates from developing countries.

This issue also arises in the definition of a baseline for a project under the Clean Development Mechanism. The baseline should not be considered as the mere prolongation of the recent past; rather, it should be the emission level that would have occurred if the most profitable decision was taken (see Philibert, 1998). The amount of potential tropical air is more important in the case of emission budgets than in the case of CDM, because the baseline in the former case will cover all emissions by a country.

As an illustration of this potential, one may recall an evaluation of the percentage of emission reduction from Business as Usual through no-regrets measures (Unep, 1994). It goes from 5% in the short term to 40% in the long term in some of the developing countries studied at that time. Moreover, there is no doubt that some large developing countries have already started to take advantage of this negative-cost potential, progressively removing cost-ineffective energy subsidies (see Goldemberg and Reid, 1998 a & b, Sinton et al, 1988), and therefore it makes sense to fully take into account this current trend while establishing baselines.

Should one negotiate emission limits or emission budgets, the definition of the appropriate baselines will in both cases be difficult from a technical standpoint, and any final decision should be left to a political negotiating process. However, negotiating emission budgets will not provoke the same fears of possible constraints upon economic growth as negotiating emission limits, and this could ease the negotiating process.

It may appear, however, that the interest of a country in negotiating an emission budget will be to inflate this budget as much as possible to get more benefits from trading. But it

is not that simple, because if all developing countries were successful in obtaining higher budgets than what the “no-regrets” baseline would provide, huge amounts of tropical air would enter the global system. This would have two consequences: first, it would undermine the commitments taken by the Annex-I countries in Kyoto, and raise the level of global emissions, to the detriment of the Convention's purposes. Second, this would lower the international price of carbon allowances, possibly to a very low level. Therefore, it is the collective interest of developing countries themselves to keep their budgets as close as possible to the expected “no-regrets” baselines.

Although these budgets, as well as the underlying trends, will differ from one country to another, they will most likely be negotiated at the same time for all developing countries wishing to participate – exactly as Annex-I Parties commitments have been negotiated at Kyoto. Also, other Parties will participate in this negotiation, to obtain a common, optimal result. They will be wary of not undermining the commitments made in Kyoto, and not removing the need for some domestic action in the industrialised countries (see V below). Other potential carbon sellers will be wary of avoiding the inflation of emission budgets, as this inflation would lower the international price of carbon allowances in their different forms. This combination of stakeholder interest will help assure all Parties that no single Party will get an unfair advantage over the others through an inflated baseline.

One must finally note that, even if the budget definition incorporates all no-cost options (“the no-regrets baseline”), an additional incentive to have them performed still remains, as it opens the door for trading further reductions.

C. *The “Contraction and Convergence” view*

There is a growing amount of literature suggesting that the level of emissions – or emission rights – allocated to countries for the next commitment periods should lead to a “convergence” of per capita levels. How strong and useful are these ideas?

First, one must distinguish a convergence in actual emission levels, and a convergence in emission rights. Apart from historical reasons, there are many geographical, climatic and other reasons for actual emissions to differ from one country to another, depending on the national circumstances of each country.

However, the idea of equal per capita emission rights seems to have some moral strength. All human beings should be entitled an equal share of a scarce common resource: the limited ability of the atmosphere to handle greenhouse gas emissions while not provoking tremendous climate change.

However, what would be the concrete implications of such an allocation? Let us first suppose it is a short-term objective. A global amount of emissions would be defined, departing from business as usual but taking into account our collective capability to reduce emissions. There is no doubt that this global amount would be above 1990 global emissions: none of the emission paths presented by the IPCC (IPCC, 1995, see also Wigley et al, 1996, Grubb, 1997) suggest that immediate global reduction would be possible. Then, this amount would be allocated on a per capita basis in the world. The obvious result would be massive financial transfers from countries with actual per capita emissions above this allocated level, to countries with actual per capita emissions below it.

Although this may attract some sympathy, it seems obvious that some countries will oppose this idea with at least the same strength as some others will favour it. Thus, the prospect for an agreement is very unlikely. Moreover, it must be said that this kind of allocation would not have a different result than any other allocation of the same global amount of emission allowances, in terms of its effects on concrete emission abatement efforts (they would take place in the same places, where they cost the least). Finally, because of this absence of implications for concrete reductions, this massive redistribution of wealth would go far beyond the purposes of the Convention, and the principles it has established.

It would seem much more reasonable to consider per capita emission rights allocation as a long-term objective – say one century or more. Then the question is: how helpful would it be? Is it worth focusing an international negotiation to obtain a formal agreement on such a very long-term objective?

Finally, it seems preferable for this idea to keep the status it has today. It is a view that may be used into the negotiating process, if some Parties wish to use it, to check if short-term agreements, built on short-term baselines with the lowest possible level of economic, scientific and technological uncertainties, are heading in the right direction.

For example, the Kyoto Protocol would broadly pass such a test (it actually results in a limited convergence in per capita emission rights), although some of its dispositions might have been challenged from that perspective. It could eventually be even more successful in passing this test, at least from the “contraction” viewpoint, if Parties decide to negotiate emission budgets for developing countries.

Many other criteria or formulae might be developed and proposed to help negotiators in defining allocations for different countries. Some will extrapolate present trends, looking at energy intensity, per capita emissions, levels of development and so on, while others will propose a long-term perspective, taking into account different conceptions of equity or different visions of the future, and try to define reasonable pathways to them. All these efforts are valuable and might help. But at the very end decisions will be taken through a negotiating process; the point being that, it might be easier to negotiate emission budgets rather than negotiate emission limits, and this option also may be more helpful in preventing tropical hot air.

IV. Legal issues

One may wonder how such “emission budgets” for developing countries could be negotiated, by building on the Climate Convention and Kyoto Protocol provisions, if Parties wished to do so.

One obvious possibility would be an amendment to the Protocol. According to Article 20 of the Kyoto Protocol, such an amendment could be adopted by the Conference of the Parties serving as the meeting of the Parties to the protocol. Therefore, it could only be adopted after the entry into force of the Protocol. The latter is itself dependent on the ratification of 55 Parties to the Convention, incorporating Annex-I Parties which

accounted for at least 55% of the 1990 carbon dioxide emissions of Annex-I Parties, as provided for by Kyoto Protocol Article 25.

Kyoto Protocol Article 21 makes very clear that Annex B of the Protocol, as well as any new annex to the Protocol, could only be changed or added through the process of amendment.

Another possibility could be to consider negotiating emission budgets for developing countries as part of the process of implementing the Clean Development Mechanism. Thus, this possibility could be considered as a special form the C.D.M. could take, and therefore be negotiated by building on the provisions of Kyoto Protocol Article 12. However, Article 12 is rather explicit on the fact that the C.D.M. is based on “project activities”, and this may make this exercise somewhat delicate. This possibility should be further considered anyway.

A third possibility could be envisioned by building on Kyoto Protocol article 3 paragraphs 10 and 11. The former reads: “*Any emission reduction units, or any part of an assigned amount, which a Party acquires from another Party in accordance with the provisions of Article 6 or of Article 17 shall be added to the assigned amount for the acquiring Party*”. The latter reads: “*Any emission reduction units, or any part of an assigned amount, which a Party transfers to another Party in accordance to the provisions of Article 6 or of Article 17 shall be subtracted from the assigned amount for the transferring Party*”.

There is no explicit provision in Article 17 to support the inclusion of “emission budgets” for developing countries. It states that “*the Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3.*” However, as developing countries have not made any such commitments – and are not asked to in this proposal – the restriction of stipulating “*Parties included in Annex B*” does not explicitly prohibit Parties not included in Annex B to participate in emissions trading in a different manner.

Moreover, Article 17 states that “*The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading*”. Here again, the listing of “verification, reporting and accountability” after the words “in particular” does not mean that the principles, modalities, rules and guidelines should be limited to those explicitly mentioned. Thus, one may envision that the Conference of the Parties could adopt decisions on the principles, modalities, rules and guidelines that would provide some developing countries with an “assigned amount” of a specific nature – budgets, not limits. This would allow them to enter the emissions trading regime through Article 3 paragraphs 10 and 11: the former will allow Annex-B countries to acquire parts of these assigned amounts, the latter would merely ensure that any part of such assigned amounts could only be transferred once.

The Conference of the Parties is the supreme body of the Convention, and as such, is entitled to make, within its mandate, decisions to promote the effective implementation of the Convention. Therefore, if the Parties wish to take a decision in the sense suggested here, and feel it useful to effectively implement the Convention and allow it to arrive closer to its ultimate objective, the Conference of the Parties would certainly not have any problems doing so.

V. Emission budgets and the question of “supplementarity”

Article 4 provides for some unlimited flexibility amongst Parties having reached an agreement to fulfil their commitments under Article 3 jointly, provided the terms of the agreement are notified to the secretariat at the time of ratification. But the Kyoto mechanisms (Articles 6, 12, 17) do not do not provide such unlimited flexibility. Article 6 states that “*the acquisition of emission reduction units shall be supplemental to domestic action*”. Article 12 states that Annex-I Parties “*may use the certified emission reductions accruing from such projects activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3*”. Article 17 states that “*any such trading shall be supplemental to domestic action for the purpose of meeting quantified emission limitation and reduction commitments*” under Article 3.

Two reasons are usually given in the analytic literature (see, e.g., Grubb (1998, 1999) to explain these provisions, and sometimes to justify that they should be implemented through precise rules in the different decisions still to be taken by the Conference of Parties in order to implement the Kyoto Mechanisms:

- The need to prevent “hot air trading”
- The fear that “too much” flexibility would have a long term downside for Climate Change mitigation, as it would reduce the incentive for technical change and consumption pattern changes in countries with some global leadership, therefore slowing the transition of all countries towards an economy compatible with a low level of GHG emissions. It may also be argued that negotiating further commitments would be eased if the situation between Parties in terms of emissions per inhabitant or unit of GDP is somewhat narrowed.

We are looking here at the possible consequences of negotiating emission budgets for developing countries, in relation to this question usually referred to as “the question of supplementarity” (i.e. of Kyoto mechanisms to domestic action in the developed countries).

Concerning the first matter of “hot air”, it seems very important for the climate's sake, that no “tropical hot air” be introduced in the trading system. This is all the more true as it appears rather difficult to prevent hot air trading, if some hot air is created by the allocation of emission budgets (for developing countries) or limits (for developed ones). If, for example, ceilings are put on the use of the Kyoto Mechanisms, be it for their use by sellers, or buyers, or both, they would not prevent hot air trading, but rather limit what would have been an environmentally sound use of the mechanisms. The reason for that is that, by definition⁴, “hot air” allowances cost nothing, and will thus be traded first. Instead, these ceilings, if any, will probably reduce the incentive to further reduce emissions in

⁴ Although a rigorous definition of “hot air” is somewhat problematic, as shown by Matsuo (1998 a and b), it is the difference between the amounts of emission allowances allocated to a country, and the expected need of that country, if this need is below her assigned amount.

potential “hot air seller” countries, leaving actual reductions, through low-cost opportunities, aside.

Therefore, it seems that the most efficient way to prevent hot air trading is at the time of allocation negotiation for each country, where inflated allocations can potentially be avoided. Furthermore, as we have shown (see above, **III**), negotiating emission budgets, not limits, increases the probability of avoiding the creation of large amounts of hot air.

To deal with the second concern is more difficult. Even if no tropical hot air is created, involvement of developing countries in emission trading, if it happened, would further reduce the cost for Annex-I countries of meeting Article 3 commitments, and therefore reduce the need for domestic action in these countries. However, different counter-arguments should be considered here:

- Reducing the cost of achieving Kyoto commitments could play a decisive role in adopting further, more stringent, commitments for subsequent periods. Thus, it seems very difficult, if not impossible, to weigh this effect against the effects of stronger incentives for technical change, for future Climate protection.
- Moreover, one may argue that achieving the Kyoto commitments at the lowest possible cost may allow countries to devote some resources to actions with rather low short-term effects on emissions, but important long-term effects (R&D, structural changes, etc.)
- With the proposal of negotiating emission budgets, a complementary incentive would be given, to developing countries wishing to participate, to achieve their potential for “no-regret” actions, as this would open the door for mutually beneficial emission trading. However, these emission reductions would not be traded, and thus would not have been compensated by emission increases in buyer countries. This would benefit the Climate.

Conclusion

Involving developing countries in emissions trading through the negotiation of emission budgets would provide them substantial capital inflows through emissions trading, therefore stimulating their economic growth. It would also allow the World to take advantage of the fact that most of them are building their infrastructure, which would determine long term paths of greenhouse gas emissions.

This would be fully in line with the provisions under the Convention, recalled above (**I**), that *“the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions”*.

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