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A Framework for Reaching Agreement on Climate Change: Morals, Self-Interest, and Strategy

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This paper examines why negotiations following the Framework Convention on Climate Change (FCCC) have stalled and makes suggestions on how to circumvent the obstacles. In particular, the paper:

- illustrates how current barriers to international agreement on climate change (CC) decompose into the separate components — self-interest, morality and strategy — and discuss how the recent country positions are mixing them.
- discusses some elements of a conceptual framework that will serve as a benchmark for assessing the feasibility of a proposal for a CC agreement.
- discusses a few modest proposals that could potentially end the current stalemate, and also the potential hurdles in implementing them.

Morals and self-interests mixed up as strategies: international games

The United Nations FCCC, signed in 1992, did not require any binding restrictions on greenhouse gas (GHG) emissions, but merely asked Annex-I countries to return to their 1990 emission levels by the year 2000. While that target is unlikely to be met by a majority of countries, the first Conference of the Parties (COP-1) felt that existing commitments were inadequate. The purpose of the Berlin Mandate of 1995 was to take action for the post-2000 period and strengthen the commitments of Annex-I countries[1] by quantifying emissions limitations and reduction objectives, whereas the Developing Country Parties (DCPs) were to remain free from any new commitments. An Adhoc Group on Berlin Mandate (AGBM) was set up to negotiate a legal instrument before the third Conference of the Parties (COP-3) at Kyoto in December 1997. This process is essentially open to all parties. Negotiations amongst a large number of participants could be considerably complex, and it is feared that only a weak agreement will result by the deadline, postponing any effective action to a later date.

The current stalemate in the global climate change negotiations seems to be rooted in the formulation of FCCC itself. The FCCC process is bogged down in negotiations about issues like emissions targets and Articles of the convention. Part of this due to the legalistic and political nature of the process. But underlying this are many fundamental issues:

- countries differ in terms of their wealth, past and future responsibilities towards the CC problem, the potential CC impacts that may be inflicted on them, and ability to cope with them;

[1]In this paper we use the terms *Annex-I* and *North* primarily to represent the developed countries, and the term *South* to represent the developing countries.

- there is uncertainty about the CC phenomenon, and its possible implications; and
- the lack of will in individual countries (in Annex-I of the FCCC) to achieve the assigned targets, which is partly due to the potentially high costs of actions required to attain the targets.

More importantly, the FCCC seems to have ignored (or underplayed) the role of self-interest in the climate change problem. Each country looks for its own self-interest and it would be rather naive to assume otherwise. Most of the Annex-I countries, which were primarily expected to reduce their emissions to 1990 levels by the year 2000, may not be able to do so. The underlying reasons for these countries not adhering to the targets are the high costs associated, and pure self-interest.

The FCCC has led to strategic behaviour on the part of countries, i.e., each country trying to bring every other country into its coalition. For instance, early on, various European countries have sought to take a lead in the convention, but this created resistance in developing countries because they feared that their needs or objectives were not taken into consideration. On the other hand, the United States (US) recently sought to tie its commitment to developing country participation by claiming that the South was going to be responsible for future emissions.[2]

Many of these postures have emerged from a situation described in academic literature as a "two–level game", in which the domestic political posturing of a government influences its international positions (Putnam, 1988). One common factor in many of these negative stances of nations, involving countries from both the South and the North, has been the notion that some sector, or the country as a whole, will lose out as a result of a global agreement.

We posit that these two-level games (or behaving strategically for domestic interests) are hurting the chances of reaching international consensus, because domestic postures increase the pressure on governments not to reach unfavourable agreements. However, this is not to say that the international agreements should bypass the domestic interests. The international frameworks addressing climate change should take into account the possibility of such 'self-interests' and accordingly formulate guidelines. We feel that it may be possible to reach agreements if negotiations are conducted in a climate of full information, that is, by internationally recognizing the various moral grounds, self-interests and strategies that may be played out. In other words, without full information and education of all affected parties, the hidden strategies may undermine any agreement.

At the same time, on the basis of self-interest alone, it also behooves the US or any other developed country to adopt a position that gives it 'win–win' leverage, since a resulting CC agreement may provide its business sectors with greater investment opportunities in developing countries. For example, witness the difficulty that Enron had in setting up a private power plant in India (and the potential support an international agreement could have given it!), and the recent positive attitude of US business interests in supporting Joint Implementation (JI) activities. Similarly, a developing country also could see the CC agreement as a 'win–win' situation, because it might get the much required resource and technology transfers from the developed countries.

We begin by developing an analytical procedure and illustrate it with recent pronouncements from the US lawmakers. The process should consist of (1) understanding the motivations of each strategy that could potentially stall the process for what it is, and (2) developing a positive strategy for overcoming such negative strategy.

The case of the 'summer games'

One clear example of strategic behaviour that could lead to a stalemate in the negotiations is the US Senate's summer resolution on climate change. This has thrown a wrench into the upcoming COP-3 convention in Kyoto. The US view is that developing countries will be responsible for the majority of emissions in the next century. Hence a resolution of the Senate seeks to prevent any protocol that "mandates new commitments to limit or reduce greenhouse gas emissions for the Annex I parties" unless "protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period..." (US Senate, 1997). This position has been reinforced by a recent statement by President Clinton (1997).

One way to frame this position for further analysis is to consider the two issues separately: (1) moral

[2]This logic completely ignored the fact that the North was largely responsible for historical emissions, and that the relative state of underdevelopment in the South makes it necessary to have resource transfers from the North to the South to fund emissions reduction in the South.

grounds (including equity), and (2) self-interest. The US position clearly reflects both, since the US clearly does not wish to risk "... serious harm to the United States economy, including significant job loss, trade disadvantages, increased energy and consumer costs, or any combination thereof" (US Senate, 1997); that is, being the only boat that risks economic sinking. In short, to the US, CC should involve some risk to all, or none. This argument *per se* appears to be based on the moral ground that since climate change is a common problem for all countries, it should be addressed by all.

However, this 'self-interest' argument (posited by the US as a 'moral' one) ignores other important moral issues: (1) that the North is responsible for most of the past emissions, which could be seen to be responsible for the climate change that has already been 'committed'; (2) that the North currently has far more culpability for CC on a per capita emissions basis than the South;[3] and (3) that the South is not in a position to pay for current efforts to mitigate emissions, whereas the North is (an equity issue).

Looking at the potential impacts of climate change, the slowly emerging consensus among the climate change impact modellers, that many countries in the South may actually suffer more than the countries in the North, adds another moral issue: if the North, in recognizing this, allows their actions to go unabated, are they not a 'cause' of the disaster that takes place? On the other hand, if developed countries are asking developing countries to participate in the 'action', while knowing clearly that the latter cannot afford to 'act'—given their development priorities and other immediate objectives—then they could be knowingly perpetuating the deadlock, or raising the potential gains to themselves in an eventual negotiation.

Resolving the stalemate

How can this stalemate be resolved? One precondition to resolving this is to recognize each component of the position for what it is: self-interest on the part of each country, the mix-up of moral principles with self-interests, and the potential gains that such strategy has for each country's negotiating position. One possible way of overcoming domestic 'games' is to provide full information on these games to peoples in developed and developing countries.

For example, since the US Senate resolution does not specify who will pay for the emission reductions in developing countries, and since it also apprehends serious harm to the US economy from commitments, surely it cannot be naïve in imagining that these are cost-free to the developing countries. One liberal interpretation of the US position is that it provides access to cheaper reduction options in developing countries through Joint Implementation (JI, otherwise known as Activities Implemented Jointly) or Tradable Permits (TPs), which is a more 'benign' form of self-interest.[4]

Seen as such, the US Senate resolution language, in not recognizing the other moral responsibilities, could also be leaving the door open for a resolution based on those same moral grounds. Thus, the debate could shift to the question of: "what can be done to bring developing countries into the fold, without risking their ability to develop?".

The next step will be to design a doable mechanism, one that is realistic and has the means to overcome barriers to negotiation, or that has low negotiation hurdles. These mechanisms could involve appealing to moral sentiment and various interests, particularly self-interest, in both the North and the South. It is quite likely that moral sentiment only goes so far, and that serious movement will only come through appealing to self-interest. For instance, an agreement might seek to include the North by involving commitments from the South, but also to include the South by tying its commitments to resource transfers from the North, and being contingent on reaching targets for economic growth rates or per capita income, the Human Development Index, and per capita emissions levels.

Also, bringing the climate change agenda closer to the sustainable development agenda, which has objectives that are more in common with current development thought, could improve the feasibility of the mechanism.

[3]A key feature of the Senate resolution is that it makes no reference to international inter-personal equity (per capita emissions, either in the past or in the future). It only makes a naïve international comparison on how much will each country emit.

[4]A tradable emissions permit (TP) is often held up as an instrument that can simultaneously address two issues at the heart of CC negotiations—international equity and cost efficiency of emissions reduction. Under this scheme, each country is allotted TPs, which together must add up to a number no more than what is justified by a tolerable level of atmospheric concentration of carbon dioxide. No country can emit more than the number of TPs held by it, net of purchases and sales. Thus, a country may reduce emissions at a certain cost if it can sell the TPs rendered surplus at remunerative prices. Likewise, a country can avoid incurring the high cost of emissions reduction if it can purchase TPs at cheaper prices. A JI scheme occurs between two countries, allowing one country to transfer financial, technological and managerial resources to another country (which has a higher marginal cost of reducing pollution), in exchange for a reduction in the emissions that the first country has to reduce. This leads to a more cost-effective solution for reducing aggregate solutions for the first country.

Why act now?

We have thus far outlined the current problem and some basic sense for overcoming it. As noted earlier, the difficulty in reaching an international CC agreement also exists because of uncertainties and the perceptions of an unfair policy regime (dictated by domestic interests). However, this does not mitigate the fact that some degree of climatic change is inevitable, and the following reasons make it even more imperative that some action be taken:

- The impacts of climatic change may be irreversible, so a precautionary principle dictates that we would be safer attempting to prevent it.
- Any actions will have a delayed effect, partly because it takes time to 'learn' what might be the appropriate responses, be it technology or lifestyle adjustments (i.e. social learning). Furthermore, a longer planning horizon will be necessary to replace capital infrastructure over the long term.
- Delaying action now may result in the need for even stronger (and more expensive) actions in the future. One example of this is that the cost of providing foreign aid may be higher in the future than in the present, as a result of higher growth rates in developing countries relative to developed country growth rates, and the cost of turning over capital infrastructure.[5]

Having discussed the current situation of CC negotiations, along with some of the issues that have been barriers to forging an agreement and reasons for early action, we now turn to a broader framework for evaluating proposals and their likelihood of success.

Elements of a conceptual framework for evaluating proposals

As was discussed in the previous section, there are many barriers to the current negotiation on CC. Some of them are due to the complexity of the climate change problem, while others are more to do with the FCCC process itself. One of the more difficult problems with the FCCC has to do with there being too many actors with too many objectives that are not being addressed.[6] It was certainly the case in the past that developing country interests were not considered in processes of international negotiation, and even the science and data for climate change have been known to harbour a developed country bias (Roddick, 1997).

In this section, we describe a first attempt to construct an evaluation framework, which can be used to evaluate policy proposals for the FCCC. The focus is on whether a given proposal is *capable of appealing to all parties, or has the necessary resources to lead to an agreement.* At its simplest, the evaluation framework would consist of a checklist of considerations, including the possible barriers that could arise within the negotiation process. At a more complicated level, this set of considerations would be developed into a fully-fledged evaluation framework that could be used to evaluate proposals.[7] In this paper, we focus on only the simplest form of evaluation framework.

No evaluation framework may be capable of forecasting exactly how well policy proposals will be received and the negotiating positions of countries. However, with some knowledge of various starting positions of the countries at negotiations and the specification of targets, it may be possible to forecast some possible scenarios for each policy proposal. In fact, the specification of a scenario may be valuable information for either helping to avoid pitfalls in the negotiation process or for preparing countries for the negotiation.

Furthermore, the evaluation framework might have to consider some aspects of the process of reaching consensus within the FCCC. These include the aspects of social learning by various actors (e.g., the private sector learning how to implement JI), and the formation of negotiating coalitions.[8]

There have been many attempts at developing frameworks to explicitly achieve some purpose, such as legal frameworks that incorporate certain issues

[5]The argument can be illustrated as follows: if we assume that the amount of 'aid' needed to change the GNP's (or infrastructure's) energy intensity in the future is the same as now (on a per unit GNP basis), and that developing countries will have higher growth rates than developed countries, then more aid as a proportion of developed countries' GNP would be needed for changing the energy intensity of the future GNP of developing countries than is currently needed. It should be noted that this is a simple 'proportions' argument, and does not include the adjustment needed to turn over capital stocks that are *not* fully depreciated, nor does it take into account discount rates.

[6]This is even more troublesome from the point of view of implementation, given that the whole notion of resource transfers is yet to be addressed, and the expectation that the transfers for CC will be on a scale vastly greater than those seen in the Montreal Protocol.

[7]Another issue is whether the FCCC itself needs to be repaired. For instance, it may be possible that there is simply no room for negotiation within the current setup of the FCCC process, especially because full consensus of all member states may be needed. However, these issues are beyond the scope of this paper.

[8]An example is the consolidation of EU member states into a unified position in the AGBM's sixth session in March (United Nations, 1997).

such as equity (Brown Weiss, 1992), frameworks for treaty formation (Szasz, 1992) and institutional frameworks for environmental aid (Connolly and Keohane, 1996). The evaluation framework we propose attempts to focus more on the structure and constituents of the FCCC process and how they form the basis for the negotiation, and the policies for reaching a consensus.

The issues discussed in the previous section suggest that an evaluation framework should account for aspects such as the following:

- *Actors at both the national and the sub-national level*—sub-national level actors (e.g. special interest groups) should be considered because of the possibility of two-level games. Thus, an ideal policy proposal should motivate all affected actors, e.g. by providing benefits to as many actors as possible through side payments, if necessary and feasible. This raises issues of both inter- and intra-generational equity.
- *Objectives of the actors, and a means for evaluating the tradeoffs in objectives*—in the broadest sense, this includes individual objectives (of the actors involved) as well as broader social objectives (e.g. the aggregate level of emissions reduction desired). This may cover the consideration of both monetary and non-monetary benefits and costs.
- *Institutions for achieving the outcomes*—institutions (such as the FCCC) represent forums for negotiating consensus and selecting policy options and, as such, are critical components. Furthermore, the design of institutions should allow for their evolution according to the changing relationships amongst actors and their strategies.
- *Implementation, transaction and negotiation costs*—implementation costs are the direct costs of putting a policy into action, and negotiation costs may be the side payments needed to negotiate agreement on a policy that is unpopular with certain parties. Transaction costs include the time and effort spent on the negotiation itself.
- *Types of policies*—the framework needs to provide means for the selection of the right policy. Many policies in the academic literature are unrealistic, and measures of their likelihood of being successfully negotiated should be considered. These measures include the implementation, transaction and negotiation costs.
- *Information*—this includes scientific information, e.g., the Intergovernmental Panel on Climate Change (IPCC) process for achieving scientific consensus for FCCC decision support.

In order to use the framework to evaluate a policy measure, it will be important to consider other issues which could act as integrating aspects for the framework. These include:

- *Institutional mechanisms*—these are important in order to integrate diverse interests of actors to achieve the institution's objectives. An example of one such mechanism is a legal and political framework that can enforce agreements. Getting all the actors to agree to enforcement is extremely difficult, given the variety of objectives that would exist.
- *Criteria for selecting the countries to be involved in the transactions*—transactions in TP or JI schemes may be limited to certain countries, particularly if they are part of an experiment. Emissions trading may occur between countries within groups or between countries in different groups. Selection of the trading partners may occur along different dimensions; for instance, a purely market-oriented scheme will dictate transactions and the transacting partners on the basis of price.
- *Measures for the quantities and types of resource transfers needed to implement policies*—examples of these are technological and financial resources. Even scientific expertise and information is a resource that needs to be transferred, particularly if negotiations are to be 'believed'. It will also be important to identify the pathways by which resource transfers can be carried out, e.g. multinational corporations and multilateral institutions.
- *Measures of the impacts of resource transfers on objectives, e.g. economic development and the environment*—one example is that of foreign investment flows, which may have positive impacts on the environment if they bring in cleaner energy technology, but could have negative impacts if they continue to support the use of polluting technology.
- *Consideration of social learning and adaptation processes*—for instance, different policy instruments and their outcomes (such as the development of new technologies) may have different time frames for taking effect or maturing. This may be because people require

time to learn, modify, and adapt to these technologies.

- *Consideration of diffusive processes* — these may involve either the expansion of the framework to a larger set of actors (if it starts from a smaller set of actors) or the diffusion of practices (e.g., spread of new technologies throughout a society). If a practice is economically or socially sound, it will be more likely to be diffused through all parts of the society or economy, or to have more linkages between more donor and recipient countries.

A more complicated framework (than we have room to develop here) would have to examine how to combine all these components into a coherent process for evaluating the negotiation scenarios and policies. Thus, different barriers may arise; e.g., a strategy may be needed to accommodate the objectives of different actors. Some barriers would occur depending on the stage of the negotiation process. Prioritization of objectives may also need to be done on the part of individual countries as well as the institution that is trying to obtain consensus.

Types of policies

In order to seriously overcome the actual negotiation barriers, we suggest that current and future policy proposals be evaluated by the above framework. That is, each proposal should consist of not only the policy itself, but also the analytic means of evaluating the various objectives, and consideration of the various issues outlined above. This section examines the different types of policies in more detail.

Policies can be divided into various types, including mitigation policies such as energy efficiency improvement, and adaptation policies such as encouraging the development of seeds that could adjust to new environmental conditions. Economic policies that have been discussed in the literature can be considered to be mitigation measures. Other policies might also be needed to support the implementation of an economic policy, including educational policies, and research and development.

Commonly mentioned economic policies include government regulation, carbon taxes, TP and JI (which involves transfer of technical and financial resources). Most of the existing policy proposals involve either one of these types or a combination of more than one type. The issue of self-interest discussed earlier suggests that an effective policy instrument is one that provides benefits to all parties. Both TP and JI have this characteristic, and both could lead to greater economic (and therefore environmental) efficiency from the interchange of rights (to pollute). Both schemes require some commitment to compliance from the actors involved, or an enforcement scheme.

While taxes and TPs are often discussed in the academic literature (particularly the literature on economic modelling), the policy instrument that many consider practical within the current regime is JI. In fact, JI experiments are ongoing in a pilot phase that will extend to 2000. In the final section, we will examine one possible mechanism, involving a limited set of countries, for getting around the deadlock.

Applying the evaluation framework

The components of the evaluation framework developed above may be more complete than necessary to assess proposals. Indeed, one of the objectives was to illustrate that potential barriers could come from any factor or combination of factors. The current barriers to the FCCC were identified in the first section. In the next section, we suggest a policy proposal that overcomes some of the deficiencies of the FCCC and addresses some of the issues that have been listed in the checklist developed in this section. These issues include the selection of actors (starting with a limited set that may be able to reach consensus more easily, given the more reasonable number of objectives) and the selection of a policy instrument that provides opportunities for social learning and experimentation. The larger set of actors in the FCCC do not have much opportunity for experimentation unless they try pilot schemes such as the ongoing JI initiatives between self-selected partners.

A modest proposal

The analysis of the previous sections indicate that CC is dealt with optimally by considering impacts from emissions (a) of all types of GHGs,[9] (b) from all countries, and (c) in all time periods. This may not be easy to achieve, and, even as immediate action is urged by a variety of experts, a lot of valuable time could be consumed in reaching a consensus over what actions individual countries should take. Compromise from all quarters will be necessary if timely action is to be taken. In this section, we examine a current proposal and put forward another for a future course of actions to

[9]Apart from carbon dioxide, which is well known and has received wider attention by far, other GHGs are methane, nitrous oxide and CFCs.

halt CC, which draw on insights gained from the conceptual framework described previously. The proposal we examine first is JI, which has been introduced earlier in the previous section as a cost-effective mechanism for reducing carbon emissions globally. Then we discuss our proposal for restructuring the global CC negotiations in such a way that congregates key players into an exclusive club, which will allocate emission rights and reduction responsibilities amongst these members. Once this is done, club membership can be opened to the remaining countries, provided they accept the rights and responsibilities allocated to them, which will take care of their economic status and vulnerability to CC.

Joint Implementation — A Way Ahead

The key players in JI are (a) the governments of Annex-I countries, (b) firms in Annex-I countries, (c) governments of countries hosting JI projects, (d) JI project collaborators in host countries, (e) the agency for certifying emissions reduction achieved through a JI project. It will be necessary to understand their perceptions of JI, their incentives to participate in JI projects and how they will actually act in one. Business firms will primarily be concerned about their profits. Unless required by regulation, or facing appropriate economic incentives, they will not participate in a JI project on their own. Annex-I governments will be primarily responsible for the behaviour of business firms in their countries while host country governments will need to guard their development priorities. Host country firms that collaborate in JI projects can gain from access to better technology and management practices which may be useful for their business. In the end, it falls to the lot of an accredited international agency to certify that JI projects are able to reduce global emissions.

JI projects evidently reduce the cost to Annex-I countries of meeting their emissions reduction obligation besides creating new business opportunities for them. That apart, it may bring substantial benefits to the host country as well:

- Technology transfers during a JI project may lead to spillover benefits for human capital in the host country.
- It may also spur FDI.
- It may promote sustainable development practices.

A number of thorny issues are involved while designing JI projects between an Annex-I country and a DCP, which are typically the most attractive partners. Among them are:

- To verify emissions reductions in the country hosting a JI project, a suitable baseline has to be established but it may prove difficult to agree on one. A host country could wilfully misrepresent its baseline emissions to gain a bargaining advantage. A baseline should ideally play the same role for a DCP as a binding target set for an Annex-I country; i.e., a DCP should be able to commit itself credibly to a baseline.
- While emissions reduction can be verified on a project-by-project basis using agreed baselines, it will be difficult to verify that emissions will not increase elsewhere — in some other sector, country, or time period, or in the form of some other greenhouse gas? Thus, certifying agencies will need some methods to deal with emission leakages.
- Some JI projects may be inherently risky and the bilateral partners will have to decide on how the risk will be shared between them.

Emissions reduction from a JI project between two Annex-I countries need not be monitored on a project-by-project basis. It is enough to verify that the two countries have emitted within their targets net of JI credits transferred between them. It may be noted that the TP scheme is a logical extension of JI, when there are many buyers and sellers of JI projects, and is theoretically a more cost-effective way of reducing emissions. Given widespread misgivings about market processes, especially in the DCPs, JI may serve well as a stepping stone for an eventual transition to a global TP system.[10] The problem of crediting emissions reduction of JI projects is analogous to that faced in a TP scheme of constructing acurate inventories of emissions by each source in each country and then matching them against the number of TPs held by that country. An interesting possibility is that credits earned through JI may be permitted for eventual trading.

Climate Change Action Club

Currently, the views amongst the Annex-I countries

[10]However, it is not clear whether transaction costs (of 'searching', 'negotiating' and 'consummating' deal) are lower in JI than in exchanging TPs. 'Searching' in an international market, which is larger, may fetch better deals, which yield higher costs savings, than entering into bilateral deals, so TPs should be more efficient than JI. On the other hand, if a country begins to look around for the best bilateral deal then, of course, it should count the cost of searching for one.

are divergent. On the one hand, the US, which has a share of about 20% in current global emissions of carbon dioxide, was apparently uncommitted to any action on restricting emissions in the post-2000 period if the DCPs remain free of any commitments to restrict emissions in the same period. On the other hand, the European Union (EU) advocates reducing emissions by up to 20% of the 1990 levels by 2010 without asking DCPs to join in[11]. Amongst the Annex-I countries, the issue of differentiated responsibilities is not yet resolved.

It is a common management practice to solve problems through an 'ABC' analysis, which identifies the top contributors to a problem and then focuses attention on them. CC is an international problem and a good way to tackle it is to evolve a consensus between the key players on what actions should be taken. Thus, nations with the highest GHG emissions currently and in the future should be included, and nations which will suffer the highest impact of CC (e.g., those in the Association of Small Island States) should also find representation. Due recognition should also be given to hegemonic powers, winning and blocking coalitions.[12] The objective of this club should be to allocate emission rights and reduction responsibilities amongst the initial members in a way that leads to a significant slowing down of emissions accumulation.

A number of factors would help bind the club members together: (a) interests of individual member countries are mutually protected; (b) mutual business and trade opportunities (say, in the field of energy technologies during the process of JI) may be given preferential treatment. In this sense, the formation of the club mimics the establishment of a strategic treaty (like the NATO) or a trade bloc (like the APEC), etc., except that its chief objective is to reduce the risk of CC.

An agreement between a few selected countries is obviously incomplete from a global viewpoint. There will be problems of emissions leakages as non-members will free-ride. But there appears to be some support in the economics literature for the idea that international environmental problems could be effectively tackled by working with a coalition of concerned countries.[13] The agreement need not be static. Once the proposed club is seen as an effective organization whose membership confers not only privileges such as preferential access to protection against natural disasters (possibly related to unmitigated CC) or preferential rights to business and trade opportunities, but also imposes responsibilities such as agreeing to participate in international action for reducing emissions, additional members may be willing to join.

Sub-optimal solutions may be expected from such a club: potential members may wait for the club to declare higher benefits from membership. The club may reciprocate by not taking hard enough measures to combat CC and suggest soft solutions that maximize the benefits for current and potential members. Such strategizing, if it happens, will obviously be unsuited for confronting the basic issues of CC. The club formation in the first instance should ensure gains for each member; i.e., it should be a stable coalition of the initial partners. The club should not bend the framework to admit additional members. If new members do not come in, then global benefits will be sub-optimal but may not be below zero. Non-members will free-ride but presumably they will face some costs of exclusion from the club. Therefore, it is essential that the original mandate of the club, which is to halt CC, not be compromised at any stage of expansion of its membership.

On a final note, it is not clear how a club like the one described above could function given the existing institutional structure of FCCC. Moreover, if such a coalition develops outside the existing framework for negotiations, then how should the UN respond to such moves? The UN functions largely as an all-inclusive organization except for one organ, its Security Council, which has a more exclusive character and is perhaps more effective in terms of actions. Perhaps it is time to think of an Environmental Security Council?

[11]These positions are being revised with the COP3 negotiations.

[12]Some of these criteria for selecting key players, though given in a limited context of modelling global CC negotiations, are discussed in Ringius (1997).

[13]For example, an analysis of the "profitability and stability of international agreements to protect the environment in the presence of trans-frontier or global pollution" is to be found in Carraro and Siniscalco (1993). "Each country decides whether or not to coordinate its strategy with other countries. A coalition is formed when conditions of profitability and stability (no free-riding) are satisfied." They show that "such coalitions exist; that they tend to involve a fraction of negotiating countries; and that the number of signatory countries can be increased by means of self-financed transfers. However, expanding coalitions requires some form of commitment. Such schemes of commitment and transfers can even lead to cooperation by all countries."

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