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TRADING SPACES - JOINT IMPLEMENTATION AFTER THE KYOTO PROTOCOL

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Abstract

Flexibility instruments such as joint implementation and emissions trading have played an important part in climate change policy negotiations since before the signing of the Framework Convention on Climate Change. They are likely to remain an important feature of future negotiations. This paper examines the characteristics of the various flexibility mechanisms introduced by the Kyoto Protocol. Although the language in which they are couched differs significantly from earlier language on flexibility, the authors point out that many of the proposed mechanisms are broadly similar to mechanisms which have already been mooted. They suggest that contentious issues will not be resolved by linguistic changes, and are best addressed by an open recognition of the multiple objectives under which flexibility instruments operate.

Keywords

Flexibility instruments, joint implementation, emissions trading, climate change, Kyoto Protocol.

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1 Introduction

Concepts of "joint implementation" and "emissions trading" have entered the language of several international conventions concerned with environmental policy. Joint implementation (JI), for example, has been discussed in the context of the Montreal Protocol (Barrett 1993, Markandya 1992), the Second Sulphur Protocol (Klaasen 1994, Jackson and Bailey 1997), and the United Nations Framework Convention on Climate Change (Jepma 1995, Jackson 1995). The basic idea of such instruments is to provide flexibility in meeting specific environmental goals. Rather than insisting that strict environmental targets are met within national boundaries, flexibility instruments allow one country to achieve some of its commitments by investing in emissions reduction (for example) an another country. In principle, it is argued, this should allow for greater cost-efficiency in meeting global targets, since abatement action can be taken first, where it is least costly to do so.

In this paper, we describe the development of these concepts within the United Nations Framework Convention on Climate Change (FCCC). The objective of the FCCC is "the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". It is generally agreed that this means reducing emissions of greenhouse gases from anthropogenic sources and the thrust of the Kyoto Protocol negotiated at the 3rd Conference of the Parties in December 1997 was to provide a framework for achieving such reductions.

Flexibility instruments have been a key issue within the negotiations that led up to the Kyoto Protocol, and are likely to continue to be important within the Convention. In this paper, we discuss the impact which opposing views about flexibility have had on the development of the instruments, illustrate the complexity which underlies this situation, and discuss appropriate strategies for resolving the conflicts which have arisen.

2 Flexibility instruments in the language of the Convention

Given the prominence of JI in the period between the signing of the FCCC and the 3rd Conference of the Parties in Kyoto, it is surprising, at first sight, to find that the Kyoto Protocol contains no explicit reference to the terms "joint implementation" or "activities implemented jointly". There are, however, numerous references to the transfer or trade of emission reduction credits. By a strange contrast, the FCCC contained no explicit reference to emissions trading at all, but couched any consideration of flexibility issues entirely in the language of joint implementation.

These apparently trivial linguistic anomalies reveal important social and institutional lessons about the process of devising international environmental policy for the mitigation of climate change. The concept of emissions trading was first proposed as a general mechanism for pollution policy by Tietenberg (1985); and introduced specifically in the context of greenhouse gas emission reductions in *Negotiating Targets* (Grubb 1989), published some three years before the signing of the FCCC. Between the publication of that influential report and the Rio Conference, considerable effort was made to incorporate the concept of emissions trading into the Framework Convention.

Those efforts were obstructed by a sharp division of views on emissions trading. Advocates argued that emissions trading would allow for improved cost-effectiveness and flexibility in reducing greenhouse gas emissions. In support of the argument from cost-effectiveness they pointed out that the costs of reducing emissions vary widely between countries, and that the least expensive route to emissions reductions would be to implement first those options which are least expensive, irrespective of geographical location. Opponents to emissions trading argued (variously) that such arrangements would reduce the incentive for donor countries to take domestic action, compromise the sovereignty of host nations, their ability to harness indigenous resources and develop their own markets, increase the transaction costs of achieving emissions reductions, and ultimately undermine the objectives of the Convention. An additional obstacle to global emissions trading was the highly political issue of devising an initial allocation of permits.

In the event, the failure to reach agreement on these issues led to the omission of any language in the Convention explicitly referring to emissions trading. Instead, the terminology of joint implementation was introduced as "enabling language" to allow for the future development of

trading type mechanisms. Almost immediately however, it became apparent that the change in terminology had not eliminated the underlying conflict of views (Jackson 1995 eg). In fact, at one point the term "joint implementation" became so problematical that the attempt to introduce a "pilot phase" - in which bilateral investments could be made (without credit) for the purpose of testing the concept - only survived by changing the terminology yet again, to refer to these investments as "activities implemented jointly" (AIJ).

The existence of conflicting views on JI/AIJ prior to Kyoto may have been one reason for excluding explicit reference to it in drawing up the Protocol. There were already enough inflammatory elements in the negotiations. Arguably, the problematic nature of the JI terminology may even have drawn some flak away from the emissions trading terminology, and allowed the latter to re-enter the institutional language. From a historical perspective, JI and emissions trading were quite clearly references to very similar kinds of mechanisms. In the intervening five years however, the two terms had increasingly come to be seen as separate mechanisms, although the distinguishing line between JI and emissions trading was seldom explicit, and often blurred. Thus for example, Bohm (1997) published the results of a "thought experiment" in which a hypothetical trading arrangement between four Nordic countries was investigated. The report was entitled *Joint Implementation as Emission Quota Trade.*

In spite of these terminological confusions, it is clear that there are in fact a number of different kinds of mechanism which could, in principle, loosely be characterised as JI/trading mechanisms, but which bear different characteristics depending on a number of factors. These factors include the types of actors involved in the arrangements, the status of these actors with respect to the Convention, and the nature of the trade engaged in. The purpose of the following sections is to characterise these different kinds of arrangements more explicitly, and to relate these characterisations to the various mechanisms for JI/trading which have been proposed both prior to, but more specifically within, the Kyoto Protocol.

3 Classification of JI/trading arrangements

There is an important distinction between *"closed"* and *"open"* flexibility instruments. Closure refers to arrangements in which both parties are subject to clearly specified emission "caps" or - in the terminology of the Kyoto Protocol - quantified emission limitation or reduction commitments (QELRCs). In these circumstances, it is possible to identify total emission allowances, and therefore to define a closed market in a clearly tradable commodity amongst different partners. Since both donor and host are bounded by QELRCs, the incentive to ensure that the trade realises concrete emission reductions is increased, and the likelihood that trading arrangements compromise the objectives of the Convention is reduced. In principle, in these circumstances JI is essentially equivalent to an emissions trading regime (Barrett 1994).

By contrast, openness in the context of flexibility instruments refers to a situation in which a the host country has no emission cap.[1] In these circumstances, the host country has no emissions allowance, and so the structure of allowance trading is less clearly defined. Nevertheless, if the credits can be transferred as a way of achieving commitments under the Convention, then there may well be incentives on both sides to engage in the trade. The host country would benefit from investment funds in specific market sectors (such as the energy sector); the donor would benefit from accredited emission reductions from the project.

The problematic element in open JI arises from the fact that there is no restriction on emission levels in the host nation. Transfer of emission reduction credits to the donor nation will reduce the amount of abatement carried out in the donor nation. But the investment may not lead to real, lasting emission reductions in the host nation: for example, there is a clear incentive for both nations to "talk up" the baseline against which emission reductions might be measured. In the worst case, large-scale implementation of open JI arrangements could compromise the objective of the Convention to reduce global greenhouse gas emissions.

A critical issue in defining JI/trading arrangements lies in the specification of the kinds of *actors involved* in the transaction. Trading arrangements have been discussed at various different levels. Quota trading is the term which has most often been used to apply to trading at the level of Parties to the Convention. Thus, the actors involved in the

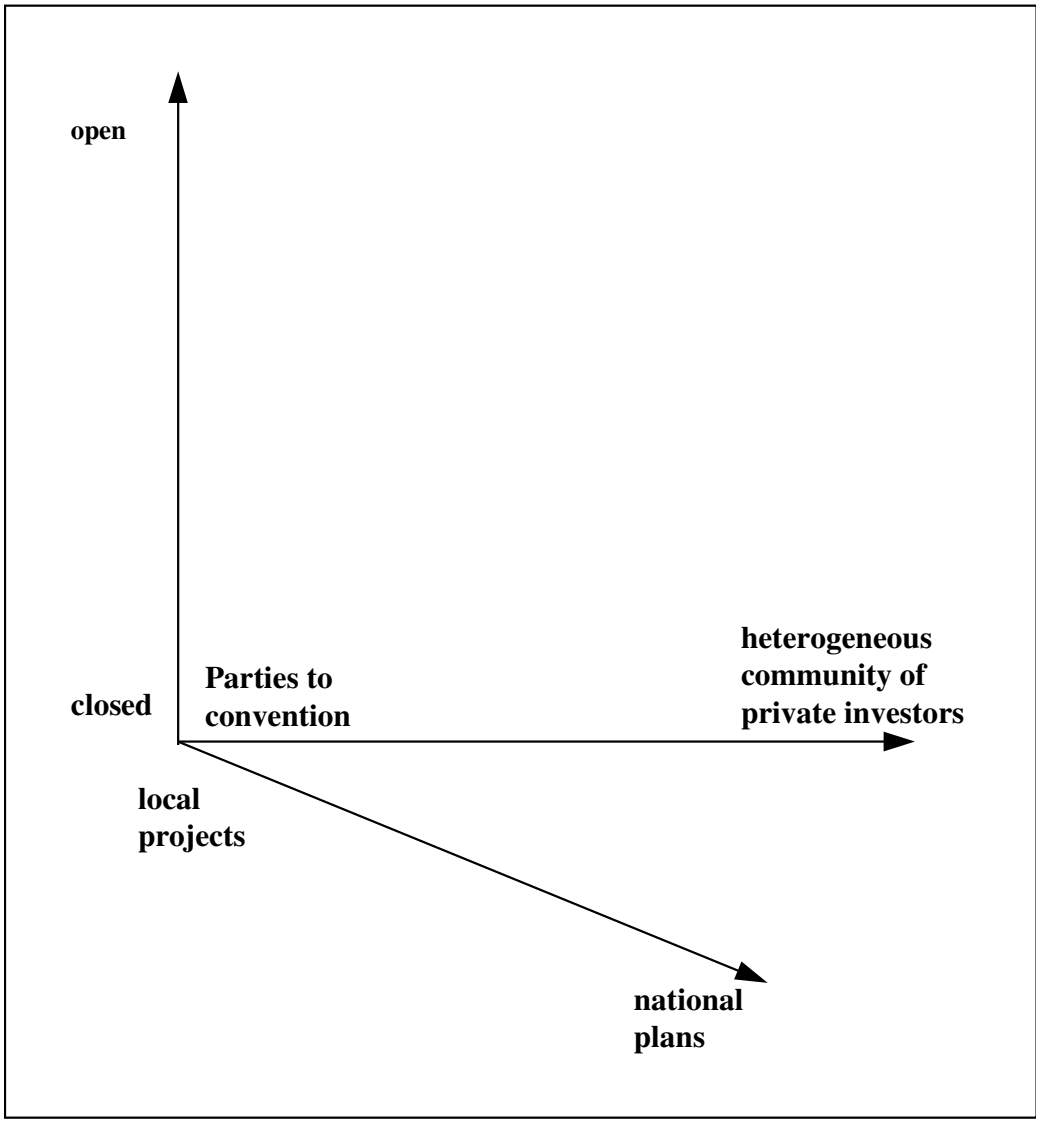
[1] In principle, open JI could include arrangements between countries neither of whom had QELRCs, although in this case it is difficult to see how there would be any incentive for the donor to engage in this relationship.

transaction would, most often, be individual national governments. One government - the donor - would agree to compensate another government - the host - in exchange for an increase in its own emission allowance at the expense of the emission allowance of the host. This is the type of arrangement envisaged, for example, by the Nordic experiment cited above.

As we have already noted, one of the main advantages claimed by proponents of JI/trading arrangements is the ability to deliver flexibility in meeting targets. In this view, it is envisaged that trading arrangements could take place between any number of different kinds of partners, not just between national governments, but between national governments and private investors, between local or regional authorities and foreign governments, or between municipalities and a wide variety of different kinds of private investors. Thus the scope of JI/trading arrangements ranges from direct bilateral agreements between individual Parties to the Convention, to a wide, heterogeneous market of private traders.

In reality, there may not be so much distinction between these different kinds of arrangements as appears at first sight. For instance, even if trading is allowed within a heterogeneous trading community, it is likely that authorisation will nonetheless be required from a legally accredited body. Conversely, even if the trade occurs as a bilateral agreement between two governments, the host country must then ensure that domestic emission reductions meet the agreed target. There are a number of mechanisms for ensuring this. One of these would be to put in place a domestic permit system which would implement heterogeneous trading internally (Fleming 1997 eg). Nevertheless, for the purposes of classifying the kinds of JI/trading arrangements which might be envisaged under the Convention, the distinction between different kinds of actors is a useful one.

Figure 1: Schematic representation of JI/trading characteristics

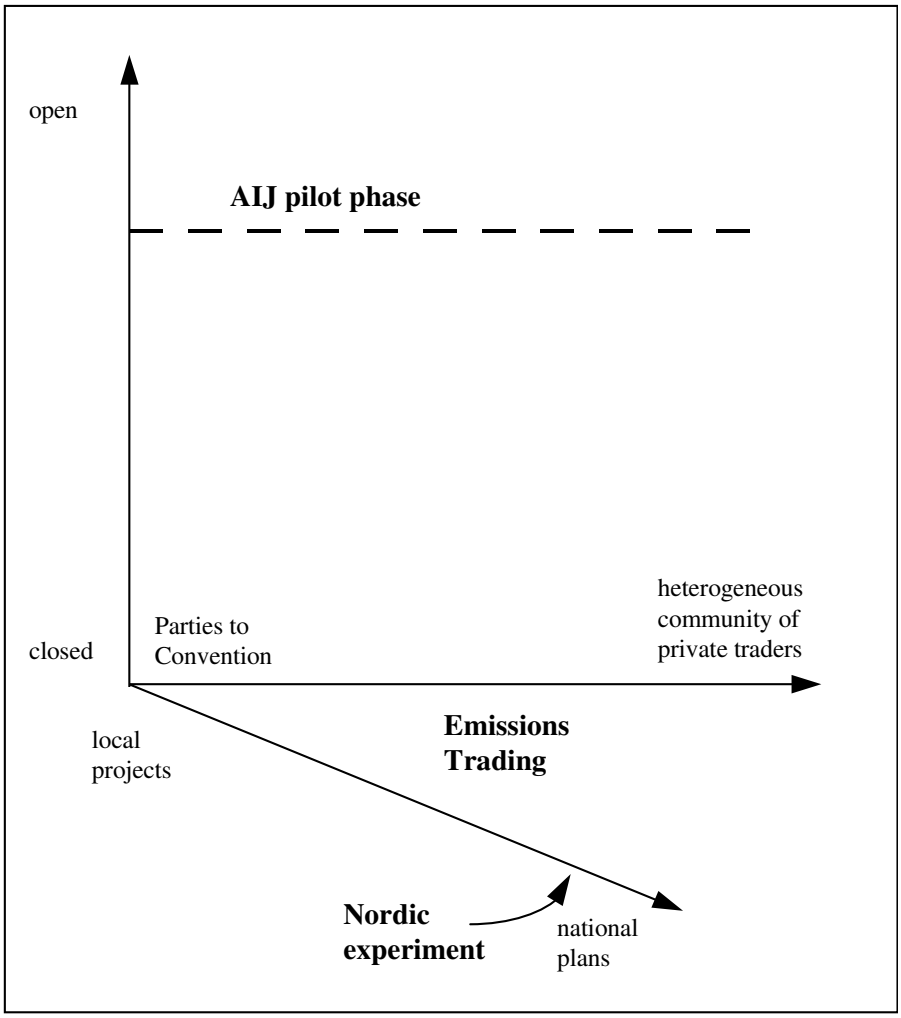


Finally, it is useful to distinguish the nature and scale of the investments implied by the envisaged trades. These can range from individual project level investments, for instance in specific energy technologies, to national policy plans for greenhouse gas emission reduction. Clearly, there is some correlation between the types of actors engaged in trade, and the types of trade engaged in. For example, national policy plan investments are only likely to be made in the context of quota trading between national governments. On the other hand, a wide range of different kinds of actors could invest in specific projects at the local level.

Figure 1 provides a schematic representation of these different characteristics of JI/trading relations, in terms of a 3-dimensional "JI-

space". The representation in Figure 1 is at best illustrative, and omits a number of potentially important institutional factors within JI/trading arrangements such as the extent to which credit is shared between donor and host, the degree of monitoring and verification of investments, and the degree of institutional competence of host and donor parties. Nevertheless, it is a potentially useful way of identifying the characteristics of different JI/trading characteristics, and classifying specific JI/trading proposals in terms of these characteristics. Figure 2 illustrates how some of the proposed JI/trading arrangements are placed within this 3-dimensional representation.

Figure 2: Examples of JI/trading relations



As noted above, when both parties are subject to emission caps - ie closed JI - the arrangement essentially reduces to a form of emissions trading. Thus, the plane of the diagram which constitutes the "floor" of

JI-space is characterised as emissions trading. The particular form of emissions trading envisaged by the Nordic experiment - ie quota trading - is closed, takes place between individual Parties to the Convention, and is implemented at the level of national plans. It can therefore be located at a quite specific point in the representation space, as shown. In contrast, pilot-phase AIJ operates at the project level. As originally conceived - ie in the absence of any established QELRCs among the Parties - it is essentially an open form of JI. AIJ could in principle be implemented by a range of different types of actor from national governments to individual private investors. Thus, pilot-phase AIJ appears in the representation as a horizontal line at some distance above the horizontal axis.

Although the scope of such a representation is purely illustrative, a number of useful conclusions can be drawn from it. Firstly, it is clear that the terminology of joint implementation could be used, and indeed has been used, to refer to a fairly wide range of different kinds of arrangements each with different characteristics. Some of these different arrangements have little in common with one another - at least in terms of the characteristics represented here. On the other hand, it seems legitimate to suggest that there is an overlap between some of these JI-type arrangements and emissions trading. In the sense of the characteristics represented here, emissions trading can be seen as a special case of JI.

Next, it is perhaps worth asking whether there is any subset of the characteristics for JI/trading arrangements which is more or less desirable than any other. From the point of view of environmental "security", it could perhaps be argued that the best forms of JI/trading arrangements are those which are closed, implemented at the project level, but legitimised directly between Parties to the Convention. Such arrangements would lie close to the intersection of the three axes in JI-space. Closure would, at least to an extent, reduce the scope for emissions "leakage" which might compromise the objective of lowering global emissions. Implementation at the project level would ensure that real, concrete measures were put in place to reduce emissions. The direct involvement of Parties to the Convention would ensure appropriate accountability.

On the other hand, one of the virtues which JI/trading arrangements are deemed to possess is that of flexibility in achieving the goals of the Convention. There are certainly those who would argue that this flexibility is best achieved by involving a broader community of actors and, in particular, by motivating private investment to engage in JI-type

investments. Some at least of those who hold this view, also believe that the full benefits of this flexibility will only be achieved by opening the market for such trades to countries without QELRCs - ie to implement "open" JI/trading arrangements (Jepma 1998 eg). It becomes apparent then, using this form of representation, that there are certain inherent trade-offs between conflicting objectives in designing appropriate JI/trading arrangements. This is a theme to which we return in the concluding discussion.

Finally, it is instructive to inquire how the various flexibility instruments introduced into the Kyoto Protocol may be characterised within this representation. This is the subject of the next section in which we also provide a more general discussion of the implications of the Kyoto Protocol for JI.

4 JI/trading mechanisms in the Kyoto Protocol

In spite of the absence of language specifically referring to JI, it is clear that the Kyoto Protocol incorporates a variety of different mechanisms which might loosely be characterised as joint implementation. In fact, there appear to be at least three distinct types of JI envisaged within the Protocol, as described in the following paragraphs.[2]

4.1 "Joint fulfilment"

Articles 3 and 4 introduce the possibility that Parties may jointly fulfil their commitments under the Protocol. Thus, individual Parties can group together and form "bubbles" within which the total agreed quantified emission limitation and reduction commitments (QELRCs) from the participating countries are met. In theory, this procedure could allow for a country-level quota-trading system as envisaged for example within the Nordic experiment. No explicit mention is made, within Articles 3 and 4 of financial exchange within the bubble, but there is clearly nothing to stop Parties from negotiating related financial transfers. On the other hand, the allocation of emission reductions within the bubble could equally be negotiated on a political basis - as happened for example within the proposed burden-sharing arrangement in the EU's pre-Kyoto negotiating position (EU 1997).

[2] In addition to these three types, Article 16 bis is an enabling clause allowing "emissions trading" between Annex B countries, and suggesting that the rules, principles and modalities for this form of emissions trading have yet to be defined by the Conference of the Parties.

4.2 Transfer of emission reduction units

Article 6 of the Kyoto Protocol allows for the transfer and acquisition, between the Parties to the Protocol listed in Annex 1 of the FCCC,[3] of "emission reduction units" from projects which reduce anthropogenic emissions or enhance sinks of greenhouse gases. Although not explicitly described as joint implementation, this kind of arrangement is essentially equivalent to *closed, project-level, joint implementation* as envisaged previously. It is worth noting that, in spite of the earlier characterisation (Figure 2), some pilot-phase AIJ would now belong to this class of JI. This would be the case, for example, for pilot-phase AIJ between western and eastern European partners. Arrangements which when set up were "open", would now be classified as "closed" because the participating countries are now subject to QELRCs. Furthermore, these arrangements foresee the transfer of emission reduction credits in one direction as a result of a financial transfer (an investment) in the other direction. In other words, as well as being JI, this arrangement also defines a form of trading under a specified emissions "cap".

It has been argued by many that closed JI between Parties who are both subject to QELRCs is far less open to abuse than open JI – in which the host country is not subject to QELRCs. The reason for this is that, in the former case, both countries operate under an emissions "cap" as specified by Article 3 (and Annex B) of the Kyoto Protocol. By calculating actual emissions inventories during the commitment period in both host and donor country, it is possible to ensure that JI/trading arrangements do not lead to direct emissions "leakage", and that the overall objective of the Protocol is met. In this situation, it is argued, the legitimacy of baselines is less critical, and the need for approval, certification, monitoring and verification procedures is less important. In other words, it is argued that "streamlined" institutional procedures may be appropriate in this context, at least from the immediate perspective of the Convention.

Nevertheless, there are a number of potential difficulties even with closed JI. One of these difficulties - the so-called "hot air" problem - is clearly illustrated by the situation in which western donor nations attempt to purchase emission reduction credits from certain Eastern European nations. The problem is that, to all intents and purposes, emission reductions greater than those required under the Protocol have already been achieved in some of these countries as a result of structural changes

[3] These countries are essentially those subject to the QELRCs listed in Annex B of the Kyoto Protocol.

in the economy since 1990. Thus, any transaction in emission reduction credits is essentially a trade in hot air, and does not lead to real, measurable environmental improvement.

At the very least, the success of closed JI arrangements requires that donor and host nations both satisfy themselves that they are able to meet their commitments under the Convention. In particular:

- donor countries will need to assure themselves that invested funds generate real, measurable returns in terms of emission reduction units; they will also require guarantees that these emission reduction units provide legitimate credits against their national inventories during the relevant commitment period;
- host countries will need to satisfy themselves that investment projects lead to real, measurable emission reductions in the commitment period; they will also need to satisfy themselves that the price at which they sell emission reduction credits to donors (or equivalently, the number of emission reduction credits which transferred to the donor for a given investment) reflects the full cost of achieving the additional emission reduction.

In other words, even though the need for procedural safeguards at the level of the Convention as a whole appears less urgent, both host and donor must implement appropriate safeguards at the national level if the trade is to be robust, and to qualify legitimately under the accounting procedures of the Convention. In particular, baselines remain an important part of the procedural elements of JI/trading relationships – albeit at the national level rather than at the level of the Convention.

These issues are of particular importance where there are differences in institutional capacity between donor and host nations. When both countries have a similar level of technical and financial expertise, there is a good chance that one can spot if the other is "gaming", or "cherry-picking" in relation to JI/trading investments. But when the host country has a lower level of institutional capacity – as may be the case for certain Central and Eastern European hosts – then there is an increased danger of trades which compromise international equity. In the long-run, such compromises will have impacts on the success of meeting the objectives of the Convention, and it may be advisable for the Convention to impose suitable procedural safeguards even in the case of closed JI/trading.

Some such safeguards are already envisaged under Article 6 of the Kyoto Protocol. For example, Article 6.1(b) lays down a provision regarding the additionality of projects, and Article 6.1(d) states that such projects should be "supplemental" to domestic policy. At the moment, neither of

these criteria are clearly defined, and certainly require clarification if they are to be meaningful. The requirement of additionality demands an appropriate procedure for determining what would have happened if the project had not been implemented, and this in its turn requires the elaboration of baselines in both host and donor countries.

The question of supplementarity remains, at the moment, entirely undefined. It is clearly important to rectify this. In particular, in ensuring that the accrual of emission reduction units is "supplemental" to domestic action it would be advisable to specify precisely how much (eg what percentage) of its reduction commitments a Party could satisfy through the accrual of emission reduction units from other Annex 1 countries. In principle, this level of activity could, and perhaps should, be different for different countries. For instance, countries which have a lower carbon intensity and for whom further domestic reductions are more costly or more difficult to achieve might reasonably be allowed to satisfy a higher proportion of their commitments through transfer of emission reduction units than countries with a higher carbon intensity and a larger potential for domestic reductions.

Finally, it should be remarked that, even where safeguards are set in relation to JI/trading between Parties both of whom have QELRCs under the Kyoto Protocol, there remain some possibilities for emissions "leakage". These occur because the global system is not yet closed with respect to greenhouse gas emissions. Thus, one of the ways of reducing domestic emissions of greenhouse gases is to export polluting processes to countries which have no emission cap, and importing the associated products. There are several possible ways round this problem. These include the following:

- closure of the global system with respect to greenhouse gas emissions;
- revision of emission accounting procedures to include the emissions "footprint" associated with all domestic consumption rather than just domestically-based activities; and
- the imposition of a comprehensive framework of environmental and social safeguards on global investments markets.

None of these options is entirely straightforward. The first implies getting developing countries on board and signed up to QELRCs under a (revised) Protocol; and the second implies substantial – and methodologically complex – revisions of existing inventory procedures. Of the three options, the third may turn out to be the most feasible even though it clearly runs counter to the prevailing trend of "liberalisation" and free trade. This highlights the importance of implicit relationships

between trade agreements defined through the Kyoto Protocol and other trade agreements such as the GATT and the proposed Multilateral Agreement on Investment.

4.3 The clean development mechanism

Article 12 of the Kyoto Protocol defines a "clean development mechanism" (CDM) through which Annex 1 countries can obtain "certified emission reductions" as a result of project activities carried out in non-Annex 1 countries. The "certified emission reductions" accruing from such activities may be used to contribute to compliance with QELRCs under Article 3 of the Protocol. This arrangement is broadly similar to what was previously envisaged as *open, project-level joint implementation*. So, for example, AIJ between EU Member States and any developing country could be construed as falling under this category. However, the extent to which the CDM will actually mirror existing AIJ projects depends heavily on the institutional arrangements under which the mechanism is eventually set up.

As pointed out above, this situation is significantly more complex, more uncertain, and more open to abuse than closed JI. Typically, the difficulties include:

- an increased reliance on counterfactual information (baselines);
- an increased potential for "gaming" both by host and by donor with respect to baselines;
- greater uncertainty in outcomes;
- reduced incentives for the host country to avoid "cherry-picking" by the donor;
- reduced incentives for domestic action by the donor;
- an increased potential for emissions "leakage";
- a risk of compromising the development of the host energy system and sustainable development path by haphazard investments;
- a potential for any adverse social or environmental effects of projects to be multiplied.

In this case, the need for procedural safeguards is increased over the closed case, and there is considerably less opportunity for streamlining of institutional procedures, even on a sector- or project-specific basis. Some such safeguards are already included in Article 12 of the Kyoto Protocol. For example, it is implied that certification procedures must be carried out on transferred emission reductions; the mechanism is subject to

supervision by an executive board, and projects are subject to independent auditing and verification. It will be important to ensure that appropriate institutional arrangements are set in place to meet these increased requirements.

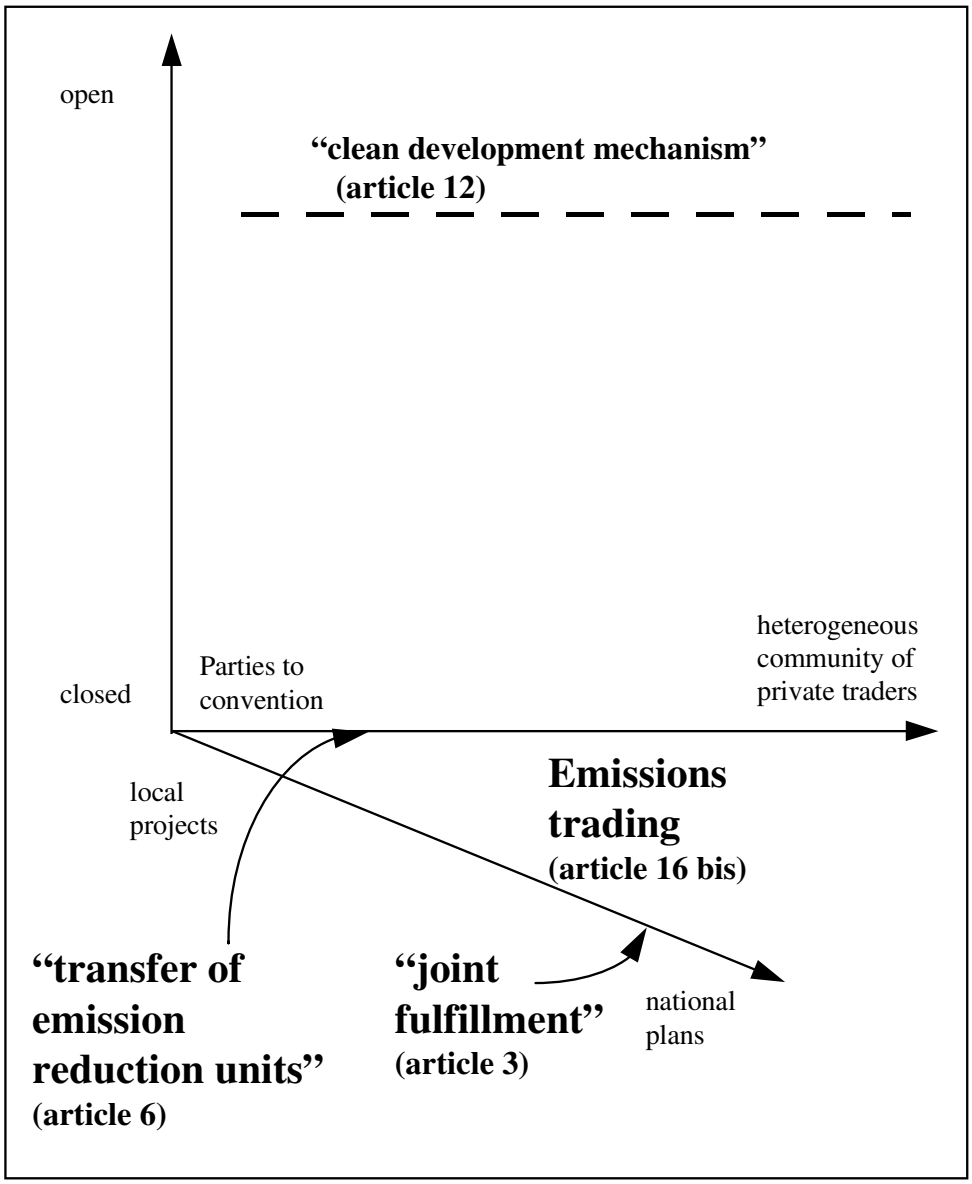
4.4 Banking of emissions reduction credits

As presently written, Article 12.10 of the Kyoto Protocol seems to imply that it is permissible for Annex 1 Parties to bank emission reduction credits, ie to count *accumulated* emission reductions achieved through the CDM in the "interim period" (2000 - 2008), against *annual* emissions during the "commitment period" (2008 - 2012). We have shown in detail elsewhere (see Parkinson *et al* 1998) that this procedure creates an imbalance between domestic emission reductions and those carried out through the CDM, because the two accounting procedures are not comparable. The incentive to invest in domestic actions could be significantly reduced compared to the incentives for investments in non-Annex 1 Parties. In the worst case scenario, actual emissions during the accounting period would not be reduced to target levels, seriously compromising the objectives of the Protocol. A potential solution to these difficulties is to operate a "partial crediting" regime, in which only a fraction of the emissions reduction is credited. This fraction is adjusted so that the "loss" of total emissions reduction is equal to the unaccredited JI emissions reduction, ie the total effort is maintained. Hence, we have a scheme which both gives incentives for JI over the whole period but does not compromise the environmental aims of the Protocol (Parkinson *et al* 1998).

4.5 Representation in JI/trading space.

Figure 3 illustrates how the different flexibility mechanisms envisaged within the Kyoto Protocol are represented in JI-space. Several points are worth noting. Firstly, the enabling language of Article 16 bis refers to the emissions trading "floor" of the space. The specific form of trading envisaged by Article 6, which we characterised above as closed, project-level joint implementation constitutes the horizontal axis bounding one edge of the emissions trading "floor". The bubble concept under which Parties may jointly fulfil their commitments under the Protocol lies at a specific point on the axis perpendicular to the plane of the page - in essentially the same place as the Nordic experiment in Figure 2. The clean development mechanism is a horizontal line in the plane of the page some way above the horizontal axis - in essentially the same place as the AIJ line in Figure 2.

Figure 3: JI/trading arrangements in the Kyoto Protocol



5 Discussion

The representation of flexibility instruments in Figures 1 to 3 highlights that, in spite of the changes in language, there are clear similarities between mechanisms proposed under the Kyoto Protocol, and mechanisms which have been put forward and argued over previously. In particular, the clean development mechanism is - potentially at least, and in the absence of further elaboration - similar in structure to the concept of AIJ.[4] It allows Annex 1 countries to gain credit for activities carried out in countries without QELRCs (Jepma 1998).

As we have pointed out above, this form of JI has been, throughout, the most contentious of the flexibility mechanisms discussed. This is mainly because of the potential for abuse of host countries with underdeveloped institutional capacity and the problem of global emissions "leakage". These were among the difficulties which tarnished the concept of emissions trading in the run-up to the Rio Conference in 1992, and also constituted a part of the difficulties which have hindered the progress of joint implementation since that time.

It may be cynical to suggest that it is for these reasons that the name of the mechanism has been changed yet again. Clearly however, a name change will not in itself resolve the difficulties associated with implementing such a mechanism. The CDM may for a while enjoy fresh kudos as a new policy concept. But if the underlying conflicts are not explicitly recognised and appropriately addressed, then the honeymoon is likely to be short.

This raises the question: what are those underlying conflicts and how have they arisen? In our view, they arise precisely because international environmental policy-making operates in the context of multiple objectives. This is clearly demonstrable in the case of the FCCC. The overall objective of the Convention is the reduction of anthropogenic greenhouse gas emissions. Article 3 of the FCCC requires that Parties be guided by the principle that "policies and measures to deal with climate change should be cost-effective, so as to ensure global benefits at the lowest possible cost". Flexibility instruments such as joint implementation (JI) and various forms of trading arrangement are intended - in part at least - as a mechanism for achieving cost-effectiveness.

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4 In the AIJ pilot-phase there is no intention of transferring credit for emission reductions achieved. Nonetheless, the pilot-phase was designed to show the feasibility of transferring credit in such situations.

It is apparent from these basic tenets that JI/trading mechanisms operate in the context of objectives which include at least the environmental goal of achieving real reductions in greenhouse gas emissions, and the economic goal of cost-effectiveness. Additional objectives which are either explicit or implicit in the FCCC include the social goal of equity between and within different nations, (and also across different generations), and policy goals such as the diffusion of technology to less industrialised countries. It might also be argued that additional goals from outside the objectives of the Convention - such as the liberalisation of trade, and the expansion of global markets - are influencing policy within the Convention.

Thus, it is clear that the task of designing and implementing appropriate flexibility instruments represents a multi-attribute decision-making context, in which there are likely to be significant trade-offs to be made between differing objectives. It is our contention that the appropriate way to proceed in this situation is to engage in a structured approach to the design of flexibility mechanisms which recognises the existence of multiple objectives, and explicitly identifies the trade-offs which occur between them.

Clearly, this task is complicated by the fact that flexibility arrangements could be set up in many different ways, depending on a variety of factors, including: the types of actors involved, the degree of "closure" of commitments by Parties to the Protocol, and the geographical level at which JI/trading occurs. Additional layers of complexity are introduced as a result of the technological issues involved in implementing specific project-level solutions, the multiplicity of possible institutional and regulatory frameworks under which JI/trading could be set up, and the need for practicability.

This complexity inhibits a simplistic generalisation of the problem. Nevertheless, it is our view that a structured approach to problem-solving in the context of multiple objectives has a higher chance of resolving potential conflicts than relying on the flexibility of language to side-step contentious issues.

References

Barrett, S., 1994. The Strategy of Joint Implementation in the Framework Convention on Climate Change, paper for UNCTAD. London: London Business School.

Barrett, S., 1993, Joint implementation for achieving national abatement commitments in the Framework Convention on Climate Change, paper for UNCTAD, London Business School.

Bohm, P., 1997. *Joint Implementation as Emission Quota Trading - an experiment among four Nordic Countries.* Copenhagen: Nordic Council of Ministers.

EU, 1997. Council Conclusions on Climate Change, 3rd March 1997.

Fleming, D., 1997. Tradable Quotas: setting limits to carbon emissions, paper 11, The Lean Economy, Newbury: Elm Farm Research Centre.

Grubb, M., 1989. *Negotiating Targets.* London: Royal Institute of International Affairs.

Jackson, T., and Bailey, P, 1997. Transboundary Initiatives for Controlling Sulfur and possible lessons for CO2, *International Journal of Environment and Pollution*, vol 8(1/2), pp37-49.

Jackson, T., 1995. Joint Implementation and Cost-effectiveness under the Framework Convention on Climate Change. *Energy Policy* vol 23(2), p117-138.

Jepma, C., 1995. *The Feasibility of Joint Implementation*, Kluwer Academic Publisher, Dordrecht, Netherlands.

Jepma, C., 1998. Kyoto Protocol and compatibility. Editorial in *JI Quarterly*, vol 4 (1), p1.

Klaasen, G., 1994. Joint Implementation in the Second Sulphur Protocol: a tempest in a teapot? background paper for the UNECE TFEAAS, 12-13th May, London.

Markandya, A., 1992. The Montreal Protocol: funding incremental costs. CSERGE working paper GEC 92-17, CSERGE, London.

Parkinson, S., Begg, K., Bailey, P., and Jackson T, 1998, Accounting and Accreditation of Activities Implemented Jointly, paper to the Ecological Economics conference in Geneva, March 1998.

Tietenberg, T., 1985. Emissions Trading - an exercise in reforming pollution policy, Resources for the Future, Washington, DC.

UNFCCC, 1992. United Nations Framework Convention on Climate Change, United Nations