Clean Development Mechanism

A discussion paper

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ABSTRACT : *Clean Development Mechanism (CDM) is one of the several 'flexibility mechanisms' of the Kyoto Protocol. The purpose of the CDM is to explore cost-effective options for Annex I countries in achieving compliance with their quantified emission limitation and reduction commitments (QELRCs) and to assist developing countries in achieving sustainable development.*

In order to qualify as a CDM project, projects need to fulfill certain characteristics which are discussed in detail in this paper. Besides, various operational issues like baselines, additionality, funding of the projects and methodology for certification and verification have been outlined in the paper. Since the CDM involves credits, these issues must be given due attention while designing the projects.

The issues related to adaptation, auditing and verification of project activities and compliance etc. have been clearly brought out in the paper. The paper also proposes a scheme for judicious sharing of proceeds out of CDM projects. The paper stresses on the need of a thorough methodology for banking, acquisition and transfer of CERs and proposes of an Executive Board, constituted mainly of Non-Annex I country Parties, which will be accountable to COP/MOP. The output of the paper will be useful to organisations in India and abroad that are working on climate change particularly the issues related to CDM.

INTRODUCTION

The present deliberations on climate change issues in global fora are largely an outcome of the Kyoto Protocol. The Kyoto Protocol established three flexibility mechanisms to supplement the domestic actions of the industrialized countries to fulfill their quantified emission limitation and reduction commitment as required under the Article 3 of the Kyoto Protocol. The three mechanisms are: Joint Implementation (JI: Article 6) Clean Development Mechanism (CDM: Article 12) and International Emission Trading (IET: Article 17). The present paper discusses the Clean Development Mechanisms (CDM).

[All the Articles refer to the Kyoto Protocol, until and unless specified otherwise.]

The CDM was established to explore cost-effective options to mitigate the impacts of climate change. The industrialized nations who are already quite efficient in their energy utilization levels (Norway is a prime example) are emitting high quantities of greenhouse gases as an obvious fallout of their advanced stages of industrialisation. Hence they will have to spend a lot of resources to even slightly increase their energy efficiencies or lower their greenhouse gas emissions. Conversely, the same amount used to achieve similar ends in the developing countries could bring about significantly greater results, because the Third World operates with comparatively inefficient technologies and presents considerable opportunities for cost-effective GHG mitigation options. The CDM brought about to achieve this specific end, was indeed a viable economic option given the global nature of the problems. The purpose of the CDM Projects shall be to assist developing countries in achieving sustainable development, and in contributing to the ultimate objective of the Convention and to assist Parties in Annex I in achieving compliance with their quantified emission limitation and reduction commitments (QELRC).

The CDM has its predecessor, in spirit at least, in the Activities Implemented Jointly (AIJ) Pilot Phase that began in 1995 and has a five year lifetime. AIJ, JI (Article 6 of the Protocol) and CDM (Article 12 of the Protocol) are all project based mechanisms designed at exploration of least cost mitigation options across countries. Except that AIJ under the pilot phase does not provide any credit to either of the Parties (Investor or the host), the rest of the operational aspects are practically the same. In the operation of AIJ, JI and CDM the additionality and baseline criteria remain the same and are critical for their eligibility.

The Asia-Pacific and African Regions had very little opportunity to learn lessons and for their capacity building during the AIJ pilot phase. At the same time such learnings and capacity building in these regions are absolutely essential for a successful CDM regime. The AIJ pilot phase therefore needs to be extended beyond 2000 at least by another three years viz. to the end of 2003. In harmony to this decision, the CDM should also have an interim phase upto 2003 for a smooth transition from AIJ to CDM mode of operation. The interim phase of CDM should be viewed as an opportunity of learning by doing. During the interim phase, simple CDM projects should be taken up for a smooth take off. After 2003 there should be no restriction on the type of CDM projects provided they meet the eligibility criteria (discussed elsewhere) for CDM. The provisions of credits from CDM projects even during the interim period should remain as provided for in the Article 12 of the Protocol. To encourage the investors, the AIJ extended beyond 2000, should have the benefit of credit sharing that accrues during 2000 and 2003. This will be quite fair for both the investor and host country parties and provide encouragement to project participants.

SOME KEY CONCEPTS IN CLEAN DEVELOPMENT MECHANISM

Supplemental to Domestic Actions

During the negotiations of the Kyoto Protocol, non Annex I country delegates feared that the price differential between reductions in industrialised countries and reductions in developing countries/economies in transition would result in minimal domestic efforts to reduce emissions, as well as minimal incentive for innovative research in the industrialised countries. Moreover for stabilization of atmospheric concentration of greenhouse gases at a level that would prevent dangerous anthropogenic interference with the climate system, a strong domestic action to bring down their consumption intensity and emission reductions by the Annex I countries would be essential. In order to force this issue, developing country Parties were instrumental in inserting the concept of supplementarity into the three flexibility mechanisms, expressed as 'Supplemental to' in Articles 6, 17 and "part of" in Article 12.

Article 6.1(d) states that acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3. Similarly Article 17: Emissions Trading states very clearly that any such emission trading shall be supplemental to domestic actions.

Supplementarity ensures strong domestic action by the industralised countries for mitigation of greenhouse gases. The carbon credits from JI, IET, CDM should provide only a small function of the Annex 1 Parties' commitments. This can be effective only if there is a cap or fixed numerical restriction, on the quantity of emission reduction that can be achieved internationally through JI, CDM, IET.

It is necessary for the UNFCCC/SBSTA to decide uniformly for the all the three mechanisms, a cap that would constitute 'supplemental'. If it is left for the implementing Parties to decide, there may be considerable 'horse trading' and the essence of a strong domestic action would be lost. In fact without a strong domestic action by the Annex I Parties, it is doubtful if the objective of the Convention will ever be achieved.

Sustainable Development Priorities / Strategies

Another word of caution have to be sounded for all AIJ/CDM/JI projects and particularly CDM projects. The project developers have to keep in mind the sustainable development priorities in the host country, with special attention to be devoted to the ecosystem in and around the project area. Since sustainable development may mean different things to different country parties, each state/country must agree upon a set of quantified Sustainable Development Indicators (SDIs) at the beginning of each CDM project. For credit of CERs these quantified SDIs must have been met through the project activities, and verified. Some of the SDIs are indicated below as an illustration only. They are:

- increase in purchasing power
- provision of safe drinking water
- provision of basic health facilities
- education to children and women
- provision of shelter to the poor particularly in the rural areas
- transfer of clean and sustainable technologies and additional finance
- rural development including sustainable agricultural practices
- conservation of biological diversity
- promoting of stakeholders participation in the project identification, design and implementation.
- promoting international trade

CRITERIA FOR PROJECT ELIGIBILITY AND DESIGN

The CDM projects may be categorised under i) Energy ii) Transportation iii) Building Sector and iv)Renewable: a) solar, b) wind, c) biomass energy as being the broad heads. Not all projects that result in emission reductions are eligible for trading under the CDM. In order to qualify, projects need to have several general characteristics which are explicit or implicit in the Kyoto Protocol. Design should also include the following criteria :

General Principles

The design should ensure

(1) environmental effectiveness, environmental performance
(2) economic efficiency for cost effectiveness and
(3) equity

Rigorous applications of these principles may raise transaction costs of the projects and thus change the economic efficiency. In the design stage itself the concept of CO_2 equivalent reduction of the six gases viz; carbondioxide(CO_2), nitrousoxide(N_2O), methane(CH_4), hydrofluorocarbon (HFCs), perfluorocarbon(PFCs) and sulphur hexafluoride (SF_6), should be introduced, and their procedure for emission reduction measurements agreed upon.

Other Design Parameters that need to be taken into consideration are :-

- Such activities should be approved by the Governments of the participating Parties and consistent with and supportive of national environment and development priorities/ strategies and shall assist Parties not included in Annex I in achieving sustainable development
- Should be host country driven
- Benefits from CDM should be real, measurable and long-term
- Reductions in emissions are additional to any that would occur in the absence of the certified project activity.
- Such activities may involve private and/or public entity
- Participation should be voluntary, approved by each Party involved
- Should contribute to the ultimate objective of the Convention
- Developing countries shall benefit from project activities resulting in Certified Emission Reductions (CERs).
- CERs obtained during 2000-2008 can be used to assist in achieving compliance of the Annex I country Parties in the first commitment period, 2008 - 2012.
- CDM modalities and procedures should be transparent and should ensure efficiency and accountability through independent auditing and verification of project activities.
- Emission reductions shall be certified by operational entities designated by COP/MOP .
- CDM shall be subject to the authority and guidance of the COP/MOP
- CDM shall be supervised by an Executive Board of Clean Development Mechanism
- The proceeds from certified project activities should be used to cover administrative expenses
- Proceeds should assist vulnerable developing countries to meet the costs of adaptation

Criteria for Real, Measurable and Long-term Benefits

Paragraphs (b) and (c) of Article 12.5 set out two project criteria. The first requires that environmental benefits of CDM mitigation projects must be real, measurable and long term. The second requires that the benefits be additional. Assessment of whether CDM projects will fulfill these criteria require comparing projects against a baseline, which would be static or dynamic. In many cases, it is counter-factual to construct a baseline that may never actually happen. Assessing environmental benefits also requires establishing system boundaries appropriate to the scale and complexity of the project to assess 'leakage'.

THE CLEAN DEVELOPMENT MECHANISM : OPERATIONAL ISSUES

The three most critical issues concerning the operational aspect of CDM are additionality, baselines and certification and verification of CDM projects.

Additionality

Article 12.5 of the Kyoto Protocol states that emission reductions from each project activity shall be certified by operational entities to be designated by the Conference of the Parties (COP) on the basis of :

- Voluntary participation approved by such Parties involved
- Real, measurable and long-term benefits related to climate change; and
- Reductions in emissions that are additional to any that would occur in the absence of the certified project activity.

Determination of additionality is inherently problematic because it requires resolving a counter-factual question : What would have happened in the absence of the specific project proposed for credit ? This question can be viewed as requiring a determination of the motivation of the project sponsors, and therefore an arduous project-by-project review that impose prohibitive transaction costs. Demonstrating additionality is, however, crucial to the integrity of the Clean Development Mechanism.

We can think of the following types of additionalities i) **Financial additionality**, that refers to whether project investment would have taken place in the absence of credit-gaining CDM provisions, and ii) **Environmental additionality**, which states that emission reductions resulting from each project activity shall be certified on the

basis of real, measurable and long-term benefits related to the mitigation of climate change. The hypothetical nature of additionality often generates definitional confusion and the need to determine the intent of the investor are components of challenge of applying additionality. This is further complicated by 'no-regrets' projects or other profitable ventures that have both economic and environmental benefits. However, such projects may not always pass a strict additionality test because they would be undertaken by the host country or the foreign investor anyway (in the absence of credit-gaining CDM).

Significance of the Additionality Debate

The primary importance of the additionality debate is ensuring the environmental integrity of the Kyoto Protocol. Certification of BaU (non-financially additional) projects in the CDM will increase global GHG emissions. The same is true if lax methodologies prevent an accurate quantification of environmental additionality - 'over crediting', CDM projects will introduce 'paper tonnes' into an international trading system. In contrast overly stringent **definitions of additionality will discourage project implementation** and exclude legitimate GHG reducing projects.

Should there by any distinction between public/private funding ?

CDM projects can be funded by both public bodies and private entities. However, there ought to be a distinction between public and private funding, specially when projects in developing countries are considered .

Private funding of a project implies that a private entity is paying for a project out of its own resources. Thus, it will be driven by a profit motive, specially with respect to CDM projects that offer CERs. Under private funding therefore, the projects with the highest baselines and/or returns on investment will be preferred. Therefore, the private sector will be interested in taking up a project only when he can hope for it to generate cash flows that are larger in size than his investments. In other words, the value of the carbon offsets should be substantial compared to the costs. However, any such certified project activity should be additional, i.e., the GHG reductions must be additional to any that would otherwise occur in the absence of the CDM project.

Private funding bodies will be interested to invest in a project only when the return from the project (inclusive of credits) will be higher than their investment cost. To them, the financial aspect of the project will be more important than whether long term environmental benefits will have been derived. This is the private sector outlook.

The advantage of a public source of funding is that greater emphasis would be placed on the welfare aspects of the projects. The developmental objective would be foremost in terms of thrust areas. Hence, projects that are most necessary from the development point of view ought to be financed from public sources. Infact, these are the projects that will prove to be environmentally additional. Accordingly, projects that demonstrate significant environmental additionalities should be accorded public funding sources.

Having looked at both private and public funding options with respect to additionality, the conclusion points at environmental additionality as the main vehicle of distinction. Public funding sources look at environmental additionality as their objective; private funding sources look at their own returns. Hence whether a privately funded project is ultimately considered will depend on whether the project generates long-term, real benefits. That is the yardstick to distinguish between public and private funding.

Baselines

Establishing a baseline / reference line is required for deciding project eligibility as well as for certification of emission reduction (CERs) during implementation

Determining environmental additionality as developed earlier requires :

- a project baseline or reference case, that estimates what would have happened in the absence of the CDM project methodologies for estimating a project's actual GHG emissions or sequestration.
- a quantitative comparison of actual emissions to baseline projections. The difference between the baseline and actual emissions (i.e. the amount of GHGs abated) is the amount of environmental additionality achieved by the projects.

Several approaches, which are summarized below, have been put forth as possible methodologies for determining the baseline of a project. For simplicity, the methodologies are categorized into two general approaches those derived from aggregate data or 'top-down' baselines and those determined case-by-case, or ' bottom-up' baselines. Within each approach baselines can be historical or forward looking; dynamic or static; or rate or 'tonne' based.

Top-down baselines

Top down baselines typically derive an 'emission rate' from existing national or sectoral data or establish 'a cap' on company, sector, or national emission levels. Examples of top-down baselines - which often use precise metrics to capture the GHG intensity of a country or sector include:[1]

- GHG emissions / megawatt hour (using national energy production data)
- GHG emissions / average mileage (using national transportation sector data)
- GHG emissions / $ of output (using sector or company data)
- GHG emissions / unit of output (using sector or company data)
- Total emissions in the energy generation sector (using absolute emission projections)

To determine a project's actual emission reductions (its environmental additionality) during a given period the national/ sectoral emission rate (such as Kg C/MWh) is compared to actual project emission rate (Kg C/MWh). The difference between the two rates, in terms of actual metric tonnes of GHG emissions, is the quantitative basis for determining CERs.

Bottom-up baselines

The key conceptual difference between top-down and bottom-up baselines or project baselines is that the latter are determined on a case-by-case basis. While top down approaches use aggregated national or sectoral data, bottom-up baselines do not require large amounts of national or sectoral data to formulate baseline. A project baseline may take the form of a benchmark emission rate or it may be a measurable amount, for instance tonnes of carbon equivalent.

But before emission reduction units are certified it is necessary that the certifier ensures that the project really meets **all the eligibility criteria as well as has met the quantified sustainable development indicators which are agreed upon between the host and investor country Parties at the project formulation stage.** In case the S.D. indicators have not been met, the certification for emission reductions cannot be issued. It is however necessary that the operational requirements of CDM must be simple and not too complicated in order to enable CDM to have an early start even from 1 January 2000 itself to benefit the developing countries. Maximum benefit to the developing countries should accrue from CDM during the period 2000-2008; beyond this period interests of the Annex I countries in CDM may wither very fast due to high transaction costs in CDM projects. AIJ/CDM Facilitation Centre (FC) as conceived by Development Alternatives may be a mechanism to bring down such transaction costs of CDM project in the Asia-Pacific region. Similar, FCs may be initiated in Africa and Latin America as well. The FCs must be financially supported internationally.

Project specific baseline in preference to top-down baseline

There is not enough data available in most developing countries to make top-down approaches viable. In the case of project specific baseline the following possibilities can be considered : Static baseline (Baseline 1), descending baseline (Baseline 2) (reflecting 'natural' technological improvement over time), a stepped baseline (Baseline 3), and CDM project baseline (Baseline 4) (see figure). Baseline 3 is to increase investor's confidence by assuming a predictable flat-line which remains for a fixed period of say 5 years. In any case some form of periodic review is necessary to account for technological innovation, and examining additionality.

Certification and Verification

The concept of certification and verifcation is embedded in the Article 12.5(a), (b) & (c), 12.6 and 12.7. **Certification** is a procedure by which an independent accredited body gives written assurance that emission reductions and sustainable development achievements that are claimed, have been actually achieved. **Monitoring** is periodic systematic surveillance/ measurement of performance and **Verification** is evaluation of the results that have been achieved against pre-set criteria.

Article 12 refers to the following requirements relating to certification and verification :

- certifiied project activities (Article 12.6)
- certified emission reductions (Article 12.5)
- independent verification and auditing of project activities (Article 12.7)

[1] The clean development mechanism : understanding additionality', Kevin A. Baumert, WRI, p23-31,CDM Draft Working Papers October 1998.

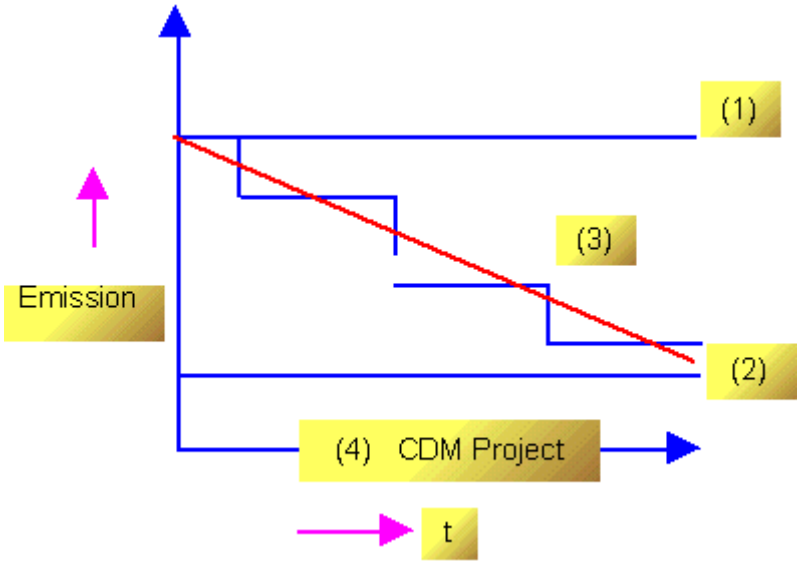
Certified Emission Reductions

Article 12.5 of the Protocol deals with certified emission reductions. It states that the clean development mechanism shall be subject to the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to the Protocol on the basis of

(a) voluntary participation approved by each Parties involved

(b) real, measurable, and long-term benefits related to the mitigation of climate change, and

(c) reductions in emission that are additional to any that would occur in the absence of the certified project activity.



Validation / Certified Project Activity

Approval of a project design that meets two objectives of CDM which are:

(I) emission reductions / avoidance and

(ii) sustainable development.

Criteria for Certification

- The CDM project activity must be certified
- The project must meet the project eligibility criteria
- The activity should be voluntary and approved by each Party involved
- The carbon reduction (environmental additionality) must be real, measurable and such activity should be able to provide long-term benefits related to mitigation of climate change
- Construction of a realistic baseline (reference line) against which carbon reduction through CDM project activity must be measured. Such a baseline must be agreed upon by the participating Parties in the project activity before certification
- Certification must be subjected to a set of criteria as defined by the International Organization (ISO) Standards
- A system of third party certification in conformity with ISO 9000 and 14000 series of standards must be introduced.

Certification of emission reduction produced by CDM projects must be undertaken by 'operational entities' designated by COP/MOP. These could be national or international bodies.

It is important to recognise that the Kyoto Protocol does not require 'operational entities' to be 'independent'. But the certification is not done by the COP/MOP or the Executive Board. Certification bodies would be involved in an essentially managerial task that involves verifying that project activities conform with all the standards and processes specified by the COP/MOP. Before certification by such entities it must be ensured that sustainable development criteria have been met for CDM projects because that is the prime purpose of this mechanism under the Protocol.

Prior independent auditing and verification procedure would ensure operational entities could only issue CERs for projects that had satisfied the independent auditors and met verification standards. This would provide a powerful check on 'operational entities' to minimise bureaucracy, incompetence and inflated claims for CERs. If an operational entity continually failed to satisfy the auditors and if verification revealed gaps between project documentation and reality, COP/MOP could suspend the right of that entity to certify projects.

Article 12 does not provide any guidance of how operational entities should be selected. There should be however more than one such operational entities in a country/region. NGOs could be designated as operational entities who have established their credibility in such areas. Development Alternatives (DA) is in the process of capacity building to take up this challenging task of being an 'operational entity' for India and the Asia-Pacific Region.

Steps for Certification and Verification[1]

Ist Step: Ex-ante certification projects involve the following issues:

- Does the project meet the relevant criteria for JI or CDM projects?
- Is the project baseline credible ? Does the assessment substantiate the environmental additionality of the project?
- Are there any significant leakage effects from the projects ? What are the major risks regarding the emission reductions ?

Traditional certification relies heavily on technical skills and good auditing practices, the ex-ante assessment of project baselines would also require significant insights in economic modeling, incentive mechanism and development issues.

2nd Step: Project specific monitoring and verification framework

A second step could be to establish a framework for how the specific project would be monitored during the life time, how measurements would be made, who would be responsible for these and how results would be verified. This step would be similar to ISO 9001 and 14001, and should form an integral part of the basic project agreement between the host and investor, and standardized significantly over time.

3rd Step: Verification of emissions reductions

This would entail auditing the physical measurements that are done at the project site, as well as the comparison of the emissions with the baseline that was established for the project, and the computation of the resulting reductions. Verification would also include review of the compliance with the established framework for project monitoring. These functions are also quite similar to what is done under established schemes such as ISO or EMAS. The verifier would issue a report after each periodic verification.

4th Step: Certification of emission reductions

The certification of emission reductions will be issued by an operational entity designated by COP/MOP to the Kyoto Protocol in conjunction with the monitoring and verification report. A detailed guideline for certification and verification would be necessary in this regard to be issued by the UNFCCC.

Dispute Resolution

In the process of certification of CERs COP/MOP may have to establish mechanism of dispute settlement between CDM Executive Board and public and private Institutions participating in the CDM.

Format for reporting

Initially CDM projects may adopt the same format of “uniform reporting of Activities Implemented Jointly under the pilot phase”. This format, if need be, may be revised in the light of experience gained and methodological work conducted under the pilot phase of AIJ and initial phase of CDM.

THE CLEAN DEVELOPMENT MECHANISM : POLICY ISSUES

CDM involoves a number of policy issues such as adapation, compliance, share of proceeds, banking of CERs and approval etc. These issues have been discussed below.

Adaptation

As mentioned earlier adaptability refers to the degree to which adjustments are possible in practice, processes or in structures of a system, for projected or actual changes of climate. Adaptation can be natural or planned, and can be carried out in response to or in anticipation of changes in conditions.

Successful adaptation depends upon technological advances, institutional arrangements, availability of financing and information exchange. However, many regions of the world particularly the developing world have limited access to these technologies and appropriate informations.

Vulnerability increases as adaptive capacity decreases. The most vulnerable systems are those with the greatest sensitivity to climate change and the least adaptability. The vulnerability of human health, socio-economic and ecological systems depend upon economic circumstances and institutional infrastructure. This implies that systems typically are more vulnerable in developing countries.

The Second Assessment Report (SAR) of the IPCC has clearly brought out that the developing countries in general will be impacted by the adverse effects of climate change as they do not have the financial / technological resources and capacity for adaptation to climate change. Given the scarcity of the resources at their command, it would be very difficult for the developing countries to divert their scarce economic resources from their main developmental activities to mitigate or provide for adaptation to climate change.

The development of a 'vulnerability index' for Parties that are particularly vulnerable could assist decisions on where adaptation funds should be focused. Enhanced support for research and monitoring, including cooperative efforts from national, international and multilateral institutions, is essential to improve our understanding of the efficacy and cost effectiveness of adaptation strategies.

Auditing and Verification of Project Activities

Article 12.7 of the Protocol discusses the need that the first Conference of the Parties to the Protocol shall at its first session, elaborate modalities and procedures with the objective of ensuring transparency, efficiency accountability through independent auditing and verification of project activities.

The mechanism for certification and verification should be cost effective, simple, documented and replicable. The mechanism should be developed in a participatory manner by all the stakeholders. The concerns of host country must be taken fully into account. A variety of skills and experiences are required at different stages of certification and verification process. NGOs and local groups in addition to taking up the task of certification and verification processes can contribute to critical site and market specific knowledge as well as guidance on certification and verification procedures and policies.

The steps to be followed in the individual verification and/or certification of GHG reduction project are based on a specific contract, protocol and guideline, which clarifies the components of the assignment and the responsibilities and liabilities of the verifier or certifier. In the absence of agreed international standards and related accreditation procedures, peer review is an important and well established mechanism to ensure the integrity and accountability of each process.

For ensuring transparency, efficiency and accountability etc., it is necessary that the UNFCCC identifies a number of institutions globally and at least one in each country preferably an NGO to perform such independent tasks of monitoring, auditing, verification of project activities for ensuring transparency. The UNFCCC should also provide financial and other support to such institutions in the developing countries to develop capacity to take up certification of emissions reductions (CERs) independently in a transparent manner. There is a possibility of distortions coming up due to the 'administered policy' of CDM projects, which can adversely affect competition. Accordingly, CDM projects should not result in market distortions, and, need to be monitored by independent institutions such as NGOs. **Development Alternatives** has the necessary infrastructure to take up independent verification and certification responsibility for the Asia-Pacific Region. Some capacity building would however be necessary initially, through international and national fundings.

Compliance Issues

Article 12.2 makes it clear that one of the CDM's main purposes is to assist Annex I Parties in 'achieving compliance' with their commitments under Article 3. In the Kyoto Protocol there are considerable loopholes. There is a need to look into these loopholes and consider eventualities for non-compliance. Kyoto Protocol does not have any provision for taking any action against Parties who fail to comply with the provisions of the Protocol. There should be a penalty associated with non-compliance which should be legally operational.

Ensuring compliance with the rules under the CDM will depend on the operation of procedures and mechanisms at both the international and domestic level. It is necessary to determine what new procedures/mechanisms are to be introduced or existing procedures and mechanisms strengthened for enforcing compliance at various stages in the CDM project activity cycle.

To develop such procedures and mechanism it may be helpful to understand:

- What is the nature of the roles and relationships between the participants involved in the CDM project activity cycle ?
- What is the 'legal personality' of the participants (are they states, private entities or international organizations)
- When and by whom, should the compliance of any of the participants in the CDM project be subject to challenge ?

Banking of CERs

Article 12.10 states "Certified Emissions Reductions obtained during the period from the year 2000 up to the beginning of the first commitment period (2008) can be used to assist in achieving compliance in the first commitment period (2008-2012). In this regard a few questions arise:

Acquisition and Transfer of CERs

This process involves not only the host and investing Parties but also the UNFCCC and the Executive Board. After the emission reductions are certified by an operational entity the CERs should be in the custody of the Executive Board who will in turn transfer part of these to the Annex-I Party (investor) and also a part of the proceeds for adaptation to non Annex-I Party (host) based on a certain agreed ratio. The CERs that accrue to Annex I Party (Investor) have to be banked, the other CERs due to the non-Annex I country Party (host) may be transferred or monetised, as per the cost of reduction per tonne of carbon, to the host country for their sustainable development and meeting the costs of adaptation.

The methodology of banking CERs from 2000-2008 through CDMs need to be clearly brought out including the institutional arrangements. The developing countries would like to encash on the proceeds from the CDM projects immediately without waiting for banking to address to their sustainable development and adaptation measures. The proceeds from the CDM is required to be shared between the investing and the host country Parties as well as with the executive board of the CDM for their administrative expenses and a part of the share of proceeds for adaptation measures in the vulnerable developing countries. Though the issue of vulnerability is being discussed elsewhere but it is worthwhile to mention that it is not only the small islands that are vulnerable to climate change but even a country like India with a 7000 km coastline and various climatic zones will be severely impacted due to climate change and therefore would need measures for adaptation and capacity building.

Due to a very complicated nature of the flexibility mechanisms in the Kyoto Protocol particularly the CDM, it is worth considering atleast an initial three year period from 2000-2003 as an interim phase of CDM. This phase will be used to take up very simple CDM projects to allow the process to take an early start. After gaining some experience other CDM projects may also be taken up for implementation based on the experience and lessons learnt during the interim phase.

As per the decision 5/CP.1 the AIJ Pilot Phase will be reviewed by 2000. It is a well known fact that countries in Asia-Pacific and Africa did not have much opportunity to implement sufficient number of AIJs during the pilot phase to learn lessons. Hence the pilot phase should be extended to another three years so that countries in Asia Pacific can be initiated into the process of flexible mechanism for mitigation of climate change.

Share of the Proceeds and Credit Sharing

As per the Article 12.8 of the Protocol, the Conference of the Parties serving as the Meeting of the Parties to the Protocol shall ensure that a share of the proceeds from certified project activities is used to cover administrative expenses as well as to assist developing country Parties to meet the cost of adaptation.

Again the Article 12.2 states that the purpose of clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3 of the Protocol.

Taking into account the interests of the investors who will be predominantly from the private sectors as well as the hosts who will also be predominantly from the private sectors, and considering their main attraction will be to maximize their benefits/return from their investments, and to cover the costs of administrative expenses of the Executive Board and to meet the cost of adaptation in developing countries, how can we distribute the proceeds equitably among these different requirements ? We assume that all developing countries are vulnerable to climate change, and a part of the proceeds has to be utilised for meeting the costs of adaptation, which may be minimal from CDM projects. Similar adaptation costs must be borne out of the ERUs from JI & ET mechanisms as well.

[1] ***World bank, May 1998***

Notes:

(1) $^{1}/_{10}^{th}$ of the proceeds is to cover administrative costs. As $^{1}/_{10}^{th}$ of the proceeds will come from all the CDM projects, the total proceeds will be huge. The Executive Board (Clean Development Mechanism) shall therefore assist in arranging funding of certified project activities as necessary.

(2) $^{1}/_{10}^{th}$ of the proceeds is set apart for adaptation. Similar proceeds should be found from JI and ET also to meet the costs of adaptation in developing countries.

(3) $^{5}/_{10}$ th of the proceeds shall go to developing country Party to assist in achieving sustainable development (to host country).

(4) $^{3}/_{10}$ th of the proceeds shall go to investing country Party to assist Annex I Parties in achieving compliance with their QELRC.

Total Proceeds from a CDM Project

No credit has been recommended to the private / public business sector host parties in the project since such parties are already getting a clean technology and additional finances under the CDM agreement . Such an agreement will have less chance of gaming and / or generating paper tonnes.

Cap on the Total Credit to any Annex-I Country

We have discussed the legitimacy of maximum 30% share of the CERs to any Annex I Investor from any CDM project. This credit sharing provision must be qualified further to avoid a situation that the Annex I Countries can meet all their QELRC through the flexible mechanisms alone. These provisions must be strictly supplemental to their domestic efforts. This means that this limit must be extended to Annex I country's QELRC, which will not only address to the ultimate objective of the Convention but also compel the industrialised countries for a strong domestic action and for innovative research to develop clean technologies.

Any Annex I country other than CETs can only obtain a maximum of 30% of their total commitment from the three flexibility mechanism viz., Joint Implementation (Article 6), Clean Development Mechanism (Article 12) and Emission Trading (Article 17). To be specific let us discuss the case of the EU. They have committed to an 8% reduction from their 1990 level emission by the first commitment period 2008-2012. The EU can therefore utilise the flexible mechanisms of the Protocol to a maximum of 30% of 8% or 2.4% of their commitment from all the three flexibility mechanisms. To illustrate further, if the EU is to reduce their emission by say 500 million tonnes of CO_2 per year to meet their commitment of 8% reduction by 2008-2012 then the EU can at best get credit to the extent of 12 million tonnes of CO_2 per year through the three flexible mechanisms (the figures are only for illustration), the remaining 488 million tonnes of CO_2 is still to be reduced per year through their domestic actions.

Fungibility Among Mechanisms

At the project level each mechanism will have a distinct product. However, finally all these clearly contribute to carbon credits, therefore we believe that at the COP/MOP and executive board level fungibility may be accepted, but not at the project level.

Approval

Approval by Host

There is a need for simplification of national approval processes to AIJ/CDM projects to speed up approval and implementation. Host country Government approval can be a problem in large countries such as India where national authorities may be several bureaucratic steps away from the local level or working level.

Approval by Involved Parties

The process should be similar to that of the AIJ during the pilot phase where the host and investing country governments approve/endorse the CDM project before it is communicated to UNFCCC and other concerned institutions for taking up the project.

Funding for Certified Project Activities

Developing Country Party (host) would need funding for certified project activities besides additional funds that would

be brought by the investor along with technology for implementing a CDM project. Such funding should be arranged through the CDM Executive Board as discussed under sharing of credits.

Authority and Guidance of the Conference of the Parties

The COP/MOP at present meets only once a year as such there should be an institutional arrangement made, so that any guidance required for operational requirements under CDM can be sought and given to CDM participating Parties by valid authorities without going to the COP/MOP any time of the year.

The CDM Executive Board

Though institutional in nature, the Executive Board will be accountable to COP/MOP but for the need of speedy action it is necessary that the Executive Board is given considerable freedom in matters relating to CDM projects, design, approval, implementation etc. otherwise it will get bogged down due to bureaucracy.

The Executive Board should be constituted mainly from Non Annex I Country Parties as CDM is primarily for assisting developing countries for achieving their sustainable development. One of the main functions of the Executive Board will be to provide necessary guidance to Non Annex I Parties for implementing CDM projects and for certification of CERs, as well as the banking of CERs for Annex I Parties. Another important function of the Executive Board will be to decide the share of proceeds to the host, the investor, the Executive Board itself and for financing adaptation costs. The Executive Board also should be able to monetise the CER proceeds for transferring it to Non Annex I Parties expeditiously. Another important function of the Executive Board will be to settle any dispute between investor and host country Parties in relation to CERs. The operational entities can be any independent body including NGOs, and they should be able to take up the responsibility of the monitoring, verification, certification of CERs.