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"Using the Climate Change Convention to Accelerate Technology Transfer to Developing Countries"

UNITED NATIONS YOUTH AND STUDENT ASSOCIATION OF AUSTRIA

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Chair:

My name is **Klaus Kogler**, I was born in Hartberg (Austria) on 21 July 1983 and I am currently studying Energy and Environmental Management at the University of Applied Science in Pinkafeld. As I am very much interested in energy and environmental issues I am also member of VICOSD (Vienna International Community on Sustainable Development). This institution specialises in the implementation of renewable energy projects in developing countries as well as in the education of young people in this field.

The previous year (2003) I was delegate of Poland in the UNIDO committee at the VIMUN 2003. This year I am glad to be Chair of this committee.

Introduction to the Committee:

UNIDO's Vision: "To improve the living conditions of people and promote global prosperity through offering tailor-made solutions for the sustainable industrial development of developing countries and countries with economies in transition."

The United Nations Industrial Development Organization (UNIDO) was founded in 1966 and is based in Vienna, Austria. Within the UNIDO organizational structure are, further, 35 regional offices, 13 investment and technology promotion offices and a number of offices related to specific aspects of its work. UNIDO maintains a strong presence worldwide. As of August 2003, 171 States are Members of UNIDO. They meet once every two years (last one: 1 – 5 December 2003). The conference is UNIDO's supreme governing body, which determines the guiding principles and policies, approves the budget and work programme of UNIDO and appoints the Director-General (currently Carlos Magarinos). It also elects representatives to 53 seats on the Industrial Development Board and to the 27 seats on the Programme and Budget Committee.

Mission

UNIDO's mission is to help countries pursue sustainable industrial development. This is a specialist role in the UN system. The role is vital: industrial growth helps foster economic development; economic development improves tax revenue and makes it possible for governments to achieve lasting social advance and poverty alleviation. (Using the Kyoto Protocol as approach to promote undertaken steps, may be a crucial point). In order to accomplish the high aims, UNIDO addresses each problem in a systematic way, referring to the "3Es" which need to be kept in balance:

Competitive ECONOMY

- Industrial policy formulation and implementation
- Statistics and information networks
- Metrology, standardisation, certification an accreditation
- Continuous improvement and quality management

Sound ENVIRONMENT

- Environmental policy framework
- Climate convention and Kyoto Protocol
- Energy efficiency
- Rural energy development
- Cleaner production
- Pollution control and waste management
- Montreal Protocol

Productive EMPLOYMENT

- Small- and medium-sized enterprises: policy framework
- Women entrepreneurs: policy
- Entrepreneurship development
- Upgrading agro-industries and related technical skills

These "3Es" – economy, employment and environment – are guiding the principles for UNIDO's approach to its markets, clients and customers – especially in the light of growing international concern over the social environmental consequences of industrialisation. UNIDO understands itself as someone who connects people, governments and institutions in order to find solutions to problems, e.g. by finding investors for projects and industries, by transferring technology.

Advisory and technical services are grouped under the appropriate "E". The result can be understood as the tree baskets of services, each containing several components described above. Each component comprises a module of several related services. These are the baskets from which to "pick and mix" the combination of services most appropriate to answer a country´s particular need.

Why UNIDO? Because there are some challenges (in the developing world) all over the world that can only be met by an international organisation. UNIDO has the necessary long experience, UNIDO understands the needs of governments, industrialists and entrepreneurs everywhere. In many fields, it has

rightly earned reputation as a neutral, honest broker. UNIDO is the world's most experienced industrial problem solver. Alone among the UN family of agencies and organizations, UNIDO focuses on industrial development and serves as a global forum on its social, economical and technical consequences.

Introduction to the Issue:

Greenhouse effect

Of all the planets in our solar system, the Earth is the only one that – as far as we know – supports life. In part, we owe our existence to a process called the greenhouse effect. Inside an artificial greenhouse filled with plants, the surrounding glass traps the sun's energy, making it warm inside, even while outside the temperature might be much colder. This "same" effect happens every day on the Earth. Gases within the atmosphere act like glass, trapping the sun's heat. These gases (greenhouse gases) include carbon dioxide (CO_2), nitrous oxide (N_2O), chlorofluorocarbons (CFCs), methane (CH_4), tropospheric ozone (O_3), and water vapour (H_2O). Without the greenhouse effect the world's average temperature would be about –18°C, instead of the +16°C we are used to.

Greenhouse effect – Enhanced greenhouse effect – Global warming and consequences

Solar energy arrives in the form of short wavelength radiation. Some of this radiation is reflected by the Earth's surface and atmosphere.

This energy is then used in a number of processes including:

- heating of the ground surface,
- melting of ice and snow,
- evaporation of water,
- and plant photosynthesis.

The earth gets rid of this energy (sends it back out into space) in form of long wavelength, infra-red radiation.
Most of the infra-red radiation emitted upwards by the earth's surface is absorbed by the gases mentioned above. Greenhouse gases prevent energy from passing directly from the surface out into space. Instead, many interacting processes (including radiation, air currents, evaporation, cloud-formation, and rainfall) transport the energy high into the atmosphere. From there it can radiate into space. This slower, more indirect process is fortunate for us.

The earth's atmosphere is made up of 78% nitrogen and 21% oxygen. Only about 1% is made up of natural greenhouse gases, but this comparatively small amount of gas makes a big difference. Before the Industrial Revolution (which started in England about 200 years ago) the mix of gases that made up the atmosphere was relatively constant. The Industrial Revolution brought new industrial processes, more extensive agriculture, and a rapid increase in world population. This rapid increase in human activity meant that more of the gases which cause the greenhouse effect were released into the atmosphere. More gas leads, as scientists are claim, to an increase in global temperature ("the enhanced greenhouse effect").

Major greenhouse gases are carbondioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), chlorofluorocarbons (CFCs) and tropospheric ozone (O_3). The effects these different gases have on the atmosphere can be best looked up in scientific literature. Knowledge of these effects is especially important to throughoutly understand the inter-linking factors of greenhouse gases and climate change.

Various independent historic measurements conclude that global average near-surface temperature has increased by about 0.5°C over the past 100 years. This global warming trend can cause significant global climate change.

Human society is highly dependent on the Earth's climate. Climate patterns and human adaptations determine the availability of food, fresh water, and other resources for sustaining life. Social and economic characteristics of society have been shaped largely by adapting to seasonal and year-to-year patterns of temperature and rainfall. An average global temperature rise of just 0.2 to 0.3°C per decade over the next hundred years could have severe consequences since some regions will experience a much higher than average increase in temperature and rainfall. Climate change will have significant effects on:

- Water resources,

- Coastal resources,
- Health,
- Agriculture,
- Forests,
- Energy and Transportation

Climate change is an international issue which needs worldwide studies and responses. The first milestones were set in the 1980s as the World Meteorological Organization and the United Nations Environment Programme established an international panel of government representatives and scientists to review the science of climate change. Since then the most important steps were the Montreal Protocol 1987, the UN Framework Convention on Climate Change 1992 and the Kyoto Protocol 1997.

Climate Change in International negotiations

In the 1980s the World Metrological Organization and the United Nations Environment Programme established an international panel of government representatives and scientists to review the science of climate change. Known as the Intergovernmental Panel on Climate Change (IPCC), it published extensive reports in 1990 and 1996, that have become the major source for discussions and decision-making processes in regard to the enhanced greenhouse effect. Since the first report the IPCC has produced many updates.

At the 1992 Earth Summit in Rio de Janeiro 155 countries signed the UN Framework Convention on Climate Change. *The stated objective of the Framework Convention is to achieve stabilisation of the greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.*

In 1995 countries to the UN Framework Convention on Climate Change met in Berlin in what is known as the first meeting of the Conference of the Parties (COP1). They agreed to continue international cooperation regarding the enhanced greenhouse effect. But there was little agreement on what could be implemented. After many negotiations delegates started working on a protocol. COP2 was held in July 1996 in Geneva. There, the countries agreed, that talks on reducing greenhouse gas emissions should be accelerated.

The Earth Summit II in New York in June 1997 reviewed of how successfully Earth Summit I commitments had been implemented in the 5 years since they were agreed on. Some arguments on the floor were that all nations start at a different level with respect to greenhouse gases. For example, some countries have copious supplies of hydroelectricity, others depend on inputs of energy-intensive methods, still others have economies that are less energy dependent. Within the European Union differential targets were allowed.

COP3 took place in Kyoto, Japan in December 1997, resulting in the Kyoto Protocol. This agreement sets the collective global target for reducing greenhouse gas emissions by 5.2% of 1990 levels by 2012.
COP4 took place in Buenos Aires, Argentina in November 1998, where a 2-year plan of action to reduce the risk of global climate change was adopted.
COP5 was held in Bonn, Germany in October/November 1999.

Then, progress was made on the following issues:

- negotiation process,
- Kyoto mechanisms,
- land-use,
- land use change and forestry
- and compliance.

In November 2000, negotiations were suspended at COP6 where no agreements on concrete measurements for the implementation of the Kyoto Protocol were reached. COP6 resumed in July 2001 in Bonn, Germany. Although the United States were not part of the talks, other industrialised nations reached partial agreements on how to begin addressing the problem of climate change.

At COP7, held in Marrakech, Morocco in November 2001, extended discussions produced a rule book for the Kyoto Protocol, clearing the way for ratification. However, Australia and the United States were not committed to ratification.

COP8 was held in October 2002 in New Delhi where the emphasis was on sustainable development.

COP9 was held in Milan, Italy in December 2003 and Argentina offered to host COP 10 this year.

Important Conventions on the Issue:

The Kyoto Protocol

The objective of the Kyoto Protocol is the *"stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"*. To date, an insufficient number of countries have ratified the Kyoto Protocol. It is only binding once it has been ratified by 55% of the signatories, which must between them represent 55% of developed countries' carbon dioxide emission. Kyoto has surpassed the requirement of signatories but has only received pledges form nations representing 44% of total emissions. The United States is the biggest polluter with a 36% share followed by Russia, with 17.5%, now holding the key to the success or failure of Kyoto.

To achieve its stated objective, the Protocol first divides nations into two categories:

Annex I countries, which consist mostly of industrialized nations,

Non-Annex I countries mostly consisting of developing countries.

The Protocol then establishes "quantified emission reduction an limitation commitments" for each Annex I country. For now, the non-Annex I countries do not have binding emission reduction commitments.

The commitment for each Annex I country takes the form of a strict budget for its total greenhouse gas emissions, called an assigned amount. The assigned amounts apply during the years 2008 through 2012 – the so-called "commitment period". Article 3 of the Protocol establishes an accounting framework for determining how emissions from different activities should count toward a country´s compliance with its assigned amount. Most Annex I countries would have to substantially reduce their total national emissions in the years 2008 through 2012 for not to exceeding their assigned amounts.

The Protocol establishes a number of "cooperative mechanisms" that allow an Annex I country to fulfil its commitment through joint efforts with other countries. The rationale for these mechanisms is, that the atmosphere is indifferent to the geographic location of a source of greenhouse gas emissions, but the costs of reducing emissions vary considerably among countries. The mechanisms are designed to allow Annex I countries to achieve compliance through a least-cost mix of domestic and international activities. Two of these mechanisms are established in Articles 6 and 12 of the Protocol.

Article 6 authorizes an Annex I country, or a private entity from that country, to invest in a climate change mitigation project in another Annex I country. With approval by the host country, the investing country receives "emission reduction units," which it can add to its assigned amount.

Article 12 authorizes an Annex I country, or a private entity from that country, to invest in a climate change mitigation project in a non Annex I country through the Clean Development Mechanism. The project must contribute to sustainable development in the host country. If it is approved, the investing country can add the resulting "certified emission reductions" to its assigned amount.

Environmentally Sound Technologies, Clean Development Mechanisms and Sustainable Development

Finding sustainable solutions involves all members of the international community. Developing countries, as they developed, face decisions, that will have consequences not only for them, but also for us all. All countries must follow the path of clean energy, which draws upon more efficient processes and technologies, and the use of environmentally sound technologies (ESTs) to change course. While developed countries also face these choices, the greater growth in developing countries affords the opportunity to overtake scientific evolution and adopt the technologies of tomorrow.

The goals rooted in the UN Framework convention on Climate Change and extended and broadened in the Kyoto Protocol are ambitious, but they can be reached through the development and use of clean energy technologies.

The Kyoto Protocol provides for the use of flexibility mechanisms. These include

- international emission trading
- joint implementation
- Clean Development Mechanism, and
- special flexibility provisions for regional integrated groupings, such as that formed by the 15 members of the European Union.

One key flexibility provision is the Clean Development Mechanism (CDM). This powerful, market oriented tool to address climate change is particularly relevant for developing countries. It offers a way to buy cleaner, but more expensive advanced technologies, instead of cheaper and more polluting technologies. The CDM adds value to ESTs, creating a new revenue stream, that will help attract foreign investment. For countries with opportunities for low-cost abatement ESTs, the revenue stream could exceed $1 billion annually. The CDM is also intended to be an opportunity for developing countries that did not accept binding emissions reduction at Kyoto to be involved in GHG mitigation.

It has been estimated that increased use of ESTs for energy production in South Asia could bring clean hydroelectric power from Nepal, electricity from Pakistan, and natural gas from Bangladesh to ease power shortages in India in an environmentally and economically beneficial way.

Energy integration can improve efficiency, reduce cost and offer consumers greater choice. It can lead to sustained economic development, regional security, a cleaner environment and more trade and investment.

It should be recognised, however, that the development and application of government policies cannot solve the GHG problem by itself. It will require a global solution in which the private sector and governments work together.

There are organisations and unions like the UNIDO, which are establishing and supporting programmes for implementing environmental sound technologies.

In forming partnerships on the climate issue and in particular in support of the Clean Development Mechanism, we are witnessing a revolution. A revolution in thinking! A revolution that says industrialized and developing countries must work together: "win-lose" strategies are going by the wayside in favour of "win-win" partnerships. And they have too. Because of this small planet, our economies and our environment are interdependent. We have to be in it together; pulling for – rather than against – each other.

And the use of ESTs to implement the CDM is a great opportunity to get started. A financial institution estimates that using ESTs for CDM could bring about $1 billion per year of new financial and technology investment to India, for example. That will help clean local air and water, whilst growing the economy and it will help in cleaning up the global pollutants that cause climate change.

In a recent study World Resources researches teamed up with collaborators in Brazil, China and India to assess the development benefits of potential CDM projects.

Key findings include:

- Potential CDM projects in all three countries offer a wide range of sustainable development benefits. These include environmental benefits such as cleaner air and water, reduced deforestation, soil conservation, and biodiversity protection; and social benefits such as rural development, employment, and poverty alleviation.
- In many cases, these benefits overlap markedly with goals that developing countries have formally or informally identified as development priorities. Far from skewing investment priorities in developing countries, the CDM offers an opportunity to make progress simultaneously on climate, development, and local environmental issues.
- Explicit assessment of the non-carbon, or sustainable development, attributes of a project are important if developing countries are to design and prioritise projects so that they are most consistent with their own development goals.

The findings suggest that the CDM can, indeed, provide substantial sustainable development benefits. For developing countries that might otherwise be preoccupied with immediate economic and environmental needs, the prospect of such benefits should provide a strong inducement to participate in the CDM.

If we are to realize these benefits, then there must be reliable and reproductible strategies and tactics, that enable decision-makers to choose the right solutions. Given the above lear indications that ESTs can help in the reduction of GHG's and the implementation of the CDM, two important questions need to be asked:

1. How are ESTs identified and selected?
2. Do ESTs meet performance expectations?

These are key questions, in case wrong technologies are chosen or do not perfom as claimed then the net result could not only be a waste of time and money but also increased emission of GHG's or reduced mitigation. Therefore, it is crucial to find answers to the questions.

What are Environmentally Sound Technologies (ESTs)?

Environmentally Sound Technologies (ESTs) are technologies that have the potential for significantly improved environmental performance relative to other technologies. ESTs protect the environment, are less polluting, use resources in a sustainable manner, recycle more of their wastes and products, and handle all residual wastes in a more environmentally acceptable way than the technologies for which they are substitutes. ESTs are not just individual technologies.

They can also be defined as total systems that include know-how, procedures, goods and services, and equipment, as well as organizational and managerial procedures for promoting environmental sustainability. The environmental performance of a technology depends upon its impacts on specific human populations and ecosystems, and the availability of supporting infrastructure and human resources for the management, monitoring and maintenance of the technology. The soundness of environmental technology is also influenced by temporal and geographical factors. Likewise, what is environmentally sound in one country or region may not be in another.

Sustainable development is a context-driven concept and different societies may define it differently. This makes it important to ensure that the adoption and use of technologies meet local needs and priorities – thus increasing the likelihood of their effectiveness. It is also important to recognise that the development and implementation of complex, sophisticated, and very expensive new technologies may exacerbate existing inequalities, or set up new ones between rich and poor nations.

Two strategies for change are required. A short term, intermediate and adaptive strategy is needed to cope with conditions as they are. At the same time, a long term and reconstructive strategy is required to establish comprehensive goals for use of ESTs, in achieving sustainable development and to implement the necessary plans for their attainment. Better policies and procedures are urgently needed to reduce the extent of damage to the biosphere until more adequate ecologically sound approaches can be provided. Such strategies must be designed to prevent the foreclosure of future possibilities that might otherwise occur because of present, high risk, irreversible decisions. This essentially involves a precautionary approach, based on knowing what ought to be avoided.

Current efforts and established processes for EST transfer are not sufficient, especially for those technologies, that cannot yet be disseminated commercially. It is important to go beyond improving market performance. Extra efforts to enact policies that lower costs and stimulate a demand for ESTs are necessary to achieve environmental benefits, that otherwise might not be realised. Integrating human skills, organisational development and information networks are also essential for effective technology transfer.

The environmental performance of ESTs is not well understood by many decision makers. This is largely due to the inadequacy of information and decision support tools used to quantify and qualify the merits of ESTs and related investments. The challenge is even greater in the context of developing countries, given the complexity of factors that influence and determine investment decisions.

Linking environmental practices to commercial success in a financially credible manner is elusive. The variety of approaches to reporting environmental performance information often makes it difficult, if not impossible, to compare products, facilities, companies, sectors and countries.

Encouraging the adoption and use of ESTs requires both voluntary approaches and a regulatory framework, that allows organizations to innovate and become environmentally responsible. Furthermore, there needs to be greater clarification of existing environmental rules and regulations, as well as better coordination and harmonization with international standards.

A combination of factors contributes to the concerns and expectations of stakeholders regarding the quality and credibility of information reported to them. This gives rise to the need for assurance provided by independent third parties regarding whether or not the reported information satisfies specific criteria.

There are significant gaps in the abilities of both information providers and information users to take advantage of the benefits of EST information systems and databases. Technology users and intermediaries could do a better job in selecting ESTs, if they knew the range of information systems available and the quality of information they contain. Similarly, technology providers could do a better job of promoting their ESTs, if they were more familiar with the target audiences and the quality requirements of these information systems.

To a certain extent, the advocates and practitioners of ESTs do not know of one another, do not support one another, and cannot be of assistance to those who want to follow a similar road but do not know how to get started. If we could turn public and private interest toward the needs of developing countries, substantial progress could be made. To guide this process, actions are needed now in the following areas:

- Defining what are ESTs
- Establishment of National goals and objectives on the adoption and use of ESTs
- Development of criteria, guidelines and methodologies for identification and selection of ESTs
- Development of criteria, guidelines and methodologies for the performance verification ESTs
- Establishing an enabling environment to enhance the adoption and use of ESTs
- Facilitating mechanisms for finance and transfer of ESTs

The inadequacy of information and decision support tools used to quantify and qualify the merits of ESTs represents a significant challenge, given the complexity of factors that influence and determine investment decisions. Cooperation amongst governments, corporations and the financial community is needed for investments in ESTs to occur.

The effectiveness of ESTs depends on having both broad-based and expert input into their development, adoption and ongoing monitoring. Governments, the private sector and citizens must all be involved. At the same time, systems for collecting, synthesizing and feeding back information and knowledge on ESTs must be developed and maintained.

Investments in ESTs and eco-efficient practices require transparent and credible information on which decision can be based. Third party performance assessment mechanisms such as verification and certification can assist in meeting these needs. Well-defined, effectively applied standards and verification processes can enhance the compatibility of different mechanisms and approaches for assessing environmental performance and encouraging the adoption and use of ESTs.

Continuous review and improvement of these processes is essential for the creation of an effective system that facilitates the development, use and verification of ESTs that is responsive to changing social, economic and political realities and at the same time leads to GHG reduction through the CDM.

Clean Development Mechanism

The CDM, as outlined in Article 12 of the Kyoto Protocol and elaborated in the Marrakech Accords, is a project-based mechanism, that allows public or private entities to invest in greenhouse gas mitigating activities in developing countries and earn abatement credits, which can then be applied against their own GHG emissions or sold on the open market. In addition to reducing emissions, CDM projects have the dual objective of contributing to the sustainable development of the host country.

The simplified modalities and procedures for small-scale CDM projects were agreed on at COP8. Further technical details related to baseline and monitoring metrologies are being elaborated by the Clean Development Mechanism's Executive Board.

<u>Overview of CDM Decisions</u>

1. The Text of Article 12 of the Kyoto Protocol.
2. The Marrakech Accords.
3. CDM Governance.
4. Steps Involved in Registering CDM Projects and Acquiring CERs.
5. Other CDM Rules.
6. Small-scale CDM projects.
7. CDM-Executive Board Reports.
8. Project Design Document.

The Text of Article 12 of the Kyoto Protocol

The text of Article 12 of the Kyoto Protocol lays out the framework of the Clean Development Mechanism:

1. A clean development mechanism is hereby defined.
2. The purpose of the 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.
3. Under the clean development mechanism:
    a. Parties not included in Annex I will benefit from project activities resulting in certified emission reductions; and
    b. Parties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3 as determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol.
4. 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 this Protocol and be supervised by an executive board of clean development mechanism.
5. Emission reductions resulting form each project activity shall be certified by operational entities to be designated by the Conference of the Parties serving as the meeting of the Parties to this Protocol, on the basis of:
    a. Voluntary participation approved by each Party involved;
    b. Real, measurable, and long-term benefits related to the mitigation of climate change; and
    c. Reduction in emissions that are additional to any that would occur in the absence of the certified project activity.
6. The clean development mechanism shall assist in arranging funding of certified project activities as necessary.
7. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, elaborate modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing and verification of project activities.
8. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall ensure that a share of the proceeds from certifies project activities is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.
9. Participation under the clean development mechanism, including in activities mentioned in paragraph 3(a) above and in the acquisition of certified emission reduction, may involve private and/or public entities and is to be subject to whatever guidance may be provided by the executive board of clean development mechanism.
10. Certified emission reduction obtained during the period from the year 2000 upon the beginning of the first commitment period can be used to assist in achieving compliance in the first commitment period.

The Marrakech Accords

With the agreements in Bonn and Marrakech, the modalities and procedures for the Kyoto Mechanisms have been elaborated. This should provide the public or private sector entities interested in the CDM with clarity on participation requirements and how to access the mechanisms. The decisions reached at the COP7 in Marrakech and at the second part of the COP6 in Bonn were compiled into a text known as the Marrakech Accords. The decisions related to the Kyoto Mechanisms are contained in the UNFCCC document FCCC/CP/13ADD2.)

CDM Governance

Under the Kyoto Protocol, the Conference of the Parties serving as the Meeting of the Parties (COP/MOP), the Executive Board (EB), and the designated Operational Entities (OEs) are key to the governance of the CDM. Separated by their tasks and responsibilities, each of these institutions is essential for the smooth functioning of the CDM.

Steps involved in registering CDM Projects and acquiring CERs

1. Steps involved in the registration of CDM projects

1. 1. Approval by Parties

Participation in CDM projects is voluntary and requires approval by Parties involved in the form of written confirmation.

i. Validation

Validation is the process whereby a designated operational entity (OE) reviews the Project Design Document (PDD) that it received from the project participants and assesses whether the project meets all the requirements of the CDM. More specifically, the OE will confirm that the following requirements have been met:

1. Party level participation requirements.
2. The project contributes to the host country's sustainable development.
3. Comments by local stakeholders were invited and taken into account in the PDD.
4. Participants have provided an analysis of the environmental impacts and if these impacts are significant and the host country required an environmental impact assessment, it is included with the validation request.
5. The project will result in anthropogenic GHG emissions reductions that are additional to any that would have occurred in its absence.
6. The baseline and monitoring plan comply with established methodologies that have already been approved by the Executive Board.

Baselines: A baseline is a quantification of the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project. Baselines are critical to any CDM project as they provide the basis for calculating the emissions reductions achieved.

Crediting Period: As part of the Project Design Document, participants will need to select one of two options for the crediting period, which begins after the registration of the project. Depending on the life cycle of the project participants can select a crediting period of seven years, which can only be renewed twice, or a ten year period with no option for renewals.

ii. Monitoring the Project

Once the project has begun its operational cycle, participants need to monitor GHG emissions reductions according to the monitoring plan contained in the Project Design Document. When the participants decide to undergo a verification by a designated OE, they will need to prepare a monitoring report that is consistent with the registered monitoring plan.

iii. Registration

If the Operational Entity (OE) determines a project to be valid, it shall submit a request for registration to the Executive Board. Registration will be considered complete eight weeks after receipt of the request unless one of the Parties, or at least three members of the Executive Board, request a review of the proposed CDM project.

b. Steps Involved in Acquiring CDM Credits

i. Verification and Certification

Verification is the periodic independent review of the project's performance in terms of greenhouse gas (GHG) reductions once the CDM project has begun. It is conducted by a designated Operational Entity (OE)

with the purpose of verifying the reductions in anthropogenic GHG emissions resulting from the CDM activity. If no problems have been identified, the OE will provide a verification report to the Parties involved, to the participants, and to the Executive Board. Once the verification has been completed and the GHG abatement sought has been verified, the OE will also issue a certification report and make it publicly available. This will constitute a request to the Executive Board for issuance of Certified Emission Reductions (CERs) equal to the verified amount of GHG reductions.

ii. Issuance of Certified Emission Reductions

The Executive Board will issue Certified Emission Reductions (CERs) within 15 days of receipt of the certification report unless one of the Parties involved, or at least three members of the Executive Board, request a review. After forwarding the share of CERs for administrative expenses and for the 2% adaptation levy, the Executive Board will deposit the remaining CERs into the appropriate registry accounts as the participants' request.

c. Party Level CDM Participation Requirements

Each of the Parties to the Kyoto Protocol must designate a national authority for the CDM. All Parties to the Kyoto Protocol may participate in the CDM, however, CDM projects can only be hosted by non-Annex I countries. A Party included in Annex I is eligible to use Certified Emission Reductions (CERs) to demonstrate compliance with its Kyoto Protocol commitments, if it meets the following requirements:

1. It is a Party to the Kyoto Protocol
2. It has established its assigned amount.
3. It has a national system in place to estimate all sources of GHG emissions and removals by sinks.
4. It has in place a national registry.
5. It submits an annual inventory of anthropogenic CO_2 equivalent emissions and removal by sinks.
6. It submits all supplemental information on its assigned amount.

Other CDM Rules

d. Sinks and the CDM

The Marrakech Accords decision on the CDM affirms the inclusion of Land Use, Land Use Change and Forestry (LULUCF) projects under the CDM. For the first commitment period, only afforestation and reforestation are eligible under CDM. Certified Emission Reductions (CERs) resulting from these activities are limited to 1 per cent of the Party´s base year emission for each year in the committed period.

e. The CDM Registry

The Executive Board is tasked with the establishment and maintenance of the CDM registry, an electronic database, in which CDM credits (Certified Emission Reductions) can be issued, transferred, held or acquired. The Executive Board will also identify a registry administrator to maintain the registry under its authority.

f. Share of Proceeds

The Executive Board will retain 2 per cent of Certified Emission Reductions (CERs) earned through CDM activities for the adaptation fund. The purpose of this fund is to assist developing countries that are particularly vulnerable to the adverse effects of climate change with the costs of adaptation.

An additional portion of CERs, which has yet to be determined, will also be retained by the Executive Board for the administrative expenses incurred during the project. CDM projects in least developed countries are exempt from this levy.

g. Prompt Start

Prompt start of the CDM allows for projects to begin as of January 1, 2000. Any CDM project that has started between the year 2000 and prior to the adoption of the Marrakech Accords in November 2001, can be registered as a CDM project prior to December 31, 2005. The crediting period for these projects may begin prior to the date of registration but not prior to January 1, 2000.

Small-scale projects in the CDM

The following categories of small-scale projects activities are eligible under simplified procedures:

1. Renewable energy projects with maximum output capacity of 15 megawatts.
2. Energy efficiency improvement projects that reduce energy consumption by up to 15 gigawatt hours per year.
3. Other project activities that reduce anthropogenic emissions by source, which directly emit less than 15 kilotons of CO_2 equivalent annually.

The simplified modalities and procedures for small-scale projects were adopted at the eighth Conference of Parties in November 2002, in New Delhi. The elaboration of baselines and monitoring methodologies is currently being undertaken by the Methodologies Panel of the Executive Board.

It should be noted that small-scale projects can use standardized baselines or project-by-project baselines.

CDM-Executive Board Reports

The Executive Board (EB) is a 20 member (10 members and 10 alternate members) supervisory body of the CDM established at COP7 in Marrakech. The reports of CDM Executive Board include the guidance on modalities and procedures for the CDM.

Project Design Document

The Project Design Document (PDD) is a necessary element of the CDM project cycle. In order to register a CDM project with the Executive Board, the project participants must prepare a PDD which provides documentation that the project activity meets the requirements of the CDM. The PDD is then submitted to a designated Operational Entity (OE) for the purpose of project validation. Key elements of the PDD are as follows:

- A general description of the project.
- Proposed baseline methodology.
- Estimated lifetime of the project and the creating period.
- Demonstration of how the project generates emission reduction that are additional to what would have otherwise occurred.
- An analysis of the environmental impacts.
- A discussion of the stakeholders consultation process.
- Monitoring and verification plan.

Most important countries

The 120 nations that have ratified the Kyoto Protocol since it was drawn up in 1997 are:

Antigua and Barbuda, Argentina, Armenia, Austria, Azerbaijan, Bahamas, Bangladesh, Barbados, Belgium, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Bulgaria, Burundi, Cambodia, Cameroon, Canada, Chile, China, Colombia, Cook Islands, Costa Rica, Cuba, Cyprus, Czech Republic, Denmark, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Estonia, European Community, Fiji, Finland, France, Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guyana, Honduras, Hungary, Iceland, India, Ireland, Ital, Jamaica, Japan, Jordan, Kiribati, Kyrgyzstan, Lao Democratic People`s Republic, Latvia, Lesotho, Liberia, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritius, Mexico, Micronesia, Mongolia, Morocco, Myanmar, Namibia, Nauru, Netherlands, New Zealand, Nicaragua, Niue, Norway, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Senegal, Seychelles, Slovakia, Slovenia, Solomon Island, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Trinidad and Tobago, Tunisia, Turkmenistan, Tuvalu, Uganda, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, Uruguay, Uzbekistan, Vanuatu, Viet Nam;

Russia

Russia has not yet ratified the Kyoto protocol. Still, it accounts for 17.5% of developed countries' carbon dioxide emission at 1990 levels, and therefore the Implementation of Kyoto highly depends on Russian approval!

The main attraction for Russia is the potential to sell emissions credits since Russia has reduced CO_2 emissions of 32% of the 1990 level due to the "loss" of industry after the break-down of the Soviet Union. Eventually though, the Russian government fears that ratification of the Kyoto Protocol will effect Russian acceptance into the World Trade Organisation (WTO) negatively. Further, it fears, that fossil fuel prices would fall if the protocol was implemented, thus forcing Western countries to introduce renewable sources of energy. Eventually, Italy has offered to invest in a fund for Russian projects, which should then be an additional impulse. Simultaneously the projects would help Italy meet its emission-reduction goals.

Eastern Africa, Southern Africa

Since the energy sector in East Africa is currently changing due to liberalisation processes, there is a window of opportunity to implement emission-reduction measures. The countries in this region are going to be confronted with institutional, technical, political and financial problems at the implementation of measure. Capacity building and the transfer of modern technologies are necessary to overcome these problems. The utilization of financial resources from the Framework Convention on Climate Change and the Kyoto Protocol are crucial to support the plan's implementation.

Last year, most of southern Africa was hit by devastating floods, which left tens of thousands homeless and hundreds dead. As a result, countries in that region like Mozambique face the real conseqeunce as water levels are still high on the rise as result of the weather conditions.

In South Africa, wind energy is already an important source of energy. Development of modern wind power technology presents an opportunity for feeding wind-generated electricity into the national grid and for providing power to local mini-grids or even smaller loads. The further development of these options can contribute to the country's overall socio-economic objectives by creating employment and by stimulating economic activity in rural areas.

Central America

Central America continues preparing for the implementation of concrete actions to mitigate climate change – particularly forestry activities within the guidelines of the CDM (Central America represents around 8% of the world CDM market), under the Kyoto Protocol of the UNFCCC. Central America's redoubts of tropical forest and forest plantations are an important part of these global "cleaners," but the region's potential also lies in land where more trees can be planted or where forests can regenerate naturally, enhancing their capacity to mitigate greenhouse gases. These are so-called "Kyoto forests," where countries can develop afforestation and reforestation projects with support from the financing system generated by the Clean Development Mechanism.

As a result of the Kyoto Protocol, several funds have been created at the international level to support CDM and other projects. These are bilateral and multilateral initiatives arising in developed countries that must reduce their emissions and in order of being attractive for investments allowing the country to take maximum advantage of its potential for mitigating climate change. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama have taken part in a process launched through the Forest and Climate Change in Central America Project, which also includes a regional document on the overall situation in Central America within the scenario of Clean Development Mechanism. These Documents are key instruments for national positioning with respect to afforestation and reforestation activities for mitigation of climate change.

China, Canada

China is slowly but surely pushing forward with a framework for Clean Development Mechanism (CDM) cooperation with other countries. It is establishing a National CDM Management Office and has sought funding from several international donors for CDM-related capacity building and technical programs.
Most has had significant interaction with several foreign partners on CDM-related projects, and Canada has probably been the most active international partner. Canada´s International Development Agency (CIDA) has already used $11.5 million to fund six projects related to capacity building and technology transfer, in order to help China kick-start its CDM process. (Canada's Climate Change Development Fund has $76 million to be allocated worldwide.) The six Canadian projects focus on:

- Capacity building on "awareness and outreach," "national communications," and "impact and adaptation";

- Enhancing China's capacity for carbon sequestration (capacity building in terrestrial carbon cycle monitoring and modelling);
- Coalbed methane technology (CO_2 sequestration);
- Reduction of CO_2 emissions from coal-fired utility boilers;
- Solar energy for rural electrification in Western China; and
- Renewable energy diversification (primarily promotion of small hydropower facilities).

Private Sector Initiatives

Some companies as BP, Europe's biggest oil company, and Tokyo Electric Power Co., Asia's largest power company, are already backing a World Bank carbon fund, that has invested $180 million in projects such as hydroelectric power station in Chile and the conversion of a coal-fired power plant in Hungary so it can burn cleaner fuels.

Sources

1. www.fao.org/DOCREP/006/AD438e/AD438e00.htm
   (BELIZE - Facing the climate change)
2. fdp.fao.org/docrep/fao/006/AD438E/AD438e01.pdf
   (Belize – Central America)
3. www.usembassy-china.org.cn/stadt/ptr/CDM-prt.htm
   (A Januray 2003 report from Embassy Beijing)
4. www.sardc.net/editorial/sanf/2001/Iss1/Nf1.html
   (Southern African News Features)
5. www.moscowtimes.ru/stories/2003/12/08/042.html
   (Italy Offers Russia Kyoto Carrots)
6. www.bellona.no/en/energy/31388.html
   (Russia Holds Key to Kyoto Ratification)
7. www.gtz.de/climate/english/projects/eastafrica.html
   (CDM - East Africa)
8. www.jxj.com/magsandj/rew/2001_03/wind_energy_in_south_africa.html
   (Wind energy in South Africa)
9. www.learn-line.nrw.de/angebote/agenda21/thema/kyoto-protokoll.htm
   (Information about Kyoto-Protokoll [German])
10. www.vnf.com/content/Articles/Articles/Forestcarbon.htm
    (Forest Carbon and the Kyoto Protocol´s Clean Development Mechanism)
11. www.unido.org/doc/3555
    (UN Industrial Development Organisation)
12. www.fr-aktuell.de/ressorts/nachrichten_und_politik/deutschland/?cnt=381554
    (Neuer Krach wegen Emissionshandel – Frankfurt Rundschau [German])
13. www.forbes.com/home_europe/newswire/2003/12/09/rtr1175321.html
    (FACTBOX - What is the Kyoto protocol?)
14. www.science.gmu.edu/~zli/ghe.html
    (Greenhouse Effect & Enhanced Greenhouse Effect)
15. www.pbs.org/wgbh/nova/ice/greenhouse.html
    (Greenhouse Effect)
16. royal.oakanagan.bc.ca/mpidwirn/atmosphereandclimate/greenhouse.html
    (Living Landscapes – Greenhouse Effect)
17. www.science.org.au/nova/016/016key.htm
    (Enhanced greenhouse effect - a hot international topic)
18. www.unep.or.jp/ietc/Activities/Urban/Index.asp
    (International Environmental Technology Centre)
19. www.dfait-maeci.gc.ca/cdm-ji/menu-en.asp
    (Canada´s Clean Development Mechanism & Joint Implementation Office)
20. unfccc.int/index.html
    (United Nations Framework Convention on Climate Change [Convention and Kyoto Protocol Text)
21. www.panda.org/goforkyoto/ratification_updates.rtf
    (Progress with Kyoto ratification - WWF)

Some links for additional Information

22. www.mofa.go.jp/policy/environment/warm/cop/
    (Climate Change, Japan Top [English])
23. cdm.unfccc.int/EB/COPMOP/#DEC17CP7
    (Decision15/CP.7; Principles, nature and scope of the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol)
24. www.tyndall.ac.uk/research/theme2/update_posters/july2002/it1_13.pdf
    (How do CDM contribute to sustainable development?)
25. www.teriin.org./nss/
    (joint implementation projects and the fate of nuclear power)
26. unfccc.int/resource/beginner_02_en.pdf (Understanding Climate Change: A Beginner´s Guide to the UN Framework Convention and its Kyoto Protocol)
27. www.uccee.org/WindCDM/WindProjectsCDM.pdf
    (Wind Power Projects in the CDM)
28. www.sidsnet.org/linkpages/Regions_and_Countries/
    (Small Island Developing States Network; Regions and Countries Links)
29. www.cckn.net/compendium/economies.asp
    (Economies in Transition)
30. www.bmu.de/de/1024/js/sachthemen/energie/klima_bonn_glossar/main.htm
    (Klimaschutz, Internationale Klimapolitik [German])
31. www.ji-cdm-austria.at/en/faq.php?print=ture
    (Austrian JI / CDM-Programme)