UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

LATIN AMERICAN AND CARIBBEAN REGIONAL WORKSHOP ON TRANSFER OF TECHNOLOGY

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PAPER SUBMITTED BY PORTUGAL ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES:

"EUROPEAN UNION ECONOMIC AND DEVELOPMENT CO-OPERATION FOR TECHNOLOGY TRANSFER: RESPONDING TO THE OBJECTIVES OF THE UNITED NATIONS CONVENTION ON CLIMATE CHANGE"

EXECUTIVE SUMMARY

This paper was prepared by Portugal on behalf of European Union and its Member States; it was prepared as a contribution to the Latin America and Caribbean Regional Workshop on Transfer of Technology, to facilitate the participants with some ideas and views of the European Union on the consultative process. The paper is based on a summary of the European Commission Working Document *EU Economic and Development Co-operation: Responding to the New Challenges of Climate Change*, which addresses policy questions and options concerning climate change and EU development co-operation in the framework of current EU financial instruments. It also covers points of view included in the EU document *A Compilation of Best Practices in the EU: Submission by Germany on behalf of the European Union and its Member States on Co-operative Approaches to Technology Transfer,* and the EU Statement on Capacity Building and on Development and Transfer of Technologies presented at the 5th UNFCCC Conference of Parties. The EU's views on the issues and questions listed in Annex of Decision 4/CP.4 were reflected in the EU document *Response to the Questions Identified in the Annex of Decision 4/CP.4 - s*ubmission by Germany on behalf of the EU and its Member States.

The European Commission Working Document addresses policy questions and options concerning climate change and EU economic and development co-operation in the framework of current EU financial instruments for Latin America and Caribbean. Most projections indicate that with forecast rates of economic and population growths, future greenhouse gas emissions from developing countries will increase considerably. It is therefore crucial that developing countries be included in global efforts to combat climate change.

However, developing countries differ significantly in terms of their developmental status, contribution to climate change and also in terms of their vulnerability to its effects. The EU has reaffirmed that the dialogue for increasing global participation must be in accordance with the principle of common but differentiated responsibilities.

Because of their very limited financial means, developing countries have high expectations for financial assistance and technology transfer from developed countries. Compared to domestic investment and private investment flows, the role of public sector financial support in the more advanced developing economies is likely to be rather limited, however if well focused it can have an important catalytic effect. In poor, least developed countries, Official Development Assistance (ODA) will be of significant importance.

The main emphasis of Union development co-operation is to foster sustainable development objectives - currently activities directly supporting the objectives of the United Nations Framework Convention on Climate Change (UNFCCC) concentrate on capacity building. However, EU economic and development co-operation and other financing instruments support actions in many sectors that are indirectly linked to the objectives of the UNFCCC.

The European Union is well placed in a good position to further integrate climate change objectives into its co-operation policies and to support initiatives on climate change. The main challenges in this regard are:

1) Identifying country specific needs and increasing country dialogue on climate change;
2) Using official development finance for mainstreaming and supporting CC objectives

3) Defining the EU's role in the development of Clean Development Mechanism and improving complementarity with different donors and forms of finance;
4) Developing sector specific measures and facilitating experience sharing on such measures within the EU and among developing country partners and economies in transition.

1. INTRODUCTION

The EU has been very supportive of all actions regarding capacity building and technology transfer in the framework of the United Nations Convention for Climate Change. The EU is aware that *capacity building* is of central importance to attain UNFCCC objectives. All Parties need to built capacity and strengthen institutions in order to meet the evolving demands of the Climate Convention. This fact represents a major challenge for developing countries and countries with economies in transition.

Identification of non-Annex I countries needs is therefore crucial. Initial national communications have already highlighted some national specific requirements. Equally relevant as the identification of needs, is the identification of existing capacities, capacity building activities and resources to support them. The EU shares the concern of several Parties who feel that more effort is needed to raise awareness of the many ways of supporting and channelling resources to capacity building.

The EU together with developing country partners has gained extensive experience in technology transfer and technology co-operation. This experience is illustrated by an important number of projects, which reflect the EU views concerning technology co-operation on climate change issues. These projects show a great variety of different options and scenarios.

The EU supports strongly the organisation of the Regional Workshops that contribute to the consultative process on technology transfer. The EU believes it essential to underline the openness of the consultative process and invites developing countries to come forward with examples for what they consider as best practice in the transfer of environmentally sound technologies. The EU has gathered a list of best practices in its view in the EU Document "Compilation of Best Practices in the EU: Submission by Germany on behalf of the European Union and its Member States on Co-operative Approaches to Technology Transfer". The EU is also looking forward to the upcoming workshops of the Consultative Process that could provide an open forum for discussions and recommendations.

2. ONGOING AND PLANNED TECHNOLOGY TRANSFER ACTIVITIES IN THE LATIN AMERICAN AND CARIBBEAN REGION

The EU together with developing country partners has gained extensive experience in technology transfer and technology co-operation. This experience is illustrated for the Latin American and Caribbean region by the activities and projects listed in Tables 1 and 2, which reflect the EU's views concerning technology co-operation on climate change issues. The submitted examples of projects were chosen by individual EU members. They show a great

variety of different options and scenarios, but are by no means statistically representative for the EU's climate change co-operation portfolio. This compilation focuses on what the respective EU members consider as promising approaches or success stories that may provide some orientation for future co-operation in the field of GHG mitigation.

The EU believes it essential to underline the openness of the consultative process and invites developing countries to come forward with examples for what they consider as best practice in the transfer of environmentally sound technologies.

Table 1. Grant supported Energy Co-operation Activities Funded by the European Community, in Latin America and Caribbean

Instruments	Energy Sector Activities	CE	RE	EE	Funding Provision
Economic Co-operation	Energy efficiency, market liberalisation, institutional support	✓	✓	✓	€1-2 million annually
ALURE (II)	Co-financing energy sector partnerships; promotion of sectoral reform		✓	✓	€25 million 1998-2002
Development Aid	Technical support, e.g. improving efficiency of electricity transmission; demand driven	✓	✓	✓	€32 million1986-1995
EDF Grants to Energy Sector	Energy activities through NIPs; principally electricity infrastructure, and RE	✓	✓	✓	€1357 million 1986-1995
Energy, Environment & Sust. Dev.	R&D on non-nuclear technologies, climate change, demonstration and dissemination of innovative technologies, modelling	✓	✓	✓	€2125 million 1998-2002
DC Research Collaboration	DC research collaboration: policies, dissemination strategies, and feasibility studies		✓	✓	€250 million 1994-1998
SYNERGY	Policy evolution and co-operation through training seminars and capacity building	✓	✓	✓	€15 million 1998-2000
Environ DC B7-6200	Policy/strategy; assessments and reports on, for example charcoal; pico-hydro; agroforestry		✓	✓	€45 million 1997-199
Tropical Forests B7-6201	Assessing and managing biodiversity resources; projects and regional programmes		✓		€200 million 1996-1999
NGOs B7-6000	Co-financed projects; energy in integrated development projects; rural electrification		✓		€200 million 1998
CDI	Promotion of private sector partnerships, technical assistance, feasibility studies		✓	✓	€73 million 1995-2000
ECIP	Promotion of private sector partnerships, technical assistance, feasibility studies		✓	✓	€52 million 1997

CE- Conventional Energy, RE- Renewable Energy, EE- Energy Efficiency/Rational Use of Energy, NIP- National Indicative Plan

Table 2. Energy co-operation projects supported by the European Communities and its Member States Activities in Latin America and Caribbean

Host country/region	Name of Project	Partner
• Latin America:	Optimal Utilisation of Energy in Latin America (ALURE)	EU-Commission
• Multilateral	UNEP Collaborating Centre on Energy and Environment (UCCEE)	Denmark
• Multilateral	Trust Fund for Rural and Renewable Energy	
• Central America	Meteorology development programme in the Central American isthmus	Finland
• Nicaragua	Support to the implementation on the UN Framework Convention on Climate Change	
• Argentina, Brazil, Chile:	International Photovoltaic Pumping Program (PVP-Programme)	Germany
• SIDS:	Training Course on Energy planning for Small Island Developing States (SIDS)	Italy
• Brazil	Demonstration of M&T and Development of Sustainable M&T Infrastructure	Portugal
• Global	Solar Medical Refrigerator	United Kingdom

3. CLIMATE CHANGE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Countries in Africa, Caribbean, Pacific, Asia, Latin America, Mediterranean region, Middle East, Central and Eastern Europe (CEE), New Independent States (NIS) and Central Asia differ significantly in terms of their developmental status, their contribution to climate change and also in terms of their vulnerability to its effects. The EU has reaffirmed that the dialogue for increasing global participation must be in accordance with "common but differentiated responsibilities and take into full account the legitimate priority needs of developing countries for the achievement of sustainable economic and social development and the eradication of poverty", while giving special attention to the least developed countries.

Currently EU economic and development co-operation is aimed to enable the sustainable development of developing countries, their smooth and gradual integration into the world economy and their campaign against poverty. In this respect, integrating climate change objectives into overall sustainable development policies should not be viewed just as a cost to developing country economies. They can make long term economic and social development strategies more sustainable, for example by:

1. Making economies more efficient, by addressing long term energy needs,
2. Making productive ecosystems more resilient to adverse effects of climate change,
3. Giving a contribution to reduced air pollution and consequent health problems.

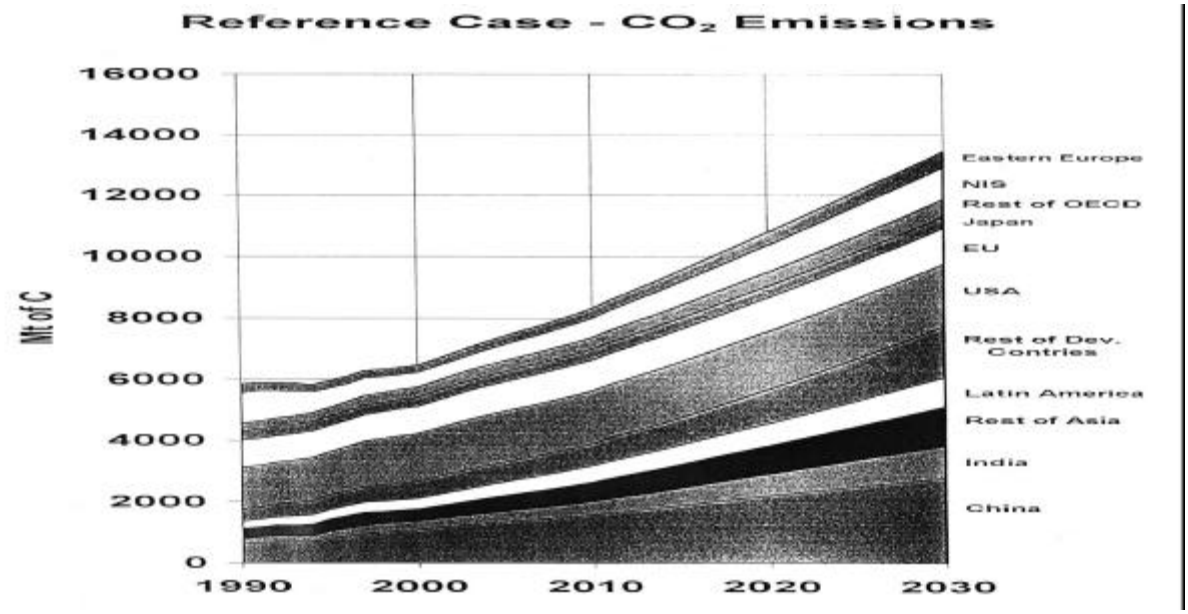

Figure 1. Trends of CO_2 emissions
(From "POLES world energy model, Research DG and ITPS, 1999)

4. POSSIBLE ELEMENTS OF A FRAMEWORK FOR A MEANINGFUL AND EFFECTIVE ACTIONS TO ENHANCE IMPLEMENTATION OF ARTICLE 4.5 OF THE CONVENTION

4.1 General

The type of funding required for emission avoidance and mitigation, and adaptation to potential adverse impacts caused by climate change will depend decisively on the country development level. Domestic savings provide by far the major financial resource for investments in more advanced middle income economies, while Foreign Direct Investment (FDI) performs even in the higher middle income countries only a limited but sometimes crucial role. Governments of those non-Annex I Parties are expected to have a key role in designing appropriate investment policies guiding domestic and foreign investors. The policies should supply proper incentives for emission avoidance and mitigation, and adaptation to potential adverse impacts caused by climate change. Therefore the role of Official Development Assistance (ODA) in the more advanced developing economies is inclined to be rather limited in the context of climate change.

In least developed countries, in which the domestic savings rates are negligible and FDI is fairly scarce, ODA will be significant. There is a particular responsibility to integrate UNFCCC objectives, i.e. adaptation and mitigation measures, into co-operation policies and to promote increased dialogue on climate change issues.

4.2. The role of private investment flows

Private investment makes between 60-70% of Gross Domestic Investment (GDI) in developing countries. Even though the private investment is far too low in most developing countries it is still of utmost importance. It is also important that these private investment flows continue to contribute to the sustainable development of the developing countries by considering the UNFCCC objectives.

There are plenty of 'clean' investments opportunities particularly in industry as well as in the energy and transport sectors. Many such investment opportunities, particularly in the energy sector, are relatively low cost and have short payback periods. In many cases fuel cost savings already justify the introduction of more energy efficient technologies.

Apart from these opportunities, domestic policies need to be designed carefully, so that private investment patterns in future could lead to significantly different development paths and trends in emissions compared to business as usual scenarios.

The Clean Development Mechanism under the Kyoto Protocol is a policy instrument that will provide incentives to private investors to take business decisions that will lead to additional emission reductions. The Activities Implemented Jointly (AIJ) serves as the pilot scheme for the CDM and Joint Implementation mechanisms.

4.3. The role of official assistance

The role of the public sector in relation to investments should first and foremost be the creation of an enabling environment for private sector investment in support of sustainable development, which takes due account of potential synergies with the UNFCCC objectives. This means that public investment, whether domestic or foreign, will only play a role in those areas where it has a clear comparative advantage. From this point of view also the role of ODA as provider of public grants to non-Annex I countries will remain rather limited, but if well focussed may have a catalytic effect.

Furthermore, many Annex I Parties make contributions to the GEF. For the period 1994-2002 € 4.6 billion has been earmarked to the GEF. The EU Member States provide their funding directly to the GEF, not through the EU. The GEF assists developing countries specifically in the management of the global commons, i.e. the atmosphere, biological diversity and international waters. In terms of the UNFCCC, the GEF primarily meets the additional costs of investment projects, which have additional benefits for climate change, i.e. mitigation and sequestration. Furthermore, it meets the agreed full costs of gathering of basic information, the preparation of non-Annex I national communications, and planning for adaptation.

OECD countries made available € 48.7 billion as ODA and € 5.2 billion as Official Aid (OA) in 1998. Developing countries should continue to use official assistance so that it contributes to their specific sustainable development objectives. In the following five areas, aid could have a synergistic role in supporting also the UNFCCC objectives:

1) Support developing countries in preparing appropriate policies and national climate change plans, including necessary scientific research and technology development, which integrate climate change objectives into other sustainable development objectives.
2) Aid supported co-operation programmes should mainstream climate change concerns during country programming and identification, appraisal, preparation and implementation of macro-economic and sector programmes and projects. Priority should be given to those interventions, which support both developmental objectives and climate change concerns so that aid becomes 'climate friendly'.
3) Project preparation should include systematic screening of projects in order to identify additional project components or investments, which would provide additional benefits with respect to climate change. In such cases, the necessary additional finance should be sought from the GEF.

4) However, in accordance with their own development priorities the partner countries can also allocate ODA or OA to specific interventions in the context of climate change, for instance capacity building (including capacity needed in the preparatory phases of AIJ projects), science and technology, monitoring of emissions, mitigation, avoidance and adaptation. The specific role of the public sector in these areas should be justified on a case by case basis.

5) Other public funds not directly targeted towards non-Annex I countries include public support to research and technology development, including the demonstration of innovative technologies, of the Annex I Parties. The results of such activities could also benefit developing countries if the collaboration with them is enhanced. Development assistance could be used, where necessary and appropriate, in order to disseminate good practices and to scrutinise the appropriateness of pilot technologies for non-Annex I countries.

4.4. The relationship between public and private financing with special reference to AIJ and the CDM

Special project-based mechanisms are foreseen to help developing countries to attract new and additional financial resources for technology transfer leading to additional emission reductions. Since 1995, Activities Implemented Jointly (AIJ) projects are undertaken. The experiences gained from such projects can be used in designing the Clean Development Mechanisms (CDM).

First estimates on the potential size of financial flows under the CDM vary considerably. It is expected that the majority of these investment opportunities will be taken up by the private sector. Private investors need an enabling environment, particularly if investments take place in the least developed countries. Therefore, reliable and predictable rules are crucial for the development of the CDM as a valuable tool. Public funding, in particular official development finance and GEF, should only be supplementary to private funding. However, Annex I Parties may also decide to utilise new and additional public funds in order to fund CDM projects, which would generate emission reduction units and certified emission reductions (CER) to help them comply with their own commitments under the Protocol. Preferably, such additional foreign public funds could target least developed and low-income countries where foreign direct investment is weak.

Aid could more specifically assist in preparatory activities for CDM, including the definition of rules and modalities, for instance through the capacity building support notably in connection with AIJ projects. In the on-going AIJ pilot phase the lack of representation of the poorest countries has become a problematic issue of geographical equity. Through relevant capacity building activities, ODA funds could play an indirect role in balancing the geographical spread of AIJ projects. At COP-5 it has been decided that the AIJ will be extended beyond its initially closing year of 2000.

5. ELEMENTS OF SUCCESSFUL TRANSFER OF TECHNOLOGY ACTIVITIES

The EU employs a wide range of financing instruments in order to implement its co-operation policies. EU development co-operation includes ODA and official aid benefiting directly developing countries, transition economies and more advanced developing countries. Moreover, other grant facilities exist which support co-operation activities in developing countries with expected spill-over effects into development and economic co-operation. These concern particularly research and technology development, demonstration and pilot projects in environment and energy. Of special importance in this respect are the EU - developing country scientific and technological co-operation activities. In addition to grant funds, the European Investment Bank mobilises significant loans from the capital markets at comparatively attractive interest rates for third countries.

The main emphasis of EU development co-operation is to foster sustainable development objectives. Currently activities directly supporting the UNFCCC objectives concentrate on capacity building. Furthermore, EU development co-operation supports actions in sectors that are indirectly linked to the UNFCCC objectives, like private sector development, energy, transport, land use, waste management, and natural resources management. Presently, the Development Assistance Committee is testing a new marker system in order to identify more specifically those projects, which contribute to the objectives of the three main multilateral environment Conventions (climate, biodiversity, desertification). In addition, there are many relevant EU research and development and demonstration activities in energy, transport, environment and sustainable development, which are grouped in the EU Framework Programme of Research and Technology Development. These co-operation and sectoral activities constitute the main entry points for mainstreaming climate change issues in co-operation policies.

The EU has long experience in its development co-operation, which could be used to support initiatives on climate change, because:

a) It has a well-developed network of programmes and projects around the world, as well as a range of relevant instruments at its disposal.

b) It plays a strong role in promoting regional co-operation among developing countries.

c) It has considerable experience in development co-operation in several climate change relevant sectors.

d) It is a strong donor in small island developing states and in the poorest countries of the world, which can be most vulnerable to the adverse effects of climate change and with least resources for adaptation.

e) It can make use of the broad scope of European research and technology development and demonstration, including the results of joint EU-developing countries research activities, which are important for knowledge generation and technology transfer to developing countries.

f) It has wide experience of scientific and technological co-operation with developing countries in areas of direct relevance to climate change.

g) It has developed in its research activities world tools such as energy or macro-economic models able to evaluate different policies and measures (marginal abatement costs, role of technologies, among others).

h) Its member states provide around 50 per cent of global Official Development Assistance. The bilateral programmes of the fifteen Member States provide a wealth of experience in development co-operation. The Union is able to make use of complementarity and spill-over effects.

i) The EU and its Member States have developed comprehensive environmental legislation related to climate change. The experiences in drawing up this legislation and in the implementation of policies and measures can be useful for non-Annex I Parties.

Therefore, the EU is in a good position to further integrate climate change objectives into its co-operation policies. The following conclusions discuss how the on-going activities can be strengthened in order to create genuine synergies between sustainable development and climate change concerns.

6. CONCLUSIONS

i. Identifying country specific needs and increasing country dialogue on climate change. The participation of non-Annex I Parties is essential for the efforts to resist global climate change, because of their rapidly growing greenhouse gas emissions and vulnerability to the adverse effects of climate change. Meanwhile, there are differences among non-Annex I Parties both in terms of their contribution and vulnerability to climate change. Therefore, efforts need to be differentiated and based on host country demand and on sustainable development needs and special characteristics of the country. In order to identify country specific needs and to increase its stake in the climate change mitigation process, climate change should become a more important and regular part of the dialogue with partner countries. For example, this could include sharing EU experiences with its own policies and measures.

ii. Integrating Climate Convention goals into Official Development Assistance (ODA). Among developing countries there are high expectations for financial assistance and technology transfer from developed countries. However, it is highly probable that the role of official development finance in more advanced developing economies will remain limited compared to private investment flows. Meanwhile, if well prepared and co-ordinated with other co-operation they can have a strong catalytic effect in the right direction. The official development finance role should concentrate on creating an enabling environment for private sector investment in support of the UNFCCC objectives. EU co-operation could have a role in supporting those objectives in the following areas:

a) Improving the targeting of co-operation with particular emphasis on joint research activities.

b) Including climate change topics into EU co-operation programmes, projects and policies. The EU Environment Impact Assessment Procedures are currently being updated so that in the future climate change aspects as a major environmental challenge will have to be integrated into policy and project formulation.

c) Support to developing countries in preparing and implementing appropriate policies where EU involvement is already strong and in relation to the UNFCCC objectives.

d) Systematic screening of results of EU research and technology development. Where possible disseminating the results and testing pilot technologies, methodologies and concepts to non-Annex I countries.

e) Better dissemination of the results of EU programmes related to climate change could provide a basis for enhanced capacity building in developing countries.

f) The EU should support initiatives of partner countries in agreement with their own development priorities in the context of the UNFCCC objectives.

On the other side, in least developed countries, official development finance can be of significant importance in the process of climate change mitigating.

iii. Identifying the EU role in the CDM. Clean Development Mechanism (CDM) should be devised to become powerful incentives for technology transfer by public and private sector. The European Union should actively participate in the development of CDM to enable capacity building and promoting investment in developing countries in agreement with sustainable development goals.

iv. Facilitating experience sharing on sector specific measures. There are many opportunities with the non-Annex I countries. Some discussion points for the necessary dialogue between sectoral and environment services include the following:

a) Energy sector. Infrastructure projects in developing countries should be accomplished in a sustainable manner. Emphasis should also be put on the creation of local-capacity building for energy management, planning and policy formulation and for implementing the right market incentives, and on equal accessibility to energy in ways that are both socially and environmentally acceptable.

b) Transport sector. Awareness raising, institutional capacity building, better understanding of environmental processes, improving the collection of environmental information, creating systems for environmental monitoring and control, regulatory development and related enforcement is needed to promote consideration of climate change issues in decision-making.

c) Land use and natural resources management. Further studies are needed. Coastal zone management activities should study possible and additional adverse effects of climate change, as should land use management activities combating desertification. Also, sequestration potential of soils and forests and increasing the use of renewable energy sources provided by the forestry and agriculture sectors should be considered.

d) Private sector development schemes support. Co-operation with the EIB, opportunities for AIJ, and pilot CDM investments could be explored within the EU business partnership programmes and SME projects, as well as the promotion of Foreign Direct Investment and thereby transfer of clean technologies.

e) The 5th Framework Programme - EU research and technology development activities, in particular the Energy, Environment and Sustainable Development Programme and the International Role of Community Research Programme.