Towards an equitable post-2012 climate agreement

Climate Development Network Proposals

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Climate
Development
Network
November 2008

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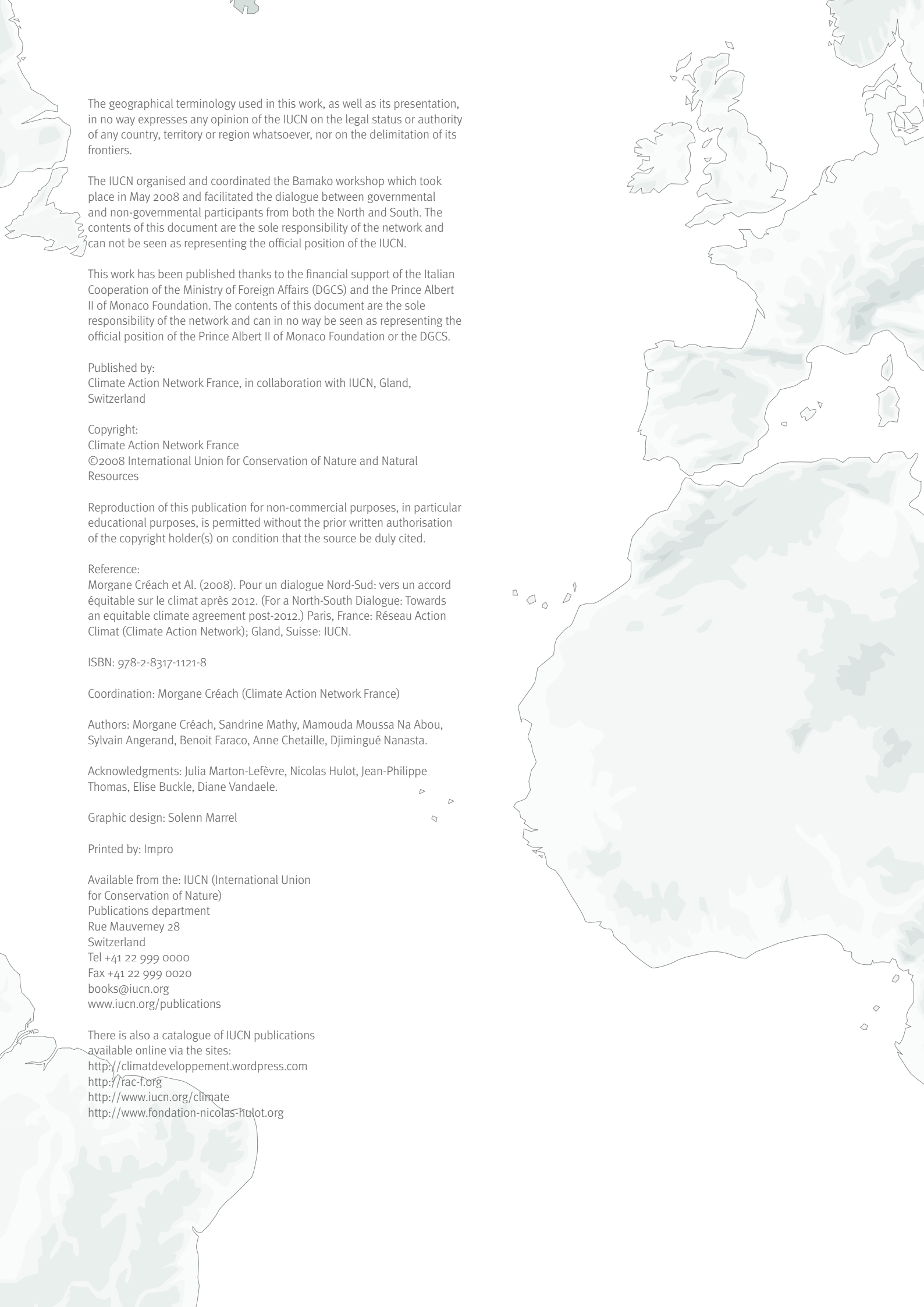

The IUCN organised and coordinated the Bamako workshop which took place in May 2008 and facilitated the dialogue between governmental and non-governmental participants from both the North and South. The contents of this document are the sole responsibility of the network and can not be seen as representing the official position of the IUCN.

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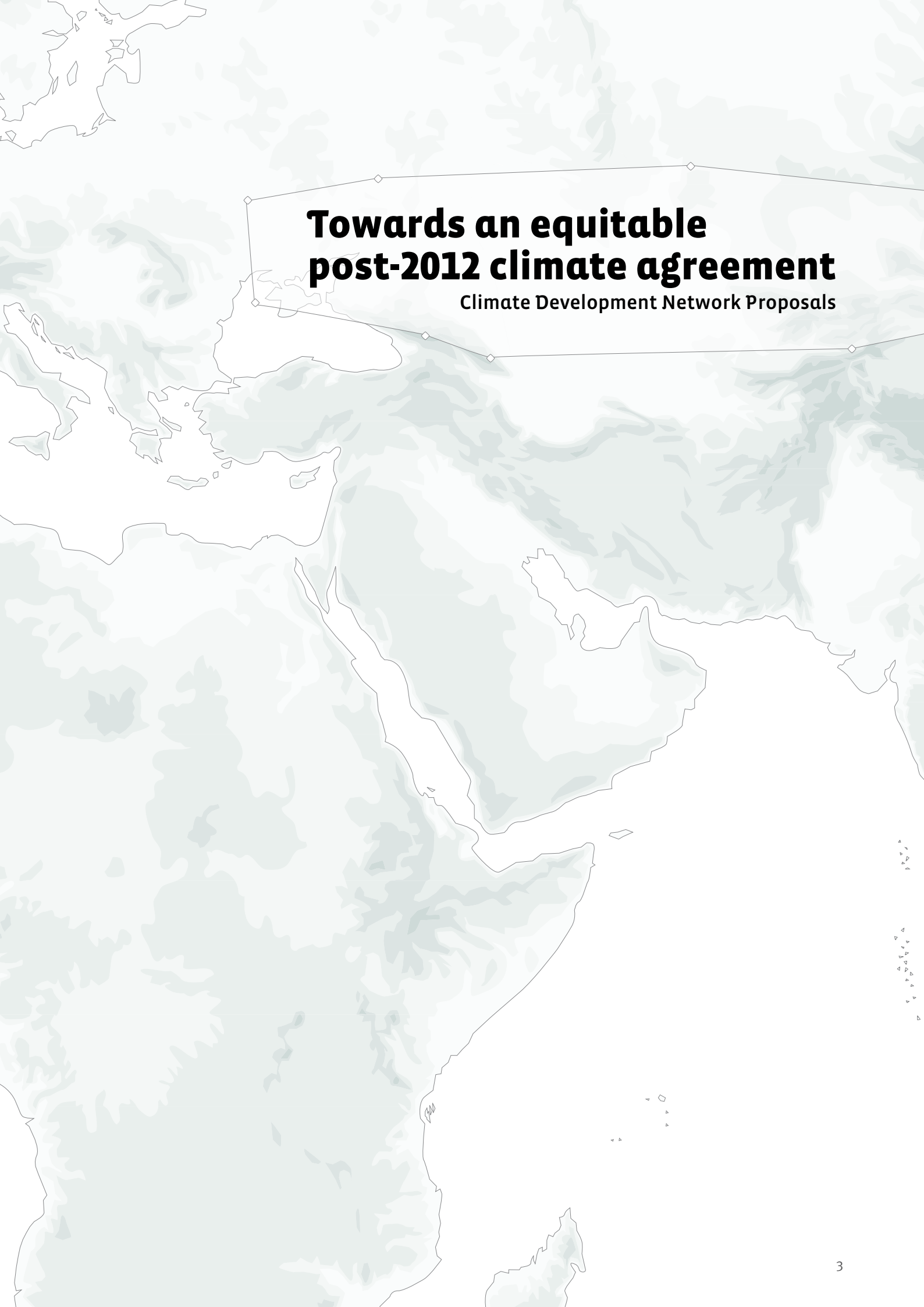


Towards an equitable post-2012 climate agreement

Climate Development Network Proposals

Contents

Préface

Equity between North and South, the key to success in climate negotiations

The international community has very little time to agree on a new global treaty to combat the imbalance in our climate. The Conference of the Parties of the United Nations Framework Convention on Climate Change, which will take place in Copenhagen at the end of 2009, must lead to a new treaty that will meet the challenge which we face. This new agreement must take into account our responsibilities, but also each person's human, financial and technical capabilities. Equity must become the main defining principle for the new agreements.

The response at the State level has, up until now, been insufficient to allow avoidance of the worst scenarios by limiting global warming to less than 2°C by the end of the century. Scientists recommend much more ambitious future reductions in emissions levels for industrialised nations, of the order of 25 to 40% by 2020 relative to the emissions levels of 1990.

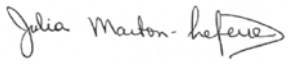
The support and political attention applied by the industrialised nations to the countries and populations most vulnerable to the impacts of climate change have also been insufficient. It is time that the industrialised nations met their obligations in a concrete manner.

We must act now. Solutions exist and are waiting to be implemented. They allow for us to reach a peak in global greenhouse gas emissions in 2015, while granting developing countries the right to development.

Climate change has repercussions for our environment in its entirety and offers us a chance, without precedent, to put right a whole set of global problems: poverty, hunger, lack of energy for billions of people, forced displacement of populations, desertification, the loss of biodiversity and forests in particular, etc.

The international community must sign-up to solutions that will benefit both North and South. Climate change and its impacts do not recognise any frontiers. But unfortunately, it is the poorest populations that will suffer the most due to a lack of means for combating its effects. Nevertheless, the situation will be untenable for us all.

Through this joint campaign statement, the partners in the project "For a North/South Dialogue: towards an equitable climate agreement post-2012" hope to add their stone to the edifice of a new international accord which must be agreed at Copenhagen. It is through a shared effort, made by participants from both North and South, that winning solutions for all of us have been identified. We consider that developing countries and, most particularly, African civil society have a major role to play in the current round of negotiations. Climate change and the policies needed to overcome it concern us all. They must not be left in the hands of a handful of experts.



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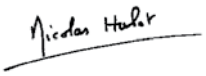
Jean-Philippe Thomas,
Coordinator of the ENDA Energy, Environment and Development Programme.



Nicolas Hulot,
President of the Foundation Nicolas Hulot for Nature and Mankind.

Presentation of the project and the “Climate Development“ network

The current cycle of negotiations being undertaken under the auspices of the UNFCCC and the Kyoto Protocol is crucial because it must initiate, at the end of 2009, the adoption of a new binding agreement on climatic change (“post-2012 agreement“).

The project, initiated in 2007, aims to set up the basis for long term collaboration between francophone NGOs in the North and South, with twin objectives:
- developing a constructive influence within civil society in connection with climate change;
- positively influencing the negotiators involved within the context of the post-2012 international climate negotiations thanks to a growth in expertise in the different NGOs making up the network.

A first workshop organised by ENDA in Dakar in 2007 led to the drawing up of a joint campaign statement which was then presented to the francophone negotiators during the UN Bali Conference in December 2007.

The Bali conference was also the occasion of the official meeting between the Climate Action Network France(CAN / RAC), IUCN (International Union for Conservation of Nature and Natural Resources), the GRET (Group for Research and Technology Exchange, French organisation for international solidarity) and the Nicolas Hulot Foundation (FNH).

A joint statement was issued on the necessity to better relate climate issues to local stakes in managing ecosystems and development for the most vulnerable populations. To do this, it is necessary to enlarge and connect existing networks, while promoting synergies between both northern and southern organisations which have complementary competences and assets.

In 2008, the members and partners of the different networks therefore decided to work together to exchange expertise and thoroughly study the essential subjects for the future of the international regime fighting against climate change. The project is based on the setting out a of a joint campaign statement based on the main climate negotiation themes: equitable targets for reducing emissions, adaptation to the impacts of climate change, deforestation and avoiding degradation, technology transfer and the necessary finance for the most vulnerable countries.

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BAMAKO, MAY 2008

In partnership with the CAN-France, ENDA, HELIO and the FNH, IUCN organised a seminar to reinforce capabilities on energy and climate issues from 6th to 8th May, 2008 in Bamako (Mali). More than 40 participants, attending from 15 different African countries, 6 of which were government representatives and 6 from other NGOs, met to share their expertise and develop shared positions on climate

The dialogue continued throughout the year via the Internet, the preferred means of communication due to the geographical separation of the participants.

A first summary of the recommendations was presented to the press and members of the IUCN during the World Conservation Congress which brought together more than 8,000 people in Barcelona in October 2008. The debate enabled expansion of the guidance documents which then formed the subject of this publication, so that it may be distributed to the NGOs and the negotiators prior to the UN climate conference in Poznan, December 2008.

Strengthened by this first experience, the partners of the project hope in the future to follow-up the initiative in order to make it more durable, but especially to reinforce and enlarge the work carried out within the network during the whole of the negotiations cycle referred to as "post-2012" which must, in principle, conclude in 2009, during the conference bringing together the different Parties, which will take place in Copenhagen. It is now a question of capitalising on this first successful experience in Africa and duplicating the approach in Asia and Latin America by applying it to the various networks in order to propose concrete solutions for an equitable climate agreement post-2012.

The "Climate Development" Network, formed in 2007, is made up of:

ENDA Third World; Climate Action Network France; HELIO International and HELIO Africa; Mali Folkcenter Nyeetaa; members and partners of the IUCN, including the Cameroon Ministry for the Environment, the Mali Ministry for the Environment, the Benin UNFCCC focal group, University of Jos, Civic Response Ghana, AMADEPELCODE, SPONG, FECOND, SPANA, le Mouvement écologique d'Algérie (Algerian ecological movement], la société tunisienne pour la nature et l'environnement (Tunisian Society for nature and the environment), the UICN-KYB project; REPAOC (Réseau des plates-formes nationales d'ONG d'Afrique de l'Ouest et du Centre - Network of national platforms of the NGOs of Central and West Africa); the Nicolas Hulot Foundation; the OFEDI (Organisation Femmes pour la gestion de l'Énergie l'Environnement et la promotion du Développement Intégré - Women's organisation for management of energy, environment and promotion of integrated development); of IDID (Initiatives pour un Développement Intégré Durable - Initiatives for Sustainable Integrated Development); NGO - EDER "Énergie et Environnement pour le Développement Rural" (Energy and environment for rural development), JVE Togo et Guinée Écologie (Togo and Guinea Ecology) and other francophone NGOs from West Africa.

Part 1.
Equity at the heart of the definition of future commitments to reduce emissions

Morgane CRÉACH, CAN-France

INTRODUCTION

Ten years have passed since the Kyoto Protocol was adopted. This year, the countdown has begun for the first period of the application of this protocol which will finish on 1st January 2013. No sooner has this first phase been started than it is already time to think of the content of the second commitment period. This is the object of negotiations known as "post-2012".

The Fourth Assessment Report of the IPCC[1] indicates that in order to limit global warming to less than 2 degrees by 2100 relative to the pre-industrial temperatures - the threshold for avoiding the worst impacts of climate change - immediate and ambitious initiatives are essential on a global scale. Time is short, global greenhouse gas emissions must reach their maximum by 2015, to then decline by 50 to 85% by 2050 relative to 2000.

It must be remembered that limiting planetary warming to less than 2°C by the end of the century is not an objective in itself, but a strict minimum that has to be attained. This limit in no way places the international community beyond the reach of the negative impacts of climate change. One only needs refer to the 4th IPCC report of 2007 to confirm that with the current global warming threshold, the adverse consequences will already be amply felt, particularly in the most vulnerable countries or regions.

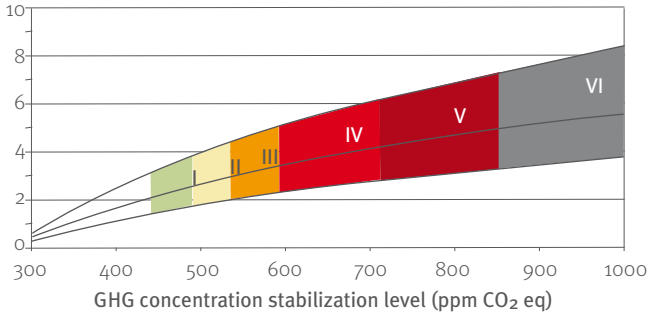
Today, the context in which the negotiations are anchored is radically different to that which prevailed in 1997. In the Fourth Assessment Report, IPCC scientists observed an acceleration in global warming and an amplification of its effects. The global warming of the last 100 years has increased from 0.6°C in the preceding report of 2001 to 0.74°C today. The forecasts for 2100 are scarcely more reassuring: according to the scenarios, the average temperature on the Earth's surface is due to increase by between 1°C and 6.3°C! Moreover, the map of the largest emitters has changed significantly and certain developing countries are now large contributors to global greenhouse gas emissions. To limit global warming safely to less than 2°C by the end of the century requires:

- drastic reductions in greenhouse gas emissions by all the developed countries,
- a limitation in the rate of increase of greenhouse gas emissions in certain of the developing countries.

From this starting point, we must raise the question as to what is a fair distribution of the efforts to be made in combating climate change. It is this in particular that developing countries continually reminded the rest of world of at the last United Nations conference which took place in Bali in December 2007. The question of equity and fair sharing of efforts cannot be avoided nor the definition of commitments or initiatives to reduce emissions, nor the acceptance of responsibility for the financial cost of the reduction.

1- Intergovernmental Panel on Climate Change, 2007.

Equilibrium global mean temperature increase above preindustrial (°C)
Source : IPCC AR4 WG3 SPM fig 8.



Stabilization scenario categories and their relationship to equilibrium global mean temperature change above pre-industrial, using: (i) "best estimate" climate sensitivity of 3°C (black line in middle of shade area), (ii) upper bound of likely range of climate sensivity of 4,5°C (red line at top of shaded area), (iii) lower bound of likely range of climate sensivity of 2°C (blue line at bottom of shaded area). Coloured shading shows the concentration bands for stabilization of greenhouse gases in the atmosphere corresponding to the stabilization scenario categories I to VI.

I- CONTRIBUTION FROM ALL COUNTRIES TO AVOID GLOBAL WARMING GREATER THAN 2°C

A- THE PRECAUTIONARY PRINCIPLE REQUIRES ACTION FROM EVERYONE...

A recent study by the Global Carbon Project indicates that global greenhouse gas emissions have never been as high as in 2007[2]. While the annual rate of increase was 0.9% between 1990 and 2000, since 2000 it has reached 3.5%, by far exceeding the worst scientific scenarios (the IPCC based its "worse case" scenario on a rate of increase of 2.7% per year)!
The concentrations of GHGs in the atmosphere is 375 ppm CO_2eq today (taking into account the cooling effect of aerosols)[3]. The IPCC indicates in its lowest stabilisation scenario (450 ppm CO_2eq) that global emissions must reach their maximum in 2015 to subsequently decline in a drastic manner. But this scenario still gives us a 50% chance of exceeding the 2°C threshold!

In practice, this scenario is based on emissions reductions in developed countries of between 25 and 40% in 2020 relative to 1990. It also envisages that certain developing countries in the regions of South America, Central and East Asia and the Middle East must limit the increase in their emissions ("substantial deviation").

Required reduction in levels relative to 1990			
Scénario	Category of country	2020	2050
A-450 ppm CO_2 e	Annex 1	-25% to -40%	-80% to -95%
	Non Annex 1	Substantial deviation relative to a reference scenario for Latin America, Central and East Asia and the Middle-East	Substantial deviation of emissions in all regions

Source : : IPCC, group III, 2007. Chapter 13, box 13.7.

To achieve the maximum chance of remaining below an irreversible threshold for global warming, collective action by all countries is thus indispensible. But it will not be possible to achieve any political agreement if the main focus of the climate change Convention and the Kyoto Protocol – common but differentiated responsibilities and respective capabilities - is not respected.

B- ... BUT IF THE PRINCIPLE OF COMMON BUT DIFFERENTIATED RESPONSIBILITIES AND RESPECTIVE CAPABILITIES IS OBSERVED

✦ The greater responsibility and capability of the developed countries

Developing countries currently emit in absolute terms as much greenhouse gases as developed countries. Nevertheless, rich countries not only have an historical responsibility, but also a current responsibility stemming from their technical and financial capabilities which enable them to attack the problem much more rapidly than developing countries can. Historical responsibility since the rich countries are responsible for approximately three quarters of CO_2 emissions from fossil fuels since 1850. Current responsibility because today, developed countries are responsible for about 50% of greenhouse gas emissions while only representing one fifth of the global population. Moreover, the annual income of an inhabitant of a developed country is five times higher than that of an inhabitant of a developing country.

Therefore the richest countries must provide the largest contribution to the efforts made. The priority for southern countries remains development. The acceptability of more ambitious initiatives on their part cannot derive other than from a post-2012 agreement which will propose an advantageous development plan for them.

✦ The double challenge for the new agreement: to reconcile the struggle against poverty with the struggle against climate change

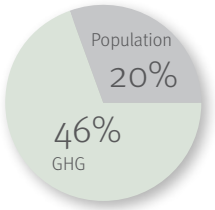
2015 represents a deadline in two respects: attainment of a peak in greenhouse gas emissions, but also meeting the Millennium Development Goals set by the international community that were specified in 2000. The latter were aimed at reducing global poverty by 2015. Even today, 2.6 billion of our planet's inhabitants live on less than $2 per day and more than 2 billion have no access to electricity. Now, access to energy, even if it does not constitute one of the Millennium Development Goals as such, represents one of the essential elements for attaining them.

This coincidence of dates is symbolic and it tells us much about the main obstacle which governments will have to overcome when negotiating a new treaty on climate change. It is not a question of prioritising development over the climatic crisis, but rather of achieving a regime that reconciles the two. The new climate agreement will have to enable drastic reductions in global greenhouse gas emissions

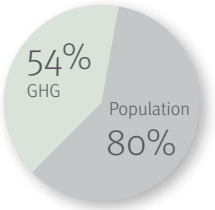
2- To find out more: http://www.globalcarbonproject.org

3- Climate Change 2007, synthesis report, IPCC.

Contribution of Annex I countries to emissions and the global population (in %)



Contribution of non-Annex I countries to emissions and the global population (in %)



Source : 4th report of the IPCC, 2007.

while at the same time leaving sufficient space for southern countries to develop. The latter are in effect not able to accept making a prior commitment to combating climate change except on condition that this initiative be integrated into a viable development model for their economy. This statement echoes the preamble to the Convention on Climate Change which recognises, for developing countries, that they "need access to resources required to achieve sustainable social and economic development and that, in order for developing countries to progress towards that goal, their energy consumption will need to grow taking into account the possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions in general, including through the application of new technologies on terms which make such an application economically and socially beneficial".

Enabling development in a world currently subject to a scarcity of resources and an imperative for reducing global emissions thus constitutes the main challenge for the negotiations known as post-2012.

Rich countries must therefore not only reduce their emissions more quickly, but they must also help developing countries to limit their emissions by providing financing and transfer of adequate technology. This, in some respect, is the essence of the Bali Action Plan adopted by the group of countries present at the last Bali conference in December 2007. Several approaches to negotiation encompassing the international community were set up to define new commitments to combat climate change.

II- THE BALI MANDATE: A NEGOTIATION PROCESS ENCOMPASSING THE FUTURE COMMITMENTS OF ALL COUNTRIES

The 180 countries present at Bali agreed on a road map, a "mandate", to be followed until the end of 2009, when a new international agreement on combating climate change will be adopted. The main challenge consisted in finding a negotiation process with brought together all countries, both industrialised and developing. From Bali onwards, two negotiation proceedings (legally speaking, "ad hoc working groups") coexist:

- the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP),
- the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA).

Their objectives include:

- for developed countries to adopt "measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances". This path creates sufficient leeway for including the new American administration in the negotiation process, the latter not forming part of the AWG-KP (because, not having ratified the Kyoto Protocol, the United States has no quantitative and binding objective constraining them to reduce their emissions),
- for the developing countries to adopt "nationally appropriate mitigation actions in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner".

The idea of equity appears throughout this mandate as an underlying feature, i.e. that the developing countries have accepted that after 2012 they will implement national initiatives for reducing their emissions but that are "appropriate in the context of sustainable development" and supported by "technology, financing and capacity-building". This formulation was one of the most fiercely negotiated points of the discussion, certain developed countries, the most prominent being the United States, desiring that the measurable, verifiable and reportable character applied only to the future initiatives of the developing countries. The latter were able to extract the commitment that it would also apply to the support that they will receive to enable their commitment to such actions. The cornerstone of the new treaty had thus been put in place: respect of equity.

III- EQUITY, THE KEY TO SUCCESS FOR THE NEW POST-2012 AGREEMENT

Equity should enable better reflection of the level of countries' development, both of the North as well as the South, in order to differentiate both the type and the level of ambition of the future commitments. Equity will also serve as the stimulus for sharing the cost of reducing emissions within the international community.

A- EQUITY FOR ESCAPING FROM THE MANICHEAN LOGIC OF THE PROTOCOL: THE BLOCK OF DEVELOPED COUNTRIES VS. THE BLOCK OF DEVELOPING COUNTRIES

The global context has changed profoundly since the Protocol was adopted in 1997 and the map of the largest emitters has changed significantly. In 2007, China took over the unfortunate crown of being the leading global emitter of greenhouse gases, ahead of the United States. Negotiation of the new post-2012 agreement must take place against the background of the latest available data, whether these be scientific, economic or social. The developing countries, for strategic reasons, negotiate internationally as a single block, the "G77+China". Nevertheless, there are profound disparities in terms of their development levels. To take these disparities into account, different types of initiative or commitment must be envisaged.

In 2004, a team of 15 researchers, originating primarily from the developing countries, developed a proposal for a differentiation framework for negotiation of the future post-2012 climate agreement. The proposal is known as the "South-North Dialogue on Equity in the Greenhouse". The criteria proposed for this differentiation are:

- responsibility: cumulative emissions of CO_2 originating from fossil fuel between 1990 and 2000,
- capability: human development index and GDP per inhabitant,
- the potential for reducing greenhouse gases: emissions per inhabitant, emissions in intensity and percentage increase in emissions.

The assessments obtained from the combination of these criteria are significant. Thus within the category of developing countries, there are countries where the inhabitants emitted less than 0.5 tonnes of CO_2 between 1990 and 2000 (Mali, Ethiopia, Chad) and others more than 500 tonnes (Qatar)[4]. The differences in terms of income per inhabitant are equally significant. For example, the revenue per inhabitant (normalised for purchasing power) in 2005 was 32,867 dollars in Singapore and 1300 dollars for Mali[5].

From these parameters, 4 "types" of developing countries stand out:

- newly industrialised countries (for example: South Korea, Qatar, Saudi Arabia, Singapore),
- developing countries undergoing rapid growth (for example: Argentina, Brazil, Malaysia, China),
- other developing countries (for example: Bolivia, India, Kenya, Morocco),
- the least developed countries (Benin, Democratic Republic of the Congo, Burkina Faso, Mali).

According to these categories, the South-North dialogue recommends different actions.

B- EQUITY IN DIFFERENTIATING THE TYPE OF COMMITMENT

All action by the developing countries to reduce their emissions must be conditional upon the prior adoption by all the developed countries (including the United States) of absolute and legally binding objectives for the reduction of their emissions.

✦ Absolute and legally binding objectives for the reduction of emissions by all developed countries

To avoid an irreversible level of global warming, all developed countries must commit themselves at a minimum to a reduction of between 25 and 40% in their emissions by 2020, relative to 1990.
At Bali, in December 2007, the ad-hoc working group of the Kyoto Protocol adopted a decision which referred to the necessary peak in global emissions within 10 to 15 years, followed by a substantial lowering; 50% by 2050 relative to 2000. The decision adopted also refers to the lowest scenario for the concentration of greenhouse gas emissions of the 4th IPCC report (450 ppm) which implies for the Annex 1 group of developed countries an emission reduction of 25 to 40% by 2020.

However, up until now, few countries have delivered upon their commitments, with the exception of the European Union. The latter made a commitment to reduce its emissions by 20% by 2020 relative to 1990. Another more ambitious target, a reduction of 30%, was enacted but was conditional upon obtaining a satisfactory global agreement at Copenhagen, the specific contents of which still have to be defined.

In June, Japan announced its intention to reduce its emissions by 60 to 80% by 2050 relative to 2005, and added that its target for 2020 would be announced "in due course".

The recent Garnaut review recommended a reduction in Australia's emissions by 10 to 25% for 2020, relative to 2000. In Canada, the Harper government plan targets a reduction in emissions of 3% in 2020 relative to 1990. At the moment then, developed countries are far from providing good examples when it comes to meeting their responsibilities. Nevertheless, it is imperative that they respect them so that the developing countries can be encouraged to take more ambitious actions in limiting their emissions.

4- Cumulative emissions between 1990 and 2000, per inhabitant.

5- List of revenues per inhabitant normalised for purchasing power established by the International Monetary Fund in September 2006.

✦ Initiatives for limiting emissions in developing countries, supported financially and technologically

According to a report by the UNFCCC[6], the investment and financial flows required to reduce emissions are more cost-effective in developing countries than in developed countries. Allocation to the developing countries of 46% of the investment required by 2030 will enable a reduction of 68% in global emissions. The same report indicates that to effectively combat climate change, all countries must implement climate change policies at a national level. However, for developing countries, external finance will be necessary. This statement is therefore in line with the "deal" obtained at Bali on developing countries' commitment being conditional to the support which they receive.

At this stage, it is difficult to pre-judge the type of initiatives that certain developing countries will be ready to take to combat an increase in their emissions. But, in the course of international discussions, various options have been put forward.

Range of actions possible for developing countries after 2012

Up until now, the link between development and climate change set up by the Kyoto Protocol rested on the Clean Development Mechanism. However, this mechanism is a long way from having led to any concrete results. To continue its existence within the framework of the post-2012 regime, it will have to be reformed. The Poznan conference at the end of 2008 will provide an opportunity for the envisaged second review of article 9 of the Kyoto protocol which has still to take place.

- **Inalienable reform of the Clean Development Mechanism (CDM)**

The current discussions relating to emissions trading and project mechaninsms relate to improving the environmental integrity of the Kyoto Protocol. The evolution of the CDM for after 2012 is crucial as several studies indicate its imperfections both for enabling real reductions in greenhouse gas emissions and also for contributing in an efficient manner to the sustainable development of the host countries. Moreover, the CDM projects suffer from an uneven geographical distribution between different world regions. Amongst developing countries, the large emerging countries attract more investment while very few of the projects are carried out within the least developed countries.

In June 2008, the Parties agreed on two lists: one embodying the changes which could become applicable during the first commitment period of the Protocol (2008-2012) and the other relative to the changes which would not come into force until after 2012. Lots of new proposals have thus emerged, certain going down the path of a reinforcement of the environmental integrity of the CDM and others which by contrast weaken it (for example: proposal of making nuclear activities eligible under CDM after 2013!). Within the scope of the options potentially applicable between 2008 and 2012, one therefore finds the possibility of appealing against the decisions of the CDM executive board, the possibility of sanctioning designated operational entities for their poor performance, the willingness to improve the implementation of the programmatic CDM, the introduction of more robust social and environmental criteria for CDM projects, etc. Amongst the options likely to be applicable after 2012, there is the possibility of reserving a part of the demand for CDM credits to certain project types (notably those with a high contribution to sustainable development) or to specific country groups (a proposition which therefore returns to the notion of differentiation), of introducing technology transfer as a criteria for each CDM (only 33 to 40% of CDM projects involve a genuine technology transfer[7]), etc.

In future, solely projects satisfying both higher criteria from an environmental point of view and also from the point of view of sustainable development of host countries will be authorised, notably those matching the criteria developed by the GoldStandard[8]. This label is currently recognised by 44 NGOs worldwide. Its principle components are summarised below.

The issue of the CDM and its evolution cannot be separated from the level of developed countries' commitments. Indeed, the CDM must not allow developed countries to clear themselves of their own reduction obligations within their own countries. Which is why, their minimum

MAIN CRITERIA OF THE GOLDSTANDARD

- the project must relate to renewable energy or energy efficiency measures and/or technologies
- the project must go well beyond a business as usual scenario,
- the project must contribute to the sustainable development of the host country.

Compared to a "classical" CDM project, two obligatory consultations of the stakeholders must be organised, in particular to ensure the full participation of the local population which will be primarily affected by the project.

6- Investment and financial flows to address climate change, UNFCCC 2007.

7- See the document section concerning technology transfer.

8- Pour en savoir plus : http://www.cdmgoldstandard.org/how_does_it_work.php

commitment for 2020 emissions reductions must be 30% on their home territory. Recourse to flexible mechanisms must not intervene except as a supplement to domestic reductions. The effort required to reduce emissions within the developed countries' home territories is indeed essential to develop technologies which, extended to the rest of the world, will allow us to remain below the global warming threshold of 2°C by the end of the century at minimum cost.

Indeed, the main weakness of the CDM is that it often rests upon the development of projects which do not allow it to attack an economic sector of activity in its totality. Hence the necessity to reach an emissions reduction approach which is more policy or program-orientated.

- **The necessity to move from a project approach to an approach extended to incorporate programmes or policies**

The options currently under discussion to enable extension of the scope for reducing emissions in developing countries cover in particular the programmatic CDM, the sustainable development policies and measures (SD PAMs) or even industrial sectoral approaches.

Programmatic CDM or bundling of projects

They offer interesting perspectives for achieving economies of scale and thus a reduction in implementation costs. The grouping of projects relates to projects carried out over several sites which result in reduced emissions in one or more sectors. Example: a solar oven installation project in Indonesia which covers 1000 houses. The programmatic CDM is a programme of activities based on a public or private initiative, which is implemented in order to create an incentive to reduce emissions. The difference between the two types of CDM is only within the context of the bundling of projects, each of them can be individually implemented as an activity within the scope of the CDM. On the other hand, within the context of the programmatic CDM, the number of projects and the project sites are not fixed at the time when they are registered and may vary during the course of their implementation. A certain volume of emission credits will be authorised in advance and the reductions in emissions obtained by the programme will be verified afterwards. The CDM would thus be extended to include policies or programmes and could even influence a specified economic activity sector. It would thus be similar in sense to the SD PAMs, but the difference is that the latter are primarily publically financed, while within the context of the CDM, finance originates primarily from the private sector.

Sustainable development policies and measures ("SD PAMs")

South Africa was the first to introduce this approach to the international scene. The interest of the SD PAMs is that they should develop the economy of the developing countries, while limiting greenhouse gas emissions. They are based on the fact that sustainable development policies have a more significant effect on the reduction of GHGs than classical development policies. The SD PAMs are therefore aimed at constructing climate policies based on a country's development priorities rather than based on emissions reduction targets. For example, within the sectors which act as a source of development such as transport or housing, there are numerous possibilities for encouraging so-called "clean" measures (for example: insulation of housing). This approach relates to article 2 of the Convention on Climate Change, according to which, economic development must be achieved in a sustainable manner.

Sectoral approaches

They cover numerous realities: cooperative transnational sectoral approaches, no lose sectoral approaches...
At Accra,the European Union proposed the creation of a mechanism for financing sectoral reductions in developing countries to obtain credits (taking into account a predefined level of reduction to be attained above which the credits could be generated and exchanged on the international emissions trading market). South Korea has likewise formulated a proposal of similar intent, at Bonn, during SB 28, then at Accra, by proposing carbon credits for appropriate national emissions reduction initiatives (for example, the implementation by a developing country of climate change combating measured as well as the adoption of a feed in tariff to encourage the development of renewable energy).

The hard core of negotiations risks becoming focused on the degree of constraint of such approaches, the definition of reference scenarios and the real additionality of the measures which will be put in place. The adoption of the sectoral credit approaches will moreover increase the offering of credits on the carbon market. In order to rectify this problem, South Korea proposed that the Annex 1 developed countries increase their reduction targets accordingly.

Nevertheless, the European Union's proposal at Accra was the target of severe criticism, the majority of the developing countries recalling that the term "sectoral" does not apply within the Convention on Climate Change except to technological agreements and in no circumstance to reduction initiatives by developing countries.

This reaction by the developing countries implies that the international negotiations on post-2012 cannot conclude positively if the developed countries do not respect their obligations. The ball has in effect been hit back into their court, so that on the one hand, they announce their own commitments for reducing emissions and on the other hand, they meet their obligations in terms of support.

It is imperative therefore that a confidence clause be respected so that developing countries and developed countries make an ambitious and collective commitment at the heart of the new agreement.

The confidence clause to be observed: the "measurable, reportable and verifiable" character of the reduction initiatives AND of support

Developing countries and developed countries agreed at Bali on the measurable, reportable and verifiable "MRV" character of the reduction initiatives which will be implemented and on the support which will be provided in return to the developing countries.

The current commitments of the Kyoto Protocol are based on quantitative targets for the reduction of the emissions of certain developed countries. Rules for measuring national emissions and the reporting thereof have been adopted. Notably, the obligation to draw up an annual inventory of national greenhouse gas emissions. The new post-2012 agreement will lead in principle to an extension of the initiatives which can be taken to combat climate change. Future reduction commitments are not merely quantitative, but also qualitative, a fortiori for developing countries (for example: sustainable development policies and measures). Nevertheless, an attempt must be made to measure their "effect" in terms of reducing greenhouse gas emissions. The task will not be made any easier due to the wide range of actions likely to be undertaken. For example, how is it possible to measure the effect of placing "save energy" labels on products on the reduction in greenhouse gas emissions? Or for that matter, on institutional reforms or the stopping of subsidies on fossil fuels. All of these initiatives are aimed at achieving the ultimate goal: a reduction in emissions. But on the whole, they relate to the intermediate objective, the effect of which is indirect and is thus difficult to measure.

The members of Annex 1 have acquired capabilities in this respect, as a result of their obligations. But these capabilities are missing in most developing countries. Thus the guidelines for compiling National Communications to the UNFCCC for non-Annex 1 Parties indicate that an emissions inventory must be included within their communications "in as far as their capabilities permit it". More than 130 non-Annex 1 countries have already supplied emissions data within their first National communication, but largely they relate only to 1994. Moreover, the developing countries have highlighted their lack of technical and institutional capabilities for preparing national inventories. Steps should be taken from this point of view to question the degree of rigour imposed by the developing countries to measure, report and verify the reduction initiatives undertaken.

A robust "MRV" system is essential for assuring the transparency of the new post-2012 agreement's effectiveness. All the more so if certain actions undertaken by the developing countries are credited in return. However, it seems inappropriate to retain the quantitative reduction in greenhouse gas emissions as the sole unit of measurement. If an energy performance standard is adopted in a country and one of the measures which is associated with it involves strengthening the authority in charge of implementing this regulation, can this measure, which contributes to the target, be ignored? The necessary change overn from a quantitative to a qualitative agreement within the context of the post-2012 regime will lead to the development of several types of indicator for measuring the effects of initiatives carried out. Moreover, the differentiation may be found to apply within the definition framework of the scope of "MRV". In effect, the degree of rigour in the measurement, reporting and verification of the reduction actions may be differentiated according to the level of development and therefore of the capability of the country concerned. In all cases, all flexibility established in this respect must be able to evolve as a function of the progressive strengthening of the capabilities of the targeted country.

The nature of "MRV", in conformance to the Bali Action Plan, not only applies to the effects of the reduction intiatives but also to the technological and financial support and the capacity-building of the developing country. However, the text enacted at Bali remains very vague about the conditions of support. For developing countries it references, "nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner".

From a strictly legal point of view, this formulation does not imply that all of the support to be provided to developing countries, is to come from developed countries. Nevertheless, the Bali Action Plan has been adopted within the framework of the UNFCCC and this poses clear

obligations for developed countries. In particular article 4.7 which links developing countries' respect of the Convention obligations to developed countries' respect of their commitments in terms of "financial resources and technology transfer".

However, in the current state, these obligations are difficult to control. National communications serve as the main source of information for assessing the progress made by developed countries in terms of supporting the developing countries. The information is often incomplete or porous and moreover is periodic in contrast to the greenhouse gas inventories, national communications not being annual.

A reinforced system will therefore be put in place within the new agreement to enable assessment and verification in a transparent manner of the nature of "MRV" for support of reduction initiatives by developing countries. Information on the different support provided must be systematically recorded and as complete as possible. The current sources of finance are varied (within the UN framework - outside UN framework, public-private finance) and centralisation of this information seems essential in measuring whether or not developed countries have kept to their commitments.

Furthermore new tool-indicators must be developed. The Expert Group on Technology Transfer has been appointed to draw up performance indicators which measure the progress achieved within the field of technology transfer. This set of indicators may serve, for example, to set up a wider "MRV" system, applicable to supporting developing countries in reducing their emissions.

One question, however, remains unanswered in relation to the nature of "MRV" both for reduction initiatives as well as support for these initiatives: that of verification. The measurement and reporting phases will effectively be weakened if a robust verification system enabling confirmation of the veracity of the information supplied is not available. Therefore, a new grading system must be made in consolidating the control system for respecting the obligations of the new treaty. The subject will not fail to crystallise the desires of both sides, developing countries having already let it be known that they are not inclined to let a third party intervene on their sovereign territory to verify the measures that have been put in place.

The future "MRV" discussions must in all cases favour the creation of a climate of trust which will permit the developed countries and the developing countries to commit calmly to the new obligations.

Just as equity must be key parameter in the definition of the amplitude and the nature of future obligations for reduction/limitation of emissions, it must also serve as a "compass" for sharing out the cost of these obligations.

C- EQUITY IN SHARING THE COST OF EMISSION REDUCTION

Combating climate change has a cost, considerably less than that associated with doing nothing, but which it is important to accept. The sharing of this cost must be guided by the equity principle. It is from this point of view that EcoEquity and the Stockholm Environment Institute have developed a tool based on the right to development within a world subject to carbon constraints: the "Greenhouse Development Right" (GDR). Two indicators are at the heart of this tool: that of responsibility and that of capability. The objective is determination of the fair share of the financial effort to be supplied by each country in the struggle against climate change. "Responsibility" must be understood as the known and cumulative emissions of a country. "Capability" insofar as it corresponds to the "economic health" of the country concerned, is therefore its level of aptitude in responding to the problem.

Their combination results in the formation of a responsibility-capability index ("RCI") which is attributed to each country and conditions the effort that will have to be to made to reduce emissions. In this way, each country must play a full role as regards combating climate change. However, those most responsible for creating the problem and who often as a consequence have the greatest capability for responding to it must at the same time reduce their emissions and help countries less responsible for the problem in limiting their emissions. Thus the countries which have most profited from development without any carbon constraints must allow other countries to attain this level of development but in a world which is already constrained, which represents an additional cost. The choice of criteria for arriving at a fair contribution from each country, according to its responsibility and capability, are as follows:

- the available carbon budget: defined in function of the emissions trajectory which gives us the greatest chance for limiting the temperature increase to less than 2°C by the end of the century,
- assessment of responsibility: defined in function of cumulative emissions between 1990 and 2005,
- assessment of capability: expressed in terms of income per inhabitant,

• a development threshold fixed at US$7,500 United States per inhabitant : the total of the inhabitants situated below this threshold do not pay for the reduction in emissions and adaptation.

Based on this method and up to 2020, the United States has an RCI of 27%, Europe of 23%, China 10% and India 1.2%. The RCI of the least developed countries is negligible by comparaison.

To embody these principles within the new global climate agreement, two possible solutions can be envisaged:

- the creation of a fund paid for at the level of its RCI according to the financial requirements estimated as being necessary for reducing global emissions. Within the context of UN negotiations, Mexico has proposed the creation of a new financial mechanism aimed principally at reducing the emissions. Each country will have to contribute, depending on whether it is industrialised or developing, at the level of its responsibility and its capability. The GDR could therefore serve as a guideline for sharing the contributions of the different countries within this new fund,
- the sharing of the global emissions reduction between countries. Depending on the available carbon budget for avoiding a global warming of 2°C, the emissions reductions to be obtained could be shared between countries in function of their respective RCIs. Since the United States and Europe represent 50% of global RCI on their own, they should therefore bear almost half of the global effort involved in reducing emissions. For Europe this implies that it should reduce its emissions by 140% by 2020 relative to 1990, which is physically impossible. Which is why it is more important than ever that developed countries, above and beyond an ambitious domestic reduction in emissions, support developing countries in reducing their emissions as well as help strengthen their capabilities.

CONCLUSION

Equity will be the key to success in the new international climate agreement. Equity in defining the type and nature of initiatives to be implemented, equity in escaping from a two-tier approach which also often provides a simplified view of the world's reality, equity in sharing the cost of combating climate change and its impact between countries.

Equity was already present in the wording of the Convention and the Protocol but has suffered for 10 years from the lack of a clear embodiment. Over this same period, the global context has changed profoundly. The fight against climate change will not be resolved by a handful of participants but requires action by all. It is only based on a new agreement in which equity goes beyond the theoretical stage to find itself reflected in differentiated commitments adapted to the responsibilities and the capabilities of each participant, that this essential collective action will be able to see the light of day.

Part 2.
The fight against deforestation and forest degradation: a challenge for the climate

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INTRODUCTION

Although it represents nearly 18% of global greenhouse gas emissions[9] the role of the land-use and forestry sectors have been some of the most controversial issues discussed during the negotiations on the Kyoto Protocol: the solution reached in the end will probably not stop deforestation but will encourage afforestation and reforestation projects, considered as "carbon sinks".

Even if the idea of integrating the role of forests in the Kyoto Protocol has been very controversial for a long time, it came back to the table of negotiations in 2005 and it is now a top-priority in the climate change agenda, discussed under the name of REDD (Reducing Emissions from Deforestation and forest Degradation).

Until now, the discussions on REDD have been focused on the technical aspects of carbon monitoring for forests, leaving aside the policy implications of this process.

If the positive outcome of REDD was to reopen the international debate on forests which had reached a deadlock (United Nations Forum on Forests without any mandate, absence of operational protocol within the Convention on Biological Diversity (CBD), failure of the creation of a new Forest Convention with the issue of plantations versus native forests), the social and environmental aspects of REDD should also be taken into account as much as carbon storage, as they are key factors of deforestation.

9- GIEC, 2007.

1- What is at stake ?

I- FROM KYOTO TO BALI, THE ROLE OF FORESTS IN THE CLIMATE NEGOTIATIONS

The issue of deforestation, known under the acronym REDD (Reducing Emissions from Deforestation and forest Degradation) has been on the table of the climate change negotiations since 2005. Forests play a key role in absorbing and storing carbon, which is central to the UNFCCC policy debate. But forests are also very rich biodiversity reservoirs and they provide ecosystem services and goods that are crucial for the livelihoods of local people (clean water, food, wet and cool climate…). Moreover, forests provide a significant source of income for a large part of the world population.

It is now urgent to put in place an effective mechanism for protecting forests. To solve this problem, the international community must implement a system which can address the multiple causes of deforestation, which vary greatly from one region to another, and which also are closely linked to the social, environmental and economic context in which deforestation takes place.

THE CAUSES OF DEFORESTATION

The causes of deforestation very much depend on geography and time. Today it is considered that in Latin America, the main causes of deforestation are the extension of agriculture, largely linked to the price of commodities. In West Africa, the use of biomass for energy is one of the main causes of deforestation, although in the Congo basin, the level of deforestation is not very significant, with the pressure of agriculture on the periphery of forested areas and illegal logging within the heart of forested areas. In Asia, the production of palm oil and logging play an important role in the destruction of native forests.

The production of agrofuels is therefore only one factor amongst others contributing to deforestation. It is now difficult to foresee what will be the biggest pressures on primary forests on the long term. However we can surely predict that an increase in the price of primary agricultural products as well as an increasing demand for biofuels will most likely cause more destruction of native forests.

The issues of land-use and forestry have been some of the most controversial during the Kyoto Protocol negotiations: the final solution proposed was to use the Clean Development Mechanism (CDM) for aforestation and reforestation projects, but with limited success as up until today, only a single afforestation/reforestation project has been registered and validated by the executive committee of the CDM.

In spite of the controversies of including the forests in the Kyoto Protocol, notably because of the risk of non-permanence of credits, but also because of the risk of a leakage associated with these projects, this idea has recently reappeared.

Some progress was made at the last climate change COP in Bali, with the implementation of a pilot early action phase based on a series of indicative guidelines. Regarding mitigation, the Bali Action Plan proposed three set of actions. The first refers to the measures for reducing emissions in developed countries. The second relates to the measures for reducing emission in non-Annex I countries which are «supported by and made possible by technology, financing, reinforcement of capabilities, in a measurable, verifiable and reportable manner». The third relates to “general approaches and positive incentive measures relating to the reduction of emissions resulting from deforestation and degradation of the forests in the developing countries; as well as the role of the preservation and the sustainable management of the forests and the reinforcement of forest-based carbon storage in developing countries”.

The Bali decision therefore constitutes a solid base for launching actions that will feed the Copenhagen negotiations on REDD. It has also recognized that the issue of degradation should be fully integrated in REDD, as it should often be addressed in the first place to stop deforestation. However, the the Bali Action Plan is slightly ambiguous, as it links REDD to the increase of forest carbon stocks in the developing countries, which could lead to the development of carbon sink projects eligible for REDD funding. Now it is clear

that REDD should primarily focus on the maintenance of existing forests and only finance projects that can stop deforestation, by excluding most of the plantation projects. The latter can be handled using other institutions and projects, notably the afforestation and reforestation CDM and it should be considered very carefully.

THE FOREST CARBON PARTNERSHIP FACILITY (FCPF)

The FCPF is an instrument managed by the World Bank, to "put in place a large scale system of incentives for reducing emissions due to forest degradation by putting in place a new source of finance intended to encourage sustainable use of forest resources and the preservation of biodiversity as well as the protection of more than 1.2 billion people for whom revenue originates, to a greater or lesser extent from the forest". It is comprised of two funds:

- A preparation facility which is aimed at helping the developing countries to i) prepare a national REDD strategy; ii) establish a national reference scenario for emissions resulting from deforestation and degradation, based on data on recent emissions and possibly, on modelling of future emissions; and iii) establish a system for monitoring emissions and reductions in emissions.
- A partnership fund supporting a small number of countries who will have successfully participated in the preparation mechanism so permitting their optional participation, in the facility for financing carbon emission reductions which will permit the partnership to implement a pilot program of bonuses that favours the policies and measurements of the REDD in some five developing countries.

Source : www.carbonefinance.org

II- FINANCE NEEDS

According to available sources, the estimated budget required to reduce deforestation by half by 2020 is between 3 and 33 billion US dollars.

The most commonly quoted report published by the United Nations at the end of 2007 estimates that 12 billion dollars a year would be needed to stop deforestation by 2030 in developing countries (non-Annex 1 of the Kyoto Protocol). According to the report by Nicholas Stern "Key Elements of a Global Deal on Climate Change" between 3 and 33 billion dollars per year are needed to halve the rate of de-forestation. The International Institute for Applied Systems Analysis (IIASA) considers that it will only be possible to reduce deforestation by 50% with an annual budget of 17 to 28 billion dollars, i.e. 2600 to 4300 dollars per hectare saved. Finally, according to the European Commission, the total estimated for reaching the objective of reducing deforestation by half by 2020 is between 15 and 25 billion euros per year (20 to 33 billion US$).

2- Should REDD be financed through a carbon-market mechanism or through a fund ?

I- THE LIMITS OF LINKING REDD TO THE INTERNATIONAL CARBON MARKETS

To finance the protection of forests, it has been proposed to link REDD to the international carbon market. This system is based on the establishment of reference scenarios or baselines which predict deforestation trajectories. If a country or a project succeeds in limiting the level of deforestation relative to a baseline, it is granted REDD carbon credits tradable on the international carbon market. These credits could then be bought by countries having legally binding emission reduction obligations which must be reached so they can attain their fixed target. This architecture has a series of technical and economical limitations which make its implementation difficult and tend to disqualify it as an option.

✦ Deforestation trajectories depend on various factors that are very difficult to predict

Assessing deforestation trajectories implies taking into account largely unpredictable but essential factors such as the evolution of commodity prices, the development of demand for animal products or exchange rate fluctuations. Thus the very large variation in the level of logging in Brazil on an annual basis makes it very difficult to predict its development over a precise period of time. The simplistic model of the U-shaped curve which permits prediction of the development of forest cover within a country as a function of its level of development is no longer suited to the current globalisation of trade: the rate of deforestation in a country not only depends on its own level of development, but also on the global demand for agricultural commodities (palm oil, soy, cotton) or natural resources (ore, wood).

Moroever, the potential effects of climate change make it even more difficult to predict the evolution of the forest cover. Thus, several studies highlight the fact that an increase in droughts within the Amazon region may result in an increase in fires without it being possible to quantify this risk in a sufficiently rigorous manner to permit its inclusion in the baseline scenario.

If the global price of soy beans falls and consequently the rate of deforestation in Brazil falls, should Brazil be financially compensated? Conversely, if the number of fires increases due to global changes in climate, should Brazil be penalised for not having succeeded in controlling its rate of deforestation?

✦ Successfully combating deforestation in one location does not guarantee that it is not simply being displaced elsewhere: the problem of “carbon leakage”

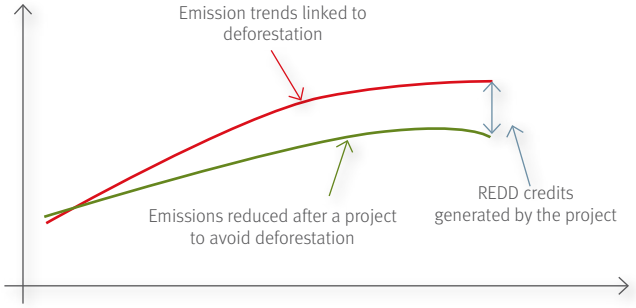
There is a risk that the implementation of projects in a forested area with the purpose of limiting greenhouse gas emissions results in just deplacing emission activities in another area[10]. This is what is referred to as carbon leakage, which corresponds to a simple displacement of emissions, following the implementation of an emission reduction project in a given area. This leakage problem is encountered in countries where the rate of deforestation is very low, such as China or India, but which, due to their demand for timber products, have a very strong impact on forests in other areas, such as South East Asia or Africa. Thus, if a balanced response is not applied, some countries may implement REDD projects while others may encounter strong pressures leading to deforestation, either by choice or by necessity if they don’t have access to REDD funding. If carbon leakage is significant, REDD will neither result in stopping deforestation, nor in reducing emission, simply displacing the problem from one area to another.

✦ The uncertainty about additionality could potentially create fictitious “avoided deforestation” carbon credits

A REDD country or project can be credited in emission reduction units tradable on the carbon market, only if it can be proved that additional emission reduction are directly associated with the project and not solely due to external causes. It is a sine qua non condition to make the carbon market operational.

For this, it is necessary to establish a “baseline scenario”, which establishes a projection of GHG emissions relative to which it is possible to calculate the project emissions reduction (see diagram). Now, the establishment of baseline scenarios permitting certain prediction of deforestation trajectories and the difficulty of being able to prove the absence of leakage from a deforestation combating project within the context of non-decreasing global demand for natural resources remain very complex. The additionality of REDD carbon credits cannot therefore be assured in a rigorous manner, these credits are potentially fictitious, with the effect that they may in reality have very little impact on emission reduction. If the additionality criteria are rigorously applied, which would guarantee the environmental benefit of the projects, there is a high risk that only a few projects meet these criteria and deforestation will not be significantly reduced. At the same time, if the criteria are too loose, fictitious credits will flood the international market, leading to the risk

10- «A more complex issue which needs to be addressed, particularly in the context of REDD, is whether protected areas reduce deforestation overall or merely displace the pressure elsewhere.» (UNEP/WCMC, 2007).



of not being able to reduce atmospheric concentrations of GHGs to satisfactory levels. [Diag: Trend of emissions linked to deforestation, Emissions after implementation of a project combating deforestation, REDD credits generated by the project].

✦ If "avoided deforestation" carbon credits are non-permanent, they cannot compensate for greenhouse gas emissions on the long term

As it is impossible to guarantee the permanence of forest cover (due to the risks of fire, trees illness or growth in food consumption), the REDD carbon credits can only ever be temporary just as the CDM afforestation/reforestation credits. This mechanism of "temporary credits" implemented within the framework of the CDM envisages that the credits arising from afforestation/deforestation will expire at the end of the commitment period, and must therefore, at that point in time, be replaced with other units of a permanent nature envisaged by the Kyoto Protocol. In the same way, the REDD carbon credits can only be considered as a shift in time in respect of the commitments and not a neutralisation of emissions. Indeed, just like afforestation/reforestation projects, the "REDD credits" connected to the carbon market are subject to certain contingencies which make them, by nature, temporary credits.

If the credits are not attractive, the level of financial funding available for combating deforestation will be very low. This is the main problem posed by the non-permanence of the REDD carbon credits: their temporary character could have low attractiveness as a consequence, and therefore in their price. Indeed, their purchase would only be or interest to investors in the case where the carbon price decreases in the long term, a hypothesis that remains unlikely, taking into account the objective of cutting global emissions by 50% before 2050.

✦ The integration in the carbon market of potentially fictitious and non-permanent "avoided deforestation" carbon credits may weaken the global objective of greenhouse gas emissions reduction

If an important part of REDD credits are non additionnal, Annex I countries will purchase these credits without reducing global carbon emissions. The reductions reported by these countries will not correspond to a real reduction in global emissions, limiting the extent of the initial objective.

COMBATING DEFORESTATION AND CONSUMPTION MODELS IN THE NORTH

Today, it is very clear that, whatever financial approach is reached, it is impossible to neglect other public policies and consumption habits within the North which create incentives for destroying tropical forests. This is the case with agricultural policies which encourage the clearing of new agricultural land. Today, the increasing demand for animal protein and the sudden demand for biofuels are considered as being amongst the main causes of deforestation.

Without large scale actions to limit land use changes, the REDD mechanism risks missing out on its entire purpose. Indeed, financing of the REDD is based to a large extent on a contribution from the developed countries, and therefore on countries which have energy and food consumption behaviour that encourages the finding of new agricultural land. Consumption of red meat, vegetable oil and the production of bio fuels to meet political targets therefore creates "deforestation incentives". It seems paradoxical on the one hand to finance initiatives that combat deforestation, while on the other hand outbidding these policies by providing a positive return for deforestation.

One of the best means for combating deforestation is therefore to contribute to limiting the incentives for deforestation, notably by drastically changing consumer behaviour in respect of consumption of red meat, vegetable oil and energy products in developed countries. As the REDD finances are by their very nature limited, it is therefore indispensible to minimise the cost of this policy by not encouraging deforestation.

To limit this risk and the risk of a carbon price collapse, some actors have proposed creating a partial fungibility by creating a "parallel market". In such a system, the developed countries commit to a percentage of their post-2012 target originating from the REDD market. This percentage would constitute a supplementary target. This proposition limits the risk of destabilising the carbon market, but could open the possibility for Annex 1 countries to renegotiate their commitments of greenhouse gas emission reduction, when these commitments should be even stronger.

✦ The integration of forests in the carbon market represents a serious threat to the stability of the carbon market

The integration of credits arising from combating deforestation and degradation within one or several international carbon markets presupposes that for the REDD mechanism to be effective, demand for its credits exists, and therefore that there are sufficient buyers. This implies ambitious GHG emission reduction levels for countries with a legally binding target for reducing their emissions. Now, within the current reduction hypotheses fixed by the IPCC, which envisages a reduction of 25 to 40% by Annex 1 countries before 2020, the volume of reductions to be reached is around 5.4 to 8.6 Gt CO_2eq. Even under the hypothesis that access to 50% of the external credits would be possible, this would permit purchasing of 2.7 to 4.3 Gt CO_2 on the international carbon market, i.e. not that far from the number of credits produced by halving deforestation (which would deliver approximately 3.6 Gt CO_2). There is therefore an obvious risk of destabilising the international carbon market if the latter is attached to the REDD mechanism. This would of course result in a fall in the carbon price, and therefore a reduction in the incentive for domestic reductions in the Annex 1 countries. Under the more realistic hypothesis, where only a low percentage of external credits would be authorised, the requirement for carbon credits would remain low, thus reducing, de facto, the incentive for combating deforestation in the South.

Moreover markets can be extremely volatile, and the value of carbon as well as the potential investment flow in favour of combating deforestation and degradation would be, under the hypothesis that a market in REDD credits is created, largely based on the economic growth of Annex 1 countries. A serious recession would therefore lead during this period to a fall in economic activity, and therefore of GHG emissions, which would have the effect of causing a significant fall in the price of carbon and would then remove a significant part of the revenue from those participating in combating deforestation and degradation.

This capacity for destabilising the markets is one of the main reasons mentionned by the European Commission in its Communication on deforestation (October 2008) for not envisaging (at least during the period 2013-2020) the integration of REDD credits in the European Emission Trading Scheme (EU-ETS). The European Commission considers that the emissions resulting from deforestation potentially represent a volume three times greater than the total emission quotas exchanged on the EU-ETS resulting in a risk in a collapse in the price per tonne of CO_2.

✦ Funding the protection of forests through REDD might create a distinctive advantage for carbon storage to the detriment of other socio-environmental values provided forests

The countries where governance and control of forests are the weakest are likely to have an advantage when it comes to attracting investors in comparison with areas where deforestation is taken more seriously. Similarly, there is a risk that the finance will be concentrated on the projects which are the most easily implemented (for example, creation of a protected area) to the detriment of more complex projects (for example resolution of land conflicts) but for which the social and environmental co-benefits are perhaps more attractive. To optimise the capture of the "carbon yield", the state could be inclined to let non-governmental or private structures manage the projects without consideration of the social component with the risk of increasing conflicts linked to the question of land rights and management of forest resources[11].

Moreover, forest management which is based solely or essentially on carbon could have as a consequence the substitution of ecosystems that store only a small amount of carbon with plantations. These ecosystems can, nevertheless, have a real high-value regarding

(In Gt CO_2)	1990	2020 (-25%)	2020 (-40%)	*Estimation of the potential supply and demand for carbon credits according to the emission reduction hypotheses of the IPCC by 2020.*	
Annexe 1 emissions	21,6	16,2	12,9		
Potential demand for credits from the Annex 1 countries				Potential supply of credits originating from deforestation	
Réduction	0	5,4	8,6	Deforestation emissions (90's)	5,8
% of authorised external credits	10%	0,54	0,8	Total reduction of deforestation	7,2
	20%	1	1,7	50% reduction of deforestation	3,6
	50 %	2,7	4,3		

Source : UNFCCC, WRI-CAIT

11- See for example Lang & Byakola (2006). "A funny place to store carbon": UWA-FACE Foundation's tree planting project in Mount Elgon National Park. http://www.wrm.org.uy/countries/Uganda/book.html

biodiversity, such as the cerrados in Brazil replaced by monocultures of eucalyptus and soya, or for the local populations if the plantations are planted on land designated "marginal" but, in reality, used for the provision of food.

Finally some countries hope to create bridges between the REDD carbon credits and the normal carbon credits to permit the financing of afforestation/reforestation projects, based on the ambiguous definition of a forest provided by the Convention on Climate Change (based largely on that of the FAO) which makes no distinction between a natural forest and a plantation.

Deforestation refers to a recorded loss of forest, in the sense that more than 90% of the original forest cover has disappeared. Gross deforestation includes the surface area of deforested zones, net deforestation equals gross deforestation less planted zones (afforestation, reforestation, restoration). For example, Brazil has announced that it will have zero net deforestation in 2015, which does not signify the end of deforestation in the Amazon, as such deforestation can be compensated with plantations.

II- THE REDD MECHANISM SHOULD BE FINANCED BY A ROBUST AND STABILISED INTERNATIONAL FUND, USED TO PROMOTE POLICIES AND ACTIONS AGAINST DEFORESTATION

In view of the problems caused by the integration of REDD into the international carbon market, setting up one or more funds would be preferable so as to avoid the main pitfalls presented by the issue of credits for "preventing deforestation". The implementation of such financial instruments to fight against deforestation and forest degradation does not solve the problems related to additionality but prevents fictitious credits from being created and thus does not jeopardise the reduction efforts made by the Annex I countries. As part of this, it is necessary to ensure that the developed countries have the capacity to finance one or more funds against deforestation and forest degradation. Contribution to these funds must therefore be binding and sufficiently significant to lift the uncertainties currently posed by the creation of voluntary funds. The policies and actions against deforestation are long term actions which require stable and predictable resources simple commitments from Annex I countries to fund the fight against deforestation and forest degradation are not sufficient. The low level of current contributions to the various voluntary funds under the Kyoto Protocol and the Convention demonstrate the limitations of such an architecture.

Several mechanisms exist to mobilise new resources for the fight against climate change (cf. section on funding). Some of them could be dedicated to the fight against deforestation and forest degradation. In Northern countries, the financial mechanisms related to emissions, such as taxes on GHG emissions or the auctioning of emissions allowances, are privileged instruments insofar as they include an incentive to reduce emissions, while producing significant financial volumes.

✦ Carbon taxation mechanisms

Taxing carbon emissions, or more generally energy, is one of the most interesting options in terms of reducing GHG emissions. A tax on certain sectors, in particular international transport (bunker fuel), which up until now were not concerned by obligations to reduce emissions under the Kyoto Protocol, could constitute a significant source of revenue.

DEFINITION OF A FOREST: AN IMPORTANT STAKE

The definition reached for forests within the framework of the climate change negotiations (UNFCCC) was defined during the Marrakech agreements in 2001:
"'Forest' is defined as a minimum area of land of between 0.05 and 1.0 hectares, with trees providing canopy cover over more that 10 to 30% of the surface (or having an equivalent population density) and which can attain maturity with a minimum height of 2 to 5 metres. A forest can be comprised either of dense formations of which the various stages and the underwood cover the largest proportion of the ground, or have clear formations. Young natural populations and all plantations comprised of trees where the canopy does still not cover 10-30% of the surface or have not yet attained 2 to 5 metres are classed in the category of forests, just as are spaces normally making up forested land which have been temporarily deforested subsequent to human intervention such as logging or natural phenomena, which should become forests once again".

✦ Auctioning of emission allowances

	Terms	Potential volume
Taxes on emissions or auctioning of allowances for international transport (air or sea)	US$ 20 per ton of CO_2 produced	US$ 24 bn/yr
Obligation to allocate a certain percentage of the auctioning in Annex I countries	National or regional carbon markets	Variable US$ 10 bn/yr
Auctioning of the AAUs on the international market	Auctioning at international level	Variable

The protection of forests can also be financed by using the revenue from auctioning of allowances within regional or national markets. Though it is currently impossible to allocate the revenue from auctioning at international level, a strong commitment from the States is needed. The European Commission has therefore proposed to auction part of the emission quotas from European companies in order to better control their reduction and plans to use at least 20% of the revenue raised by auctioning emissions allowances to fight against climate change and support actions aimed at attenuation, adaptation and the fight against deforestation in the South. In its communication on deforestation and forest degradation, the Commission proposes that 5% of the revenue raised from auctioning be allocated to a REDD mechanism. Based on a market of allowances that would earn the States between 30 and 50 billion euros per year, the amount allocated to the fight against deforestation would be between 1.5 and 2.5 billion euros per year.

III- GOVERNANCE OF THE REDD MECHANISM: A BALANCE BETWEEN RESPECT FOR NATIONAL SOVEREIGNTY AND THE CONDITIONS OF ACCESSIBILITY MUST BE FOUND

Governance issues need to be addressed in order to guarantee the efficiency and effectivness of the REDD mechanism.

✦ International Framework Conventions ratification and implementation

Different international conventions and declarations recognise the rights of indigenous peoples: Convention 169 of the International Labour Organization, the Convention on Biological Diversity (in a less restrictive manner) and most importantly the United Nations Declaration on the Rights of Indigenous Peoples. The transposition of these conventions and declarations into modern law is extremely slow and suffers from the apathy of the States. Nevertheless, the process for the resolution of land conflicts and the recognition of the rights of indigenous peoples is underway in many countries where the pressure on land use is very high (Indonesia, Brazil and to a much lesser extent, the Democratic Republic of Congo).

✦ National platforms that engage all stakeholders

To operate under good conditions, the management of the REDD mechanism at the national level should be based on a national platform that fully associates local communities and indigenous peoples. These platforms will have to ensure that those actors are fully part of the decision making process, and that their opinions are truly taken into account. The experience drawn from the voluntary partnership agreements between the European Union and a certain number of African countries as part of the European mechanism for the fight against illegal trade (FLEGT) shows the necessity to find means to get every interested stakeholder to take part in the negotiation. The conditions to be brought to the funding resulting from REDD are equally important to ensure the best possible involvement of the States in the negotiation and to direct them in their positioning.

✦ Observance of the United Nations Declaration on the Rights of Indigenous Peoples

REDD funding should only be received by the States who have recognised and implemented the United Nations Declaration on the Rights of Indigenous Peoples, particularly the principle of free, prior and informed consent.

3- Implementing REDD policies : reinforcing public policies and governance

The setting up of one or more funds for the fight against deforestation enables the majority of pitfalls posed by the integration of REDD into the international carbon market to be avoided. They allow the funding of national policies as well as the remuneration of local actors, particularly local communities.

I- RESOLVING LAND CONFLICTS

There is a large consensus, even among those in favour of an integration of REDD into a market process, to recognise that working around the clarification of land rights is an essential prerequisite to any policy for the fight against deforestation.

The majority of Southern countries that are still covered by large forest areas are recent States in which many land conflicts take place, even if the extent to which this issue is addressed varies widely according to the regions and states. Forests are the living space of many indigenous peoples who have traditional rights to use these spaces. In many countries, these traditional rights have not been recognised by modern law and overlap one another, hence the many conflicts. Thus, for example, it is not uncommon to see a forest concession allocated by a State to a forest company when the forest is inhabited by an indigenous people.

Part of the funding raised to fight against deforestation will therefore need to be used to clarify land rights in forest areas, with the recognition of real ownership or land tenure rights for local people and the implementation of land management plans and legal processes ensuring land security for communities and individuals.

II- CAPACITY-BUILDING FOR FOREST RESOURCES MANAGEMENT AND CONTROL

✦ Ensuring effective forest management

Deforestation is not only caused by economic phenomena, it is also the symptom of a deficiency in establishment of law. Reinforcing legal institutions, civil society's means of information and action, independent regulatory authorities constitute a priority that exceeds the sole objective of fighting against deforestation, and yet it is a top priority for coordinating international action. Particular attention must be paid to the forest monitoring system. Increasing the staff in charge of management and providing them with the right equipment will not be effective if the staff can be corrupted. A special body could be created, operating according to the principles of the private sector within the administration itself.

✦ Harmonising agricultural and forest policies

REDD funding must enable the coordination of all policies that have an impact on land use change. In Brazil for example, the cultivation of sugar cane in central region of the country displace cattle breeding and soybean cultivation towards the Amazon and indirectly causes the pioneer front to advance. There is a high risk of "bipolarisation" if these policies are not called into question: on the one hand, forest areas whose protection is reinforced by REDD and on the other, areas used for export agriculture (including agrofuel), which leads to very strong land tensions that would be detrimental to food-producing agriculture and the poorest populations.

III- OBJECTIVE OF THE FUND: IMPLEMENTING MEASURES TARGETED AT LOCAL ACTORS

Local actors represent the first level of intervention on forests, once land issues are resolved. They are key players in the sustainable management of forest ecosystems: local communities and indigenous peoples are at the interface between most of the goods and services provided by the forest and those who benefit from them. It is essential to make them the recipients of a significant share of the funding devised by the REDD mechanism. Several systems allow local actors to be targeted, by simultaneously inducing the preservation of carbon stocks, of social and economic benefits, without neglecting biodiversity protection. The implementation of payments for environmental services (PES) or micro-fund systems, which allow the poorest populations to be targeted, will therefore have to be one of the priorities of the REDD funds.

✦ The initiatives funded by REDD must be aimed at preventing the clearing of new forest areas and the conversion of forests into agricultural areas

The actions funded by REDD must remain distinct from the actions aimed at improving "conservation, sustainable management of forests

and enhancement of forest carbon stocks in developing countries". The fact that REDD accounts for degradation, which allows the assessment of the damage caused to ecosystems without the forest being destroyed, should not weaken this distinction.

The recognition of forest degradation in REDD covers very different perceptions and strategic interests. Some countries would like to obtain funding to carry out forest concession management plans or to promote low impact logging measures. Others expect that plantations could be regarded as a means of alleviating pressure on natural forests and thus eligible as an action that reduces forest degradation. The absence of a shared vision is likely to complicate the debate and could lead the negotiations to a deadlock.

Subsequently, REDD must not encourage the fragmentation of intact forests, by directly or indirectly encouraging the industrial forest exploitation of wood in primary forest concessions and the opening of roads. This exploitation, despite being "selective" or "low impact", leads to forest degradation and increases the risk of deforestation (spreading of fires facilitated by clearings, use of exploitation roads as possible penetration channels that accelerate agricultural conversion...).

On the contrary, REDD could offer a "bonus" to the countries that commit to protect primary forests, without excluding the populations that depend on them.

✦ Developing community-based forest management

To ensure that the poorest populations that depend on forests are not negatively affected by this massive inflow of funding, it is essential to clarify land issues and also to target these funds so that poor people can have access to these funds.

Many projets have demonstrated that the management of forests by communities could be environmentally sustainable and offer economic and social benefices. REDD could, for example, help local communities carry out management plans, establish marketing channels for non ligneous forest products, invest in equipment or facilitate access to the global market by funding the certification costs.

POTENTIALLY DESTABILISING FINANCIAL FLOWS

According to the OECD, approximately 1% of the overall Official Development Assistance has been dedicated to forestry, i.e. approximately 343 million Euros/year (between 2000 and 2005). Should the REDD mechanism provide several tens of billions of Euros/year, the financial income to be raised could be multiplied by a factor of 100! Suddenly increasing the value of the forests could have dire consequences for the 1.6 billion people who depend on them, at least partly, in their way of living (FAO, 2008) and the 60 million indigenous people who depend on them wholly, especially since their land rights often remain unrecognized. These consequences could lead to the emergence of new conflicts, to the alteration of traditional governance systems up to the total exclusion and "militarisation" of protected areas.

✦ Supporting an environmentally friendly agriculture primarily aimed at ensuring food security

It is important to clearly draw the line between export agriculture and subsistence agriculture. Intensifying agricultural production without undermining a model of agricultural development based on export leads to a dead end. For example, the increased use of nitrate fertilizers could lead to an increase in nitrous oxide emissions, a greenhouse gas 200 times more potent than CO_2. However, the intensification of agricultural inputs may be necessary and, if it established on short cycles, by promoting agro-forestry, it would allow an improvement in agricultural yields while minimising the negative impacts on the environment.

Contrary to generally accepted ideas, traditional agricultural methods, like slash-and-burn cultivation, do not necessarily lead to more deforestation in a context of constant demographic pressure. These traditional methods can even improve forest diversity and encourage the regeneration of certain trees like the mahogany trees in Democratic Republic of Congo (Khaya sp.).

Initiatives aimed at reducing the impact of subsistence agriculture on forests must therefore be well thought out, non-systematic and prevent, as much as possible, disruptions in rural societies. Thus, programs for the substitution of fire wood by gas or solar furnaces faced serious problems in terms of social acceptability. Sometimes, there are traditional methods that allow agricultural production to be intensified, but with limited dissemination: rather than imposing management methods coming from the outside, REDD could encourage the exchange of techniques and experiences within a country or a sub-region.

IV- GOVERNANCE AND INTERNATIONAL MANAGEMENT OF THE FUND

✦ Proposal for the management under co-supervision of the Convention on Climate Change/Convention on Biological Diversity/Convention to Combat Desertification to define the orientations and targets of the fund

Forests should not be only considered for their carbon values. The implementation of the REDD mechanism must also take into account the value of forest biological diversity and all the social and environmental goods and services that forests provide. The Convention on Biological Diversity adopted the ecosystemic approach as well as a work programme on the biological diversity of forests, which the REDD mechanism should take into account during its drafting and implementation stages.

The problems linked to soil degradation from deforestation, including their biological diversity, should also be taken into account. The REDD mechanism would therefore gain in being managed under the co-supervision of the Convention on Climate Change, the Convention on Biological Diversity, and even the Convention to Combat Desertification.

Since 2001, a liaison group has been established to facilitate exchanges between the secretariats of these 3 conventions and to supply information to their respective scientific committees. Beyond these scientific exchanges, the framework of the REDD mechanism should include the implementation of a governing body that operates under the principle of co-supervision, and which should be in charge of the definition and operation of the REDD mechanisms.

✦ Balanced representation of the various stakeholders, particularly for indigenous peoples

The funds resulting from the REDD mechanisms could be managed within governing bodies established at national level, which would bring together all the stakeholders involved in managing the policies and projects implemented. Moreover, the integration of representatives from local communities and indigenous people is an essential condition for the success of the REDD mechanism. Without these key actors in forest management, key issues such as land issues cannot be addressed effectively.

✦ Arbitration Commission that may be called upon in case of conflict

The REDD mechanism would have to adopt an International Commission for Conflict Resolution, the composition of which must be fair and integrate representatives from indigenous peoples. In particular, these will have the possibility of suspending the funds allocated, and in certain cases, to ask for their reimbursement.

CONCLUSION

The agreement on deforestation and forest degradation will be one of the key issues of the international treaty negotiated in Copenhagen. But protecting forests goes far beyond the simple issue of carbon storage. Indeed, according to the Indian economist Pavan Sukhdev, the carbon stored in forests may only represent approximately 20% of the value of the goods and services provided by forest ecosystems. The REDD mechanism will therefore be faced with many more challenges to be operational and effective, fair and equitable. The issue therefore lies in finding an agreement that allows the benefit sharing all the actors who benefit from these goods and services, from local communities and indigenous peoples to developed countries.

Part 3.
Adaptation, the second aspect of the fight against climate change

Mamouda MOUSSA NA ABOU, ENDA ™

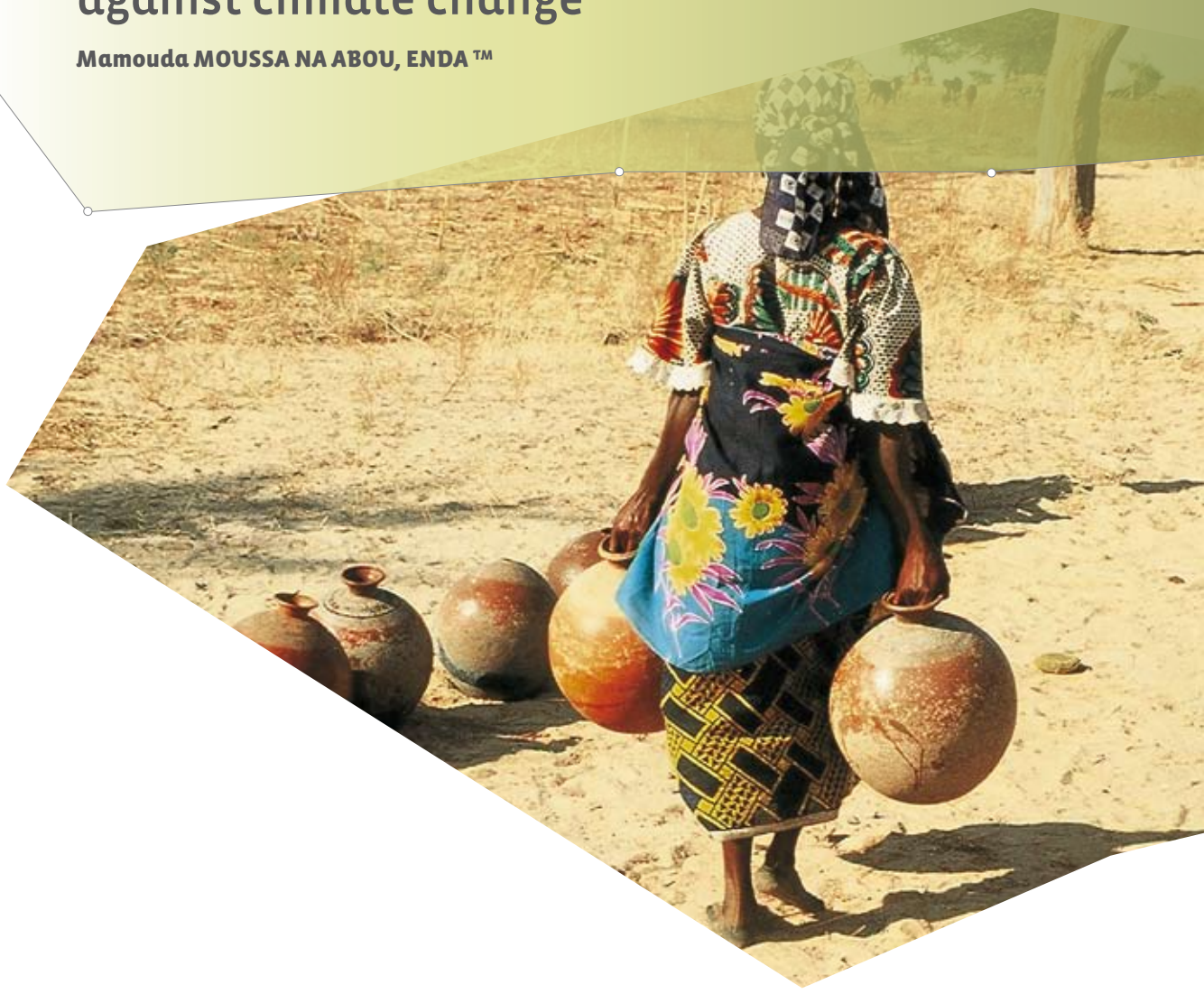


Diagram 1

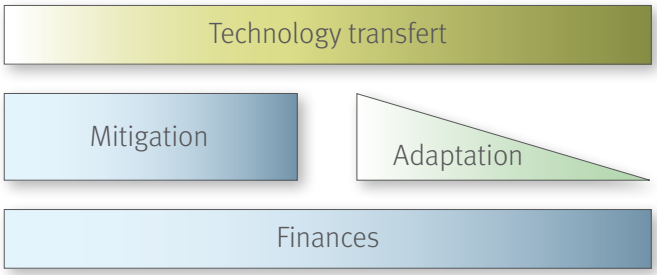
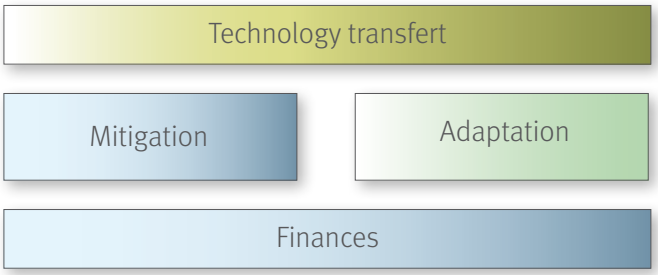


Diagram 2



I- THE LIMITED SIGNIFICANCE GIVEN TO ADAPTATION UNTIL NOW

Up until now, adaptation has not been given the significance or the attention it deserves on the international stage. The diagram (1) illustrates the significance of adaptation in the current system of negotiations within the International Community. Diagram (2) illustrates the situation desired by NGOs in terms of adaptation, in particular as part of the new post-2012 agreement[12].

The parties involved have focused their attention on reducing emissions when the harmful effects of climate change already exist, and most unfairly affect the most vulnerable countries and populations whose capacity for adaptation is very limited. Just like adaptation without reducing emissions would be pointless, solely reducing emissions with no strategy of adaptation is equally inconceivable.

As part of the Convention, industrialised nations have clear obligations to support adaptation in developing countries. Article 4.4 states that "The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects". But there is no denying that developed countries have failed to fulfil their commitments on this issue.

The costs of adaptation are significantly higher than the funds currently available. Depending on the sources, yearly estimates stand at:
- 28 to 67 billion dollars by 2030 according to the UNFCCC,
- at least 50 billion dollars according to OXFAM,
- at least 86 billion dollars by 2015 according to UNDP.

The funding received as part of the Convention's Special Climate Change Fund and Least Developed Countries Fund amounts to 165 million dollars, compared to the 262 million dollars promised. As part of the Kyoto Protocol's Adaptation Fund, the 2% share of proceeds of the credits resulting from the Clean Development Mechanism will allow 100 to 500 million dollars to be generated every year by 2030 in the case of a low demand and 1 to 5 billion dollars every year in the case of a high demand for credits from Annex I countries.
In any case, the funds and mechanisms currently in place to generate this level of funding are largely insufficient to meet the challenge posed by adaptation.

II- THE FRAMEWORK OF NEGOTIATIONS ON ADAPTATION

A- THE SIGNIFICANCE OF ADAPTATION IN THE BALI AGENDA

The Bali Action Plan refers to adaptation in chapters 1c), (i), (ii), (iii), (iv) and (v) as follows:
1c) Enhanced action on adaptation, including, inter alia, consideration of:
(i) International cooperation to support urgent implementation of adaptation actions, including through vulnerability assessments, prioritization of actions, financial needs assessments, capacity-building and response strategies, integration of adaptation actions into sectoral and national planning, specific projects and programmes, means to incentivize the implementation of adaptation actions, and other ways to enable climate-resilient development and reduce vulnerability of all Parties, taking into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change, especially the least developed countries and small island developing States, and further taking into account the needs of countries in Africa affected by drought, desertification and floods.
(ii) Risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance.
(iii) Disaster reduction strategies and means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change.
(iv) Economic diversification to build resilience.
(v) Ways to strengthen the catalytic role of the Convention in encouraging multilateral bodies, the public and private sectors and civil society, building on synergies among activities and processes, as a means to support adaptation in a coherent and integrated manner.

The positive aspect of this action plan is that it places adaptation on an equal footing with emissions reduction. Adaptation now represents one of the 5 pillars of the post-2012 negotiations.

B- NAIROBI WORK PROGRAMME (NWP) ON IMPACTS, VULNERABILITY AND ADAPTATION

Finalised in 2006, the so-called Nairobi Work Programme on impacts, vulnerability and adaptation relating to climate change aims to take

12- Saleemul Huq, June 2008.

further account of the issue of adaptation in international negotiations on climate change. This work programme is focused on nine main areas, including:

1. Methods and tools
2. Data and observations
3. Climate modelling, scenarios and downscaling
4. Climate related risks and extreme events
5. Socio-economic information
6. Adaptation planning and practices
7. Research
8. Technologies for adaptation
9. Economic diversification

The NWP provides an opportunity to underline the negotiations on aspects linked to adaptation as part of the Bali Action Plan. However, there is a set of issues within the Bali Action Plan which is not currently taken into account by the NWP. These include:

- prioritisation of actions and financial needs assessments,
- the content of response strategies,
- the means to promote adaptation actions,
- ways and means to reduce vulnerability,
- disaster reduction strategies.

The main outcomes expected from this programme are:

- Enhanced capacity at international, regional, national, sectoral and local levels to further identify and understand impacts, vulnerability, and adaptation responses, and to select and implement practical, effective and high priority adaptation actions.
- Improved information and advice to the Conference of the Parties (COP) and its subsidiary bodies on the scientific, technical and socio-economic aspects of impacts, vulnerability and adaptation, including facilitating the implementation of decision 1/CP.10, where relevant.
- Enhanced development, dissemination and use of knowledge from practical adaptation activities.
- Enhanced cooperation among Parties, relevant organizations, business, civil society and decision makers, aimed at enhancing their ability to manage climate change risks.
- Enhanced integration of actions to adapt to climate change with those to achieve sustainable development.

The main criticism that can be made against this programme is that it is excessively focused on research (impact assessment, understanding of the scientific, technical and socio-economic aspects of adaptation) to the detriment of action. Developing countries, particularly the most vulnerable, are already suffering from the impacts of climate change and urgently need to adapt. In addition, the funding issue, though crucial, is not mentioned in the NWP.

The establishment of a group of experts to lead the Nairobi Work Programme is part of current discussions. However, points of view diverge regarding the need for such a group of experts. On the one hand, various groups of experts already exist as part of the Convention and activities may end up overlapping. On the other hand, the small island States have underlined the need to organise and better manage the large quantities of information accumulated through the NWP. A group of experts could therefore be presented with the mission of using all the information collected so as to help with the decision-making process, which currently is not the NWP's objective. Lastly, no decision has been made to this effect but the opportunity of creating such a group of experts will once again be addressed at the Poznan Conference.

III- PANORAMA OF PROPOSALS FROM THE STATES ON ADAPTATION

Adaptation is addressed within many bodies of Convention: the SBSTA with the NWP, the Ad-hoc Working Group on a long term cooperative action under the Convention and also, though to a lesser extent, as part of the SBI.

During the 28th session of the subsidiary bodies (SB 28, June 2008) of the Convention and Protocol, adaptation was addressed as part of a workshop entitled "Advancing Adaptation through finance and technology, including National Adaptation Programmes of Action". Discussions concerned the urgency of providing assistance to developing countries that are particularly vulnerable to the adverse effects of climate change, especially the LDCs, small island States without forgetting African countries. Several Parties, including Bangladesh, the Cook Islands, Gambia, the European Union and the United States of America, considered that NAPAs should be undertaken by all developing countries and not just by the least developed countries.

From an institutional point of view, the European Union put forward a "Framework for Action on Adaptation" that involves shared solutions and consequently cooperation between all countries. However, despite the interesting points it contains, the European Union's pro-

posal shows little in concrete terms. For its part, China proposed the establishment of a "climate change adaptation committee" under the Convention, the main objective of which would be to support adaptation in developing countries through enhancement of capacities and concrete initiatives.

Regarding funding issues, a consensus seems to exist on the fact that new funding sources will have to be found to adequately meet the adaptation requirements. The Parties expressed their preference for mechanisms linked to the framework of the Convention and the Protocol. Along similar lines, the Cook Islands proposed a "Convention adaptation fund" to complement the Adaptation Fund under the Kyoto Protocol, which would be established and run under the authority of the Conference of the Parties. It would be funded by the countries according to their respective level of greenhouse gas emissions. Access to funding should be facilitated for particularly vulnerable countries. The Cook Islands have also proposed an "international insurance mechanism" to help small island states better manage the financial risks that result from extreme weather events.

For its part, Japan described its bilateral and multilateral initiatives to increase support for adaptation in vulnerable developing countries while the United States of America simply referred to a range of bilateral and multilateral sources to fund adaptation.

China proposed that countries allocate part of the GDP (in addition to that deducted for the official development assistance) to an adaptation fund and to a multilateral technology acquisition fund. Norway proposed to auction part of the emission rights of developed countries and Switzerland to establish a carbon tax from which countries with per capita emissions of less than 1.5 ton of CO_2 per year would be exempted. As part of the Ad-hoc Working Group under the Kyoto Protocol, Norway also proposed to use the revenue raised from auctioning allowances in the maritime sector to fund adaptation activities in developing countries. Many of these proposals are interesting because they have the merit of being outside the voluntary contributions system.

In Accra in August 2008, negotiations continued, aimed at a "shared vision" of the Parties regarding the main elements of the Bali Action Plan in order to reach a new treaty on climate change by the end of 2009. Within the AWG-LCA, a contact group on adaptation and its associated means of implementation has been established during plenary discussions. Within this contact group, Bangladesh proposed an international adaptation research centre, which would be based in Bangladesh. The African group submitted its point of view on adaptation for the post-2012 agreement. In particular, it proposed the implementation of a regional African initiative that would include a network of African centres of excellence as well as running pilot projects. The Alliance of Small Island States (AOSIS) proposed an adaptation framework that will comprise the mechanisms relating to the sources of funding as well as the ways and means to build resilience and adapt to the impacts of climate change. The European Union gave some outlines that may govern a possible agreement in Copenhagen on adaptation, which will allow an increase in financial resources and investments on adaptation, the integration of adaptation in national planning as well as support for the most vulnerable countries in order to formulate adaptation plans and programs. Several developing countries highlighted the fact that despite developing National Adaptation Programmes of Action (NAPA) and identifying priority actions, very few of these NAPAs have been implemented through lack of funding.

Generally speaking, while debates are rather rich in "good intentions", concrete action is always hoped for in order to help developing countries meet their "urgent and immediate" adaptation needs.

IV- CLIMATE AND DEVELOPMENT NETWORK RECOMMENDATIONS ON ADAPTATION

A- ACCELERATING AND IMPROVING THE IMPLEMENTATION OF NAPAs

- Current negotiations on climate change should not only focus on drawing up a new agreement but also on achieving the targets of the first commitment period of the Kyoto Protocol. To date, 33 of the 48 LDCs have drawn up and submitted their NAPAs. They contain nearly 300 project ideas in total. Unfortunately, only 11 of these projects have been presented to the Global Environment Facility for funding[13].
- NAPAs have the merit of providing an initial assessment of the priorities in terms of adaptation in least developed countries. However, they are not enough to face climate change in the long run since they focus on short/medium term adaptation priorities. Only National Future Adaptation Programmes of Action (NFAPA) will enable LDCs to achieve sustainable adaptation to the challenges posed by climate change. Bangladesh thus proposed the establishment of national adaptation programmes of action on behalf of the LDCs, based on the NAPAs' experience, and which would focus on the following five elements:

13- Report on the workshop on advancing adaptation through finance and technology, including national adaptation programmes of action – AWG-LCA, Bonn – June 2008.

- Medium and long term approaches.
- Information and awareness.
- Planning and design of adaptation measures.
- Implementation (technology, enhanced capacity).
- Monitoring and assessment.

Gambia proposed that a formal process be established among the Parties for the preparation of these adaptation programmes of action. Should such programmes be adopted, their preparation as well as their implementation will require resources to be allocated so as to prevent them from remaining dead letters.

B- FINDING PERENNIAL AND ADEQUATE SOURCES OF FUNDING TO MEET THE CHALLENGE POSED BY ADAPTATION

- Current funding is largely insufficient to meet the needs in terms of adaptation. New adequate and perennial sources of funding must be found. Several options have been placed on the negotiation table. The proposals that involve auctioning emission rights or taxes can constitute new tools that may be able to generate the perennial and adequate funding required to meet adaptation needs.

- In any case, the level of contributions will have to be distributed according to indicators based on each country's level of responsibility and capacity and to observe the "polluter-payer" principle. The countries most responsible and most capable of taking action will have to pay for the adaptation of the least responsible and most vulnerable countries.

- The funding found for adaptation will have to come in addition to the overseas development aid (ODA).

C- IMPLEMENTING AN INTERNATIONAL INSURANCE MECHANISM

And this, in order to help countries to deal with losses and damage caused by extreme events. The AOSIS strongly supports this request, but this is not the only one. For example, the Swiss proposal in favour of creating a tax carbon to fund adaptation includes another aspect aimed at creating an insurance mechanism. Beyond helping the most vulnerable countries deal with losses and damage caused by extreme weather events, this mechanism would also be aimed at supporting preventive, risk reduction initiatives. A workshop on this subject is to be organized in Poznan and should fuel future negotiations.

D- ESTABLISHING A FAIR GOVERNANCE SYSTEM

Discussions on funding cannot be dissociated from discussions on the governance of funds. It is worth reminding that the rules of governance of the Adaptation Fund under the Kyoto Protocol crystallised the desires of many, which only allowed for a late decision during the Bali conference at the end of 2007. No matter what decision is made regarding the new sources of funding, essential principles will have to be observed in terms of the governance structure that will be established. The rules in place for the governance of the Adaptation Fund could be used as references in that respect: a majority representation of developing countries and two specific seats for the least developed countries and the small island developing States.

E- GIVING PRIORITY TO THE MOST VULNERABLE COUNTRIES AND POPULATIONS

- The funds released for adaptation must primarily be allocated to the most vulnerable countries and populations. To do so, a vulnerability index could be created to classify countries.
- Consultation with local communities must be enhanced when preparing and implementing NAPAs, in order to better meet the needs of the populations.
- The most vulnerable populations must be able to appropriate the NAPAs to ensure the success of their implementation.

F- IMPROVING THE STATE OF KNOWLEDGE ON THE IMPACTS OF CLIMATE CHANGE

- The NWP must help better understand the future impacts of climate change in developing countries, particularly in the LDCs. Indeed, very few of them know, for example, at which point climate change will impact their food security or how climate change will affect their coastal zones over time and space.
- Many countries pleaded for the implementation, after 2012, of regional centres to support developing countries in their adaptation efforts, in particular the Cook Islands on behalf of the small island developing States but also China, Bangladesh on behalf of the LDCs, as well as the European Union. All these proposals are based on the principle that the NWP provides indications which are useful but not sufficient to significantly increase the level of knowledge dissemination. One of the objectives of these centres would consist in promoting knowledge dissemination and technology transfer, supporting pilot projects, enhancing capacities (including institutional ones aimed at preventing disasters relating to climate change and at planning preventive measures), reinforcing early detection systems for extreme events. The African group also proposed the implementation of a regional African initiative that would include a network of African centres of excellence as well as running pilot projects. Additional funding will have to be provided to help the implementation and work of these regional centres.

G- SYSTEMATICALLY INTEGRATING ADAPTATION INTO DEVELOPMENT

- The integration of adaptation to climate change must be a fundamental criterion in existing development projects funded by international organisations, cooperation, etc.
- Simulations aimed at assessing climate impacts and at adapting the planned project according to future impacts must systematically be carried out.
- The sectoral policies of developing States must integrate adaptation considerations, at national and local level.
- Environmental Impact Assessments already carried out for development projects must integrate the aspects related to climate.
- New laws voted at national level must also integrate climate considerations.
- The Poverty Reduction Strategy Papers (PRSP), drawn up for the World Bank as a condition of the debt cancellation initiative for the poorest countries, must integrate climate change.

CONCRETE EXAMPLE OF AN ADAPTATION PROJECT

Locality

The village of Landou (near Thiès) in the rural community of Keur Moussa, located approximately 60 km away from Dakar, is the target of this activity.

Problem

The rural community of Keur Moussa, located between Dakar and Thiès, includes a certain number of villages, the majority of which are established on the foothills of the Massif of Ndiass, a plateau that culminates at more than 120m[14]. Dominated by solid masses, the villages and their environment are subject to fast water drainage because of the steep slope. Water erosion is the crucial problem because of its consequences on the environment (degradation of resources, stripping of the top soil, gully erosion, lack of water infiltration) and on the populations (fatal accidents, collapse of houses, no access to resources).

The populations, already faced with a dire lack of access to water, have every difficulty in cultivating the ground, even more so with off-season cultures. The loss of ground has led to a marked shortage in cultivable land. The little land available is deprived of cultivable soil, washed away by the force of surface waters that uproot vegetation and cultures. Consequently, agricultural yields have decreased significantly, together with the revenues from agriculture.

Water flow on slopes is not compatible with the infiltration of groundwater. This situation exacerbates water shortages, especially in areas where wells are dry two months after the wintering season, with fertility already dropping due to climate variability. In some places around the massif, the level of groundwater is 30m below the sea, thus contributing to the intrusion of salt water and the breakdown of hydraulic equipment such as drilling machines.

Adaptation alternative

Thanks to the help of ENDA and its partners, populations have invested in the fight against erosion to retain water and soil in order to once again benefit from cultivable land, capable of providing them with good agricultural yields: a good example of adaptation to climate change.

Half moon pit to retain rain water

Anti-erosion stone ridge

14- Gender, climate change and human security in Senegal – Enda Energia, February 2008.

Part 4.
An unprecedented need for technology transfer

Anne CHETAILLE, GRET
Sandrine MATHY, CIRED

I- CONTEXT: WHAT IS IT ABOUT?

Technology transfer not only involves the transfer of a technology by its designer or owner to a user, but also the communication of a know-how adapted to the context of the buyer. This includes enhancing local capacities so that the various beneficiaries (local individuals, industrial sector, farmers, governments, etc) can appropriate them as well as distribute them.

A- TECHNOLOGIES FOR EMISSIONS REDUCTION AND ADAPTATION

Technology transfer is one of the pillars of the future agreement on post-2012 climate regime. Up until recently, the technology transfer issue almost exclusively focused on the issue of greenhouse gas (GHG) emissions reduction. And yet, technologies are also required to meet adaptation needs. The technologies under consideration for emissions reduction tend to be modern, capital intensive and well identified technologies, where one key selection criteria is reduced level of emissions. However, the technology transfer required for adaptation refers to a much wider scope in terms of vulnerability reduction and to both "hard" and "soft" technologies. This is due to the actual nature of adaptation, which is closely linked to development.

B- WHAT TECHNOLOGIES ARE NEEDED?

In the case of reduction, technologies have varying levels of maturity. It is essential to differentiate them according to this criterion because the specific needs for each of these technologies and the answers required to ensure their transfer will not be the same:

1. The development of emerging technologies: one can quote the ULCOS project (Ultra Low CO_2 Steel Making) or carbon capture and storage (CCS). Specific research and development funds are invested in these projects, the technological viability and possible marketing date of which are uncertain. The development of these technologies is made by the market leaders at high cost. Technological innovation requires much more than the incremental cost normally associated with the margin improvement of an existing technology. The transfer of these technologies only occurs among the partners involved in R&D projects.

2. Advanced technologies: one can quote the most efficient wind turbines or supercritical coal-fired power stations. These technologies are deployed by the market leaders. They constitute a marketing weapon because they allow one to acquire a dominant position in a particular market sector. For that reason, the main obstacle to their transfer generally comes from their high price tag and the intellectual property rights that protect them against any undue dissemination, unless licences are paid. These licences are often too costly for developing countries. Their transfer mainly occurs within joint-ventures or via private partnerships.

3. Known "clean" technologies: they refer to advanced technologies from the previous generation. These technologies are not as costly and no longer constitute a competitive weapon. The main obstacles to their transfer have more to do with an inadequate market structure or a lack of human and financial means in the country concerned.

Among these various categories of technology, there is debate as to which are most effective in terms of GHG emissions reduction. In 2001, the IPCC's third assessment report concluded that "known technological options could help achieve stabilisation levels of 550ppm, 450ppm or below. Known technological options are defined as already existing in operation or in pilot projects. This does not include technologies that would require drastic technological breakthroughs…". Even if other publications conclude on a need for intensifying research on technologies, there is a large consensus on the fact that known technological options in energy production and transformation and in the field of end equipment already allow significant short-term reductions in GHG emissions. In this case, the main issue is the dissemination of these technologies in every country. And yet, just because a technology is efficient and profitable does not mean it is adopted. In most cases, it will become efficient and profitable because it is adopted. Technological trajectories often depend mainly on the initial conditions of dissemination of these technologies. Thus, in the case of wind power in Europe, cost reduction and its dissemination were largely induced via the learning by doing principle, made possible by the policies in support of its development.

In the case of adaptation, the technologies required concern infrastructures (hydraulic, drainage, etc.), management practices (agriculture, biodiversity) as well as technical systems (geographical information, early detection, etc.).

C- TECHNOLOGIES FOR WHICH BENEFICIARIES?

The conditions required to ensure a transfer of technology and the answers needed to meet these conditions will be differentiated according to the countries concerned. They will depend, among other things, on the level of development and GHG emissions of the countries, which in turn will condition the capacities of absorption of new technologies and the investment dynamics. Thus, in the case of developing countries, it will be necessary to distinguish emerging countries and least developed countries.

Indeed, emerging countries have high economic growth rates. They have important funding capacities in the form of foreign direct investments or the availability of a large monetary reserve (as in the case in China). These countries gradually adopt environmental policies, which refer to local issues and to a search for legitimacy on the markets. Some of these countries also become highly competitive technology developers, capable of exporting technologies. Thus, the Chinese capital cost in coal-fired power stations is twice as low as the world average[15] (hypercritical cycles). India with Suzlon is one of the leaders of the wind power market with more than 10% of the global market share.

In the case of the least developed countries however, since both the availability of local resources and the inflow of foreign capital in structuring projects are low, overseas development aid (ODA) constitutes the main leverage[16] for funding projects. In these countries, it is difficult to imagine technology transfer, whether for the purpose of attenuation or adaptation, being financed other than via funds originating from ODA.

D- NEEDS ASSESSMENT

The financial assessment of needs to ensure the technology transfers required, particularly in terms of transfer of know-how, is delicate to perform. These flows are closely linked to flows of investment and funding, whether they originate from private or public sources, made at the domestic or foreign level[17]. According to a report of the UNFCCC, the new investments made in 2000 in the field of attenuation reached 7.8 trillion dollars, of which 21% (1.7 trillion dollars) was intended for developing countries, compared to only 0.5% for the least developed countries. Most of the investments are made at the domestic level (public and private). The private sector accounts for 86% of financial flows.

This report estimates that approximately 200 billion dollars per year will be required by 2030 in terms of funding and investment to bring the level of emissions back to what it was in 2004. This represents approximately 1% of the total projected investment and 0.26% of global GDP in 2030. 46% of this funding should be allocated to the developing countries, which would allow total emissions to be reduced by 68%. Though these amounts may seem relatively low compared to GDP and the investment, they only concern investments in new infrastructures and do not take into account those that must be made in existing infrastructures. With regard to adaptation, the amounts required are more difficult to evaluate given the heterogeneity of the possible adaptation measures. They are in the order of several tens of billions of dollars per year.

II- IS WHAT HAS BEEN DONE UP TO THE STAKES AT HAND?

A- PROVISIONS OF THE CONVENTION AND PROTOCOL

The need for technology transfer is mentioned in the 1992 Convention on Climate Change. Article 4.5 states that developed countries are to help developing countries to facilitate technology transfer: “The developed country Parties [...] take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties”. In 2001, in Marrakech, the countries agreed on the implementation of a general framework on technology transfer, which is structured around five key themes: (i) technology needs and their assessment, (ii) technology information, (iii) enabling environments, (iv) capacity-building and (v) mechanisms for technology transfer. Several work bodies and operational mechanisms have been established to implement this general framework.

15- Rogeaux B. The competitiveness of coal in Europe, USA and Asia, “Charbon et Développement Durable” symposium, Grenoble, May 18, 2006. Available at: http://webu2.upmf-grenoble.fr/iepe/Manif/journee-charbon2006/Charbon%20Durable/Rogueaux-Charbon.pdf

16- Giroux P., “ Le nouveau cadre conceptuel de l’Aide Publique au développement “, Liaison Energie-Francophone no.60, pp.15-22, 2003. Available at: http://www.iepf.org/media/docs/publications/148_LEF60.pdf

17- Violetti, D., Trends in financial flows and technology transfer, presentation at the Workshop of the Convention on innovative options for financing the development and transfer of technologies, Montreal, September 2004.

✦ The Expert Group on Technology Transfer (EGTT)

It submits recommendations on these 5 themes to the Subsidiary Body for Scientific and Technological Advice (SBSTA). It is also involved in two themes of growing significance in the negotiations: innovative options for financing technology transfer and adaptation technologies[18].

Since its creation in 2001, the group had built expertise exclusively on the aspects of "energy supply" (innovation and development of strategies involving governments and private companies), but in June 2004, it affirmed the need to refocus the approach on the aspects of "demand" for technology transfer. This implies a better understanding of the needs in terms of disseminating existing technologies, building capacity and accounting for the interactions within the process of technology dissemination between non-governmental actors such as the companies and the populations concerned.

✦ The Global Environment Facility (GEF)

This financial mechanism of the Convention was commissioned to support the implementation of the technology transfer framework in developing countries. This support is made via the GEF's "trust funds" and the Special Climate Change Fund (SCCF) to help with adaptation, technology transfer, energy, industry, transport, agriculture, silviculture, waste management, etc.

The GEF mandate concerning climate change built up with the decisions made during the Conferences of the Parties since 1992. With regard to mitigation, the role of the GEF spans across several action programmes, such as promoting energy efficiency, disseminating renewable energies through market approaches, urban transport systems, land use change and forestry. Overall, 2.5 billion dollars have been allocated in the field of climate change (i.e. approximately 250 million dollars per year) leading to a reduction in greenhouse gas emissions of more than one billion tons[19]. This funding allowed the dissemination of more than thirty technologies (energy efficiency, renewable energies, etc).

In the field of adaptation, the GEF's involvement is more recent, with the implementation of a pilot adaptation strategy (2004). The funds total 130 million dollars. Technology transfer was a key component in the adaptation projects funded via the SCCF and the LDC Fund[20]. The amounts available to the Adaptation Fund of the Protocol will depend on the quantity of Certified Emission Reduction units issued by the Executive Board of the Clean Development Mechanism (CDM) - see below - and the price of a ton of CO_2. If one considers the following hypothesis – 300 to 450 million units issued per year and the price of a ton at 24 US dollars – the financial resources available will be in the order of 80 to 300 million dollars per year. In the favourable hypothesis where the CDM continues after 2012 and with a strong demand for carbon credits, one to five billion dollars could be available.

✦ The Clean Development Mechanism (CDM)

This mechanism is aimed at stimulating the North-South transfer of environmentally friendly technologies. Initially, the CDM's definition did not explicitly mention the technology transfer obligation in projects. The latter was introduced in 2001 by the Marrakech Accords. Existing studies today show that CDM projects give rise to a transfer of technology in only 33 to 40% of the cases[21] and mainly in projects for the destruction of non-CO_2 greenhouse gases with high global warming potentials such as HFCs, CH_4 or N20 (projects in the chemical industry and the agricultural or waste management sectors) and in wind power production[22]. Among the projects that give rise to a transfer of technology, imported technologies come mainly from European countries, and would be more specifically destined to Mexico and China. Africa, with only 3% of CDM projects, remains the poor relative in that area[23].

This shows that presently, the scope of action of the CDM is limited and cannot lead to ambitious reductions:

- it does not allow for attracting investors where they are most needed without incentive,
- since it only covers periodic projects, it cannot provide a sufficiently comprehensive answer in terms of technology transfer:
  - on the one hand, nothing is planned to ensure the dissemination of technologies beyond the actual CDM project;
  - on the other, the CDM is not presently adapted to include emissions reduction in diffuse emission sectors (housing, transport, end equipment) or on the scale of a sector or programme wider than a project, particularly when taking into account additional domestic policies and measures that may lead to massive emissions reductions.

18- UNFCCC, "Expert Group on technology transfer: five years of work", 2007.

19- WEF, "The elaboration of a strategic program to scale-up the level of investment in the transfer of environmentally-sound technologies: a progress report", May 2008.

20- Ibid.

21- In these studies, projects for the removal of HFC23 are included in the projects leading to a transfer of technology.

22-Dechezlepretre A., Glachant M., Ménière Y. "The Clean Development Mechanism and the International Diffusion of Technologies: An Empirical Study," Energy Policy, 36, 2008..

B- NON-UN INITIATIVES

Beyond the financial mechanisms of the UNFCCC, non-UN initiatives have been implemented to finance technology transfer. Within a period of 18 months, a dozen funds – bilateral and multilateral – have been created. Some of them relate to technology transfer more or less explicitly:

- The Climate Investment Funds of the World Bank: it was approved in September 2008. Around ten countries will contribute up to 6.1 billion dollars. This fund is made up of two investment instruments: the Clean Technology Fund and the Strategic Climate Fund.

- The Global Energy Efficiency and Renewable Energy Fund (GEEREF): established by the European Union, it is aimed at developing private investment in projects that promote energy efficiency and renewable energies in the developing countries and transition economies. This fund must also contribute to the stability of the energy supply in the poorest regions of the world.

- The Asia Pacific Carbon Fund: established by the Asian Development Bank, this fund supports clean energy projects.

Public-private partnerships have also been set up. The most important is the "Asia-Pacific Partnership on Clean Development and Climate", created in 2005. It brings together the United States, Japan, Canada, India, China and South Korea to promote technological cooperation on clean energies. Some call this partnership the "Coal Pact".

It is difficult to have a clear vision of the types of projects that will be carried out via these programmes, particularly of the sectors targeted, the type of transfer ("hard" technologies versus "soft" technologies, accounting for the diffusion aspects, for the absorption capacity of the technologies and for capacity-building, or not), and their geographic coverage. In addition, the amounts allocated are neither perennial nor up to the level needed. Lastly, these disparate initiatives, all based on voluntary contributions, do not constitute binding commitments. They compete with the UN framework, the sole entity with a historical and international legitimacy in the fight against climate change and capable of implementing consistent binding commitments with a long term vision.

C- BALI'S TURNING POINT

The Bali Conference enabled technology transfer to be placed into more operational discussion phases. Indeed, since the origin of Convention, discussions on technology transfer focused on technical aspects as part of the Subsidiary Body for Scientific and Technological Advice (SBSTA). They had never concretely addressed the issues of funding, capacity-building or obstacles to technology transfer. During the last Conference of the Parties (end of 2007 in Bali), these issues took centre stage. Technology transfer was placed on the agenda of the subsidiary body in charge of implementation (SBI) and negotiations of the agreement on the future climate regime (Bali Action Plan). In every decision adopted in Bali, developed countries have been referred back to their commitments, with the obligation to implement performance indicators to measure and monitor the effectiveness of the action related to technology transfer, on the one hand, and to help identify new mechanisms to increase funding and investments in technology transfer, on the other[24]. A strategic programme must be drawn up by the GEF in order to assess existing projects, new needs and future priorities.

Within the Bali Action Plan, technology transfer is one of the five pillars of the negotiation for the agreement on the future climate regime. The Parties have agreed on the need for "enhanced action on technology development and transfer to support action on mitigation and adaptation, including, inter alia, consideration of:

- Effective mechanisms and enhanced means for the removal of obstacles to, and provision of financial and other incentives for, scaling up of the development and transfer of technology to developing country Parties in order to promote access to affordable environmentally sound technologies,
- Ways to accelerate deployment, diffusion and transfer of affordable environmentally sound technologies,
- Cooperation on research and development of current, new and innovative technology, including win-win solutions,
- The effectiveness of mechanisms and tools for technology cooperation in specific sectors".

23- Boyd E, Hultman N.E., Roberts T., Corbera E., Ebeling J., Liverman D.M., Brown K., Tippmann R., Cole J., Mann P;, Kaiser M., Robbins M., Bumpus A., Shaw A., Ferreira E., Bozmoski A., Villiers C. and Avis J. (2007) The Clean Development Mechanism: An assessment of current practice and future approaches for policy. Tyndall Centre for Climate Change Research Working Paper 114. 67pp.

24- See Chetaille, A., " De l'urgence climatique à une réponse politique forte, une route sinueuse – retours sur la Conférence des Nations Unies sur le changement climatique, 3 – 15 Décembre 2007 ", January 2008.

III- WHAT MUST BE DONE

A- CHANGING SCALE: PROMOTING AN UNPRECEDENTED TRANSFER OF TECHNOLOGY

In view of the extent of the requirements to fight against climate change, unprecedented efforts must be made in terms of technology transfer.

✦ In terms of GHG emissions reductions

1. Drawing up an inventory of the technologies available as well as the needs in terms of technology transfer (using technology needs assessments, national plans and national communications) and the conditions required for their success. This assessment is necessary to precisely define the types of support according to the national circumstances of the countries. Particular attention must be paid to the identification and assessment of the potential for dissemination of endogenous technologies in every country. These technologies are adapted to technological and economical contexts and to specific know-how. Their dissemination will induce less significant costs than exogenous technology.

2. Giving priority to the diffusion of the most efficient known technologies rather than to research and development (R&D) aimed at developing breakthrough technologies. Many countries wish for the implementation of R&D programmes on emerging breakthrough technologies, as is the case with carbon capture and storage (CCS). Though this approach may have advantages in terms of cost sharing and involvement of new countries in R&D, there are limits as to the technologies considered. These are costly, capital intensive, and their commercial maturity is uncertain. Moreover, they are likely to be developed too late compared to the emissions trajectories required to stabilise greenhouse gas concentrations. These programmes would undoubtedly have a squeeze-out effect on short and medium term priorities, such as the dissemination of the most efficient known technologies and the way of structuring the markets to absorb these technologies. The priority must be the implementation of an international energy efficiency improvement programme.

3. Harmonising standards at international level
For some technologies, markets are at least regional and more often global, as is the case for the market of compact fluorescent lamps, which are sold worldwide. The most efficient technologies can thus be disseminated more easily and more widely. This is not always the case for other technologies for which markets are segmented, particularly because of transport costs that constitute a market barrier. To avoid market segmentation, standards must be harmonised to allow the most efficient technologies to become widespread.

4. Enhancing cooperation on energy efficiency
Enhanced cooperation on the assessment of energy efficiency, the need for minimum performances in goods and services, labelling and certification, energy audits, as well as codes of conduct, should be encouraged. It should cover all types of end uses, including transport as well as energy conversion, for which the overall potential is enormous. This work must be made in association with the competent international standards authorities, including ISO. Lessons must also be learned from the European implementation of the energy label on a range of electrical appliances, which allowed a significant improvement in the energy consumption of new appliances. It encouraged manufacturers to market more energy efficient appliances.

5. Reforming the CDM. This reform should focus on the fulfilment of more extensive and more ambitious programmes, capable of having a deep impact on the techno-economic systems of the host country. The eligibility criteria should be reviewed to give priority to projects aimed at energy efficiency and renewable energy.

✦ In terms of adaptation

6. Identifying the technologies necessary to adaptation in every targeted field and the potential of endogenous technologies that may mitigate increased vulnerability.

EXAMPLE OF THE EUROPEAN CO_2 LABELLING DIRECTIVE FOR NEW CARS

Directive 1999/94/EC of 13 December 1999 imposes the display of CO_2 emissions for new cars. However, it does not describe how the display should be made, contrary to what has been done for electric equipment for years. Each Member State therefore enforced the directive in a different manner. Some use the same label as the European energy label with A to G rating, while others use different methods of classification which confuses consumers, who find themselves unable to read the label properly. Hence, this directive provides consumers with a useful piece of information, but it would be much more effective if it was more detailed and harmonised across all countries.

7. Promoting the incorporation of adaptation in every development policy, a key issue in terms of efficiency.

B. LIFTING THE OBSTACLES TO TECHNOLOGY TRANSFER

Private investors face obstacles to technology transfer that can be economical, regulatory or institutional. These obstacles must be better identified and lifted. In a context of scarcity of public funds, it is essential that they are used to finance incentives for private investors and technology transfer for the least developed countries.

8. Identifying perennial sources of funding to redirect private investments. In developing countries, the levels of risks are often considered as high for private investors (political risk, uncertainty on tariff policies, lower level of maturity of markets...). This does not encourage them to develop often more costly low carbon technologies. It is therefore essential to compensate this "risk premium" with adequate incentives that guarantee a minimum level of profitability for investors. In Europe, the part played by the feed in tariff on the development of wind power is undeniable. In the countries that opted for this policy, investors have been able to benefit from a long term visibility on the profitability of their project. Other innovative mechanisms can be studied in order to cover the additional risks investors must face. These types of funding will have to be stable and perennial. Several channels must be explored (see part 5 on funding).

9. Studying the sectors and technologies for which intellectual property rights (IPR) effectively constitute an obstacle to technology transfer.

It is necessary to achieve a more precise identification of the essential technologies which are subject to intellectual property rights and to what extent these rights constitute an obstacle to TT. Though IPRs may not constitute a barrier in the sector of renewable energies[25], they may do so in other fields. Various parameters must be taken into account to determine whether IPRs constitute an obstacle or not: existing patent, known affordable alternative solutions, level of competition and price at which the technology can be sold.

10. Drawing up a positive list of technologies for which IPRs must be mitigated and studying the measures to be implemented: system involving compulsory licences, creation of a special fund.

11.. Encouraging public funding for the least developed countries. The LDCs do not offer sufficient guarantees for private investors. For these countries, technology transfer will have to be supported by additional funding from overseas development aid.

12. Making sure a coherent regulatory framework is implemented in the countries that benefit from funding. A company will only invest in a country if there are outlets and possibilities for the distribution of its products and if its products are competitive compared to rival products. An existing market is therefore a prerequisite for technology transfer and dissemination. Some regulatory and institutional frameworks, as well as certain price setting policies, particularly in the energy sector (fossil energy subsidies) can deter investors, constitute a barrier to technology transfer and also be in total contradiction with the project's objectives and the funding allocated.

13. Capacity building
Public funding must include capacity building, particularly training of engineers, awareness programmes on efficient and cost-effective technologies, institutional support, etc.

C- CREATING A COHERENT INSTITUTIONAL FRAMEWORK TO ORGANISE TECHNOLOGY TRANSFER

The diversity of measures to be adopted in terms of technology transfer, the multiplicity of non-UN initiatives, as well as the necessary involvement of actors such as the private sector, are as many elements that militate for an appropriate institutional framework to be defined. This framework is necessary to ensure both internal and external coherence with respect to the relevant ongoing initiatives and non-governmental representatives. Several solutions are being considered: the creation of a subsidiary body under the Convention (alongside the SBSTA and SBI) for the transfer of technologies (proposal from China) or the widening of competences of the GEF.

These proposals for an enhancement of the institutional framework on the issue of technology transfer highlight its increasing significance in the post-2012 negotiations. In any case, institutional enhancement is essential within the future treaty, whether a new body is created or not. Despite the GEF's broad experience in technology transfer, the procedures for accessing funding remain complex.

25- Barton J., Osborne G., "Intellectual Property and Access to Clean Energy Technologies in Developing Countries, An Analysis of Solar Photovoltaic, Biofuel and Wind Technologies", 2007.

The GEF must continue its reforms to lift these access limitations. Its funding capacities should also be widened. The new areas of spending should concern:

- the technology needs assessments (TNA) financed by the Special Climate Change Fund,
- capacity building,
- specific projects for the least developed countries,
- projects aimed at improving incentives for private investors,
- measures aimed at mitigating IPR-related costs for certain technologies deemed efficient.

Part 5.
Financing reduction and adaptation, the key stake in the post-2012 agreement

Djimingue NANASTA, ENDA™
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INTRODUCTION

The question of finance for combating climate change is one of the five pillars of the Bali action plan. If within the framework of the Kyoto Protocol, the reduction commitments are relatively modest and imply only marginal financial transfers from the North to the South, they throw a whole new light on the question of meeting the target of cutting global emissions by half before 2050.

First with the Stern report, then with the UNFCCC report "Investment and Financial Flows to address climate change (2007)", the question of finance and economic stakes found its place on the agenda of international negotiations on climate change. To achieve drastic emissions reduction in developed countries and enable developing countries to escape from an economic path which is based on fossil fuel dependence while at the same time combating deforestation, it will be necessary to mobilise significant financial flows, both in public and private sectors. The adaptation policies, both in the North as well as the South also have a significant cost, which is, nevertheless much less that the cost of the damage which will be created by global warming.

Within this context, a finance system for combating climate change must be organised which will enable implementation of the investments necessary for reduction and adaptation. This must be done on a fair, equitable and transparent basis. The question of responsibility and application of the "polluter/payer" principle are at the centre of this debate. And if we get stranded on the question of finance, then there will be little hope of keeping global warming below 2°C by the end of the century.

Moving from relatively modest financial flows to huge investments in favour of energy efficiency, renewable energy sources and also agriculture that emits less GHGs involves high stakes. In this respect, severable questions cannot be ignored and merit further attention.

The first relates to the creation of new mechanisms enabling a considerable increase in the required volumes of finance. Without mentioning the direction of investment from the private sector which may be controlled by the generalisation of a signal price permitting application of the "polluter/payer" principle, the question of public finance is central. The Bali action plan assumes that post-2012 «nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable" will exist. In other words, the reduction measures in the developing countries, and notably in the large emerging countries[26], will have, in part, to be financed by the developed countries.

The second question is, of course, largely dependent on the first and arises from the nature of the instruments used to organise the financial flows. While the Kyoto Protocol organises finance based on three pillars, namely voluntary state contributions, share of proceeds from the CDM and finance provided by flexible mechanisms, nothing is clear for post-2012. Review of the Kyoto Protocol under article 9 as well as discussions on market mechanisms will have to enable improvement of these mechanisms, while at the same time asking whether new instruments, and notably what are, according to the jargon of the negotiations, referred to as «market-linked mechanisms», are consistent with ensuring a benefit from the auctioning of emissions rights to finance the combating of global warming.

26- As envisaged by the IPCC report (see part on reduction).

I- THE FINANCIAL STAKES

The organisation of the finance flows for reduction and adaptation is the keystone of the Climate Change Convention and the Kyoto Protocol. Generation of sufficient resources to align the energy and agricultural policies and also the construction of adaptation strategies rests a central question. It is this that will enable fulfilment of commitments and objectives. Article 4 of the Convention, relative to the commitments of the Parties, establishes different responsibilities (see box). But today, the finances of the Convention and the Protocol are largely insufficient to cover the volumes required for reduction and adaptation.

The Convention and the Protocol envisage several financial mechanisms that will have to enable the realisation of the objectives where the reduction of GHG emissions and adaptation are concerned. Today the majority of resources are provided via the GEF, the financial mechanism of the Convention.

A- THE FINANCIAL MECHANISM AND THE FUNDS OF THE CONVENTION AND KYOTO PROTOCOL

Article 11 of the Convention envisages the establishment «a mechanism for the provision of financial resources on a grant or concessional basis, including for the transfer of technology". This financial mechanism is placed under the supervision of the Conference of the Parties (COP) to which it is answerable. Its operation shall be entrusted to one or more existing international entities. Article 21 of the Convention provides that «The Global Environment Facility of the United Nations Development Programme, the United Nations Environment Programme and the International Bank for Reconstruction and Development shall be the international entity entrusted with the operation of the financial mechanism referred to in Article 11 on an interim basis".

The GEF was created in 1991 in preparation for the Rio Earth summit. It is the financial mechanism of the three conventions originating from this summit (climate, desertification, biological diversity). Regarding Where the Climate Change Convention, it is required to report regularly to the COP, on the use of finance devoted to combating global warming.

ARTICLE 4 OF THE CLIMATE CHANGE CONVENTION

3. The developed country Parties and other developed Parties included in Annex II shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations under Article 12, paragraph 1. They shall also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of implementing measures that are covered by paragraph 1 of this Article and that are agreed between a developing country Party and the international entity or entities referred to in Article 11, in accordance with that Article. The implementation of these commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties.

4. The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.

The Marrakech Accords established three new funds, two under the Convention, the third under the Protocol:

- The objective of the **Special Climate Change Fund** is to finance projects relating to reinforcement of capabilities, adaptation, technology transfer, reduction of climate change and diversification of the economies of countries that are strongly dependent on revenues derived from fossil fuels;
- **The Least Developed Countries Fund** must support the implementation of a working programme that favours the LDCs;

These two funds are financed by the voluntary contributions of countries.

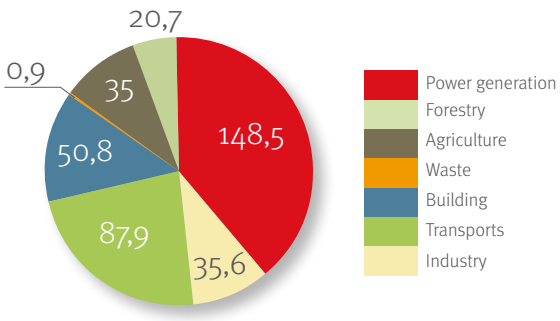
- **The Adaptation Fund,** which has been functional since the Kyoto Protocol came into force in 2005. It is intended to finance concrete adaptation projects and programmes within the developing countries and to support the reinforcement of capabilities. This fund is financed by the establishment of a levy of 2% on credits generated by CDM projects.

B- THE CURRENT STATE OF FINANCES

Financial mechanism	Estimated value (in millions US$)
GEF trust fund for action on climate change in developing countries (since 1991)	2,300
Development agencies, private investors and recipient countries	6,900
Special Climate Change Fund (Convention) (2007)	42
LDCs Fund (Convention) (2006)	38
Adaptation Fund (2008-2012) (Protocol)	125
Total	9 405

Source : CAN-International & UNFCCC

Investment and financial flows in 2030 at the global level (USD billion)



Financial mechanisms devoted to combating climate change are currently relatively simple and based on voluntary contributions from the developed countries. However, all analysts are united in recognising a problem in dispersion, fragmentation of the finances and public policies and, on the other hand, a serious lack of resources.

- **The need for new, additional, sustainable and predictable resources**

It is necessary to make new and additional funds available beyond the overseas development aid (ODA): the multiplication of funds raises numerous concerns relating to the origin of the resources and their additionality with respect to the ODA (risks of diversion of ODA to climate change). This problem returns to the necessity of developing innovative financial mechanisms, such as recommended by the Bali action plan.

- **Promoting the coherence of finance**

Funds created within and outside of the Convention create a risk of fragmentation of the financial resources, which remain small in comparison with the needs. These initiatives are essentially motivated by the donor countries and only slightly by the recipient countries. The duplication of initiatives may also be detrimental to the effectiveness of the aid such as that promised in the Paris Declaration, signed by the donor countries and the beneficiary countries. Promoting financial coherence implies the consideration within the context of negotiations on an adequate institutional structure for managing and distributing resources.

II- FINANCE NEEDS

A- MITIGATION AND TECHNOLOGY TRANSFER

Where reduction is concerned, funds will be necessary to finance low carbon development strategies in the developing countries and also for developing and generalising technology transfer. In addition to this, combating deforestation, which is responsible for 20% of GHG emissions, must also be taken into consideration. For the three main reduction fields, an important part of the finance must originate from developed countries, to take into account the "polluter/payer" principle and the principle of common responsibilities, differentiated according to respective capabilities.

Several documents evaluate the financing needs for combating global warming up to 2030 or 2050. The majority of these studies are based on economic models and growth hypotheses which define the form of the financial response of the international community. Taking into account the uncertainties that exist, the figures given by the reports, and repeated here, serve only as indicators of the amplitude of the finances to be mobilised.

The reference report published by UNFCCC at the end of 2007[27] estimates that it will be necessary to mobilise between 200 and 210 billion dollars in 2030 to return global emissions to their current level. This corresponds to between 0.3 and 0.5% of the global GDP for the period. According to the report, 46% of this total corresponds to the reduction efforts in the South, which will contribute to 68% of total emission reductions.

This report identifies a certain number of sectors in the countries of the South in which savings in GHG emissions are significant. These include deforestation with 12.4 Gt CO_2eq (i.e. 56% of reductions), energy production with 5 Gt CO_2eq (23%) and industry with 2.3 Gt CO_2eq (4%). Where the necessary investment is concerned, energy production comes first with 73.4 billion US$ (41% of investment), transport with 35.5 billion US$ (20%), deforestation with 20.6 billion US$ (12%) and industry with 19.1 billion US$ (11%).

For his part, Nicholas Stern[28] evaluated the annual cost of combating climate change as 1% of global GDP (US$ 540 billion in 2007 and up to US$ 953 billion in 2030 based on the hypothesis of a growth in GDP of 2.5% over the same period.).

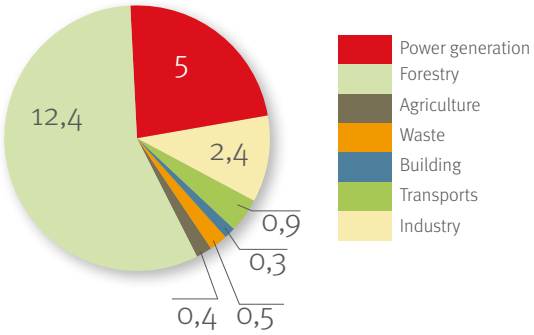
B- COMBATING DEFORESTATION

According to the sources, the estimated finance required to reduce deforestation by half by 2020 is between 3 and 33 billion US dollars. The UNFCCC report published at the end of 2007 calculates the annual total to return the rate of deforestation to 0% by 2030 as 12 billion dollars in developing countries (non-Annex 1 of the Kyoto Protocol). The report by N. Stern «Key Elements of a Global Deal on Climate Change» estimates that it will be necessary to spend between 3 and 33 billion dollars per year to halve the rate of deforestation. The International Institute for Applied Systems Analysis (IIASA) considers that it will only be possible to reduce deforestation by 50% with an annual budget of 17 to 28 billion dollars, i.e. 2600 to 4300 dollars per hectare saved. Finally, according to the European Commission, the total estimated for attaining the objective of reducing deforestation by half by 2020 is between 15 and 25 billion euros per year (20 to 33 billion US$).

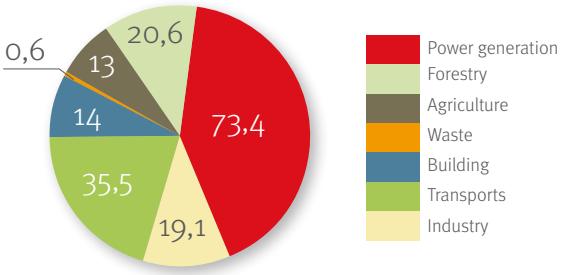
27-UNFCCC, Investment and financial flows to address climate change, Nov 2007, www.unfccc.int

28-Nicholas Stern, Stern Review on the Economics of Climate Change, 2006, http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change

Emission reduction Gt Co_2 eq in non-Annex 1 countries



Investment and financial flows in 2030 in non-Annex 1 countries (in USD billion)



C- ADAPTATION TO THE IMPACTS OF CLIMATE CHANGE

Over several years, several studies and assessments have been carried out to try to determine the sum required by countries facing climate change.

The World Bank[29], in a report issued in 2006, estimates that the developing countries will require approximately 10 to 40 billion $ per year to cope with climate change. The Stern report published just prior to the Nairobi conference at the end of 2006, evaluated the expense required for adaptation as approximately 0.2% of global GDP[30].

The NGO Oxfam[31] estimates a sum of 50 billion dollars will be required per year to cover the cost of adaptation to climate change. The UNFCCC report, published in 2007, places the requirement for adaptation by the developing countries as being between 28 and 67 billion dollars per year by 2030. For its part, the United Nations Development Program (UNDP) has estimated the requirement at 86 billion US$ by 2015[32].

The lack of consensus among the different estimates reported above should be noted. This demonstrates that it is difficult to make appropriate evaluations, especially that evaluations can be made based on different types of adaptation needs[33]. Thus it will be necessary to carry out in depth studies to estimate more precisely the probable costs that developing countries will be required to support if they hope to be able to effectively implement adaptation initiatives in response to climate change. It will be necessary to agree on the calculation methods[34]. However, when considering these figures, one constant stands out: the costs of adaptation efforts for the developing countries are enormous and they cannot face them alone.

AUCTIONING OF CO_2 ALLOWANCES WITHIN THE EUROPEAN UNION EMISSIONS TRADING SCHEME

Within the framework of its climate policies, the European Commission presented its climate and energy package in January 2008. This document contains 4 regulations/directives projects. The objective is to reduce european greenhouse gas emissions by 20% by 2020 (c.f. 30% in the case of a "satisfactory agreement" reached at Copenhagen).

One of the measures proposed within the framework of this package concerns the revision of the directive on the european emissions trading scheme for exchanging CO_2 quotas between certain industrial and energy sectors. The European Commission proposes that from 2013, the CO_2 quotas be put up for auction and that 20% of the revenue resulting therefrom be allocated to projects for combating climate change, especially in Southern countries. Auctioning of all the CO_2 quotas at the European level would enable generation of at least 40 billion euros per year.

III- PROPOSALS ON THE NEGOTIATING TABLE

Currently, several proposals co-exist on the negotiating table. The LCA AWG, which held its second session in June 2008 in Bonn, held a workshop on this subject. This workshop provided the opportunity for the Parties to present their points of view on the subject.

Even if it is clear that a significant part of the finances will come from private investment, framed and reoriented by incentive policies, financial instruments or standards and regulations, the necessity of finding additional significant finance means that several paths must be explored. At the moment, the three directions explored by the negotiators are:

- Extension of carbon trading and project mechanisms
- Revenue drawn from auctions of carbon emitting rights, either within national or regional markets or at the international level
- Taxes on GHG.

Within this framework, the European Union, which has not adopted a position on the different options in international negotiations, has presented a list of finance options which could be used, while recalling that 86% of the finance for reductions should originate from the private sector. Europe has insisted on several routes to finance the combating of climate change. The first consists in pricing carbon based on negotiable permits for industry and based on national policies and measures, such as taxation, standards, incentive measures, subsidies. The second involves marshalling of finance as a function of greenhouse gas emissions by the auctioning of emission allowances or taxation, e.g. on aviation or marine transport.

In June 2008, the UNFCC Secretariat presented the table below. It lists numerous possible financing routes, while proposing a quantitative evaluation where possible.

29- World Bank (2006).- Clean Energy and Development: Towards an Investment Framework.- Washington: World Bank.

30- STERN, Nicholas, (2006). Climate Change. Human Solidarity in a Divided World.

31- OXFAM (2007).- Adapting to climate change: What's needed in poor countries and who should pay. Oxfam Briefing Paper no. 104. Oxford: Oxfam International, May 2007.- 52p

32- UNDP (2007).- Human Development Report 2007/2008: Fighting

33- For example: integration of climate change in investment programmes; analysis of existing infrastructure; additional investment required due to climate change (e.g. dykes, bridges, etc.); integration and adaptation in programs and policies for combating poverty. See: Muller, Benito (2008).- International Adaptation Finance: The Need for an Innovative and Strategic Approach.- Oxford: Oxford Institute for Energy Studies.- EV 42. 43p.

MECHANISM	VOLUME	EXPLANATIONS
Implementing a tax similar to that existing under the CDM for the international markets in the ERU[35], AAU[36] and the RMU[37]	10 to 50 million US $	Annual average from 2008 to 2012
	Depends on the size of the carbon markets post 2012	All estimations must make hypotheses on future commitments, because the level of commitments will define the sums exchanged
Auctioning of quotas for international aviation and marine transport	10 to 25 billion US $	The annual average for aviation grows between 2010 and 2030
	10 to 25 billion US $	The annual average for marine transport grows between 2010 and 2030
Tax on aviation transport	10 to 15 billion US $	Based on 6.5 US$ per passenger per flight.
Funds to invest in foreign exchange reserves	Up to 200 billion US$	Voluntary allocation of up to 5% of foreign exchange reserves for reduction
Access to renewable energy sources in the developed countries	US$ 500 million	Eligible renewable energy projects in the developing countries could receive certificates which could be used as elements in achieving conformity with commitments to renewable energy sources in the countries of the North.
Debt relief program in exchange for energy efficiency	To be determined	Creditor countries negotiate an agreement to cancel a part of the external debt in return for a commitment from the debtor country to invest this amount in clean energy projects.
Tobin Tax	15 to 20 billion US $	Tax of 0.01% on all monetary transactions
Special drawing rights	Initially 18 billion US$	Special drawing rights could be awarded to create revenues for the Convention objectives.

A- ONE GLOBAL PROPOSAL: MEXICO AND THE WORLD CLIMATE CHANGE FUND

Mexico proposes to create a World Climate Change Fund (Green Fund) to enable extension of the participation of various countries in favour of clean development and technical and financial support of reduction and adaptation initiatives. This mechanism could be part of the global agreement negotiated at Copenhagen in 2009.

For the Mexican government, the challenge consists in putting in place a mechanism which enables responding more efficiently than the CDM to the challenge of financing adaptation and reduction. Such a mechanism must be realistic, fair, predictable, efficient and encourage the participation of all countries, both developed and developing.

EXAMPLE OF THE ACTIVITIES WHICH COULD BE FINANCED:

• Grey Agenda
- Improvement of energy efficiency
- Promotion of renewable energy sources
- Capture and storage of CO_2
- «Green» housing programme, with energy efficiency and reduced consumption
- National programme for methane capture, its use and storage
- Waste management
- Mode change in transport
- Promotion of low-emission vehicles

• Green agenda
- Reduction of emissions linked to deforestation and degradation
- Reforestation, afforestation and revegetation
- Prevention of forest fires
- Reduction of emissions from agricultural land
- Production/use of biofuels under certain strict conditions

The specific objectives of the fund are to (1) reinforce reduction actions, (2) support efforts to adapt to the adverse effects of climate change and countermeasures, (3) provide technical assistance and promote the transfer and spreading of clean technologies, (4) contribute to the emergence of a finance regime under the Convention.

All countries will have to contribute to this fund in conformance with the principle of common responsibility, differentiated according to respective capabilities.

When it comes to financial resource allocation, all countries, developed and developing should be able to benefit from the fund. Reduction activities will be defined by the countries, as a function of their priorities and their national circumstances. The results of the financial initiatives must be measurable, reportable and verifiable (which returns to the formulation of the Bali action plan). The activities financed by the fund should be on different scales (sub-national to sectoral). The distribution of resources should be determined by the COP.

Regarding access to the fund, Annex II countries (developed countries) will only have access to a part of the total of their contribution (for example: 70%). This will enable developing countries to have access to significant new finance for reduction. A part of this fund would be reserved for the least developed countries.

It is possible that a link could be established to market mechanisms, on condition that the two processes do not lead to a double counting of the emission reductions. This will, nevertheless, enable integration of private investment within this mechanism.

Mexico proposes a double levy of 2% on fund contributions. 2% would go to the Kyoto Protocol Adaptation Fund, 2% to a technology transfer fund for so-called «clean» technologies.

This fund would be a new mechanism, complementary to those instituted in the Convention and the Kyoto Protocol.

34- For its part, Oxfam proposes an adaptation financing index based on the historical responsibility for GHG emissions and the capability of supplying financial assistance of the country. Ibid.

35- Emission Reduction Unit (ERU)

36- Assigned Amount Units (AAU)

37- oval Unit (RMU)

Name of proposal	Which finance?	Why?	How much?	How?
World climate change fund (Mexican proposal)	All countries would have to contribute to the fund in agreement with the principle of common but differentiated responsibilities. 4 criteria would be retained ("polluter/payer" principle, efficiency, capability of paying, equity).	The fund would be mainly dedicated to reduction in both Annex I and non-Annex 1 countries. 2% of the contributions would be levied to finance the adaptation fund. 2% of the contributions would be levied for a fund dedicated to technology transfer.	At least 10 billion US$ per year	Would finance a list of projects, from combating deforestation, to promotion of renewable energy sources via energy efficiency and CCS. The funds would be administered by an executive board in which each participating country would be represented. The largest emitters would be assured a permanent representation.
Global tax on world emissions (Swiss proposal)	All countries would be subjected to a tax of US$ 2 per tonne of CO_2. The countries which have a level of emission per inhabitant less than or equal to 1.5t/CO_2 would be exempt. Industrialized countries contribution : 76%	- Creation of a multilateral adaptation fund (MAF), 18.4 billion US$ - Prevention fund 9.2 billion US$ - Insurance fund 9.2 billion US$ Creation of national funds for climate change, 30.1 billion US$	48.5 billion US$ per year	Tax collected in a decentralised manner. Pending the coming into force of the Copenhagen agreement, the Protocol Adaptation fund could manage finance that is already available.
Auctioning of AAUs to finance adaptation (Norwegian proposal)	A part of the revenue derived from the auctions is levied for financing: =› The financing countries would be those with a legally binding target for reducing their emissions, or even a sectoral commitment	Financing of adaptation	2% of auctionning could annually generate between 15 and 25 billion US$	Not-specified
China	Dedication of a part of the global GDP (for example 0.5%) in addition to the financing already in existence	Creation of specialist funds: - Dedicated adaptation funds - Multilateral funds for technology acquisition		- The funds would be established and managed under control of the COP. - Equitable representation of countries - Easy access and low cost of management

Governance of the fund would be according to principles decided by the COP. The fund would be managed by an Executive Board with proportional representation of developing and developed countries.

B- SECTORAL PROPOSALS FOR ADAPTATION

✦ The Swiss proposal

Switzerland has proposed the creation of a solidarity mechanism to finance adaptation, based on a system of taxing CO_2 emissions linked to the burning of fossil fuels. The tax level proposed is 2 US$ per tonne of emitted CO_2, i.e. approximately 0.5 cents per litre of petrol. An exemption would be envisaged below a threshold of 1.5 tonnes of CO_2 per inhabitant, in order to take into account the principle of common but differentiated responsibilities and the capability of acting.

18 billion dollars could result from this tax (of which more than 75% from the developed countries). Switzerland envisages its proposal as complementary to the other envisaged devices, making explicit reference to the Mexican proposal.

Switzerland proposes that a significant part of this finance should go to national funds for climate change, which purpose would be to accompany national adaptation strategies and the transfer and dissemination of reduction technologies and measures. Another part of this finance would replenish two funds, one for insurance, the other for prevention in order to accompany resilience strategies and to respond to the inevitable impact of climate change.

Although it has a complex distribution structure, the Swiss proposal is interesting due to the simplicity of its method of collecting funds. A tax mechanism linked to fossil fuel emissions is indeed, easy to put into action and enables raising of significant and stable finance.

✦ The Norwegian proposal

Norway proposes financing adaptation by auctioning emission rights for Annex 1 developed countries (Assigned Amount Unit «AAU»). Norway proposes that a small percentage of the value of the allocated emissions rights could go to finance adaptation, either by auctioning these rights or by a tax on their issuance. According to calculations, 2% of the auctioning of the AAUs would generate between 15 and 25 billion dollars per year. Of course, the revenue derived from the auctions would depend on the level of commitment of the countries which have a legally binding reduction target for their emissions. The higher the level of constraint, the more significant the revenues would be. By contrast, targets that are only modest will cause the prices to drop and therefore the finance capabilities also.

IV- THE GOVERNANCE STAKES

The new fund governance stakes, i.e. management of the financial resources, eligible activities and the sharing between countries are the determining factors.

The priority must be avoiding the ineffective scattering of the financing by multiplication of bi- and multilateral funds. It is imperative to implement coordination developing synergies between the financial participants. Should the opposite occur, taking into account the volumes to be mobilised and the necessity for developing global and concerted responses, both at the national and regional level, the risk of developing isolated or even contradictory policies threatens to undermine the foundations of the response to climate change.

Another priority consists in permitting a fair and equitable subdivision of the financing, dependent on parameters such as the capacity to act, vulnerability to climatic risks. It is imperative that within the framework of the governance structures, the financial instruments are open. A fair representation of the Northern and Southern countries is indispensible. Access to civil society in these decision-making arenas is also a sine qua non condition for the success of the financial policies.

V- "CLIMATE AND DEVELOPMENT" NETWORK RECOMMENDATIONS

- The financial mechanisms intended to help the countries in realising their objectives must be stable, predictable and adequate. They will have to take into account the regional peculiarities and enable the achievement of the social and economic objectives.

- Whatever the mechanism retained, it is clear that the additional contributions will have to come from developed countries. In the same way, the least developed countries will have to benefit from specific funds to help them in their economic and ecological transition.

- Several financing mechanisms for combating climate change will no doubt have to coexist. Above and beyond an improvement in the functioning of the carbon trading market and resorting to flexible mechanisms, two new paths are to be explored:

  - Taxation of GHG emissions linked to the use of fossil fuel resources. Aviation and marine transport sectors must make their contribution.

  - Auctioning of emissions rights, within the framework of the national and international carbon markets. The revenue from these auctions must permit as a priority financing of emission reduction and adaptation actions.

- The governance of the financial mechanisms must respond to the requirements of transparency, equity and efficiency.

  - The institutions managing the finance mechanisms will have to ensure coherence between the actions taken and development of synergies to avoid dispersion and parcelling up of the financial means for combating climate change.

  - The countries of the South as well as civil society must be closely associated with management of these funds.

  - A part of the financing will have to be available to local development projects led by the local communities. It's one of conditions for the success of the fight against climate change.

  - The financing must accompany policies and measures with assessable effects.

ACRONYMS

AAU: Assigned Amount Unit

CCS: Carbon Capture & Storage

CDM: Clean Development Mechanism

CO_2: Carbon dioxide

COP: Conference of the Parties

EGTT: Expert Group on Technology Transfer

GEF: Global Environment Facility

GDR: Greenhouse Development Rights

GHG: Greenhouse gases

Gt: Gigaton

IPCC: Intergovernmental Panel on Climate Change

IPR: Intellectual Property Rights

JI: Joint Implementation

LDCF: Least Developed Countries Fund

LDC: Least Developed Countries

MRV: Measurable, Reportable and Verifiable

NAPA: National Adaptation Programs of Action

NWP: Nairobi Work Program

ODA: Official Development Assistance

RCI: Responsibility Capacity Index

REDD: Reduction Emissions from Deforestation and Forest Degradation

SBI: Subsidiary Body for Implementation

SB 28: 28th session of the Subsidiary Bodies

SBSTA: Subsidiary Body for Scientific and Technological Advice

SCCF: Special Climate Change Fund

TNA: Technology Needs Assessment

TT: Technology Transfer

UNFCCC: United Nations Framework Convention on Climate Change

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Site of CAN international: http://www.climatenetwork.org

Site of the Goldstandard: http://www.cdmgoldstandard.org

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