

# THEMATIC DEBATE OF THE GENERAL ASSEMBLY

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## “CLIMATE CHANGE AS A GLOBAL CHALLENGE”

This document provides an overview of some of the key issues to be considered during the General Assembly's Thematic Debate on climate change, including:

- the latest scientific assessments;
- the two components of the response - adaptation and mitigation;
- the role of the private sector; and,
- possible next steps in the multilateral process.

An annex describes the existing commitments, financial architecture and progress to date of the institutional response to climate change under the auspices of the United Nations.

### OVERVIEW

1. The average global temperature rose by 0.74°C during last century. This is the largest and fastest warming trend in the history of the Earth that scientists have been able to discern. Current projections show that trend will continue and will accelerate. The best estimate indicates that the Earth could warm by 3°C during the 21<sup>st</sup> Century. Scientists are now certain that most of the change is due to human activities that emit greenhouse gases. Greenhouse gases, of which CO<sub>2</sub> is the most important, trap heat in the Earth's atmosphere, leading to the overall rise of global temperatures, which are liable to disrupt natural climate patterns. Eleven of the last 12 years rank among the 12 warmest in the last 150 years. The warming trend has already affected all continents and oceans.

2. The most recent Intergovernmental Panel on Climate Change (IPCC) reports issued this year dispelled many uncertainties. Climate change is already having significant impacts in certain regions, particularly in developing countries, and on most ecosystems. It will affect developing countries' ability to achieve the Millennium Development Goals (MDGs). However, the reports also show that the problem can be addressed and that affordable mitigation solutions exist. Economic assessments indicate that the cost of inaction will exceed the cost of taking early action, probably by several orders of magnitude. Dealing with climate change is an

economic necessity to avoid serious disruption to global and national economic and social activity.

3. The challenge now is to develop a fairer and more effective global response to address this global problem. Some of the worst scenarios outlined by the IPCC can still be avoided by taking immediate action. This requires concerted efforts by all countries, especially industrialised countries and major emerging economies, to significantly reduce the amounts of greenhouse gas emissions. Since climate change is already negatively affecting people in many areas, it is necessary to develop methods that will allow people and communities to adapt to the realities imposed by climate change. Developing countries will be the most affected and are those with the most limited resources – a combination that will require collective efforts to address.

4. 2007 is a critical year and the UN is working to bring countries together to develop a global approach to address climate change. Many initiatives are being launched and commitments undertaken by Member States, groups of States, civil society and the private sector. These are essential but not sufficient by themselves. The UN and its Framework Convention on Climate Change offer the institutional framework within which a global solution can be achieved (see Annex A).

## I. THE CHANGING GLOBAL CLIMATE: ASSESSING THE SCIENCE AND THE IMPACTS

### *IPCC latest assessments*

- average temperature rise of around 3°C expected this century.
- during the last 100 years the earth has warmed by 0.74 °C, most rapidly over the last 50 years; Arctic temperatures have increased at almost twice this rate.
- atmospheric concentrations of carbon dioxide have increased from a pre-industrial value of 278 parts-per million (ppm) to 379 ppm in 2005.

5. The “blanket” of greenhouse gases that occurs naturally in the atmosphere serves the vital function of regulating the planet’s climate. Since the start of the industrial revolution some 250 years ago, emissions of greenhouse gases have been making this blanket thicker at an unprecedented speed. This has caused the most dramatic change in the atmosphere’s composition since at least 650,000 years ago. Unless significant efforts are made to reduce emissions of greenhouse gases, the global climate will continue to warm rapidly over the coming decades and beyond.

6. The IPCC – created in 1988 by the World Meteorological Organization and the United Nations Environment Programme – provides the most authoritative and comprehensive assessments of the state of knowledge on climate change every five years. These assessments also provide the basis for international policy-making on climate change. The IPCC does not conduct new research, but makes policy-relevant assessments of the existing worldwide literature on the scientific, technical and socio-economic aspects of climate change, drawing on the work of hundreds of experts from all regions of the world.

7. The latest IPCC assessment, released during 2007, shows that the warming of the climate system is unequivocal and accelerating. This is based on evidence of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.

8. Projections indicate faster warming is expected. If emissions continue to rise at their current pace and are allowed to double from their pre-industrial level, the world will face an average temperature rise of

around 3°C this century. To explain the magnitude of such seemingly insignificant global temperature changes from a different perspective: the difference between the present average global temperature and an ice age is 5 °C.

9. Serious impacts are associated with these scenarios, including sea-level rise, shifts in growing seasons, and an increasing frequency and intensity of extreme weather events such as storms, floods and droughts. Impacts of climate change will vary regionally, with the most significant impacts expected in the Arctic, the Asian mega-deltas, Small Island Developing States (SIDS) and sub-Saharan Africa. Climate change will further constrain water resources, already stretched by growing demand from agriculture, industry and cities. Rising temperatures will further diminish the mountain snow pack and increase evaporation, thus altering the seasonal availability of water.

10. Overall, developing countries are the most vulnerable to these risks. In the most vulnerable communities, the impacts of climate change pose a direct threat to people's very survival. The devastating effects of extreme events, temperature increases and sea level rise will worsen with consequences for all of us, particularly the poor.

11. Wildlife and biological diversity – already threatened by habitat destruction and other human-caused stresses – will face an increased risk of extinction. The most vulnerable ecosystems include coral reefs, boreal (sub-arctic) forests, mountain habitat and those dependent on a Mediterranean climate. The oceans will also experience higher temperatures, and as they absorb more carbon dioxide sea life will be negatively affected due to increasing acidity. In all regions, the faster the temperatures rise, the greater the risk of damage.

12. The climate does not immediately respond to reductions in greenhouse gas emissions. Some greenhouse gases survive in the atmosphere for years, decades or even centuries. As a result, climate change will continue for hundreds of years after atmospheric concentrations have stabilized. Significant reductions in global emissions of greenhouse gases are required. However, decisions on the precise level at which greenhouse gas concentrations should be stabilized to prevent dangerous climate change have not been taken yet.

## II. ADAPTING TO CLIMATE CHANGE

13. Adaptation is a process through which societies make themselves better able to cope with the risks associated with climate change. These risks are real and already happening in many systems and sectors essential for human livelihood, including water resources, food security and health. Adaptation options are many and range from technological options such as increased sea defenses or flood-proof houses on stilts, to behavior change at the individual level, such as the sparing use of water, lower and more efficient energy consumption. Other strategies include early warning systems for extreme events, improved risk management, insurance options and biodiversity conservation to reduce climate change impacts on people, e.g. by conserving and restoring mangroves to protect people from storms.

14. Delay to adaptation, and that includes any delay in helping to finance and support concerted, long-term adaptation in developing countries, will mean increased costs and pose greater risks to humanity in the future. Droughts or loss of glacial melt-water, for example, could trigger large-scale population movements and heightened competition over scarcer resources such as water, food and energy. According to the Stern Review, these effects may exacerbate existing political tensions and could drive greater global instability.

15. The IPCC suggest that future vulnerability depends not only on climate change but also on development pathways. Sustainable development can reduce vulnerability. To be successful, adaptation should be mainstreamed in national and international sustainable development priorities and sectoral programs. Climate change can policies can also promote activities with multiple benefits to catalyze progress in achieving sustainable development goals, while contributing to adaptation objectives.

16. Effective national adaptation strategies may include:

- Measures to enhance the scientific basis for decision making;
- methods and tools for the assessment of adaptation;
- education, training and public awareness on adaptation, including for young people;
- promoting individual and institutional capacity-building;
- technology development and transfer;
- promotion of local coping strategies; and,
- legislation and regulatory frameworks, which promote adaptive-friendly action.

17. Many countries are starting to take concrete action to adapt to future climate changes. This needs to be expanded and integrated into national and sectoral plans to ensure that sustainable development and adaptation are progress together. The UNFCCC fosters adaptation by committing all Parties to formulate, implement, publish and update adaptation measures, as well as to cooperate on adaptation. A variety of support mechanisms for adaptation implementation in developing countries are supported; including, the provision of funding, insurance and technology transfer, as well as scientific and technical assistance.

18. National Adaptation Programmes of Action are an option for Least Developed Countries and provide a rigorous assessment of urgent adaptation needs. They aim to expand the coping range of communities. In addition, the 'Nairobi' work programme on impacts, vulnerability and adaptation to climate change assists all countries in understanding and assessing impacts, vulnerability and adaptation. It enables informed decision-making on practical adaptation actions and measures and provides a structured framework for cooperation. The UN System, its specialised agencies and other international organisations also mainstream adaptation into their relevant work programmes.

19. Adaptation must be implemented through a holistic approach incorporating both local (bottom-up) and national (top-down) levels. The role of the UNFCCC is to catalyze adaptation efforts through this integrated and cross-cutting set of actions, which take into consideration current climate variability and future climate change. These actions should be linked to national and sectoral policies and objectives, as well as environmental objectives of other Multilateral Environmental Agreements. Bilateral, multilateral and regional collaboration must be included both in terms of assessment and implementation of adaptation measures.

20. It is critical that adaptation be brought forward on policy agendas. Parties to the UNFCCC have already highlighted the major challenges and the most important elements that might be part of an enhanced multilateral response to climate change when the first commitment period under the Kyoto Protocol expires in 2012. Sustained sufficient funding for the implementation of large-scale adaptation initiatives is of key importance. Without sufficient and targeted funding, adaptation runs the risk of not being effectively addressed. Short-term emergency relief, or "reactive" funding, is costly and unsupportive of sustainable development approaches over the long term.

21. Adaptation does not obviate the need for mitigating greenhouse gas emissions. Both adaptation and mitigation strategies are necessary and complementary.

### III. REDUCING THE EMISSIONS THAT CAUSE CLIMATE CHANGE

22. At present total annual emissions of greenhouse gases are rising. Over the last three decades, emissions increased by an average of 1.6 per cent per year with CO<sub>2</sub> emissions from fossil fuels use growing at 1.9 per cent per year. In the absence of further policy action, these emission trends are expected to continue. The IPCC observed that for the period 1970 - 2004, the largest growth in greenhouse gas emissions has come from energy supply and consumption, and road transport. At the same time, access to energy is crucial for achieving the MDGs, and is one of the over-riding concerns of developing countries, since economic growth demands increased or more efficient energy supply and consumption.

23. According to the reference scenario of the International Energy Agency (IEA), global energy demand will grow by 60 per cent by 2030. In the period up to 2030, the energy supply infrastructure world-wide will require a total investment of USD20 trillion, with about half of that in developing countries. The way in which these energy needs are met will determine whether climate change will remain manageable. Both national and international climate policies and actions are needed to “green” energy supply and economic growth. It is also, of paramount importance that the growth of emissions is decoupled from economic growth. Mitigation efforts over the next two to three decades will determine to a large extent the long-term mean global temperature increase and the corresponding climate change impacts that are avoided.

24. According to the IPCC, there is significant potential for mitigation, including increasing the use of clean technologies and improving end-use efficiency. There are significant economic potential for all sectors involved in mitigating global greenhouse gas emissions over the coming decades. This potential is sufficient to offset the projected growth of global emissions or even to reduce emissions below current levels. The IPCC suggest that the macro-economic effects of mitigation towards stabilization (between 445 and 710 ppm of CO<sub>2e</sub>) in 2030 vary from a small increase in global GDP to a 3 per cent decrease, depending of the stringency of the stabilization target. The Stern Review suggests that the annual cost of emissions reductions leading to stabilization at 550 ppm CO<sub>2e</sub> is likely to be around 1 percent of GDP by 2050.

25. Some of the available mitigation options are in fact “no regrets” opportunities that can yield multiple societal and environmental benefits. At the same time, concerns of developing country oil exporting nations, which center on the negative impacts that mitigation measures in developed countries may have on their economies, need to be taken into account.

26. The wide deployment of climate-friendly technologies is key to meeting the mitigation challenge. Existing clean technologies need to be rapidly picked up by the private sector and deployed widely, including through technological cooperation between industrialised and developing countries. Addressing climate change will, however, require continuous improvement through innovation and the development of new technologies.

27. Governments can play a major role motivating the private sector to invest in innovative technologies by providing incentives that are clear, predictable, long term and robust. Governments are successfully using a wide range of policies and measures that address climate change, including regulations and standards, taxes and charges, tradable permits, voluntary agreements, subsidies, financial incentives, research and development programs, and information instruments.

28. Effective mitigation requires a diversified portfolio of policies to address all major sectors. Some of the cheapest options for reducing emissions involve electricity savings in buildings, fuel savings in vehicles and increased soil carbon content in agriculture. Policies to promote a shift to less carbon-intensive energy sources are particularly effective. Governments can promote a range of energy options, including the encouragement of natural gas as well as mature renewable energy technologies such as large hydro, biomass combustion and geothermal. Carbon capture and storage technology is another option to isolate carbon emissions from the atmosphere, and to store them, for example in geological formation.

29. Approximately 30 per cent of the projected emissions in the residential and commercial sectors – the highest rate amongst all sectors studied by the IPCC – could be reduced by 2030 with a net economic benefit. Improvements relating to transport, such as providing public transport systems and their related infrastructure and promoting non-motorised transport can further reduce emissions. The greatest potential for reducing industrial emissions is located in the energy-intensive steel, cement, and pulp and paper industries. Options for reducing agricultural emissions are cost competitive in achieving long-term climate objectives.

30. Current rates of deforestation contribute to more than 20% of human-caused greenhouse gas emissions, making deforestation across the globe a significant contributor to human-induced climate change. The UN's Food and Agriculture Organisation estimates that between 2000 and 2005, an average of 12.9 million hectares of forests was lost annually, mostly in South America, followed by Africa and Asia. Arresting today's high levels of deforestation, promoting sustainable forest management and planting or promoting new forests could considerably reduce greenhouse gas emissions.

31. Climate policies can also bring many win-win benefits that may not factor into cost estimates – positive externalities. These include technological innovation, tax reforms, increased employment, improved energy security and health benefits from reduced pollution. Climate policies offering significant co-benefits have the potential to reduce greenhouse gases and provide substantial advantages for numerous economic sectors and for varying development goals.

32. Mainstreaming climate change mitigation is an integral part of sustainable development. The IPCCs findings confirm that sustainable development can reduce greenhouse gas emissions and reduce vulnerability to climate change. Increasingly, strategies to address climate change are being integrated into national planning and sustainable development strategies. Many countries have already launched major national strategies on climate change with a range of government policies to reduce greenhouse gas emissions from industry, agriculture, and forestry, as well as ambitious energy efficiency and renewable energy goals.

33. Projected climate changes can exacerbate poverty and undermine sustainable development, especially in least-developed countries. Global mitigation efforts can enhance sustainable development prospects in part by reducing the risk of adverse impacts of climate change. Effective multilateral cooperation significantly reduces the global cost of addressing climate change compared to the costs if each country was to act alone. The emerging carbon market resulting from the Kyoto Protocol is an illustration of how market incentives can be used to meet objectives set by an international agreement.

#### **IV. THE ROLE OF BUSINESS IN SHAPING SOLUTIONS**

34. The role of business as a source of solutions on global climate change is now universally recognized, and its interaction with the public policy agenda is increasing. The business community can offer new choices, innovate, apply knowledge and technology to problems and turn them into opportunities. Key to establishing such a role has been the growing number of corporations who have understood the vital importance of corporate social responsibility, risk mitigation, and performance dimensions associated with the sustainable production and use of energy. Actions to address climate change can also provide a platform for new economic growth, new jobs, new manufacturing and service industries, and new roles for sectors such as agriculture and forestry.

35. Many of the world's leading businesses are stepping up to the problem of climate change because they understand its risks and recognize the need to act to minimize those risks. They also see enormous opportunities in the development of new, climate-friendly technologies that will help economies advance and grow — without continuing to pose a threat to the global climate. They also want to improve their competitive position in the marketplace and to get a head start developing the technologies and the strategies that will contribute to reducing emissions in the years ahead.

36. There is a wide range of activities that businesses can undertake to reduce their contribution to climate change. They can implement green power programs and cogeneration projects; they can develop energy-saving processes and products, clean fuels, biomass energy, clean-burning vehicle engines and much more. With assistance from governments, they can play an important role in the climate effort through partnerships. Both research partnerships and partnerships in the development of climate policy, can help ensure a factual basis about what can be achieved, how to achieve it and when.

37. At the international and national levels, governments need to provide business with certainty of direction. The challenge is to continue to create the frameworks and partnerships that will allow business to play its essential role in protecting the climate. They need to know that climate change is a priority, to understand the direction and the ultimate goal of national and international climate policies. This will allow businesses to invest with confidence in the necessary technologies and strategies.

## **V. THE NEXT STEPS IN THE GLOBAL RESPONSE TO CLIMATE CHANGE**

38. Around the world, discussions on climate change are moving with a new sense of urgency and openness. Climate change has been included in the agenda of several important international and regional meetings this year, many of which have called for successful outcomes at the United Nations Climate Change Conference to be held in Bali in December 2007. The Bali Conference will provide the world with an opportunity to further engage in the multilateral climate change process under the auspices of the UN and to collectively craft the next steps in the global response to climate change.

39. To facilitate an exchange of views and to galvanize political will for the Bali Conference, on 24 September 2007 the Secretary-General will convene an informal high-level event in New York on the margins of the General Assembly. The event will provide an opportunity to involve all countries and other stakeholders in the multilateral process.

## **Annex A**

### **THE INSTITUTIONAL FRAMEWORK: THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE AND THE KYOTO PROTOCOL**

40. General Assembly resolution 45/212 launched negotiations that resulted in the United Nations Framework Convention on Climate Change (UNFCCC). The convention was opened for signature on 4 June 1992 at the Rio de Janeiro 'Earth Summit' the United Nations Conference on Environment and Development. Fifteen years later, the UNFCCC is at the centre of the global response to climate change. The Convention recognizes that man-made emissions of carbon dioxide and other greenhouse gases are altering the world's climate. It has established a long-term objective to stabilize greenhouse gas concentrations in the atmosphere to prevent dangerous human interference with the climate system while allowing development to take place.

41. The provisions of the Convention were not sufficient so a substantial extension to the Convention – the Kyoto Protocol – was adopted at the third Conference of the Parties in December 1997. The Kyoto Protocol, which entered into force on 16 February 2005, established legally binding emission targets for industrialized countries. Since adoption, both instruments have been further elaborated by decisions of Parties at their annual meetings. These collective decisions now make up a detailed set of rules for implementation of both the Convention and its Kyoto Protocol.

#### **A. Commitments under the UNFCCC**

42. The UNFCCC sets an overall framework for international efforts to tackle the challenge of climate change. All Parties must develop and periodically submit special reports called national communications, which must contain information on the greenhouse gas emissions of that Party and describe the steps it has taken and plans to take to implement the Convention. Each national communication is subject to an "in-depth" review to provide a comprehensive, technical assessment of a Party's implementation of its commitments.

43. The Convention also requires all Parties to put in place national programmes and measures to control emissions and to adapt to the impacts of climate change. Parties also agree to promote the development and use of climate-friendly technologies; education and public awareness of climate change and its impacts; sustainable management of forests and other ecosystems that can remove greenhouse gases from the atmosphere, and to cooperate with other Parties in these matters.

44. Industrialized countries, which are called Annex I Parties under the Convention, have additional commitments. These Parties agreed to undertake policies and measures with the specific aim of returning their greenhouse gas emissions to 1990 levels by 2000. Annex I Parties must also provide more frequent national communications and must separately provide yearly inventories of their national greenhouse gas emissions, which are subject to an annual technical review process.

45. They must also promote and facilitate the transfer of climate friendly technologies to developing countries and to countries with economies in transition, as well as provide new and additional financial resources to help developing countries implement their commitments. Such financial resources are to be provided through the Global Environment Facility, which serves as the Convention's financial mechanism, and may also be provided through bilateral or other multilateral channels.

## **B. Commitments under the Kyoto Protocol**

46. The Kyoto Protocol shares the Convention's ultimate objective to stabilize atmospheric concentrations of greenhouse gases at a level that will prevent dangerous interference with the climate system. The Kyoto Protocol builds upon and enhances many of the commitments already in place under the Convention. Only Parties to the Convention can become Parties to the Protocol. Although all Parties have agreed to further advance the implementation of their existing commitments under the Convention, only Annex I Parties took on new commitments under the Protocol. Specifically, these Parties have agreed to binding emission targets over the 2008 – 2012 timeframe.

47. To assist Annex I Parties in meeting these targets, and to promote sustainable development in non-Annex I Parties, the Kyoto Protocol adopted three innovative mechanisms, by which Annex I Parties may avail themselves of low-cost emission reductions achieved elsewhere. To support the implementation of these mechanisms, the Kyoto Protocol strengthened the Convention's reporting and review procedures and created a system of electronic databases, called national registries, to monitor transactions under the Kyoto mechanisms, and an international transaction log to verify transactions of emissions credits, including their issuance, transfer and acquisition between registries. It also established a compliance system designed to strengthen the Protocol's environmental integrity, support the carbon market's credibility and ensure transparency of accounting by Parties. It is overseen by a committee, which has the authority to determine and apply consequences for non-compliance.

## **C. Market Mechanisms and the Carbon Market**

48. The Kyoto Protocol's market mechanisms seek to lower the costs of achieving emissions targets: the clean development mechanism, joint implementation and emissions trading. The clean development mechanism, or CDM, allows Annex I Parties to invest in projects in non-Annex I Parties that reduce emissions, or that enhance sinks through afforestation or reforestation. The Annex I Party can then use credits generated by these projects toward meeting its emission target. Similarly, through joint implementation (JI) Annex I Parties can receive credit for investing in projects in other Annex I Parties. Finally, emission trading allows Annex I Parties to trade credits or emission allowances among themselves.

49. Among these mechanisms, the CDM stands out, as it provides a vehicle to finance sustainable development projects that reduce greenhouse gas emissions in developing countries. It is overseen by an Executive Board, operating under the authority of the CMP, that approves methodologies for baselines and monitoring, registers projects and issues credits. With over 1200 projects in the pipeline, the CDM has an overall emission reduction potential of about 1.4 billion tonnes by 2012 (of which 590 million are already in the form of registered projects). The CDM is gaining speed very rapidly, but the market needs long-term policy certainty in demand beyond 2012 to continue to deliver.

50. Currently, CDM projects are not evenly distributed across geographic regions. As a result, the *Nairobi Framework* was initiated by the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the World Bank Group, the African Development Bank, and the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) at the Nairobi Climate Change Conference in 2006. It aims to help developing countries, especially those in sub-Saharan Africa, to improve their level of participation in the CDM.

## **D. Financial architecture to address climate change**

51. The contribution of countries to climate change and their capacity to prevent and cope with its consequences vary significantly. The Convention and the Protocol therefore call for financial assistance from countries with more resources to those less endowed and more vulnerable. The Parties to the Convention assigned operation of the financial mechanism to the Global Environment Facility on an on-going basis, subject to review every four years. The financial mechanism is accountable to the COP, which decides on its climate change policies, programme priorities, and eligibility criteria for funding. In addition, three special funds have been established:

- (a) **Special Climate Change Fund** to finance projects relating to capacity-building, adaptation, technology transfer, climate change mitigation and economic diversification for countries highly dependent on income from fossil fuels.
- (b) **Least Developed Countries Fund** intended to support a special work programme to assist the LDCs.
- (c) **Adaptation Fund**, will finance practical adaptation projects and programmes in developing countries and support capacity-building activities. It will be funded from the adaptation levy on CDM projects. Parties may contribute as well. It will become operational with the entry into force of the Kyoto Protocol.

52. Different financing efforts need to be reconciled in a long-term legal framework in order to provide security for carbon markets, investments and long-term policy results. Existing financial structures and project-based mechanisms need to complement each other so that available finances can best be directed at both adaptation and mitigation. Governments will consider existing and planned investment flows and finance schemes relevant to the development of an effective international response to climate change at Bali Conference in December 2007, with a particular focus on the needs of developing countries.

## **E. Technology**

53. Clean technologies are central to combating climate change and many are already available. Cleaner technologies and energy efficiency can provide win-win solutions, allowing economic growth and the fight against climate change to proceed hand in hand. Given the continued dominant role of fossil fuels in the global energy mix, energy efficiency, cleaner fossil fuel and carbon capture and storage technologies are needed to allow their continued use without jeopardising climate change objectives.

54. Encouragingly, according to UNEP and New Energy Finance (NEF), sustainable energy investment has increased markedly over the past couple of years, with wind, solar and biofuels attracting the highest levels of investment. This reflects technology maturity, policy incentives and investor appetite. Investor appetite suggests that existing technology is ready for scale-up and that renewable energy can become a larger part of the energy mix without waiting for further technology development yet investments in climate-friendly technologies are still in their infancy

55. To fully meet the mitigation challenge across the globe, the scale-up needed requires greater cooperation between industrialised and developing countries. Clear and predictable policy frameworks for private investors to

operate within and, innovative financing approaches that allow public funds to attract private investment will also help.

56. The UNFCCC has facilitated a number of investment instruments and opportunities targeted at technology transfer. The current technology transfer framework provides opportunities to attract financing for climate change technology transfer by identifying priority technology needs of developing countries and working to create enabling environments for technology transfer. It is also important to build capacity at the national level to improve legal and regulatory framework, and to help project developers at the sectoral level to demonstrate to private financiers that proposed projects are financially attractive.

57. In addition, the Global Environment Facility (GEF) aims to play a catalytic role in the development of markets related to climate change. It allocates and disburses about USD 250 million per year in grants for climate change projects. GEF funds have been used to stimulate innovative financing mechanisms, such as risk mitigation schemes, loan guarantee programs and micro-finance.

58. The CDM also provides a number of opportunities for attracting finance for climate change projects by offering a legal framework and a marketplace for Parties that are required to reduce greenhouse gas emissions. The CDM makes it easier to attract financing for climate change projects, through sales of carbon emissions reductions. As such, the carbon market has an important role to play in bridging the technology and investment challenge, while addressing climate change concerns.

59. The interest of development finance institutions also indicates that there is an opportunity for climate change technology transfer in emerging markets. An important aspect of their activities is that they attract private financiers to climate change projects.

## **F. Deforestation**

60. Reducing deforestation plays an increasing role in carbon mitigation, as well as in other sectors such as stemming biodiversity loss.

61. The UNFCCC acknowledges the need to protect forests as part of efforts to combat climate change. Under the Kyoto Protocol, emissions from deforestation in developed countries are taken into account as part of national commitments to reduce greenhouse gases. Tropical deforestation, however, was excluded from the Kyoto Protocol due to controversies surrounding sovereignty, uncertainty and implications for efforts to reduce fossil fuel emissions. Discussions on reducing emissions from deforestation

in developing countries are underway within the UNFCCC process, at the initiative of developing countries.

## **H. Calendar of meetings**

- Fourth workshop under the Dialogue on long-term cooperative action to address climate change by enhancing implementation of the Convention and the resumed fourth session of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG)  
**Vienna, Austria**  
**27 - 31 August 2007**
- Thirteenth session of the Conference of the Parties (COP 13) and the third session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 3)  
**Bali, Indonesia**  
**3 - 14 December 2007**
- Sessions of the UNFCCC subsidiary bodies  
**Bonn, Germany**  
**2–13 June 2008**
- Fourteenth session of the Conference of the Parties (COP 14) and the fourth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 4)  
**Poznan, Poland**  
**1–12 December 2008**
- Sessions of the UNFCCC subsidiary bodies  
**Bonn, Germany**  
**1–12 June 2009**
- Fifteenth session of the Conference of the Parties (COP 15) and the fifth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 5)  
**Copenhagen, Denmark**  
**30 November to 11 December 2009**