



Sustainable use of natural resources: climate change, clean energy and technology

60. The interlinked challenges of climate change, energy security and the sustainable and efficient use of natural resources are amongst the most important issues to be tackled in the strategic perspective of ensuring global sustainability. A shift towards green growth will provide an important contribution to the economic and financial crisis recovery. We must seize the opportunity to build on synergies between actions to combat climate change and economic recovery initiatives, and encourage growth and sustainable development worldwide.

61. Science clearly shows that anthropogenic greenhouse gas emissions – mainly produced by the use of fossil fuels - are provoking dangerous climate change, putting at risk not only the environment and ecosystem services but the very basis of our present and future prosperity. The costs of inaction far outweigh the costs of moving towards low-carbon societies. At the same time, stable and secure energy availability is indispensable for social and economic development; it is essential to ensure global energy security and energy access in developing countries, particularly the most vulnerable. Immediate and resolute action is needed by all countries to build on existing and new technologies and to design and deliver innovative economic, environmental and energy policies.

62. We emphasise the paramount importance of technology development and diffusion on a global scale in meeting these challenges and accelerating the economic recovery, while moving towards a low-carbon society. It is indispensable to encourage efficient markets, competitive frameworks and consistent public policies, to enhance investments in energy efficiency, clean technologies and renewable energies, which will in turn create opportunities for businesses worldwide. We will take the lead in accelerating the transition towards a low-carbon economy based on green, sustainable growth, reflecting the need to lower dependence on traditional energy sources. We reiterate the commitment made at the London Summit to make the best possible use of our fiscal stimulus programmes, also in light of the deliberations of the G8 Environment Ministerial in Siracusa and the G8 Energy Ministerial in Rome, and will ensure that such packages will contribute substantially towards building new, cleaner economies that will create new jobs and bring about a green and sustainable recovery. We call upon other countries to join us in this endeavour.



Climate change and environment

Fighting climate change

63. This is a crucial year for taking rapid and effective global action to combat climate change. We welcome the decision taken within the UN Framework Convention on Climate Change (UNFCCC) in Poznan to enter full negotiating mode, in order to shape a global and comprehensive post-2012 agreement by the end of 2009 in Copenhagen, as mandated by the Bali Conference in 2007. We must seize this decisive opportunity to achieve a truly ambitious global consensus.

64. We reconfirm our strong commitment to the UNFCCC negotiations and to the successful conclusion of a global, wide-ranging and ambitious post-2012 agreement in Copenhagen, involving all countries, consistent with the principle of common but differentiated responsibilities and respective capabilities. In this context we also welcome the constructive contribution of the Major Economies Forum on Energy and Climate to support a successful outcome in Copenhagen. We call upon all Parties to the UNFCCC and to its Kyoto Protocol to ensure that the negotiations under both the Convention and the Protocol result in a coherent and environmentally effective global agreement.

65. We reaffirm the importance of the work of the Intergovernmental Panel on Climate Change (IPCC) and notably of its Fourth Assessment Report, which constitutes the most comprehensive assessment of the science. We recognise the broad scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2°C. Because this global challenge can only be met by a global response, we reiterate our willingness to share with all countries the goal of achieving at least a 50% reduction of global emissions by 2050, recognising that this implies that global emissions need to peak as soon as possible and decline thereafter. As part of this, we also support a goal of developed countries reducing emissions of greenhouse gases in aggregate by 80% or more by 2050 compared to 1990 or more recent years. Consistent with this ambitious long-term objective, we will undertake robust aggregate and individual mid-term reductions, taking into account that baselines may vary and that efforts need to be comparable. Similarly, major emerging economies need to undertake quantifiable actions to collectively reduce emissions significantly below business-as-usual by a specified year.

66. We recognize that the accelerated phase-out of HCFCs mandated under the Montreal Protocol is leading to a rapid increase in the use of HFCs, many of which are very potent GHGs. Therefore we will work with our partners to ensure that HFC emissions reductions are achieved under the appropriate framework. We are also committed to taking rapid action to address other significant climate forcing agents, such as black carbon. These efforts, however, must not draw away attention from

ambitious and urgent cuts in emissions from other, more long-lasting, greenhouse gases, which should remain the priority.

Promoting the role of markets to reduce emissions

67. We believe that efficient markets, including carbon markets, supported by stable and predictable regulatory frameworks, are central to achieving these objectives. A wide range of competitive instruments and mechanisms, such as emissions trading schemes and performance-based regulation, constitute some of the most flexible and cost-effective means to foster economically sound investments in energy efficiency, renewable energy, clean and innovative technologies. Other measures, including, where appropriate, incentives, fees, emission and other taxes, progressive reduction of fossil fuel subsidies, consumer labelling, innovative financing mechanisms and public-private partnerships, designed and applied consistently with our international obligations, can also be useful in the context of policies that promote green and sustainable development models and accelerate the transition towards a low carbon society.

68. The elimination or reduction of tariff and non-tariff barriers to trade in environmental goods and services is essential to promote the dissemination of cleaner low-carbon energy technologies and associated services worldwide. Efforts should be intensified to ensure a successful outcome of the ongoing WTO negotiations on the liberalisation of environmental goods and services. Carbon leakage is an important issue to tackle. It must be addressed in a WTO compatible way. We support the aim of a comprehensive global agreement at Copenhagen, which we believe to be the most appropriate way to deal with any carbon leakage issues that may arise.

69. We support flexible, economically sound market-based approaches to emission reductions. In particular, cap & trade schemes, where implemented, have proved largely successful and improved understanding of the potential advantages, critical issues and indicators. The use of market mechanisms, including those under the Kyoto Protocol, provides opportunities to reduce emissions cost-effectively, while facilitating technology diffusion, low-carbon development and the involvement of emerging and developing countries. With a view to building on these experiences and to facilitate action under the global post 2012 agreement, we commit to:

- a) further explore, taking into account national circumstances, the potential of carbon trading systems and their possible linkages;
- b) cooperate among us and with other countries to expand carbon markets to the extent possible and reduce costs and align emission allowance trading schemes, with a view to developing transparent carbon markets which would expand to involve emerging and developing countries, including on a sectoral basis;
- c) support the development, reform and enhancement of project, programmatic and policy-based offset mechanisms, including the Kyoto Protocol's Clean



Development Mechanism (CDM), in order to encourage their use, enhance their effectiveness and environmental integrity, and facilitate actions from developing countries under the global, post-2012 agreement;

d) work with others to further develop market mechanisms under the Copenhagen agreement to possibly include sectoral trading and sectoral crediting mechanisms, to enhance the participation of emerging economies and developing countries in the market ensuring environmental integrity.

70. The private sector will continue to be an essential player in the efforts to address climate change. To trigger a change in direction and mobilise investments we will engage the private sector more actively, in order to bring its expertise into the international framework and enhance information exchange and partnerships between Governments and businesses.

71. Sectoral approaches can be useful tools to facilitate progressive involvement by emerging economies and reinforce economy-wide mitigation policies of developed countries. Analysis has highlighted the potential to curtail emissions by focusing on specific sectors and we welcome the ongoing work of the International Energy Agency (IEA) and others in this respect.

72. Attention should also be devoted to sectors, such as international aviation and maritime transport, that represent a significant and growing source of emissions and are characterised by a predominantly international dimension. We will use our participation in ICAO, IMO and UNFCCC processes to reach an agreed outcome for the post-2012 period to rapidly advance towards accelerated emission reductions for the international aviation and maritime sectors.

Technology development and research

73. The development and deployment of technologies and know-how in developed and developing countries will play a crucial role both in mitigation and adaptation to climate change and in moving towards low-carbon growth models. It is essential to substantially improve energy and resource efficiency in key sectors, as well as to develop and disseminate low-carbon technologies, in particular renewable energy. In this context, we stress the critical role of an efficient system of intellectual property rights (IPR) to foster innovation. Capitalizing on new technologies will require a major scientific effort and policy initiatives. Building on our existing commitments to urgently advance the development and deployment of clean energy technologies, consistent with existing international obligations, we will:

a) encourage and facilitate the development, deployment and diffusion, particularly through the engagement and leveraging of critical private sector investment, of advanced appropriate technologies in emerging and developing economies, which permit a technological leap and avoid lock-in;



- b) further promote international participation and cooperation in R&D activities and to this end we invite the IEA to further define its proposal for an international low-carbon energy technology platform;
- c) promote technology roadmaps, such as those being prepared by the IEA, to further the development and demonstration of innovative technologies;
- d) work with developing countries to build capacity to support the deployment, diffusion, demonstration and transfer of climate friendly technologies.

74. Recognising the importance of research and development, we committed in Toyako to increase investment in basic and applied clean technology research and development. We will intensify such efforts and explore options to enhance global technology cooperation. We ask our experts to assess progress in meeting these commitments, and report back by our meeting in Canada in 2010. We will promote further national and international fundamental research on the earth's climate. We believe that provisions on financing technology research, development, deployment and diffusion should form an integral part of the post-2012 agreement.

Financing

75. Financing is central to achieving an agreement at Copenhagen and requires mobilisation of significant financial resources, both public and private. Given its capacity to innovate, the private sector should play a pivotal role in financing investments in new technologies. Public resources should therefore seek to leverage private-sector financing, to support research, development and demonstration of low carbon technologies in order to accelerate the development and deployment of early stage technologies, and to aid implementation of adaptation and mitigation strategies in developing countries. To promote concerted efforts on technology and financing, we:

- a) strive for greater predictability of international support and affirm our intention to contribute our fair share, in the context of an ambitious deal in Copenhagen;
- b) affirm that all countries, except Least Developed Countries (LDCs), should participate in the financial effort to tackle climate change, according to criteria to be agreed, and we support consideration of the proposal by Mexico;
- c) call for the elaboration and implementation of an effective financial arrangement to support the post-2012 regime. We underline that mobilizing financing for developing countries, through a broad range of financial sources, including financial assistance, is required for adaptation and mitigation, and to facilitate the transition to low-carbon economies. Financial support needs to be efficient, effective and equitable and therefore linked to results in terms of emission reductions and adaptation actions;
- d) will work to ensure that the governance of mechanisms disbursing funds is transparent, fair, effective, efficient, and of balanced representation among developed



and developing countries. We stress the importance of building on existing instruments and institutions, such as the Global Environment Facility (GEF), multilateral development banks, adaptation funds and bilateral assistance agencies and the Climate Investment Funds (Strategic Climate Fund and Clean Technology Fund);

e) promote public-private partnerships, in order to facilitate targeted and efficient investments in research, development, deployment and diffusion of clean technologies, while mobilising additional resources from the private sector.

Adaptation

76. Recognising that even implementing ambitious mitigation steps will not avoid further climate impacts, we will define and implement effective adaptation and capacity building policies. We are deeply concerned about the consequences of climate change on development, ecosystem services, water and food security, agricultural output, forests, health and sanitation, particularly for LDCs and SIDS, but also for the poor and most vulnerable in all countries. We underline the possible security implications of the adverse impact of climate change and the potential for increased conflicts over scarcer resources. We will address these issues in a spirit of partnership between developed and developing countries and confirm our commitment to effectively address adaptation in the Copenhagen agreement. We will, in addition:

- a) mainstream effective adaptation strategies and risk assessments into international cooperation programmes and assist developing States in integrating adaptation efforts into national development plans and policies;
- b) significantly increase consideration of the role of ecosystems in adaptation measures, with a view to improving resilience of ecosystems, reducing vulnerability and underpinning new and sustainable growth models;
- c) strengthen knowledge networks for adaptation and support for research and capacity building related to vulnerability and impact assessments as well as planning and implementation of adaptation measures;
- d) address the need for financing for adaptation through appropriate bilateral and multilateral mechanisms.

Natural disasters

77. To address the increased threats of natural disasters and extreme weather phenomena caused by climate change, such as increased flooding, storm surges, droughts and forest fires, we will act to improve risk preparedness, prevention, monitoring and response times, particularly in developing countries, by:

- a) defining common guidelines for disaster prevention and management to be used in developing national plans, in collaboration with the UN International Strategy



for Disaster Reduction (UNISDR) and the World Meteorological Organisation (WMO), building on the Hyogo Framework for Action and on national experiences, as well as improving management of risks, awareness raising and training of the population and civil protection real-time response, such as logistical support for emergency situations;

b) supporting the ongoing work on the development of the Global Earth Observation System of Systems (GEOSS).

Forests and land degradation

78. Aware that deforestation accounts for approximately 20% of annual CO₂ emissions, and that forests are an essential repository of biological diversity and key to the livelihoods and rights of many people, we remain engaged in seeking the reduction of emissions from deforestation and forest degradation and in further promoting sustainable forest management globally. We will:

a) support the development of positive incentives in particular for developing countries to promote emission reductions through actions to reduce deforestation and forest degradation. Considering that these measures will provide tangible results only in the medium term, it is also crucial to undertake early action initiatives to urgently tackle drivers of deforestation, and we will cooperate to identify innovative instruments in this respect, including through initiatives such as UN programme on Reducing Emissions from Deforestation and Forest Degradation, Forest Carbon Partnership Facility (FCPF) and the Informal Working Group on Interim Finance for Reducing Emissions from Deforestation and Forest Degradation (IWG-IFR);

b) continue to support efforts to reduce emissions from deforestation and forest degradation, including the role of conservation, sustainable management of forests and enhancement of forest carbon stocks, as set out in the Bali Action Plan. We continue to support REDD and will consider the inclusion of financial mechanisms within the future global agreement on climate change;

c) encourage cooperation and the use of synergies between the UNFCCC and other international forest-related processes, and promote national strategies developed in collaboration with relevant players, including governments, indigenous peoples and local communities, civil society groups and the private sector;

d) enhance cooperation with partner countries to combat illegal logging and trade in illegally-harvested timber, in accordance with our obligations under international agreements and building on our previous commitments and actions, including those under the Forest Law Enforcement and Governance (FLEG) processes. We reaffirm our intention to promote transparent timber markets and trade in legal and sustainably produced timber. In that regard, we will follow up, where appropriate, with concrete actions on the preliminary list of options presented in 2008 by the G8 Forest Experts Report on Illegal Logging;



e) reinforce international cooperation and information sharing for sustainable forest management, including use of forest resources, prevention and management of forest fires and monitoring of pests and diseases.

79. We are deeply concerned about desertification and land degradation in drylands, as both causes and consequences of climate change. Acknowledging the substantial impacts of these phenomena on human well-being, poverty, food security and the environment, we recognise the efforts of the UN Convention to Combat Desertification (UNCCD) and call upon the Parties and existing funding mechanisms to strengthen synergies among the Rio Conventions in the implementation of selected projects. Furthermore, we will work with developing country partners to integrate effective Sustainable Land Management (SLM) into relevant cooperation programmes and assist them in integrating SLM into national development plans policies and national climate change mitigation and adaptation strategies.

Biodiversity

80. Recognising the intrinsic value of biodiversity and its essential contribution to economic and social well-being and the fundamental role of ecosystem services in poverty reduction, in the achievement of the Millennium Development Goals (MDGs), we:

- a) will reinforce our efforts to meet the 2010 Biodiversity Target to significantly reduce the current rate of biodiversity loss at the global, regional and national level;
- b) underline the necessity to establish a vision and an ambitious and achievable common framework for biodiversity beyond 2010, making use of the synergies between climate change and biodiversity policies. To this end, we endorse the “Carta di Siracusa” on Biodiversity as an effective means to promote a long-term strategy to enhance the conservation of biodiversity.

81. We also acknowledge that, despite international efforts to date, including within the framework of the Convention on Biological Diversity (CBD), the rate of biodiversity loss is increasing, exacerbated by climate change and impacts of human activities. In order to reduce the negative effects related to ecosystem degradation, including water and food scarcity and on carbon sinks and to strengthen the conservation and sustainable use of biological diversity, we will:

- a) strive to ensure that sustainable development policies take into account the benefits of ecosystem goods and services, integrating the conservation and sustainable use of biodiversity into all relevant sectors;
- b) work towards the completion of the negotiation on the international regime on access to and benefit sharing of genetic resources by 2010;
- c) strengthen and broaden international, regional, national and local activities to conserve biodiversity;



- d) continue to support the Potsdam Initiative launched in 2007 and in particular the ongoing global initiative, “The Economics of Ecosystems and Biodiversity”;
- e) further encourage the engagement of civil society, the business community and other relevant stakeholders for biodiversity conservation activities.

82. Recognising the need for robust scientific assessment, and in order to improve the science-policy interface for biodiversity and ecosystem services, we encourage the ongoing intergovernmental process under the United Nations Environment Programme (UNEP) on the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), striving to complete this process at the earliest possible time.

Education for Sustainable Development

83. We appreciate and encourage accelerating the ongoing international efforts, in particular by the UNESCO and other organizations, in promoting Education for Sustainable Development, as a life-long learning process enabling communities to find new solutions to emerging social, economic and environmental challenges.

Clean and accessible energy

84. Together with climate change, long term sustainable development models for all countries must also address the fundamental issues of energy availability - particularly through clean energy - and energy poverty. Fostering investments in energy infrastructures, energy efficiency, diversification of the energy mix and technological innovation is key to ensuring secure, clean and affordable energy to long term world needs, while substantially curbing carbon emissions.

85. We will support and improve international predictable legal and regulatory frameworks as an essential prerequisite for well functioning energy markets and for reducing investment risks and uncertainties in producing, transit and consuming countries.

Energy efficiency, diversification of the energy mix and technology

86. We recognise the need to scale up investments in energy infrastructures and technological innovation, and to adapt regulatory and institutional frameworks where necessary, to increase energy diversification and improve energy efficiency, as the most cost-effective means of reducing emissions and driving a green recovery while substantially improving energy security. We reaffirm the significance of energy saving and efficiency programmes. To this end we:



- a) commit to design and implement effective policies to improve energy efficiency in all the main sectors of our economies, and to actively promote conservation and energy efficiency among consumers;
- b) support the IEA's ongoing work on identification and dissemination of best practices, standards and recommendations for increasing energy efficiency.

87. We welcome the operational launch of the International Partnership for Energy Efficiency Cooperation (IPEEC), with a substantive agenda for promoting energy efficiency, and:

- a) look forward to activities as envisaged in the IPEEC work plan to help countries implement energy efficiency policies and to further information on a Global Energy Efficiency Action Initiative, taking into account the 25 recommendations of the IEA, and ask IPEEC to report back to the G8 Summit in France in 2011;
- b) ask IPEEC to incorporate the Sustainable Buildings Network, successfully developed as an important result under the energy pillar of the Heiligendamm Dialogue Process to exploit the potential of energy efficiency in residential, commercial and industrial buildings, and with a view to present its findings to the G8 Summit in France in 2011.

88. A comprehensive strategy to ensure sustainable development and long-term energy security must envisage a portfolio of different energy sources. In the context of diversification of the energy mix, renewable energies will play an essential role, as these meet the dual challenge of reducing emissions and lowering fossil-fuel consumption and dependence. We will:

- a) improve policy and regulatory frameworks in order to boost investments in renewable energies, and promote their deployment and diffusion also in emerging and developing countries;
- b) continue to support international cooperation and partnerships on renewable energies. We note with interest the launch of the International Renewable Energy Agency (IRENA) which we invite to cooperate with other international organisations to actively promote the deployment of renewable energies;
- c) promote research and development of and investment in smart grids, as a means to accelerate efficient and secure integration of renewable energy sources and distributed generation into the electricity system and enhance energy efficiency;
- d) support regional initiatives aiming at promoting renewable energy and low carbon technologies, such as the Mediterranean Solar Plan and the Asia-Pacific Partnership on Clean Development and Climate;
- e) considering the importance of further developing sustainable bioenergies and alternative fuels we welcome the work of the Global Bioenergy Partnership (GBEP) in developing a common methodological framework to measure greenhouse gas emissions from biofuels and invite GBEP to accelerate its work in developing



science-based benchmarks and indicators for sustainable biofuel production and to boost technological cooperation and innovation in bioenergy.

89. We witness that a growing number of countries have expressed interest in nuclear power programmes as a means to address climate change and energy security concerns. In the opinion of these countries, nuclear energy can play an essential role, as it meets the dual challenge of reducing greenhouse gas emissions and lowering fossil-fuel consumption. We reaffirm that the fundamental prerequisite for the peaceful use of nuclear energy is the international commitment to safeguards/non proliferation, safety and security (3S). In close collaboration with the International Atomic Energy Agency (IAEA), we will continue to promote the development and implementation of robust international treaties, standards, recommendations, and monitoring procedures both at international and national levels. In this context, we promote international collaboration at all levels, including cost-benefit analysis, research, infrastructure and human resources development, plant construction, operation, decommissioning and waste management, in order to ensure the highest technically available safety and security standards and accelerate further development and deployment of innovative technologies. We stress the key role played by the IAEA in promoting the highest standards of non proliferation, safety and security. We call on all countries interested in the civil use of nuclear energy to engage in constructive international cooperation.

90. Considering the above mentioned challenges, the G8 Nuclear Safety and Security Group (NSSG) will continue in its work to consider nuclear safety and security issues. We welcome the initiative launched by the NSSG on nuclear safety and security Education and Training, aimed at building capacity in countries embarking on or expanding nuclear programmes.

91. We are aware that despite effective diversification strategies, fossil fuels will continue to be an essential component of the energy mix in many countries, at least in the medium term. The development and deployment of innovative technologies such as Carbon Capture and Storage (CCS) is therefore expected to contribute substantially to reducing emissions. Reaffirming the commitment made in Toyako for the launch of 20 large-scale Carbon Capture and Storage demonstration projects globally by 2010, we will:

- a) accelerate the design of policies, regulatory frameworks and incentive schemes focused on the development and deployment of CCS technology;
 - b) encourage greater involvement of developing countries by promoting collaboration and knowledge diffusion, also through IEA regional roundtables;
 - c) work to identify sources of financing for CCS demonstration projects;
 - d) invite the IEA, together with the Carbon Sequestration Leadership Forum (CSLF), to report on and further develop technology roadmaps and to work with the private sector to accelerate the construction and operation of demonstration projects.
- To this end, we welcome the work on criteria by the IEA to facilitate tracking of



global progress on these projects in view of an update to be presented at our Summit in 2010;

e) following the launch of the Global Carbon Capture and Storage Institute (GCCSI) we invite it to actively cooperate with the ongoing activities of the IEA and the CSLF to ensure that these efforts are mutually reinforcing;

f) identify investment needs and overcome obstacles, including the potential development of innovative partnerships with multilateral financial institutions.

Combating energy poverty

92. Access to modern energy services is essential for human and social development, and for the achievement of the MDGs. Energy access and availability are tightly interlinked with the improvement of living conditions, both in rural and urban areas, providing for cleaner water, more effective sanitation and health services, better education systems and other essential services. Moreover, energy input for productive uses is crucial for job creation and income generation.

93. Noting that energy poverty remains widespread in many areas, most notably in Africa and Asia, we support the launch, together with interested countries, of the Expert-Level Working Group on Energy Poverty following the proposal made at the G8 Energy Ministers Meeting in Rome, and encourage it to submit a report before the 2010 Muskoka Summit. We are committed to take swift, resolute action, with developing country governments, international financial institutions, local communities and the private sector. Building upon previous commitments, we will:

a) promote the development of transparent national policies able to effectively use public resources and attract and stimulate private sector investments in rural electrification and the deployment of renewable energy systems and alternative cooking technologies and fuels;

b) encourage active involvement of local communities in rural electrification programmes, through the deployment of appropriate technologies and the development of skills and capabilities in cooperation with the private sector;

c) ensure that work to improve energy access contributes to put developing countries on the path to low-carbon development, by reducing high carbon lock-in, as well as supporting exploitation of new technologies, improved energy security and off-grid access in remote areas;

d) enhance capacity building initiatives, aimed at increasing energy efficiency, diffusion of renewable energies and efficient use of natural resources;

e) enhance capacity building initiatives for the sustainable development and deployment of oil, natural gas and electricity regional energy networks;

f) stimulate the mobilisation of increased financing for energy access, including through the improvement of investment conditions.