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AD HOC WORKING GROUP ON LONG-TERM COOPERATIVE ACTION UNDER THE CONVENTION Fifth session

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Item 3 (a-e) of the provisional agenda

Enabling the full, effective and sustained implementation of the Convention through long-term cooperative action now, up to and beyond 2012, by addressing, inter alia:

A shared vision for long-term cooperative action

Enhanced national/international action on mitigation of climate change

**Enhanced action on adaptation** 

Enhanced action on technology development and transfer to support action on mitigation and adaptation

Enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation

# Fulfilment of the Bali Action Plan and components of the agreed outcome

Note by the Chair\*

#### Part II

## Summary

This document was prepared by the Chair of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) in response to a request from the AWG-LCA at its fourth session. The purpose of the document is to focus the negotiating process on the fulfilment of decision 1/CP.13 (the Bali Action Plan) and on the components of the agreed outcome to be adopted by the Conference of the Parties at its fifteenth session, by describing areas of convergence in the ideas and proposals of Parties, exploring options for dealing with areas of divergence, and identifying gaps that might need to be filled. The document is built upon the ideas and proposals of Parties, including those assembled in FCCC/AWGLCA/2008/16/Rev.1. The document consists of two parts. Part I contains an explanatory introduction and an overview, including suggestions for focusing the negotiations at AWG-LCA 5. Part II covers in some detail the state of consideration by the AWG-LCA of Parties' ideas and proposals on all the elements of the Bali Action Plan, structured in a manner that reflects the current organization of work of the group.

<sup>\*</sup> This document was submitted after the due date owing to the date of the submission of views.

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# I. A shared vision for long-term cooperative action<sup>1</sup>

- 1. Expressions by Parties of their vision for long-term cooperative action have revealed that important aspects of the vision appear to be shared by Parties. A diversity of views remains on the weight to be given to individual aspects of the vision.
- 2. Consideration needs to be given to the question of whether, and if so how, a shared vision statement in the agreed outcome called for in the Bali Action Plan (decision 1/CP.13) should reflect the essential agreed elements of action on adaptation, mitigation, finance and technology. If it were decided that it should, the statement would need to encompass, inter alia, the following topics:
  - (a) Approaches to long-term cooperative action on the basis of equity and in accordance with the provisions and principles of the Convention, in particular the principle of common but differentiated responsibilities and respective capabilities, taking into account social and economic conditions and other relevant factors;
  - (b) The global priorities of economic and social development and poverty eradication, and the central role that sustainable and climate-resilient development will play in reducing vulnerability to a changing climate and in making economic growth compatible with climate protection;
  - (c) Adaptation to the adverse effects of climate change, being of high priority for all countries, and special attention to the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change, especially the least developed countries (LDCs) and small island developing States (SIDS), taking into account the needs of countries in Africa affected by drought, desertification and floods;
  - (d) Economic transition that shifts global economic growth patterns towards more sustainable production and consumption, promoting sustainable lifestyles and a move towards a low-carbon society;
  - (e) A long-term global goal for emission reductions, based on science, to guide direction to long-term cooperative action, making it sufficiently effective to bring about the deep cuts in global emissions required to achieve the ultimate objective of the Convention and allow for the option of achieving lower stabilization levels and thereby reduce the risk of more severe climate change impacts;
  - (f) The leadership by developed countries in emission reductions aimed at achieving a long-term goal, guided by a medium-term goal;
  - (g) The determination of developing countries to take nationally appropriate mitigation actions (NAMAs) in the context of sustainable development and the determination of developed countries to provide support in the form of technology, finance and capacity-building, all of the above in a measurable, reportable and verifiable manner;
  - (h) The magnitude of the financial and technology needs relating to enhanced action on mitigation and adaptation; and the required resolve to mobilize adequate, predictable and

In its paragraph 1 (a), the Bali Action Plan (decision 1/CP.13) calls for a shared vision for long-term cooperative action, including a long-term global goal for emission reductions, to achieve the ultimate objective of the Convention, in accordance with the provisions and principles of the Convention, in particular the principle of common but differentiated responsibilities and respective capabilities, and taking into account social and economic conditions and other relevant factors.

The workshop on a shared vision for long-term cooperative action, held at the fourth session of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention, is relevant to this chapter.

- sustainable financial resources; to drive technology innovation and accelerate the deployment and diffusion of existing technologies; and to provide for access to opportunities to acquire sufficient capacity to respond to the challenges of climate change in a timely manner for countries lacking such capacity;
- (i) Ways to maximize the positive and minimize the negative economic and social consequences of enhanced action on mitigation of climate change and ways to promote economic diversification in order to build resilience to potential consequences;
- (j) The need to build a sound foundation for decision-making that is based on relevant scientific, technical and economic considerations and regularly re-evaluated in the light of new findings in these areas.

## A long-term global goal for emission reductions

- 3. A shared vision for long-term cooperative action is to include a long-term global goal for emission reductions, which would provide direction to long-term cooperative action and guide short- and medium-term action. While Parties concur on many of its characteristics, further consideration is needed in terms of its quantification and the contribution of different groups of countries to achieving such a goal.
- 4. There is a convergence of views that a long-term global goal for emission reductions should:
  - (a) Be aspirational or indicative;
  - (b) Be ambitious and reflect the urgent need to address climate change, aiming to achieve the ultimate objective of the Convention as stated in its Article 2;
  - (c) Be based on the best available scientific information, in particular from the Intergovernmental Panel on Climate Change (IPCC), and be reviewed on a regular basis on the basis of evolving scientific evidence;
  - (d) Have as one of the key benchmarks the minimization of further climate change impacts on vulnerable developing countries;
  - (e) Be achievable and realistic, considering cost-effective emission scenarios;
  - (f) Not undermine global economic development;
  - (g) Be comprehensive, covering all anthropogenic emissions and removals of greenhouse gases (GHGs).
- 5. Parties concur that 2050 is an appropriate time frame for a long-term goal. A range of options have been identified for quantifying such a goal, based on:
  - (a) A level of stabilization of GHG concentrations in the atmosphere. Parties have proposed levels of around 450 ppm carbon dioxide equivalent (CO<sub>2</sub> eq) or 350 ppm CO<sub>2</sub> eq;
  - (b) A limit to the global average temperature increase. Options for quantifying such a limit put forward by several Parties include around 1.5 °C above the pre-industrial level and 2 °C above the pre-industrial level. Other Parties have questioned the utility of setting a quantified limit for global temperature increase;
  - (c) GHG emission reductions at a global level. Options proposed by Parties for quantification include:
    - (i) A reduction of 50 per cent of 1990 levels, or without specifying the base year;

- (ii) Reductions of between 75 and 85 per cent (including ranges within these figures) of 1990 levels;
- (d) Other approaches to specifying the level of stabilization or emission reductions, including global average GHG emissions per capita reduced to about 2 t CO<sub>2</sub>.
- 6. In determining the pathway to achieve the long-term goal, Parties have converged on the need for global GHG emissions to peak within a certain time frame. Parties have proposed a number of options for such a time frame, including emissions peaking by 2015, by 2020, within 10–20 years or in the next 10–15 years.
- 7. There is a lack of convergence on the issue of the contribution by different groups of countries to the achievement of the long-term goal and pathways to it.
- 8. With regard to the contribution by developed countries as a group, the proposals include:
  - (a) For the year 2050: reduction in their GHG emissions of 85 per cent, of 95 per cent, within the range of 75–95 per cent and within the range of 80–95 per cent of 1990 levels;
  - (b) For the year 2020: reduction in their GHG emissions of 25–40 per cent of 1990 levels;
  - (c) Not setting any quantitative ranges for emission reductions, especially for the purpose of setting targets for reduction of national emissions.
- 9. With regard to the contribution by developing countries as a group, Parties have proposed:
  - (a) For the year 2050: a reduction in their GHG emissions of 25 per cent of 2000 levels;
  - (b) For the year 2020: substantial deviation in emissions from the baseline. Some Parties have proposed a range for this deviation of 15–30 per cent, at least for a group of most economically advanced developing countries;
  - (c) Not setting any quantitative ranges for emission reductions, but defining emissions paths for developing countries, which would ensure economic growth and social and welfare benefits.

# II. Enhanced action on adaptation<sup>2</sup>

# A. A cooperative framework for promoting adaptation and resilience

10. Parties concur that adaptation to the additional burden of climate change is important to all countries, especially developing countries, particularly LDCs, SIDS and countries in Africa affected by drought, floods and desertification. Parties converge on the need for an overarching framework that would address different aspects of adaptation, such as the preparation and implementation of national plans, and the promotion of enabling environments and increased knowledge-sharing among all Parties. The framework would be structured but flexible. Appropriately scaled up and streamlined financial and technological support will be needed to support adaptation action in developing countries. In addition,

The Bali Action Plan, in its paragraph 1 (c) (i–v), calls for enhanced action on adaptation, including consideration of international cooperation to support urgent implementation of adaptation action; risk management and risk reduction strategies; 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; economic diversification to build resilience; and ways to strengthen the catalytic role of the Convention.

The following workshops of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) are relevant to this chapter: the workshop on risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance (held at the fourth session of the AWG-LCA); and the workshop on advancing adaptation through finance and technology, including national adaptation programmes of action (held at the second session of the AWG-LCA).

risk reduction and risk management have been identified in the Bali Action Plan as important components of adaptation action, and there has been much discussion by Parties on possible mechanisms to deal with risk.

# 1. Formulating and implementing adaptation plans

- 11. Parties concur that adaptation planning and implementation should take place within the framework for adaptation described in paragraph 10 above. Adaptation planning and implementation should be undertaken in all countries, with a view to ensuring that the process effectively reflects priorities and engages a wide range of stakeholders, as well as making use of new and existing knowledge and experiences. In this context Parties concur that:
  - (a) Adaptation plans, taking into account all sectors, should be integrated into long-term planning and policies;
  - (b) Adaptation actions should be prioritized;
  - (c) Priority should be given to the needs of the most vulnerable countries;
  - (d) Scientific information and analytical tools should be integrated into the adaptation planning process;
  - (e) Capacity-building should be promoted to enable the effective implementation of adaptation;
  - (f) Assessments should be undertaken of impacts, vulnerability and adaptation (including costs and benefits), as well as of those areas that are expected to suffer from the most severe impacts;
  - (g) Engagement with the private sector and other stakeholders should be promoted;
  - (h) Knowledge, experiences and lessons learned from existing activities, including those carried out at the community level as well as activities from ongoing initiatives such as the Nairobi work programme on impacts, vulnerability and adaptation to climate change,<sup>3</sup> should be integrated into adaptation planning;
  - (i) The proposed national plans should benefit from experience in developing national adaptation programmes of action (NAPAs),<sup>4</sup> but go beyond the concept of urgent and immediate needs and the project approach toward a long-term programmatic approach to adaptation.
- 12. There is convergence on the view that institutional arrangements to ensure effective adaptation planning and implementation at the national level are necessary to engage and coordinate the work of a broad range of stakeholders (see also paras. 16 (d) and 19 below).

The Nairobi work programme is implemented by Parties, a large group of intergovernmental and non-governmental organizations, the private sector, communities and other stakeholders to assist all Parties, in particular developing countries, including the LDCs and SIDS, to improve their understanding of, and decision-making on, impacts, vulnerability and adaptation to climate change. Objectives and outcomes of the programme are outlined in decision 2/CP.11. Activities mandated by the Subsidiary Body for Scientific and Technological Advice and achieved during the first phase of the work programme are described in document FCCC/SBSTA/2008/12. Current mandates for activities for the second phase are given in document FCCC/SBSTA/2008/6, paragraphs 10–74.

NAPAs provide a process for LDCs to identify priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change. The rationale for NAPAs rests on the limited ability of LDCs to adapt to the adverse effects of climate change. See <a href="http://unfccc.int/4722.php">http://unfccc.int/4722.php</a>.

- 13. There is also convergence on the view that the UNFCCC process should play a leading, catalytic role in guiding, coordinating and promoting adaptation planning and implementation in all countries.
- 14. There appears to be a convergence of views on the need for more adequate data and information, as well as the need for enhanced sharing and maintaining of adaptation-related data and information.
- 15. Further consideration is needed of the means for monitoring adaptation, and arrangements to ensure feedback to the UNFCCC process.
  - 2. Building resilience, creating enabling environments and sharing knowledge
- 16. There is convergence on the view that enabling environments for adaptation should be created and that adaptation action should be incentivized through:
  - (a) Climate-resilient development, and building resilience through economic diversification in response to the impact of climate change;
  - (b) Regulatory policies, legislative changes, national capacity-building, removal of barriers and other supportive approaches;
  - (c) Knowledge sharing among a broad range of stakeholders such as international organizations, local communities and the private sector, and enabling knowledge sharing to take place, for example by enhancing regional centres;
  - (d) Enhancing institutional arrangements and regional cooperation in order to coordinate and to enable adaptation actions, at the national, regional and international levels, and to facilitate the development of adaptation plans at the national level.
- 17. There is convergence among Parties on the view that engaging a wide range of stakeholders (among them international organizations, local communities and the private sector) in knowledge sharing is critical, and that the Nairobi work programme currently serves as a hub for adaptation knowledge sharing and should be enhanced to play a similar role in a more demanding future adaptation regime.
- 18. Parties concur that there is a need to use regional centres to effect and enhance knowledge sharing and to deliver training and capacity-building. Further consideration is needed on whether this requires the establishment of new regional centres, the enhancement of existing centres, or a combination of both options.
- 19. There appears to be a convergence of views on the need for further effort related to enhancing institutional arrangements under the auspices of the UNFCCC. Further consideration is needed of proposals on this matter. These proposals include strengthening existing institutional arrangements and/or creating new ones, such as:
  - (a) Committees to enhance adaptation action;
  - (b) Expert groups and working groups;
  - (c) Mechanisms and/or new subsidiary body/bodies.
    - 3. Risk reduction and management, and insurance-related mechanisms
- 20. Parties concur that managing and reducing risk, and building resilience, are key building blocks of adaptation, and can be integrated into broader adaptation strategies and national adaptation programmes. Mechanisms to manage, reduce and share risk would assist Parties, particularly the most vulnerable, in better responding to the adverse effects of climate change.

- 21. There is convergence on the view that Parties should foster resilience to climate variability and change through:
  - (a) Assessing, managing and reducing risk, and building capacity to do so;
  - (b) Disaster reduction strategies and actions to address loss and damage associated with climate change impacts, drawing on the experience of the Hyogo Framework for Action;<sup>5</sup>
  - (c) Engaging the private sector and other relevant stakeholders and communities, specifically in the context of risk and insurance.
- 22. Further consideration is needed on whether a new risk mechanism should be created under the Convention, incorporating such areas as insurance, rehabilitation and/or compensation, and risk management, to support countries' efforts in risk management.

#### B. Matching enhanced action on adaptation with financial and technological support

- 23. In line with the Bali Action Plan, there is convergence among Parties on the need for developing countries to receive new and additional, sustainable and predictable financial resources and investment to undertake adaptation action and meet the additional costs posed by climate change; <sup>6</sup> as well as on the need for action on technology development and transfer, and capacity-building, to support action on adaptation.
- 24. With regard to the activities to be supported, there is convergence on the view that financial resources could be used, including through programmatic approaches, to support adaptation actions such as:
  - (a) Preparation and implementation of national adaptation plans in developing countries.

    This would involve supporting activities encompassed at all adaptation stages, including climate change risk, impact and vulnerability assessment, planning, implementation and monitoring;
  - (b) Integration of adaptation into sectoral and national planning;
  - (c) Risk reduction and management;
  - (d) Technologies for adaptation;
  - (e) Creation and sustainment of enabling environments, including through the funding of capacity-building;
  - (f) Economic diversification in response to the impact of climate change;
  - (g) Activities to enhance knowledge sharing.

25. Priority areas in technology support for adaptation could include, inter alia, technologies for monitoring, forecasting and modelling of climate change, for early warning, for improving the resilience of agriculture to the impacts of climate change, and for coastal zone management.

<sup>&</sup>lt;sup>5</sup> The Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters. Adopted at the World Conference on Disaster Reduction, held from 18 to 22 January 2005, in Kobe, Japan. Available at <a href="http://www.unisdr.org/eng/hfa/docs/Hyogo-framework-for-action-english.pdf">http://www.unisdr.org/eng/hfa/docs/Hyogo-framework-for-action-english.pdf</a>>.

<sup>&</sup>lt;sup>6</sup> This subchapter concerns how financial resources and technology would be employed. Issues regarding the generation of financial resources and investment and ways and means in which financial resources are managed, governed and delivered are covered in chapter IV.

- 26. Further consideration is needed regarding the portion of funding allocated to adaptation action. This may require further consideration of criteria for determining support, possibly based on whether an action is:
  - (a) Is a stand-alone adaptation intervention;
  - (b) Is geared towards climate-proofing development activities by integrating the additional climate change risk;
  - (c) Is aimed at expanding the adaptive capacity of vulnerable communities.<sup>7</sup>
- 27. Further consideration is also needed on possible support for risk sharing mechanisms, including insurance, in the most vulnerable countries, and on the role of public–private partnerships in these mechanisms.
- 28. As for the allocation and use of financial resources, there is convergence on the view that financial support should be provided as a priority to particularly vulnerable developing countries, including LDCs, SIDS and countries in Africa affected by drought, floods and desertification. Clarification is required on:
  - (a) The possible consideration of levels of vulnerability determined by national circumstances, respective capabilities, levels of risk and impacts, in any further prioritization of support;
  - (b) Monitoring and feedback associated with the provision and utilization of financial resources for the implementation of national adaptation action.

## III. Enhanced action on mitigation<sup>8</sup>

#### A. Mitigation by developed countries

29. Several Parties have noted in their submissions that Parties to the Kyoto Protocol are currently engaged in the process of establishing further commitments for developed countries under the Kyoto Protocol, and that, within that process, such issues as national emission reduction or limitation

The technical paper entitled "Investment and financial flows to address climate change: an update", FCCC/TP/2008/7, prepared by the secretariat, addresses similar issues. See page 45, table 13.

The Bali Action Plan, in its paragraph 1 (b) (i–vi), calls for the consideration of enhanced national/international action on mitigation of climate change, including the consideration of measurable, reportable and verifiable nationally appropriate mitigation commitments or actions by all developed country Parties; NAMAs 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; policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries; cooperative sectoral approaches and sector-specific actions; various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions; and economic and social consequences of response measures.

The following workshops of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) are relevant to this chapter: the workshop on subparagraphs 1 (b) (i) and 1 (b) (ii) of the Bali Action Plan (to be held at the fifth session of the AWG-LCA); the workshop on economic and social consequences of response measures (para. 1 (b) (vi) of the Bali Action Plan) (to be held at the fifth session of the AWG-LCA); the workshop on opportunities and challenges for mitigation in the agricultural sector (to be held at the fifth session of the AWG-LCA); the workshop on policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (held at the third session of the AWG-LCA); and the workshop on cooperative sectoral approaches and sector-specific actions, in order to enhance implementation of Article 4, paragraph 1 (c), of the Convention (held at the third session of the AWG-LCA).

objectives, base year definitions, commitment period duration, the range of GHGs to be covered and methodological guidance are being discussed. Some Parties have expressed a view on the need to consider the relationship between the processes of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) and the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA). This subchapter does not cover these issues and concentrates on those aspects that are explicitly outlined in the Bali Action Plan and have been specifically addressed by most Parties in their submissions.

- 1. Nationally appropriate commitments and actions, comparability of efforts, and national circumstances
- 30. Parties concur that developed countries have a leadership role to play in modifying longer-term trends in GHG emissions by contributing significantly to global mitigation efforts by undertaking ambitious nationally appropriate mitigation commitments and actions.
- 31. A number of Parties have recalled that for most developed country Parties, commitments to achieve quantified emission limitation and reduction objectives would be established under the AWG-KP process. They have suggested that commitments for developed country Parties that are not Parties to the Kyoto Protocol would need to be established in accordance with the Bali Action Plan, while ensuring comparability of efforts among developed countries and taking into account their national circumstances. The options and approaches suggested by Parties in this respect include the use of criteria to ensure comparability of efforts and application of a sectoral approach; such options and approaches require further consideration.
- 32. Parties have also made a number of general suggestions for the process of establishing quantified emission limitation and reduction objectives, such as:
  - (a) Setting voluntary but binding commitments;
  - (b) Defining through negotiations the "nationally determined" commitments or actions that would reflect comparable efforts;
  - (c) Using a sectoral approach as part of a "bottom-up" approach to determining a reduction or limitation objective at the national level;
  - (d) Using historical responsibilities for climate change as a basis.
- 33. The AWG-LCA may need to consider such suggestions, taking into account related discussions under the AWG-KP process.
- 34. Parties have also put forward various suggestions and options for mitigation actions that would complement commitments to achieve quantified emission limitation and reduction objectives. These include using sectoral approaches in setting national targets or identifying actions, or considering approaches to mitigating emissions from fuels sold for use in international aviation and maritime transport. Such suggestions require further consideration.
  - 2. Measurement, reporting and verification of actions and commitments
- 35. Parties concur that the reporting and review processes under the Convention and the Kyoto Protocol (for Parties to the Kyoto Protocol), including the methodologies and procedures for annual reporting and review of national GHG inventories and for periodic reporting and review of national communications, provide a foundation for measurement, reporting and verification of commitments and actions of developed countries. Parties also concur that monitoring of compliance with commitments or actions could be built on the existing compliance mechanisms under the Kyoto Protocol, subject to the nature of commitments or actions and taking into account experiences gained from other international agreements if needed.

36. There is convergence among Parties on the view that a measurement, reporting and verification system should enable the monitoring of progress in achieving quantified emission limitation and reduction objectives as well as progress in fulfilling other mitigation commitments and actions, including those for which outcomes are not directly measurable. The various specific suggestions put forward by Parties with regard to requirements for measurement, reporting and verification would need to be elaborated further in conjunction with the consideration of commitments or actions in the context of the Bali Action Plan. Further consideration is also needed on whether, and if so, which, provisions should apply for measurement, reporting and verification of the costs and impacts of mitigation actions, policies and measures, including verification of impact assessments and efforts to reduce adverse impacts of actions, policies and measures on developing countries.

#### **B.** Mitigation by developing countries

- 1. Nationally appropriate mitigation actions by developing countries
- 37. Parties concur that NAMAs should contribute to the sustainable development and economic growth of developing countries, as well as to the global effort to mitigate climate change in accordance with countries' capabilities and national circumstances. Where appropriate, NAMAs should build on existing actions, plans, programmes and strategies. There is a convergence of views that such actions should be determined and formulated at a national level and on a voluntary basis.
- 38. There is also convergence on the idea that NAMAs would be defined in the context of Article 4, paragraph 1(b), and Article 12, paragraph 4, of the Convention.
- 39. Parties have proposed a range of actions that can constitute a NAMA, including:
  - (a) Sustainable development policies and measures, nation- or sector-wide mitigation programmes, as well as activities and projects (e.g. clean development mechanism-type activities);
  - (b) Low-carbon development plans and strategies;
  - (c) National sector-based mitigation actions and standards;
  - (d) Actions under para. 1 (b) (iii) (REDD-plus)<sup>9</sup>;
  - (e) Technology deployment programmes;
  - (f) Relevant standards, laws, regulations and targets at a national or sectoral level;
  - (g) Cap-and-trade schemes.

40. Parties are converging on the approach of establishing a registry of NAMAs. There also appears to be convergence on the idea of a mechanism (established in connection with or as part of the registry) to match pledges of mitigation action by developing countries with pledges of financial and technological support by developed countries. Such a registry and "matching system" would perform the following functions:

- (a) Register NAMAs being undertaken or pledged by developing countries;
- (b) Register financial, technological and capacity-building support for NAMAs which has been given or pledged by developed countries, or has been mobilized through the Convention;

In this document, issues related to policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries are referred to collectively as actions under para. 1 (b) (iii) (REDD-plus).

- (c) Match NAMAs with pledges or sources of support;
- (d) Receive and manage information on measurement, reporting and verification of actions, including their outcomes in terms of limiting and/or reducing GHG emissions (see also paras. 53–56 below);
- (e) Receive and manage information on measurement, reporting and verification of support (see also paras. 64–66 below).
- 41. Further consideration is needed on the following key aspects of the registry and the possible matching system:
  - (a) What information would be required for each action?
  - (b) Who could register a pledge (e.g. Parties only or different levels of government)?
  - (c) How would the extent of support requested (none, partial or total) and the type of support (e.g. public funding, existing flexibility mechanism, emissions trading, etc.) affect the registration process?
  - (d) What would be the purpose of the matching system: to allocate support, or to facilitate and/or monitor bilateral decision-making?
- 42. There is a divergence of views on whether the legal nature of actions (voluntary and non-binding or binding) should be different for different groups of countries (these would be identified according to a set of criteria reflecting countries' economic development and capacity). There is also a divergence of views on whether the nature of, and requirements for, measurement, reporting and verification of actions by certain groups of developing countries should be similar to those for developed countries.

Additional issues relating to mitigation actions under para. 1 (b) (iii) (REDD-plus)

- 43. Parties concur that actions under para. 1 (b) (iii) (REDD-plus) could form an important part of the mitigation efforts of those developing countries that have mitigation potential in this area. There is convergence on the view that as part of the implementation of these actions, co-benefits, broad participation and sustainable forest management (consistent with long-term sustainable land management) should be promoted, and the issues of permanence and leakage should be addressed.
- 44. There is also convergence on the view that policy approaches should:
  - (a) Be performance-based, so that support for implementation is based on results;
  - (b) Aim at achieving a national level of implementation, taking into account national circumstances.
- 45. In this regard, further consideration is needed on the extent to which subnational approaches should be allowed in the initial phases of implementation.
  - 2. Matching enhanced action on mitigation with financial and technological support
- 46. There is convergence with regard to the activities that would be supported, with Parties stating that financial resources and technology may be used to enable the full range of NAMAs, from single activities and projects to national actions (see para. 39 above). This may include:
  - (a) Activities at any stage of a national mitigation programme, including during planning, implementation and monitoring;
  - (b) Creating and sustaining enabling environments for mitigation in developing countries, including through capacity-building, removing barriers, and defining, strengthening and

- implementing technology-specific policies and measures aimed at promoting deployment of low-carbon technologies and national climate policies;
- (c) Establishing and maintaining registration systems;
- (d) Undertaking measurement, reporting and verification of actions;
- (e) Improving the exchange of information on mitigation technologies, including information on best practices, cost and abatement potential;
- (f) Preparing technology needs assessments (TNAs) that serve as the basis for financing technology transfer projects and programmes and as a starting point for technology transfer activities at the international level.
- 47. There is also convergence on the view that technology support for mitigation should be directed to technologies in sectors with the most emissions and/or greatest potential for emission reductions, and to those technologies that provide significant co-benefits.
- 48. There is a lack of convergence on whether broad categories of NAMAs should be agreed to at the international level and to what extent such categories would determine eligibility for financial and technology support.
- 49. Parties are converging on the view that all developing countries are eligible for support for mitigation activities. Further consideration is required on whether criteria would be used to determine the proportion of financial resources that a developing country is eligible to receive.
- 50. Regarding requirements for support of mitigation actions, further consideration is needed on whether, and under what circumstances, financial resources should be delivered up front or after the supported mitigation action reaches a pre-defined performance level. This also raises the question of how the performance of the action would be verified.

Additional issues relating to support of actions under para. 1 (b) (iii) (REDD-plus)

- 51. Parties are converging on the view that positive incentives and support for actions under para. 1 (b) (iii) (REDD-plus) should be provided. There is a lack of convergence on how these actions should be supported (see chapter IV below).
- 52. On the subject of which elements should receive support, there is convergence on supporting readiness activities, including capacity-building, institutional strengthening, technical assistance, improving governance and enforcement, as well as on initiating national programmes and demonstration projects (see chapter IV below).
  - 3. Measurement, reporting and verification of actions and support

Measurement and reporting of actions

- 53. As regards which elements of an action should be measured (where appropriate) and/or reported (including under the registry), Parties appear to be converging on the view that this should include:
  - (a) Information on the implementation of voluntary mitigation plans, programmes and actions themselves (e.g. those listed in para. 39 above);
  - (b) The reduction in GHG emissions achieved by the action in relation to the national GHG trajectories (e.g. at a national or sectoral level);
  - (c) The incremental cost of the action, and the support needed;
  - (d) The sustainable development benefits and co-benefits.

- 54. There is convergence on the view that adequate and accessible support should be provided to developing countries to enable them to develop and maintain capacity to conduct national GHG emissions inventories more frequently.
- 55. On how actions and their outcomes should be measured (where appropriate) and reported, there is convergence on the view that this process should build on the experiences gained from the Convention, including in using IPCC methodology (including actions under para. 1 (b) (iii) (REDD-plus)), and take into account lessons from other international agreements in this area. Parties are also converging on the view that measurement and/or reporting should be carried out in accordance with internationally agreed guidelines and reported to the Conference of the Parties (COP) on a regular and more frequent basis than is currently the case for national communications. Parties concur that lighter reporting requirements should apply to LDCs and SIDS.
- 56. Further consideration is needed on the following questions:
  - (a) Should measurement and reporting requirements for NAMAs be generic or specific to the type of action?
  - (b) How would requirements for measurement and/or reporting depend on the support received?

## Verification of actions

- 57. There is convergence on the view that verification should serve to build confidence among Parties and provide adequate information to the COP to enable it to assess progress towards global mitigation goals.
- 58. There appears to be convergence on the following:
  - (a) Requirements for verification would depend on whether actions were undertaken unilaterally or with international support;
  - (b) Actions supported by finance and technology and actions generating carbon credits would need to meet higher standards of verification than actions undertaken without international support;
  - (c) More flexible verification requirements for any type of action should apply to LDCs and SIDS.
- 59. The question arises of whether all actions should be verified by national entities and in accordance with national procedures, or whether verification should occur at the international level (e.g. under the auspices of the UNFCCC) and involve an independent review process. A possible solution explored by Parties is that verification should be carried out at the national level but in accordance with internationally agreed guidelines or procedures for nationally funded actions, and at the international level for actions implemented with external support.
- 60. As in the case of measurement and reporting, there is a need for consideration of whether verification requirements should be different for different groups of countries and/or different types of action.

Additional issues relating to measuring, reporting and verifying mitigation actions under para. 1 (b) (iii) (REDD-plus)

- Parties have converged on the view that measurement, reporting and verification of actions under para. 1 (b) (iii) (REDD-plus)<sup>10</sup> should take the following main elements into consideration:
  - (a) Reference emissions and reference levels need to be established and verified, taking into account national circumstances;
  - (b) A common methodology should be used for all policy approaches, based on remote sensing and verification on the ground;
  - (c) Robust national forest monitoring systems and ex-post verification are both necessary.
- 62. There appears to be convergence on the view that measurement, reporting and verification systems in this area should be based on:
  - (a) National forest inventories, existing or to be developed;
  - (b) Unbiased, periodic reviews (possibly organized under the auspices of the UNFCCC) to assess the application of agreed modalities, including review of data.
- 63. Further consideration is required on whether to measure leakage, and if so how, and whether effects on biodiversity and other impacts or co-benefits should be included in the monitoring systems.

Measurement, reporting and verification of support

- 64. There is convergence on the view that measurement, reporting and verification of support for NAMAs, for example those included in paragraph 39 above, should be developed, taking into account the current reporting system under the Convention.
- 65. There appear to be convergent views on which aspects or elements of support should be measured (where appropriate), reported and verified, including: additional financial, technological and capacity-building support; direct and indirect contributions; information on efforts to obtain support from non-public sources; cost-effectiveness and "carbon-effectiveness" of financial assistance; and performance indicators for technology transfer.
- 66. Further consideration is needed on the following:
  - (a) Whether measurement, reporting and verification of support should include only specific support provided under the Convention or also other climate-specific sources;
  - (b) Whether measurement, reporting and verification of support would depend on the type of action and if so, how.

### C. Economic and social consequences of response measures

- 67. Parties have identified a range of potential consequences of response measures as being important and likely to grow as mitigation is enhanced. There appears to be convergence among Parties on the need to address this issue through:
  - (a) Assessing and analysing the consequences;

The Subsidiary Body for Scientific and Technological Advice, at its twenty-ninth session, concluded that guidance from the AWG-LCA in relation to decision 1/CP.13, paragraph 1 (b) (iii), would facilitate progress on its programme of work on methodological issues relating to decision 2/CP.13, paragraph 11 (FCCC/SBSTA/2008/13, para. 47).

- (b) Taking into consideration the possible negative economic and social consequences when designing policies and measures to tackle climate change;
- (c) Minimizing the consequences by undertaking appropriate measures.
- 68. Parties have presented proposals to enhance the capacity of affected countries, especially poorer countries, to cope with the negative economic and social consequences of mitigation actions, in particular by diversifying their economies to build resilience. These proposals require further consideration and include:
  - (a) Establishing a framework to address the impacts of response measures, and a forum to assist Parties in analysing and modelling such impacts;
  - (b) Arrangements for sharing knowledge of, and experiences with, measures to respond to the adverse impacts of response measures, including implementing and disseminating win—win technologies to minimize the adverse impacts of response measures.

# D. Other cooperative actions on mitigation

69. Some elements of long-term cooperative action on mitigation would involve cooperative efforts by developed and developing countries, including cooperative sectoral approaches and market-based approaches. This subchapter does not cover issues relating to the Kyoto Protocol, such as possible improvements to existing mechanisms or how these mechanisms may be used by Parties included in Annex I to the Convention to meet their commitments, as these matters are being discussed under the AWG-KP.

# 1. Cooperative sectoral approaches

- 70. There appears to be convergence on the view that cooperative sectoral approaches should not replace national emission reduction targets in developed countries and should not lead to trade sanctions and restrictions or the application of international standards.
- 71. There is convergence on the notion of using sectoral approaches to enhance implementation of Article 4, paragraph 1(c), of the Convention (see chapter IV below). Views diverge on whether this should go beyond technology cooperation and involve, for example, the establishment of sector-specific agreements or targets. In particular, there is a lack of convergence on how to deal with emissions from international aviation and maritime transport; proposals include establishing an independent legally binding agreement or agreeing on a global cap on these emissions while leaving aspects of implementation to the International Civil Aviation Organization and the International Maritime Organization.
- 72. Further consideration is required to capture the potential for cooperation on mitigation at the sectoral level other than the potential that could be realized in other areas of the Bali Action Plan, including NAMAs (see chapter III B above), technology (see chapter IV below) and approaches to enhance the cost-effectiveness of, and to promote, mitigation actions (see chapter III D 2 below).

## 2. Various approaches, including opportunities for using markets

- 73. There appears to be a convergence of views on the positive role that market-based approaches can play in making mitigation actions cost-effective.
- 74. Views are convergent on the need to ensure the environmental integrity of market-based instruments and mechanisms, and to strengthen their contribution to sustainable development. There appears to be convergence on the view that greater use of these instruments and mechanisms, as well as greater coherence and linkage among them, would lead to benefits such as a narrowing of the range of prices for carbon allowances and credits worldwide.

- 75. Further consideration is needed on whether to introduce new market-based mechanisms and what their nature might be. Key issues with regard to new mechanisms are (1) the extent to which they would allow mitigation action in developing countries to offset emissions in developed countries and (2) whether they would have a sectoral dimension. Options explored for new mechanisms include sectoral crediting based on non-binding targets ("no-lose"), sectoral emissions trading, and crediting or trading mechanisms for actions under para. (1) (b) (iii) (REDD-plus) (see chapter IV below).
- 76. Further consideration is needed of the opportunities and support requirements to implement NAMAs through market-based approaches applied at the national and/or sectoral levels within a country. Further consideration is also needed of the participation of developing countries in the various market-based mechanisms that may be available. Differences in the ability of developing countries to implement market-based approaches and to participate in market-based mechanisms may arise from the nature of these approaches and mechanisms as well as eligibility and measurement, reporting and verification requirements.

# IV. Finance and technology<sup>11</sup>

#### A. Generation of financial resources

- 77. There is convergence on the need for various sources and options to scale up the generation of new, additional and adequate financial resources. There is also convergence among Parties on the underlying principles for the generation of financial resources; namely:
  - (a) Resources should be new and additional, adequate, predictable and sustainable;
  - (b) Generation of resources should be based on the principles of equity and common but differentiated responsibilities and respective capabilities.
- 78. Further consideration is needed on other principles proposed by Parties, such as the polluter pays principle and the principle of historical responsibility.
- 79. Parties have proposed the following options for generating new and additional financial resources:
  - (a) An assessed contribution from developed country Parties as a percentage of gross national product or gross domestic product;
  - (b) An assessed contribution from all Parties, except LDCs, based on a predefined set of criteria, including GHG emissions, respective capacity and population;
  - (c) Auctioning of assigned amounts or emission allowances at the international and/or domestic level;
  - (d) A uniform global levy on CO<sub>2</sub> emissions, with exemption for LDCs;
  - (e) Levies on emissions from international aviation and maritime transport;
  - (f) A tax on air travel;
  - (g) A share of proceeds from market-based mechanisms under the Kyoto Protocol.
  - (h) A global levy on international monetary transactions.

<sup>&</sup>lt;sup>11</sup> The Bali Action Plan, in its paragraphs 1 (d) and (e), calls for enhanced action on technology development and transfer to support action on mitigation and adaptation and for enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation.

The workshop on cooperation on research and development of current, new and innovative technology, including win-win solutions, held at the fourth session of the AWG-LCA, is relevant to this chapter.

80. There is a range of views on the roles of the public and private sectors in generating financial resources to support enhanced action. Further consideration is required on how public finance could leverage private finance effectively and ensure coherence among different sources of funding. Further clarification is also needed on the subject of enabling environments to foster investment and financial flows, including the issue of support needed to establish enabling environments in developing countries.

Additional issues relating to actions under para. 1 (b) (iii) (REDD-plus)

81. Parties have provided ideas and proposals for approaches to the generation of financial resources for actions under para 1 (b) (iii) (REDD-plus). They comprise policy approaches, positive incentives, the use of non-market approaches or a combination of market and non-market approaches (for issues on delivery, see para. 99 below). Further clarification is needed on these proposals.

## B. Institutional arrangements and governance

- 82. Parties concur that an effective financial framework is needed for the provision of financial resources and investment to support enhanced action on mitigation, adaptation and technology cooperation. This framework would require clear and focused mandates and responsibilities, and would help to plan, coordinate, monitor and review progress on financial support provided for enhanced action, in a measurable, reportable and verifiable manner in the case of mitigation.
- 83. There is convergence among Parties that the overall governance of a possible financial framework should:
  - (a) Be under the guidance and authority of the COP;
  - (b) Ensure full transparency, efficiency, effectiveness, openness and the equitable and balanced representation of all Parties;
  - (c) Provide coherence and coordination between various sources of financing.
- 84. Parties have proposed the following options for the financial framework:
  - (a) Creating new institutional arrangements, including funds;
  - (b) Making efficient and effective use of current institutional arrangements, including funds;
  - (c) Reforming the existing institutional arrangements, including funds, such as the Global Environment Facility, an operating entity of the financial mechanism of the Convention, and creating new institutional arrangements including funds, if needed.
- 85. Parties have proposed the creation of a single umbrella body, as an institutional arrangement under the authority and guidance of the COP, to coordinate the activities of different specialized bodies in providing financial resources for enhanced action. This requires further consideration.
- 86. Further consideration is also required of proposed institutional arrangements, including funds, to support. These are:
  - (a) Specialized national and international funds and mechanisms to generate, manage and deliver financial resources from private and public sources for mitigation, including actions under para. 1 (b) (iii) (REDD-plus);
  - (b) A specialized technology mechanism and dedicated multilateral funds for technology development and transfer to support the delivery of technology and finance to enhance action on mitigation and adaptation;
  - (c) A specialized financial mechanism and dedicated multilateral funds for adaptation, including for any financial support that may be needed to support elements of a new

mechanism for insurance. Institutional arrangements to enable financing for adaptation would include a framework and a dedicated committee.

- 87. Further consideration is required on the proposed institutional structures and/or components of a financial framework, such as: a governing body (the COP); an operating body (e.g. an executive board); funds and/or investment mechanisms; and supporting bodies (e.g. a scientific committee and/or technical panels).
- 88. There is a lack of convergence on whether only new and additional financial resources channelled through the financial mechanism of the Convention should count towards Parties' commitments on the provision of support, or whether resources delivered through bilateral, regional and other multilateral institutions, as referred to in paragraph 11.5, could also count.
- 89. There is convergence on the need for an effective institutional arrangements on technology under the Convention, with clear and focused mandates, to help plan, coordinate, monitor and review progress in order to ensure the effectiveness of development and transfer of technologies as set out in Article 4, paragraph 1 (c) and 5, of the Convention.
- 90. Further consideration is needed on the specific functions of possible new institutional arrangements to enhance further action on technology development and transfer that could support and enable action on mitigation and adaptation under the Convention. The options for such functions are:
  - (a) To develop a technology action plan that defines specific policies, actions and funding requirements for all relevant technologies that are in the public domain, under patent protection or under development;
  - (b) To guide, support, verify and monitor activities and commitments related to technology within and outside the Convention, and to facilitate dissemination of technology information:
  - (c) To facilitate financial support for technology development and transfer, and to verify the financial and technological contribution;
  - (d) To facilitate NAMAs by developing country Parties by identifying available technologies and their emission reduction potentials, by facilitating access to finance to meet technology needs, by giving advice on promoting technology transfer and diffusion, and by reporting periodically to the COP on the results of its activities;
  - (e) To enable action to support TNAs by developing countries, capacity-building and enabling environments and participation in the technology-oriented agreements.
- 91. Further consideration is also needed on the form and status of this arrangement. Specific options include:
  - (a) Continuing with the existing arrangements and mechanisms and enhancing financial and technology cooperation, without creating any new institutions;
  - (b) Developing a technology framework that could include new institutional arrangements, such as a special advisory group on technology cooperation to support NAMAs by developing countries, and be built on experience and lessons learned from ongoing

technology transfer activities within and outside the Convention, including the work of the EGTT:  $^{12}$ 

- (c) Establishing a new technology mechanism as an umbrella entity to guide overall technology development and transfer activities under the Convention, possibly supported by an executive board on technology under the direct guidance of the COP, by technical panels, by a special advisory panel to coordinate cooperative international technology research and development (R&D), and by national and/or regional technology centres and networks, and financed by a new multilateral technology fund.
- 92. Further consideration is also needed on how the possible new institutional arrangements for technology would relate to other possible institutional arrangements to support mitigation and adaptation action.

## C. Delivery of financial resources

- 93. There is convergence among Parties on the following principles for delivery of new and additional financial resources, to guide access to these resources and their disbursement:
  - (a) All developing countries should be eligible to access financial resources, with emphasis on the needs of vulnerable countries in the context of adaptation;
  - (b) The delivery of resources should preferably take a programmatic approach, but use a project-based approach where national circumstances require it;
  - (c) The delivery of resources should be measurable, reportable and verifiable;
  - (d) Improved access should be ensured (with direct access as a proposed option).
- 94. Further consideration is required of the following principles proposed by Parties for the delivery of new and additional financial resources:
  - (a) Financial resources should be provided on a grant or grant and concessional basis;
  - (b) An agreed level of incremental cost and/or full cost should be used as a basis for providing support to implementation of enhanced action on adaptation, mitigation and technology cooperation;
  - (c) International fiduciary standards for public finance<sup>13</sup> management should be used.
- 95. Parties have made proposals on issues related to the delivery of financial resources, including criteria for defining the level of financial resources available to countries and which entities in a country would be eligible to receive resources, and the timing of provision.
- 96. Regarding the potential recipients of financial resources, further consideration is needed on whether financial support should be provided according to predefined criteria, including the following:

This includes the framework for meaningful and effective actions to enhance the implementation of Article 4, paragraph 5, of the Convention and a set of follow-up actions set out in annex I to decision 3/CP.13, which include activities relating to TNAs by Parties not included in Annex I to the Convention, technology information, enabling environments, capacity-building and mechanisms for technology transfer, including innovative options for financing technology transfer, cooperation with relevant conventions and intergovernmental processes, and promotion of endogenous development of technology and of collaborative research and development on technology, and the work of the Expert Group on Technology Transfer.

<sup>13</sup> "Public finance", in this document, should be read as new and additional financial resources delivered on a grant or grant and concessional basis under the Convention.

- (a) For access to financial resources for adaptation: the level of vulnerability, determined by national circumstances, respective capabilities and levels of risk and impacts;
- (b) For access to financial resources for mitigation: mitigation potential, national circumstances and capabilities, as well as cost-effectiveness of the action in terms of the potential amount of emissions reduced per unit of investment and its long-term contribution to the transition to a low-carbon economy;
- (c) For access to financial resources for technology cooperation: priority technologies and sectors identified by developing country Parties in their TNAs, national adaptation plans, NAMAs and national communications, as well as the absorptive capacity of the recipient country.
- 97. Further consideration is needed on modalities of access to and disbursement of financial resources, including procedures for improved, direct and simplified access.
- 98. Further consideration is also needed on potential recipients of financial resources within a country. Options include national or subnational governments, private entities within the eligible country, or other private or national and/or subnational entities.

Additional issues relating to delivery of financial resources for actions under para. 1 b (iii) (REDD-plus)

- 99. Regarding the provision of financial resources for actions under para. 1 (b) (iii) (REDD-plus), there is convergence on the view that support for readiness activities (see para. 52 above) should come from fund-based approaches. Further consideration is needed of ways and means to support implementation of actions under para. 1 (b) (iii) (REDD-plus). Parties have proposed a number of approaches:
  - (a) A performance-based approach that rewards emission reductions, supported by non-market positive incentives;
  - (b) Financial support provided through a comprehensive set of modalities and mechanisms, including an increased level of official development assistance, loan funding and non-repayable financial flows, assessed contributions by developed countries and carbon credits from the global carbon compliance market;
  - (c) A two-track approach that includes support provided by market-based mechanisms for deforestation and forest degradation, and fund-based support for a broad range of land-use activities such as conservation;
  - (d) An overall voluntary approach, separate from the clean development mechanism, to support implementation of actions under para. 1 (b) (iii) (REDD-plus) in three steps: (1) promoting readiness and capacity-building; (2) expanding implementation under the Convention through non-compliance and voluntary market instruments; and (3) introducing compliance-based market mechanisms;
  - (e) A performance-based approach supported by diverse funding sources where emissions reductions could be allocated in international markets.

## D. Technology cooperation and cooperative research and development

100. Parties have converged on the need for a more effective and comprehensive approach to enhancing technology cooperation and cooperative R&D. The aim is to scale up global investment in technology R&D and ensuring effective deployment, diffusion and transfer of technology. Any action in this area would need to actively engage the private sector and encourage cooperative partnerships between governments and industry.

- 101. With regard to the objective of cooperative technology R&D, there is convergence among Parties on the need:
  - (a) To promote joint R&D activities and programmes, particularly involving developing countries, with the aim of promoting endogenous capacity and technologies of developing countries and reinforcing North–South, South–South and triangular cooperation, prioritizing technologies that might have high costs but also high potential for GHG mitigation and technological progress;
  - (b) To provide more opportunities for cooperation on R&D for technologies for adaptation, in particular for the most vulnerable countries and the SIDS, in the absence of win-win solutions and market intervention.
- 102. There is an apparent convergence on the need for institutional arrangements that initiate and coordinate a broad range of technology R&D planning and implementation activities at the regional and international levels (see chapter IV C above).
- 103. Further consideration is needed on:
  - (a) Whether new national or regional technology centres and networks should be established, existing ones enhanced or a combination of both options undertaken;
  - (b) Whether, and if so, how, to recognize voluntary technology-oriented agreements under the Convention;
  - (c) A mechanism to accredit, credit and reward international technology cooperation actions;
  - (d) Whether, and if so, how, to enhance the flow of information among Parties on their bi- and multilateral actions and partnerships undertaken at the regional and/or multilateral level:
  - (e) How to build national R&D capacity (e.g. through information sharing platforms or networking, training and exchange programmes);
  - (f) Promotion of joint R&D cooperation among developed and developing country Parties, which could address protection of intellectual property rights (IPRs) and facilitate technology sharing;
  - (g) Ways to promote development of R&D-related technology agreements.
- 104. A range of areas for sector- or technology-specific cooperation have been proposed, including renewable energies, improvements in energy efficiency, carbon dioxide capture and storage and some specific technologies for adaptation. There is apparent convergence on the view that priority areas should be defined at the national level, taking into account national circumstance and development priorities.
- 105. Further consideration is needed on the transfer of publicly owned technologies for mutual and global benefit. There is a lack of convergence on possible cooperative action in this area. Options explored include: pooling and sharing publicly funded technologies; making the technologies available in the public domain at affordable price and promoting joint R&D activities with developing countries.
- 106. Further consideration is also needed of approaches to ensure the accessibility and affordability of appropriate technologies without compromising incentives for innovation provided by IPR protection. Successful approaches from other regimes involving compulsory licensing for specific technologies have been suggested for application in the climate change context. Other suggestions are: incentives (tax exemption, subsidies, etc.) for technology innovators to apply differential pricing; patent pools to disseminate technologies to developing countries at low cost; and licensing publicly funded technologies.

## Annex

# Placement of elements related to actions under para. 1 (b) (iii) (REDD-plus) in this document

- 1. This annex provides orientation on where issues specifically related to actions under para. 1 (b) (iii) (REDD-plus) have been addressed in this document.
- 2. These issues are addressed in the following paragraphs:
  - (a) Paragraphs 43–45: actions under para. 1 (b) (iii) (REDD-plus) in the general context of nationally appropriate mitigation actions;
  - (b) Paragraphs 51–52: support of actions under para. 1 (b) (iii) (REDD-plus);
  - (c) Paragraphs 61–63: aspects of actions under para. 1 (b) (iii) (REDD-plus) related to measurement, reporting and verification of actions;
  - (d) Paragraph 75: aspects of actions under para. 1 (b) (iii) (REDD-plus) related to various approaches, including opportunities for using markets;
  - (e) Paragraph 81: generation of financial resources for actions under para. 1 (b) (iii) (REDD-plus);
  - (f) Paragraph 86 (a): institutional arrangements to support actions under para. 1 (b) (iii) (REDD-plus);
  - (g) Paragraph 99: delivery of financial resources to support actions under para. 1 (b) (iii) (REDD-plus).

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