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on
AWG-LCA 8, item 3
Development and transfer of technology
9 December 2009@ 20:00

Enhanced Action on Technology Development and Transfer

1. *Decides* that the objective of enhanced action on technology development and transfer in support of action on adaptation and mitigation is to enable global cooperative action to implement the Convention, in particular its Article 4, paragraphs 1(c), 3, 5, 7, 8 and 9, in order to meet the ultimate objective of the Convention;
2. *Decides* that the Technology Mechanism is hereby [defined][established] to:
 - (a) Accelerate action at each stage of the technology development cycle, by enhancing and scaling up cooperation among Parties to support national and international actions on mitigation and adaptation;
 - (b) Facilitate the identification and removal of barriers to development and transfer of technologies for adaptation and mitigation, while ensuring that adequate capacity is developed and maintained in developing countries for this purpose;
 - (c) Ensure accessibility, affordability, appropriateness and adaptability of the technologies required by developing country Parties for enhanced action on mitigation and adaptation, based on national circumstances and priorities, particularly the urgent need for the development and transfer of technologies for adaptation in developing country Parties, in particular the small island developing States and the least developed countries, and the need for economic diversification of developing country Parties whose economies are affected by the adverse impacts of response measures;
 - (d) Ensure adequacy and predictability of technological, financial and capacity building support to developing countries for technology development and transfer, particularly the development and enhancement of endogenous technologies and capacities of developing countries, taking into account the important role of public finance in supporting technology research, development, demonstration of technology and in leveraging private-sector funding;
3. *Decides* that the Technology Mechanism shall operate under the [authority and] guidance of the Conference of the Parties and articulate with the [Financial Mechanism of the Convention,][Coordinating Mechanism for Mitigation and the Framework for Adaptation] as described in [*insert reference to relevant decisions*];
4. *Decides* that the implementation of the Technology Mechanism and other activities as determined by the Conference of the Parties, taking into account the indicative list of activities eligible for support as described in annex I to this decision, shall be funded from a technology window within the [overall financial arrangement] established under [*insert reference to relevant decision*] and/or through existing bilateral and multilateral cooperative programmes and initiatives in accordance with Article 11, paragraph 5, of the Convention;

DRAFT

5. *Decides* that the Technology Mechanism¹ will consist of:
- (a) An Executive [Body][Committee]; and
 - (b) A Consultative Network for Climate Technology;
6. *Agrees* that all Parties will undertake national and international cooperative actions on technology development and transfer related to mitigation and adaptation in accordance with their common but differentiated responsibilities and respective capabilities, and their specific national and regional development priorities, objectives and circumstances, in the context of Article 4 paragraphs 1(c), 3, 5 and 7 of the Convention, including but not limited to:
- (a) Participating in international partnerships to advance the development, demonstration, deployment, diffusion and transfer of environmentally sound technologies, including through formulation and implementation of national and international technology roadmaps and action plans;
 - (b) Establishing voluntary technology arrangements and partnerships with intergovernmental organizations, the private-sector, academia, civil society organizations and local and sub-national governments for enhancing cooperative action amongst Parties on adaptation and mitigation by developing countries;
 - (c) Promote the establishment of partnership arrangements with relevant international organisations, the public and private sectors, academia and the research community;
 - (d) Enhance the development and dissemination of best practices;
 - (e) Support national and regional capacity building;
 - (f) Establish and/or strengthen existing national innovation systems, including through centres of technology innovation or excellence;
 - (g) Promote public and private sector investment in research and development;
 - (h) Provide incentives to mobilize private capital;
 - (i) Enhance in-country enabling environments;
 - (j) Develop institutional, technical and human capacity;
 - (k) Establish and maintain robust nationally appropriate policy and regulatory frameworks;
7. *Decides* to develop a Technology Capacity-building Programme and provide immediate technology capacity-building support to developing country Parties [*insert how*] to enable their action on mitigation and adaptation, now, up to and beyond 2012;
8. *Agrees* that the elements of and modalities for the implementation of the Technology Capacity-building Programme shall be elaborated by the Executive [Body][Committee] on Technology, building upon the elements contained in annex VI to this decision, for consideration by the Conference of the Parties at its seventeenth session;
9. *Decides* that the Expert Group on Technology Transfer, established by decision 4/CP.7 and reconstituted by decision 3/CP.13, shall prioritise and complete its pending activities within 2010, taking into account its programme of work for 2010-2011 as endorsed by the Subsidiary Body for

¹ Annexes I to VII contain elements that may be useful in deciding on the functions and elements of the Technology Mechanism.

DRAFT

Scientific and Technological Advice and the Subsidiary Body for Implementation at their thirty-first session;

10. *Decides* that the Executive [Body][Committee] established by this decision will replace the Expert Group on Technology Transfer, which shall have its mandate terminated at the sixteenth session of the Conference of the Parties, and at which time the Expert Group on Technology Transfer shall deliver a final report to the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation;

11. *Encourages* developed country Parties to double public expenditure and private investment in research, development and demonstration of technologies for mitigation and adaptation by 2012 and quadruple public expenditure and private investment by 2020;

12. Option 1 *[No reference to IPR in the draft COP Decision]*

Option 2 *Decides* that the Executive [Body][Committee] on Technology shall recommend to the Conference of the Parties international cooperative actions to support the removal of barriers to technology development and transfer, including those arising from intellectual property rights, taking into account the elements contained in annex VII;

Option 3 *Decides* that the Consultative Network for Climate Technology shall provide technical support to enhance the capacity of developing country Parties to identify and remove possible barriers to technology development and transfer, including those arising from intellectual property rights, identified in their technology needs assessments, technology action plans and road maps;

13. *Decides* to periodically monitor and assess the effectiveness of the implementation of Articles 4, paragraphs 5 and 1(c), of the Convention and of the Technology Mechanism;

14. *Decides* that technological support, for both mitigation and adaptation, shall be *[insert modalities for reporting as agreed in negotiations on finance, mitigation and adaptation]*.

DRAFT

ANNEX I

Indicative list of activities eligible for support

1. Activities eligible for support shall be determined by country driven processes and defined through national appropriate mitigation actions and national adaptation plans, and may include but will not be limited to:
 - (a) Cooperative research, development and demonstration programmes to providing opportunities for participation by developing country Parties;
 - (b) Deployment and diffusion of environmentally safe and sound technologies and know-how that have a great potential to reduce greenhouse gas emissions substantively and simultaneously address the adverse impacts of climate change and the adverse impacts of response measures in developing country Parties;
 - (c) Activities and incentives that leverage public and private investment in technology development, deployment diffusion and transfer;
 - (d) Incremental costs of soft and hard technologies for implementation of adaptation and mitigation actions;
 - (e) Climate change observation systems and related information management;
 - (f) Purchasing of licenses and other intellectual property rights issues;
 - (g) Establishment and strengthening national systems of innovation and technology innovation centres;
 - (h) Development and implementation of national technology plans for mitigation and adaptation including technical training and training in this regard;
 - (i) Support for the enabling environments, in the context of the implementation of national adaptation and mitigation plans.

DRAFT

ANNEX II

Mandate, composition and organisation of work

Executive [Body][Committee] on technology

A. Functions

1. The Executive [Body][Committee] on Technology is responsible for the implementation of the Technology Mechanism and shall undertake the following functions, under the authority and guidance of the Conference of the Parties, and be fully accountable to the Conference of the Parties:

- (a) Elaborate a technology action plan as a starting point of its work to enable implementation of enhanced action on technology development and transfer;
- (b) Develop a rolling two year strategic program of work and report on implementation annually;
- (c) Identify best available technologies, technologies with great potential to reduce greenhouse gas emissions and best practices in relevant sectors, and develop, gather and disseminate relevant road maps and action plans;
- (d) [Provide guidance and support for][Advise] Parties to conduct country-driven planning to support the dissemination of environmentally sound technologies, including on technology needs assessments, technology action plans and low-emission development strategies;
- (e) [Develop and implement, as part of its programme of work and through a country driven process mediated through the recipient governments,][Advise on] practical and concrete actions that address specific needs of developing countries on the development and transfer of technologies for adaptation;
- (f) [Provide guidance][Advise] on the establishment of and strengthen, as appropriate, national and regional technology innovation centres and networks, including centre-to-centre twinning arrangements, with a view to enhancing cooperative research and development and North–South, South–South, and triangular technology cooperation, in order to accelerate the development, demonstration, deployment, diffusion and transfer of environmentally sound technologies to support action on mitigation and adaptation by developing country Parties;
- (g) [Develop and guide][Advise on] the implementation of a capacity building programme to build and/or strengthen domestic capacity in developing countries to identify technology options, make technology choices, and operate, maintain, and adapt technologies, including through twinning, fellowships, training of trainers and on-the-job technical and vocational training and furthermore promote coherence and cooperation between relevant international and national organizations and initiatives, including centres and networks, on capacity building for enhanced technology development and transfer;
- (h) Promote close collaboration on research and development, deployment, demonstration and production of technologies for climate mitigation and adaptation between governments, industries, and research communities of developed and developing countries, through networking relevant international technology initiatives, organizations and national and regional centres and liaising with other bodies under the Convention, as appropriate;

DRAFT

- (i) Monitor and assess the financial support and performance of the development and transfer of environmentally sound technologies in terms of speed, range and size of the technological flow in accordance with international technology action plans towards low-carbon and climate-resilient economies;
- (j) Provide policy advice and recommendations to the Conference of the Parties, [the Subsidiary Bodies and any Implementation bodies] on the implementation of Article 4, paragraph 5, of the Convention;
- (k) Option 1: Identify appropriate actions to address barriers to technology development and transfer encountered by developing countries Parties, including those related to intellectual property rights, to enable action on mitigation and adaptation;
Option 2: Provide the Conference of the Parties, the Subsidiary Bodies and any implementation bodies advice and analysis on ways to promote technology development, deployment and transfer including improving enabling environment;
- (l) [Cooperate and coordinate with other relevant bodies as required on assessment of nationally appropriate mitigation actions and national adaptation actions;]
- (m) Option 1: Cooperate and coordinate with other relevant bodies as required on disbursements of funds under the financial mechanism of the Convention;
Option 2: Provide the Conference of the Parties, the Subsidiary Bodies and any implementation bodies, advice and analysis on financing development, deployment and transfer of technologies;
- (n) [Articulate technology transfer and financing mechanisms under the Convention with other United Nations organizations, multilateral financial institutions established under bilateral or multilateral development programmes and other relevant international forums not directly related to climate change, with the assistance of technical panels to be created;]

B. Composition

2. The Executive [Body][Committee] on Technology shall comprise X members representing Parties to the Convention, with the aim of achieving fair and balanced representation, as follows:
 - (a) X representatives from each of the five regional groups of the United Nations and X representatives from the small island developing States, taking into account the interest groups as reflected by the current practice in the Bureau of the Conference of the Parties;
 - (b) X representatives from Parties included in Annex I to the Convention;
 - (c) X representatives from Parties not included in Annex I to the Convention.
3. The members of the Executive [Body][Committee] on Technology may invite advisors drawn from relevant intergovernmental organizations, academia, the private sector and civil society.
4. An alternate member for each member of the Executive [Body][Committee] on Technology shall be elected consistent with the approach as set out in paragraph 2 of this annex. The nomination by a constituency of a candidate member shall be accompanied by a nomination of a candidate alternate member from the same group.
5. Members, including alternate members, of the Executive [Body][Committee] on Technology with the appropriate technology development and transfer, technical, finance and/or policy expertise

DRAFT

shall be identified by their respective governments, nominated by the relevant groups and elected by the Conference of the Parties to serve as government representatives, and that vacancies shall be filled in the same manner.

6. Members and alternate members shall serve for a term of two years and shall be eligible to serve a maximum of two consecutive terms and that:

- (a) X members, including alternate members, of the Executive [Body][Committee] on Technology shall be elected initially for a term of three years and X members, including alternate members, shall be elected for a term of two years;
- (b) thereafter, the Conference of the Parties shall elect, every year, X members and X alternate members for a term of two years;
- (c) the term as a member does not count towards the term as alternate member, and the term as an alternate member does not count towards the term as a member;
- (d) the members, including alternate members, shall remain in office until their successors are nominated.

7. The Executive [Body][Committee] on Technology shall annually elect a chairperson and a vice-chairperson from among its members, with one being a member from a Party included in Annex I to the Convention and the other being a member from a Party not included in Annex I to the Convention, and that the positions of chairperson and vice-chairperson shall alternate annually between a member from a Party included in Annex I to the Convention and a member from a Party not included in Annex I to the Convention.

8. If a member, or an alternate member, of the Executive [Body][Committee] on Technology resigns or is otherwise unable to complete the assigned term of office or to perform the functions of that office, the the Executive [Body][Committee] on Technology may decide, bearing in mind the proximity of the next session of the Conference of the Parties, to appoint another member, or an alternate member, from the same constituency to replace the said member for the remainder of that member's mandate, in which case the appointment shall count as one term.

D. Organization of work

9. The Executive [Body][Committee] on Technology shall prepare a biennial work programme for approval by the Conference of the Parties. The work programme shall address each of the functions contained in section A above.

10. The Executive [Body][Committee] on Technology shall meet at least four times per year and shall prepare an annual report to the Conference of the Parties on the implementation of its functions and its work programme. The Executive [Body][Committee] on Technology may be requested to provide advice to support the work of other bodies established by the Conference of the Parties under the Convention.

11. The secretariat of the United Nations Framework Convention on Climate Change shall service the Executive [Body][Committee] on Technology.

12. A simple majority of the members of the Executive [Body][Committee] on Technology must be present at the meeting to constitute a quorum.

13. Decisions of the Executive [Body][Committee] on Technology shall be taken by consensus; if all efforts at reaching a consensus have been exhausted, and no agreement has been reached, decisions shall be taken by a two-thirds majority of the members present at the meeting on the basis of one member, one vote.

DRAFT

ANNEX III

Possible elements of a technology incentive instrument

1. A technology incentive instrument for enhanced cooperative action on technology development, deployment, transfer and diffusion for mitigation and adaptation projects and programmes should be established in order to stimulate accelerated diffusion and transfer of existing and new environmentally safe and sound technologies to developing country Parties.
2. For the purpose of meeting its commitments for measurable, reportable and verifiable support for environmentally sound technologies and know-how in accordance with Article 4, paragraph 5, of the Convention, a [an Annex II] Party may transfer to, or acquire from, other Parties, Environmentally Sound Technology Rewards (ESTR) resulting from projects and programmes, including sectoral actions, that accelerate the deployment, diffusion or transfer of environmentally sound technologies for mitigation or adaptation in any sector of the economy, provided that the following conditions are met:
 - (a) Host Parties establish technology targets or objectives;
 - (b) Voluntary participation is approved by each Party involved;
 - (c) Any such project or programme results in measurable, reportable and verifiable reductions of greenhouse gas emissions by sources, storage or capture, enhancement of removals by sinks, or increases in climate resilience that is additional to any that would otherwise occur;
 - (d) The project or programme contributes to the achievement of the technology targets and objectives of the host Party in receipt of that technology;
 - (e) The host Party has allocated ESTRs to the project or programme, proportionate to the [volume of emissions reduced or removed][resultant technology transfer][or increase in climate resilience];
 - (f) Participants in the ESTR mechanism may involve private and public companies;
 - (g) The acquisition of ESTRs is recognized as a contribution towards the efforts of Parties to meet their commitments under Article 4, paragraph 5, of the Convention.

DRAFT

ANNEX IV

Elements of international Technology Action Plan(s)

1. The international Technology Action Plan should build on and enhance coordination among and collaboration with relevant international and national efforts and be informed by national technology action plans.
2. The Technology Action Plan shall be implemented with financial support through the financial mechanism of the Convention and other financial arrangements as part of the Copenhagen agreed outcome, including all the available means to ensure the affordability of technologies, products and related services.
3. The Technology Action Plan will be based upon a regular assessment of global technology needs for long-term action on climate change with the aim of accelerating short-, medium-, and long-term action across all stages of the technology development cycle, including research, development, demonstration, diffusion, transfer and use of existing and new environmentally safe and sound technologies, in order to achieve the ultimate objective of the Convention, support action on mitigation and adaptation and promote a shift to sustainable development paths. The Plan shall specify actions for an initial period of three years and be regularly updated every successive three years. It will:
 - (a) Assess the steps required to accelerate research, development, demonstration, diffusion and transfer of environmentally sound technologies for mitigation and adaptation through developing a comprehensive overview of what needs to be done to promote wider and more rapid development and deployment of key technologies, and which shall identify:
 - (i) The current state of the development of technologies for mitigation and adaptation;
 - (ii) Key stakeholders and relevant existing and emerging efforts contributing to the development of these technologies;
 - (iii) Gaps and barriers that prevent technologies from reaching commercial maturity;
 - (iv) Opportunities for cooperation between developed and developing country Parties, including their respective private sectors;
 - (v) Prioritized technologies that should be the focus for specific programmes of action to accelerate the development and transfer of technology;
 - (b) Define specific, time-bound actions and associated funding requirements with specific programmes of action developed for each prioritized technology, encompassing:
 - (i) Measures to overcome the barriers to technology development and transfer;
 - (ii) Policies and measures to enhance enabling environments;
 - (iii) Capacity-building activities;
 - (iv) Actions to promote cooperative research and development;
 - (v) Measures to address intellectual property rights;
 - (vi) Incentive mechanisms;
 - (vii) Actions to enhance the development and transfer of technologies for adaptation;
 - (viii) The establishment and/or strengthening of existing national and regional technology innovation centres.

DRAFT

Elements of a national Technology Road Map and Action Plan

Parties should promote and support the development and transfer of innovative and climate-friendly technologies including through the formulation and sharing of technology road maps and action plans, which may involve:

1. A national technology needs assessment.
2. Identification of technological options for [specific] [all] [sectors] [greenhouse gases] [priority areas by sector and by technology].
3. Identification and removal of barriers to the development, deployment, diffusion and transfer of [win-win technological options such as carbon dioxide capture and storage, clean fossil fuel and non-energy use of fossil fuel technologies][identified technological options].
4. Priority areas shall be identified sector by sector and technology by technology. For the most GHG-intensive sectors, nationally appropriate deployment schemes should be developed within the context of technology needs assessments and low-emission development strategies, taking into account specific barriers for technology deployment in these sectors.
5. Policy instruments, enabling environments and infrastructure required for the deployment, diffusion and transfer of identified technological options.
6. Identification of capacity-building needs.
7. Opportunities for joint research and development between developing country Parties, and between developed and developing country Parties to be financed by developed country Parties.
8. For the most greenhouse gas intensive sectors, nationally appropriate deployment schemes should be developed, taking into account specific barriers to technology deployment in these sectors.
9. Measures that promote wide diffusion of existing and emerging adaptation technologies in similar climates.
10. Measures to address intellectual property rights.
11. Incentive mechanisms.
12. Voluntary partnerships and agreements.
13. Actions to enhance the development and transfer of technologies for adaptation.
14. The establishment and/or strengthen of existing national and regional technology innovation centres.
15. Within the context of the national adaptation and mitigation planning, identification of actions that, in order to be implemented, require international support.
16. Periodic review of progress to identify areas where international cooperation should be strengthened.

DRAFT

ANNEX V

Consultative Network for Climate Technology

1. The Consultative Network for Climate Technology will facilitate and accelerate the development, demonstration, deployment, diffusion and transfer of environmentally sound technologies through enhanced and scaled up cooperation to support national and international action on adaptation and mitigation by developing country Parties.

Functions of the Consultative Network for Climate Technology

2. The Consultative Network for Climate Technology will promote access to environmentally sound technologies for mitigation and adaptation, particularly those technologies that contribute to both sustainable development and climate change benefits, principally through the form of public and private partnership, including through but not limited to the following functions:

- (a) Provide advice and support to developing country Parties and their stakeholders for the identification of needs and on the implementation of environmentally sound technologies, practices and processes;
- (b) Improve and provide access to publicly available information on existing and emerging technologies for mitigation and adaptation, and act as a clearing-house to promote the broad exchange of and diffusion of information;
- (c) Provide training, information and workforce development programs to build and/or strengthen regional and/or national capacity in developing countries to identify technology options; make technology choices; and operate, maintain and adapt technologies, including through training of trainers and on-the-job technical and vocational training;
- (d) Stimulate and encourage, through collaboration with the private sector, public institutions, academia and research institutions, research, development, demonstration, deployment, diffusion and transfer of existing and emerging environmentally sound technologies, as well as opportunities for technology cooperation;
- (e) Develop and customize analytical tools, policies and best practices for conducting country-driven planning to support the dissemination of environmentally sound technologies;
- (f) Leverage expertise of other technology centres that affiliate with the network;
- (g) Facilitate international partnerships among public and private stakeholders to accelerate the innovation and diffusion of environmentally sound technologies;
- (h) Provide, upon request by developing country Parties, in-country technical assistance and training to support their identified technology actions;
- (i) Undertake other activities, as appropriate and as determined the Centre.

Organisational arrangements

[Insert who and how it is decided to include entities into the Network; how the Network will be operationalised, supported and coordinated, location, internal governance arrangements and relationship with the Executive [Body][Committee] on Technology, staffing and financing arrangements]

DRAFT

Functions of national Technology Innovation Centres

3. National technology innovation centres may have, but will not be limited to, the following functions:

- (a) Serve as coordinating nodal centres to facilitate and enable:
 - (i) The identification of key technological products that have strong sustainable development and climate change benefits along with their projected price and performance targets;
 - (ii) The development of such products;
 - (iii) The development of markets for these products, in partnership with appropriate public- and private-sector organizations;
- (b) Promote the broad exchange and diffusion of information on technologies for mitigation and adaptation;
- (c) Encourage and strengthen collaborative partnership arrangements for research and development with national and international public- and private-sector institutions and initiatives, including through facilitating twinning, cooperation, information sharing and networking between national and regional technology innovation centres, as appropriate;
- (d) Promote the deployment, diffusion and transfer of environmentally sound technologies for mitigation and adaptation to developing country Parties;
- (e) Stimulate capacity-building, in particular for endogenous technologies, including by providing cooperative training and development facilities and training opportunities, supported by public-private partnerships, to develop and deploy renewable energy and energy efficiency technologies and environmentally sound adaptation technologies.

DRAFT

ANNEX VI

Possible elements of a technology capacity-building programme

1. Analysis, information, training activities and advice on the development and implementation of relevant policies, and institutional and regulatory frameworks that promote the development and use of environmentally sound technologies.
2. Advice and support for the development and implementation of national technology actions, including for the preparation and implementation of national technology action plans.
3. Advice and technical assistance to facilitate increased private investment in key greenhouse gas emitting sectors, including advice on the establishment of public–private partnerships to promote environmentally sound technologies.
4. Advice and support for the identification of policy instruments and infrastructure required for the deployment, diffusion and transfer of identified technological options for the implementation of nationally appropriate mitigation and adaptation actions.
5. Training, information and workforce development programmes, including national technology innovation systems, to build capacity in order to ensure that all market actors understand the costs, performance and benefits of climate change-related technologies.

DRAFT

ANNEX VII

Options to address intellectual property rights

1. Any international agreement on intellectual property shall not be interpreted or implemented in a manner that limits or prevents any Party from taking any measures to address adaptation or mitigation of climate change, in particular the development and enhancement of endogenous capacities and technologies of developing countries and transfer of, and access to, environmentally sound technologies and know-how.
2. Specific and urgent measures shall be taken and mechanisms developed to remove barriers to development and transfer of technologies arising from intellectual property rights protection, in particular:
 - (a) Creation of a Global Technology IPR Pool for Climate Change that promotes and ensures access to intellectual property protected technologies and associated know-how to developing countries on non-exclusive royalty free terms;
 - (b) Take steps to ensure sharing of publicly funded technologies and related know-how, including by making the technologies and know-how available in the public domain in a manner that promotes transfer of and/or access to environmentally sound technology and know-how to developing countries on royalty free terms.
3. Parties shall take all necessary steps in all relevant forums to exclude from IPR protection and revoke existing IPR protection in developing countries and least developed countries on environmentally sound technologies to adapt to and mitigate climate change, including those developed through funding by governments or international agencies and those involving use of genetic resources that are used for adaptation and mitigation of climate change.
4. Developing countries have the right to make use of the full flexibilities contained in the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement, including compulsory licensing.
