

Informal group on technology and capacity building

**Consolidated paragraphs by the Facilitator based on the revised Negotiating Text
(FCCC/AWGLCA/2009/INF.1)¹**

**B. Enhanced action on development and transfer of technology (paragraphs 180-198)
Thursday 13 August 2009**

Preambulars

Paragraph (page #)	Opportunity to consolidate	Rationale
Preambulars (p170)	Proposals 1 and 4 are put together into one set of preambulars	The preambular proposals are not competing proposals or alternatives, so therefore they are presented as a block of preambulars
Preambulars(p170)	Para. x.1 under section of objective, scope and guiding principles is moved into preambular and consolidated with proposal 4, which are preambular 1 and 2 in current text.	Text is formulated as a preambular; similar concepts can be merged.
Preambulars(p170)	Proposal 2 and x.1 are moved to objectives, scope and guiding principles and consolidated as x.1	They are not formulated as preambulars and suit objectives, scope and guiding principles
Preambulars(p170)	The fourth preambular of the original proposal 3 is consolidated into preambular 4	The language in the preambulars are similar and can be merged.

Paragraph 180

Objectives, Scope and Guiding Principles		
Paragraph (page #)	Opportunity to consolidate	Rationale
x.1(p.170)	The original x.1 moved to preambular section. The proposal 2 of preambular section and x.1 in preambular section are consolidated and moved as new x.1 in this section.	Rearrangement according to the content of the text.
Chapeau (p.171)	Alternatives 1 and 2 to chapeau of para. 180 and chapeau of alternatives 1, 2, 3, 4 and 5 to para.180 are consolidated into original chapeau of para.180.	All the chapeau in the alternatives are derived from the original text.
Sub para. (a) (p.171)	Consolidation of sub para (a), alt.2.(a)*, alt.3.(a), alt.4.(a) and alt.5.(a) and (i).9.	All these sub paragraphs are derived from original sub para. (a)
Sub para. (a) (p.171)	Sub para. alt.1.(a) and alt.1.(b) and	Similar language in each

¹ This document contains consolidated text for both technology development and transfer and capacity building. Capacity building appears on page 32.

	alt.5. (a) are consolidated as alternative 2 to sub para (a).	sub paragraph
Sub para. (b) (p.171)	Consolidation of sub para (b), alt.(b) **, alt.1.(c), alt.2.(b), alt.3.(b), alt.5.(f).	Similar language in each sub paragraph
Sub para. (b) (p.171)	Alt.4.(b) is rearranged as new alternative to sub para. (b)	Similar concepts can be merged into one sub paragraph
Sub para. (c) (p.171)	Consolidation of sub para. (c), alt.1.(d), alt.2.(c), alt.4.(c) and alt.5.(g)	Similar language in each sub paragraph
Sub para. (d) (p.172)	Consolidation of sub para. (d), alt.1.(e), alt.2.(d), alt.3.(c), alt.4.(d), alt.5.(e) and i.(10).	Similar language in each sub paragraph
Sub para. (e) (p.172)	Consolidation of sub para. (e), alt.1.(g), alt.2.(e), alt.3.(d) and alt.4.(e)	Similar language in each sub paragraph
Sub para. (f) (p.172)	Consolidation of sub para. (f), alt.1.(h), alt.2.(f), alt.3.(e) and alt.4.(f)	Similar language in each sub paragraph
Sub para. (f) (p.172)	Alt.5.d rearranged as alternative consolidated sub para. (f).	Similar language in each sub paragraph
Sub para. (g) (p.172)	Consolidation of sub para. (g), alt.3.(f) and alt.4.(g)	Similar language in each sub paragraph
Sub para. (g) (p.172)	Alt.2.g rearranged as alternative consolidated sub para. (f).	Similar language in each sub paragraph
Sub para. (h) (p.172)	Consolidation of sub para. (h), alt.2.(h), alt.1.(i) and alt.3.(g), alt.4.(h), alt.5.(h) and alt.(h) and (i).	Similar language in each sub paragraph
Sub para. (i) (p.172)	Consolidation of sub para. (i), alt.2.(i), alt.3.(h), alt.5.(i) and alt.(h) and (i).	Similar language in each sub paragraph
Sub para. (j)-(j).16(p.172-173)	Renumbering and consolidation of sub paragraphs of (i).1-8, (i).11, alt.1.(j), alt.2.(j), alt.2.(k), alt.2.(l), alt.1.(f), alt.2.(m), alt.5.(c), sub para.189.1.(f)	They are all new sub paragraph additions proposed in the alternatives. Sub paragraph 1.(f) in 189 is a broad principle

*: Alt.1.(a) =subparagraph (a) of alternative 1 to paragraph 180.

** : Alt.(b) = alternative to sub paragraph (b).

Paragraph 180 bis

Proposed new section entitled National and cooperative actions to enhance the development, application and diffusion, including transfer, of technologies, practices and processes

Paragraph (page #)	Opportunity to consolidate	Rationale
x.1 prior to 181 (p176-7)	There are no simple opportunities to consolidate this proposal for new sections on National actions and Cooperative actions.	This is a consolidated proposal that has been reflected in the text.

Paragraphs 181-183

Technology Action Plan		
Paragraph (page #)	Opportunity to streamline	Rationale
181 (p177-8)	Merge alternative 1 and 2 into original 181	There is a high level of similarity between these three

Technology Action Plan		
Paragraph (page #)	Opportunity to streamline	Rationale
		alternatives, and they can be merged into one option
181/183 (177-8)	Take the second paragraph in alternative 2 on national road maps and make it the new 183.1	This preserves national road maps as a distinct element of the text.
182 (p178)	Merge first paragraph in alternative 2 with 182	Similar text on the technology cycle is in both paragraphs and they can easily be streamlined.
183.1 (p178)	[Identification of] inserted before sub paragraph (b)	Unintentionally the current formulation has the opposite meaning
x.1 (p178)	184 (d).2 is merged into x.1 (b).	Global technology road maps are addressed in paragraphs 181-183, national technology road maps are addressed in paragraph 185 and paragraph 184 is focused on national activities.

Paragraph 184

[Technology needs [assessments], enabling environments, [and] capacity-building, technology information, and mechanisms for enhanced cooperative action on technology development, deployment, transfer and diffusion] [Enhanced national capacity] [Cooperative action to promote technology needs assessment, technology information, enabling environments and capacity-building]		
Paragraph (page #)	Opportunity to consolidate	Rationale
184 New Alternative 1 and 2 (p179-10)	Create two new alternatives – one based on TNAs as stand alone activities, and one based on TNAs integrated into other national planning processes	There are 2 distinct options within the text. One which would see TNAs as separate processes and one which links them or combines them with other national planning processes. Making a clear distinction in the text helps facilitate negotiations on the options.
184 (p179-181)	Alternative to (a) and the old Alternative 2 becomes the basis for new Alternative 2.	For the reasons above
184 (p179-181)	(d).2 merged into x.1 (b) in paragraphs 181-183	Global technology road maps are addressed in paragraphs 181-183, national technology road maps are addressed in paragraph 185 and this section is focused on national activities.
184 (p179-181)	Alternative 1 merged with original 184	Streamlining this text clarifies the two distinct options for

[Technology needs [assessments], enabling environments, [and] capacity-building, technology information, and mechanisms for enhanced cooperative action on technology development, deployment, transfer and diffusion] [Enhanced national capacity] [Cooperative action to promote technology needs assessment, technology information, enabling environments and capacity-building]		
Paragraph (page #)	Opportunity to consolidate	Rationale
		TNAs as above.

Paragraph 185

Technology Road Maps		
Paragraph (page #)	Opportunity to consolidate	Rationale
185 (p181)	Alternative to 1 (a) combined with original (a)	The alternatives have similar language and can be combined
185 (p182)	Alternative to (b) combined with original (b)	The alternatives have similar language and can be combined
185 (p182)	Minor change to chapeau to create functioning English	
185 (p182)	(c) and (e).2 grammar improved	

Paragraph 186

Cooperative Actions on Research and Development		
Paragraph (page #)	Opportunity to consolidate	Rationale
186 (p182-4)	Combine all alternatives to 186 into one option.	There is language within the options, which is similar, and the alternative paragraphs are only slight modifications of the original bracketed text.
186 (p183)	(b).1 could be moved and integrated with paragraph 180 or 185	The subparagraph is a proposed function of the technology mechanism/framework for technology
186 (p183)	The paragraph “[Stimulate the formation and development of national and international innovation systems and markets for technologies for mitigation and adaptation, creating favourable investment and enabling environments, and engaging the private sector]” would be moved and integrated with 184	The paragraph is closely related to the text on TNAs, enabling environments, capacity building etc, and it is also formulated as an objective or guiding principle
186 (p183)	The paragraph beginning “Focused voluntary technology oriented agreements” would be moved and integrated with 193	The paragraph is directly related to the section on voluntary agreements.
186 (p183)	The text on technology innovation centres would be moved and integrated with 197	The paragraph is directly related to the section on technology innovation centres.

Cooperative Actions on Research and Development		
Paragraph (page #)	Opportunity to consolidate	Rationale
186 (p184)	The text on voluntary agreements would be moved and integrated with 192	The paragraph is directly related to the section on voluntary agreements.
186 (p184)	Text on climate innovation centres would be moved and integrated with 197	The paragraph is directly related to the section on technology innovation centres.
186 (p184)	Text on tariff barriers could be moved to 180	There is existing text in paragraph 180 related to tariff barriers.

Paragraphs 187-189.2

Measures to address intellectual property rights		
Paragraph (page #)	Opportunity to consolidate	Rationale
188 (p184)	Alternative to (a) combined with (a)	These are the same concepts compulsory licensing or patent exemptions and are therefore consolidated into the one sub paragraph
188 (p184)	Alternative to (b) combined with (b)	These are the same concepts of patent pools and are therefore consolidated into the one sub paragraph
189 (p185)	Option 3.1 can be merged with other elements of the text (see below). Option 3.1 (a) becomes the new (c).x combined of Option 2	Similar concepts and language.
188 (p184)	(c).3 and (c).5 merged with the new (b) in Option 2	These are the same concepts of patent pools and are therefore consolidated into the one sub paragraph
188 (p185)	(c).7 merged with the new (a)	These are the same concepts compulsory licensing or patent exemptions and are therefore consolidated into the one sub paragraph
188 (p185)	(c).4 combined with (c).1	These are the same concepts of preferential pricing and are therefore consolidated into the one sub paragraph
188 (p185)	The alternative to paragraph 188 can be merged into other elements of the text. In the alternative to 188, (a) is merged into the new (a), (b) merged with new (c).5 (along with the relevant part of 189), (c) (iv) becomes the new (c).y, (c) (i) is merged with (c) and (c) (ii) and (iii) are merged with the new (b)	All similar concepts in the alternative to paragraph 188 are merged into Option 2
188.1 (p185)	188.1 is merged with the new (a)	These are the same concepts of patent pools and are therefore

Measures to address intellectual property rights		
Paragraph (page #)	Opportunity to consolidate	Rationale
		consolidated into the one sub paragraph
189.1 (p185)	Option 3.1 is no longer required – the chapeau is merged into Option 2, sub paragraph (a) is merged with the new sub paragraph (c).x, while sub paragraph (b) is moved to paragraph 197 and sub paragraph (c) is be moved to paragraph 180	Sub paragraph (a) is directly related to financing of technology innovation centres and sub paragraph (b) is a broad principle that is not directly related to IPRs and would be better placed in the section on Objectives, Scope and Guiding Principles.
189.2 (p186)	This is a distinct and separate option 4 and should be labelled as such. Due to the merging of Option 3.1, paragraph 189.2 becomes 189.1	The revised text did not have this as a clearly identified separate option.

Paragraph 190-191

Paragraph (page #)	Opportunity to consolidate	Rationale
190 (p186)	x.1 on the leveraging service is similar to the proposed Technology Development and Transfer Facility proposed in the section on institutional arrangements	Proposals are similar and were moved to facilitate consideration
190 (p186)	The alternative to 190 may be better expressed as a separate paragraph rather than an alternative to 190	Alternative to 190 moved to become the new x.1
191 (p186-7)	Alternative to the chapeau for 191 is merged with the chapeau for 191	These have very similar concepts and language
191 (p186-7)	Alternative (a) and original (a) can be merged, (b) can be merged with (b), (c) and (d) become the new (g) and (h)	The streamlining ensures that any unique language in both alternatives are included
191 (p186-7) & 184 (p179-181)	(d).1 in 184 is merged with paragraphs 190	Mechanisms may be better consolidated in the relevant section of the text.

Paragraph 192

[Voluntary agreements][Partnerships]		
Paragraph (page #)	Opportunity to consolidate	Rationale
193 (p187)	Paragraph 193 is moved to the section on technology information	The paragraph is primarily about technology information
186 (p182-4)	The text on voluntary agreements is moved from 186 to this section and merged with paragraph 192	The paragraph is directly related to the section on voluntary agreements.

Paragraph 193-195

Technology information

Paragraph (page #)	Opportunity to consolidate	Rationale
193 (p187)	Paragraph 193 is moved to this section on technology information	The paragraph is primarily about technology information
194 (p187-8)	'development and technology mechanism' changed to 'technology mechanism'	To keep consistent language throughout the text
194 (p187-8)	Alternative to paragraph 194 combined with paragraph 194	The alternative text can be accommodated within the paragraph
194 (p187-8)	Reference to Options 1 and 2 can be removed	Reference to Options within the text may not be relevant

Paragraph 196

Institutional Arrangements (not including paragraph 197-198 on Technology Innovation Centres)		
Paragraph (page #)	Opportunity to streamline	Rationale
196 (p188-189)	Option 1.1, 1.2 and 1.3, with the functions of Option 3 are merged to create a single Option 1	These options have many similar features and no contradictory elements therefore they can be merged.
196 (p189)	Option 2 – alternative to (c) is merged with (c) and the functions of Option 3 are included as (e).5-7 Alternative 1 is an elaboration of Option 2, and is now labelled as an alternative to Option 2	Option 3 is similar to other options for a subsidiary body with a subset of its functions, therefore it can be merged without losing its substance.
196 (p190)	Option 3 is absorbed by Option 1 and Option 2	See above
196 (p190)	Option 4 becomes the new Option 3, Option 5 becomes the new Option 4, and Option 6 becomes the new Option 5.	Changes in the numbering of options due to the merging of one option into others
196 (p191)	Alternative 1 becomes an alternative to Option 2.	Alternative 1 is an elaboration of Option 2.
x.1 above paragraph 190 (p186)	x.1 above paragraph 190 – the proposed technology leveraging service - has been moved into this section as new Option 6.	Proposals are similar and were moved to facilitate consideration
196 (p193)	Alternative 2 is labelled as Option 7	Alternative 2 is a unique Option, and is therefore labelled as Option 7

Paragraphs 197-198

National and regional technology innovation centres		
Paragraph (page #)	Opportunity to consolidate	Rationale
197 (p193-194)	The first paragraph of alternative to 197 are consolidated into chapeau of para.197	They are common concepts with similar functions
197 (p193-194)	Alternative to (a) merged with (a)	These sub paragraphs have common elements that can be consolidated.
197 (p194)	Second and third paragraph of alternative to	The text is about the function

	197 are rearranged as subparagraphs of para.197	of the centres.
197 (p194)	The fourth paragraph of alternative to 197 is consolidated into para.198	The text is directly related to financing of technology innovation centres
186 (p182)	Text moved from paragraph 186 into section on national and regional technology innovation centres and merged with paragraph 197 as (a).1	The text is directly related to technology innovation centres
189.1 (p186)	Text moved from paragraph 189.1.(e) into section on financing of national and regional technology innovation centres and merged with paragraph 198	The text is directly related to financing of technology innovation centres

Alternative to paragraphs 198 and 175

Financing technology development and transfer		
Paragraph (page #)	Opportunity to consolidate	Rationale
-	No opportunities to consolidate where identified	

B. Enhanced action on development and transfer of technology²

Preambular paragraphs

[Recognizing the importance to promote and cooperate in the development, deployment, transfer and diffusion of technologies that control, reduce or prevent anthropogenic emissions of greenhouse gases in all relevant sectors under the framework beyond 2012,]

[Acknowledging that intensive support for promotion of technology transfer such as identification of technologies to be deployed and matching of companies with those that own the technologies and of those that require the technologies should be provided to the developing countries that have already taken policy measures, measures on GHG reductions, and made efforts to enhance the business environment to accelerate technology transfer,]

[Confirming that in order to achieve the long-term goal, it is essential not only to quickly deploy practically available technologies but also to develop innovative technologies,]

[Guided by the principles and provisions of the Convention and the principle of learning by doing and recognizing the existing framework for meaningful and effective actions to enhance the implementation of Article 4.5 of the Convention established under Convention 4/CP.7 and enhanced under BAP 3/CP.13 (the framework for technology development, deployment, diffusion and transfer) along with Articles 4.1(c), 4.5 and 11.5,]

[Guided also by the best available science and broad participation of stakeholders at national and local government and community levels,]

[Recognizing that climate change poses a serious threat to social and economic development of all Parties and noting that the SIDS and LDCs are particularly most vulnerable to impacts of adverse effects of climate change and that these groups of countries will suffer disproportionately,]

[Recognizing also the urgency and the immediacy of the climate change problem the Parties agreed on a legally binding Adaptation Framework as set out in subsequent sections,]

[Noting the continuing growth in greenhouse gas emissions, particularly high rate of growth in developing countries,]

[Aware that such growth will significantly contribute to increasing concentration level of greenhouse gases in the atmosphere, with serious potential consequence,]

1. Objectives, scope and guiding principles

x.1 [Enhanced action on technology shall build on and enhance the implementation of the existing framework for technology action as described in the Article 4 paragraphs 1 (c), 5 and Article 11 paragraph 5, of the Convention, and decision 4/CP.7 and decision 3/CP.13, and address the gaps in, and to enhance the implementation of Articles 4.1, in particular 4.1 (c), 4.3, 4.5, 4.8, and 4.9, in the context of Article 4.7 of the Convention.]

x.2 [Developed Country Parties shall provide new and additional financial resources, including for the transfer of technology, needed by the Developing Country Parties to meet the agreed full incremental costs of implementing such measures.]

x.3 [Developed Country Parties shall take all practicable steps to promote, facilitate and finance, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly Developing Country Parties, to enable them to implement the provisions of the Convention.]

² The Bali Action Plan, in its paragraph 1 (d), calls for enhanced action on technology development and transfer to support action on mitigation and adaptation. In advancing their proposals under this matter, Parties referred to Articles 4.1(c), 4.3, 4.5 and 11.5 of the Convention.

x.4 [Enhanced action on technology must give urgent and equal weight to action on technologies for adaptation in conjunction with action on technologies for mitigation and to ensuring that existing barriers to the diffusion of adaptation technologies are addressed.]

x.5 [All Parties, taking into account their common but differentiated responsibilities and respective capabilities, shall cooperate to promote the transfer and diffusion of, or access to, technologies and know-how necessary for supporting the mitigation and adaptation actions taken by developing country Parties.]

x.6 [The developed country Parties shall promote development of innovative technologies through strengthening international cooperation including sharing roadmaps for technology development.]

180. [Building on the existing framework for technology as described in decision 4/CP.7, and reaffirmed in decision 3/CP.13, in accordance with Articles 4.1(c), 4.5 and 11.5, an] [[An] enhanced [action on technology][set of short-, medium- and long-term national and international cooperative actions] [technology mechanism³][framework for technology] [shall][should] be [established] [developed] [promoted]]][Existing frameworks for technology shall be enhanced] to [[implement the technology transfer provisions][enhance the implementation of Article 4.3, 4.5, and 4.8] of the Convention] [support the short-, medium- and long-term cooperative action on technology [at the national and international level.][support global research, development, diffusion and transfer of climate related technologies]]][and [shall][should] take into account the special needs of all developing countries, particularly low-lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification, and developing countries with fragile mountainous ecosystems are particularly vulnerable to the adverse effects of climate change.] [The framework of technology] [Enhanced action on technology development and transfer to support action on mitigation and adaptation][and shall][should] [be guided][contain] by the following [[objectives and] principles][elements]:

(x.a) Establish enabling environment for technology transfer, including, according to the IPCC, inter alia, the macroeconomic policy framework: trade and foreign investment policies, financial sector regulation and energy tariffs policies;

(a) [Be guided by the provisions of the Convention, particularly Articles 4.3, 4.4, 4.5, 4.8 and 4.9, and] [[B][b]uild on [and strengthen] [existing] activities [under][within] the Convention[, including the work of the Expert Group on Technology Transfer (EGTT), and expand ongoing activities relating to technology] [and under other specialized institutions] and [operate under the [authority] guidance of the COP] and be accountable to it in accordance with relevant provisions of the Convention][and other efforts on technology development and transfer outside the Convention];

Alternatives to subparagraph (a)

Alternative 1:

[Build on domestic strategies that identify needs and priorities;]

Alternative 2: (1.a and b, 5 b)

[Enhance implementation of the Convention's framework for technology development, deployment, diffusion and transfer;]

[Complement and build on [all relevant] existing [and emerging national and international] technology-related initiatives[, including international and non-governmental organizations];]

(b) [Address][Consider] all aspects [stages] of the technology [development cycle][spectrum], including R&D, deployment, diffusion[, demonstration] and [transfer] of [affordable] [state of the art] environmentally sound technologies to enable [all Parties,

³ Other formulations proposed include a "technology transfer mechanism", "technology facilitative mechanism", "arrangement" and "technology institutional framework".

particularly] developing country Parties, to [enhance action on mitigation and adaptation][to gain access to technologies necessary to address the worst effects of climate change];

Alternative to subparagraph (b)

(b) Address all aspects of cooperation on technology research and development cycle, deployment, transfer and diffusion in accordance with Articles 4 paragraph 1(c), 3 and 5 of the Convention, in order to enable mitigation and adaptation as stipulated in decision 1/CP.13 (Bali Action Plan).

(b).1 Wide diffusion of existing technologies similar to scale of information communication technologies;

(c) [Promote coherence by [integrating and]expanding [ongoing activities [inside and outside the Convention] related to technology][catalytic and integrated actions on technology in order to support global mitigation and adaptation responses];]

(c).1 Facilitate national actions and international cooperative actions that maximize the full potential of technology to reduce greenhouse gas emissions and build climate resilience;

(d) [[Aim to] achieve accessibility], [Facilitate the removal of barriers for technology development and transfer,] [affordability, appropriateness] and adaptability of technologies [required][identified][needed] by [all Parties, in particular][developing countries], as appropriate, in order to [[support] [enhance] [their action on mitigation and adaptation] [Articles 4, paragraphs 1 (c) and 5 of the Convention]][address the worst effects of climate change and to take nationally appropriate action on [mitigation and] adaptation];

(e) [[[Aim to] [identify and achieve the removal of][remove]][Address][Serves as a primary vehicle in the] barriers [for][to] technology development[, deployment] [and][,] [transfer][and diffusion][to developing countries by reducing tariffs on environmental goods and services and strengthening the IPRs];]

(f) [[Further] Stimulate the formation and development of [local,] national and international innovation systems [and markets for technologies for mitigation and adaptation], [creating enabling trade and investment environments, [[creating] the creation of favourable investment and enabling environments], and [engaging][prompt] [engagement [with][of]] the private sector];]

Alternative to sub paragraph (f)

[Assist developing countries in building sustainable national regulatory and institutional frameworks that promote the development, deployment and diffusion of environmentally sound technologies;]

(g) [[Provide for full [agreed] cost and full [agreed] incremental cost, as referred to in Article 4.3 of the Convention.] [In order to implement the framework Parties may avail themselves of resources in accordance with the relevant provisions set out in Article Z]].

Alternative to sub paragraph (g)

[Take into consideration the full incremental costs and benefits of adopting environmentally sound technologies;]

(h) [[[Take into account the [[important] role] [relevance] of][Rely on developed country Parties'] public finance][Public finances shall be allocated by the Annex-I Parties] in supporting technology [outcomes, including the needs][R&D] [and] [to leverage private investment] [in the] [demonstration], deployment, diffusion and transfer of technologies [to the developing countries.] [Parties, particularly Annex II Parties, are urged to support R&D, deployment and diffusion of technologies by public/private sector];]

(i) Recognize the [importance of enabling environments, the engagement of the private sector, and the key roles that the public and private finance will play in the development, deployment, diffusion and transfer of technologies] [role that small and medium-sized enterprises could play in the success of adaptation and mitigation efforts and in

economic development] [and take into account the obstacles they face regarding the development and transfer of technology];

Additions of new sub paragraphs:

(j) Address the unique technology relevant issues specific to SIDS recognizing scale of economies, enabling environments, and geographical remoteness for both adaptation and mitigation.

(j).1 Ensure participation of all stakeholders at all levels of decision-making on technology cooperation and sharing, especially women, youth, indigenous peoples and local communities, among others.

(j).2 Efforts for enhanced action on technology development, deployment and diffusion should aim at:

(i) Reducing greenhouse gas emissions, facilitating low-emission development and contribute to appropriate adaptation, to contribute to the overall objective of the Convention;

(ii) Accelerate research, development, diffusion and transfer of environmentally sound technologies among all Parties.

(j).3 Improving energy efficiency and environment in upstream and downstream activities relating to fossil fuels.

(j).4 Promote diversified energy particularly carbon capture & storage technology.

(j).5 Support for the promotion of inward foreign direct investment, labour-intensive exports (manufacturing and services), trade liberalization, competition, access to developed countries' markets and human resource development.

(j).6 Support for price and ownership reforms in energy and associated industries.

(j).7 Technical assistance for economic diversification.

(j).8 Enhance R&D through supporting and improving of existing and establishment of new national and regional centres of excellence working on environment-friendly technologies, in particular in developing countries.

(j).9 Support to be prioritized for the least developed and most vulnerable countries.

(j).10 Accelerate innovation of environmentally sound and affordable technologies for mitigation and adaptation, in all countries and regions and scale up and speed up deployment and diffusion of environmentally sound and affordable technologies for mitigation and adaptation, especially in developing countries.

(j).11 Provide Parties with [pathways to low-emission and climate-resilient technology implementation][a shift to sustainable development paths], promote measures that facilitate technology innovation and diffusion by all Parties, including north-south and south-south and triangular action and contribute to the development of national long-term strategies for low-emission development and climate change adaptation.

(j).12 Immediately to ensure that any technology transfer to developing countries is appropriate for the developing countries concerned in order to enable its effective utilization.

2. Promoting [Cooperati[on]ive policies between the developed and developing countries on technology research, development, diffusion and transfer]⁴

Note: Proposals for the implementation of enhanced action on technology are reflected in this section. In advancing their proposals, Parties in some cases also proposed a governance structure for such action. Such proposals are reflected in paragraphs 196–198 below.

⁴ Technology cooperation in specific technologies and sectors is reflected in paragraphs 129–131 above.

Proposed new section entitled National and cooperative actions to enhance the development, application and diffusion, including transfer, of technologies, practices and processes

National actions

x.1 Recognizing that national policies and actions drive technology financing, leverage the private sector, build capacity, create suitable investment conditions, and support technology RD&D, demonstration, deployment, diffusion and transfer, Parties will, in the context of their national strategies, and consistent with their national circumstances:

- (a) Implement actions, consistent with relevant national social, economic, energy and environmental policies, that establish conditions which promote the development, deployment and diffusion of environmentally sound technologies;
- (b) Establish effective enabling environments with policies and regulations, economic instruments, and other related measures to foster technology diffusion;
- (c) Promote private investment and matchmaking, encourage innovative financial mechanisms and reduce market, technology and political risks to private investment in climate technologies;
- (d) Establish national programmes that support common performance standards, testing, verification and certification programmes for technologies for mitigation and adaptation;
- (e) Establish training, information and workforce development programmes to build capacity, including national centres of excellence, to ensure that all market actors understand the costs, performance and benefits of climate change technologies;
- (f) TNAs [to be fully elaborated taking into account the findings of the 2006 TNA review and expanded to cover more in-depth assessments of obstacles in the functioning of relevant technology innovation systems, including detailed assessment of technology capacity and markets. TNAs should also be shared and made publicly available] [to be carried out within the framework of the NAPAs and NAMAs in order to ensure consistency and coherence among the various efforts; TNAs should not constitute a barrier to short-term technology transfer];
- (g) Capacity-building, taking into account the various activities completed or under way on a bilateral or multilateral basis and mainstreamed within an enhanced framework for capacity-building for mitigation and adaptation (decision 2/CP.7);
- (h) Knowledge, technical and other necessary expertise in existing institutions and organizations, including regional centres and networks [shall][should] be developed, used, shared and sustained at regional and national levels;
- (i) Parties should strengthen their national technology research and their national technology research, development and demonstration programmes and provide appropriate support to developing country Parties through, inter alia:
 - (i) Reinforcing North–South, South–South and triangular cooperation with the aim of promoting endogenous technologies of developing countries and prioritizing technologies for mitigation and adaptation that might have high costs but also high potential for GHG mitigation and/or increase resilience to negative impacts of climate change;
 - (ii) Providing opportunities for participation by developing country Parties in joint RD&D programmes for specific technologies and joint - ventures to accelerate deployment, diffusion and effective transfer of technologies;
- (j) Focused voluntary technology-oriented agreements, including on partnerships within and outside the Convention and engaging the private sector and civil society organizations [shall][should] be recognized. Such agreements could include cooperative R&D and large-scale demonstration projects, technology deployment projects, cooperation on specific sectors or gases, and cooperation on climate observation and warning systems for enhancing resilience.

Cooperative actions

x.2 Recognizing that cooperative actions should be conducted and acknowledged that promote the development and deployment of environmentally sound technologies. Parties will engage in cooperative actions, to the extent appropriate and consistent with their national strategies that:

(a) Strengthen technical and institutional capacity to sustain cooperative technology development, deployment, diffusion and transfer activities including enhancements in policies, standards, information and assessment, and investment programmes;

(b) Promote greater public and private sector investment in RD&D for targeted EST technology areas through enhanced support for strengthened incentives for private-sector participation in RD&D;

(c) Promote participation in international programmes that support the development and use of common performance standards, testing, verification and certification programmes.

(d) Establish international partnerships to advance the development, deployment and transfer of environmentally sound technologies;

(e) Support, strengthen and expand globally coordinated research programmes and networks or alliances of climate technology research institutes to engage developing countries;

(f) Capacity-building, taking into account the various activities completed or under way on a bilateral or multilateral basis and mainstreamed within an enhanced framework for capacity-building for mitigation and adaptation (decision 2/CP.7);]

(g) Knowledge, technical and other necessary expertise in existing institutions and organizations, including regional centres and networks [shall][should] be developed, used, shared and sustained at regional and national levels;

(h) Parties should strengthen their national technology research and their national technology research, development and demonstration programmes and provide appropriate support to developing country Parties through, inter alia:

(i) Reinforcing North–South, South–South and triangular cooperation with the aim of promoting endogenous technologies of developing countries and prioritizing technologies for mitigation and adaptation that might have high costs but also high potential for GHG mitigation and/or increase resilience to negative impacts of climate change;

(ii) Providing opportunities for participation by developing country Parties in joint RD&D programmes for specific technologies and joint - ventures to accelerate deployment, diffusion and effective transfer of technologies;

(i) Focused voluntary technology-oriented agreements, including on partnerships within and outside the Convention and engaging the private sector and civil society organizations [shall][should] be recognized. Such agreements could include cooperative R&D and large-scale demonstration projects, technology deployment projects, cooperation on specific sectors or gases, and cooperation on climate observation and warning systems for enhancing resilience.

[Technology action plan

181. [Develop] [A] technology action plan [to serve] [shall be drawn up] [as a starting point] [for the work of the Executive Body] [for the work of a body for the technology mechanism] [for enhanced cooperative action on technology].⁵ [It shall aim to accelerate research, development, diffusion and transfer and use of environmentally sound technologies [[among all Parties], [particularly]] [to the developing countries with a view to implementing the Annex I commitments contained in the Convention] [from] [Annex II Parties] [the

⁵ This proposal is presented in the context of proposals to establish an executive body on technology and a multilateral climate technology fund reflected in paragraphs 175, option 5, above and 196, option 2, below.

developed Parties that have commitments under the Convention and the other developed Parties in a position to transfer environmentally sound technologies] [developed country Parties and other developed Parties included in Annex II of the Convention] [to] [non-Annex I Parties] [developing country Parties and other Parties in need of abovementioned activities], in accordance with Article 4.5 of the Convention, in order to support action on mitigation and adaptation [and] [to] promote a shift to sustainable development paths. The technology action plan shall develop an effective strategy to identify and propose specific measures to overcome the economic and technical barriers and to assess the required steps to accelerate research, development and transfer of environmentally sound technologies for both mitigation and adaptation.]

(a) It will include specific actions and timelines for the first three years, and will be updated for successive three-year periods;

(b) To realize the full potential of technology, the TAP shall support all stages of the technology cycle, including research, development, demonstration, diffusion, and transfer;

(c) The TAP will define specific policies, actions and funding requirements for all relevant technologies under the following classifications: public domain technologies, patented technologies and know-how, future technologies;

(d) The establishment of national and regional technology centres of excellence to reinforce north–south, south–south and triangular cooperation, including joint research and development (details can be annexed to the legal/agreed outcome)].

182. [[To realize the full potential of technology,] the action plan shall support all stages of the technology development cycle, [including technology research and invention through scientific and technical cooperation, technology development, technology transfer and diffusion,] [and [articulate] [linked] with the financial mechanism of the Convention in order to [secure] assist with obtaining the necessary financing] [and ensure that financing for technology transfer, including all available means to ensure the affordability of technologies, products and related services, is available].

183. [The action plan [shall][should] include specific policies, actions, institutional arrangements and funding requirements for existing and emerging [technologies in the public domain, patented technologies and [future]] [IPRs protected] technologies to be developed in the future. The plan shall also include clear actions for the first three years, and be reviewed after every [updated for successive] three-year periods in light of lessons learned.] This should also include: public domain technologies and future and innovative technologies.]]

183.1 Parties should promote the development of innovative technologies and strengthen international technology cooperation, including through the formulation and sharing of national technology road maps as part of the technology action plans. Such road maps should include:

(a) Identification of technological options for specific sectors;

(b) [Identification of] obstacles to the development and transfer of identified technological options;

(c) Policy instruments and infrastructure required for the deployment, diffusion and transfer of identified technological options;

(d) Capacity-building needs;

(e) Opportunities for joint technology R&D between developed and developing countries.]

Alternative to paragraphs 181, 182 and 183: to move to new section entitled Cooperative action to promote technology research, development and demonstration and deployment and new subsection on Technology action plans/technology road maps:

x.1 [Parties shall promote the development of innovative technologies and strengthen international technology cooperation, including through the following actions:

(a) A series of prioritized technology action plans shall be developed to, inter alia, identify the potential for the technology to contribute to global, regional or national mitigation and adaptation responses, identify the gaps and barriers to commercial maturity and recommend further actions that may be required to realize this potential;

(b) Technology action plans shall be informed and supported by comprehensive [global] technology road maps [to provide an overview of what needs to be done to promote wider and more rapid development and deployment of key technologies for mitigation] which shall identify:

- (i) The current state of development for the technology;
- (ii) Key stakeholders and relevant existing and emerging efforts contributing to the development of the technology;
- (iii) Gaps and barriers to commercial maturity;
- (iv) Opportunities for collaborative effort between developed and developing countries, including their respective private sectors;

(c) Technology action plans and technology road maps will build on and work collaboratively with other relevant international and national efforts and institutions to maximize efficiency of effort and avoid duplication.]

[Technology needs [assessments], enabling environments, [and] capacity-building, technology information, and mechanisms for enhanced cooperative action on technology development, deployment, transfer and diffusion] [Enhanced national capacity] [Cooperative action to promote technology needs assessment, technology information, enabling environments and capacity-building]

184. [Cooperation on technology [Technology outcomes] [shall][should] be enhanced by the following [elements] [catalytic actions]:

Technology needs assessments

184.1 [[TNAs] [[to be fully elaborated taking into account the findings of the 2006 TNA review and expanded to cover more in-depth assessments of obstacles in the [access to, development and transfer of] [functioning of] relevant technology innovation systems, including detailed assessment of technology capacity, barriers and markets. TNAs] should [continue to [also] be [shared and] made publicly available] [and] [could] [[to] be carried out within the framework of the [NAPAs], [and] NAMAs and other relevant reports and information including national communications in order to ensure consistency and coherence among the various efforts; [TNAs should not constitute a barrier to short-term technology transfer to the developing country Parties.];] Technology road mapping exercises that identify, inter alia, opportunities for partnerships, as well as obstacles to technology development and deployment, could constitute an element of TNAs;]

Alternative to paragraph 184.1

[A single process will be carried out to identify technology needs (TNAs), [which could include] nationally appropriate mitigation actions (NAMAs)[, NAPAs,] and [long-term planning for achieving low-emission development] [which should be integrated into national low-emission development strategies and which could include NAMA/NAPA processes and the use of country-specific technology development plans]. [This process will result in preparation of a national low-emission development strategy, as described in Article X, paragraph Y.] This single document should contain an in-depth assessment of [obstacles in] [national barriers to] the functioning of relevant technology innovation systems, including detailed assessment of technology capacity and markets. Assessment of technology needs for adaptation, and barriers to the deployment of these technologies, should be carried out in the context of climate-resilient development, as described in Article P, paragraph Q.] [Action to enhance national capacity on technology shall include the following elements:

(a) Developing countries shall be assisted in completing Technology Needs Assessments, integrated with national low-carbon development strategies. TNAs should

include, inter alia, in-depth assessments of national barriers to technology deployment and diffusion, capacity for technology adoption and related capacity-building needs as well as relevant market conditions;

(b) [Enhancement of the TNA process to support full participation by all developing countries,][TNAs to be fully elaborated] taking into account the findings of the 2006 TNA review[, the revision of the TNA handbook and lessons learned in the field testing and early implementation phases,] and expanded to cover more in-depth assessments of obstacles in the functioning of relevant technology innovation systems, including detailed assessment of technology capacity and markets. TNAs should also be shared and made publicly available and be carried out within the framework of the NAPAs and NAMAs in order to ensure consistency and coherence among the various efforts;

(c) 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 TNAs and low-emission development strategies, taking into account specific barriers for technology deployment in these sectors.]

Enabling environments

184.2 [Enabling environments] [which create the conditions conducive to private and public sector technology development, deployment, transfer and diffusion] [– technology-specific policies and measures with both adaptation and mitigation benefits [need to] [should] be defined [[/strengthened] and implemented]. Policies and measures [should] [may] include deployment schemes for adaptation measures and [low-greenhouse gas emission technologies] measures to address barriers to technology development, deployment and diffusion, and technologies for adaptation [and national energy and climate policies]];

Capacity building

184.3 Capacity-building, also taking into account the various activities completed or under way on a bilateral or multilateral basis [and in accordance with the capacity-building theme articulated in decision 4/CP.7 and 3/CP.13, as well as the framework for capacity-building in developing countries (decision 2/CP.7)] [and mainstream[ed]ing within an enhanced framework for capacity-building for mitigation and adaptation [(decision 2/CP.7)]], under the Convention; capacity-building activities should be guided by the Convention. Capacity-building needs should be identified and delivered in the overall context of support for mitigation and adaptation;

184.4 [Information to support actions that enable technologies for mitigation and adaptation,] knowledge, technical and other necessary expertise in existing institutions and organizations, including local and subnational authorities, existing regional centres and networks [shall][should] be developed, strengthened, used, shared and sustained at regional and national levels.]

184.5 A programme for capacity-building for accelerated technology development, deployment and diffusion in developing countries shall be developed. This programme for capacity-building should include the following elements, [taking into account the various activities completed or under way on a bilateral or multilateral basis and mainstreamed within an enhanced framework for capacity-building for mitigation and adaptation (decision 2/CP.7)];:

(a) Analyses, information, training activities and advice on development and implementation of relevant policies, institutional and regulatory frameworks that promote the development and use of environmentally sound technologies;

(b) Advice and support for the development and implementation of national technology deployment schemes;

(c) Advice and technical assistance to developing countries in order to facilitate increased private investment in key GHG emitting sectors, including advice on the establishment of public–private partnerships for promoting environmentally sound technologies;

(d) Knowledge, technical and other necessary expertise in existing institutions and organizations, including regional centres and networks [shall][should] be developed, used, shared and sustained at regional and national levels;

(e) [Advice and support for the identification of] policy instruments and infrastructure required for the deployment, diffusion and transfer of identified technological options.

184.6 Parties shall promote the accelerated penetration of cost-effective technologies in non Annex-1 countries through pilot projects which strengthen their capacity to develop specifications for these applications which are appropriate to national circumstances, and create human resources necessary for the design, implementation, and operation and maintenance of these applications.

Technology Road Maps

185. [In accordance with their respective commitments in the Convention, the [Parties [shall][should] promote and support the development of innovative and climate friendly technologies and [strengthen international technology cooperation,] including through the formulation and sharing of national technology road maps. Such road maps [shall][should] [include] be consistent with TNA and should in accordance with Article 4, paragraph 5, of the Convention [include]:

- (x.a) National needs assessment;
- (a) Identification of technological options for [specific] [all] sectors[and all gases];
 - (a.1) Improved understanding on the role of oceans on climate change and vice-versa, and its effects on marine ecosystems, marine biodiversity and coastal communities, especially in developing countries and small island states; including marine scientific research and sustained integrated ocean observatory systems;
 - (b) [Removing] [Identification of] [obstacles] [barriers] to the development, deployment, diffusion and transfer of [win-win technological options such as carbon capture and storage, clean fossil fuel, non-energy use of fossil fuel technologies] of [[identified] technological options];
 - (c) Policy instruments and enabling environments infrastructure required for the deployment, diffusion and transfer of identified technological options;
 - (d) Capacity-building needs;
 - (e) Opportunities for joint technology R&D between developed and developing countries should be paid by developed countries.]
 - (e.1) R&D between developing countries, and triangular cooperation.
 - (e.2) All Parties shall periodically review progress and identify areas where international cooperation should be strengthened.]

[Cooperative actions on research and development]

186. [[All] [[Developed country] Parties], [in accordance with national capabilities, and other developed Parties included in Annex II of the Convention] [The developed Parties that have commitments under the Convention and the other developed Parties in a position to transfer environmentally sound technologies] [shall] {shall} [take efforts to] strengthen their national technology research, development and demonstration (RD&D) programmes [and provide appropriate support] [with the aim of a substantial increase of private and public energy-related RD&D compared to current levels, working towards at least a doubling of global energy-related RD&D by 2012 and increasing it to four times its current level by 2020, with a significant shift in emphasis towards safe and sustainable low greenhouse gas emitting technologies, especially renewable energy] [towards] [[to developing country Parties] through], inter alia:]

(a) [Reinforcing] Enhancing North–South, South–South [and triangular] cooperation, including city to city twinning arrangements, with the aim of promoting technology development taking into account endogenous technologies [of developing [countries][country Parties]] and prioritizing technologies for mitigation and adaptation [towards a goal of bringing down costs and increasing the] that [might] have not only [high costs but also high] potential for GHG mitigation and/or increas[e]ing resilience to the [negative] adverse impacts of climate change;

(b) Providing opportunities for [all] [participation [by developing country]] [Parties] in joint R&D programmes[, as appropriate] for specific technologies and joint ventures to accelerate deployment, diffusion and effective transfer of technologies [from developed country Parties and other developed Parties included in Annex II of the Convention to developing country Parties] [from developed to developing country Parties, particularly technologies for adaptation [for SIDS,] [small island developing countries, LCDs and Africa] [for low lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification, and developing countries with fragile mountainous ecosystems are particularly vulnerable to the adverse effects of climate change,] [consistent with the language of the Bali Action Plan and the Convention] [, in the absence of win-win solutions and market intervention].

[Measures to address intellectual property rights]

187. [Option 1]

[Technology development, diffusion and transfer [shall] be promoted by operating the intellectual property regime. [This process shall also make use of the flexibilities in the IPR regime to][in a manner that encourages development of climate-friendly technologies and simultaneously] [such as compulsory licensing to] facilitates [the][their] demonstration, diffusion and transfer to developing countries. Buy down the cost of technologies to provide the:

- (a) Full cost for LDCs; and
- (b) Partial cost for other developing countries taking into account the ability to pay]

[Alternative to paragraph 187:]

[Parties shall cooperate to develop and deploy patent sharing and/or intellectual property free renewable energy and energy efficiency technologies.]

188. [Option 2]

Specific and urgent measures [shall] [should] be [instituted in [a] relevant forum[s]][established] [and mechanisms developed] to remove barriers to development and transfer of technologies from [developed][the developed Parties that have commitments under the Convention and the other developed Parties in a position to transfer environmentally sound technologies] to developing country Parties arising from the intellectual property rights (IPR) protection, [including][in particular]:

(a) [All necessary steps shall be immediately taken in all relevant fora to [mandatorily exclude from patenting] [revoke all existing patents on essential/urgent] [implement compulsory licensing for] [specific] [climate-friendly] [environmentally safe and sound] technologies [in developing countries] [held by Annex II Parties which can be used to adapt to or mitigate climate change][, including those developed through funding by governments or international agencies];]

(b) [Pooling and sharing publicly funded technologies and making the technologies available in the public domain at an affordable price] [[Creation of a “Global Technology Pool for Climate Change”] [that promotes] [sharing] [of] [and ensures access to] technologies that can be used to adapt to or mitigate climate change and associated know-how [and trade secrets] to developing countries [including on non-exclusive royalty-free terms] [at an affordable price] [and on terms and conditions that promotes access for developing countries] in order to provide better information service and reduce transaction costs;]]

(c) [Use to the full flexibilities contained in the Trade Related Aspects of Intellectual Property Rights (TRIPS) including Compulsory licensing to access intellectual property protected technologies, taking into account the example set by decisions in other relevant international forums relating to IPRs, such as the Doha Declaration on the TRIPs Agreement and Public Health;]

(c).x Parties agree that nothing in any international agreement on intellectual property shall 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 transfer of, and access to technologies;

(c).y Adoption of a Declaration on IPRs and Environmentally Sound Technologies in relevant fora to, inter alia, reaffirm the flexibilities in the TRIPS Agreement and enhance the enabling environment for implementing these flexibilities.

(c).1 [Preferential pricing] [Differential pricing between developed and developing countries].

(c).2 Reviewing all existing relevant IPR regulations in order to provide certain information to remove the barriers and constraints that GHG mitigation technologies are subject to.

(c).3 Promoting innovative IPR sharing arrangements for joint development of environmentally sound technologies.

(c).4 Limited/reduced time patents on climate friendly technologies.

(c).5 [Genetic resources, including germplasms of plant and animal species and varieties that are essential for adaptation in agriculture, shall not be patented by multinational or any other corporations.]] [Biological resources including microorganisms, plant and animal species and varieties, and parts thereof that are used for adaptation and mitigation of climate change shall not be patented.]

189. Option 3

[[LDCs][Countries vulnerable to the adverse effects of climate change] should be exempted from patent protection of climate-related technologies for adaptation and mitigation, as required for capacity-building and development needs.

189.1 Option 4

The Executive Body on Technology (EBT) should establish a committee, an advisory panel, or designate some other body, to proactively address patents and related intellectual property issues to ensure both increased innovation and increased access both for mitigation and adaptation technologies. Such a committee/panel should:

(a) Actively engage enterprises and institutions in both developed and developing countries;

(b) Develop a clear framework for evaluating and determining when intellectual property becomes a barrier to international technology research, development, deployment, diffusion and transfer and provide options for corrective action;

(c) Make recommendations back to the UNFCCC COP or COP/MOP on barriers that may require further actions.]

[Incentive mechanism[s] for technology transfer][Cooperative technology deployment]

x.1 [The Annex I countries shall institute incentives at the national level notably tax exemption and subsidies for the owner of patented technology with a view to promoting transfer and diffusion of the environmentally sound technologies to the developing countries;]

190. [[An incentive][The existing] [mechanism][s] for technology transfer [for enhanced cooperative action on technology development, deployment, transfer and diffusion] for mitigation and adaptation via projects/programmes that stimulate accelerated diffusion and transfer of existing and new environmentally safe and sound technologies to developing [countries] [country Parties], in particular a vulnerably countries [shall][should] be [strengthened] [established] [offered]] in accordance with Article 4, paragraph 9.

191. [For the purpose of [meeting its quantified emission limitation and reduction commitments] [meeting its commitments] and requirements for monitoring, reporting and verification, as appropriate, [a Party] [any Party included in Annex II] may transfer to, or acquire from, [other Parties] [any other such Party] emission reduction units resulting from projects [and programmes that accelerate the diffusion or transfer of environmentally sound technologies] [aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy], provided that:

- (a)' Host Parties establish technology targets or objectives;
- (a) [Voluntary participation] [Any such project] is approved by [each Party][the Parties] involved;
- (b) Any such project results in [measurable, reportable and verifiable] reductions of GHG emissions by sources or enhancements of removals by sinks [that is additional to any that would otherwise occur];
- (c) The project contributes to the achievement of the technology targets and objectives of the [host] Party in receipt of that technology;
- (d) The [host] Party [providing the technology shall be] [has] allocated assigned amount units or environmentally sound technology rewards (ESTRs) [for] [to] the project or programme, proportionate to volume of emissions removed;
- (e) The project/programme is registered under the Convention;
- (f) Participants in the ESTR mechanism may involve private and public companies;]
- (g) It does not acquire any emission reduction units if it is not in compliance with its obligations; and
- (h) The acquisition of emission reduction units shall be supplemental to domestic actions for the purposes of meeting commitments.]

191.1 Parties shall promote the accelerated penetration of cost-effective technologies in non Annex-I countries through the provision of financial support as appropriate, such as concessional loans and risk guarantees, for the large-scale dissemination of these technologies.

[Voluntary agreements][Partnerships]

192. [Focused voluntary technology oriented agreements, including on partnerships within and outside the Convention and engaging the private sector and civil society organizations and local and subnational governments [shall][should] be [recognized][encouraged], including in accordance with Article 11.5 of the Convention. Such agreements could include cooperative R&D and large-scale demonstration projects, technology deployment projects, cooperation on specific sectors or gases, and cooperation on climate observation and warning systems for enhancing resilience.] [The contribution to enhanced action on RD&D through voluntary agreements on research, development and demonstration of key mitigation or adaptation technologies, shall be recognized under the Convention. Such agreements shall involve Parties to the Convention, and may include partnerships with the private sector, academia and civil society.]

Move paragraph 192 option 1 to proposed new section entitled National and cooperative actions to enhance the development, application and diffusion, including transfer, of technologies, practices and processes

Technology information

193. Technological information transfer agreement/multiple agreements to facilitate the spread of environment friendly products [and a healthy and reliable agricultural production system should be established].]

194. The technology mechanism under the Convention can also include a) [A] technology information platform, based on existing platforms, [should be developed and be continuously

updated to collect information] on sector-specific technologies and best practices [on publicly and privately held technologies, [including on IPRs and licensing], costs, abatement potentials, barriers and manufacturers of technologies.] [The existing technology information platforms should be strengthened and linked together.]

195. [The technology mechanism will also develop a][A] global database including ‘[green production][low-emission]’ technologies and best practices for mitigation and adaptation to be continuously updated [should be developed through the technology information clearing house (TT:CLEAR).]]

3. Institutional arrangements, including funds

[Note: Parties proposed several options for the creation or strengthening of institutional arrangements under the Convention for enhancing action on technology. In proposing these arrangements, Parties in some cases also proposed funds and/or implementation aspects. Proposals on funds for technology are reflected in paragraph 175 above and proposals on implementation aspects of enhanced action on technology are reflected in paragraphs 181–195 above.]

196. [Institutional arrangements for] enhanced cooperative action on technology [shall]{should}{include]

[Option 1

[An enhanced advisory capacity or role for] [and further efforts by] the Expert Group on Technology Transfer (EGTT) [acting in accordance with decision 4/CP.7 and serving as an advisory body to] [with the role of advisory centre at UNFCCC subsidiary bodies for development and transfer of technologies, and perform the following functions:] [to all bodies of the Convention] [the SBI, and] [the SBSTA] [and SBI] with appropriate improvements.]]

The EGTT shall:

- (a) Provide advice and recommendations to the COP on the overall implementation of technology action under the Convention;
- (b) Elaborate a technology action plan as a starting point of its work;
- (c) Guide and supervise the disbursement of a multilateral climate technology fund;
- (d) [Strengthen cooperation][make efficient use of the current institutional arrangements] through a range of institutions;
- (e) Promote communication and information/knowledge sharing;
- (f) Engage the private sector and encouraging cooperative partnership between governments, research intuitions, including cities, and industries, recognizing a wide variety of processes, mechanisms and organizations outside the UNFCCC and the critical role of private-sector investment, capacity and expertise as well as the role of public research institutions;]
- (g) Seek cooperation and coordination with relevant international technology initiatives and organizations, particularly with respect to the development of technology road maps, cooperative actions on research and development of technology, options for financing technology deployment, diffusion and transfer, and advice on issues related to IPR;
- (h) Stimulate the establishment of facilitative mechanisms to leverage private sector financing to meet developing countries’ needs;
- (i) Encouraging and strengthening collaborative partnership arrangements with relevant existing and emerging national and international public and private sector institutions and initiatives,

- including academia, the research community, government, business and other stakeholders;
- (j) Develop special reviews on existing technologies, including information on estimated cost, risks, benefits and limitations, as well as the required infrastructure, human resources and diffusion potential, taking into account the circumstances of the host Party;
- (k) Elaborate suggestions on the implementation of the most appropriate financial scheme for a given technology deployment in a given country, including assessment of local capability in production of its components and their servicing;
- (l) Elaborate regulatory documents, terms and criteria and guidance, and preparation of the respective decisions of the Parties;]
- (m) Monitor and assess the performance and progress, using performance indicators, and report to the COP.

[The membership of the EGTT shall be expanded] [The EGTT shall establish panels] to encompass business, research community and other relevant expert organizations, including the financial community, with responsibility for, inter alia:

- (a) Provision of relevant technical and other expert advice relating to the process of technology development, deployment and diffusion;
- (b) Undertaking technology action plans and road maps;
- (c) Provide advice as requested on TNAs, technology development plans or low emission development strategies.]

[[Option 2⁶

an executive body on technology, as a subsidiary body of the Convention, to enhance the implementation of the Convention by enhancing action on technology development and transfer to support action on mitigation and adaptation. The executive body shall, inter alia:

- (a) Provide advice and recommendations to the COP on the overall implementation of technology action under the Convention;
- (b) Elaborate a technology action plan as a starting point of its work;
- (c) Guide and supervise the disbursement of a multilateral climate technology fund [according to eligibility criteria such as Parties' level of development as well as their emissions reduction, limitation and adaptation potentials and their absorption capacities (human capital, depth of domestic market etc.).]
- (d) Promote communication and information/knowledge sharing; and policy dialogue;
- (e) Monitor and assess the performance and progress, using performance indicators, and report to the COP;
 - (e).1 Identifying areas of cooperation with the private sector and making recommendations to the COP for action;
 - (e).2 Contribute to the measuring, reporting and verifying of both the actions and the support for the actions;
 - (e).3 Advise on promoting technology transfer and diffusion in all relevant sectors, especially carbon capture and storage technology;
 - (e).4 Identify best practices and best available technologies from developed countries and technologies that will be available in the future;

⁶ This proposal is presented in connection with proposals on funds reflected in paragraph 175, option 5, above and proposals on implementation aspects reflected in paragraphs 181–183, above.

- (e).5 Develop special reviews on existing technologies, including information on estimated cost, risks, benefits and limitations, as well as the required infrastructure, human resources and diffusion potential, taking into account the circumstances of the host Party;
- (e).6 Elaborate suggestions on the implementation of the most appropriate financial scheme for a given technology deployment in a given country, including assessment of local capability in production of its components and their servicing;
- (e).7 Elaborate regulatory documents, terms and criteria and guidance, and preparation of the respective decisions of the Parties.]

Under the guidance of the COP, this body would comprise and be supported by a strategic planning committee, technical panels, a verification group and a secretariat {accountable to the executive body}.

The executive body on technology shall {comprise government representatives elected by the COP with balanced regional representation, who are experts on matters related to technology development and transfer, and be open to input from other experts.} {be open to all Parties. Members of the committee and panels shall be determined by the COP.}] A multilateral climate technology fund (MCTF) shall be established that will provide technology-related financial requirements as determined by the Executive Body under COP.

Alternative to Option 2

[Establish an Executive Body on Technology (EBT), as a subsidiary body of the Convention, in accordance with its Article 7.2 (i). The EBT shall be composed of government representatives, elected by the COP, with balanced regional representation, who are experts on matters of technology development and transfer. The EBT shall: (the following can be put in an Annex to the decision to establish the EBT, as terms of reference, organizational structure, functions, etc...)]

- (a) be guided by the following principles:
 - (i) operate under the authority and guidance of the Conference of the Parties;
 - (ii) achieve the accessibility, affordability, appropriateness, and adaptability of technologies required by developing country Parties for enhanced action on mitigation and adaptation;
 - (iii) achieve the removal of barriers for development, deployment, adoption, diffusion, and transfer of environmentally-sound technologies (ESTs);
 - (iv) ensure the provision of new and additional, adequate and predictable financing resources for development, demonstration, deployment, adoption, diffusion, and transfer of ESTs;
 - (v) support the development and enhancement of endogenous capacities and technologies of developing country Parties;
 - (vi) accelerate the penetration of cost effective technologies, including pilot projects. capacity-building and facilitating financing;
 - (vii) promote win-win solutions and technologies that have great potential to minimize adverse impacts of climate change and the adverse impacts of response measure in developing countries Parties including economic diversification;
 - (viii) be action-oriented in the view to achieve cost effectiveness;
 - (ix) promote broader involvement of relevant stakeholders;
 - (x) promote public-private partnership.
- (b) have the following functions:
 - (i) accelerate the development, demonstration, deployment, adoption, diffusion, and transfer of environmentally-sound technologies from developed country Parties and other developed Parties included in Annex II to the Convention, to

- developing country Parties, in order to avoid the lock-in effects of non-ESTs, and to promote sustainable development in developing country Parties;
- (ii) provide access to technology for adaptation at national, sub-regional and regional levels, enabled by capacity-building, and the provision of new and additional, adequate and predictable financing resources to meet the costs of both integration of adaptation into the development process and stand-alone adaptation activities;
 - (iii) remove barriers to technology transfer and enhance means of facilitating this transfer, to promote urgent access to advanced ESTs while balancing rewards for innovators with the common good of humankind, including, inter alia, jointly-developed technology and sharing of intellectual property rights;
 - (iv) enhance enabling environments to facilitate access to technology, including through financing environments that leverages private sector financial resources, including policy dialogues, and involvement in development, demonstration, deployment, adoption, diffusion, and transfer of environmentally-sound technologies (ESTs);
 - (v) build on existing activities within the Convention, including the work of the enhanced Expert Group on Technology Transfer (EGTT), to promote coherence through the integration of ongoing activities related to development and transfer of technologies;
 - (vi) provide the means for the full implementation of Convention commitments on development, deployment, adoption, diffusion, and transfer of environmentally-sound technologies (ESTs), and related financing and capacity-building;
 - (vii) develop strategy and technology action plans and monitor and verify the implementation of the specific operational policies, guidelines and administrative arrangements, including the disbursement of resources, for the purpose of achieving the objectives of the multilateral technology fund taking into account the cost effectiveness of the proposed activities as well as the potential for their replicability;
 - (viii) coordinate action by different stakeholders at international, regional and national levels;
 - (ix) assess the performance of development and transfer of ESTs in terms of speed, range and size of the technological flow.
- (c) be comprised of and supported by:
- (i) A Strategic Planning Committee to:
 - develop strategy;
 - provide regular guidance;
 - assess and elaborate technology-related matters;
 - continuously evaluate progress, including financial and technological flows and range and effectiveness of technologies transferred;
 - develop updates for the Technology Action Plan (TAP), as described below, at regular intervals;
 - perform any other functions to be assigned to it by the EBT;
 - capacity-building.
 - (ii) Technical Panels to generate and compile current expert information related to, inter alia,
 - policies and measures;
 - intellectual property cooperation, sharing and partnership;

- sectoral, cross-sectoral and cross-cutting cooperation;
 - assessment, monitoring and compliance related matters;
 - dissemination of knowledge;
 - documenting, scaling up and diffusion of indigenous adaptation technologies which already exist in developing countries.
- (iii) A Verification Group to put in place a measurement, reporting and verification system for compliance with the provision of financing and the development, demonstration, deployment, adoption, diffusion, and transfer of environmentally-sound technologies by Annex I Parties to developing countries under the mechanism, and the overall compliance with financing and technology commitments under the Convention, including the MRV requirements under the Bali Action Plan.
- (iv) A Secretariat to:
- support and facilitate the activities of the Executive Body of Technology;
 - compile and prepare a final report on the financial and technological contributions made and reported by Parties to the technology mechanism, including the overall MRV requirements under the Bali Action Plan.
- (d) Develop a Technology Action Plan (TAP) to serve as a starting point for the work of the Executive Body.
- (i) It will include specific actions and timelines for the first three years, and will be updated for successive three-year periods.
- (ii) To realize the full potential of technology, the TAP shall support all stages of the technology cycle, including research, development, demonstration, diffusion, and transfer.
- (iii) the TAP will define specific policies, actions and funding requirements for all relevant technologies under the following classifications: public domain technologies, patented technologies and know-how, future technologies.
- (e) the establishment of national and regional technology centers of excellence to reinforce north-south, south-south and triangular cooperation, including joint research and development (details can be annexed to the legal/agreed outcome).

An indicative list of activities and costs eligible for support under the EBT is attached as an Annex (the Annex will consist of the indicative list of activities and costs eligible for support by the mechanism contained in the G77 and China submission on a Technology mechanism under the COP)].

[Option 3]⁷

[a technology committee [to advise] the COP in technology policy issues. [The committee should be serviced by a strengthened professional secretariat and advised by a technology panel comprising experts nominated by Parties.] The functions of the technology committee include][a technology panel shall have the following functions]:

- (a) Identifying areas of cooperation with the private sector and making recommendations to the COP for action;
- (b) [Reviewing and propose [and deciding] on technology investments];
- (c) [Reviewing [and approving] technology funding requests];
- (d) [Reviewing progress of implementation of the technology action programme];
- (e) [Approving procedures and modalities for technology cooperation with the private sector.]
- (e).1 Identify and promote best practices and best available technologies;

⁷ This proposal is presented in connection with proposals on funds reflected in paragraphs 175, option 5, above and proposals on implementation aspects reflected in paragraph 181–183 above.

- (e).2 Identify appropriate ways for promoting transfer of existing best available technologies and those that will be available in the short, medium and future terms;
- (e).3 provide guidance and support to developing country Parties in producing technology needs assessments as part of their low carbon development strategies;
- (e).4 Gather and, where necessary, produce or commission global technology roadmaps;
- (e).5 Assist coordinating mechanism with assessment of NAMAs and other relevant bodies.

[Option 4

a new body on technology transfer and financing [under the Convention] to enhance the implementation of technology transfer mechanisms as well as the associated enabling activities such as capacity-building, technical training, and R&D cooperation, including those activities identified in TNAs, NAMAs and NAPAs. The new body on technology transfer and financing should:

- (a) Coordinate the existing financing mechanisms, either market or non-market, [to be established];
- (b) Contribute to the measuring, reporting and verifying of both the actions and the support for the actions;
- (c) Facilitate links for accessing to funds and should reduce diversification among existing sources of funds within the Convention;
- (d) Articulate technology transfer and financing mechanisms under the Convention with other United Nations organizations, multilateral financial institutions established under bilateral or multilateral development programs and other relevant international forums not directly related to climate change, with the assistance of technical panels to be created.]

Insert a new paragraph which integrates key elements of current options 2, 3, 4 and 5.

[Option 5

involvement of private entities and/or relevant international organizations, at national and/or sectoral level, through, inter alia, the enhancement of public-private partnership and the provision of advisory functions by experts in public and/or private sectors. For enhancing this cooperation, an [advisory group] for sectoral technology cooperation to support the implementation of NAMAs by removing obstacles to and promoting technology transfer and diffusion in all relevant sectors.

The advisory group for sectoral technology cooperation should, inter alia:

- (a) Identify best practices and best available technologies from developed countries and technologies that will be available in the future;
- (b) Identify appropriate ways for promoting transfer of existing best available technologies through analysing emission reduction potentials and setting indicators;
- (c) Advise on promoting technology transfer and diffusion in all relevant sectors;
- (d) Periodically report to the COP on its activities.]

Option 6

a new technology leveraging service which could form part of a broader facilitation platform should be created to provide an interactive facilitation service for actions identified through low emission development strategies and/or TNA/NAMA/NAPA processes. This service is to be provided to developing countries and would, on a voluntary basis, assess potential actions, assist in the development of rigorous projects proposals and assist in matching with the most appropriate form of investment support, particularly with a view to leveraging private sector funding. This service would work closely with relevant international financing institutions, multilateral development banks and the private sector.

Option 7

[A Technology Development and Transfer Facility is hereby established.

The purpose of the Technology Development and Transfer Facility is to assist developing country Parties to identify and help facilitate the transfer of low greenhouse gas emitting technologies, particularly renewable energy and energy efficiency technologies, to assist in the undertaking of national appropriate mitigation actions. The Facility shall also assist particularly vulnerable developing countries to identify and help facilitate the transfer of appropriate adaptation technologies.

The Technology Development and Transfer Facility shall be subject to the authority and guidance of the COP (or the Conference of the Parties serving as the assembly of Parties) and be supervised by a Board.

The constituency of the Board shall be determined by the COP (or Conference of Parties serving as the assembly of Parties) and be guided by the principle of equitable geographical representation.

The Technology Development and Transfer Facility shall regularly report to the COP (or Conference of Parties serving as the assembly of Parties).

Advice shall be provided to the Technology Development and Transfer Facility Board by the Expert Group on Technology Transfer.]

Proposal to consolidate paragraph 196 with paragraphs 174 and 175: See proposal reflected as an alternative to paragraphs 174 and 175

National and regional technology innovation centres

197. Existing [national and regional technology innovation centres] [Cooperative Technology Development Centres] and networks among Parties, particularly in developing countries [shall][should] be [established][and existing centres][strengthened][established and/or strengthened], as appropriate, [in major developing country regions around the world] to:

(a).1 [Be a coordinating nodal centre to facilitate and enable the identification of one or more key technological products which have strong sustainable development and climate change benefits along with their projected price and performance targets, the development of such products, and the markets for these products, in partnership with appropriate public and private sector organizations.]

(a) Promote [joint R&D activities] [in the context of South–South, North–South and triangular][and] cooperation [joint development of new technology][, which may include the sharing of IPRs];

(b) [Promote the deployment, development and transfer of environmentally sound technologies for mitigation and adaptation [to developing country Parties]];]

(c) Stimulate capacity-building[, in particular for endogenous technologies];

(d) Improve access to information on existing and new technologies;

(e) [Promote the sharing of IPRs].]

(f) Provide cooperative training and development facilities supported by public-private partnerships to develop and deploy renewable energy and energy efficiency technologies and environmentally sound adaptation technologies.

(g) Provide training opportunities for participants from all countries to facilitate the development and transfer of renewable energy and energy efficiency technologies as well as other environmentally sound adaptation technologies.

198. [Financial resources required to support] [Funding for the development of] [New and additional financing that is adequate, predictable and sustainable for] such [centres and networks][Cooperative Technology Development Centres][joint technology excellence centres] [shall][should] be provided by various sources including the [identified by the COP (or Conference of Parties serving as the assembly of Parties)] [Technology Window of the] [multilateral climate technology fund referred to in paragraph 175, option 5, above] and [developed country] Parties through [an assessed contribution] [existing bilateral and multilateral cooperative programmes, partnerships and initiatives] [to enable entities in these

countries to do research and development especially on adaptation as well as mitigation technologies.]]

x.1 [Establish a Multilateral Climate Technology Fund (MCTF) to provide technology-related financial resources as determined by the EBT. The MCTF shall operate under the Conference of the Parties as part of the enhanced multilateral financial mechanism set up under the Convention: (also see Annex *paragraph x.4* below)

x.2 Sources of Funds:

(a) The MCTF shall be financed by assessed contributions from developed country Parties and other developed Parties included in Annex II of the Convention. Contributions to the mechanism shall be new and additional, and adequate and predictable, in accordance with Article 4.3 of the Convention;

(b) An agreed proportion of contributions by developed country Parties to bilateral and regional cooperation may be considered as contributions to the MCTF, provided that such cooperation is consistent with the policies and scope of the mechanism, and the guidance provided by the EBT;

(c) Specific sources including, parts of regular fiscal budget for research and development, fiscal revenue from taxation on carbon transaction and/or auction of emission permits in carbon market, as well as fiscal revenue from energy or environmental taxation in developed countries;

(d) Financing transfer to the MCTF shall be counted as measurable, reportable and verifiable commitments, both for mitigation and adaptation actions;

(e) Any financial resources for technology development and transfer channelled outside the framework of the financial mechanism, and therefore outside the authority and guidance of the COP, shall not be regarded as fulfilment of commitments by developed country Parties under Articles 4.3 and 4.5 of the Convention, or in fulfilment of the Bali Action Plan;

x.3 The MCTF will cover, inter alia,

(a) eligible costs of activities approved by EBT;

(b) the administrative costs of the Executive Body, the Secretariat, and other bodies serving the EBT;

(c) costs associated with other specific decision of the Conference of the Parties related to technology development and transfer.

x.4 Annex I

Activities eligible for support from the mechanism include, inter alia:

(a) Promotion, facilitation and implementation of activities along the entire technology cycle to enable the accelerated adoption of ESTs;

(b) Support for research, development, manufacture, commercialization, deployment and diffusion of technologies for adaptation and mitigation in accordance with Decision 1/CP.13.

(c) Adaptation technologies to address the adverse effects of climate change and finance the removal of barriers to the large-scale transfer of technologies for adaptation;

(d) Technologies to address the adverse impact of response measures, and finance the removal of barriers to the large-scale transfer of technologies for reducing the adverse impact of response measures;

(e) Capacity-building to manage and generate technological change, enhance absorptive capacity, create enabling conditions in developing countries, inter alia, costs of:

(i) Research, development and demonstration of new technologies;

(ii) Enhancing human and institutional capacity;

(iii) Guarantees on foreign direct investment for environmentally sound technologies.

- (f) Commercialization of new and emerging technologies, inter alia:
 - (i) Venture capital, with public investment leveraging private capital markets for emerging technologies;
 - (ii) Research, development, and demonstration of new technologies, financed by venture capital and other sources;
 - (iii) Joint technology development
- (g) Creation of manufacturing facilities for EST, including low-GHG emission technologies, inter alia, costs of:
 - (i) Compulsory licensing, cost associated with patents, designs, and royalties;
 - (ii) Conversion of existing manufacturing facilities or of establishing new facilities;
 - (iii) Research and development activities, including joint research, development, design, and demonstration;
 - (iv) Technology adaptation;
 - (v) Retraining and dissemination of know-how;
 - (vi) Operation; and
 - (vii) Monitoring and verification.
- (h) Procurement of low-GHG emission technologies, including software and hardware, inter alia:
 - (i) Cost of premature modification or of replacement of existing equipment, as well as the cost of new equipment;
 - (ii) Cost of retraining and dissemination of know-how;
 - (iii) Cost of technical assistance for the design, installation, and stable operation of the technology;
 - (iv) Cost of fuel and other operational costs;
 - (v) Cost of technologies for fuel switching;
 - (vi) Cost of monitoring and verification.]

Structural proposals

Proposal 1:

The technology chapter should be rearranged into two sections according to the following orders;

A section on objectives, scope and guiding principles

A section on cooperation on technology research, development, diffusion and transfer for technologies for mitigation and adaptation.

1. *A subsection on Technology needs assessments*
2. *A subsection on Enabling environments*
3. *A subsection on Capacity-building*
4. *A subsection on Technology information*
5. *A subsection on Mechanisms for enhanced cooperative action on technology development, deployment, transfer and diffusion.*
6. *A subsection on Cooperative research and development*

Proposal 2:

The technology chapter should be rearranged into six sections according to the following orders:

1. *A section on preambles*
2. *A section on objectives*
3. *A section on guiding principles*
4. *A section on cooperative action to promote technology needs assessment, technology information, enabling environments and capacity-building*
5. *A section on cooperative action to promote technology research, development and demonstration and deployment*
6. *A section on Institutional arrangement*

Proposal 3:

The technology chapter should be rearranged into seven sections according to the following orders:

1. *A section on preamble*
2. *A section on objectives*
3. *A section on guiding principles*
4. *A section on enhanced national capacity*
5. *A section on cooperative actions on capacity-building, information sharing*
6. *A section on cooperative actions on research, development and demonstration*
7. *A section on institutional arrangements*

Proposal 4:

Insert a section entitled National and cooperative actions to enhance the development, application and diffusion, including transfer, of technologies, practices and processes

Insert a new subsection entitled Technology action plans/technology road maps

C. Capacity-building

Paragraph (page #)	Opportunity to consolidate	Rationale
1. Principles		
x.1, x.2, x.3 (p. 196)	Three paragraphs could be combined to create one paragraph.	These paragraphs describe guiding principles for capacity-building support and closely relate to each other.
x.2 (p. 196)	Second sentence of the paragraph could be used as a chapeau for a combined paragraph on the principles.	The text refers to principles for capacity-building support.
x.1 (p. 196)	The text could be included in the list of guiding principles.	The paragraph refers to a principle for capacity-building support to LDCs.
x.3 (p. 196)	The text could be included in the list of guiding principles.	The paragraph lists general guiding principles for capacity-building support.
x.2 (p. 196)	The first sentence of the paragraph could be included in the list of principles.	The text refers to a general guiding principle for capacity-building support.
199 (x.a) (p. 196)	The text could be moved from the paragraph about the scope of capacity-building support to the paragraph about the guiding principles.	The text refers to a general guiding principle for capacity-building support.
2. Scope of capacity-building support		
199 (x.a) (p. 196)	The text could be moved from the paragraph about the scope of capacity-building support to the paragraph about the guiding principles.	The text refers to a general guiding principle for capacity-building support.
199 (a) (p. 196)	Minor editorial change to correct grammar.	
199 alternative to (a) (p. 196)	Could be merged with the original 199 (a) highlighting the difference in language (strengthening versus creation) by brackets.	The text of an alternative language is similar to the original text.
199 (b) (p. 196)	Minor editorial change to correct grammar.	
199 alternative to (b) (p. 196)	Could be merged with the original 199 (b) highlighting the difference in language (reference to national coordination processes) by brackets.	The text of an alternative language is similar in substance to the original text.
199 alternative to (c) (p. 196)	New sub-paragraph (d) could be created. Minor editorial change to	The text of this alternative sub-paragraph is not similar

Paragraph (page #)	Opportunity to consolidate	Rationale
	maintain the language style of the paragraph 199.	in substance to the text of the original sub-paragraph and therefore cannot be merged.
199 (d) (p. 196)	Renumbered as (e) due to the creation of a new sub-paragraph (d).	
199 alternative to (d) (p. 197)	Could be merged with the original 199 (d) highlighting the difference in language by brackets. Minor editorial change to maintain the language style of the paragraph 199.	Both original and alternative sub-paragraphs relate to monitoring and reporting.
199 (e) (p. 197)	Renumbered as (f) due to the creation of a new sub-paragraph (d).	
199 (e).1 (p. 197)	Renumbered as (g) to increase readability of the text.	
199 (f) (p. 197)	Renumbered as (h) due to the creation of a new sub-paragraphs (d) and (g). Minor editorial change to maintain the language style of the paragraph 199.	
199 (f).1 (p. 197)	Renumbered as (i) to increase readability of the text. Minor editorial change to maintain the language style of the paragraph 199.	
199 (g) (p. 197)	Renumbered as (j) due to the creation of new sub-paragraphs.	
199 (g).1 (p. 197)	Renumbered as (k) to increase readability of the text. Minor editorial change to maintain the language style of the paragraph 199.	
199 (g).2 and 199 (g).3 (p. 197)	Could be combined to create a new sub-paragraph (l).	Both sub-paragraphs refer to capacity-building for various aspects of technology transfer cycle.
Alternative to 199 and 199.3 (p. 198)	Last part of the alternative to paragraph 199 and first sentence of paragraph 199.3 could be combined to create a new paragraph 200 in the sub-section on the scope of capacity-building support.	Both texts have identical language and relate to the scope of capacity-building support.
199.1	Could be merged in paragraph 199 to create a new sub-paragraph 199 (m).	The text relates to the scope of capacity-building support.
3. Institutional arrangements		
Alternative to 199 (p. 197-198) 199.2 (p.198) 201.3 (p.199)	Three paragraphs could be combined to create a new paragraph 201 with differences in language highlighted by brackets.	These three paragraphs describe a new mechanism for capacity-building support and have similar language.
Alternative to 199 (p. 197-198) 199.2 (p.198) 201.3 (p.199)	Minor editorial changes to correct grammar.	
201.2	Moved to the sub-section on institutional arrangements and renumbered as 202.	The paragraph relates to institutional arrangements for capacity-building support.

Paragraph (page #)	Opportunity to consolidate	Rationale
4. Measurement of capacity-building support and action		
Alternative to 199 (p. 197-198) 199.3 (p.198) 200 (p.198)	The last sentence of alternative to paragraph 199 and paragraphs 199.3 and 200 could be combined to create an Option 1 in a new paragraph 203. Differences in language are highlighted by brackets.	The language of the last sentence of alternative to paragraph 199 is identical to paragraph 199.3. The above texts are similar in substance to paragraph 200 and refer to the measurement of capacity-building support.
Alternative to 200 (p. 198)	The paragraph could be used as Option 2 in a new paragraph 203.	The paragraph relates to the measurement of capacity-building support and action
5. Provision of financial resources for capacity-building		
201.1 (p. 199)	Could be combined with original paragraph 201. Minor editorial change to correct grammar.	This paragraph lists principles for the provision of financial resources and makes reference to Article of the Convention. It is better placed before the text on a financial mechanism for capacity-building.
Alternative to 201 (p. 199)	Could be combined with original paragraph 201. Differences between original paragraph 201 and alternative paragraph 201 are presented as Option 1 and Option 2.	Identical language. The only difference is a type of a new financial mechanism.

1. Principles¹

x.1 Parties should cooperate to address the capacity needs of developing countries taking into account the following guiding principles:

- (a) For LDCs capacity-building activities will be undertaken in the context of Article 4.9 of the Convention. This will ensure that there is capacity to utilize effectively the support given to this group to adapt to the impacts and participate in mitigation actions;
- (b) Capacity-building should be:
 - (i) a continuous, progressive and iterative process;
 - (ii) country driven and consistent with national priorities and circumstances;
 - (iii) context specific and tailored to specific needs;
 - (iv) built on existing institutions and making use of local and indigenous knowledge;
 - (v) cross cutting and integrated into development planning and implementation;

¹ Chapter IV.C Capacity-building in the revised negotiating text does not contain sub-headings. Sub-headings have been added in the draft consolidated text to improve its readability.

- (vi) participatory, with the engagement of a broad range of stakeholders;
- (vii) an integral part of enhanced action on adaptation and mitigation.

2. Scope of capacity-building support

199. [International cooperation [shall][should] be enhanced to support the capacities of developing country Parties to implement mitigation and adaptation [capacity-building] actions, including, inter alia:

- (a) [[Creation] [strengthening] of enabling environments at national, [subnational and local] level [for enhanced action on adaptation and as appropriate mitigation], including [the establishment, where necessary, of appropriate] policy and legal and regulatory frameworks;]
- (b) [Institutional strengthening through [the establishment of national coordinating bodies or enhancement of those bodies, where they exist, and] strengthening capacity of national focal points, [national coordinating processes] [and stakeholders;]]
- (c) [Capacity-building for the preparation, implementation and follow-up of [NAPAs] [National Adaptation Plans], other national adaptation plans/strategies, national communications, TNAs for adaptation and mitigation including under NAMAs and [NAPAs] [National Adaptation Plans], and the readiness and implementation phase for REDD and REDD-plus activities and the carbon capture and storage project activities;]
- (d) [Enhancement of capacity to plan, prepare and implement relevant mitigation and adaptation actions;]
- (e) [Capacity-building for monitoring, reporting and verification of NAMAs, [[including][and] REDD-plus actions]], [Enhancement of capacities to monitor and report on climate change actions, including for preparation of national communications], national greenhouse gas inventories and carbon capture and storage project activities;
- (f) [Capacity-building needs identified in national communications, national adaptation plans, NAMAs, national REDD-plus plans, national technology road maps and carbon capture and storage project activities;]
- (g) Capacity-building needs specific for urban areas;
- (h) Promotion of education, training and public awareness, with special focus on youth, women and indigenous peoples;
- (i) Promotion of the gathering and exchange of information related to climate change impacts on marine ecosystems, communities, fisheries and other industries; emergency preparedness, monitoring and forecasting of climate change and ocean variability; and improvement of public awareness of early warning system capacity;
- (j) Provision of technical assistance for building developing countries' capacity to 'ready' themselves for accessing larger pools of domestic and international financing];

- (k) Building, development, strengthening, enhancement and improvement of existing scientific and technical skills, capabilities and institutions, particularly in developing countries, to enable them to assess, adapt, manage and develop technologies that have:
 - (i) great potential to reduce GHG emissions;
 - (ii) win-win solutions including carbon capture and storage technologies;
 - (iii) great potential to minimize the adverse impacts of climate change and the adverse impact of response measures in developing country parties including economic diversification;
- (l) Capacity-building in technology R&D, including innovation for adapting available technologies to national endowments and circumstance, and in actual deployment and servicing of technologies at operational levels;
- (m) Strengthening of national institutions to address the emerging capacity-building needs, particularly those related to implementation of the provisions of the climate change regime.

200. [Developed countries shall support developing countries to formulate and implement strategies and action plans to implement learning-by-doing stand alone capacity-building projects/programmes and activities within the agreed framework under the Convention.]

3. Institutional arrangements

201. A specific capacity development and support mechanism shall be established [and supported by developed country Parties to cater for the specific capacity-building needs of developing country Parties, in particular LDCs, SIDS and African countries,] including training (subregional training of trainers), mentoring and learning-by-doing activities among other measures:

- (a) To empower relevant institutions at various levels [taking into account also the need for stand alone capacity development activities at various levels];
- (b) To enhance observation, research and knowledge management;
- (c) [To strengthen endogenous capacities;]
- (d) To strengthen communication, education and awareness-raising at all levels, especially at the local and community levels;
- (e) To strengthen and use regional networks of information and knowledge sharing[, including indigenous knowledge sharing;]
- (f) To share experiences, information and best practices of developing countries [regions including African, Asian and Latin American countries within AOSIS;]
- (g) To assess, strengthen and mobilize the capacities of existing relevant facilities and institutions [in LDCs, SIDS, Africa and other] developing countries;
- (h) [To strengthen and use data for systematic observation, early warning, modelling, disaster preparedness and capacity evaluation and monitoring;]

- (i) [To strengthen capacity for modelling and needs assessments related to adaptation, mitigation, capacities, financing and technologies;]
- (j) To develop tools, methods and technologies and support their application;
- (k) To encourage and strengthen participatory and integrated approaches in planning and decision-making, including the meaningful participation of [various non-governmental actors] [civil society];
- (l) [To strengthen the structural and institutional capacity for economic diversification].

202. Technical Panels on Capacity Building (TPCBA and TPCBM) shall organize, coordinate, monitor, evaluate and retrofit the implementation of capacity-building activities for adaptation and mitigation and the respective financing and technology development and transfer in developing countries. TPCBs shall also provide information and views on the fulfilment of support commitments for capacity-building by developed countries. The TPCBs shall create mechanisms for sharing lessons learned, promote South-South cooperation as well as for dissemination of successful capacity-building activities in developing countries.

4. Measurement of capacity-building support and action

203.

Option 1.

[Support for capacity-building activities shall be measured through the use of agreed and effective performance indicators [and in units to be established as part of the review of the implementation of the capacity-building framework adopted under decision 2/CP.7.], in order to ensure that the resources provided by developed country Parties are benefiting developing countries within the context of the agreed activities identified and undertaken through a bottom-up, national-driven process.]

Option 2.

[To facilitate the monitoring and review of commitments under the Copenhagen Agreement, all Parties should report on progress made in enhancing the capacity to address climate change, and of support provided or received.]

5. Provision of financial resources for capacity-building

204. [Financial and technological support [shall] [should] be provided in the context of Article 4.9 of the Convention in a transparent, expedited, direct access, sustainable and predictable manner under the overall guidance of the COP through

Option 1

a dedicated multilateral fund for capacity-building as referred to in paragraph 175, option 6, above.

Option 2

a new financial mechanism to support mitigation, adaptation, technology transfer and capacity-building action as referred to in paragraph 166 and paragraph 174, option 1, above.

Provision of capacity-building support to developing country Parties, along with delivery of financial support and technology transfer, shall be a legally binding obligation of developed country Parties, with consequences for non-compliance.]
