Work programme of the Expert Group on Technology Transfer (EGTT) for 2008-2009.

Progress and preliminary findings

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Expert Group on Technology Transfer under the UNFCCC

- COP 13 agreed to reconstitute the EGTT for a further five years with a strengthened mandate.
- EGTT aims to enhance the implementation of Article 4.5 of the Convention and advancing the development and transfer of technology activities under the Convention.
- The EGTT comprises 19 experts (11 from NAI Parties, 8 from AI Parties) and meets at least twice a year.
- Work programme of the EGTT for 2008-2009 endorsed at SB 28

Work programme of the EGTT for 2008-2009

- Major activities of the EGTT for 2008-2009 responding to decision 3/CP.13 and 4/CP.13:
  - Activity 1: Identifying, analysing and assessing existing and potential new financing resources and relevant vehicles to support the development, deployment, diffusion and transfer of environmentally sound technologies.
  - Activity 2: Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the technology transfer framework.
  - Activity 3: Developing a strategy paper for the long-term perspective beyond 2012, including sectoral approaches, to facilitate the development, deployment, diffusion and transfer of technologies under the Convention
- Terms of Reference for these activities were endorsed at SB 28

Activity 1: Identifying, analysing and assessing existing and potential new financing resources and relevant vehicles to support DDDT of ESTs

- COP 13 requested the EGTT to identify, analyse and assess existing and potential new financing resources and relevant vehicles in supporting development, deployment, diffusion and transfer of ESTs in developing countries.

- COP 13 also requested the EGTT to assess gaps and barriers to the use of, and access to, these financing resources to provide information to Parties to enable them to consider the adequacy and predictability of these resources.

- Overall objective of this work is to develop and propose recommendations on options for future financing, both sources and innovative vehicles, necessary for enhancing the implementation of the Convention with regard to the technology transfer framework.

Activity 1: Identifying, analysing and assessing existing and potential new financial resources to support DDDT of ESTs

This work comprises 3 tasks:

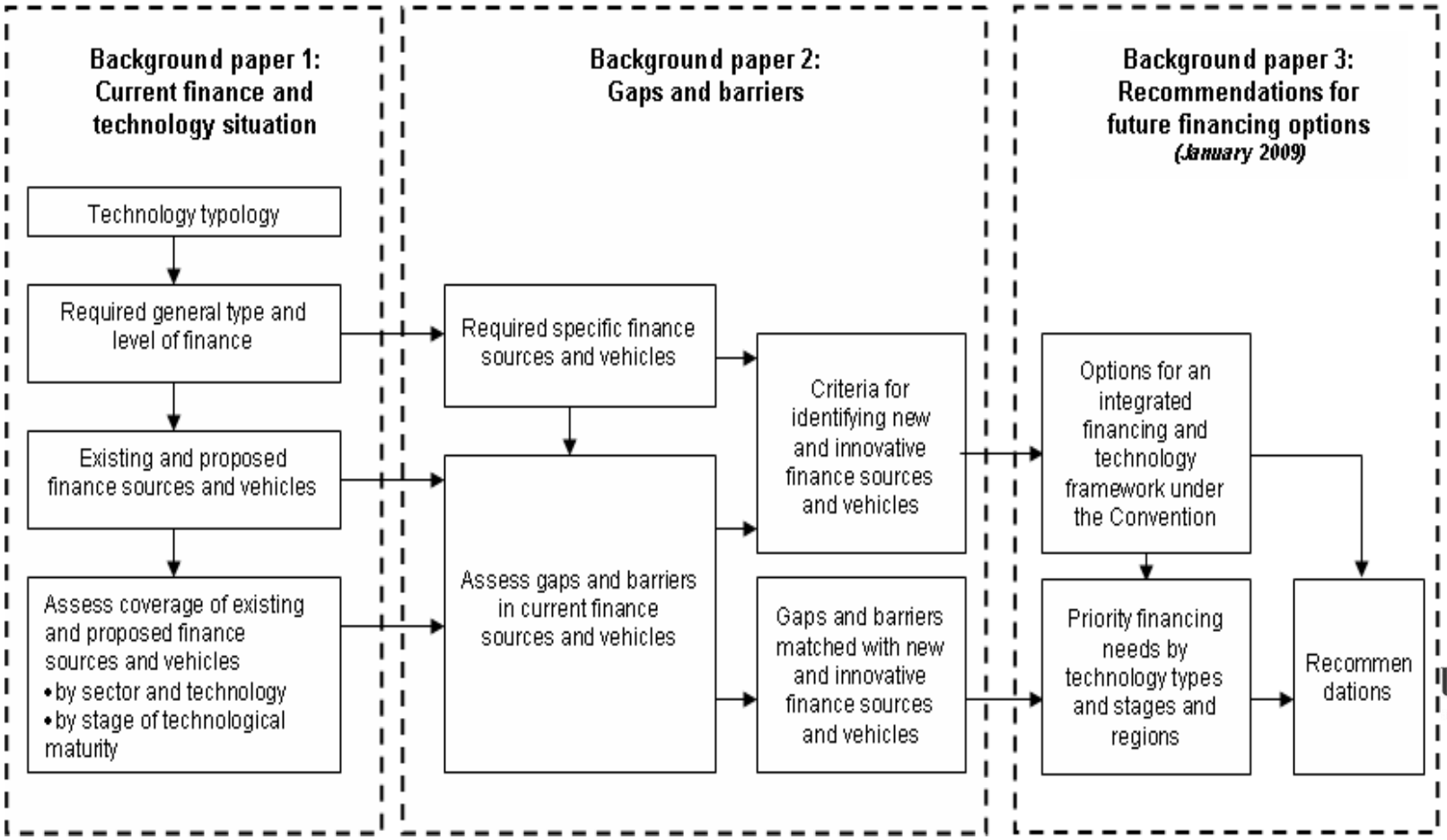
- Task I: Identify and analyse existing and potential new financing sources and relevant vehicles in supporting the development, deployment, diffusion and transfer of technologies for mitigation and adaptation in developing countries

- Task II: Identify and assess gaps in and barriers to the use of, and access to, these financing resources

- Task III: Prepare recommendations on future financing options and risk mitigation tools necessary for enhancing the implementation of the Convention with regard to the technology transfer framework.

Activity 1: Identifying, analysing and assessing existing and potential new financial resources to support DDDT of ESTs.

Methodology



Activity 1: Identifying, analysing and assessing existing and potential new financial resources to support DDDT of ESTs.

Estimates of current financing for technology

Research and Development	Demonstration	Deployment		Diffusion		Total
Global	Global	Global	Developing Countries	Global	Developing Countries	
USD10 billion per annum – Govt USD20 billion per annum - Total	In preparation	USD33 billion per annum USD45 billion per annum	In preparation	USD71 billion in 2006	USD 14.2billion per annum	Global USD 124 to 136 billion Developing Countries: ?

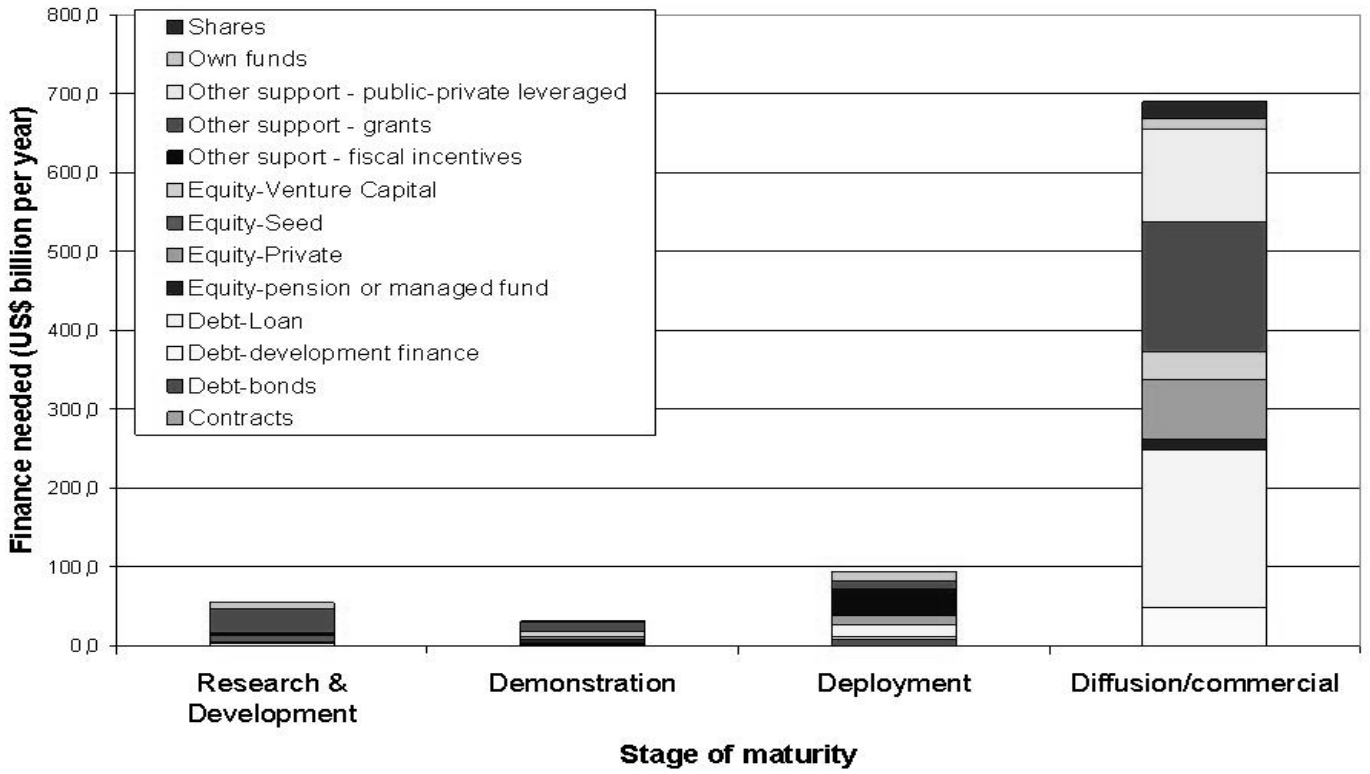
Activity 1: Identifying, analysing and assessing existing and potential new financial resources to support DDDT of ESTs.

Estimates of Finance Needs by Stage of Technological Maturity for Mitigation

	Research and Development	Demonstration	Deployment		Diffusion	
	Global	Global	Global	Developing countries	Global	Developing countries
Additional Finance needs	USD50 billion per annum[1] USD10-100 billion per annum[2] USD10 billion per annum Public investment[3] USD30-100 billion[4]	USD27-36 billion per annum until 2030[5]	USD73-163 billion per annum[6] USD42-75 billion per annum (in addition to a carbon price of USD25/tonne)[7] USD91-163 billion per annum (in addition to a carbon price of USD25/tonne) USD25-35 billion per annum[8]	USD 18.25-40.75 billion per annum[9] USD 10.5-18.75 billion per annum[10] USD 22.75-40.75 billion public investment[11] USD 6.25-8.75 billion per annum[12]	USD1000 billion per annum from 2010-2050[13] USD379.5 billion per annum to 2030[14]	USD464 billion per annum from 2010-2050[15] USD176 billion per annum to 2030[16]

Activity 1: Identifying, analysing and assessing existing and potential new financial resources to support DDDT of ESTs.

Finance need per stage of development and type of finance.



Activity 1: Identifying, analysing and assessing existing and potential new financial resources to support DDDT of ESTs - Financing barriers

Stage of technological maturity that faces the barrier	Gaps and barriers categories related to maturity stage	Manifestations of specific finance barriers	
		Public finance	Private finance
R&D	Proof of concept	· Other political priorities for public finance · Unclear results of fundamental research · Unclear results of education and training	· Insufficient rate of return · Spill over effects prevent private financiers from capturing benefits of investment
R&D	Technical	· Other political priorities for public finance	· Lack of good technical information, resulting in high-risks profiles · Spill over effects prevent private financiers from capturing benefits of investment
R&D, demonstration	Scale	· Relatively high costs to scale up from prototype scale	· Lack of technological track record, resulting in high-risks profiles
R&D, demonstration, deployment	Costs	· High costs to reach significant deployment	· Lack of policy to overcome costs, leading to low internal rate of return (IRR)
R&D, demonstration, deployment, diffusion	Economic	· Unwillingness to interfere in the market, especially when drastic changes harm vested interests · Inflexibility of tax policy	· Energy pricing and subsidies; lack of, or insufficient carbon price · High upfront capital costs · Lack of valuation of co-benefits, leading to low IRR · Requirement of large parallel infrastructure, leading to high upfront costs

Activity 1: Identifying, analysing and assessing existing and potential new financial resources to support DDDT of ESTs

- Summary:
  - Estimates of the finance needs to mitigate climate change vary much and are highest for more advanced stages of technological development, but gaps are everywhere.
  - The estimate of the finance need can be as high as USD 1 trillion annually by 2030.
  - Coverage of Convention and non-Convention sources of finance is particularly low for essential sectors such as the transport, and the building sectors.
  - How private financing can be leveraged by public finance remains a challenge which will need to be addressed by new and innovative options for finance.

Activity 2: Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

- COP 13 requested the EGTT to develop a set of performance indicators that could be used by the Subsidiary Body for Implementation (SBI) to regularly monitor and evaluate the effectiveness of the implementation of the technology transfer framework.

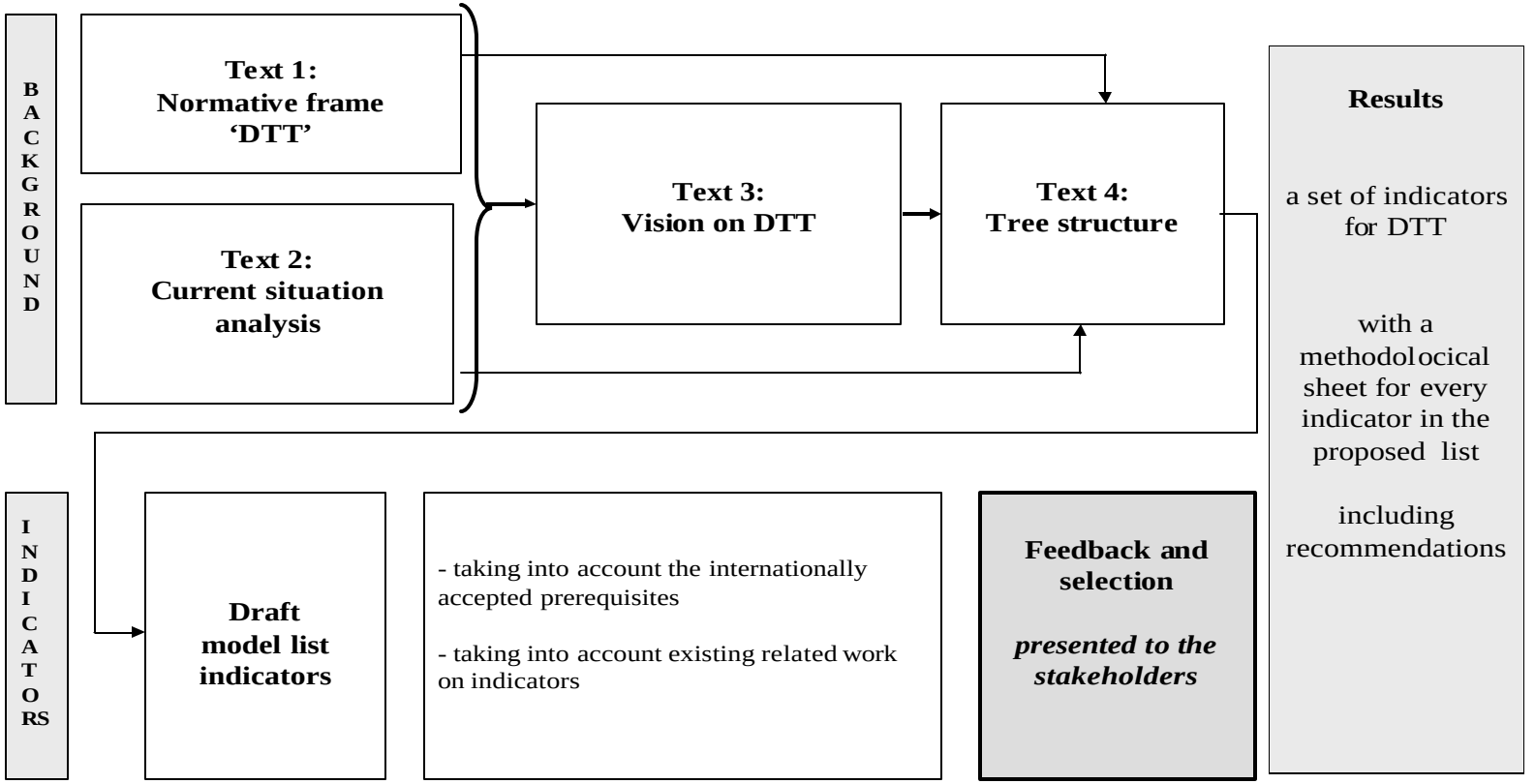
- The overall objective of this work is to develop and test a balanced and robust set of performance indicators that could be used by the SBI to monitor and evaluate the effectiveness of the implementation of the technology transfer framework.

- This work comprises 3 tasks:

  - Task 1: Develop a set of candidate performance indicators
  - Task 2: Test the set of performance indicators
  - Task 3: Prepare recommendations for using the indicators

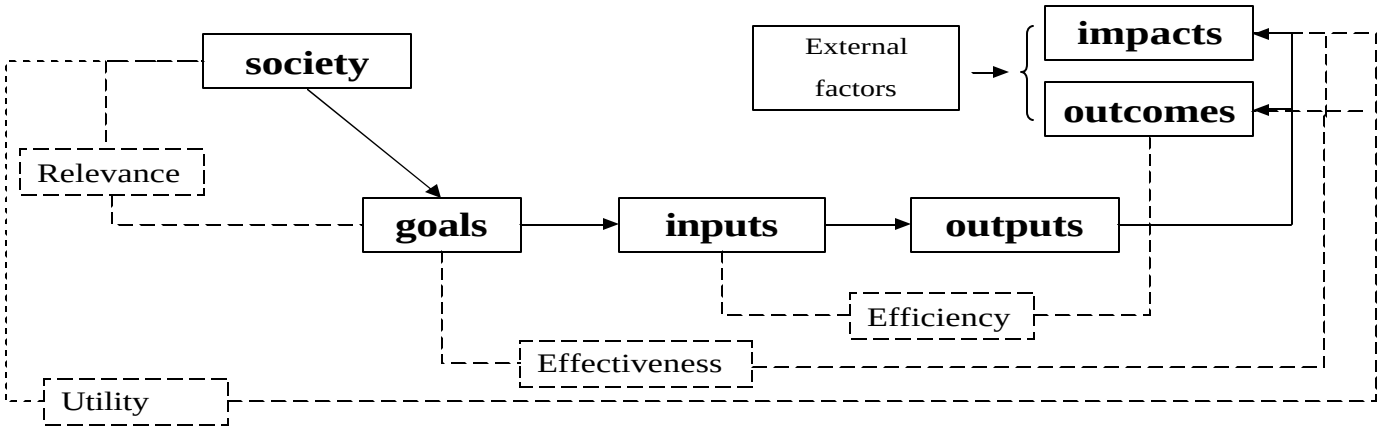
Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework

Participating process for developing a list of performance indicators.



Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework

Framework for monitoring and evaluating the effects of policies.



Relevance: to what extend are the goals justified in relation to needs?

Effectiveness: to what extend have the expected goals been achieved?

Efficiency: Have the goals been achieved at the lowest cost?

Utility: Are the goals or unexpected effects contributing to a net increase in social welfare?

Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

Step-by-step approach:

1. Objectives for the key-theme
2. Re-grouping by synthesized objective
3. Re-grouping by stakeholder
4. Re-grouping by indicator category
5. Checking against earlier proposals
6. Identification of missing links between vision, objectives and effects

Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

Step 1: Objectives for each theme

The technology transfer framework contained in the Annex to decision 4/CP.7, complemented with the set of actions set out in decision 3/CP.13, annex I, for each theme consists of the following elements:

- In the Annex to decision 4/CP.7, under C. Key themes and areas for meaningful and effective actions,
  - definition
  - purpose
  - implementation
- In the Annex I to decision 3/CP.13,
  - Recommendations for enhancing the implementaion

Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

Step 2: Regrouping by synthesized objective

Example for TNAs

- ‘to undertake TNAs’
- ‘to provide resources’
- ‘to build capacity’
- ‘to update and disseminate the TNA handbook’
- ‘to make available information of the TNAs’
- ‘to implement the results of technology needs’
- ‘to share lessons learned, success stories, good practices’
- ‘to consider the synthesis report’
- ‘to organize a meeting to identify TNA methodologies’
- ‘EGTT cooperates with the CGE’

Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

Number of performance indicators after the first step:

- 20 indicators for the key theme ‘technology needs and needs assessment’;
- 9 indicators for the key theme ‘technology information’,
- 76 indicators for the key theme ‘enabling environments’,
- 36 indicators for the key theme ‘capacity building’, and
- 23 indicators for the key theme ‘mechanisms’.

Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

An overview of the number of indicators by category for each key theme.

	Input–indicator	Process–indicator	Output–indicators	Outcome–indicators
TNA	7	3	9	1
TI	2	4	2	1
EE	31	3	29	14
CB	7	8	11	10
MECH	3	1	19	/

Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

Preliminary Findings

Example for Technology Needs and Needs Assessments, the following 6 indicators are selected:

- Amount of financial resources provided for the TNA process (expressed in USD per Annex II Party and in total);
- Number of programmes/projects for capacity–building on TNA in NAI countries per Annex II Party, per IGO and in total;
- Number of targeted NAI Parties (incl. percentage of LDC's) per Annex II Party and per IGO;
- Number of published TNA's completed or updated by NAI Parties;
- Synthesis report made available by the UNFCCC Secretariat and discussed at the SB's;
- Number of technologies from TNA's implemented by NAI Parties.

Developing performance indicators to monitor and evaluate the effectiveness of the implementation of the TT framework.

Next Steps:

- Test the set of performance indicators taking into account SMART criteria
- Provide recommendations for using the performance indicators

Developing a strategy paper for the long-term perspective beyond 2012, including sectoral approaches, to facilitate the DDDT under the Convention

- COP 13 requested the EGTT to develop for the long-term perspective beyond 2012, the terms of reference for elaborating a strategy paper, including sectoral approaches, that could draw on the work undertaken by Parties in processes under and outside the Convention as well as the results of work undertaken by other international organizations and forums. The strategy paper should be considered by SB 30.

- The overall objective of this work is to develop, for a long-term perspective beyond 2012, a strategy paper, including sectoral approaches, to facilitate the development, deployment, diffusion and transfer of technologies under the Convention.

Strategy paper, including sectoral approaches

- This work comprises three tasks:
  - Task 1: Identify and assess effective ways and means that could scale up diffusion and transfer of existing technologies for mitigation and adaptation.
  - Task II: Identify and assess effective ways and means that could accelerate deployment and demonstration mitigation and adaptation technologies
  - Task III: Identify and assess ways and means that could greatly enhance investments in research, development and demonstration of innovative technologies

Strategy paper, including sectoral approaches

The EGTT identified the following key considerations in the development of this long-term strategy:

a) Advance development, diffusion and transfer of both mitigation and adaptation technologies,

b) Address all stages of development and transfer

c) Consider implementation at global, regional, and national levels

d) Strengthen partnerships with existing international technology cooperation programs and establish incentives for private-sector participation and investment in technology cooperation;

e) Address specific sectoral, technology and regional aspects

f) Ensure that technology cooperation and transfer actions are measurable, reportable, and verifiable (MRV).

Strategy paper, including sectoral approaches. Tasks and activities.

This work will be conducted in the following sequence:

a) Establishment of criteria for selection and evaluation of options.
b) Review of options for enhanced international technology cooperation
c) Selection of technology options for further development and evaluation.
d) Evaluation of technology options according to the criteria
e) Development of an integrated strategy for enhanced long-term technology cooperation under the UNFCCC.

Strategy paper, including sectoral approaches. Proposed criteria for selection and assessment of options:

- Potential for large-scale mitigation and adaptation impact
- Relevance and flexibility to needs of countries at different development stage
- Effectiveness across sectors and with sectoral strategies
- Ability to mobilize and leverage private investment
- Potential to be self-sustaining and replicated
- Cost-effectiveness
- Complementary with other programs
- Ease of implementation
- Possesses governance structure to inspire trust and cooperation
- Advances use of endogenous technologies
- Sustainability
- Ability to monitor, report, and verify

Strategy paper, including sectoral approaches. R&D categories and current programs.

Identifies the primary areas where specific technology R&D cooperation options are under development and evaluation and includes a review of current climate technology R&D programs within and outside the UNFCCC.

Technology cooperation is divided into three areas.

- Global pooling of funds to support a coordinated R&D agenda
- Coordination of existing R&D programs and enhanced R&D capacity building;
- Increasing national public-sector investment and incentives for increased private investment in R&D.

Preliminary findings:

- Current programs under the UNFCCC do not provide direct support for R&D on climate technologies.
- Governments in developed and developing countries fund innovative technologies in a number of areas. Investments mainly focus in three areas: basic, pre-commercial research, high-risk high-payoff projects, and commercialisation R&D partnerships with the private sector.
- There are a number of existing multilateral forums for promoting R&D cooperation such as R&D coordination through IEA technology implementation agreements, the Consultative Group on International Agricultural Research and the Center for International Forestry Research.

Strategy paper, including sectoral approaches. Demonstration and deployment options.

Three primary forms of technology cooperation need to achieve effective deployment of near-commercial climate change technologies:

- Demonstration and scale-up,
- Commercialisation and investment,
- Intellectual property (IP) access and protection

Preliminary findings:

- The GEF supports a variety of technology demonstration and scale-up projects for near-commercial climate change mitigation and adaptation technologies, particularly through Operational Programs (OP)7.
- The GEF's experiences highlight some lessons that can inform any future efforts to advance use of technologies that are not fully commercial. Decisions on investments in projects to advance near-commercial technologies must be based on objective and realistic estimates of current costs and future cost reductions. Selecting promising markets for further technology introduction and providing technical advice with project design are very important criteria of project success. Industry participation and validation of interest in sustained investment in the selected technologies in the target markets is essential to ensuring that replication occurs.
- In addition to the GEF activities, the CDM, JI, and Adaptation Fund contribute (or wi contribute) to the deployment of near-commercial technologies.

Strategy paper, including sectoral approaches. Diffusion and transfer of existing technologies.

Four primary forms of technology cooperation need to achieve effective diffusion of existing climate change technologies in markets around the world:

- Capacity Building and Information Dissemination,
- Enabling Environment,
- Investment Facilitation,
- Technology Access.

Preliminary findings:

- Two special funds, managed by GEF, have been established by UNFCCC: Special Climate Change Fund (SCCF) and Least Developed Countries Fund (LDCF) with voluntary contributions. An Adaptation Fund has been established in 2007 under the Kyoto Protocol with a contribution of 2% of Certified Emission Reductions (CERs) for most Clean development Mechanism (CDM) projects.
- The World Bank's Investment Framework for Clean Energy and Development, Carbon Market Continuity Fund for purchasing post-2012 credits, Carbon Facility for Low Carbon Growth, and Climate Technology Fund for GHG reduction through long term investment and technology expansion are important.
- In addition many other institutions including bilateral aid agencies, multilateral partnerships such as Asia Pacific Partnership, Climate Technology Initiative, and Private Financing Advisory Network have established a strong climate agenda.

Thank you for your attention!

Jukka.