

Enabling environments for technology transfer

Findings of the draft technical paper

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Structure of the paper

- ◆ Overview
- ◆ A common understanding through experience sharing
 - ◆ Stakeholder levels
 - ◆ IPCC Framework for enabling environments
 - ◆ Means for creating EEs at different levels
 - ◆ Internal technology diffusion (Annex II & non-Annex II)
 - ◆ International technology transfer (to non-Annex II)
- ◆ Connecting enabling environments with sectors
- ◆ Case studies
- ◆ Conclusions: Cross-cutting issues & issues for consideration

Overview

- ◆ COP's decision 4/CP.7 adopted "Framework for effective and meaningful actions to enhance implementation of Article 4.5 of the Convention"

Article 4.5:

- ◆ Annex II Parties "shall take all practicable steps to promote, facilitate, and finance, as appropriate, the transfer of, or access to, ESTs and know-how" to other Parties - developing in particular
- ◆ In this process, Annex II Parties and other organizations in a position to do so "shall support the development of endogenous capacities and technologies in developing countries"

Overview...cont'd

Framework

- ◆ Enabling environments: one of 5 key themes
- ◆ Defined as "government actions, such as fair trade policies, removal of technical, legal and administrative barriers to technology transfer, sound economic policy, regulatory frameworks and transparency, all of which create an environment conducive to private and public sector technology transfer"

Mandate

- ◆ Prepare a technical paper, or "synthesis document" on enabling environments on basis of ToR endorsed by EGTT

Framework...cont'd

- ◆ EEs as per the Framework for enhancing implementation of Article 4.5 are defined as government actions *inter alia*:
 - ◆ Fair trade policies
 - ◆ TT to developing countries as part of national policy
 - ◆ Export credit programs
 - ◆ Promotion of transfer of publicly owned technologies
 - ◆ Transparent approval procedures for TT projects
 - ◆ Joint R&D
 - ◆ Tax preferences
 - ◆ Removal of technical, legal and administrative barriers to technology transfer
 - ◆ Sound economic policy
 - ◆ Environmental regulatory frameworks
 - ◆ Protection of IPRs
 - ◆ Preferential government procurement

Outward flow

Inward flow or internal diffusion

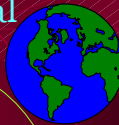
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Scope of the paper

- ◆ Literature review of:
 - ◆ Internal technology and international technology transfer experiences - measures to promote inflow & outflow
 - ◆ Government policies and activities by other stakeholders
 - ◆ Synthesis of IPCC SRTT, IPCC TAR, National Communications, WTO documents, other official documents, case studies
 - ◆ Both mitigation and adaptation (but far fewer examples available)
 - ◆ No pre-conceived framework on approach - framed around a collection of readings

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Developments in multilateral fora



Doha Ministerial Declaration (2001)

Reaffirmation of TRIPS Article 66.2
Promotion of TT to LDCs

WSSD Plan of implementation (2002)

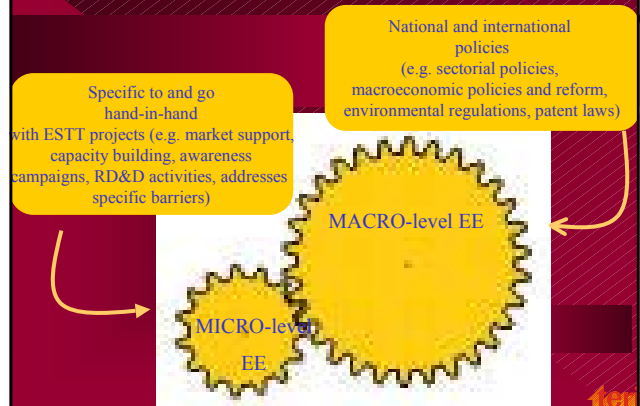
"enabling international economic environment",
"enabling domestic environment" for TT and international assistance & investment

UNFCCC, Agenda 21 (1992)

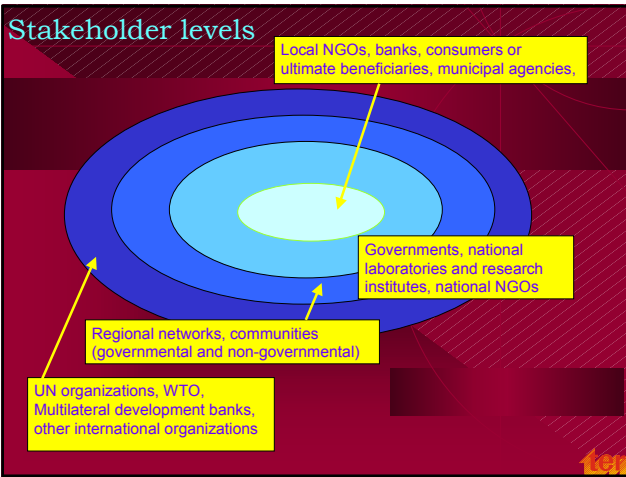
Established WGTTC;
Reports submitted on actions promoting TT to LDCs (2002)

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Macro vs. micro-level EEs



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IPCC's 10 dimensions of enabling environments

Enabling environment	Influential actors	Examples of means of implementation
National systems of innovation	Governments, firms, industry, technology development boards	Clustering of SMEs, formal & informal networks, research institutes
Human & institutional capacity	ALL	Technical training & education, demonstration programs
Sustainable markets	MDBs, governments, NGOs, financiers	Revolving funds, subsidies, government procurement
National legal institutions	Governments	Patent laws, environmental regulation
Macroeconomic policy	MDBs, governments, financiers	Energy sector reforms, investment policies, incentives for private sector transfer

IPCC's 10 dimensions of enabling environments...cont'd

Enabling environment	Influential actors	Examples of means of implementation
Social infrastructure and participatory approaches	Governments, NGOs	Involvement of end-users
Codes, standards & certification	Int'l organizations, Governments	Emission standards Equipment labeling, timber certification
Equity considerations	Governments, NGOs	Recognition of socially vulnerable classes
Rights to productive resources	Governments	Land tenure rights
Research and technology development	Governments, firms, research institutes	Joint R&D

Sector-wise - barriers and enabling environments for TT to non-Annex II countries

Buildings, transport, industry, energy supply

- ◆ Increasingly determined by market forces, economic instruments, and the way reforms are managed
- ◆ Substantial role for the private sector
- ◆ Barriers:
 - ◆ Lack of reflection of economic & environmental costs in price of fossil fuels
 - ◆ High cost of cleaner technologies
 - ◆ Lack of enforcement of regulations
 - ◆ Lack of awareness on energy efficiency measures
- ◆ Enabling environments:
 - ◆ Liberalization and deregulation (e.g. China & FDI policies, Latin America & power sector reforms)
 - ◆ Standards (e.g. vehicular emission standards, industry)
 - ◆ Market transformation support (e.g. GEF's RE projects, PELP, NGO involvement)
 - ◆ Adaptive R&D (e.g. UK-China building energy efficiency)
 - ◆ Capacity strengthening (e.g. Japan's GAP, information clearinghouses)

Sector-wise - barriers and enabling environments for TT to non-Annex II countries

Agriculture & Forestry

- ◆ Highly site-specific
- ◆ Both adaptation & mitigation options possible
- ◆ Uncertainty concerning CC impacts
- ◆ Barriers:
 - ◆ Sources of food & livelihood security for developing countries
 - ◆ High cost of patented technologies
 - ◆ Highly limited short-term profitability of ESTs
- ◆ Enabling environments:
 - ◆ Involvement of NGOs, extension workers for capacity strengthening
 - ◆ Participatory programs (e.g. Joint forest management)
 - ◆ Cooperation with international institutes (e.g. CGIAR, FSC & Indonesia)
 - ◆ National plant breeding labs & R&D (e.g. Sierra Leone & new rice variety)



Sector-wise - barriers and enabling environments for TT to non-Annex II countries

Solid waste management

- ◆ Largely the responsibility of municipal agencies
- ◆ Barriers:
 - ◆ Limited finance
 - ◆ GHG abatement technology know-how
 - ◆ Limited institutional capability
- ◆ Enabling environments:
 - ◆ Encouraging private participation
 - ◆ Recognition of socially marginalized groups (e.g. Brazil)
 - ◆ NGO action, adaptive R&D (e.g. Sulabh, India)



Sector-wise - barriers and enabling environments for TT to non-Annex II countries

Public health & coastal zone adaptation

- ◆ Largely the responsibility of public agencies
- ◆ Benefits are primarily local
- ◆ Barriers:
 - ◆ High degree of uncertainty
 - ◆ High cost of advanced information collection systems
 - ◆ Low attention received thus far
- ◆ Enabling environments:
 - ◆ Information in the public domain regarding sea-level monitoring (esp. for Small Island Developing States)
 - ◆ Proactive involvement of NGOs and national networks (e.g. malaria eradication in Kenya and Vietnam)
 - ◆ Capacity strengthening



Cross-cutting issues and considerations

- ◆ Role for the market
 - ◆ Significant for mitigation sectors with increasing private sector involvement (buildings, industry, transport, energy)
 - ◆ Less significant for adaptation sectors where government and socially-oriented organizations play the main role



Cross-cutting issues...cont'd

- ◆ Liberalization and restructuring of energy sector: demand & supply side impacts
- ◆ Portfolio of policy instruments and synergy of enabling environments
- ◆ Enabling environments at both sides of TT
- ◆ Adaptive RD&D
- ◆ Multistakeholder involvement and partnerships

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Cross-cutting issues...cont'd

- ◆ Quality and availability of information in the public domain
- ◆ Impact of stronger IPR protection on FDI and TT
- ◆ Extent and nature of economic incentives
- ◆ Compatibility of country priorities and sustainable development objectives with EST transfer and diffusion (*i.e.* we revisit here macro and micro-level enabling environments)

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Needs of paper

- ◆ More inputs needed for analysis of "macro enabling environments", such as patent laws, energy sector reforms, economic liberalization, etc., and their impacts on ESTT)
- ◆ Broader country coverage (*i.e.* currently, there are more examples from India)
- ◆ Paper contains many examples of EEs created in Annex II Parties - are these useful given the focus of Article 4.5?

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