Government Role for Technology Transfer

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<tr>
<td>US</td>
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<td>India</td>
<td>88%</td>
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Chapter 34: Transfer of Publicly-owned Tech
CSD 5 Decision/Roi+5: Transfer of publicly-funded technology
Feasibility Study: 1997 Korean Government & CSD/UNEP/UNCTAD
Expert Meeting: Feb. Kyungju, Korea
Recommends sector-specific pilot scheme
still not realized ------
Public R&D

◆ focusing on improving domestic industrial competitiveness
◆ not yet reflect the need to integrate TT to DC
◆ No legal restriction except the US:
  Bay-Dole Act: only to firms manufacturing substantially in the US
Climate Change Crisis

◆ requires new technology cooperation regime.
◆ requires to integrate Climate Imperatives into current IPR regime
◆ Climate crisis requires change of current IPR regime? Then How?
◆ What is the role of Government?
Distinction of Concepts

- **Technology Diffusion**
  - Enabling Business, Investment, Marketing
  - Tech. Diffuses Itself

- **Technology Transfer**: FCCC Art.4.5
  - What Governments can do? (for both North & South)
    - vis-à-vis 1. private sector, market
    - 2. public sector, policies
Current State of Tech. Transfer

◆ Private Sector: FDI, Trade
◆ Public Sector:
  - ODA Programs: Tech. Coop.
  - Bi/Multilateral Institutional Schemes: AIJ, Exchange & Training programs
◆ Public R&D → private sectors
  → commercialization / marketing
  from Public to Private
  not from North to South
Role of Government

◆ Provide regulatory framework
  - Market and demand creation
◆ Major Player of Market: end user
  - Esp. for Energy and ESTs,

More So for Developing Countries

◆ For TT, Market is Primary Actor but Government is also major actor of Market
  - considerable role even TT through market
EST R&D driver:
- Initial commercial viability of EST: low
- Public & Private Partnerships

Initiate Public R&D programs for Climate Change → commercialize as part of Industrial Policy for domestic competitiveness
- thus closed and restricted to access and transfer

So far, EST generation function of Gov. (Public R&D) do not fully reflect Global Env. Policy objective (TT for CC)
- Positive Example: 5th Framework for R&D, EU (INCO-DEV)
Status of EST Market in DC

- Unstable Market:
  - Newly Emerging; now Demand & Supply
  - Dynamic & Fluid; short life-span of EST yet to be (or hard to be) standardized,
  - Imperfect competition; small market, imperfect information
  - SMEs; vulnerable to deal with MNCs, lacking Tech. Assessment & Verification Capacity,

- Supply: dominated by foreign firms

- Demand: public sector dominant,
  SME demand weak
  - High-pressure sales & marketing
  - Buying old or inappropriate tech.
  - Ex. Incinerators purchased but not used (Korea)
    Import old air quality monitoring equipment
◆ Restrictive Conditions for Licensing: RBP or Refuse to license, Ex. HFC/Korea
◆ Additional Cost for Tech. Assessment Consulting: right choice even incur costs
◆ Need Survey & Monitoring for EST Market Functions: so far no analysis yet for this issue
RBP of IPR

- HFC to replace CFC (Freon Gas): refuse to license technology: 1989,
- Register patent to block technology development/ later offer to license/ no need to buy
- Global Environment: opportunity for Monopolistic Profit ???? → abusing IPR → compulsory licensing (agenda 21)
Expectations

- More than current market, ODA, institutional actions
  - not just enabling business environment
- Improving the access, conditions of market
  - easy financing, licensing, tech. assessment
- Promote indigenous R&D capacity
Sources for Frustration

◆ Lack of Own Capacity for indigenous R&D, Finance, Adaptation, Assessment, Verification,
◆ Tech.Coop.Prog.: More Hardware > Software
  - transfer of Black Box not Know-how
◆ Even for publicly-funded Tech.: 
  - only being commercialized in the market
  - emphasis on “Enabling Business Environment”
Focus of Debate

What Governments can do to

- Improve market functions to create stable and sound EST market as major end-user of EST
- Improve public R&D programs to catalyze Tech. Transfer & promote indigenous capacity for R&D
Key Issues for Public Policy

◆ <Private Sector>
  - How to harness Commercial Interests to contribute to Global Env. Goals?

◆ <Public Sector>
  - How to reflect Global Env. Goals into the Industrial & Economic policy?
Reconcile/integrate commercial interests with public policy goals

Make marketing strategy more environmentally sustainable: refrain Old Tech. Dumping & RBP (Restrictive Business Practice)

Monopoly of IPR
  - Reduces market share
    (ex. HFC case in Korea)

Easy transfer – increasing market share

Create Incentives for Sustainable Marketing
How for Private Sector?

◆ **Incentives:**
  - Provide financial/fiscal support for demonstrations/adaptation, & for Tech. Assessment and Verification

◆ **Disincentives:**
  - Address RBP & high-pressure sales of old tech. Damage to Corporation Image, Bad Publicity
  - Compulsory Licensing
For Developed Governments

◆ Integrate global environmental goals (TT/CC) into public R&D programs: focus not only commercialization but also on TT to DCs
  - remove legal or administrative restrictions which restrict transfer to foreign entity
◆ Explore possibility of Pooling, Sharing, Exchanging of publicly-funded ESTs for mutual and global benefit
  - since even DCs do have Public R&C, this can be done not only North-South but also South-South or South-North
◆ Link R&D ST Community & ODA community
   - willing scientists lack marginal incremental cost for Tech. Coop. activities
   - earmark incremental cost for Tech. Coop. activities into public R&D budget at the time of initial budget allocation

◆ Enhance Accessibility of Public R&D programs
   - increase expert exchange programs
   - already exist; on ad-hoc & bilateral basis for basic & low level technology
   - needs to be adopted as a general policy & for high level technologies too
Promote joint R&D activities with developing countries:
- little joint R&D between Developed & Developing, Gap needs to be bridged (IEA/OECD)
- Contribute to promote indigenous R&D capacity

Mandate from UNGASS 1997
- Feasibility Study on the transfer of publicly-funded EST in 97, Kyungju Expert Meeting in Korea Feb. 1998 (UNCTAD/UNEP/UNCSD)
- decision adopted CSD in 1998, invite interested parties to take sector specific action
For DC Governments

- Strengthen Regulatory Framework:
  - Market & demand creation
- Create Enabling Environment for EST market and Business: as major end-user of EST, explore potential role for sound market development
- Improve indigenous capacity for localizing, assessing, verifying ESTs
Jointly for Both Governments

◆ Survey on how EST Market functions:
  - to address issues related with imperfect market conditions, RBP, Tech. Dumping
  - to promote sound EST market development

◆ Monitor Tech. Coop. Programs:
  - to evaluate & improve TT for mutual satisfaction/not much feedback from field
  - to develop indicators for Tech. Transfer

◆ **Build long-term partnership** for mutual and global benefit;
  - es. through publicly-funded R&D