Dissemination and Spill Over of Technology

Technology Dissemination

- Technology dissemination is a process that involves moving an innovation from one party to another. Technology is a noun—a term that holds several levels of meaning. The broadest and most fundamental definition of technology is whatever civilization uses to sustain itself.

- Within this definition, manufactured objects (e.g. pottery and baskets) and objects adapted from nature (e.g. herbal medicines) are known as material technologies. Processes, techniques, and other types of applied knowledge (e.g. double-entry bookkeeping) are known as intangible or social technologies. Technologies can be grouped into basic categories:

- languages and codes, whether spoken, written, or signed;
- customs, traditions, rituals, and rites;
- applied concepts and knowledge;
- natural objects that people put to use;
- manufactured tools and other goods;
- Performances and objects valued for aesthetic or symbolic reasons.

Impact on Societies

- Technology dissemination affects societies in terms of the degree or level of impact (breadth, depth, and speed of dissemination) and the nature of that impact (benefit and surprise).
- Breadth involves the number of sectors touched and the number of people touched.
- A. sector could refer to a geographic area—a neighbourhood, a community, a region, a nation, or beyond.
- A sector could equally refer to an economic or demographic component of society—older persons or a particular industry, for example.

- A consideration of breadth ultimately reflects the number of people affected.
- Depth involves the initial intensity of the touch, which could be subtle or startling, and to the long-term level of impact on the society.
- Speed of dissemination pertains to the rapidity with which a technological innovation spreads.

Technology Dissemination Strategies

1. Training and capacity building
2. Effective dissemination method in Indonesia through technology showcase or techno-farm demonstration
3. Improvement of the marketing system through the introduction of new technological system
4. Introduction of new varieties in Malaysia through farm demonstrations, short courses, and hands-on training;
5. Participatory approaches in technology promotion and dissemination in the Philippines;
6. Effective extension through farmers' organizations in Thailand;
7. Creation-diffusion approach for rice in Vietnam, which is a technical innovation adapted to particular biophysical condition and socio-economic situation of farm households.

Emerging Challenges

1. Technology needs, distance/remote education, client-oriented extension service which take into account demographic characteristics.
2. Commercialization (intellectual property rights; value-added applications such as packaging, processing and trading; technology exhibition); and
3. Industrialization (technology incubation and innovation mechanisms; institutional assistance to provide support.

Technology Spill over

Meaning: Technology spill over refers to the unintentional technological benefits to firms that come from the research and development efforts of other firms without the costs being shared.

Concept of Technology Spill over

- Technology spill over is expected to be particularly strong from leading firms coming from advanced economies to firms in emerging economies.
- Successful technology spill overs depend on the absorptive capability of the receiving firms as well as the technological gap between sending firms and receiving firms.
- Technology spill over is also a social process which is modulated by the geographical as well as cultural context when it takes place.
- Both geographical and cultural proximity play significant roles in process.
- In future, the focus on technology spill over's from leading firms coming from advanced economies to following firms in emerging economies to that examines the two- way knowledge flow and interactions between sending firms and receiving firms.
- Technology spill over is ultimately a learning experience for both sides.

Technology Spill over effects may include

(i) positive effects

- displacing activities that reduce emissions in another location;
- technology spill over's awareness building; c
- cost reduction of technology due to scale effects;
- and attraction of demand for clean, reliable services); and/or

(ii) negative effects

- displacing activities that cause emissions in another location; technology leakage;
- purchasing or contracting out of services and commodities that were previously produced on-site and now lead to emissions elsewhere;
- emission increases due to higher demand for services and commodities whose market price has been reduced through the project;
- and changes in emissions during the life-cycle of a product so that emissions arise in other stages of the life-cycle that are not subject to constraints

Technology Spill over's and linkages

- ❖ The human capital effect: refers to the need for developing countries to have reached a certain point of development in order to absorb new technologies. Enhancing human capital can lead to higher productivity and profitability.
- ❖ The demonstration effect: occurs when local firms learn from foreign firm by simply observing and mimicking their product innovations, techniques, managerial performance or forms of organisation – with local adaptations.
- ❖ The competition effect: occurs as a result of competition from foreign affiliates in the sector introducing competitive pursuits from domestic firms trying to catch up with MNCs through R&D activities and reallocation of resources.