



The Conservation of Biodiversity: Implications of the IP System on Equitable Benefit Sharing

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Overview

- Technology Transfer under the CBD
- Overview of Mechanisms relevant to the CBD
- Costs and Benefits of IPRs with respect to Technology Transfer
- Options to promote Technology Transfer





Technology Transfer under the CBD

Three objectives of the CBD:

- 1) The conservation of Biological Diversity
- 2) The sustainable use of its components
- 3) The fair and equitable sharing of the benefits arising out of the utilization of genetic resources,
 - by appropriate access to genetic resources and
 - **by appropriate transfer of relevant technologies,** and
 - by appropriate funding.





CBD Terminology

- **Technology:**
 - not only technical machinery and equipment
 - but also “soft” technology, i.e., technological information, or know-how.
- **Intellectual property mechanisms:**
 - broader than IPRs
 - covers IP laws and systems that do not involve the grant or exercise of distinct ‘rights’, but are typically used in practical tech transfer process.
 - Examples: nondisclosure agreements, measures against unfair competition and the use of public domain patent information.





Overview of IP Mechanisms relevant to the CBD

- Patents
 - Genetic resources may be patented in diverse ways in different countries
- Licensing
 - Access and benefit sharing (ABS) of genetic resources requires choices as to obtaining, assigning, licensing and exercising of patents on relevant technologies.
- Trade Secrets
 - Providers of genetic resources may require certain information to be kept confidential, such as the exact location of a potentially endangered species in situ.
- Traditional Knowledge
 - Technology partnerships may need to take into account national laws on TK, protecting bio-diversity knowledge , traditional medical knowledge, etc.
- Copyright and Databases
 - Conservation of biodiversity, earth observation data, and satellite images





The Four Phases of Technology Transfer

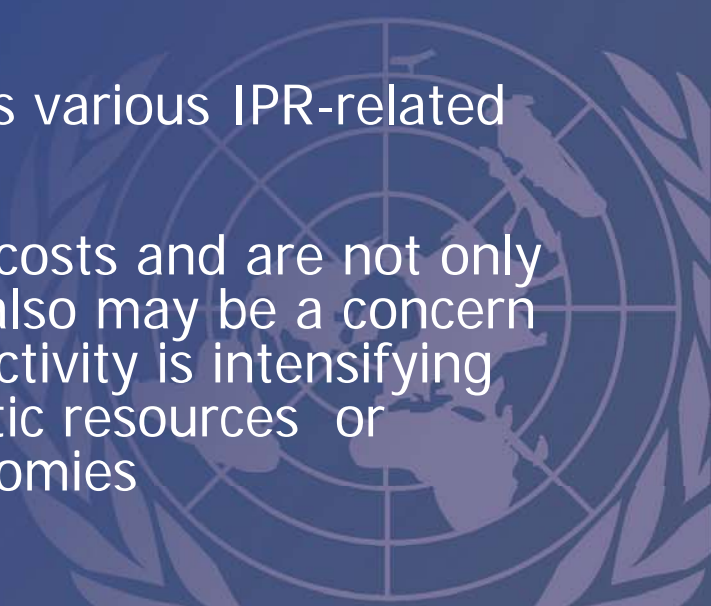
- 1) Technology Development
- 2) Identification of Transfer Opportunities
- 3) Actual Transfer
- 4) Technology Adaptation





Technology Development: The Impact of IPRs

- Patent system provides incentives, clarity, predictability and access to information regarding technologies dealing with conservation and the sustainable use of biological diversity
- However, effective access and use of the information requires a range of resources and uncertainty in the system may cause additional difficulties
- Developing research partnerships incurs various IPR-related costs and benefits
- Patent thickets may create transaction costs and are not only a concern of developed countries, but also may be a concern of developing countries where patent activity is intensifying in technologies relevant to use of genetic resources or producing products for developed economies





Identification of Transfer Opportunities: The Impact of IPRs

- Transparency in the patent system may lead to identification of transfer opportunities
- Actual accessibility, cost and quality of the patent information and capacity to make use of the information are necessary
- CBD emphasizes international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity
- Strong collaborative research and development efforts between developing and developed countries is needed





Actual Transfer of Technology: Forms of Transfer Agreements

- Licensing Agreement
- Partnership Agreements
 - May be sought in knowledge intensive fields such as biotechnology to spread the cost, risks and uncertainty
- Material Transfer Agreements
 - Regulate the transfer of tangible research materials, especially biological and genetic resources
- Bioprospecting Agreements
 - Often used to meet CBD requirements of prior informed consent and mutually agreed terms for ABS to gain access to genetic resources
- Patent Pools





Actual Transfer of Technology: The Impact of IPRs

- IPRs as “currency” used to secure funding
- Costs of acquisition may depend on stage of development of the technology
- Negotiation for key patents needed for sustainable use of genetic resources and development of value added products may be a better approach for developing countries than forcing the formation of patent pools.
- With respect to technologies which make use of genetic resources, IPRs may be an important avenue of diffusion; including joint patents or research programs with countries of origin of the genetic resource





Technology Adaptation: The Impact of IPRs

- IPRs may affect the manner of dissemination of the technology
- Overly broad patent rights may inhibit technology absorption through reverse engineering, or as in the case of genetic research, by blocking access to essential medical information
- Strengthened IP laws will likely shift firms' activity away from exports towards licensing
- But appropriate measures should be taken to prevent or control restrictive practices in licensing agreements which impede the adequate adaptation of the technology contrary to the objectives of the CBD
- National patent protection should be adjusted to the level of the country's technological development





Options to Overcome Barriers to Technology Transfer and Cooperation

- A well-designed broader regulatory framework
- Adequate institutional capacity so as to minimize the number of erroneously granted patents
- Capacity building and training on legal-technical skills, including granting of patents and design of domestic patent laws
- Need for IP-related technical assistance to improve developing countries' capacity to use IP licensing for technology transfer
- Enhance developing countries' skills for the negotiation of technology transfer agreements/provisions/clauses
- Encouragement of development and implementation of sui generis IP systems to protect traditional knowledge





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