General Assembly Consultative Workshops on:
**"Development, transfer and dissemination of clean
and environmentally sound technologies in developing countries"**

ISSUES PROPOSED FOR DISCUSSION

Workshop 3

**Capacity building to enhance the development, adoption and use of clean and environmentally
sound technologies in developing countries**

Intellectual property considerations and related capacity building

The social value of disclosing inventions is often greater than their direct value to inventors. Today's intellectual property (IP) regimes are meant to exploit this positive externality, in order to encourage the dissemination of technological knowledge. IP regimes try to achieve this objective by a variety of means including term limits on exclusive use patent and other IP rights. In theory, the intent is to balance incentives to innovate – which are generally provided by granting temporary exclusive rights to inventors – with encouraging dissemination of innovations, on the understanding that new knowledge builds on existing knowledge and there can be important societal benefits from its more rapid diffusion.

There can be a tension, however, between the objectives of IP regimes and sustainable development policy objectives, such as those relating to health, education, poverty eradication, energy, water and environment. For example, global sustainable development objectives may necessitate the promotion and transfer of clean and environmentally sound technologies, in particular in view of developing countries facing special capacity challenges. This tension has contributed to an enduring debate on IP issues in relation to sustainable development, with a considerable polarization of views.

A vast range of technologies is available (some being considered "mature") to address environmental aspects of sustainability. A variety of factors affect the rate of diffusion of those technologies across countries, including regulations and incentives, relative costs, and technological capabilities. There are different views as to whether or in which contexts the dissemination of these technologies is hampered by IP issues.

The aim of this Session is to outline key issues and discuss potential recommendations relating to the role of IPRs in relation to the development, global diffusion and transfer to developing countries of environmentally sound technologies.

- *In delegates' view, do intellectual property issues pose significant constraints for developing countries in the case of certain clean and environmentally sound technologies? If yes, can you provide examples? What approaches could achieve close alignment of IP regimes with sustainable development objectives?*

- *In delegates' view, should exceptions to IP protection for clean technologies be prioritised for specific groups of developing countries? What sort of an international negotiation process can be envisaged to establish priorities for global action, in view of the special needs and initiatives of various groups of countries, including Least-Developed Countries and Small Island Developing States?*

- *What do international organisations do (or should they do) to provide empirical evidence on the impact of IP regimes on the development and dissemination of clean and environmentally sound technologies?*

Other specific issues:

- *Patent pools: do they work satisfactorily? What sectors/aspects of sustainable development are they most relevant for? Are they a relevant tool for countries with few if any firms possessing strong technological capabilities?*

- *IP clearing houses: are there functioning good examples?*

- *Patent buyouts: are there cost-effective examples with significant impact?*

Other international technology capacity building activities

Technology flows through various channels, including trade and investment as well as movements of skilled people. Being able to utilize, adapt and improve upon those technologies is a function of domestic technological capabilities and whether the institutional and policy environment rewards technological effort.

Countries can, and many do, actively promote strengthening of domestic technological capabilities. Still, there is wide variation across countries in such capabilities, as well as wide variation within countries – e.g. between leading and lagging enterprises in a given sector.

Technological needs and capabilities evolve through stages as countries move closer to the technological frontier. Governments can facilitate advances in such capabilities by a combination of measures: investing in scientific and engineering education and training, creating a policy environment that encourages investment in progressively more technology-intensive activities, and fostering institutions that perform R&D into critical technologies that support domestic industries.

International cooperation can also help bolster technological capabilities in developing countries. Such cooperation can occur through joint research projects between university-based researchers in developed and developing countries, through joint private sector R&D between developed and developing country firms, through bilateral and multilateral government technology cooperation programmes, as well as some combination thereof – in the form of global technology partnerships.

International institutions have long played an active role in fostering such technology cooperation and technology transfer. These include a number of United Nations agencies as well as other international or supra-national institutions (such as the European Union). National laboratories of a number of developed countries also have programmes of international cooperation including with developing countries. These may be bilateral or multilateral in nature.

This session aims to map important elements of the global science and especially technology cooperation landscape. The idea is to know whether the needs for capacity building of developing countries are being adequately addressed by these various initiatives, and if not where the major gaps are.

- *What are the main technology-related capacity building initiatives of the international organisations? Whom do they reach and how effectively are they addressing the needs of developing countries?*

- *Are there examples of successful networks for international cooperation in research and development for environmentally sound technologies? What have they achieved and how have they shared the outputs of their efforts among the various partners? Which developing countries have been able to play a partner in such networks?*

- *What opportunities are offered by international organisations for developing countries to strengthen public and private sector capabilities for the adoption and efficient use as well as for the research, development and demonstration of clean and environmentally sound technologies?*

- *How can information and capacity gaps be addressed and how can existing international arrangements be further enhanced to foster technology cooperation and transfer? What good practices could be scaled up by international organisations for capacity building?*
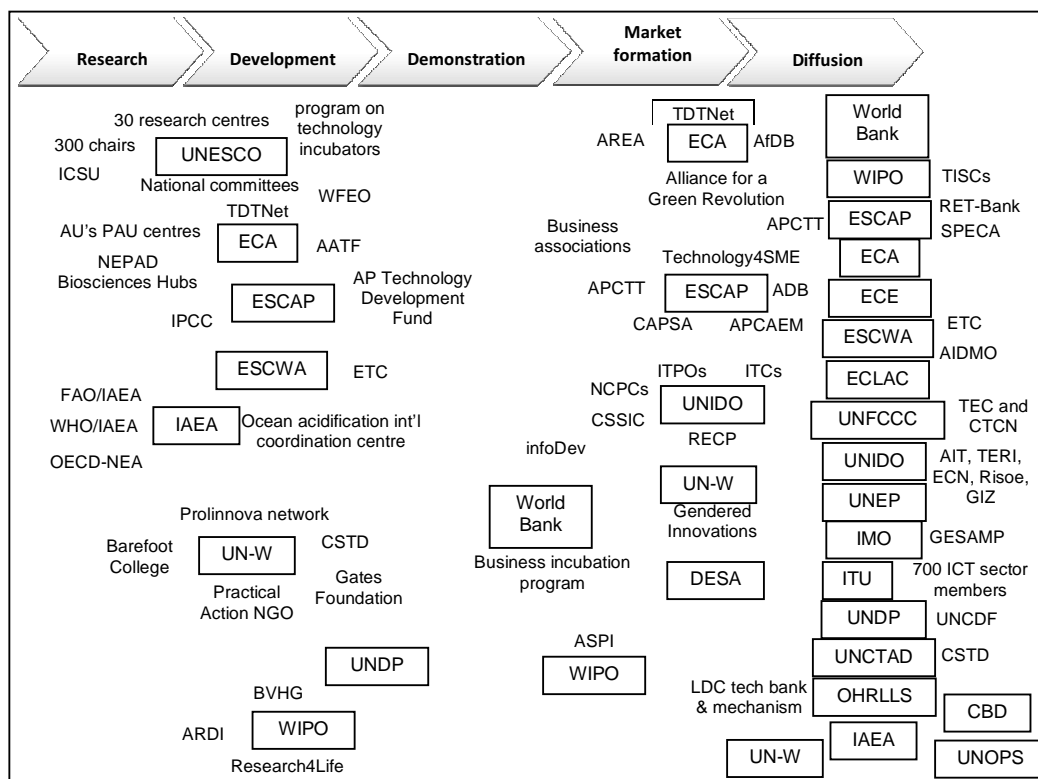
The way forward: Strengthening the international architecture for environmentally sound technology development, transfer and dissemination

What needs to be improved in the current system of facilitation for clean and environmentally sound technologies?

Figure 1 illustrates existing and planned contributions of, and selected partnerships by, UN entities, as contained in their submissions to the support the Secretary General's report A/67/348 in 2012.

Figure 1 Overview of UN contributions (boxes) and selected partnerships (without boxes).

Research → Development → Demonstration → Market formation → Diffusion

30 research centres
300 chairs
ICSU
UNESCO
National committees
WFEO
program on technology incubators

TDTNet
AU's PAU centres
ECA
AATF
NEPAD Biosciences Hubs
AP Technology Development Fund
ESCAP
IPCC

ESCWA
ETC
FAO/IAEA
WHO/IAEA
IAEA
Ocean acidification int'l coordination centre
OECD-NEA

Prolinnova network
Barefoot College
UN-W
CSTD
Practical Action NGO
Gates Foundation

UNDP
BVHG
ARDI
WIPO
Research4Life

World Bank
Business incubation program

infoDev
ASPI
WIPO

TDTNet
AREA
ECA
AfDB
Alliance for a Green Revolution
Business associations
APCTT
Technology4SME
APCTT
ESCAP
ADB
CAPSA
APCAEM

NCPCs
CSSIC
ITPOs
ITCs
UNIDO
RECP

UN-W
Gendered Innovations

DESA

LDC tech bank & mechanism

World Bank
WIPO
TISCs
ESCAP
RET-Bank
SPECA
ECA
ECE
ESCWA
ETC
AIDMO
ECLAC
UNFCCC
TEC and CTCN
UNIDO
AIT, TERI, ECN, Risoe, GIZ
UNEP
IMO
GESAMP
ITU
700 ICT sector members
UNDP
UNCDF
UNCTAD
CSTD
OHRLLS
CBD
IAEA
UN-W
UNOPS

Source: "Options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies", Report of the Secretary-General, A/67/348, 4 September 2012.

- *Are there additional important international initiatives that should be added to Figure 1? What could be done to address concerns about the efficiency and efficacy of the UN system in supporting technology facilitation?*

- *From the perspective of individual country representatives, which international capacity building or support mechanisms represent good practices that should be replicated or expanded?*

- *What are the most important gaps in the capacity building activities of UN entities to promote the development, transfer and dissemination of clean and environmentally sound technologies?*

- *For which technology areas or stages is it most difficult to tap into existing mechanisms for support? More specifically, what is the size and scope of unmet demand for international assistance?*

- *According to Figure 1, much of international organisations' efforts to foster access to clean technologies in developing countries is concentrated in the market formation and diffusion aspects of innovation. Is there a case for stronger international assistance in the more basic aspects of scientific and research capabilities in developing countries?*

What are the preferred options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies?

In response to the UNCSD ("Rio+20") outcome, the UN Secretary General – in his report A/67/348 to the General Assembly – proposed options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies, based on inputs from relevant UN entities, see http://sustainabledevelopment.un.org/index.php?menu=1455.

Discussions among Member States on the suggested options have led to the present series of Workshops, in order to consider a wider range of views. It should also be noted that recently (16 May 2013), UN Member States and UN entities have been invited to provide further inputs and views on options for a technology facilitation mechanism.

In this context, delegates may wish to consider the following questions:

- *Is there a need for a new and additional mechanism to facilitate the transfer and deployment of clean and environmentally sound technologies? If yes, in what ways should it go beyond existing initiatives?*

- *What global coordination role should it play to strengthen the many ongoing capacity building activities worldwide?*

    o *More specifically, what would be its relationship to other initiatives such as the climate technology centre and networks as well as a possible technology bank for the least developed countries?*

- *What gaps is a new technology facilitation mechanism expected to fill?*

    o *How specifically might it enhance and facilitate access to selected technologies that are deemed to be essential to sustainable development?*

- *What should be the governance mechanism appropriate for such a technology facilitation mechanism?*

- *Is a new mechanism needed at both the global and regional levels?*

Even when a given technology (as machinery or codified knowledge) can be transferred on preferential terms to a developing country, benefiting fully from it in a sustained manner usually depends on the availability of numerous ancillary skills and management capabilities across the economy. It is often the absence of such capabilities that has prevented the development of appropriate technologies in developing countries. This presents decision makers with complementary sets of challenges:

- *What roles could a technology facilitation mechanism play in overcoming the difficulties faced by developing countries in getting right the ancillary aspects of technology uptake, such as access to skills, knowledge and management capabilities, in order to support innovation systems?*

- *What could a technology facilitation mechanism do to overcome the shortages in skills and capabilities over and above general development cooperation frameworks and activities that are underway?*

- *What policies and actions should be prioritised by governments to eliminate distortions in the trade and investment frameworks that might constrain technology transfer?*

Finally, assuming there are identified areas where the existing international architecture is found wanting,

- *how can an international consensus be reached on the facilitation of clean and environmentally sound technology development, transfer and dissemination to developing countries?*