



Agenda and Concept Paper for a Scoping Workshop on  
**TECHNOLOGY TRANSFER NEEDS FOR ASIA AND THE PACIFIC**

Dates: 6-7 December, 2016

Venue: Kobe, Japan

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## OBJECTIVE

Conduct a scoping workshop to address technology transfer needs of APN developing member states with the aim of developing a robust collaborative regional research and capacity development framework under the APN that will provide support for technology transfer research, synthesis, assessment and capacity development activities that will effectively respond to the needs of APN members and produce information for decision makers that could lead to stronger solutions for an adaptable, sustainable, low carbon Asia-Pacific under a warming climate.

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## BACKGROUND

The world is coming together with a growing consensus that we need to work together to take science-informed action, and APN is part of that endeavour. APN demonstrates its ability to contribute to the international effort towards global environmental change and sustainability through its forward looking fourth strategic phase (2015-2020), which it entered in 2015, twenty years after its inauguration as a result of the [1990 White House Conference on Science and Economics Research Related to Global Change](#) and its initiative in calling for the establishment of regional global change networks for global environmental change.

The mission of the APN is to enable investigations of changes in the Earth's life support systems and their implications for sustainable development in the Asia-Pacific region through support for research and science-based response strategies and measures, effective linkages between science and policy, and scientific capacity development. The APN, therefore, supports investigations that will identify, explain, project and predict changes in the context of both natural and anthropogenic forcing; assess potential regional and global vulnerability of natural and human systems; and contribute, from the science perspective, to the development of policy options for appropriate responses to global change and sustainable development.

As part of its mandate to bring relevant science to policy- and decision-making processes in order for society to respond to the challenges of global environmental change and sustainability, APN continuously keeps abreast of the challenges the region is facing. Crosscutting with its themes of climate change and climate variability, and resources utilization and pathways for sustainable development, APN launched a new framework in 2012 next to its main core programmes. With the aim of enhancing mitigation action across countries in the region to help achieve the global vision for a low carbon and sustainable future, this framework on Low Carbon Initiatives ([LCI Framework](#)) has since produced tangible outputs that are expected to serve the communities within the Asia-Pacific region.

***The scoping workshop for technology transfer could be viewed as a continuum to the LCI Framework.***

Ensuring that the APN remains proactive in responding to the needs and challenges of the countries it serves, particularly its developing country members in the region, APN has been following the work of the UNFCCC closely in the area of low carbon technology transfer, particularly in light of the developmental needs of the

region, including the rapid growth of India and China, while remaining below a global average temperature rise of 2°C.

To this end and to continue its efforts to address the challenges of global environmental change in the Asia-Pacific Region, APN is convening a 2-day scoping workshop on mitigation (low carbon) and adaptation technology transfer in the context of regional collaborative research following needs identification, and capacity development. APN sees a growing niche in the area in order to support these global efforts in strengthening networks, partnerships and capacity building for climate technology transfer at local, national and regional levels for the countries it serves.

## TECHNOLOGY TRANSFER

According to an IPCC Special Report released in 2000<sup>1</sup>, barriers to the transfer of environmentally sound technologies (EST) vary according to context. Some of the barriers include lack of information; insufficient human capabilities; lack of understanding of local needs; and inadequate environmental codes and standards. The report notes there is no pre-set answer to enhancing technology transfer and that the identification, analysis and prioritization of barriers should be country based (IPCC Special Report for Working Group III, SPM, 2000).

Technology transfer encompasses the broad set of processes that cover the flows of knowledge, experience, and equipment for mitigating and adapting to climate change among different stakeholders. It comprises the process of learning to understand, utilize, and replicate the technology, including the capacity to choose it, adapt it to local conditions, and integrate it with indigenous technologies. IPCC defines technology transfer as *“the exchange of knowledge, hardware and associated software, money and goods among stakeholders, which leads to the spreading of technology for adaptation or mitigation”*. The term encompasses both diffusion of technologies and technological cooperation across and within countries (IPCC, 2007b; glossary).

On technology transfer the Bali Action Plan (2007)<sup>2</sup> stated the need for “cooperation on research and development of current, new and innovative technology, including win-win solutions” and international efforts since then have been concentrated in the UNFCCC framework’s five themes: technology needs and needs assessments; technology information, enabling environments, capacity building, and mechanisms for technology transfer. Advancing the technology development and transfer agenda further, the UNFCCC Technology Mechanism<sup>3</sup> was established under which the Technology Executive Committee (TEC) and the Climate Technology Center and Network (CTCN) operates.

According to CTCN (established at COP16), successful technology transfer requires not only exchange of technological solutions, but also strengthening policy and regulatory environments, and capacities to absorb, employ, and improve appropriate technologies. For capacity development in technology transfer, CTCN aims to catalyze and develop a) programmes to strengthen institutions and institutional capacities in developing countries; b) regional/national training programmes for projects seeking a range of needs including financing; and c) capacity building programmes targeted at developing technology cooperation and partnership forming capabilities of technology centres and institutes in developing countries.

In 2015, a commitment was made under the **Paris Agreement**<sup>4</sup> to strengthen the Technology Mechanism with a request that the TEC and CTCN undertake further work on technology research, development and demonstration. In the Decision 1/CP.21 67, COP requests the SBSTA to initiate, at its 44th session (May 2016),

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<sup>1</sup> <https://www.ipcc.ch/pdf/special-reports/spm/srtp-en.pdf>

<sup>2</sup> [FCCC/CP/2007/6/Add.1\\*](http://unfccc.int/tp/2007/6/Add.1)

<sup>3</sup> [http://unfccc.int/tpclear/templates/render cms page?TEM\\_home](http://unfccc.int/tpclear/templates/render cms page?TEM_home)

<sup>4</sup> <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>

the elaboration of the technology framework taking into consideration that the framework should facilitate the undertaking and updating of TNAs, as well as the enhanced implementation of their results, particularly technology action plans and project ideas, through the preparation of bankable projects; the provision of enhanced financial and technical support for the implementation of the results of the TNAs; the assessment of technologies that are ready for transfer; and the enhancement of enabling environments for and the addressing of barriers to the development and transfer of socially and environmentally sound technologies.

For adaptation, UNFCCC (2005) notes that technology transfer is ***“the application of technology in order to reduce the vulnerability, or enhance the resilience, of a natural or human system to the impacts of climate change”***. A recent publication by ADB (2014)<sup>5</sup> pin-points a number of technologies for adaptation in coastal resources, human health, transportation, water resources, and disaster risk management. UNEP-IETC’S response to fostering technology transfer are needs assessments, policy strengthening to promote enabling environments; capacity development for stakeholders; ensuring that initiatives for technology transfer match with national sustainable development goals; strengthening communication among technology transfer bodies through information sharing and joint activities, including providing a platform for technology transfer (IETC, 2003).

## CAPACITY DEVELOPMENT

Within the context of technology transfer and enhancing the implementation of the UNFCCC technology transfer framework, UNFCCC defines capacity building a process which seeks to: ***“build, develop, strengthen, enhance and improve existing scientific and technical skills, capabilities and institutions particularly in developing countries, to enable them to assess, adapt, manage and develop technologies.”*** In this context, UNFCCC notes that capacity building should be country-driven, addressing specific needs and conditions of developing countries, and reflecting their national sustainable development strategies, priorities and initiatives.

At the recent 5<sup>th</sup> Meeting of the Durban Forum on Enhancing Capacity to Implement the Paris Agreement, which was held in Bonn in May 2016, **a number of questions were put to break-groups that tackled the issues of capacity development and technology transfer in the content of mitigation and adaptation.** Questions were posed around the capacity building needs to convert INDCs into action; to mobilize finances; to ensure transparency in undertaking activities; and to improve on a global scale adaptation and mitigation-related capacity building at the institutional, systemic and individual levels. Specific questions posed at the meeting are in **Box 1**<sup>6</sup>.

### Box 1: 5<sup>th</sup> Meeting of the Durban Forum on capacity building focused on the following questions:

#### Capacity-building to convert INDCs to action

- What are the lessons learned that countries can apply from experiences so far (i.e. NAMAs, NAPAS, NAPs), in order to move INDCs from planning to implementation and enhancement?
- What necessary steps need to be taken at the national level to convert INDCs to action? How to build the institutional capacities required to do so?
- What capacities are required for countries to comply with the obligation to regularly prepare NDCs, to monitor their implementation and to be able to increase ambition?

#### Capacity-building for mitigation

- What progress has been made on mitigation-related capacity-building at the institutional, systemic and individual level?
- Where are the remaining gaps, needs and challenges?
- What assessment is available on mitigation-related capacity-building at the regional, national or sub-national levels?

#### Capacity-building for adaptation

- Which are the capacity building measures and actions for adaptation that have already been undertaken in various parts of the world? How they can help to increase climate resilience?
- What progress has been made on adaptation-related capacity-building at the institutional, systemic and individual level? Where are the remaining gaps, needs and challenges, including in the private sector?
- What assessment is available on adaptation-related capacity-building at the regional, national or sub-national levels?

#### Capacity-building for technology

- What progress has been made on capacity building at the institutional, systemic and individual level?
- Where are the remaining gaps, needs and challenges?
- What assessment is available on capacity-building at the regional, national or sub-national levels?

<sup>5</sup> <https://www.ctc-n.org/sites/www.ctc-n.org/files/technologies-climate-change-adaptation.pdf>

<sup>6</sup> [http://unfccc.int/cooperation\\_and\\_support/capacity\\_building/items/9439.php](http://unfccc.int/cooperation_and_support/capacity_building/items/9439.php)

Capacity building is a cross-cutting issue in all sustainable development policy documents, including Agenda 21 and the Rio+20 outcome document, the Future We Want. Technology, science and capacity building are major pillars of the Means of Implementation of the Post-2015 Agenda and of the Rio+20 follow-up processes. The Means of Implementation of the Post-2015 Development Agenda and the Addis Ababa Action Agenda, which established the Technology Facilitation Mechanism (TFM), could provide an opportunity to address some of the gaps hindering the facilitation and transfer of technologies.<sup>7</sup> As part of the TFM the annual collaborative Multi-stakeholder Forum on science, technology and innovation for the sustainable development Goals (STI Forum) took place in June 2016<sup>8</sup>.

## APN RESEARCH & CAPACITY DEVELOPMENT AGENDAS

Fostering the understanding of global environmental change is achieved by conducting regional collaborative research and capacity development. Under climate change, APN advances science that informs decision-making regarding adaptation, mitigation and sustainable development through five themes. For the present concept on technology transfer, the two most relevant themes are climate change and climate variability, and resources utilization and pathways for sustainable development. Through these thematic areas and with the development of a framework for technology transfer, APN expects to make a difference in terms of responding to the needs of the region in addressing low carbon development, helping establish low carbon societies, while, at the same time, responding to a number of the sustainable development goals for a better and more informed Asia-Pacific.

In its 4<sup>th</sup> strategic phase, APN increasingly emphasizes the importance of transdisciplinary and interdisciplinary approaches in addressing regional issues. For the present scoping activity, it is important to emphasize that APN invests in the identification of applicable methodologies and the development of new tools to improve the effectiveness of knowledge transfer between scientists and decision makers. APN recognizes the importance of developing capacity, which is embedded in the APN philosophy. Some of the examples of the work that APN continues to support are:

- a. Promoting and strengthening global change and sustainability research
- b. Addressing and identifying gaps via synthesis and assessment work
- c. Developing pathways and effective mechanisms to achieve sustainable development
- d. Developing pathways and mechanisms for effective adaptation and mitigation strategies
- e. Encouraging place-based integrative research particularly from developing countries.

Under the APN's research themes that encompass climate change and resources utilization and pathways for sustainable development include, some of the topics of relevance include, though are not limited to:

- Mitigation options and their implications for sustainable development
- Climate change in the context of water and food security and systems
- Integrated climate assessments
- Climate resilience through enhanced capacity, knowledge transfer and technology support
- Assessment and enhancement of land use sustainability
- Sustainable energy in the context of greenhouse gases
- Renewable energy systems and sources
- Biofuels and biotechnology to offset fossil fuel consumption
- Sustainable management of urban areas, coastal zones, etc.
- Technology development and knowledge transfer in waste management systems
- Sustainable consumption and production
- Regional strategies and initiatives to reduce, reuse and recycle materials

<sup>7</sup> <https://sustainabledevelopment.un.org/topics/technology>

<sup>8</sup> <https://sustainabledevelopment.un.org/TFM/STIForum>

## PARTNERSHIP APPROACH

In undertaking the scoping workshop, APN wishes to engage the best partners and institutions in the region that are already making headway in technology transfer for a low carbon and climate resilient world. It will call on and bring together experts from bodies such as UNFCCC's CTCN and TEC; APEC-VC, GEF, GCF, ADB (through its pilot Asia-Pacific Climate Technology Network and Finance Centre joint project with UNEP), UNEP-IETC, IGES LoCARNet, and SIDA. With a view to engaging experts from these bodies, APN expects to provide a robust framework that addresses the technology transfer needs of its member countries, particularly the barriers the countries are facing.

## OUTPUTS: REGIONAL FRAMEWORK FOR TECHNOLOGY TRANSFER

The scoping workshop will provide develop a robust regional research and capacity development framework that could be a strong arm of the APN providing support to undertake technology transfer research, synthesis and assessment that will provide information for decision makers that could lead to solutions for sustainable development in a changing climate.

The following documents will be outputs of the workshop.

- i) A report that provides a clear indication of the needs of member countries relating to technology transfer, and
- ii) A draft proposal by way of a **framework for technology transfer** for presentation to APN's 22<sup>nd</sup> Intergovernmental Meeting, the highest body of APN. This draft framework will outline the kinds of activities that would be beneficial for APN as well as suggestions on how APN, together with partnering entities can assist developing countries in raising their capacity in the context of technology transfer for global environmental change and sustainability.

### ACRONYMS

ADB	Asian Development Bank
APN	Asia-Pacific Network for Global Change Research
APEC-VC	Asia-Pacific Economic Cooperation – Virtual Center
CTCN	Climate Technology Centre and Network
GCF	Green Climate Fund
GEF	Global Environment Facility
IGES KRC	Institute for Global Environmental Strategies – Kansai Research Centre
IPCC	Intergovernmental Panel for Climate Change
LoCARNet	Low Carbon Asia Research Network
LCS-RNet	International Research Network for Low Carbon Societies
SIDA	Swiss International Development Agency
TNA	Technology Needs Assessment
TEC	Technology Executive Committee of UNFCCC
UNEP-IETC	United Nations Environment Programme – International Environmental Technology Centre
UNFCCC	United Nations Framework Convention for Climate Change