Fourteenth meeting of the Technology Executive Committee

**United Nations Campus (AHH building), Bonn, Germany
28–31 March 2017**

Cover note

Draft TEC Brief on South-South cooperation and triangular cooperation on technologies for adaptation

I. Background

1.   The Technology Executive Committee (TEC) held at its 12th meeting a thematic dialogue on enablers and barriers to South-South cooperation on technologies for adaptation.[1] At TEC 13 the TEC agreed to prepare a TEC Brief on South–South cooperation and triangular cooperation on technologies for adaptation, incorporating the work undertaken by the TEC in this area, including the outcomes of the thematic dialogue, and relevant information from the engagement with the United Nations Office for South-South Cooperation.

II. Scope of the note

2.   The annex to this note provides the draft TEC Brief on South–South cooperation and triangular cooperation on technologies for adaptation prepared by the TEC task force on adaptation.

III. Expected action by the Technology Executive Committee

3.   The TEC will be invited to consider the draft and provide guidance on the draft, with a view to finalizing the Brief after TEC14.

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[1] <http://unfccc.int/ttclear/events/2016_event1>.

Annex

South-South Cooperation and triangular cooperation in Technologies for Adaptation for Water and Agriculture

Why is this TEC Brief?

Water and agriculture are essential for poverty reduction, sustainable development and human wellbeing. Agriculture accounts for 70 percent of total global freshwater withdrawals, making it the largest user of water along the entire agri-food supply chain.[i] The links between water and agriculture will be exacerbated in the near future under the pressure of population growth and climate change. Estimates indicate that 60 percent more food will need to be produced to feed the world population in 2050 and total global water withdrawals for irrigation are projected to increase by 10 percent in the same period.[ii]

Adapting water management and agricultural practices to climate variability requires integrated responses that address the complex and interrelated nature of global resource systems.[iii] These integrated responses can be fostered through the exchange of technologies that countries accumulate in their own development process and which tend to be more accessible, adaptable and affordable than those from developed countries.[iv] An essential alternative for developing countries in responding to the growing pressure of climate change on resource systems is therefore to step up cooperation for the exchange of more cost-effective technologies for adaptation to the implementation of their National Adaptation Plans (NAPs), Nationally Determined Contributions (NDCs) and the Sustainable Development Goals (SDGs).[v]

Yet, the potential for South-South and Triangular (SSC/TrC) in technologies for adaptation for water and agriculture remains largely untapped.[vi] Based on a mapping of SSC/TrC initiatives, e-survey with National Designated Entities (NDEs)[vii], partners and members of the Climate Technology Center and Network (CTCN),[viii] and recommendations of the UNFCCC Technology Executive Committee (TEC)[ix], this TEC Brief outlines the challenges for SSC/TrC in technologies for adaptation, reviews best practices and lessons learned, and highlights the roles of different stakeholders for the successful replication and transfer of technologies for adaptation in the context of SSC/TrC.

Highlights

- The adoption of the 2030 Agenda for Sustainable Development and the entry into force of the Paris Agreement may bring opportunities for countries to increase SSC/TrC for enhancing the transfer and deployment of adaptation technologies;
- SSC/TrC can further assist countries in implementing their priority adaptation actions, as articulated in NDCs, NAPs, and other national and subnational adaptation planning efforts;
- Countries may count on the efforts taken by governments, research institutes, and global institutions and mechanisms like the TEC and the CTCN to catalyse SSC/TrC for technologies for adaptation;
- Local stakeholders should also be involved and empowered to enable the replication and improvement of local solutions and thus promote the sustainable application of technologies for adaptation;
- The integration of hardware, software, and orgware is also necessary and should be supported by flexible programs and partnerships;
- Effective coordination and integration of technologies for adaptation in cross-sectoral planning and policy formulation by local and national governments should be pursued to ensure the implementation of appropriate adaptation actions;

- Similarly, institutional support to SSC/TrC for knowledge management and information sharing and linkages between climate change and other development areas should be explored and properly reflected in adaptation action within the NAPs and NDCs;
- Other global mechanisms, international networks and organizations such as the UNOSSC can further support and promote SSC/TrC in technologies for adaptation and strengthen links with the SDGs.

The potential of SSC/TrC in technologies for adaptation

Adaptation experience is accumulating across regions in the public and private sector and within communities. Governments at various levels are starting to develop adaptation plans and policies to integrate climate-change considerations into broader development plans.[x] SSC/TrC can help increase the adaptive capacity of countries by transferring knowledge and technology that tend to be attuned to local geoclimatic conditions, scaled down to levels appropriate to the size of local markets, and adaptable to the reality of low-income consumers. This knowledge and technology can further build local capacity and enhance countries' ability to adapt to climate change.

Yet, the potential of SSC/TrC in technologies for adaptation remains largely untapped. An e-survey conducted with 138 National Designated Entities to the CTCN, 14 CTCN Consortium Partner representatives, and 102 CTCN Network Members revealed that nearly 50% of the organizations had never engaged in SSC in technologies for adaptation in the agriculture and water sectors. The relatively few existing SSC/TrC initiatives in technologies for adaptation in the agriculture and water sectors tend to concentrate in a small number of

Figure 1. Mapping of SSC in technologies for adaptation in water and agriculture

countries (see Figure 1). [xi] There are also few SSC initiatives that focus on the intersection between water, agriculture and climate change (see Figure 1). [xii] The SSC/TrC technologies for adaptation in the agriculture and water sectors with the largest potential demand by developing countries are illustrated in figures 2 and 3. [xiii]

SSC/TrC technologies for adaptation in the agriculture sector with the largest potential demand/most demanded by developing countries

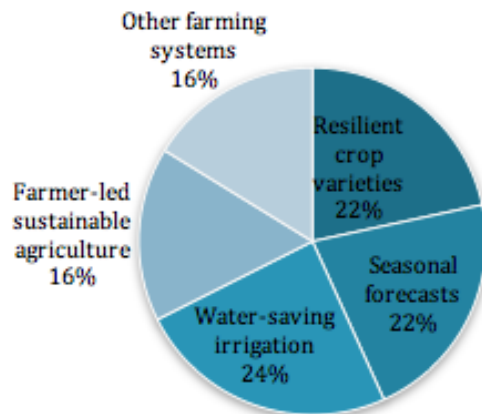*Figure 3. Largest potential demand for SSC/TrC in adaptation technologies in Agriculture*

SSC/TrC technologies for adaptation in the water sector with the largest potential demand/most demanded by developing countries
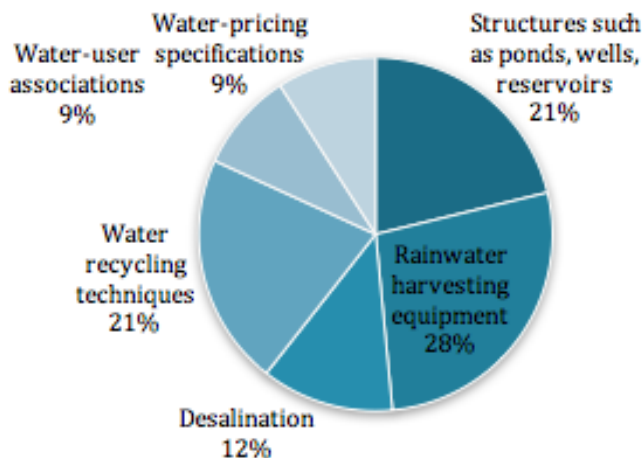

Figure 2. Largest potential demand for SSC/TrC in adaptation technologies in Water sector

Two main factors seem to contribute to these phenomena. First, the lack of a universally accepted definition of SSC/TrC poses questions on whether SSC/TrC encompasses people-to-people in addition to government-to-government cooperation. Second, the financial crisis that has affected Northern countries and its impact on traditional aid, combined with the emergence of BRICS contributed to confine SSC/TrC to an instrument of foreign policy of 'emerging powers' when in fact it includes a much wider array of narratives, actors and modalities. Adding to this is the fact that South-South partners do not report to the OECD-DAC and that data and information on SSC/TrC remains limited. As such, many SSC/TrC initiatives fall off the radar and opportunities for SSC/TrC are missed. This is particularly true for Eastern Europe and Arab States, who have been the first to adapt agriculture and water systems to climate change and have become a 'laboratory' for new technologies for adaptation.

Main challenges to SSC/TrC in technologies for adaptation in the agriculture and water sectors

In order to meet the potential demand for technologies for adaptation and to enhance support to SSC/TrC initiatives, SSC/TrC partners must address challenges like limited knowledge of Southern adaptation technologies and initiatives; lack of or inadequate access to financial resources; inadequate legal and regulatory frameworks; and insufficient organizational and technical capacity, all limiting the transfer of technologies for adaptation among developing countries.[xiv]

At the institutional level, the lack of funding and dedicated human resources were identified as some of the main factors that hinder organizations' engagement in SSC/TrC in technologies for adaptation. Measures to increase funding for SSC/TrC have included the introduction of specific allocations for technology research and development activities in the national budget or by identifying and creating financial schemes and funds for technology transfer (See Box 1 and Box 2). Other enablers include setting up coordination and communication channels for information exchange between partners.

The lack of regulatory frameworks for technology transfer and handling intellectual property also provide negative incentives for organizations that are considering to invest in SSC/TrC. The measures put forward to overcome this challenge were quite diverse and include establishing quality control systems and agriculture crediting and certification systems, formulating detailed regulations and standards for the prioritized technology, creating policies to enforce land utilization and avoid conflicts between farmers, and reviewing the current regulatory framework to include an agricultural extension service (educating farmers to apply related scientific research to agricultural practices).

Lessons learned

SSC/TrC has developed mechanisms for replicating and transferring technologies for adaptation in the water and agriculture sectors[xv] and have offered important lessons for countries should they choose to implement their NAPs and NDCs through SSC/TrC.[xvi]

Learning and sharing experiences through personal interactions, such as exchange programs, has proven to be an effective tool that can help accelerate knowledge dissemination.

SSC/TrC for technologies for adaptation is mainly delivered through capacity building initiatives like trainings and study tours. While these exchanges continue to take place on an *ad-hoc* basis, there has been growing support to more long-term capacity building initiatives for a better appropriation of these technologies. Therefore, delivery modalities and instruments that build relationships and capacity beyond the project life-span (e.g. train the trainer programs, joint research activities and knowledge and technology networks and platforms) are gaining traction and being combined with one another, depending on the context, in more structuring SSC/TrC interventions.

Capacity building strategies should be designed to enable countries devise solutions for their self-development. Hence, these strategies should combine technical-practical trainings, supervised practices, evaluation of learning and other complementary initiatives. These strategies should further consider processes like technology inventories and observatories that can strengthen local participation, identification of policy priorities and actions, and mutual accountability. They should also include the creation of permanent systems like online platforms and networks to provide appropriate, cost-effective mechanisms for continuous collaboration and exchange of information.

Local stakeholders should be involved and empowered to enable the replication and improvement of local solutions and thus promote the sustainable application of technologies for adaptation

Indigenous knowledge and technology can be made more accessible, adaptable and affordable to the context of developing countries. Mechanisms to identify, use and develop this knowledge and technology in the context of SSC/TrC include bottom-up, participatory approaches like community consultations and peer-to-peer learning. These approaches help transfer new information to farmers and extend ready-to-use technologies that help vulnerable rural communities adapt to climate variability. They are also important to empower local communities to contribute to action-oriented plans that prioritize adaptation strategies and cope with the negative effects of climate change.

BOX 1: Barley-livestock systems for better climate change resilience in Jordan and Iraq

Barley-based livestock production systems sustain some of the poorest segments of the rural population in North Africa and West Asia. In Iraq and Jordan, barley-livestock production systems rarely provide a dependable means of food supply and income for farmers. Limited access to inputs, fragmented extension and research programs, and unsustainable farming practices are aggravated by climate variability and the increased incidence of drought. Iraqi and Jordanian barley farmers experience significant losses during prolonged dry spells. In 2008, barley-harvested areas decreased by 50 per cent in Jordan and declined from 750,000 ha to only 25,000-75,000 ha in northern Iraq.

This IFAD-funded project builds on previous ICARDA research to improve awareness of climate change at the policy and community levels, deliver technologies to resource-poor communities, and encourage farmers to adopt

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sustainable agricultural practices. The project aims to increase the productivity of barley-livestock agricultural systems in Iraq and Jordan while strengthening climate change resilience among targeted rural communities through national and community-level awareness raising and ready-to-use technologies.

Recognition and management of indigenous knowledge and technology in water and agriculture

Community consultations about variability of local weather patterns, climate change and threats to local livelihoods were an important part of the project. These community consultations helped frame local climate change plans that prioritize adaptation strategies. They also helped communities cope with the negative effects of climate change, including through the identification of suitable technologies and management practices from other developing countries.

Knowledge management and capacity building systems and strategies

Ensuring that new transformative technologies and management practices were placed directly in the hands of farmers was one of the main priorities of the project. To achieve this goal, an evaluation and climate change proofing of appropriate technologies was conducted according to criteria like sustainability, resilience to climate change, and measurable improvements in rural livelihoods. The evaluation was followed by the identification of opportunities and potential for the generation of new technologies capable of strengthening farmer resilience. New technologies and information were provided via peer-to-peer learning, illustrating the transformative potential to farmers.

The integration of hardware, software, and orgware is necessary and should be supported by flexible programs and partnerships.

Adaptive programs and multi-dimensional partnerships contribute to the implementation of more contextually relevant, sustainable "hardware" technologies (e.g. new irrigation systems, drought-resistant seeds), but also "software" (e.g. insurance schemes, crop rotation patterns) and "orgware" technologies like early warning systems that combine hard measuring devices with soft knowledge and skills that can raise awareness and stimulate appropriate action. For this reason, the adoption of mechanisms for developing countries to present their needs and identify suitable solutions is extremely important for SSC/TrC in technologies for adaptation. These mechanisms include, for instance, criteria and indicators for selecting hot spots linked to scenario development, vulnerability assessment reports, as well as frameworks to improve the regional knowledge and information sharing.

Programs and partnerships must be flexibly formed and different technologies carefully combined in order to be relevant and cost efficient. There is also a need to extend the knowledge and information base to aid critical policy interventions that complement and strengthen existing adaptation efforts.

BOX 2: Adaptation to climate change induced stress in the Nile Basin

The Nile Basin is one of Africa's most important ecosystems, hosting 40% of Africa's population. Although climate change has a fundamental role for water management in the Nile Basin, reforms in the water sector often have very weak links to climate. Countries lack a comprehensive water policy, institutional capacity, and adequate climate variability monitoring and response mechanisms.

This project is a partnership between UNEP and the Nile Basin Initiative (NBI), sponsored by SIDA. The overall project goal is to build the adaptive capacity of the Nile Basin countries that are most vulnerable to climate change. Results and information emanating from the project are expected to support decision makers in the Nile Basin in building resilient ecosystems and economies and in improving cooperative management of water resources.

Recognition and management of indigenous knowledge and technology in water and agriculture
An assessment methodology including themes, tools, criteria and indicators for selecting hot spots linked to scenario development was developed. The methodology sought to improve regional knowledge on adaptation strategies and transformative policies for cooperative management of water resources. A vulnerability assessment report based on the methodology identified adaptation actions for building resilience of vulnerable

sectors and ecosystems in the region. The report would also support critical policy interventions that complement ongoing efforts to cooperative management of water resources.

Knowledge management and capacity building systems and strategies
The project helped strengthen the capacities of government agencies, research institutes, non-governmental organizations and other social actors that can facilitate climate resilience at local and national level. Project partners facilitated political and technical processes, and provided climate information, training, information management and dissemination through climate change adaptation portals and awareness materials. Several policy areas and recommendations for policy actions were identified as a result.

Effective coordination and integration of technologies for adaptation in cross-sectoral planning and policy formulation by local and national governments is essential to ensure the implementation of appropriate adaptation actions.

A systematic approach is needed to take the cooperation to scale and fully leverage the diverse cooperation modalities under the SSC/TrC framework. South-South partners are therefore encouraged to form SSC/TrC strategies and embed them into national development planning. Additional efforts are needed to ensure that project findings and results feed into policy processes and help devise policies to reduce barriers to technological application. This can be done throughout the project lifespan as for instance through meetings with relevant community members, extension officers, researchers, and policy makers to discuss, validate and disseminate results as well as to formulate recommendations for helping local communities to cope with the impacts of climate change. Action plans based on these policy recommendations can further enable communities to bring climate change into sharper focus and implement adaptation activities.

Promoting and scaling up SSC/TrC to assist countries in implementing their adaptation actions

The adoption of 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) in 2015, and the entry into force of the Paris Agreement in 2016 may bring opportunities to countries to increase use of SSC/TrC for enhancing the transfer and deployment of adaptation technologies. Increased use of SSC/TrC can further assist them in implementing their priority adaptation actions, as articulated in NDCs, NAPs, Technology Needs Assessments (TNAs), or other national and subnational adaptation planning efforts. These countries can benefit from the concerted effort by governments, research institutes, specialized UN agencies, programs, funds, and other global institutions and mechanism (Figure 4).[xvii] It is important to note that for any SSC/TrC or any other technical cooperation modality to be effective, it is important it be focused on specific challenge(s) or barrier(s) to identifying, prioritizing, piloting, deploying or scaling up adaptation technology.

Forms to promote and scale up SSC/TrC to assist countries in implementing their adaptation actions include:

A. Bringing multiple stakeholders to work together in different capacities like policy design, knowledge management and exchange, and project implementation.

There remains some blurry understanding of the concept of SSC/TrC, no systematic and widely available information on the trends and patterns of SSC/TrC. Further, there appeart o be insufficient monitoring and evaluation frameworks, and a lack of an adequate environment for Southern experts to share information. Countries also have different abilities to manage and participate in SSC/TrC, often resulting in differing approaches to SSC/TrC partnerships and unrealized potential.

It is also important to understand needs by region are important. Information on common needs and priorities for regions with similar challenges should be identified in a coordinated fashion. In other words, it is not only important to know about the technology innovations that are being developed in south regions, but finding out what needs exist that are not being met.
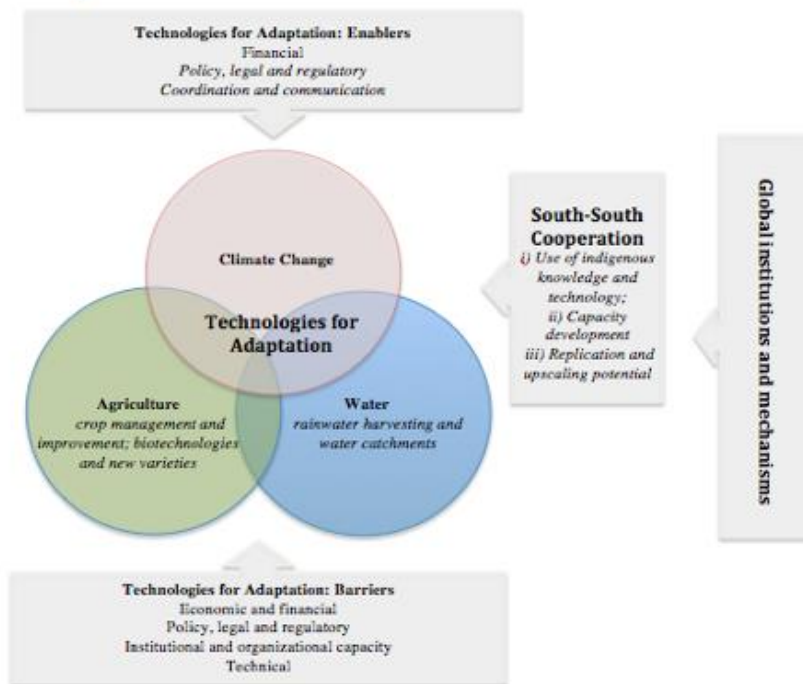
Source: Vazquez, K. C. (2016)

Figure 4. Global Institutions in h implementation of technologies for adaptation via SSC/TrC

SSC/TrC may be considered as a topic for discussion in the annual meeting, thematic dialogues and other regular events of the TEC, the CTCN and the Adaptation Committee. This would be an opportunity to regularly assess the state of SSC/TrC in technologies for adaptation, review progress, identify areas for enhanced support, and propose recommendations. In addition, an online community of practice under the TT: Clear website and UNFCCC events can be useful avenues for interaction among international experts, policymakers, specific services of bodies under the Convention (including the TEC and the CTCN), and other relevant stakeholders and mechanisms.

B. Providing Institutional support to SSC/TrC in order to enable effective knowledge management and information sharing on adaptation technologies.

There is growing need to mainstream SSC/TrC in technologies for adaptation into programs and to secure regular funding to enable this. Organizations engaging in SSC/TrC may embed specific allocations for technology research and development in organizational planning and budgeting processes to secure regular funding for SSC/TrC initiatives. They may also map countries' commitments, the mechanisms trough which funding for implementing these commitments is disbursed, how these mechanisms are accessed, and the barriers to access, disburse and execute this funding.

There is also a need for creating "SSC/TrC marker" to identify SSC/TrC projects and activities supporting technologies for adaptation, as well as when a technology from another developing country has been used or is being developed. This may be done by the TEC and the CTCN in collaboration with the UN Office for South-South Cooperation (UNOSSC) and research institutions. The CTCN may develop a registry with all relevant information on SSC/TrC in technologies for adaptation and information on Parties' technologies for adaptation in water and agriculture that could be matched with countries' demands.

The emergence of specific funding mechanism such as the New Development Bank (NDB) and the Asian Infrastructure Investment Bank (AIIB) and their roles to promote/upscale SSC adaptation technologies should be further explored, since the approach offered by these new mechanisms may have innovated current approaches to SSC/TrC.

C. Exploring the linkages between climate change and other development areas (e.g. agriculture-water-climate nexus) and have them reflected in adaptation action within the NAPs and NDCs.

Water, agriculture and climate change are inseparable. Yet, there seem to be few examples of SSC/TrC in technologies for adaptation that adopt integrated approaches to the water-food-climate nexus.[xviii] There is limited awareness of what and where hard, soft and orgware technologies for adaptation from the South are located.

Action may include expand ongoing efforts to develop a broadly accepted definition for adaptation technologies, mapping of technologies unique to use in the Global South and systematization of exchanges among developing countries, including the approaches taken, the modalities used, as well as the strategies for sharing indigenous technology, and scaling up SSC/TrC. These efforts should build on and integrate with pre-existing initiatives and support the implementation of adaptation action in countries' NAPs and NDCs.

D. Using global mechanisms, international networks and organizations such as UNOSSC to support and promote SSC/TrC in technologies for adaptation and strengthen links with the SDGs.

There is potential for complementarity and cooperation among the UNFCCC Technology Mechanism (comprising the TEC as a policy discussion body, and the CTCN as the operative body) and the Technology Facilitation Mechanism with regards to the implementation of SSC/TrC initiatives in technology for adaptation. Other global initiatives like the Technology Facilitation Mechanism (TFM)[xix] can potentially help advance SSC/TrC in technologies for adaptation that integrate water, food and climate. As a gateway for information on existing science, technology and innovation (STI) initiatives, mechanisms and programs within the UN across the 17 Sustainable Development Goals (SDGs), the TFM can help address complex development challenges like the water-food-climate nexus through multidimensional initiatives.

As an inter-governmental body, the TFM's focus on initiatives, mechanisms and programs may potentially create limitations in terms of support to private innovation and small businesses. These could be addressed by the CTCN through its technical assistance, networking and knowledge management services. Complementary might also be explored with the TEC, through joint policy spaces and networks to promote SSC/TrC in technologies for adaptation. Coordination of the SSC/TrC in technology for adaptation initiatives taken by the TFM, the TEC and the CTCN should be further discussed as the TFM evolves and taking into consideration the review of adaptation activities under the Convention scheduled for 2017 as well as the implementation of the 2030 development agenda. Further links between adaptation technologies and the 2030 Sustainable Development Agenda should allow the TEC and the CTCN expand their engagements.

Policies and actions for enhanced South-South Cooperation in technologies for adaptation

Issue	Actor	Recommendation	Action
Few integrated approaches to water-food-climate. Limited awareness of what and where hard, soft and orgware technologies for adaptation from the South are located. Lack of an enabling environment for institutions and experts from the South to share information and knowledge	Governments, research institutes, specialized UN agencies, programs and funds, and other national and international organizations	A. Develop knowledge base of integrated technologies for climate change adaptation from the South	1. Expand ongoing efforts to develop a broadly accepted definition for adaptation technologies 2. Map technologies and systematize exchanges among developing countries, including strategies for capacity building, management of indigenous technology, and scaling up potential
	TEC/CTCN enhanced support to SSC in technologies for adaptation in water and agriculture	B. Create a policy space and network to promote SSC in technologies for adaptation	3. TEC: include SSC/TrC as a topic for discussion in the annual meeting, thematic dialogues and other regular events.
Low visibility of SSC/TrC initiatives in technologies for adaptation	Governments, research institutes, specialized UN agencies, programs and funds, and other national and TEC/CTCN enhanced support to SSC/TrC in technologies for adaptation in water and agriculture	C. Increase visibility of existing technologies and networks from the South D. Develop an online knowledge repository and exchange platform to identify and match the demand with the supply of SSC/TrC in technologies for adaptation	7. Develop indicators for identifying SSC/TC projects and activities (e.g. SSC/TrC 'marker') 8. TEC: Recommend the creation of a SSC/TrC marker 9. TEC: Facilitate a global initiative to map technologies and systematize exchanges among developing countries. 10. CTCN: Develop a registry with all relevant information on SSC/TrC in technologies for adaptation to be hosted in CTCN website
Enhance bilateral funds and global trust funds support to SSC/TrC in technologies for adaptatio. Further develop private sector engagement	Governments, research institutes, specialized UN agencies, programs and funds, and other national and international organizations	E. Map existing climate funds for technologies for adaptation and how to access them	11. Map existing commitments by countries, the mechanisms trough which this funding will be disbursed, how organizations can access these mechanisms, and potential barriers to assess, disburse and execute this
	TEC/CTCN enhanced support to SSC in technologies for adaptation in water and agriculture	F. Assist Parties access and make better use of funding mechanisms	12. TEC: Propose a review of the operational procedures of the GCF and the GEF to ensure these mechanisms can best support SSC/TrC in technologies for adaptation 13. TEC: recommend specific allocations for SSC in technologies for adaptation 14. TEC: recommend mapping of commitments, mechanisms, and barriers to assess, disburse and execute funding for SSC/TrC in tchnologies for adaptation

Tapping the potential contribution by other global mechanisms and institutions

Recommendation	Action
Explore complementarity and foster cooperation among the TFM, the TEC and the CTCN with regards to the matchmaking function as well as the facilitation of access to information, knowledge, experience and best practices with regard to the implementation of SSC/TrC initiatives in technology for adaptation.	15. Establish joint policy spaces and networks to promote SSC/TrC in technologies for adaptation. 16. Coordinate SSC/TrC in technology for adaptation initiatives by the TFM, the TEC and the CTCN. This should be pursued as the TFM evolves, taking into consideration the review of adaptation activities under the Convention scheduled for 2017 and the implementation of the 2030 development agenda.

Source: Vazquez, K.C. (2016) with adaptations

Acknowledgements

References

[i] FAO (2016) *Ibid*

[ii] FAO (2016) *Ibid*

[iii] Outcomes of the 2013 Third Synthesis Report of the technology needs assessment (TNA) of non-Annex 1 Parties: For adaptation, the most commonly prioritized sectors were agriculture[iii] (84% of the Parties) and water resources (77%). Parties identified more than 320 different technology options and more than 150 different technologies were prioritized.

[iv] Vazquez, K. C.; LUCEY, A. (2016). 'Advancing South-South cooperation in education and skills development: lessons from the field'. UNDP.

[v] Agarwal, A. (2011) 'South-South cooperation in technology transfer and the clean development mechanism Some explorations.'

[vi] In 2014, official development assistance provided by OECD-DAC countries totaled $135.2 billion in 2014 while SSC among the Global South was estimated in $20 billion (A/70/311). Comparisons between ODA and SSC must be done with caution. Knowledge and technology exchange is at the heart of SSC and may be underestimated if measured by OECD-DAC frameworks. Global estimates of SSC may also differ from the data reported by South-South partners at the national level as there is not yet an agreed international framework for assessing and monitoring SSC.

[vii] Vazquez, K. C. (2016) 'South-South Cooperation in Technologies for Climate Change Adaptation' Background paper for discussion during the thematic dialogue to be held as part of the first meeting of the UNFCCC/TEC in 2016 in Bonn, Germany

[viii] Vazquez, K. C. (2016) *Ibid*

[ix] Key messages & Recommendations of TEC to COP22 available at http://unfccc.int/ttclear/policies

[x] IPCC (2014) *Ibid*

[xi] Results of a mapping of ongoing and completed projects between 2010-2015 in which transfer of technologies for adaptation in the agriculture and water sectors have originated in developing countries; and of an e-survey conducted with 138 National Designated Entities to the CTCN, 14 CTCN Consortium Partner representatives, and 102 CTCN Network Member representatives. The mapping and the e-survey provided a relatively small subset for generalization on trends across regions and countries.

[xii] Results of a mapping of ongoing and completed projects between 2010-2015 in which transfer of technologies for adaptation in the agriculture and water sectors have originated in developing countries; and of an e-survey conducted with 138 National Designated Entities to the CTCN, 14 CTCN Consortium Partner representatives, and 102 CTCN Network Member representatives. The mapping and the e-survey provided a relatively small subset for generalization on trends across regions and countries.

[xiii] Results of a mapping of ongoing and completed projects between 2010-2015 in which transfer of technologies for adaptation in the agriculture and water sectors have originated in developing countries; and of an e-survey conducted with 138 National Designated Entities to the CTCN, 14 CTCN Consortium Partner representatives, and 102 CTCN Network Member representatives. The mapping and the e-survey provided a relatively small subset for generalization on trends across regions and countries. However, some overall patterns can be observed and are described in the following sections.

[xiv] Vazquez, K. C. (2016) *Ibid*

[xv] Vazquez, K. C. (2016) *Ibid*

[xvi] Key messages and recommendations from the TEC to the COP 22 available at http://unfccc.int/ttclear/policies

[xvii] Vazquez, K.C. (2016) *Ibid*

[xviii] Vazquez, K. C. (2016) *Ibid*

[xix] Launched in September 2015, the Technology Facilitation Mechanism (TFM) aims at increasing the creation and use of innovative technologies that will help achieve the 2030 Agenda on Sustainable Development. The Mechanism will be composed of a UN Inter-Agency Task Team (IATT) on Science, Technology and Innovation (STI) for the SDGs, chaired by UNEP and the UN Department of Economic and Social Affairs (UN-DESA); an annual forum; and an online platform as a gateway for information on existing STI initiatives, mechanisms and programs. The online platform will be used to map information on existing science, technology and innovation initiatives, mechanisms and programs. It will facilitate access to information, knowledge and experience, as well as best practices and lessons learned, on science, technology and innovation facilitation initiatives and policies. The multi-stakeholder forum on science, technology and innovation will be convened once a year, for a period of two days, to discuss science, technology and innovation cooperation around thematic areas for the implementation of the sustainable development goals. It will identify and examine technology needs and gaps, including on scientific cooperation, innovation and capacity-building. The mechanism is part of an overall deal to improve development financing and organize funding for the Sustainable Development Goals (SDGs).