A submission for

2. Decision 1/CP.21, paragraph 42 (b): Also requests the AC consider methodologies for assessing adaptation needs with a view to assisting developing country Parties, without placing an undue burden on them, with a view to preparing recommendations for consideration and adoption by CMA1.

Views from experience with implementing the global Technology Needs Assessment (TNA) project.

How could adaptation needs be defined? What should be the goals(s) when assessing adaptation needs?

Considering the multidimensional definition of adaptation which is widely applied, it remains difficult to measure or quantify an adaptation need as such. However, we can identify perceived needs by the countries based on available needs assessments, and requests coming into funding mechanisms. In the area of technology for adaptation, needs can be identified both in terms of technological maturity (traditional, modern, high technology) and in terms of area of effort (transfer, diffusion, innovation).

Based on identified perceived technology needs, it seems that at this point of time, the most important issue/the goal is not international technology transfer for adaptation as such, as it is more a concern of accelerating the diffusion (dissemination and uptake) of identified technologies, although there are also situations where specific international transfer is critical, in case of for example a need for new or improved crop varieties, water use efficiency techniques, climate hazard monitoring systems and so forth.

What are examples of methodologies for assessing adaptation needs? What are the strengths and/or limitations of these methodologies?

The global Technology Needs Assessment project, funded by the Global Environment Facility and implemented by UN Environment through UNEP DTU Partnership, assists developing country Parties to the UNFCCC determine their technology priorities for the mitigation of greenhouse gas emissions and adaptation to climate change. The TNA project has so far supported more than 60 countries in preparing Technology Needs Assessments (TNAs) since 2009.

The Technology Needs Assessment project – as a national participatory process providing in-depth analysis of technology options and actions – offer information on the implementation potential, ability and scale of technologies, and enhance understanding of how technologies can be applied or used within specific policies, programmes or projects.

In the process of identification and prioritization of technologies for adaptation it is imperative to ensure that they address the underlying stressors to vulnerability to climate change stressors (like access to basic

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resources such as water, infrastructure and public facilities) and that they are suited to local conditions. If one ignores such issues, the technologies may be ineffective, and may prove maladaptive if implemented without recognition of relevant social contexts and environmental processes. Therefore it is vital to identify and assess technologies against appropriate criteria when prioritizing technologies.

For the technology prioritization process, the TNA project uses the multi criteria analysis (MCA). MCA facilitates the participation of stakeholders and hence allows normative judgments, while incorporating technical expertise in the technology assessment. Based on the assessment, technologies are prioritized to indicate which technologies should be implemented first. MCA is useful when comparing multiple options across a multiple set of criteria. A prioritization exercise could be done comparing multiple technologies, such as desalination, water reclamation and reuse rainwater harvesting from roof tops. MCA can also be used to prioritize technologies applied to solve different problems, which ideally should work towards the same objective.

When assessing technologies for adaptation using MCA, it usually involves combinations of some criteria which are quantified in monetary terms, and others for which monetary valuations do not exist. It also allows for a mix of quantitative and qualitative criteria, with the result that the quality, form and format of information may even differ within the same assessment of technologies. Wherever it is possible to quantify costs and benefits in monetary terms, then this data should be included in the MCA.

As mentioned above, MCA provides a structured framework for comparing a number of adaptation technologies across multiple criteria. A major benefit of using MCA for prioritizing adaptation technologies is the ability to include the preferences of stakeholders involved in the process, emphasizing the importance of having appropriate representation of stakeholders during the prioritization process.

What barriers and gaps exist with respect to the development and application of methodologies for assessing adaptation needs? What actions are needed to address these barriers and gaps, particularly within the context of the Convention and the Paris Agreement?

The experience from working with TNA countries shows a number of barriers for the application of the methodology. These can broadly be grouped into

a) Data/Information availability, quality, appropriateness
b) capacity (individual and institutional)

Recommendations on how to address such gaps and challenges:

a) individual and institutional capacity building,
b) case studies showcasing,
    a. experiences to overcome data challenges
    b. approach and types of indicators used for assessing potential of adaptation actions/technologies
    c. costs and benefits of introducing adaptation actions/technologies
    d. good practice for inspiration and replication