



Science, Technology and Innovation (STI) for Low Carbon and Resilient Cities: Training Workshop evaluation report

Context and background

Mongolia has experienced significant climate changes with warming over 2-degree Celsius between 1940 and 2015 and rainfall decline, leading to chronic drought, extreme climate-driven hazards - which are fundamental in our discussion today to build low carbon and resilient cities.

The latest Mongolian's Nationally Determined Contribution (NDC) has set the ambition to achieve a 22.7% reduction in GHG emissions from its business-as-usual scenarios by 2030 through domestic efforts and to further reduce the target to 27.2% based on international support.

To facilitate a low carbon and resilient transition in achieving national and local mitigation targets while ensuring continuous growth and improvement of the quality of life in Mongolia. UNESCAP, in collaboration with the Government of Mongolia, and international partners including ICLEI and iGDP, has designed and conducted a two-day capacity building workshop that takes a solution-based approach to introduce best practices in and beyond North-East Asia leveraging science, technology, and innovation in achieving low-carbon and resilient development at the local level.

Introduction of the survey

By the end of the two-day workshop, a Mentimeter evaluation survey was conducted. The survey collected information including participants' professions, gender, and working sectors, key takeaways, key areas of interest, satisfactory level on the effectiveness and efficiency of the workshop. About 22 participants responded to the online survey. This training workshop evaluation report synthesises the results from the survey and the responses received from the final Brainstorming session. The materials relevant to the workshop and this evaluation report are presented in the annexes below:

- Annex 1. Mentimeter survey responder's information
- Annex 2. Mentimeter report
- Annex 3. Final program agenda
- Annex 4. List of participants



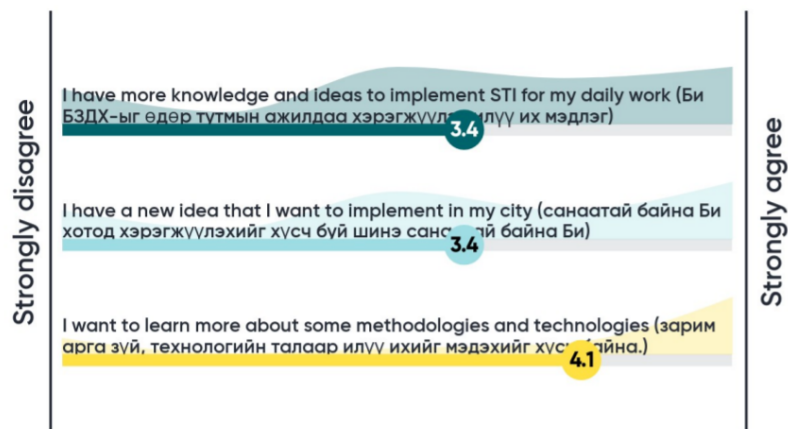
Satisfactory survey results

Overall evaluation of the workshop satisfaction and effectiveness

The average evaluation score of the workshop is **8.1 out of 10**, signifying that the participants are highly satisfied with the entire workshop.

The survey also assessed the participants' knowledge and understanding of Science, Technology and Innovation (STI) before and after the workshop. The results show that the workshop helped the participants to incrementally enhance their knowledge and ideas to implement STI in their daily work (3.4) and showed strong interest in learning more methodology and technology (4.1).

Compared to before you attend the workshop, which of the following statements is true?



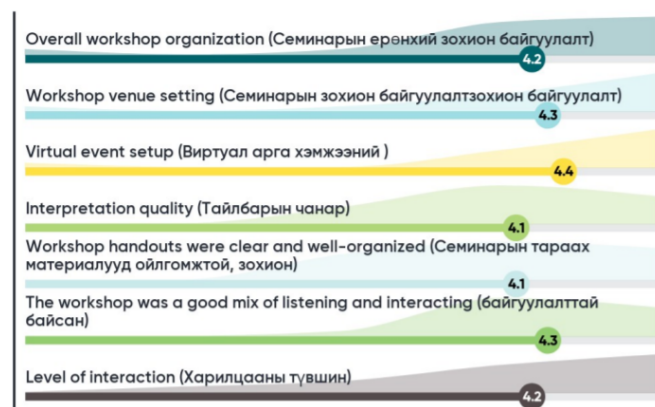
Efficiency evaluation of the workshop organisation

The workshop organisation has received positive feedback and recognition from different perspectives. Both offline and online participants also expressed positive feedback, which shows that the virtual and in-person workshop experience has been smooth. The



participants also appreciated the level of interaction between the participants and speakers, attributing to good workshop agenda design.

Overall assessment on the workshop organization



Effectiveness and efficiency evaluation of each session

The workshop participants also evaluated each workshop session: if the workshop fulfilled the objectives of allowing participants to gain a better understanding of the topic in discussion; the quality of speakers and the discussions. The questions are:

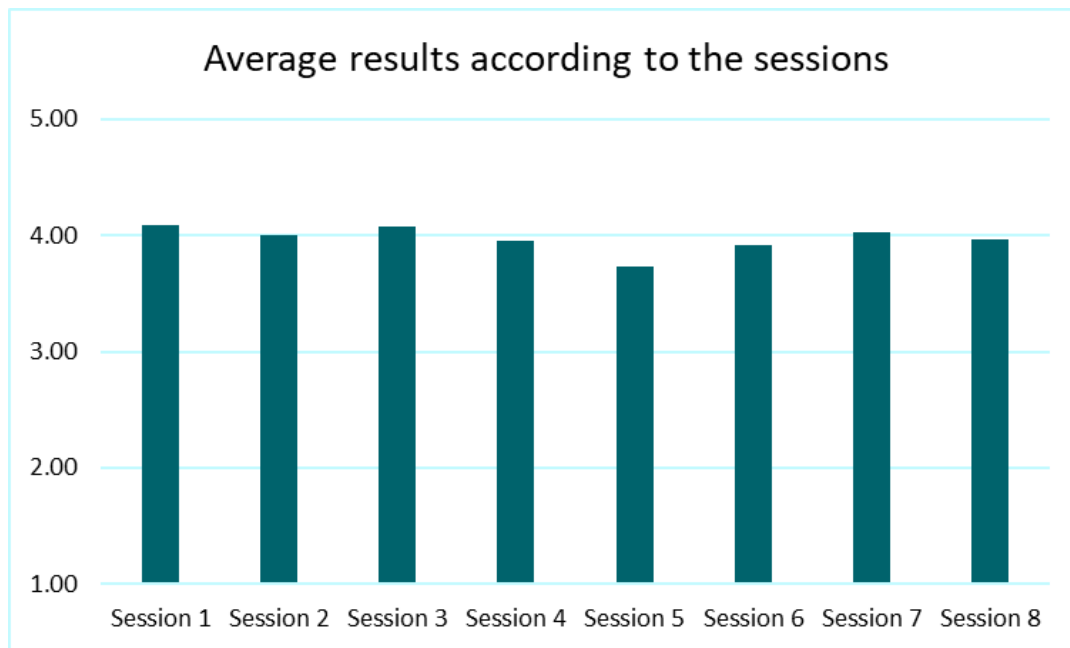
- Question 1: It helped me to gain better understanding on the importance of STI
- Question 2: I know how to replicate the knowledge to my city
- Question 3: The speakers were knowledgeable and well-prepared
- Question 4 (EN) and 5 (MN): It helped me to identify gaps and opportunities in current application of STI and low-carbon and resilient development
- Question 6: The time for presentation and discussion was adequate and fruitful

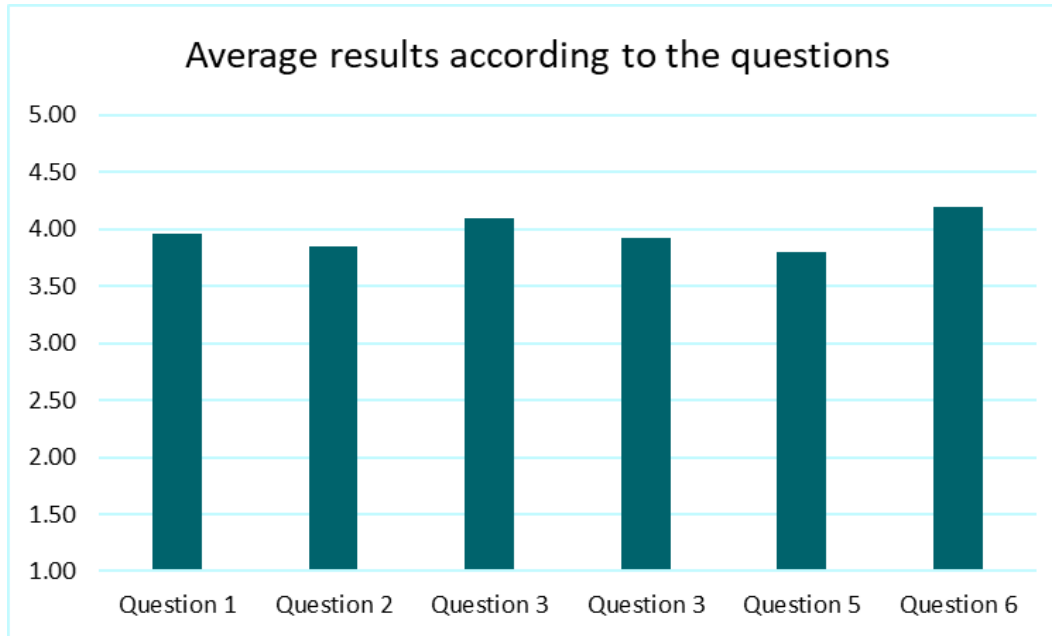
The overall results for each session according to the questions are shown in the table below.



	Session 1 Intro	Session 2 Urban	Session 3 Mobility	Session 4 Energy	Session 5 Coal to green	Session 6 Governance	Session 7 Waste	Session 8 Resilience
Question 1	4.1	4.2	4.1	3.9	3.5	3.9	4	4
Question 2	3.9	3.8	4.1	3.9	3.5	3.8	4	3.8
Question 3	4.2	4.1	4.2	4	4	3.9	4.2	4.2
Question 4	4.3	3.9	4	4.1	3.5	3.8	4	3.8
Question 5	4.1	3.9	3.7	3.7	3.6	3.9	3.8	3.7
Question 6	3.9	4.1	4.4	4.1	4.3	4.2	4.2	4.3

The satisfaction results according to the sessions and the questions are also shown in the figures below. The effectiveness and efficiency showed minimal variation across the sessions although Session 1 (introduction) and Session 3 (mobility) received the highest recognition. Session 5 (coal-to-green) was the lowest. It could be due to the intensive Day 1 that the participants had and Session 5 was the last session.





Key takeaways based on the Mentimeter survey and brainstorming session

The three biggest takeaways of the participants

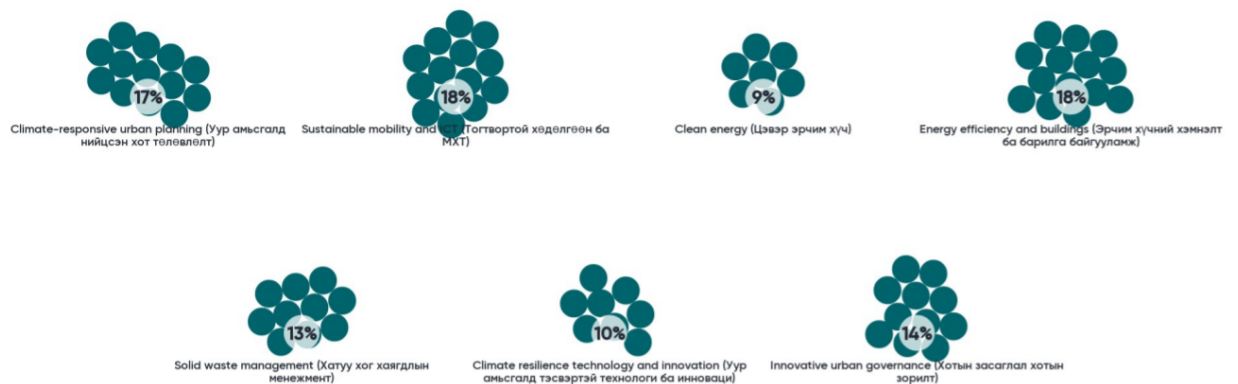
- Mongolian governments and cities need to improve the governance and financing mechanisms to deploy the STI, starting from pilot or demonstration projects
- Mongolian cities are willing to learn from other cities' innovative experiences and practices and they can also share some excellent examples that they have achieved on the international stage
- There is a strong need to engage and empower different stakeholders from the government, private sector, research institutes, and international organisations to solve the key challenges and to deploy STI in a holistic manner

Three top challenges that Ulaanbaatar hope to prioritise based on sectors



The survey shows that energy efficiency and buildings (18%), sustainable mobility and ICT (18%), and climate-responsive urban planning (17%) are the top three challenges that UB should prioritise.

What are the three top challenges that UB should prioritize based on the following sectors?

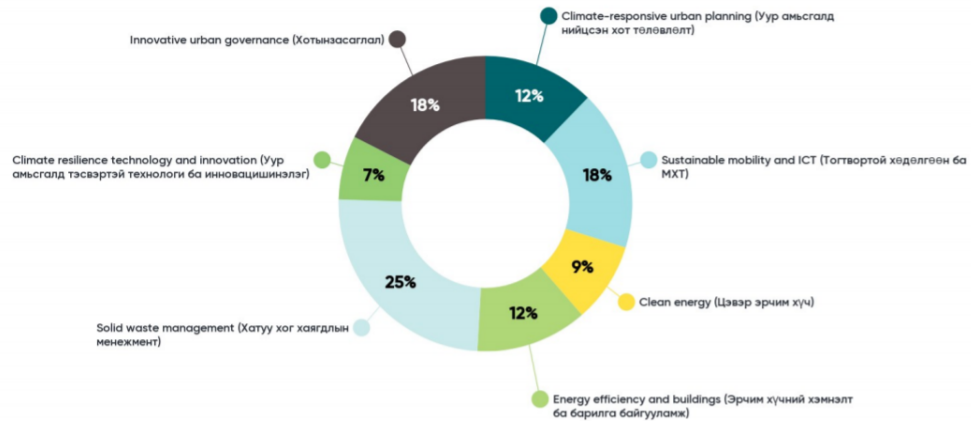


The top three short-term priorities for Ulaanbaatar according to sectors

Survey results show that solid waste management is the top short-term priority that UB should tackle (25%), followed by sustainable mobility and ICT (18%) and innovative governance (18%).



What are the top three short-term priorities for UB according to the following sectors

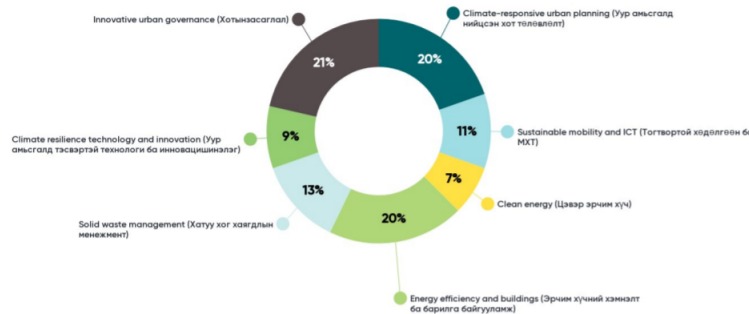


The top three mid-to-long-term priorities for Ulaanbaatar according to sectors

Survey results show that establishing innovative urban governance mechanisms is the top priority that UB should tackle in the mid-to-long-term period (21%), followed by climate-responsive urban planning (20%) and enhancing energy and building efficiency (20%).



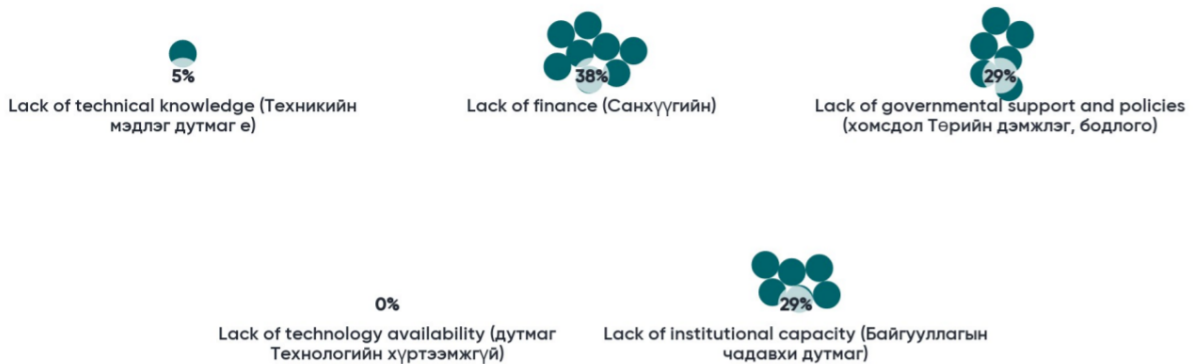
What are the top three mid-to-long-term priorities for UB according to the are the key areas you think that UB is going to work on?



Top barriers to implementing STI in Mongolia

More than a third of the participants acknowledged that lack of finance (38%) is the top barrier that Ulaanbaatar faces in better utilising STI in urban development while the other 29% voted for lack of institutional capacity and lack of governmental support and policies respectively.

What are the top barriers to implement STI in Mongolia or in your city





Participants' suggestions on follow-up joint activities and initiatives

The majority of participants have shown strong interest in co-organizing and participating in peer-to-peer learning and knowledge sharing events, such as international conferences and webinars, capacity buildings, and scientific conferences on a regular basis. Through co-organizing and participating in the events, they want to achieve the objectives as follows:

- 1) Strengthen collaborations and cooperation in North-East Asia to tackle mutual environmental challenges of the region such as air pollution and more;
- 2) Study the new innovations and best practices of other cities that have leveraged STI for their urban development and transfer the experience and technology to Mongolia;
- 3) Engage decision-makers, academia, and private sectors to initiate joint studies that identify pressing issues and needs to develop inclusive and innovative solutions;
- 4) Raise awareness, build local capacity, and establish MRV system for policy implementations; and
- 5) Get practical advice and experience on issues facing other cities, such as how to engage local communities and different departments in decision-making processes.



Further interests of the participants

Most of the participants expressed their further interests in:

- Studying the possibility of introducing international best practices;
- Utilising innovative solutions in technical and economic research;
- Developing Ulaanbaatar City's greenhouse gas inventory; and
- Holding innovation competitions among the public to cultivate new innovations and forces.

Topics or aspects of the workshop that the participants find the most useful and interesting for their daily work

Workshop Topics (ranked according to the frequency of mentions):

- Session 3: Sustainable mobility and ICT
The Seoul TOPIS case has been highlighted by participants, as Mongolia would like to see the technical transfer of Seoul's progressive smart traffic system to tackle their traffic jams and mobility-induced air pollution problems.
- Session 7: Solid waste management
The Xuzhou Bulk Solid Waste Management case has been highlighted.
- Session 8: Urban Climate Resilience
Sponge City Initiatives has been highlighted as the participant would like to introduce such a solution for Ulaanbaatar City's flood prevention
- Session 6: Innovative Governance (Chengdu's Community Building)
- Session 5: Green Transition (Essen's transition story)
- Session 4: Sustainable living environment (Building Efficiency)
- Session 2: ICT for Urban Planning (Data-driven planning in Singapore)

The most frequent questions across all sessions have been on project financing and partnerships mechanisms

- **Project financing or business model: The financing mechanism of innovative approaches and projects is the question continuously raised by the participants.** For instance, in session 3, participants raised questions on the financing mechanism of the Seoul Ttareunyi public bike-sharing system, specifically, they are curious about the financial sustainability of the bike-sharing system as well



as its maintenance costs. Furthermore, participants were also interested in the business models that are adopted in deploying the technology

- **Collaboration and partnerships mechanisms.** Many of the cases introduced have an emphasis on stakeholder engagement as well as the establishment of collaboration and partnerships. For instance, in the solid waste management session, participants are curious about how the collaboration mechanisms are set up and the working mechanisms of such partnerships that together contribute to the project success.

In the brainstorming session, participants noted that in order to introduce the best practices and make them work, Mongolian cities must raise awareness on climate change within the government as well as the general public. Moreover, the cities need to set up good governance and urban planning mechanisms that involve the general public and to discuss and address social problems caused by environmental pollution and infrastructure failure. Participants also noted the importance of working with international organisations to develop and implement sustainable projects with the wider engagement of relevant stakeholders including academia, the private sector and the communities in the planning process. Suggestions such as wide-ranging communication campaigns to encourage public participation in climate change to catalyse their low-carbon consumption patterns and lifestyles, even encourage technological or policy innovations. The participants are represented from different backgrounds and workspace, which allowed the speakers and participants to interact fruitfully.

In all, participants not only show strong interest in all sessions but also acknowledge that the success of the workshop includes covering a diversity of issue areas by introducing practical experiences and innovative solutions from a wide range of countries, and making the discussion interactive and informative session to the participants.

Conclusion and reflection on the entire workshop based on a rapid SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none">● The case studies provided a good basis and background materials for	<ul style="list-style-type: none">● The workshop time was slightly overtime



<p>each workshop session although we could not measure the effectiveness of the case studies or if the participants read them</p> <ul style="list-style-type: none"> • The workshop organisation and implementation process is positively recognized despite the language complication • The workshop speakers are of high quality and relevance - in terms of topic, content delivery, experience and diversity • The workshop agenda was well structured and organised with a balanced mix of presentation and interaction • The workshop met the objectives of introducing STI to different participants • Participants are diverse and well-informed • CCRCC team's support has been tremendous 	<ul style="list-style-type: none"> • The language was a challenge for the participants to understand, particularly for slides that are not fully translated. Therefore, slides translation must be always prioritised to encourage focus • The workshop date could have been decided earlier so that the organisation and workload could be better distributed amongst partners • It may be better for UNESCAP to provide more honorarium as part of the budget allocation so that we are able to pay (more) speakers according to the market price
<p>Opportunities</p> <ul style="list-style-type: none"> • Continue to build the relationship with the international and local partners to bring the interests and discussions into the next level of implementation at the LCC-NEA • Continue to develop working groups or demonstration projects based on further consultation and the topics of interests with the key partners and stakeholders 	<p>Threats</p> <ul style="list-style-type: none"> • Uncertainties in COVID19 must be taken into account to ensure effective implementation • Sustainable financing and budgeting