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Letter dated 31 July 2025 from the Permanent Representative of Tajikistan to the United Nations addressed to the Secretary-General

I have the honour to transmit herewith the Dushanbe Glaciers Declaration (see annex I),* the Dushanbe Glaciers Appeal: A Call for Action (see annex II)* and the Chair's summary of the High-level International Conference on Glaciers' Preservation (see annex III).* The Conference was held from 29 to 31 May 2025 in Dushanbe, Tajikistan.

I would be grateful if you could circulate the present letter and its annexes as a document of the General Assembly, under agenda item 18.

(*Signed*) Jonibek **Hikmat**
Permanent Representative

* Circulated in the language of submission only in line with current liquidity management measures.

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Annex I to the letter dated 31 July 2025 from the Permanent Representative of Tajikistan to the United Nations addressed to the Secretary-General

Dushanbe Glaciers Declaration

We, the Heads of Delegation, high-level representatives of the states, organizations, major groups and other stakeholders having met in Dushanbe, Tajikistan from 29 to 31 May 2025, contributing to the High-Level International Conference on Glaciers' Preservation in our different roles and responsibilities,

Recalling United Nations General Assembly Resolution 77/158 of 14 December 2022, in which it decided to declare 2025 the International Year of Glaciers' Preservation and to proclaim 21 March of each year the World Day for Glaciers, to be observed starting in 2025,

Reaffirming commitment to United Nations General Assembly Resolution 70/1 of 25 September 2015, "Transforming our world: the 2030 Agenda for Sustainable Development", in which it adopted a comprehensive, far-reaching and people-centred set of universal and transformative Sustainable Development Goals and targets that include a dedicated climate action Goal 13, as well as relevant provisions of United Nations General Assembly Resolution 79/1 of 22 September 2024 "Pact for the Future" in line with national priorities, in which it committed to accelerate efforts to restore, protect, conserve and sustainably use the environment, including forests, mountains, glaciers and drylands,

Reaffirming also commitment to the United Nations Framework Convention on Climate Change and the Paris Agreement, including the outcomes of the first Global Stocktake at the twenty-eighth session of the Conference of the Parties that took place in Dubai, United Arab Emirates, from 30 November to 12 December 2023,

Recalling United Nations General Assembly resolution 77/172 of 14 December 2022 that proclaimed the period 2023–2027 as Five Years of Action for the Development of Mountain Regions,

Recognizing that glaciers and the broader cryosphere are a critical component of the hydrological cycle and that the current accelerated retreat of glaciers, melting of ice sheets, loss of snowpack and thawing of permafrost are caused by climate change, with severe negative impacts on the environment, human well-being, health, economies, infrastructure, tourism, agriculture, ecosystems and sustainable development,

Deeply concerned that, over the past decades, climate change has led to widespread shrinking of the cryosphere, with mass loss from ice sheets and glaciers and reductions in snow cover and permafrost, which have decreased the stability of high mountain areas, increased damage from glacial lake outburst floods and changed the amount and seasonality of runoff and water resource availability from snow-dominated and glacier-fed river basins, as well as contributed to localized declines in agricultural yields, water scarcity, loss of the ice memory recorded in glacier layers and increased global mean sea level,

Emphasizing that glacier and snow melt significantly affects communities near and far from glaciers, disrupting the availability of freshwater resources that billions of people depend on for drinking water supplies, irrigation, livelihoods and energy production, agricultural productivity, food security, hydropower capacity, tourism, trade, navigation and transportation, and resulting in loss of cultural and natural heritage disproportionately affecting local populations and Indigenous Peoples,

Stressing that, in many high mountain areas, glacier retreat and permafrost thaw from global warming are projected to further decrease the stability of slopes, and that the incidences of floods owing to glacial lake outburst or rain-on-snow events, landslides and snow avalanches are projected to increase and occur in new locations or different seasons, further exacerbating the risks of natural hazards and taking note of the Sendai Framework for Disaster Risk Reduction 2015-2030 and the outcomes from its midterm review in May 2023 that committed to accelerate progress on integrating disaster risk reduction into policies, programmes and investments at all levels,

Realizing the interconnections between glaciers' preservation and the protection, conservation, restoration and sustainable management of ecosystems as well as their linkage with climate action, biodiversity conservation, disaster risk reduction, and combating desertification, as well as with human development, including the empowerment of women and girls, promotion of traditional knowledge and cultural practices, eradication of poverty and hunger to leave no one behind,

Noting with concern the findings contained in the special reports of the Intergovernmental Panel on Climate Change's Sixth Assessment Cycle, especially the special report on *The Ocean and Cryosphere in a Changing Climate* and the Cross Chapter Paper on Mountains in the Working Group II Contribution on Impacts, Vulnerability and Adaptation,

Noting also that continued rise in global temperatures may result in irreversible impacts on certain ecosystems with low resilience such as polar, mountain and low-lying coastal ecosystems impacted by ice sheet, glacier, permafrost and snowpack loss, including accelerated and higher committed sea-level rise,

Noting further that decreases in global greenhouse gas emissions are essential to limit glacier and mountain cryosphere losses and ice sheet melt,

Acknowledging the first annual observance of 'World Glaciers Day' on 21 March 2025, and taking note of the 2025 edition of the United Nations World Water Day Report, *Water Towers: Mountains and Glaciers,*

Highlighting the importance of advancing related scientific research and continuous monitoring to address the challenges associated with melting glaciers and changes to the cryosphere called for in United Nations General Assembly resolution 78/321 of 13 August 2024 that proclaimed the period from 2025 to 2034 as the Decade of Action for Cryospheric Sciences,

Recognizing that the need for a worldwide inventory of existing perennial ice and snow masses that was first considered during the International Hydrological Decade, declared by the United Nations Educational, Scientific and Cultural Organization for the period 1965–1974,

Acknowledging the importance of managing responsible adaptation in the face of glacier loss and emergence of post-glacial ecosystems,

Underscoring the importance of initiatives related to the Earth's cryosphere for the achievement of the 2030 Agenda and its Sustainable Development Goals, the Decade of Action on Cryospheric Sciences 2025-2034, and the International Decade for Action, "Water for Sustainable Development" 2018–2028,

Taking note of the convening of the United Nations Conference on the Midterm Comprehensive Review of the Implementation of the Objectives of the International Decade for Action, "Water for Sustainable Development", 2018-2028, held from 22 to 24 March 2023 in New York, which generated significant momentum towards enhancing water action and political commitment at all levels, including through the

Water Action Agenda, to address water-related challenges, and outcomes of the Third High-level International Conferences on the International Decade for Action "Water for Sustainable Development", 2018–2028 held in Dushanbe from 10 to 13 June 2024, which called for support for the implementation and widespread celebration of the International Year of Glaciers' Preservation in 2025 and the annual celebration of the World Day for Glaciers on 21 March,

Emphasizing that the International Year of Glaciers' Preservation 2025 and the first International High-Level Conference on Glaciers' Preservation has enhanced common efforts and support for addressing the social, economic and environmental challenges and opportunities for the preservation of glaciers for present and future generations,

Forward-looking key messages

We, invite and encourage all decision-makers and stakeholders to take action in order to:

Stress the urgent need to raise awareness of and facilitate actions towards the preservation of glaciers, snowpack, post-glacial ecosystems and to promote their socio-economic benefits and the conservation of biodiversity, including through transboundary cooperation as appropriate,

Promote integrated approaches for climate mitigation, adaptation and resilience, to manage water resources sustainably and mitigate hazards from a rapidly declining cryosphere, including disaster risk reduction, early warning systems, infrastructure and nature-based solutions as well as sustainable agrifood systems,

Ensure effective measures for adaptation and to avoid further loss and damage, which also require reliable and sustained glacier, snowpack and permafrost monitoring to inform future projections and preparedness,

Foster cooperation and partnerships between scientific institutions and relevant stakeholders on mountain cryosphere monitoring and research at various levels, and promote availability of research results and findings to all stakeholders in order to develop public policies and programmes at international, regional, national, sub-national and local levels,

Recognize the financial gap for glacier-related adaptation as a pressing need, given that even in low emission scenarios, loss of glacier ice and reduced snowpack will necessitate some level of adaptation to changing water supplies and increasing hazards,

Enhance embedding glaciers' preservation into risk management frameworks and investment strategies to mitigate financial and environmental risks and drive economic resilience,

Promote the participation of stakeholders, including women, youth, local communities and Indigenous Peoples in glacier-related processes, recognizing the value of traditional and Indigenous Peoples' knowledge and local communities for sustainable solutions,

Enhance capacities and capabilities of the next generation of scientists and practitioners working on glacier and cryosphere-related issues using a multipronged approach that integrates education, mentorship, field experience with policy engagement and the development and use of innovative tools and technologies to bridge science, policy and local knowledge,

Gathered in Dushanbe for the High-level International Conference on Glaciers' Preservation, we declare our commitment to the following actions, according to our respective capabilities:

1. *Affirm* the importance of glaciers and broader cryosphere for the global sustainable development, environment and climate agendas;

2. *Look forward* to the thirtieth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Belém, Brazil, from 10 to 21 November 2025, as an opportunity to urge governments and other stakeholders to bring more ambitious Nationally Determined Contributions consistent with real and lasting glacier preservation and to ensure that the preservation of glaciers and broader cryosphere and adaptation efforts remain at the forefront of global climate action;

3. *Strengthen* the linkages between water, glaciers and the broader cryosphere, disaster risk reduction and climate action through the 2026 United Nations Water Conference to Accelerate the Implementation of Sustainable Development Goal 6: Ensure availability and sustainable management of water and sanitation for all and the 2028 United Nations Conference on the Final Comprehensive Review of the Implementation of the Objectives of the International Decade for Action, "Water for Sustainable Development", 2018–2028, as well as the eighth session of the Global Platform for Disaster Risk Reduction as the main global forum to assess and discuss progress on the implementation of the Sendai Framework for Disaster Risk Reduction;

4. *Encourage* governments and stakeholders, including international finance institutions, the private sector, bilateral donors, inter-governmental and non-governmental organizations, to mobilize financing on a voluntary basis, as appropriate, to limit and adapt to glacier and snowpack loss, mitigate cryosphere-related hazards, conserve biodiversity, and enhance ecosystem services, including to voluntarily join Tajikistan's contribution to the trust fund coordinated by the United Nations Secretary-General to support glaciers' preservation activities;

5. *Pledge* to raise the status of glaciers and the cryosphere, the projected loss of much of the cryosphere to climate change, and the devastating impacts on downstream people and ecosystems, including due to rising sea levels, throughout the International Year of Glaciers' Preservation 2025, as well as the Decade of Action on Cryospheric Sciences, 2025-2034, in all relevant forums and venues;

6. *Recommend* registering the actions and partnerships proposed during the High-Level International Conference on Glaciers' Preservation, as well as during all other relevant conferences and events, as voluntary commitments on the United Nations SDG Actions Platform,[1] including in the Water Action Agenda[2] as appropriate, and providing regular updates on their progress;

7. *Encourage* the launch of a Global Glacier Agenda with a view to elevating the importance of glaciers as well as the broader cryosphere in the global sustainable development, environment, oceans, water and climate agendas, while ensuring coherence and complementarity with existing initiatives, including in support of the International Year of Glaciers' Preservation and Decade of Action for Cryospheric Sciences 2025-2034;

[1] United Nations SDG Actions Platform. Available at: https://sdgs.un.org/partnerships.

[2] United Nations Water Action Agenda. Available at: https://sdgs.un.org/partnerships/action-networks/water.

8. ***Express*** **our sincere appreciation for the hospitality extended by the Government and People of Tajikistan and the support of the United Nations and of all the partners who contributed to this important conference.**

– Adopted in Dushanbe on 31 May 2025 by acclamation.

Annex II to the letter dated 31 July 2025 from the Permanent Representative of Tajikistan to the United Nations addressed to the Secretary-General

Dushanbe Glaciers Appeal: A Call for Action

Glaciers are melting rapidly with far-reaching consequences for people, prosperity and the planet. Billions of people depend on water supplies from glaciers and snowpack for growing food, producing energy, and meeting daily drinking water needs. Floods, mudflows, landslides and other glacial-related risks threaten ecosystems, infrastructure, homes and even the lives of people. Glaciers and the broader cryosphere play a critical role in the Earth's climate and water cycle and are a part of humanity's natural and cultural heritage. Climate change has already destroyed about one-third of mountain ice, and this will continue without serious mitigation consistent with the lower 1.5°C Paris Agreement limit. Urgent climate action is essential– every fraction of a degree of warming and every moment of delay deepens the crisis. While the window for action is swiftly closing, there is still time to preserve glaciers and the broader cryosphere for present and future generations.

For three days from 29 to 31 May, world leaders and high-level delegations gathered in Dushanbe at the first High-level International Conference on Glaciers' Preservation to discuss urgent and innovative solutions to preserve glaciers and address the impacts of their melting. The Conference was convened in the framework of the United Nations General Assembly-declared International Year for Glaciers' Preservation 2025[1] and Decade of Action for Cryospheric Sciences 2025-2034[2] by the Government of Tajikistan in cooperation with the United Nations, in particular United Nations Educational, Scientific and Cultural Organization and the World Meteorological Organization, the Asian Development Bank and other partners. It brought global attention to the urgency and widespread impacts of melting glaciers, affirmed the importance of glaciers on the international agenda, and provided a platform for diverse stakeholders to exchange latest data, innovations and policy solutions. The Conference concluded with the adoption of the *Dushanbe Glaciers Declaration* which offers forward-looking key messages and sets forth follow-up steps.

At the midpoint of the International Year for Glaciers' Preservation, we appeal to the world community for greater attention and action. This is not only a call for urgent action but also a message of hope – *it is not too late to act*.

Global Glaciers Agenda - *Moving from Declaration to Implementation*

Inspiring actions are already underway. Throughout the three days of the Conference, governments, scientists, development partners, young people, local communities and other stakeholders shared decisive actions and ambitious plans to preserve glaciers and address the wide-ranging impacts from the loss of glaciers and the broader cryosphere.

The key messages from the *Dushanbe Glaciers Declaration* and Conference sessions, alongside the success criteria for the International Year for Glaciers' Preservation, form a seven-point **Global Glaciers Agenda**:

1. Promote integrated approaches for climate mitigation and adaptation, to manage water resources sustainably and to reduce the risk of glacial-related disasters as part of national, regional, and international policies, plans and strategies.

[1] United Nations General Assembly resolution 77/158 adopted on 14 December 2022.
[2] United Nations General Assembly resolution 78/321 adopted on 13 August 2024.

2. Invest in sustainable development solutions to address the socio-economic impacts of glacier and cryosphere loss, conserve biodiversity and protect natural and cultural heritage.

3. Effectively use and mobilize financial and technical resources, including through support for the New Collective Quantified Goal climate finance target decided at COP29,[3] and make voluntary contributions to the United Nations trust fund to support glaciers' preservation.

4. Enhance monitoring, science, and research on glaciers and the broader cryosphere, develop innovative tools and technologies, and build capacities of the next generation of cryosphere scientists and practitioners.

5. Promote the inclusive participation of stakeholders, including women, youth, local communities and Indigenous Peoples in glacier-related activities and processes, recognizing the value of traditional and Indigenous knowledge and bridging science, policy and local knowledge.

6. Foster international cooperation, knowledge sharing and partnerships to address glacier-related issues, including South-South, North-South, Triangular, regional and transboundary cooperation.

7. Raise awareness about glaciers and the broader cryosphere and advance this *Global Glaciers Agenda* in global platforms and processes across the international agendas for sustainable development, climate, freshwater, oceans, disaster risk reduction and the environment, including through making more ambitious commitments.

This seven-point *Global Glacier Agenda* provides an initial framework towards a common approach to preserve glaciers and address the wide-ranging and far-reaching impacts from the loss of glaciers and the broader cryosphere.

Call for Action- *Laying a strong foundation*

The ensemble of commitments, actions, partnerships, and other initiatives presented during the first High-level International Conference on Glaciers' Preservation form a solid core of efforts and engagements - *new and existing* - by the international community to preserve glaciers and address the impacts of their melting. These initiatives and key messages, captured in the *Chair's Summary*, already contribute towards the implementation of the seven-point *Global Glaciers Agenda*.

In the spirit of solidarity, Member States, United Nations and its entities, other international and regional organizations, financial institutions, civil society organizations, private sector, academia, youth and other stakeholders are called upon to contribute to the implementation, as appropriate, and based on their respective capacities. To show support for the *Global Glaciers Agenda*, voluntary commitments, partnerships and other initiatives can be registered by governments, the UN system and stakeholders on international commitment platforms, such as the United Nations SDG Actions Platform[4] that supports acceleration of the UN Sustainable Development Goals (SDGs).

Dushanbe Glaciers Process- *Sustaining momentum*

From high mountains and polar regions through glacier-dependent valleys to low-lying coastal cities and small island developing states, bridges of solidarity and

[3] Twenty-ninth United Nations Climate Change Conference (COP29), held in Baku, Azerbaijan, from 11 to 22 November 2024.

[4] United Nations Department of Economic and Social Affairs, SDG Actions Platform. Available at: https://sdgs.un.org/partnerships.

cooperation have been built. The world has united to preserve glaciers and tackle issues and challenges related to the rapid loss of glaciers and the broader cryosphere.

The high level of ambition and unstoppable momentum from the International Year of Glaciers' Preservation 2025 and the first International High-Level Conference on Glaciers' Preservation must not only be carried forward but also further amplified to enhance common efforts.

A **Dushanbe Glaciers Process** will be established to provide a platform to support the implementation and follow-up of the *Global Glaciers Agenda*, consisting of regular international conferences every three years.

* * *

Together, let us rise to the challenge of melting glaciers – and shape a future defined not by challenges, but by cooperation, joint concrete action, and hope for present and future generations.

Annex III to the letter dated 31 July 2025 from the Permanent Representative of Tajikistan to the United Nations addressed to the Secretary-General

CHAIR'S SUMMARY

High-level International Conference on Glaciers' Preservation

29-31 May 2025, Dushanbe Tajikistan

Summary

The first High-level International Conference on Glaciers' Preservation took place from 29 to 31 May 2025 in Dushanbe, Tajikistan. The Conference was convened by the Government of the Republic of Tajikistan in cooperation with the United Nations, in particular United Nations Educational, Scientific and Cultural Organization and the World Meteorological Organization, the Asian Development Bank and other partners. It was organized within the frameworks of the United Nations General Assembly-declared International Year of Glaciers' Preservation, 2025 (A/RES/77/158) and the Decade of Action for Cryospheric Sciences, 2025 to 2034 (A/RES/78/321). The main objective was to anchor the importance of glaciers on the international agenda as well as advance global efforts through collaborative action, scientific innovation, and policy alignment and support the implementation of the International Year and the Decade.

The Conference was attended by more than 2600 participants from over 90 Member States, United Nations entities, international and regional organizations, financial institutions, scientific and academic institutions, civil society, women's organizations, youth, private sector and other stakeholders. The official programme featured a high-level opening session, two plenary sessions, twelve thematic sessions, two leaders' roundtables, an international exhibition and a closing session. Thematic sessions addressed four main areas: socio-economic impacts of glacier melt; cross-cutting issues such as biodiversity, cultural and natural heritage, and transboundary cooperation; glacier science, research and monitoring; and solutions for mitigation, resilience and adaptation planning. The Pre-Conference Day included eight forums, eighteen side events and an evening "Glaciers Festival" cultural programme.

This landmark event of the International Year mobilized political will at a pivotal moment to raise climate ambition and heightened global awareness of the crucial role of glaciers and the broader cryosphere for the climate, environment, freshwater resources, oceans, food systems, energy production, as well as natural and cultural heritage. The Conference offered a unique and timely platform to present latest scientific data and facilitate constructive dialogue between scientists, policymakers and other stakeholders. It linked discussions on melting glaciers and polar ice sheets with coastal areas and Small Island Developing States to provide a holistic, global approach. Conference participants advocated for a greater allocation of resources for glaciers' preservation, including through the new climate finance goal and voluntary contributions to the United Nations trust fund to support glaciers' preservation. The Conference affirmed the importance of glacier preservation efforts for the achievement of the goals of international agendas.

The Conference produced three outcome documents: *Chair's Summary, Dushanbe Glaciers Declaration, and Dushanbe Glaciers Appeal: A Call for Action*. The Declaration reflects the key messages and strategic recommendations from the Conference. It was adopted by acclamation during the Closing Session. The Appeal captures the collective spirit of the Conference participants to preserve glaciers and the broader cryosphere as well as address the wide-ranging and far-reaching impacts of their melting. It includes a seven-point "Global Glaciers Agenda" to provide an initial framework towards a common approach and outlines how momentum can be sustained through the establishment of a Dushanbe Glaciers Process and regular international conferences every three years.

CHAIR'S SUMMARY

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I. Introduction

The melting of glaciers is one of the most pressing environmental challenges of our time. Climate change has already destroyed about one-third of mountain ice, and this will continue without serious mitigation consistent with the lower 1.5°C Paris Agreement limit. As glaciers shrink, they disrupt local and seasonal water supplies that billions of people depend on for drinking, irrigation, livelihoods, and energy production. Glacier-related hazards such as glacial lake outburst floods, landslides, and ice collapses threaten communities, infrastructure, and even lives. Economic inequalities in the face of glacier loss become more pronounced, particularly in developing regions where communities heavily depend on glacier-fed water resources. Although glaciers and polar ice sheets are far from small islands and low-lying coastal areas, their melting poses an urgent challenge through its contribution to global sea level rise. These changes that have dramatic consequences for people, planet and prosperity are essentially irreversible for centuries to thousands of years.

Recognizing the urgency and magnitude of these climate-related issues and their profound socio-economic implications, in December 2022 the United Nations General Assembly adopted resolution 77/158[1] that declared 2025 as the International Year of Glaciers' Preservation (IYGP 2025) and invited the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Meteorological Organization (WMO) to co-facilitate implementation of the associated activities. Furthermore, in August 2024, the United Nations General Assembly adopted resolution 78/321[2] that proclaimed the Decade of Action for Cryospheric Sciences, 2025 to 2034 to address the challenges of the cryosphere (glaciers, ice sheets, snowpack, permafrost, and sea ice) through scientific research and monitoring.

The first High-level International Conference on Glaciers' Preservation (Conference) took place from 29 to 31 May 2025 in Dushanbe, Tajikistan. The Conference was convened by the Government of the Republic of Tajikistan in cooperation with the United Nations, in particular UNESCO and WMO, the Asian Development Bank (ADB) and other partners within the frameworks of IYGP 2025 and Decade of Action for Cryospheric Sciences. The main objective of the concluded Conference was to anchor the importance of glaciers and the urgency of stopping the accelerated melting of glaciers on the international agenda, and advance global efforts in addressing glacier melt and its wide-ranging and far-reaching impacts through collaborative action, scientific innovation, and policy alignment. The Conference was designed to support the implementation of IYGP 2025 by fostering international, regional and transboundary cooperation and by mobilizing high-level political commitment and resources. It sought to strengthen global partnerships among governments, scientists, civil society, financial institutions and other stakeholders to advance scientific research and monitoring, address the socio-economic consequences of glacier retreat, and promote integrated adaptation strategies such as early warning systems and disaster risk reduction.

The Conference aimed to align glacier preservation efforts with global goals for climate, water availability, energy, and food security. The landmark conference was held at a pivotal moment as governments finalize their 2025 round of Nationally Determined Contributions (NDCs) to mobilize political will to raise the ambition of climate commitments as well as strengthen international cooperation and solidarity to preserve glaciers and address the impacts of their accelerated melting in advance of

[1] United Nations General Assembly resolution 77/158 adopted on 14 December 2022. Available at: https://docs.un.org/A/RES/77/158.

[2] United Nations General Assembly resolution 78/321 adopted on 13 August 2024. Available at: https://docs.un.org/A/RES/78/321.

the 30th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC COP30) that will take place in Belem, Brazil, 10-21 November 2025. The outcomes of the Conference will contribute to numerous global and multilateral processes, inter alia, the 2025 UN Ocean Conference (France, June 2025), High-level Political Forum on Sustainable Development (New York, July 2025), the preparatory meetings for the 2026 UN Water Conference co-hosted by the United Arab Emirates (UAE) and Republic of Senegal.

The preparatory process for the Conference was inclusive and diverse. The International Advisory Board of IYGP 2025, which is comprised of key stakeholders, supported the preparation of the Conference through the development of a comprehensive programme and contribution to the outcome documents. The Group of Friends of Glaciers convened by the Permanent Missions to the United Nations in New York provided valuable input throughout the preparatory process. The National Organizing Committee chaired by the Prime Minister of the Republic of Tajikistan led the preparatory process with a Conference Secretariat reporting to the Committee.

II. Stocktaking of the Conference

A. Conference Sessions (30 and 31 May)

The official high-level Conference sessions took place on 30 and 31 May in the state complex "Kokhi Somon" and consisted of a high-level opening session, two plenary sessions, twelve thematic sessions, two leaders' roundtables and a closing session. The Conference was attended by more than 2600 participants from over 90 Member States, United Nations entities, international and regional organizations, financial institutions, scientific and academic institutions, civil society, women's organizations, youth, private sector, and other stakeholders.

Opening Session

The Conference opened with a compelling short film narrated from the perspective of a mountain glacier about the consequences of melting glaciers and opportunities for action. The President of the Republic of Tajikistan, H.E. Mr. Emomali Rahmon provided the opening address, which was followed by other distinguished speakers at the level of Heads of Government, senior United Nations officials and leaders of international financial institutions. The Opening Session was moderated by Mr. Pedro Vargas David, Chairman of the Board of Directors of Euronews.

In his speech, the President of the Republic of Tajikistan, H.E. Mr. Emomali Rahmon welcomed participants and noted that the Conference is an important step towards the implementation of the United Nations resolution on the International Year of Glaciers' Preservation 2025. He pointed out that the accelerated melting of glaciers is a global crisis of our times with no precedent in human history. He underscored the importance of implementing the Paris Agreement on Climate Change and taking necessary measures to prevent an increase in global temperature.

H.E. Mr. Emomali Rahmon explained that Tajikistan, which has the largest glaciers in Central Asia, is facing this crisis now. Out of 14,000 glaciers, which are the source of 60 percent of drinking water in the region, already 1,300 have completely melted. The loss of glaciers threatens not only natural heritage but also the lives of millions of people in the region. He stressed that glaciers' preservation is not just a problem of countries with glaciers but a global crisis that deserves the immediate attention of the international community. He expressed the need to expand effective cooperation with all partners for the comprehensive monitoring of glaciers and to jointly plan and implement urgent measures to protect them. He called on all

partners and stakeholders to support this initiative and thus make their relevant contribution to the implementation of the Decade of Action for Cryospheric Sciences, 2025-2034.

In this regard, Tajikistan proposed several immediate actions to reduce the process of glacier melt: (1) raise the awareness of the global community about the vital role of glaciers, (2) strengthen international cooperation to address glacial melt and its consequences, (3) conduct comprehensive monitoring and scientific research to better understand the changes of glaciers and impacts on ecosystems, water resources, socio-economic issues, and global climate change, (4) implement collective actions to address the socio-economic consequences of glacier melting, (5) align measures to protect glaciers with measures aimed at addressing climate change, (6) effective use and mobilization of financial and technical resources for the practical implementation of glacier preservation initiatives and make contributions to the United Nations trust fund in support of activities for glaciers' preservation, and (7) development and implementation of strategies and action programmes at national and regional levels. Additionally, he proposed to develop a global strategy for glaciers' preservation at the global level and noted that Tajikistan will raise this initiative within the United Nations framework and calls upon all countries to support it.

H.E. Mr. Emomali Rahmon expressed confidence that the results of the Conference will serve as a call for pragmatic action by the international community to contribute to important global processes and lay the foundation for the formation of a Dushanbe Glaciers Process. He concluded by encouraging participants to cherish and contribute towards protecting glaciers to ensure a bright future for humanity and voiced hope that the international community will make greater efforts for the timely implementation of water- and climate-related goals and commitments, especially for the protection of glaciers and the efficient and rational use of water.

H.E. Ms. Amina J. Mohammed, United Nations Deputy Secretary-General congratulated the Government and people of Tajikistan for convening the first Conference and commended its commitment to glaciers as a beacon of hope to keep global momentum to sustainably manage vital water resources and raise urgent climate ambition. Since 1975, over 9,000 billion tons of ice have disappeared. Between 2022 and 2024 alone, the world witnessed the largest three-year glacier mass loss ever observed and, at current rates, many glaciers may not survive this century. She emphasized that this is not just a mountain crisis – it is a slow-moving global catastrophe with far-reaching consequences for water availability, food security, biodiversity loss, infrastructure, and the stability and health of communities worldwide.

H.E. Ms. Amina J. Mohammed offered three messages: (1) ensure that this conference signals an urgent call to action uniting multilateral cooperation and strategic partnerships (2) ensure that national climate plans set measurable adaptation targets across water, infrastructure, energy, and food systems to build resilience, secure financing, and protect livelihoods, and (3) identify pipelines of market-ready investments, backed by high-quality data and evidence-based tools that forecast returns, demonstrate co-benefits for job creation and economic growth, and unlock new financial services. She stressed the importance of Nationally Determined Contributions (NDCs) - not only as climate pledges, but as investment roadmaps that drive SDG implementation. She encouraged the use of other global milestones such as UNFCCC COP30, 2025 UN Ocean Conference, UN Food Systems Summit Stocktake, Second World Summit on Sustainable Development and the 2026 UN Water Conference to elevate political will and sharpen the focus on glaciers for people, planet and prosperity. She called for urgent action to protect water-related ecosystems and announced that the United Nations stands ready to ensure that SDG 6 is achieved.

H.E. Mr. Muhammad Shehbaz Sharif, the Prime Minister of the Islamic Republic of Pakistan, expressed appreciation for the visionary leadership of the President of Tajikistan and commended the efforts to place glaciers' preservation on the global climate agenda. He explained how Pakistan witnessed firsthand the peril of glacial melt during the unprecedented and cataclysmic floods of 2022 that submerged one-third of the landmass of Pakistan, caused 75 glacial lake outburst floods and formed more than 3000 glacier lakes, affecting over 33 million people and resulting in economic loss and damage of over US$ 30 billion. He indicated that scientific projections are even more sobering, considering that while glacial melt is expected to accelerate flooding in the coming decades, this will be followed by a drastic decline in river flows as glaciers further recede. He stressed that adequate funding for climate-resilient infrastructure to overcome the financing gap remains critical for climate vulnerable countries. He emphasized that developed countries must meet their climate finance commitments with a balanced focus on adaptation and mitigation, as well as loss and damage. He explained that water transcends political boundaries, connects communities and sustains ecosystems and cultures, binding humanity in a shared destiny. He called on participants to protect and preserve nature's precious bounties for the planet and people.

The First Vice President of the Islamic Republic of Iran, H.E. Mr. Mohammad Reza Aref, highlighted climate change, biodiversity loss and environmental pollution as main challenges that pose serious threats to the globe. He noted that glaciers are strategic and critical reserves of freshwater increasingly under threat due to the acceleration of global warming and their protection requires comprehensive diplomatic, environmental and social measures. He shared the experience of Iran as a semi-arid climate that relies on water resources derived from melting snow and glaciers in developing traditional water management systems. He provided the example of "Qanats" that are underground water channels to prevent evaporation as historical achievements that align human needs with environmental realities. He explained that Iran has created a bridge between traditional and modern systems by combining indigenous knowledge and advanced technologies. He expressed hope that this conference will lead to increased multilateral development cooperation and exchange of experience and knowledge between countries. He called for the strengthening of political measures to support implementation of effective programmes for resilience to droughts and floods and empowerment of local communities to face the melting glaciers and the decline of water resources.

H.E. Dr. Constantino Guveya Dominic Nyikadzino Chiwenga, First Vice President of the Republic of Zimbabwe, welcomed the acknowledgment by the international community of the global challenge posed by melting glaciers. He noted that the rapid melting of glaciers has accelerated unpredictable weather patterns, worsening the occurrence of droughts and floods. He explained that in 2023/2024 Zimbabwe experienced the worst drought in 43 years. On a continental scale, climate-driven glacier melt is projected to lower Africa's gross domestic product by as much as 3 per cent by 2050. He noted that preserving glaciers is not just about saving frozen water but also safeguarding the stability of the global water cycle and ensuring climate resilience globally. He shared the efforts that Zimbabwe is making to implement its National Climate Change Adaptation plan initiatives that include harvesting water through constructing dams, sustainable groundwater exploitation programmes, conservation practices for agriculture, promotion of drought-tolerant crop varieties and animals and mainstreaming climate change adaptation in all government and local authority programmes. He highlighted the importance of transboundary water cooperation and noted that Zimbabwe has recently acceded to the UN Water Conventions. He called for the Conference to send a strong message in the lead up to UNFCCC COP30 that there is a shared responsibility to reduce greenhouse gas emissions and preserve glaciers before it is too late. He concluded by inviting participants to attend the 15th meeting of the Contracting parties to the

Ramsar Convention on Wetlands that will take place in Victoria Falls from 23 to 31 July 2025 to discuss the sustainable management of wetlands as an integral part of the global water agenda.

The Vice President of the Republic of The Gambia, H.E. Mr. Mohammed B. S. Jallow, expressed appreciation to the Government of Tajikistan for convening this conference, reflecting a profound recognition that glaciers, although distant to some, are integral to global water systems, ecosystems, economies, and livelihoods. The Gambia lies far from glacial regions, but nonetheless, is on the frontlines of their disappearance. The Gambia's coastline stretches just over 80 kilometres, yet it is home to nearly 60 per cent of the population, key infrastructure, fertile agricultural zones, and vital ecosystems. Coastal erosion, aggravated by sea-level rise, encroaches upon communities, critical infrastructure, and livelihoods. Without urgent adaptation measures, projections show that a large part of Banjul Island could be submerged or rendered uninhabitable within the next decade. He explained that these climate-induced stressors divert national resources toward emergency shoreline protection, human resettlement, and social support mechanisms, often at the cost of long-term development goals. The Gambia has developed a National Adaptation Plan and Integrated Coastal Zone Management Plan backed by community engagement, scientific research and international cooperation. He expressed strong support for the global fund for glaciers' preservation as a mechanism to link upstream preservation with downstream protection and amplify the voices of vulnerable nations on the global stage. He emphasized that the fight to preserve glaciers is also a combat for deltas, estuaries, island and coastal cities and expressed a commitment to work with all nations across borders and disciplines.

H.E. Mr. Hussain Mohamed Latheef, Vice President of the Republic of Maldives appreciated the opportunity to speak about glaciers that, although thousands of kilometres away, play a critical role in shaping the tides that surround the island nation. He explained that nearly 80 per cent of the nearly 1200 islands of the Maldives lie less than a metre above sea-level; hence when glaciers melt, sea-level rises and the future of the Maldivian people falls into uncertainty. For SIDS like the Maldives, melting glaciers means salt in the underground water reserves, receding shorelines and the loss of livelihoods, communities and cultures. He called for limiting global warming to 1.5°C and noted that every moment of delay deepens the crisis. As a demonstration of commitment and ambition, he announced that the Maldives has submitted its third Nationally Determined Contribution (NDC) which aims to reduce emissions by 1.52 million tons by 2035 and generate 33 per cent of electricity from renewable sources by 2028. He urged all countries to submit updated NDCs before COP30 this year with enhanced ambition, transparency and urgency. He called for greater focus on the special circumstances of Small Island Developing States (SIDS) including the need for tailored strategies, concessional climate finance, technology adapted to unique needs and meaningful capacity building. He also called for enhanced cooperation and solidarity to bridge the distance between frozen frontiers and fragile shores.

The Secretary-General of WMO, Professor Celeste Saulo, commended Conference participants for championing the cause of the cryosphere. She expressed that WMO is proud to co-lead IYGP 2025 with UNESCO. She noted that glaciers are retreating at an alarming pace. She gave the example of the largest glacier in Central Asia, Vanch-Yakh Glacier (Fedchenko), that has lost 16 cubic kilometres in volume and 45 square kilometres in area in recent decades, which is the equivalent of 6.4 million Olympic swimming pools and 6,000 football fields worth of ice. The *State of the Global Climate 2024*[3] report by WMO revealed that for the third consecutive

[3] World Meteorological Organization (2025). *State of the Global Climate 2024*. WMO-No. 1368. https://library.wmo.int/idurl/4/69495.

year, all 19 monitored glacier regions lost mass. The melt has already contributed 18 millimetres of sea-level rise. She proposed five urgent and practical actions: (1) tackle the root cause- global warming; (2) strengthen monitoring systems through investment in National Hydrometeorological Services; (3) unlock the power of partnerships such as WMO's Global Cryosphere Watch, Early Warnings for All, and Third Pole Regional Climate Centre; (4) turn science into policy by using data to drive decisions; and (5) invest in people by empowering the next generation of glaciologists, hydrologists and climate experts especially women and young scientists. She stressed that, as WMO marks its 75th anniversary, it will continue its role as a bridge between science and service and between forecasts and action. She concluded by urging action to keep glaciers alive for the sake of the planet and human survival.

Ms. Lidia Brito, UNESCO Assistant Director-General of Natural Sciences, noted that the theme of this conference- placing glaciers at the heart of the global agenda - resonates deeply with UNESCO's mandate. UNESCO serves as a key platform for scientific cooperation—supporting the monitoring of snow, glaciers, and water resources, and advancing adaptation strategies. She recalled that 21 March marked the first-ever World Day for Glaciers and highlighted the launch of the *United Nations World Water Development Report 2025: Mountain and Glaciers- Water Towers*[4] that resonated globally. Recent statistics from UNESCO reveal that glaciers designated as World Heritage sites are losing an average of 58 billion tons of ice annually. She noted that, while 2025 is a landmark year for glaciers' preservation, one year alone is not sufficient to address the scale and urgency of the cryosphere crisis. She informed that UNESCO has been invited to lead the implementation of the Decade of Action for Cryospheric Sciences, 2025–2034, and announced that the high-level political launch will take place on 8 June 2025 during the Third United Nations Ocean Conference in Nice, France under the leadership of H.E. Mr. Emomali Rahmon, President Emmanuel Macron of France, and the UNESCO Director-General to carry forward and amplify the outcomes from today's Conference into a decade-long commitment to cryospheric science and action. She concluded by reiterating UNESCO's steadfast longstanding commitment to cryospheric action.

The Executive Director of the United Nations Children's Fund (UNICEF), Ms. Catherine Russell, highlighted that children bear the least responsibility for climate change, but they are being hit first and hardest by its impacts. UNICEF estimates one billion children worldwide are at high risk of the impact of the climate crisis through lost schooling, rising poverty rates, displacement, lack of safe water and other related risks. She urged to put children at the centre of global commitments to climate action and climate finance. UNICEF is taking action in partnership by retrofitting schools, improving water and sanitation systems, scaling up health and nutrition services and building disaster preparedness and early warning systems for children and families. She recommended: (1) a stronger focus on the risks for children posed by glacier loss that can inform adaptation strategies, (2) more child-responsive climate finance, (3) inclusion of climate education in school curricula, and (4) greater support for the meaningful participation of children and young people in decisions about climate. She called on countries to endorse the Declaration on Children, Youth and Climate Action and to integrate child rights into climate policies and budgets, including Nationally Determined Contributions and National Adaptation Plans. UNICEF values partnerships and looks forward to greater collaboration to build a climate resilient world fit for children today and future generations.

[4] United Nations, *The United Nations World Water Development Report 2025 – Mountains and glaciers: Water towers*. UNESCO, Paris. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000393070.

Ms. Armida Salsiah Alisjahbana, Executive Secretary, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), expressed gratitude to the President of Tajikistan for his advocacy to keep glaciers high on the international agenda and for providing a platform for the voices of the cryosphere research community and most vulnerable mountain populations to be heard. She noted that in Asia and the Pacific alone, almost 2 billion people depend on glacier-fed rivers and groundwaters. She informed that ESCAP Member States adopted a resolution introduced by the Government of Tajikistan on "Strengthening cooperation on water and climate change nexus" that calls for strengthening regional cooperation for integrated water resource management, early warning systems, cost-effective technologies, increased capacity-building and multi-stakeholder dialogues to increase resilience. She emphasized that regional solutions are key. She proposed three areas for enhancing regional and international cooperation to deal with glacier melt: (1) implement solutions for reducing drivers of accelerated glacier melting notably black carbon and dust storms, (2) undertake joint adaptation planning across shared river basins, and (3) adopt a twin-track strategy for managing shared risks and building community resilience to face glacier- and water-related disasters especially for vulnerable areas and communities.

Mr. Yingming Yang, Vice-President of Asian Development Bank (ADB), congratulated H.E. Mr. Emomali Rahmon for his leadership and for hosting the inaugural Conference. He shared that the ADB is helping its developing members tackle the complex challenge of melting and disappearing glaciers through a transformational initiative called *Glaciers to Farms*. The flagship regional programme will promote sustainable water use and food security across nine countries including Tajikistan. The ADB, together with the Green Climate Fund, aims to mobilize $US 3.5 billion in adaptation investments including from the private sector. He noted that the Central Asia Regional Economic Cooperation (CAREC) Program is fostering greater collaboration by facilitating knowledge sharing and policy dialogue among countries on water resources management. He made two calls to action: (1) scale-up collaboration between governments, communities and private sector to help Asia adapt to a future of shrinking and fewer glaciers using effective platforms such as this conference, *Glaciers to Farms* and CAREC, and (2) continue to help countries to swap fossil fuels for clean energy in a way that does not compromise energy access or economic development, for example Tajikistan's Rogun Hydropower Project. He expressed thanks to all the participants for their commitment to glaciers' preservation.

The Vice President of Asian Infrastructure Investment Bank (AIIB), Mr. Ajay Bhushan, expressed deep concern that by 2050 the threat looms that a third of Central Asia's glaciers may vanish, imperiling the foundations of water, food and energy security for millions. He commended Tajikistan for championing regional coordination, advancing science and policy and mobilizing climate finance. He stressed that the urgency to act cannot be overstated and affirmed that AIIB stands shoulder to shoulder with all nations committed to safeguarding the planet's future. He noted that the partnership has already delivered climate-resilient infrastructure in Tajikistan. He proposed three areas to accelerate efforts: (1) scale-up funding by harnessing both public and private capital to protect glaciers and support sustainable water management; (2) strengthen partnerships to unite communities, governments and multilateral agencies in a common cause; and (3) innovate boldly by implementing pioneering and inspiring solutions from glacier stabilization techniques to cutting-edge irrigation technologies. He reiterated AIIB's commitment to support Tajikistan and its members to forge a sustainable resilient tomorrow and secure this precious heritage for generations to come.

The distinguished speakers expressed their gratitude to the Government of Tajikistan for initiating the International Year of Glaciers' Preservation and for convening this high-level conference that provides a unique and timely platform for countries and stakeholders to discuss challenges and work together towards solutions to preserve glaciers and address the impacts of melting glaciers and the broader cryosphere for current and future generations.

Plenary Sessions I & II

The two plenary sessions provided an opportunity for heads of official delegations to deliver a statement. Over 75 delegations made statements during the two plenary sessions that took place on both days of the Conference. Plenary Session I was co-chaired by H.E. Mr. Qohir Rasulzoda the Prime Minister of the Republic of Tajikistan and Chairman of the National Organizing Committee, Professor Celeste Saulo the Secretary-General of WMO and Ms. Lidia Brito UNESCO's Assistant Director-General of Natural Sciences. Plenary Session II was a continuation of the first plenary session. The full list of plenary speakers and statements is provided in annex 3.

Throughout the plenary sessions, government leaders shared insights into how the loss of glaciers and the broader cryosphere are directly and indirectly affecting their countries and expressed deep concern about the adverse impacts on their populations, environment and economies. They affirmed ambitious commitments to prioritize climate mitigation and adaptation as part of updated NDCs and national adaptation plans (NAPs), and shared examples of actions to strengthen early warning systems. Heads of delegations highlighted efforts they are making though current programmes and showcased innovative solutions, including application of cutting-edge technologies. Several speakers indicated interest to share advanced technologies, modelling systems, monitoring techniques, including expertise in Earth observation.

Numerous heads of delegation announced commitments and partnerships aimed to bring greater financial resources, scientific cooperation and technical support at multilateral, regional, transboundary and bilateral levels. Financial institutions provided overviews of their investments in programmes and projects that support glaciers' preservation, climate mitigation and adaptation and other related areas. Several UN agencies and development partners offered technical assistance and capacity development in their respective, mandated areas. Global and regional inter-governmental organisations expressed willingness to use their platforms to support follow-up discussions initiated during the Conference and to facilitate experience sharing.

Speakers concurred that preserving glaciers will require international solidarity, long-term thinking, and concrete actions and called for greater attention and urgency to address glacier and cryosphere-related issues as part of international processes, such as the UNFCCC COP30 in Brazil, 2026 UN Water Conference in UAE, and other upcoming regional and global meetings and events.

Thematic Sessions

Twelve thematic sessions were held over the two official Conference days: 30 and 31 May 2025. The thematic sessions addressed four main areas: (i) socio-economic impacts of glacier melt; (ii) cross-cutting issues such as biodiversity, cultural and natural heritage, and transboundary cooperation; (iii) glacier science, research and monitoring; and (iv) solutions for mitigation, resilience and adaptation planning. The key messages from each thematic session were presented by the respective rapporteurs during the Closing Session.

Thematic Session 1. ***Glaciers, Arctic and Antarctic Ice Sheets, the Threat of Sea level Rise and Strategies for Small Island Developing States***

Polar regions are experiencing some of the most dramatic consequences of climate change, including accelerated glacial melt and destabilization of ice sheets. Climate change poses significant threats to polar glaciers, resulting in rising sea levels and shifting weather patterns. The threat of sea-level rise is an urgent challenge for SIDS, although glaciers and polar ice sheets are far from SIDS, their melting contributes to global sea level rise. Immediate action is crucial.

Thematic Session 1 brought together senior officials, scientists, and diplomats to discuss the accelerating loss of glaciers and ice sheets, and its implications for sea level rise and the survival of Small Island Developing States (SIDS). Co-chaired by Mr. Alexander Kozlov, Minister of Natural Resources and Environment of the Russian Federation, and Mr. Yosuke Tomizawa of the United Nations Department of Economic and Social Affairs (UN DESA), the session opened with keynote addresses from Ms. Retno Marsudi, the United Nations Secretary-General's Special Envoy for Water, and Mr. Sergei Zhuravlev, Director of the State Hydrological Institute, Russian Federation.

A panel discussion moderated by Mr. Abou Amani, Secretary of the Intergovernmental Hydrological Programme of UNESCO, featured contributions from researchers and government representatives across polar and tropical regions. Discussions emphasized the need for robust adaptation measures, scientific cooperation, and financial innovation to support climate resilience, particularly for vulnerable states.

Thematic Session 1 identified six key messages:

1. Glaciers and polar ice sheets are melting at alarming rates, contributing significantly to sea level rise and threatening low-lying SIDS.
2. SIDS face existential threats due to sea level rise, with entire national territories and populations at risk from saltwater intrusion, economic loss, and cultural displacement.
3. There is a need to address the knowledge gaps between cryosphere dynamics and regional impacts in vulnerable regions, particularly Southeast Asia and SIDS.
4. Robust adaptation and anticipatory action are urgently needed, guided by integrated scientific knowledge and early warning systems.
5. Financial architecture must evolve to enable accessible, fit-for-purpose investments in climate resilience for developing countries.
6. Solidarity and multilateral cooperation are essential to link upstream cryosphere preservation with downstream community resilience.

Thematic Session 2. ***From Glaciers to Sea: Glaciers, Snowpack and Water Availability in a Changing Climate***

Thematic Session 2 focused on the far-reaching impacts of glacier and snowpack loss, from high mountain headwaters to downstream communities hundreds of kilometres away. Regions such as Central Asia, northern Pakistan, and western Peru—many of them arid and heavily dependent on seasonal meltwater—face mounting risks to agriculture, energy security, and water supply as the cryosphere rapidly changes.

Tajikistan was highlighted as a key example, where over 90 per cent of electricity comes from hydropower. As snow turns to rain and glaciers retreat, dam

inflow timing and volume are changing, with direct consequences for irrigation, flood control, and electricity generation. This mirrors similar trends in other mountainous regions globally.

Panellists stressed that although cryospheric change is accelerating, our ability to monitor and adapt is lagging. High-altitude data gaps, especially at elevations above 3,000 meters, severely limit understanding of snow water equivalent, glacier mass balance, and permafrost conditions. This undermines both scientific forecasting and infrastructure planning.

A central message was the need to consider the entire river basin from "glacier to sea" by integrating upstream, midstream, and downstream perspectives. Communities at different elevations face distinct challenges and have varying levels of understanding about cryosphere change. Effective communication and tailored support are essential for equitable and inclusive adaptation.

Aligned with the goals of the IYGP 2025 and relevant SDGs, the session called for action in three areas: improving scientific monitoring and modelling, strengthening cross-border cooperation, and supporting local communities through climate-resilient practices and policies. Institutions like ADB, International Centre for Integrated Mountain Development (ICIMOD), and bilateral donors such as Norway were identified as key actors to drive this change.

In closing, the session urged that while uncertainty remains in how exactly the cryosphere will change, the direction is clear: glaciers are melting, and the impacts are already being felt. Rapid, coordinated, and science-informed action is needed now before adaptation gaps grow even wider.

Thematic Session 2 identified the following key messages:

1. **Enhance scientific monitoring and modelling** by closing high-altitude data gaps (especially above 3,000 metres) and improving understanding of snow water equivalent, glacier mass balance, and permafrost conditions.

2. **Strengthen transboundary cooperation and governance** through integrated, basin-wide water management and increased cross-border data sharing and coordination.

3. **Support climate-resilient communities** by implementing adaptive policies and practices, and tailoring communication and solutions to the diverse needs of upstream, midstream, and downstream populations.

4. **Accelerate coordinated, science-based action** by turning robust evidence into inclusive, early adaptation efforts and closing the gap between research and policy implementation.

5. **Promote global and regional initiatives and partnerships** such as the IYGP 2025, basin-wide adaptation planning ("glacier to sea"), and collaboration among governments, scientific bodies, and local communities.

Thematic Session 3. *Glacial-related Hazards and Disaster Risk Reduction: Leveraging the "Early Warnings for All" Initiative*

Thematic Session 3 focused on strengthening the integration of glacier-related hazard monitoring into global and regional disaster risk reduction frameworks, particularly through the Early Warnings for All initiative. It brought together high-level representatives, scientific experts, and regional actors to explore how glacial melt, glacial lake outburst floods, and associated risks can be more effectively addressed through inclusive multi-stakeholder collaboration, integrated operational early warning systems, and policy innovation.

Moderated by Ms. Natalia Patricia Alonso Cano from the United Nations Office for Disaster Risk Reduction (UNDRR), the session began with remarks from H.E. Mr. Sulaimon Ziyozoda, Deputy Prime Minister of Tajikistan and National Focal Point for the Early Warnings for All initiative, who emphasized the urgency of addressing cryosphere-related hazards in mountainous countries like Tajikistan. Professor Celeste Saulo, Secretary-General of WMO, underlined the importance of integrating glacier monitoring and science into regional and national forecasting systems for local anticipatory action. Dr. Paola Moschella Miloslavich of Peru's National Institute for Research in Glaciers and Mountain Ecosystems delivered a compelling keynote on the increasing vulnerability of high mountain communities in the Andes and the need for localized, gender-responsive, and culturally sensitive early warning systems.

Chaired by Dr. Stefan Uhlenbrook (WMO), the panel brought together a diverse set of stakeholders from international organizations and development agencies. Ms. Kathleen Anne Coballes (ADB) emphasized the integration of disaster risk reduction in agricultural and water infrastructure investments across Central and West Asia. Mr. Sanjay Srivastava (ESCAP) shared regional risk mapping tools and stressed the importance of innovation and digital solutions for impact-based multi-hazard forecasts tailored to diverse risk profiles of vulnerable people such as elderly and disabled. Dr. Ali Neumann from the Swiss Agency for Development and Cooperation (SDC) highlighted the governance dimension of early warning systems, notably the institutional setup and political commitment, as part of the wider integrated disaster risk reduction. Ms. Diana Aripkhanova (UNESCO) discussed the role of training and education on early warning systems and disaster risk reduction for communities, especially for its young and/or local/indigenous members. Mr. Deepak KC from the United Nations Development Programme (UNDP) presented national-level climate resilience work in Nepal, especially community-based early warning systems noting the last mile connectivity through i) knowledge sharing, upscaling, replication and ii) coordination, cooperation, networking. Ms. Olivia Becher from the European Bank for Reconstruction and Development (EBRD) spoke on the role of flexible climate finance and multilateral development banks in mobilizing investments for scaling early warning system infrastructure.

Speakers highlighted that glacier-related hazards are increasing due to climate change and must be integrated into national disaster risk reduction frameworks. They noted that the Early Warnings for All initiative provides a strategic opportunity to extend multi-hazard systems into cryospheric regions. Cross-sectoral and cross-agency coordination is essential to ensure that mountain communities receive timely and accessible alerts. They stressed the importance of the science-policy interface, inclusive governance, and financing mechanisms are critical to operationalize early warning systems in glacier-dependent regions.

The session concluded with questions from the audience covering topics such as trust building for data sharing, low-cost cooperative solutions, capacity building for democratization of technical infrastructure, and gender equality.

Key messages from Thematic Session 3 included the following:

1. Early Warning Systems are a key component of integrated disaster risk reduction. In the context of Early Warning Systems for all initiative, inclusion of glacial hazards in a multi-hazard operational framework is a critical milestone to be achieved by 2027.

2. Transboundary and compound nature of glacial hazards – which often have cascading impacts – necessitates interdisciplinary science, research and training. Technology and digital innovation should shape the solutions.

3. Ensuring synergy across disciplines, institutions, sectors and communities is essential for successful EWSs which are aligned with and supported by national and global policies for climate change adaptation and mitigation.

4. Glacial hazard data, including exposure and predictions, should inform disaster risk assessments to support national risk management strategies.

5. Governance of EWSs related to glaciers requires 1) sustainable financing, 2) effective institutional setup, 3) inclusive multi-stakeholder dialogues at national, regional and global levels, and 4) strong political commitment.

Thematic Session 4. ***Partnership for Climate Change, Glaciers and Transboundary Cooperation in Central and West Asia Region***

Thematic Session 4 emphasized the critical role of science, finance, and regional cooperation and platforms in enabling coordinated action. The session moderator, Ms. Yasmin Siddiqi, Director of Agriculture, Food, Nature, and Rural Development Sector of Central and West Asia for the ADB welcomed the participants and explained the session structure: scene-setting through technical presentations followed by a high-level ministerial panel discussion. The session co-chair, Mr. Thomas Eriksson, Director of Department of Eastern Europe, Central Asia, and the Middle East Region for the Green Climate Fund, delivered the opening remarks as Session Chair. He acknowledged the region's vulnerability to glacier loss and highlighted the importance of regional collaboration, referencing the *Glaciers to Farms* regional program and ongoing work under CAREC and the Green Climate Fund. He called for scaled-up adaptation finance and stronger political commitment.

Two technical presentations followed: Professor Stephan Harrison (Pegasys Ltd.) presented findings from the *Glaciers to Farms* regional program glacier risk assessments and Dr. Lukas Arenson (BGC Engineering) discussed permafrost degradation, showing how warming affects frozen slopes and infrastructure, with cascading impacts on mountain hydrology.

The session then moved into a structured ministerial panel featuring ministers, deputy ministers, and senior officials from Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan. During the first round of discussions, ministers shared national perspectives on glacial melt. H.E. Mr. Mashiev Meder Asanovich, Minister of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic highlighted water stress and upstream management. H.E. Mr. Charygeldi Babanyyazov, Minister of Environmental Protection of Turkmenistan emphasized downstream vulnerabilities and national adaptation plans. During the second round, H.E. Mr. Shukurzoda Isfandiyor, First Deputy Chairman, Committee for Environment Protection of Tajikistan and Ms. Umayra Taghiyeva, Deputy Minister of Ecology and Natural Resources for Azerbaijan discussed how regional cooperation can enable collective response. They called for better data-sharing, coordinated early warning systems, and alignment of adaptation plans.

During the final round, H.E. Mr. Yerlan Nyssanbayev, Minister of Ecology and Natural Resources of Kazakhstan, H.E. Mr. Aziz Abdukhakimov, Minister of Ecology, Environmental Protection and Climate Change of Uzbekistan and Mr. Abdulaziz Alshehhi, Deputy Head of Research Sector, TRENDS Research and Advisory Center based in the UAE emphasized how regional platforms such as CAREC are essential for sustaining cooperation, accessing finance, and sharing knowledge. It was underscored that CAREC has a critical role in bringing together development partners to mobilize support on climate action especially for adaptation while also creating opportunities for low carbon development.

The Rapporteur summarized five key points from the session:

1. The impacts of glacial melt are escalating and urgent.
2. Science must guide policy at national and regional levels.
3. CAREC and similar platforms are crucial for aligning investments and innovations.
4. Climate risks require transboundary collaboration.
5. Political momentum must now lead to concrete, financeable actions.

Ms. Siddiqui (ADB) closed by encouraging follow-through on initiatives discussed and urged stronger engagement in regional programs, such as *Glaciers to Farms* regional program and CAREC to integrate science in future investments to tackle melting of the cryosphere and build lasting resilience that transcends boundaries in the region.

Thematic Session 5. ***Glacier Futures: Linking Knowledge, Communities and Policy for Climate Resilience***

Thematic Session 5 opened with welcoming remarks from Arnold Kreilhuber, Regional Director for the United Nations Environmental Programme (UNEP), who emphasized the urgency of addressing glacier retreat as a multidimensional crisis with implications for climate resilience, water security, and biodiversity conservation. His opening underscored the need to bridge scientific knowledge with policy responses and local community action. The session consisted of three thematic blocks.

The first block, *Action & Storytelling*, featured Jean-Baptiste Bosson coordinator of the Ice & Life Project and Marcela Fernández representing Cumbres Blancas and Glacier Nation, whose presentations delivered a compelling narrative of glaciers as both fragile ecosystems and rallying points for community mobilization. Bosson presented cutting-edge research on glacier and post-glacial ecosystem dynamics, including projected habitat transformations and their capacity for carbon sequestration. His data showed that under current trajectories, up to 46 per cent of global glacier volume may be lost by 2100. He introduced the concept of post-glacial ecosystems as potential biodiversity refugia and carbon sinks, urging stronger legal protections, such as the new French policy targeting 100 per cent strong protection of glaciers by 2030. Fernández recounted her advocacy work mobilizing public support in Colombia and globally bringing together scientists, Indigenous People, decision makers and youth, underscoring the emotional and cultural resonance of glaciers.

The second block, *Policy & Partnerships*, started with a presentation outlined Tajikistan's multifaceted national strategies, including the State Programme for the Study and Preservation of Glaciers (2010-2030). Tajikistan's dependence on glacier-fed hydropower and agriculture makes it acutely vulnerable to glacial loss, but also a leader in regional water diplomacy and ecosystem preservation. Bolot Moldobekov, Director of the Central Asian Institute for Applied Geosciences, highlighted the critical importance of regional partnerships for effective glacier monitoring and risk mitigation, particularly in the context of increasing glacial lake outburst flood risks.

The third block, *Science & Ecosystem Tools*, featured David Keith, Lead of the International Union for Conservation of Nature (IUCN) Commission on Ecosystem Management and IUCN Red List of Ecosystems and Jose Rafael Ferrer-Paris from the IUCN Commission on Ecosystem Management. Mr. Keith introduced the Global Ecosystem Typology and the Red List of Ecosystems as robust tools for classifying ecosystems and assessing their risk of collapse, including pilot applications to glacial and post-glacial ecosystems in the cryosphere. He demonstrated how the Red List of

Ecosystems can support forward-looking conservation planning, identifying which glacial systems are most vulnerable and which post- glacial ecosystems hold the greatest potential for climate resilience and water security.

The interactive panel discussion featured high-level perspectives from Angela Andrade the Chair of IUCN Commission on Ecosystem Management, Henk Ovink the Executive Director of the Global Commission on the Economics of Water, James Dalton the Global Water and Wetlands Team Lead for IUCN and Musonda Mumba the Secretary General of the Ramsar Convention. The panel acknowledged that while complete prevention of glacier loss is no longer possible, proactive management and economic valuation of new hydrological realities is essential. Discussions stressed the importance of adaptive transboundary water governance, investment in nature-based solutions, and the expansion of protected areas to include emerging post-glacial zones. Speakers noted a significant governance gap in recognizing and protecting glacier ecosystems and called for both local innovations and international instruments, such as a potential global moratorium or treaty on glacier exploitation.

The session was closed by James Dalton (IUCN) who emphasized the need to blend credible science with grassroots engagement. He called for enhanced awareness, community science, and the strengthening of global data-sharing networks to guide future protection and restoration efforts.

Thematic Session 5 identified six key messages:

1. Glacier loss is inevitable—but how we respond will define our collective future.
2. Post-glacial landscapes are emerging ecosystems—and demand urgent protection.
3. New water realities require rethinking governance—especially across borders.
4. Communities and citizen science are essential allies in adaptation to glacier loss.
5. Science and tools like the IUCN Global Ecosystem Typology and IUCN Red List of Ecosystems are key to informed policy and investment.
6. Policy alignment and government leadership are pivotal to meeting global targets.

Thematic Session 6. *Bridging Indigenous Knowledge, Heritage and Community Action for Glacier Preservation*

Glaciers are not only critical water sources but are also deeply embedded in the cultural heritage and traditional knowledge of Indigenous Peoples and local communities worldwide. As glaciers retreat due to climate change, their loss threatens both ecological balance and cultural continuity. These living heritage systems offer a unique lens through which communities anticipate and mitigate disaster risks. Despite their contributions, Indigenous perspectives and knowledge systems remain underrepresented in global climate policies and conservation strategies. This session explored how Indigenous and local knowledge, combined with scientific research, could support glacier preservation and strengthen community-led adaptation. The discussion highlighted community-driven initiatives, governance models, and policy mechanisms that empower Indigenous Peoples and local communities as key actors in glacier conservation.

Thematic Session 6 opened with remarks from Mr. Abou Amani, Director of the Water Sciences Division at UNESCO. High-level opening statement was delivered by Ms. Izabella Koziell, Deputy Director General of ICIMOD, emphasizing the need to integrate Indigenous knowledge into glacier preservation. A short video showcased

Indigenous knowledge from UNESCO sites. Ms. Mumba Musonda (Ramsar Convention) delivered a keynote on the heritage significance of glaciers.

The panel discussion, moderated by Ms. Ruth Nguma (UNESCO), featured representatives from ICIMOD, Scientific Research Hydrometeorological Institute of Uzbekistan, WMO, UNDP Pakistan, the Youth Ecological Centre of Tajikistan, and University of Fribourg. Speakers highlighted challenges in integrating Indigenous and local knowledge into policy, the importance of recognizing glaciers as cultural heritage, and the value of inclusive climate governance.

An interactive discussion with the audience allowed for the exchange of ideas and local insights. Mr. Amani concluded the session by reaffirming UNESCO's support for Indigenous-led climate action and the necessity for inclusive glacier conservation strategies.

Thematic Session 6 resulted in five key messages:

1. Indigenous and local knowledge systems and living heritage enhance resilience and adaptation, particularly in water management, disaster risk reduction, and biodiversity conservation in glacier-fed regions.

2. Integrating Indigenous and local knowledge with scientific research significantly improves early warning systems and empowers communities to take informed and locally grounded action.

3. Youth engagement and education are vital. Young people are not only the most vulnerable to climate impacts-they are also key to safeguarding and revitalizing traditional knowledge systems.

4. Cross-disciplinary collaboration between traditional knowledge holders, scientists, and policymakers is essential. It is through this collaboration that inclusive and lasting glacier preservation can be achieved.

5. Policy frameworks must formally recognize Indigenous and local knowledge systems. This includes ensuring their protection, integration, and leadership roles in national and international climate and water strategies.

Thematic Session 7. ***Glacier Monitoring Needs Worldwide***

To discuss the challenges and opportunities of mountain observations and of glaciers, in particular, Thematic Session 7 took a focused approach on Central Asia and made comparisons to other regions of the globe. The session provided an overview of glacier monitoring, explored opportunities for space-based monitoring of the cryosphere in high mountains and polar regions, and discussed the reestablishment of the Gorbunov meteorological station at the Vanzh-Yakh glacier as a WMO CryoNet station. It evaluated the status of long-term meteorological observations in high mountains, which were often managed as part of research projects with limited duration and non-continuous datasets. It stressed the need to combine long-term programmes operated by the Central Asian organisations with innovative research projects conducted by both national and international organisations to provide and, importantly, sustain state-of-the-art monitoring. The CAMON (Central Asia Mountain Observatory Network) network serves as a successful example of such synergy.

The session examined ways to improve the usefulness of these datasets for long-term trend analysis by standardizing and integrating data from different sources through the WMO Information System. It emphasized the need for long-term commitments through government-supported programs and regional collaboration. The session also discussed the importance of sustainable satellite observations of

high-mountain regions in Central Asia and globally to provide information at the spatial scale needed for basin-scale management of water resources and underlined that some key satellite capabilities are currently at risk. The session highlighted the need for validation and interpretation of satellite data using ground-based observations, which allow characterization of processes not directly achievable from satellite observations. The legacy data from the Gorbunov meteorological station and other hydrometeorological agency stations, as well as data from research stations such as those within CAMON and similar networks, are invaluable for long term climate change monitoring in high mountain terrain and provided Essential Mountain Climate Variables for the Pamir region. The reestablishment of operation at the Gorbunov station requires innovative solutions and strong collaborations and will benefit from collaboration with the well-established CAMON sites. Once implemented, it offers an excellent opportunity to develop best practices beneficial at regional and global scales.

The following key messages have been summarized from the remarks and panel discussions:

1. Standardized data is crucial for effective water management and sharing. New observations, especially at high elevations, are necessary for glacier monitoring. Traditional methods should be complemented with remote sensing and emerging technologies.

2. Glacier coverage in Central Asia in general and in Tajikistan in particular is extensive, and glacier changes are presenting hazards related to glaciers melt. Data sharing and integration are essential for water resource forecasting, provision of early warning including across the borders, and climate adaptation. Continuous and sustainable glacier monitoring is insufficient globally, especially with accelerating climate change. Improved indicators and harmonized data are needed for better predictions.

3. Cooperation and improved observation methods are underway, e.g. with the CryoSCOPE database monitoring the Arctic and other cryosphere regions. Melting snow, glaciers and ground ice significantly impact water sources and various environmental factors. In-situ data and observations are necessary for better forecasts.

4. Diverse cryospheric components, not just glaciers, should be measured through integrated strategies to improve data availability, and data sharing is crucial. Glacier monitoring is multidisciplinary, requiring various parameters for different applications. Glacier and cryosphere monitoring strategies should leverage measurements of individual elements (meteorology, glaciers, snow, permafrost) and integrated hydrological signals (stream discharge, water isotopes, soil moisture, groundwater) to enhance water resource forecasts.

5. Efforts to monitor glaciers and cryosphere should ensure gender equality and build science capacity for monitoring activities.

Thematic Session 8. *Glacier Projections and Emissions: How much can 1.5°C Emissions Pathways Save?*

Thematic Session 8 presented the most recent work on glacier projections globally, regionally, and of individual glaciers, to inform stakeholders ranging from high-level policy makers to businesses to the general public of the implications of choices today. The session opened with an address from UNFCCC COP29 President H.E Mukhtar Babayev, in which the irreversible impacts of overshooting 1.5°C were highlighted in terms of the existential threat this presents to numerous populations and communities worldwide. The UNFCCC COP29 President stressed that 2025 was

a critical year to deliver deep, rapid and sustained emissions reductions through new and updated country NDCs at UNFCCC COP30 in order to maximise glacier preservation and limit further climate damage.

Three panel presentations then presented the latest science on glacier projections, techniques for communicating science to policymakers, and a case study of the future of glaciers in Tajikistan under different emissions scenarios. Strong focus was given to a landmark publication by the GlacierMIP3 (Glacier Model Intercomparison Project third phase) consortium, which was published in the journal *Science* on 29 May 2025, that will inform the Inter-governmental Panel on Climate Change's Seventh Assessment Report projections for glaciers over the coming centuries.

Another highlight of this session was the release of several new glacier animations, showing visually the expected response of several signal glaciers from the major mountain regions of the world to low emissions, versus high emissions pathways, produced by the University of Fribourg with support from ADB and the International Cryosphere Climate Initiative (ICCI). These included the previously produced Great Aletsch of Switzerland, Athabasca in the Canadian Rockies; and Tajikistan's massive Vanch-Yakh (Fedchenko) glacier.

The key messages from Thematic Session 8 are the following:

1. The survival of glaciers depends on our choices today. The timeframe for emissions reductions to preserve glaciers and their essential ecosystem services is extremely urgent, with little room for course-correction after 2030 because the current pace of loss is so rapid.

2. The latest science shows that ambitious mitigation (1.5°C) will save twice as much ice globally (53 per cent) than our current emissions pathway (2.7°C), with which we are on track to destroy over 75 per cent of glacier ice worldwide once glaciers fully adjust to their new climate.

3. In some especially vulnerable regions, immediate and ambitious mitigation sticking close to 1.5°C can save up to 25 times more ice compared to our current emissions pathway. This demonstrates the high sensitivity of the world's glaciers to every fraction of a degree of warming.

4. The state and clarity of science has moved on since 2015 when the Paris Agreement temperature limits were negotiated. Research now shows that even 1.5°C is too high for many glaciers worldwide, but that 2°C will be disastrous. Four regions of the world — the Western Canada/US, European Alps, Iceland, and Scandinavia – will lose virtually all ice at 2°C, while the central and eastern Himalaya will only retain 25 per cent of their ice once these glaciers fully adjust to this new climate.

5. Nations need to work together urgently to deliver deep, rapid and sustained emissions reductions — fighting to prevent for every tenth of a degree of warming. This is because every tenth of a degree matters for the survival of glaciers. Presentation of ambitious 1.5°C aligned NDCs at UNFCCC COP30 will be crucial to course correct onto an emissions trajectory that maximizes glacier preservation. With low emissions, countries worldwide will begin to see improvements in glacier stability in just a few decades- sending a clear message of hope, as well as urgency.

Thematic Session 9. ***Latest Glacier and Cryosphere Science***

Thematic Session 9 focused on new insights into glacial and periglacial science and highlighted innovative ways of thinking that can help bridge schisms between

knowledge and action. Notably, this session combined the work of established researchers involved in highly impactful studies on our current knowledge of cryosphere processes with that of six rising scholars, each of whom is already making a mark in their fields, whether through combining disciplines or actively engaging the next generation in the decisions about the direction of future research. Keynote speaker, Professor Celeste Saulo, Secretary-General of WMO emphasized that what will be lost extends well beyond the physical glaciers and the ice to include histories, cultures and even futures. There is a need for increased utilization of Indigenous knowledge, interdisciplinary collaborations, and systems of mentorship that are future-looking and future-serving.

One of the two co-chairs, Dr. John Pomeroy from the University of Saskatchewan, Canada explained that existing models are failing to capture reality which hinders the ability to predict the complex and multidimensionality of our glacier-related future. Gains in modelling in recent years have led to stronger parameterization and enabled features such as blowing snow to be captured, yet we still need to be able to account, for example, for debris-covered mountains and the implications of black carbon on glaciers. Dr. Lukas Arenson (BGC Engineering) continued the theme of models by presenting findings from several recent papers, about new methods for mapping mountain permafrost. This work is particularly novel, as permafrost is particularly challenging to detect without in situ measurement because it is thermally defined and rarely in equilibrium with the current climate.

The second co-chair for the session, Dr. Martin Hoelzle, Professor from the University of Fribourg, Switzerland and World Glacier Monitoring Service presented recent findings on glacier mass loss by the Glacier Mass Balance Intercomparison Exercise (GlaMBIE) research collective. Dr. Hoelzle captured the urgency of science-backed policy and political willpower to act on glacier loss, showing how rapidly we are losing ice–and how much power we hold to change the trajectory of our future loss. Dr. Dhiraj Pradhananga, Professor from Tribhuvan University, Nepal presented a scientific article, “Glacier preservation doubled by limiting warming to 1.5°C versus 2.7°C” on behalf of Zellokari et al (2025)[5] on the latest GlacierMIP projection. He noted that it is imperative we look beyond 2100 into multi-centennial timeframes considering that glaciers are relatively slow to act and react to the changing climate. Using this extended time period, Zellokari et al (2025) demonstrate how each tenth of a degree Centigrade in temperature rise today will lead to an additional 2 per cent loss in ice in the future. Moreover, they show that limiting warming to 1.5°C rather than the policy-aligned 2.7°C will preserve more than twice as much (54 per cent) global glacier mass by 2100 relative to 2020.

One of the early career researchers, Mr. Pawan Singh from the Indian Institute of Technology Roorkee, India, flipped the dynamic on timescales by sharing that his doctoral research shows aspects of glacier change that occur on hourly or daily timescales and thus often evade the measurements that focus on annual change. Ms. Christina Draeger from the University of British Columbia, Canada shared that under high-emissions scenarios, the downscaling of global glacier models leads to significant underestimation of glacier melt, in part because these models fail to account for temperature, radiation, humidity, wind speed and albedo. With his research focusing on Greenland’s ice sheet, Mr. Josep Bonsoms from the University of Barcelona, Spain spoke about how the rapid melt of Greenland’s ice is intertwined with changes in Rossby waves and the reduction of albedo, features that have implications for weather patterns and climate throughout the northern hemisphere but

[5] Harry Zekollari et al., Glacier preservation doubled by limiting warming to 1.5°C versus 2.7°C. *Science* **388**, 979-983 (2025). DOI: 10.1126/science.adu4675. Available at: https://www.science.org/doi/10.1126/science.adu4675.

that the connections are just now beginning to be understood and thus incorporated into models. Dr. Aftab Nazeer from Bahauddin Zakariya University, Pakistan focused his segment on the importance of understanding the changing hydrological system and glacier melt on agriculture and downstream risk. Dr. Muhammad Yasir of the Pakistan Meteorological Department angled his segment on improving early warning systems for glacial-lake outburst floods and other glacier-related disasters.

The last intervention was made by Ms. Aishwarya Sanas from Shiv Nadar Institution of Eminence, India. Ms. Sanas, a social scientist, noted the rising importance of interdisciplinarity. Science has been able to cut through and overcome political divisions and geopolitical tensions, but rapid warming is changing this dynamic. Interventions from the floor addressed the lack of uniform data and timescales, open-source data and universal knowledge especially about pre-industrial glacier status.

Six key messages were identified from Thematic Session 9:

1. Melting of glaciers and the cryosphere is not just about losing ice, it is losing history, culture, and the future.

2. Need to increase interdisciplinarity. Not only is culture being lost, but the cryosphere is one of the most geopolitically active regions in the world. Science has been able to cut through and overcome political divisions and geopolitical tensions throughout the 20th century, but rapid warming is changing this dynamic. This is not just impacting the political sphere, but also science due to an increased reluctance to share data and more isolationism when increased partnerships are needed.

3. Quick fixes are indeed too good to be true and only serve as a cover. Rapid emission cuts are the only thing to spare the glaciers, and their impacts on communities.

4. Limiting warming to 1.5°C can halve glacier loss (double glacier preservation) compared to 2.7°C from current policy pathways. In fact, each fraction of a degree matters: 2 per cent of ice mass is lost for each tenth of degree of warming.

5. Glaciers, permafrost and other cryosphere phenomena respond slowly and operate not only on scales of years or decades but also on scales of centuries and millennia. Need to look beyond 2100, to several hundred or even thousands of years into the future. Models need to reflect this. Understanding committed glacier loss is critical for long-term projections with implications for inter alia water availability, food, and energy security.

Thematic Session 10. *Pact for the Future: How the Pact Can Inform Glacier Preservation*

The Thematic Session 10 convened high-level leaders, technical experts, youth activists, and multilateral stakeholders to address the urgent challenge of glacier loss through the lens of the Pact for the Future adopted by the United Nations General Assembly in September 2025. Organized by the Government of Tajikistan and the United Nations Resident Coordinator's Office (UNRCO) in Tajikistan, the session aligned with the IYGP 2025 and the Decade of Action for Cryospheric Sciences 2025-2034.

H.E. Mr. Sirojiddin Muhriddin, Minister of Foreign Affairs of Tajikistan, opened the session by framing glacier preservation as both a moral obligation and a multilateral imperative. He called for global solidarity to protect glaciers as critical freshwater reserves and symbols of intergenerational equity. Ms. Armida Salsiah Alisjahbana, United Nations Under-Secretary-General and ESCAP Executive

Secretary, emphasized integrating local knowledge into global policy frameworks and using the Pact to operationalize commitments into action. In her keynote speech, the United Nations Secretary-General's Special Envoy on Water, Ms. Retno Marsudi, stressed that preserving glaciers is fundamental to water security and global resilience. She advocated for integrated financing, multilateral cooperation, and embedding glacier preservation into climate and development agendas.

An interactive panel discussion moderated by Ms. Parvathy Ramaswami, United Nations Resident Coordinator in Tajikistan. H.E. Meder Mashiev, Minister of Natural Resources, Ecology, and Technical Supervision for the Kyrgyz Republic, highlighted Kyrgyzstan's Five-Year Mountain Action Plan and underscored cross-border collaboration as essential for all countries that depend on the cryosphere. Ambassador François Jackman, Permanent Representative of Barbados to the United Nations, and Cornelia Meyer, Chairman and CEO, MRL Corporation), called for glacier- related financing to be treated as a global public good. They proposed mechanisms such as pre-disaster finance, insurance instruments, and ESG-aligned private investment. Ambassador Katherine Smitton, Ambassador of the United Kingdom to Tajikistan, stressed the importance of pragmatic, community-anchored public-private partnerships. Ms. Cheng Li, Technical Officer from UN-Water, described efforts to integrate glacier monitoring into SDG indicators, notably 6.4.2 and 6.6.1. Earth observation, remote sensing, and water accounting were presented as essential tools. Ms. Fariza Jobirova, a youth climate advocate from Tajikistan, personalized glacier loss by sharing local impacts on her community. She urged formal inclusion of youth in policymaking processes and emphasized glacier melt as a human crisis.

The session discussions identified several solutions and recommendations:

1. Integrate cryospheric indicators into NDCs, Voluntary National Reviews, and SDG tracking mechanisms to ensure glaciers are part of global accountability frameworks.

2. Mobilize global political and financial support for the International Year of Glaciers' Preservation, including voluntary contributions to the United Nations trust fund.

3. Bridge science and community resilience, linking glacier monitoring with local knowledge to inform national adaptation strategies.

4. Foster multistakeholder partnerships, including international financial institutions, insurers, and local governments, to develop finance solutions tailored to glacier-related risks.

In his closing statement, H.E. Mr. Sirojiddin Muhriddin emphasized that the Pact for the Future represents a commitment to future generations. He called for sustained global solidarity, science-based action, and urgent resource mobilization to preserve glaciers as vital lifelines. Stressing that the challenges are not of tomorrow but of today, he urged all participants to carry forward the partnerships and momentum forged during the session.

Thematic Session 11. *Climate Finance and Investment for Glacier Preservation and Adaptation*

As indicated by the State Minister of Forests and Environment of Nepal, H.E. Ms. Rupa Bishwakarma in her opening speech, there is a clear need to mobilize significant finance to help developing countries respond to glacial melt. Countries need to make investments in sustainable agriculture and in making infrastructure resilient to effectively respond to glacial melt. Mr. Bapon Fakhruddin, Water and Climate lead of the Green Climate Fund, highlighted during his intervention that out

of all investments in adaptation finance, only 3 per cent is invested in mountainous regions and only 1 per cent targets the cryosphere. Investment can be channelled through different instruments, including grants and concessional lending, blending mechanisms and capital markets through the green bond framework and de-risking mechanisms.

Regional programmes like *Glacier to Farms* can be vehicles to attract and mobilize greater levels of finance by connecting upstream glacier dynamics to downstream agricultural and livelihood systems. The science-based design makes it a perfect example of how science and financing solutions can attract funding from multilateral climate funds, impact investors and green finance platforms. If adequately financed and replicated, such programs can drive scalable, climate-resilient development across glacier-dependent regions.

As ADB's Director for Agriculture, Food, Nature, and Rural Development, Ms. Yasmin Siddiqi indicated in her speech, there is a need to create a framework that allows investors to come up with a technical and operational basis for identifying and categorizing projects that help countries respond to the impacts of glacial melt. It is critical to build up a pipeline of investable projects that offer countries operational solutions. There are practical solutions built up over many decades of investing in sustainable agriculture, river basin management and resilient infrastructure. Good practices need to be converted into investable projects that can attract finance.

Governments must shape markets if they are to attract private sector investment. Countries need the right policies and legislation, which must be translated into increased ease of doing business so that investors have the confidence to invest. Mr. Yusuf Majidi, First Deputy Minister of Finance, Republic of Tajikistan, highlighted in his intervention how private asset management companies have shown a great interest in investing in this type of financial instruments and how important it is to increase the private sector involvement in climate financing investments. During her presentation Ms. Abdurakhmonzoda Nigina Shukhrat, Director of the Agency for Securities and Special Registration, Republic of Tajikistan showed a great example of how the Republic of Tajikistan has adapted the policy and has been shaping the legislation to issue green bonds successfully and attracting capital resources towards the much-needed climate financing.

It is essential that countries are supported to mobilize their own resources to tackle climate change. A key example from this discussion is the potential for countries to develop capital market instruments such as green bonds to attract high-quality long-term finance. Countries will need support from international financial institutions to help develop the frameworks and the institutional architecture necessary for such instruments including risk sharing. Another critical area will be fiscal policy and domestic resource mobilization.

There is a need to be creative and innovative in our efforts to mobilize finance, particularly private sector finance. There is a need for clearer technical and operational criteria for glacier-related projects, where science and operational solutions go hand in hand, as indicated by Ms. Yasmin Siddiqi (ADB). There is a need to explore the use of innovative financing instruments such as blended finance, capital market instruments and results-based financing, green and blue bonds, catastrophe bonds, other thematic bonds and sukuk as Mr. Bradley Hiller, Lead Climate Change Specialist, from the Islamic Development Bank mentioned during his panellist intervention.

Collaboration is essential if we are to translate scientific good practice into investable projects. We need collaboration between scientists and policymakers and financiers. Ms. Pam Pearson, Director of ICCI explained that countries must work

together to enhance coordination for developing and operationalizing shared early warning systems and sharing data to allow the development of scientific models. This allows a better understanding of risks and will provide a framework to attract more funding, contributing to protecting the shared cryosphere and the communities who depend on it.

Six key messages were reported by Thematic Session 11:

1. There is a clear need to mobilize significant finance to help developing countries respond to glacial melt.
2. It is critical to build up a pipeline of investable projects that offer countries operational solutions.
3. Governments must shape markets if they are to attract private sector investment.
4. It is essential that countries are supported to mobilize their own resources to tackle climate change.
5. We must be creative and innovative in our efforts to mobilize finance, particularly private sector finance.
6. Collaboration is essential if we are to translate scientific good practice into investable projects.

Thematic Session 12. ***Zero-Carbon Development: A Path Forward for Glacier Nations***

Thematic Session 12 opened with a video address from H.E. Dasho Tshering Tobgay, Prime Minister of Bhutan. His key message was that glaciers are more than ice, they are sacred lifelines. The climate crisis is impacting Bhutan and the world now and it is time for action. A G-Zero Alliance was formed at UNFCCC COP29, as a collection of carbon neutral countries with a clear message that we need a net-zero world. He issued an urgent call to the global community for climate justice, wherein it implements a path to cutting emissions by 2035. The keynote speech by COP29 President, H.E. Mukhtar Babayev emphasized the need to work together to cut emissions through NAPs, UNFCCC, and legal requirements. Some countries have limited financing to shift to green economies and that a plan is only as good as the delivery. Consequently, the Baku Finance is the largest financial pledge from the UN process giving a benchmark to guide countries; however, countries need to be held to account and should be called upon to set out how they will pay by 2035. The co-chairs of the session, H.E. Rupa Bishwakarma, State Minister of Forests and Environment, Nepal and Ms. Rojina Manandhar, UNFCCC Secretariat emphasized the need for collective action now and gave particular attention to the need for financial resources for many countries.

A panel discussion was moderated by the Head of the of Office of the Resident Coordinator of the United Nations in Bhutan. Ambassador Geering spoke about Australia's focus on renewable energy such as electricity and is working towards becoming a global leader in clean energy. Australia wants to host UNFCCC COP31 along with SIDS, intends to design a Conference of the Parties that brings greater attention to small islands. Dr. Petteri Talaas, Director-General of the Finnish Meteorological Institute informed that last year the European Union and WMO recorded a 1.55°C temperature increase, new levels of carbon dioxide and noted that the Antarctic Sea ice is melting. G20 countries are responsible for 80 per cent of the emissions; they made commitments to keep temperature increase at 1.5°C, but many of the G20 countries have not followed through on their commitment. Mr. Zhimin Wu, Director of the Forestry Division, Food and Agricultural Organization (FAO) pointed out the continuous loss of forests: 10 million hectares every year are lost to

deforestation, 35 million hectares are lost to pests and diseases, and 70 million hectares burned by fires. At the global level, the United Nations General Assembly adopted resolution 79/283 that proclaimed 2027–2036 as the United Nations Decade for Afforestation and Reforestation in line with Sustainable Forest Management. Many countries have engaged in tree planting projects; however, the survival of the newly planted trees must be ensured through technical support.

Mr. Chris Dickenson, Senior Specialist Climate Change at the ADB noted that ADB's mandate covers the region that has 50 per cent of greenhouse gas emissions. More importance needs to be given to finance and adjusting capital frameworks to mobilize more resources for member countries. ADB's recent reforms commit US$ 23-35 billion a year by 2030 to climate finance for adaptation and mitigation and ensure finance will bring about more resources, co-financing, and innovations. Dr. James Kirkham, Chief Scientist for the Ambition on Melting Ice High-level Group highlighted that there is a scientific basis for why carbon neutrality is necessary to protect glaciers. Mitigation is essential to save as much ice as possible. The two youth activists passionately told stories about the impact that climate change has had on their home communities. In the case of Tashi Lhazom, she spoke about the devastation of her village in Lim Valley, Nepal when a glacier lake outburst flood happened in 2011. Marcela Fernández spoke of her home in the Andes, which has tropical glaciers and compared glaciers to terminally ill patients that need our attention.

Thematic Session 12 identified the following six key messages:

1. Carbon zero countries have a major role to play in mobilizing greater climate contributions.
2. Zero-carbon and negative carbon growth are both possible and economically feasible while meeting SDGs.
3. Nature-based solutions have an essential role to play in ensuring both adaptation and mitigation goals on a 1.5°C pathway.
4. National development plans and development assistance should emphasize zero-growth pathways and assist developing countries to meet these goals.
5. Mitigation needs to be at the forefront of any climate discussions if we are to save some of the glaciers.
6. Include young people in climate decision-making. They are passionate, informed and it is their world.

Leaders' Roundtables I & II

The Leaders' Roundtables took place on 30 May 2025 from 2 p.m. to 5.30 p.m. These closed, high-level sessions took place on the margins of the Conference to offer the opportunity for leaders to emphasize the need for 1.5°C-consistent climate pledges as the only means to preserve glaciers and their essential ecosystem services. Two roundtable format sessions took place.

Session I. *Financing for Glacier-Related Adaptation, Mitigation and Loss and Damage*

Session I was moderated by the Chairman of the Committee for Environmental Protection of Tajikistan, H.E. Mr. Bahodur Sheralizoda. First Deputy Prime Minister of Tajikistan H.E. Mr. Hokim Kholiqzoda welcomed all participants, and noted the importance of partnerships, and stressed Tajikistan's strong commitment to support communities at risk.

Leaders from across the spectrum of financing institutions agreed that financing for glacier-related adaptation and mitigation is a pressing need. ADB Vice President Yang noted ADB's US$ 2.3 billion Glaciers to Farms Initiative with the Green Climate Fund to support sustainable land practices, and US$ 40 billion for food systems across Asia. Green Climate Fund's Executive Director Mafalda Duarte asserted the need to continue with a strong voice on mitigation and the 1.5°C Paris Agreement goal alongside meeting the finance gap towards adaptation. Ajay Bushan Pandey, Asian Infrastructure Investment Bank Vice President, noted financing of over US$ 450 million in sustainable climate infrastructure, including Tajikistan's Rogun Dam. H.E. Christian Frutiger, Swiss Development and Cooperation Agency Assistant Director General, stressed the difficulty of financing at scale to support glacier-dependent regions and called for greater emphasis on long-term financing. The World Bank Country Manager for Tajikistan and Turkmenistan, Ozan Sevimli, emphasized the need for a coordinated and integrated approach to financing to protect the world's water towers and adapt with sustainable ecosystems given impacts of glacier loss.

Mountain and downstream nations also certainly face some level of irreversible loss and damage, either from extreme events or permanent changes to landscapes and ecosystems, that already today require dedicated financing. Vice-President of Zimbabwe Dr. Constantino Chiwenga noted that southern Africa had damage of US$ 234 million in the 2023-2024 drought. IUCN Director-General, Dr. Grethel Aguilar, noted that the global community has proven it can mobilize finance with extreme threats to human existence such as COVID-19; threats to our glaciers are very similar, and there is a need to join in mobilizing human and financial resources.

Glacier loss presents an urgent challenge not just to glacier nations, but to those downstream, especially in summer or periods of drought; and to coastal nations suffering effects of sea-level rise from glacier loss. Mohammed B. S. Jallow, Vice-President of Gambia, stated that Gambia lies far from most glaciers yet is greatly impacted by sea-level rise caused by their melting and asked for simplified climate finance access to enable its goal of a fully 1.5°C-aligned NDC. Dr. Musonda Mumba, Secretary General of the Ramsar Convention on Wetlands noted the close linkage between wetlands, glaciers, and future loss and damage if we fail to invest and prevent damage to this essential lifeline. UNICEF Executive Director Catherine Russell stated that the global climate crisis, including loss of glaciers is an essential issue for children and future generations and commended Tajikistan for including child health and education as part of its own NDC.

Leaders agreed also that effective adaptation requires financing for reliable and sustained glacier and mountain monitoring, and data to inform future projections. This combination of urgent current and future needs presents a challenge to adequate financing from international financial institutions, bilateral donors, the private sector and foundations. Ivana Živković, UNDP Assistant Administrator and Regional Director, informed that UNDP stands ready to support governments by expanded glacier monitoring and with 1.5C-consistent NDCs. United Nations Office for Project Services Regional Director for Europe and Central Asia, Moin Karim, noted their readiness to assist on practical aspects of implementation.

Concluding the discussions, the moderator, H.E Mr. Bahodur Sheralizoda, thanked the participants, noting that 2025 is the tipping point for glaciers' preservation to ensure no glacier-dependent communities are left behind; and the *Dushanbe Glaciers Declaration* and *Dushanbe Glaciers Appeal* must deliver on the commitments to glaciers' preservation.

Session II. ***Making 2025 the 'Tipping Point to Preserve Glaciers' with 1.5oC-Consistent NDCs at COP30***

Session II was moderated by Ms. Rojina Manandahr from the UNFCCC Secretariat. Coming as governments finalize their 2025 round of NDCs, the Ambition Leaders' Roundtable featured leaders emphasizing the need for 1.5ºC-consistent climate pledges as the only means to preserve glaciers and their essential ecosystem services.

Leaders called for action, urging governments and other stakeholders to bring far more ambitious NDCs to UNFCCC COP30 in Brazil: NDCs consistent with real and lasting glacier preservation. UN Deputy Secretary-General Amina Mohammed observed that the world is not on track to meet Paris commitments and noted that every tenth of a degree matters: the difference between 1.5ºC and 2ºC is the difference between sustainability and irreversible loss. She noted that pushback is distorting the science, but it is in the ability to act despite resistance that success lies, to preserve our glaciers and a liveable future, with sustained political will and a radical upgrade in ambition. She emphasized that if we choose to act, the story of glacier loss can still become a story of human achievement. The Minister of Environment, Climate & Wildlife of Zimbabwe, H.E. Evelyn Ndlovu, informed that Zimbabwe has submitted its NDC, pledging 40 per cent emissions reductions. H.E. Eang Sophalleth, Minister of Environment of Cambodia urged greater emissions reductions and informed that Cambodia is preparing its NDC 3.0 and plans a 41 per cent finance -contingent reduction by 2030. ICIMOD Deputy Director, Izabella Koziell, noted the increasing needs of the eight ICIMOD member countries, including for financing, noting that even 1.5ºC is too high for Hindu Kush Himalaya glaciers. Dr. Petteri Taalas, Director General of the Meteorological Institute of Finland noted that G20 countries need to address their emissions and highlighted that Finland plans to reach carbon neutrality by 2035.

Participants strongly highlighted the connection between glacier nations, and coastal and downstream nations far from glaciers and snowpack, urging the creation of new alliances to raise the need to preserve global ice stores to the benefit of all, given that losses will be greater for each fraction of a degree rise above today. WMO Secretary General Professor Celeste Saulo noted with concern that for the first time, in 2024 all 19 monitored glacier regions lost mass; overshoot and more loss will have huge implications downstream and for sea-level rise. Dr. Paola Moschella, Deputy Director, Ministry of Environment, Peru described how glacier loss in the Andes is not only an issue of water security, but water quality as the lands around glaciers degrade and release harmful substances. Minister of Environment and Ecological Transition from Senegal, H.E. Professor Daouda Ngom, said that Senegal is not a glacier nation yet feels the acute impacts of glacier loss due to sea-level rise and disruption of global climate systems, concluding the need to act with urgency. Speaking as host country of the Green Climate Fund, Chung Keeyong, Deputy Minister for Climate Change from Korea noted that his country has integrated cryosphere issues into its national climate risk assessments.

IYGP International Advisory Board Co-chair Dr. John Pomeroy from Canada presented the need for urgency based on latest glacier science to preserve glaciers and their downstream resources, concluding that the time to act is now. State Minister of Forests and Environment of Nepal, H.E. Rupa B.K., presented the *Sagarmatha Call to Action* to H.E Mr. Bahodur Sheralizoda, Chairman of the Committee for Environmental Protection of Tajikistan, asking that the Dushanbe Glaciers Conference serve as a turning point to materialize the Baku to Belém Roadmap. The Green Climate Fund's M. Alisher Mamadzhanov, Multilateral Governance Senior Specialist, noted their strong support for country mitigation efforts in support of the

1.5ºC Paris Agreement goal. The Permanent Representative of Barbados to the UN Ambassador François Jackman noted the need for more such political leadership at this point in history and the climate crisis.

At the invitation of the moderator, H.E Mr. Bahodur Sheralizoda closed the Ambition Roundtable. He noted the very important ideas and comments raised, many of them interconnected, and added that it is necessary to avert disaster, and at the same time adapt in a balance of adaptation and mitigation.

Closing Session

The Closing Session was co-chaired by the Prime Minister of the Republic of Tajikistan and Chairman of the National Organizing Committee, H.E. Mr. Qohir Rasulzoda, and the Secretary-General of WMO, Professor Celeste Saulo.

H.E. Mr. Qohir Rasulzoda expressed his gratitude to all attendees for their active participation in the first High-Level International Conference on Glaciers Preservation. He noted that the Conference facilitated constructive dialogue, exchange of best practices and scientific knowledge to address the pressing challenge of rapidly melting glaciers and reaffirmed that glaciers play a key role in maintaining global ecological balance, supporting socio-economic growth and addressing water resources challenges. He provided a brief overview of the various Conference sessions, events, and cultural programmes that took place over the three days. He noted that over 2600 participants from 90 countries attended the Conference representing United Nations Member States, United Nations entities, international and regional organizations, international financial institutions, the private sector, civil society organizations, academia, communities, local authorities, and other stakeholders. The impressive number and level of participants demonstrated the global importance of the Dushanbe platform for convening high-level representatives to discuss important issues related to climate change, particularly glacier melt and mobilizing political will to accelerate progress in achieving the relevant goals of the 2030 Agenda for Sustainable Development.

H.E. Mr. Qohir Rasulzoda and Professor Celeste Saulo invited the rapporteurs from each of the eight pre-conference forums and twelve thematic sessions to report back to the Conference participants on the key messages from their respective sessions. The Co-Chairs thanked the Rapporteurs and those involved in the preparation of the forums and thematic sessions for their significant contributions to the rich dialogue and outcomes from the Conference.

H.E. Mr. Qohir Rasulzoda introduced the outcomes of the Conference - the *Dushanbe Glaciers Declaration* and the *Dushanbe Glaciers Appeal: A Call for Action* - that call upon UN member states and stakeholders to take necessary measures to enhance international cooperation in promoting and coordinating the global agenda for the preservation of the cryosphere and glaciers. He emphasized that Tajikistan, as a country at the forefront of these processes and deeply committed to advancing the water and climate agenda, is ready to continue making every effort to achieve these common goals.

Professor Celeste Saulo expressed gratitude to H.E. Mr. Emomali Rahmon, President of Tajikistan for the generous hospitality extended to the Conference participants and for his leadership and commitments to the preservation of glaciers. She highlighted several important takeaway messages from the Conference. First, she stated that collaboration is required especially at the regional level to preserve frozen water. She was encouraged to see the strength of regional unity and was heartened to hear about Tajikistan’s plans for a Regional Glaciological Center. Second, she called for strengthened monitoring systems to improve understanding and models in an Earth System approach. Third, science must be the basis for action and a foundation

for informed decision-making from disaster risk plans to river basin management. She stressed the importance of data sharing. Finally, noting that glacier preservation and monitoring are a heavily underinvested sector, she called on development partners and funding agencies to encourage investments including from the private sector. She expressed WMO's support for the *Dushanbe Glaciers Declaration* and underscored WMO's role in supporting glacier and cryosphere monitoring systems and services, facilitating science-based adaptation and promoting international cooperation.

The *Dushanbe Glaciers Declaration* was adopted by acclamation by all Conference delegations and participants. H.E. Mr. Qohir Rasulzoda thanked Member States and international organizations, members of the International Advisory Board of the International Year of Glaciers' Preservation 2025, Member States of the United Nations Group of Friends of Glaciers in New York, and all other stakeholders for their valuable contributions to the preparation of the Dushanbe Glaciers Declaration.

H.E. Mr. Qohir Rasulzoda officially closed the High-Level International Conference on Glaciers Preservation.

B. Pre-Conference Day (29 May)

The Pre-Conference Day that took place on Thursday, 29 May 2025 included eight forums, eighteen side events and an evening "Glaciers Festival" cultural programme. The Pre-Conference events offered diverse opportunities for dialogue, knowledge exchange, and engagement between participants in advance of the official opening of the Conference.

Pre-Conference Forums

The eight Pre-Conference Forums aimed to break down traditional silos and promote cross-sectional dialogue on glacier preservation and its wider implications. Organized at different venues around Dushanbe, they served as platforms for inclusive discussion among diverse stakeholders to address critical glacier-related issues that intersect various disciplines, such as climate science, water management, and socio-economic development. The key messages from each Forum were presented by the respective Rapporteurs during the Closing Session.

Forum 1. *Agriculture in a Time of Glacier Loss: Addressing droughts, flooding with carbon sequestration and resilience in glacier-dependent regions*

The High-Level Forum on "Agriculture in a Time of Glacier Loss: Addressing droughts, flooding with carbon sequestration and resilience in glacier-dependent regions", was organized by the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP), the Mountain Partnership Secretariat, and the Committee of Environmental Protection under the Government of the Republic of Tajikistan with active participation of representatives of Central Asia countries, UN agencies, development partners, Tajikistan's Ministry of Agriculture, Committee of Environmental Protection, Committee of Emergency Situation and Civil Defense, Tajik Academy of Agriculture Science, public organizations and the private sector.

The Forum facilitated a high-level panel discussion on "Promoting sustainability in mountain and glacier ecosystems" between government representatives from Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan, UN agencies, development partners and Mountain Partnership member organizations. The technical session relating to "Mountains and Glaciers for Water, Food Security and Livelihoods" and the roundtable on enhancing "Partnership for Healthy Mountains - Mobilizing Collaboration and Cooperation for Climate Resilience in Mountain

Ecosystems and Glaciers" allowed participants to exchange experiences and best practices as well as share challenges they face with achieving sustainable agriculture in the context of glacier loss. The event brought together ministers, representatives from UN agencies, research institutions, youth organizations and civil society from across Central Asia and beyond. The discussions spotlighted innovative (i.e. artificial glacier program), scalable solutions – from climate-smart agriculture and nature-based restoration to evidence-based policies for glacier preservation and sustainable agri-food systems.

Key issues addressed during the Forum included the identification of effective water and climate adaptation strategies tailored to the specific needs of glacier-dependent ecosystems. Participants emphasized the importance of context-sensitive and resilient agricultural practices that support both livelihoods and environmental sustainability. The Forum allowed participants to hear a clear and united call: "we all must move beyond fragmented and sectoral management toward coordinated, integrated action, grounded in science, enabled by strong cooperation, and inclusive of all voices". It was acknowledged that advancing climate finance remains a priority, ensuring access to modern technology, expertise and resources needed for adaptation. Water cooperation is essential in Central Asia and all mountain regions as a basis for stability and sustainable development.

Key messages from Forum 1 include the following:

1. Glacier water is our lifeblood and must be managed holistically, across borders and sectors. This requires open data, shared knowledge and innovative financing.
2. Scientific and traditional knowledge should be recognized as complementary tools in designing locally appropriate and effective responses.
3. Community-based mitigation and adaptation efforts should be expanded, with particular attention to the role of Indigenous Peoples and local actors.
4. Mountain youth must be at the table, helping to shape long-term and effective solutions with their energy, creativity and determination.
5. Investments in education and capacity building are needed to improve climate-resilient irrigation and water-saving technologies.
6. Climate risk and disaster planning should be integrated into national and regional development strategies.
7. Mobilizing partnerships and collaboration at all levels – global, regional, national and local – is key to building climate resilience and security in mountain regions.
8. The Forum strengthened momentum for solidarity and cooperation to transform glacier loss from a crisis factor into an opportunity for sustainable solutions in agriculture.

Forum 2. ***Children and Youth Glacier Preservation Forum***

The Children and Youth Glacier Preservation Forum convened 130 young participants from Tajikistan and glacier-affected countries, along with experts, government representatives, and international partners. The Forum provided a unique platform to amplify youth voices on glacier preservation, climate action, and sustainable futures.

The Forum began with a live performance of *Voices of Melting Glaciers* — a song written and performed by Tajik children, highlighting the urgency of protecting glaciers. Welcome remarks were delivered by Ms. Catherine Russell, Executive Director of UNICEF who emphasized recognizing children as rights holders and

urged for child-responsive climate policies. H.E. Mr. Ziyozoda Sulaimon, Deputy Prime Minister of Tajikistan, reaffirmed the country's leadership in inclusive climate policy and announced a five-year state program on environmental literacy, and a joint project with UNICEF to enhance climate resilience in education. Mr. Bapon Fakhruddin, Water Resources Management Senior Specialist, Green Climate Fund, stressed the need for scaling innovations and adopting diversified climate financing. H.E. Mr. Raimundas Karoblis, Ambassador of the European Union Delegation to Tajikistan, highlighted the importance of youth perspectives in shaping effective climate action, the need for building green and digital skills, and the value of youth advisory structures for fostering meaningful youth engagement in climate dialogues. Anis Tohirov, President of Tajikistan Youth for Water and Climate Network, called for ensuring that Forum discussions inform future strategies and policies. Orzu Odinaev led a session on child-sensitive NDC 3.0, advocating for a whole-of-school approach, resilient WASH (water, sanitation and hygiene), and youth participation in national climate policies.

In a panel discussion session, young people from glacier-affected countries and youth leaders and experts presented innovations and shared firsthand experiences of glacier loss, youth empowerment, and climate action. Susmita Mishra (Nepal) presented *Echoes from the Unheard Glaciers*, sharing stories from lesser-known Himalayan glaciers and highlighting how youth in Nepal are driving local awareness, scientific monitoring, digital storytelling, and community-based climate action. Yuqing Luo shared her journey as an early career scientist in glaciology, describing how youth can engage with the scientific community. She presented on machine learning for ice core analysis and the importance of decoding Earth's frozen memory to inform climate action. Shukurgeldi Myradov (Austria/Turkmenistan) explored the duality between Austria and Turkmenistan in addressing climate adaptation and youth empowerment and highlighted how Austria's glacier monitoring and education strategies serve as a model for youth-inclusive policymaking and global cooperation. Namita Paudel presented her research on microbial ecosystems in trans-Himalayan rivers. As a young scientist and biodiversity expert, she emphasized the importance of promoting glacier preservation at multiple levels, drawing on her extensive fieldwork in Nepal and China. Anisa Abibulloeva (Tajikistan) focused on youth engagement in climate action in Tajikistan, highlighting the growing leadership of Tajik youth in national climate platforms, community-based projects, and glacier-related initiatives.

Table discussions provided space for cross-sector dialogue. Participants stressed the need for youth voices from glacier-affected countries to be integrated in global dialogues and called on governments to adopt youth-inclusive climate policies. Closing remarks by Ms. Maria Osbeck, UNICEF Regional Adviser Sustainability and Climate reinforced the importance of youth-government collaboration and affirmed that children are agents of change.

Recommendations from the Children and Youth Glacier Preservation Forum include the following:

1. Recognize children and youth as independent rights-holders, stakeholders, and key partners in climate action. Empowering children and youth in environmental decision-making and tapping into their innovative minds and actions ensures a sustainable and resilient future.

2. Prioritize the interests, needs and well-being of children and youth in the fight against climate change and glacier preservation, as they are the most vulnerable to its impacts.

3. Increase climate financing that is focused on meeting children's needs.

4. Ensure that the social services and systems are resilient to climate shocks.

Forum 3. ***Regional Forum on Glacier Monitoring and the Cryosphere in Central Asia***

The Regional Forum on Glacier and Cryosphere Monitoring in Central Asia was jointly organized by the Agency for Hydrometeorology under the Committee for Environmental Protection of the Republic of Tajikistan, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Green Central Asia – Phase II Program, and the Swiss Agency for Development and Cooperation.

The Forum brought together over 150 participants, including representatives from Central Asian governments, international organizations, research institutions, and development partners. During the Regional Forum, a wide range of practical actions, new initiatives, institutional commitments, and regional partnerships were presented and discussed. This reflected a shared understanding that effectively addressing the complex challenges related to glacier retreat and cryosphere degradation requires coordinated, cross-sectoral, and long-term engagement at all levels—local, national, and international.

Welcoming remarks were delivered by senior representatives from the Parliament and Committee for Environmental Protection of the Republic of Tajikistan, Agency for Hydrometeorology of Tajikistan, WMO, the German Embassy in Tajikistan, Swiss Agency for Development and Cooperation, German Federal Environment Agency, UNESCO, International Organization for Migration and Finnish Meteorological Institute. The opening ceremony underscored the urgency of regional cooperation considering accelerating climate change and its severe impacts on mountain ecosystems and water resources. Speakers emphasized the strategic importance of the Forum as a platform for advancing regional cooperation, sharing expertise, and building capacity in glacier and cryosphere monitoring.

During the opening session, several high-level speakers expressed deep concern over the accelerating degradation of glaciers and the broader cryosphere, noting its direct implications for water security, agriculture, and sustainable development across Central Asia. They called for enhanced transboundary collaboration, grounded in scientific research and inclusive of all stakeholders—governments, academia, international partners, and local communities. Special attention was given to the role of mountain ecosystems as critical sources of freshwater and biodiversity, and to the growing risks posed by the loss of glaciers, snow cover, and permafrost. Forum participants concurred that only through coordinated regional action can these challenges be effectively addressed. The opening ceremony concluded with a unified call to strengthen partnerships and intensify joint efforts, setting a constructive and solution-oriented tone for the Forum's subsequent discussions.

The Regional Forum on Glacier and Cryosphere Monitoring in Central Asia consisted of four sessions:

Session 1 focused on glacier and cryosphere monitoring in Central Asia. Experts presented recent results from regional expeditions, discussed modern glacier degradation over the past 30–50 years, and shared methods for glacier mapping and inventory. The session emphasized the role of glaciers in seasonal and long-term water supply, their relevance for sustainable water management, and the need for regional cooperation and innovation.

Session 2 addressed the impacts of global and regional climate change on the cryosphere—including glaciers, snow cover, and permafrost—and its implications for water resources and sustainable development.

Session 3 explored the cryosphere as a vital water source. Experts noted that up to 70-80 per cent of summer river flow in the Amu Darya and Syr Darya originates from melting glaciers and snow, highlighting the direct threat posed by cryosphere degradation to water, food, and energy security.

Session 4 analysed the broader climate crisis in mountainous regions of Central Asia, particularly in Tajikistan and Kyrgyzstan. It explored links between climate change, water resources, and migration, noting that migration and remittances have become key adaptation tools. Positive trends included regional scientific collaboration and increased engagement of women and youth.

The Forum concluded that new dynamics of regional cooperation around glacier monitoring and the cryosphere in Central Asia were taking shape. A highlight was the announcement of a new Regional Glaciology Center in Dushanbe. Participants of the Regional Forum on Glacier and Cryosphere Monitoring formulated a series of concrete follow-up actions aimed at strengthening the region's collective response to the impacts of climate change on glaciers and the cryosphere.

Specifically, Forum 3 proposed the following key areas of action:

1. Strengthening intergovernmental cooperation mechanisms for the development and implementation of regional cryosphere monitoring and protection plans, taking into account the specific contexts of each Central Asian country.

2. Continuing efforts to develop a unified glacier and cryosphere database, ensuring open access and data sharing for all relevant stakeholders both within the region and beyond.

3. Actively engaging the private sector and other stakeholders in the implementation of projects focused on developing infrastructure for cryosphere monitoring and introducing innovative technologies that contribute to mitigating climate change impacts and enhancing regional resilience.

4. Maintaining collaboration with international donors and financial institutions to secure the necessary funding for conducting research, as well as developing and implementing regional programs and projects related to climate change adaptation and cryosphere monitoring.

Forum 4. From IYGP to Decade of Action for Cryospheric Sciences, 2025-2034

The Forum opened with remarks from Mr. Loiq Rahmonzoda (Tajikistan), H.E. Elsa Pignol (France), and Mr. Abou Amani (UNESCO), who collectively emphasized the urgency of glacier preservation and action on the cryosphere, the need for international scientific cooperation, and inclusive partnerships within the Decade of Action for Cryospheric Sciences (2025–2034). They highlighted the increasing threats from glacier retreat, glacial lake outburst floods, and the importance of integrating scientific knowledge into policy and early warning systems. Keynote speaker Dr. John Pomeroy outlined the strategic transition from IYGP 2025 to a decade-long initiative. He introduced five strategic pillars: research and monitoring, socio-economic adaptation, education and capacity building, policy advocacy, and financing. He stressed the need for a global cryosphere observation system, community-based adaptation, and a global cryosphere charter.

Panel I focused on the status of cryospheric science and capacity building. Speakers from ICIMOD, WMO, International Atomic Energy Agency (IAEA), and UNESCO emphasized the importance of regional collaboration, gender equity, indigenous knowledge, and the integration of artificial intelligence and isotope hydrology in glacier monitoring. They called for stronger links between science and policy, and the need for inclusive education and mentorship programs. Panel II addressed socio-economic impacts and resilience. Experts from Global Mountain

Safeguard Research, the University of Zurich, Kazakhstan's Ministry of Ecology, and CAIAG discussed the cascading effects of glacier retreat on water security, agriculture, infrastructure, and cultural heritage. They advocated for early warning systems, participatory adaptation strategies, and improved data sharing and standardization. Panel III explored policy, advocacy, and financing. Panellists from ICCI, ADB, FAO, and UNEP stressed the need for science-based policy, systemic economic reforms, and inclusive financing mechanisms. They highlighted the importance of youth engagement, emotional resonance in advocacy, and leveraging existing national frameworks like National Adaptation Plans and National Biodiversity Strategies and Action Plans.

The Forum concluded with a strong call for coordinated global action, emphasizing that the success of the Decade will depend on inclusive partnerships, sustained financing, and the integration of cryospheric science into broader climate and development agendas.

Key messages from Forum 4 are as follows:

1. *Bridging Science and Society:* Moving from the International Year of Glaciers Preservation 2025 to the Decade of Action on Cryospheric Sciences (2025-2024), collectively accelerate efforts to bring science to the society by translating and communicating scientific outcomes into easily understandable language that is inclusive, accessible and actionable for informing policies that support both adaptation and mitigation strategies.

2. *Strengthen Education, Technical Training, and Capacity Building:* Invest in cryospheric science education, technical training, and capacity building to develop a new generation of cryosphere specialists equipped to collect and analyse data, harness emerging technologies, and generate science-based insights that are understandable by the end user and able to inform decision-making.

3. *Leverage Scientific Cooperation and partnerships for collective action on the cryosphere:* Moving forward, strengthen international scientific cooperation on the cryosphere by fostering collaboration and partnerships among governments, scientific communities, and stakeholders, and by leveraging both existing and new frameworks, particularly within the UN system, to advance research, share knowledge, and elevate the cryosphere on global agendas.

4. *Enhancing resilience and co-development of adaptation strategies:* To address the escalating socio-economic impacts of cryospheric change beyond the IYGP 2025 to the Decade of Action for Cryospheric Sciences (2025-2034), promote co-designed adaptation and resilience-building strategies that are locally grounded and globally informed-integrating scientific research, Indigenous and local knowledge, while recognizing and amplifying diverse voices, and leveraging the strength of unity in diversity.

5. *Mobilize innovative and inclusive financing and advocacy strategies:* To meet the scale and urgency of cryospheric challenges, there is a need to transform our economic systems to create an enabling environment for innovative, inclusive, and blended financing mechanisms.

Forum 5. *Ministerial Dialogue on Climate Resilience, Glacier Preservation, and Water Cooperation*

Forum 5 was comprised of two sessions. Session 1 featured a Ministerial dialogue forum on climate resilience, glacier preservation and water cooperation. The session was officially opened by H.E. Mr. Bahodur Sheralizoda, Chairman of the Committee for Environmental Protection under the Government of the Republic of Tajikistan.

In his remarks, H.E. Mr. Sheralizoda emphasized the urgency of addressing the accelerated melting of glaciers, which poses escalating threats to regional water security, biodiversity, and socio-economic stability. He underlined Tajikistan's long-standing leadership in advocating for international cooperation on glacier preservation and climate resilience.

Key interventions were delivered by senior representatives of international organizations. Professor Celeste Saulo, Secretary-General of WMO, highlighted the critical role of hydrometeorological data sharing, early warning systems, and regional forecasting tools in enabling timely adaptation actions. Grethel Aguilar, Director General of IUCN, called for scaling up nature-based solutions to climate impacts, noting the multiple benefits of ecosystem restoration, watershed management, and community-based resilience. Mafalda Duarte, Executive Director of the Green Climate Fund, emphasized the importance of international cooperation and climate finance for glacier preservation and the resilience of communities in Central Asia. Duarte expressed the Fund's readiness to further strengthen support for regional efforts. Ministers and high-level representatives from Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, and Tajikistan discussed national strategies and public policies on glacier protection, climate change adaptation and water connectivity.

Ms. Yasmin Siddiqi, Director, Agriculture, Food, Nature and Rural Development sector of ADB highlighted key points regarding effective financial instruments and programs: ADB is deploying massive resources (US$ 100 billion climate finance, US$ 100 billion unlocked lending, US$ 40 billion food security) and specialized programs (e.g., US$ 3.5 billion *Glacier to Farms*, US$ 5 billion Nature Solutions Hub, US $500 million Pakistan policy loan) to increase high-quality lending, mobilize concessional finance, de-risk development, create enabling environments, and leverage private capital for large-scale impact. The session was moderated by Dr. Stefan Uhlenbrook of WMO. He stressed the importance of integrating science-based solutions with regional policy frameworks to address the complex water–climate nexus. The session concluded with closing remarks by H.E. Mr. Sheralizoda, who reaffirmed Tajikistan's commitment to advancing a collective regional vision. He emphasized that the outcomes of the dialogue should feed directly into the final Declaration. He also called upon partners to translate commitments into practical, financed initiatives that can protect both people and ecosystems in the face of growing climate risks.

Session 2's focus was "Strengthening Stakeholders' Partnerships for Glaciers Preservation, Climate Adaptation, and Community Engagement in Regional Water Cooperation". Co-organized by International Water Management Institute (IWMI), CAREC, and the Coca-Cola Foundation, this dynamic session brought together youth, academia, government, and civil society to foster inclusive and impactful water governance in Central Asia. Opening remarks from Dr. Batyr Mamedov (CAREC), Dr. Mark Smith, Director General of IWMI, and Ambassador Bakyt Dzhusupov of the Organization for Security and Co-operation in Europe (OSCE) emphasized the urgent need for regional multilateral cooperation to preserve glaciers and build climate resilience. Dr. Barbara Janusz-Pawletta introduced the Swiss diplomatic initiative, Blue Peace Central Asia, while Ms. Zarina Sultonova highlighted the private sector's role in water stewardship. Mr. Vladimir Grebnev presented the regional climate adaptation strategy.

The interactive "bus stop" segment enabled deep dives into youth engagement, women's leadership, and academic collaboration. Discussions stressed that joint degree programs, interdisciplinary research, and institutionalized science-policy dialogue are vital for knowledge-driven water governance. Equally, advancing gender equality through inclusive policies and visible leadership is a strategic imperative.

Youth involvement emerged as a key pillar, with calls for practical training, mentorship, and roles in decision-making. From the floor, participants echoed the need for transparent, science-based cooperation mechanisms. In closing, Ms. Nilay Dogulu (WMO) emphasized that building partnerships across generations, sectors, and borders is the only way forward anchored in equity, knowledge, and sustained human capital investment.

Five key messages from Forum 5 are the following:

1. Build resilient partnerships: It is the key to preserve glaciers through aligned efforts on building climate resilience and strengthen water cooperation through aligned efforts towards climate resilience with adaptation and mitigation. Sustainable financial support must be scaled up.

2. The transboundary implications of glacier melting, especially for the water-energy-food-environment nexus, highlights the need for harmony in collaboration, cooperation and coordination efforts.

3. Foster academic and policy synergy: Strengthening academic cooperation through joint degree programs, interdisciplinary research, and science-policy dialogue is essential for advancing sustainable water governance and diplomacy in Central Asia.

4. Empower inclusive leadership: Promoting women's leadership in the water sector through inclusive policies, dedicated funding, and public visibility is both a strategic necessity and a path to unlocking broader social and economic benefits.

5. Invest in youth for lasting impact: Engaging and equipping youth with practical skills, mentorship, and leadership opportunities ensures the development of a new generation capable of addressing regional water and climate challenges.

Forum 6. ***Enhancing Transboundary Cooperation for Water Sustainability and Climate Resilience in Glacier Dependent Basins of Central Asia***

This high-level Regional Forum convened over 120 participants from Central Asian ministries, regional organizations, UN agencies, development partners, research institutes, and civil society. The Forum was organized by Scientific-Information Center of the Interstate Commission for Water Coordination of Central Asia (ICWC) in collaboration with the Swiss Agency for Development and Cooperation, United Nations Regional Centre for Preventive Diplomacy for Central Asia (UNRCCA), Organisation for Economic Co-operation and Development (OECD), World Bank, GIZ, IWMI and United Nations Economic Commission for Europe (UNECE).

In the opening session, high-level speakers underscored the accelerating impacts of climate change on glacier-fed basins and the urgency for transboundary, science-based, and inclusive cooperation. Members of the ICWC from Kazakhstan and Tajikistan, as well as representatives of the water ministries of Turkmenistan and Uzbekistan, addressed the Forum, stressing the urgent need for collective efforts in sustainable resource management and ecosystem preservation, with a particular emphasis on mountain ecosystems. UNDRR emphasized integrated risk management and early warning systems, while Executive Committee of International Fund for Saving the Aral Sea (IFAS) and International Network of Basin Organizations highlighted regional governance efforts and basin management tools. GIZ mentioned the Regional Climate Change Adaptation Strategy in Central Asia which was adopted by all Central Asian countries and can serve as a basis for further joint actions in the region.

Session 1 focused on strengthening transboundary governance and regional platforms such as IFAS. UNECE presented the practical tools to facilitate cooperation developed under the Water Convention, while the United Nations Assistance Mission in Afghanistan emphasized the potential areas of collaboration with Afghanistan. Experts and country representatives stressed that shared climate risks could act as a unifier, catalysing operational cooperation on water, energy, and environmental issues.

Session 2 explored science-policy interfaces. Presentations from the Cryospheric Observation and Modelling for Improved Adaptation in Central Asia programme, Scientific-Information Center, IWMI, FAO, and others showcased cryospheric monitoring, basin ecosystem research, and opportunities for integrating environmental considerations into basin planning. A recurring theme was the need to improve data exchange, invest in interoperable systems, and strengthen local expertise.

Session 3 examined financing mechanisms. OECD, World Bank, and IUCN outlined diverse approaches—from conservation bonds and blended finance to nature-based solutions that support the water-energy-food-ecosystem nexus and promote sustainable basin investments. The session also highlighted the need to invest in key dimensions to promote regional climate resilience at the nexus, such as improved forecasts, water efficiency and conservation, integrated storage solutions including groundwater, and strengthened data and information tools. Participants discussed the alignment of financial instruments with national priorities and regional cooperation goals.

The closing session consolidated key takeaways. Participants agreed on the need for integrated solutions, institutional improvements, and long-term partnerships, emphasizing the importance of actionable science, inclusive governance, and diversified financing.

The key messages from Forum 6 include the following:

1. In Central Asia the rate of temperature increase is approximately twice the global average. Snow and glacier-fed river basins are at the heart of Central Asia's water, energy, food, and ecosystem security — their sustainable management and protection across all forms of water storage — glaciers, reservoirs, and groundwater — require transboundary cooperation, coordinated planning and due diligence in implementing policy decisions to promote regional stability and development and to reduce risks. Further integration of the Water-Food-Energy-Ecosystem nexus strengthens decision-making under increasing uncertainty.

2. Bridging science and policy enables evidence-based policymaking: the use of all relevant data, research findings (including on cryosphere and groundwater) and development of services and forecasting tools to contribute to early warning systems, and to inform basin planning and management, resilient infrastructure development, and ecosystem restoration.

3. Integrating ecosystem considerations, including environmental flows, into basin water management in Central Asia—from glaciers to deltas—is essential for sustaining water security, preserving biodiversity, and enhancing climate resilience.

4. Innovative and "right" financing, aligned with Nexus thinking, is urgently needed to enhance long-term resilience, support sustainable solutions from source to end-user, and ensure equitable benefit-sharing aligned with national and regional priorities. Ongoing financial constraints and emerging joint infrastructure investments highlight the need to scale up diverse financing models, including public–private partnerships and engagement with international financial institutions.

5. The Forum reaffirmed a shared regional commitment to sustain dialogue, multi-stakeholder partnerships involving governments, the private sector, researchers and civil society and to implement joint solutions for the future of Central Asia — including engagement with Afghanistan.

Forum 7. ***Towards Sustainable Water Management in Central Asia: The Role of Cryosphere Monitoring in Water Allocation Decision-Making***

Forum 7 provided an invaluable platform to exchange knowledge, present new scientific findings and discuss policy options that can ensure climate-resilient water management for Central Asia. It emphasized the nexus between science and policy, between technical insights and political commitment. It aligned directly with the IYGP 2025 and Decade of Action for Cryospheric Sciences, which emphasizes the urgency of protecting glaciers and managing water resources sustainably through science-based international cooperation.

The different local and development partners involved in the Forum expressed their commitment to support climate action and sustainable water management across Central Asia. The participants listened first-hand, that glacier melt is no longer a distant concern, but a present and accelerating reality. Glaciers provide long-term natural freshwater storage and effective river regulation and stability to the global hydrological cycle. The melting of the cryosphere threatens long-term water availability and accessibility, with negative implications for food and energy security, as well as environmental sustainability in the region. Several approaches to address the challenge were discussed in the framework of Forum 7.

First, countries and organizations must invest in cryosphere research. This science is not academic—it is foundational to smart, forward-looking decision-making. Meeting these challenges requires strong multi-sectoral partnerships. Private sector engagement and innovation are essential to developing scalable, data-driven solutions. Technologies such as remote sensing, glacio-hydrological modelling, drone technology and open-access platforms are transformative and must be invested in to improve the evolution of the cryosphere and respond to glacier change with adequate water allocation decisions. Likewise, mobilizing private investment through public-private partnerships and climate finance mechanisms can help scale up adaptation, fund green infrastructure, and enhance resilience in glacier-dependent regions. These efforts are critical for strengthening early warning systems, supporting climate-resilient livelihoods, and reducing the vulnerability of communities.

Second, effective water diplomacy supported by adequate water allocation decisions and improved transboundary water cooperation are key elements to managing trade-offs and identifying synergies within and between communities, regions, sectors, stakeholders or even nations. Water diplomacy is essential to close cross-border and cross-sectoral collaboration to ensure fair distribution of resources and effectively tackle the pressing issues of climate effects and subsequent water scarcity.

Third, participatory approaches and inclusive decision-making processes as proposed by the “glacier to farmer to international markets” approach, are essential not only for the sustainability and effectiveness of climate and water-related initiatives to support agrifood systems, but also for fostering stability and preventing conflict. Inclusive planning processes create space for diverse stakeholders to share perspectives, information, build mutual understanding, and co-create solutions that are equitable, informed and more resilient. Connecting cryosphere-specific networks of scientists and researchers with water- and climate-related institutions responsible for climate and water related policy and planning will play a vital role in enabling these processes and promoting long-term water-resilient development and stability for local communities.

Initiatives under the GIZ, European Union and OSCE initiatives and projects have contributed to enhancing the technical capacity of local institutions, promoting regional dialogue, and supporting practical solutions for glacier and watershed monitoring. In particular, the results and impacts of the Integrated Rural Development Project / Towards Rural Inclusive Growth and Economic Resilience project were presented. The *Report on Mountain Water Management under Climate Change in Zarafshon River Basin* showcased a case study about the present and future hydrology of Zarafshon river basin in the context of a melting cryosphere. The findings of the report are the result of mainstreaming advanced glacier monitoring and glacio-hydrological and water allocation modelling in Tajikistan, in support of the Ministry of Energy and Water Resources. It proposes solutions and policy recommendations to improve cryosphere monitoring and adapt to a changing hydrological cycle in the context of a melting cryosphere.

Key messages for Forum 7 include the following:

1. A comprehensive approach from the glacier to the farmer to international markets must underpin future engagements and initiatives between local and international development partners aimed at improving livelihoods dependent on agrifood systems based in cryosphere-fed river basins. This requires drawing linkages between the cryosphere community of scientists and researchers and agencies of meteorology with water users, water-related institutions, public sector national and local governments and the private sector.

2. Integration of cryosphere monitoring into national and regional water and climate policies and strategies is not optional, but essential. Data from high-altitude areas must inform national planning, transboundary cooperation and water diplomacy efforts and dialogue to adequately consider downstream-upstream dynamics. Accurate forecasting, water allocation and early warning systems, and adaptive infrastructure are necessary tools in our adaption response toolkit to a melting cryosphere.

3. Target capacity building initiatives and young experts, to scale up focused technology investments, based on single, proven and effective approaches such as drone technology and scalable glacio-hydrological and water allocation models to enable local stakeholders to build deeper expertise, drive continuous improvements in cryosphere monitoring and avoid spreading financial efforts with untested and expensive technology options.

4. Local and international development partners must cooperate to address existing data and digital gaps by establishing robust hydrometeorological monitoring networks and centralized water and climate data management systems for cryosphere monitoring and water allocation decision-making. Open data and standardized hydrological and water allocation modelling tools should be among the main pillars to enhance collective access and analysis of water- and climate related information.

Forum 8. ***Women Forum on Glaciers' Preservation***

Forum 8 gathered over 400 participants from more than 23 countries, including representatives from parliament, government bodies, international organizations, scientific institutions, and civil society. During the Forum, key challenges related to climate change and the accelerated melting of glaciers were discussed, as well as the significant role of women in preserving these unique natural resources.

The Forum noted that the climate crisis cannot be solved without women at the centre, as they are disproportionately impacted and uniquely positioned to lead solutions. Providing women with access to resources, education, and leadership

opportunities can unlock their potential to develop and implement sustainable solutions for glaciers preservation. Systemic support for women's initiatives is needed at all levels—from local to international as investing in women is an investment in climate resilience, and an investment in the capacity of communities to adapt to the impacts of climate change.

Concerted regional efforts can strengthen ecosystem resilience and provide a more effective response to climate challenges. Gender-responsive climate policies promote more equitable and sustainable development that reflects the interests of all groups. Creating an enabling environment for women's leadership on sustainable development and climate change is key to achieving equitable and effective solutions.

Additionally, active youth participation ensures continuity of knowledge and builds capacity for long-term environmental transformation. An informed society plays a crucial role in supporting climate solutions and shaping environmentally responsible behaviour. Active participation of civil society contributes to the successful implementation of climate initiatives and increases their legitimacy and effectiveness.

As a result of the discussions, key recommendations were developed:

1. Increase women's participation in decision-making related to water resource management and glacier protection.

2. Promote scientific and educational programs involving women and youth in environmental protection including the establishment of a regional platform for women scientists, climate activists and experts on glaciers preservation.

3. A call to action to mobilize national and international resources for gender responsive programmes aimed at sustainable management of glacier ecosystems including promotion of public-private partnerships.

4. Strengthen regional cooperation through joint research, knowledge exchange, and harmonized policies on glacier and water resource protection, with particular emphasis on cross-border collaboration.

5. Integrate gender perspectives into national and regional climate strategies by ensuring women's equal access to finance, green technologies, and capacity-building opportunities.

6. Support women's leadership through mentorship, networking, and institutional mechanisms at local, national, and regional levels, including the development of leadership training programs focused on sustainable development and climate action.

7. Foster meaningful youth engagement through the creation of intergenerational dialogue platforms, support for youth-led climate initiatives, and inclusion of young women in national and regional policy discussions.

8. Promote climate education and public awareness campaigns that highlight the interlinkages between gender and climate, leveraging traditional and digital media to reach diverse audiences.

9. Finally, encourage inclusive civic participation in climate-related decision-making and implementation processes by enhancing the role of community-based organizations, NGOs, and civil society networks in environmental governance.

The Forum concluded with confidence and hope of continued joint cooperation for a sustainable future for all.

Side Events

Eighteen side events were organized by global, regional and national actors at different venues around Dushanbe on 29 May 2025. These events created an additional platform for wider discussion on various glacier-related issues and priority themes of the Conference.

1 *Advances in the Study of Tajikistan's Cryosphere: Current Achievements and Future Directions*, co-organized by the National Academy of Sciences of Tajikistan, Mountain Societies Research Institute, and University of Central Asia

2 *Decentralised Sanitation Solutions Roundtable: Bridging Policy, Technology and Practice*, organized by Bremen Overseas Research & Development Association

3 *Adaptation and Resilience to Glacial Hazards*, co-organized by United Nations Economic and Social Commission for Asia and the Pacific, United Nations Resident Coordinator's Office for Tajikistan

Agency for Hydrometeorology of Tajikistan, North EurAsia Climate Centre, and the Asian and Pacific Centre for the Development of Disaster Information Management

4 *Glaciers and Science*, co-organized by National Academy of Sciences of Tajikistan, Xinjiang Institute of Ecology and Geography (CAS), Research Center for Ecology and Environment of Central Asia (Dushanbe), State Scientific Institution "Center for Research of Glaciers", and Institute of Water Problems, Hydropower and Ecology

5 *Science Diplomacy for Glacier Preservation and Transboundary Water Resilience in the Hindu Kush Himalaya (HKH)*, co-organized by IYGP Task Force 2, International Centre for Integrated Mountain Development, the Asia-Pacific Water Forum, United Nations Economic and Social Commission for Asia and the Pacific, Clean Air Fund, UNESCO Chair in Mountain Water Sustainability, and the Small Earth Nepal

6 *The Role of Mass Media and Social Networks in the Study and Preservation of Glaciers*, co-organized by the Embassy of the Russian Federation in the Republic of Tajikistan and Lomonosov Moscow State University in Dushanbe

7 *Isotopes and Innovative Technologies in Glacier Studies,* co-organized by the National Academy of Sciences of Tajikistan, International Atomic Energy Agency, State Scientific Institution "Glacier Research Center of the NAST", Agency for Chemical, Biological, Radiological, and Nuclear Safety of the Academy of Sciences of Tajikistan

8 *CICA Side Event on "Water Security and Climate Resilience: Addressing the Environment Challenges in CICA Member States",* co-organized by the Conference on Interaction and Confidence-Building Measures in Asia, Chairmanship of the Republic of Azerbaijan with the support of the CICA Secretariat

9 *Catalyzing Global Action for Glacier Resilience: Civil Society Experience from Central Asia,* co-organized by Federal Republic of Germany, Welt Hunger Hilfe, Youth Ecological Center of Tajikistan, the Little Earth, Tajikistan Nature Foundation, and United Nations Environment Programme

10 *Glaciers, the 3rd Pole and the Central Asian Flyway of Migratory Birds,* co-organized by Hanns Seidel Foundation Korea, Central Asian Conservation Network, Ramsar Regional Initiative for Central Asia, Independent Evaluation Unit, Green Climate Fund, East Asian-Australasian Flyway Partnership

11 *Melting Po(in)t: An Intergenerational Dialogue on Glacier and Water Availability,* co-organized by Central Asia Youth for Water, GIZ, GFA Consulting Group GmbH, HELVETAS Intercooperation gGmbH, European Union, German Federal Ministry for Economic Cooperation and Development

12 *Pathways to Action: Tackling Super Pollutants for Glacier Preservation for the High-Level International Conference on Glaciers' Preservation,* co-organized by UNEP-hosted Climate and Clean Air Coalition and Clean Air Fund

13 *Song of Glacier,* organized by the Swiss Cooperation Office in Tajikistan

14 *Water Resources Stereoscopic Monitoring in Tajikistan,* co-organized by the University of Electronic Science and Technology of China, Institute of Water Problems, Hydropower and Ecology of the National Academy of Sciences of Tajikistan, Zhejiang University of Technology, Northwest Institute of Eco-Environment and Resources, and the Chinese Academy of Sciences

15 *Strategies for Sustainable Use of Water Resources,* organized by ECUMENE Global Forum

16 *Human Mobility and Climate Change in Mountain Areas: Priorities for Action,* co-organized by the International Organization for Migration and Ministry of Labor, Migration, and Employment of Population of the Republic of Tajikistan

17 *Carbon Markets as a Tool for Monetizing Environmental Projects: Lessons for Central Asia,* organized by ECUMENE Global Forum

18 *Climate Science and Research Inventory: A Foundation for Sustainable Solutions in Central Asia,* co-organized by the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan, Project Office for Central Asia on Climate Change and Green Energy and United Nations Educational, Scientific and Cultural Organization

Glaciers Festival

The High-Level Conference on Glaciers' Preservation also featured a rich cultural programme that included a *Glaciers Festival* that was organized by the Government of Tajikistan on the evening of 29 May 2025 at "Navruzgoh Park".

The main objective of the Glaciers Festival was to raise public awareness and to celebrate glaciers as a main source of life for the planet, emphasizing the need to treat them with care and preserve them for future generations. The Glaciers Festival immersed participants in the rich cultural heritage of the Tajik people. Conference participants visited outdoor booths displaying traditional folk crafts and artistry, including Chakan embroidery, recognized as part of UNESCO's Intangible Cultural Heritage, traditional dress and jewellery from different regions of Tajikistan, and were invited to sample Tajik national cuisine and various types of drinking water. Information was provided to participants about the country's tourism potential, including natural and historical sites, ecological and agricultural tourism, hunting, medical and mountaineering tourism, and other types of tourism.

The official programme started with welcome remarks by H.E. Ms. Mansuri Dilrabo Saidullo, Deputy Prime Minister of the Republic of Tajikistan. The programme featured a glacier-inspired concert programme showcasing distinguished Tajik musical and dance talent spanning modern and traditional genres accompanied by a symphony orchestra and culminating with a fashion show displaying the beauty of Tajik national attire. The cultural performances took place below a stunning backdrop of a "Glaciers Moquette" situated over a waterfall symbolizing glaciers as a source of life and origin of freshwater resources. The Glaciers Festival demonstrated the depth of Tajik hospitality and provided participants with a venue to get acquainted with the rich history, cuisine, culture, art, and traditions of the Tajik people.

C. Additional Conference events and activities

International Exhibition

An important highlight of the Conference was the International Exhibition entitled, *Turning Glacier Challenges into Solutions,* which was organized on the first floor of the main Conference venue, "Kohki Somon". In total twenty exhibitors, including 10 ministries and agencies of the Republic of Tajikistan and 10 international organizations and institutions, displayed 3-dimensional models, real-world equipment for glacier expeditions, art and educational as well as information materials. They shared best practices, innovations and scientific achievements, emphasizing the beauty, significance, and fragility of glaciers and ongoing efforts to preserve them at the international, regional and national levels. The Exhibition presented cutting-edge technologies and solutions to monitor and preserve glaciers, such as remote sensing, drone technology, and glacier engineering techniques. Inspiring actions undertaken by stakeholders, notably youth, were showcased to encourage individuals to participate in global conservation efforts.

Over the two days of the Conference, the International Exhibition was visited by over 2000 participants. It contributed to raising awareness about the impacts and consequences of glacier melt and presented the latest scientific research and developments in the field of glacier monitoring, encouraging international cooperation, exploring innovative technologies and digital solutions, among efforts that contribute to implementation of the IYGP 2025 and Decade of Action for Cryospheric Sciences, 2025-2034, It also facilitated networking opportunities and fostered international cooperation through professional and business connections among Conference participants.

The exhibition organizers included the Ministry of Energy and Water Resources of the Republic of Tajikistan, the Ministry of Industry and New Technologies of the Republic of Tajikistan, the Ministry of Foreign Affairs of the Republic of Tajikistan, the Agency for Land Reclamation and Irrigation under the Government of the Republic of Tajikistan, the Committee for Environmental Protection under the Government of the Republic of Tajikistan, the Committee for Emergency Situations and Civil Defense of the Republic of Tajikistan, the Committee for Tourism Development under the Government of the Republic of Tajikistan, the National Academy of Sciences of Tajikistan, the Agency for Innovation and Digital Technologies of the Republic of Tajikistan, the State Enterprise "Smart City", UNICEF Tajikistan, Naue GmbH & Co. KG (Germany), ArkEdge Space Inc (Japan), ADB, IOM, World Food Programme (WFP), the Government of Switzerland, Caritas Internationalis Tajikistan Branch, ICCI and UNDP.

Tours & Glaciers Run

The National Organizing Committee organized tours and a Glaciers Eco-Run on Sunday, 1 June 2025 to offer international participants the opportunity to experience first-hand examples of glacier degradation, integrated water resources management and water-related sustainable development in Tajikistan, as well as to learn more about the rich history and experience the hospitality of the Host Country. The Conference participants were provided with opportunities to observe the current challenges Tajikistan is facing from melting glaciers that are a main source of water in the upper catchments in mountainous parts of the country to the level of multiple water users in the lowlands where water contributes to food production, is used for drinking and local development, and is a powerful engine for the generation of clean energy. The tour destinations included the City of Dushanbe, Safed-Dara Ski Resort, Hissor Fortress, Siyoma Gorge in Varzob valley, Rammit Gorge, Rogun Hydropower Plant, and Nurek Hydropower Plant. International participants shared positive impressions and expressed satisfaction with the high quality of the tours.

A Glacier Eco-Run was held in Safed-Dara to raise awareness about climate change, environmental protection, and the rapid melting of glaciers—critical issues for Tajikistan, Central Asia and the globe's water resources. The event featured participation from athletes, environmentalists, and the public, with special guests including Caroline Gleich, a renowned climate activist and ski mountaineer, and Dilshod Nazarov, Olympic hammer throw champion from Tajikistan. The race offered three categories: Mountain Challenge (5 km)-a steep ascent from 2,200m to 2,900m, Ekiden Relay (5 km)- teams of four, each running 1,250 meters, Ice Mile (1,600 m)- a flat route across a 1,600-meter plateau. More than 350 participants enjoyed pristine mountain air, sunny weather, and breathtaking landscapes while promoting glacier preservation.

The Eco-Run symbolized global solidarity in glacier preservation and sustainable mountain development. Open to all physically prepared participants, it emphasized personal responsibility (via liability waivers) and collective environmental action. The Glacier Eco-Run successfully combined sport, advocacy, and international collaboration, reinforcing the urgent need to protect glaciers for future generations. The winners were honoured in a ceremony attended by H.E. Ms. Dilrabo Mansuri, Deputy Prime Minister of Tajikistan, Representatives from the Committee for Environmental Protection, Committee for Youth Affairs and Sport, Members of the Conference Secretariat, Local authorities from Varzob District. The awards recognized both athletic achievement and contributions to environmental awareness.

Media Coverage

As the premiere event of the United Nations-declared International Year of Glaciers' Preservation, 2025, the Conference garnered extensive media attention domestically, regionally, and internationally. The event, focused on addressing climate change and glacier preservation, was widely covered by Tajik and foreign media outlets, ensuring global visibility for its critical environmental message.

The media campaign achieved exceptional results. There were over 1000+ unique mentions across TV, print, and digital platforms. Social media content reached 1.2M+ users globally, with high engagement rates and more than 50+ blogger partnerships. Media coverage of the Conference was diffused in six United Nations languages (Russian, English, Spanish, Arabic, Chinese), Tajik and other national languages.

The Conference attracted significant interest from global media, amplifying its reach. Coverage by international news agencies: Reuters, AFP, and Associated Press distributed press releases and analytical pieces and major networks including Euronews, Al Jazeera, and Agence France-Presse aired segments on the conference's outcomes and Tajikistan's leadership in glacier preservation. Regional Outlets, such as Russian (TASS, RIA Novosti), Central Asian (Kazinform, UzA), MIR TV, and Chinese (CGTN) media, highlighted regional cooperation aspects.

In Tajikistan, the conference received comprehensive reporting across multiple platforms. State Media, including National TV (TV Tojikiston, TV Safina, TV Jahonnamo, TV Varzish, TV Ilm va tabiyat, TV Tourism and folk crafts), Radio (Radio Tajikistan, Radio Khovar, Radio Sadoi Dushanbe), and official newspapers (Jumhuriyat, Sadoi Mardum), provided daily updates, interviews with delegates, and live broadcasts of key sessions. Independent outlets such as Asia-Plus, Avesta.tj, and Your.tj, published in-depth articles, expert opinions, and multimedia content. Government portals (khovar.tj, prezident.tj, mfa.tj, tajnature.tj, others) and news aggregators featured real-time coverage, photo galleries, and video highlights.

To maximize engagement, the Conference media campaign leveraged multilingual digital platforms. A bilingual (English/Russian) conference website hosted detailed agendas, speaker bios, and press materials (www.dushanbeicgp2025.com). Dedicated accounts on Facebook, LinkedIn, and Instagram provided live updates, speaker highlights, and interactive content in Tajik, Russian, and English. The hashtag campaigns fostered global conversations through trends like #Glaciers2025, #IYGP2025 and #DushanbeGlaciersConference. A strategic collaboration with the Association of Bloggers of Tajikistan significantly amplified the conference's digital reach on Instagram and TikTok. More than 20 influential bloggers and content creators participated in coverage from the venue; which generated more than 200 pieces of original content across platforms. This approach enhanced youth engagement through relatable, localized messaging.

Professional photographers captured images of key moments during the main Conference Sessions, Pre-Conference Day, Tours and other related events. The photographs are available on-line at the Ministry of Foreign Affairs, Republic of Tajikistan album: https://www.flickr.com/photos/mfatj/albums/. The photo albums provide a visual narrative that documents the highlights, interactions and overall experience of participants.

The wide-reaching and intensive international media coverage underscored Tajikistan's role as a key advocate for climate resilience. The Conference's media strategy successfully elevated the urgency of glacier preservation to a worldwide audience. By combining traditional journalism with dynamic digital outreach, the event set a benchmark for environmental advocacy communications.

III. Outcomes of the Conference

A. Outcome Documents

The High-Level International Conference on Glaciers' Preservation produced three outcome documents: *Chair's Summary* (this document), *Dushanbe Glaciers Declaration*, and *Dushanbe Glaciers Appeal: A Call for Action*.

Dushanbe Glaciers Declaration

The final *Dushanbe Glaciers Declaration* reflects the key messages that emerged from the preparatory process, Thematic Sessions, Pre-Conference Forums, as well as other important conclusions and recommendations from the Conference. It provides strategic recommendations towards UNFCCC COP30 and identifies other important opportunities ahead to advance implementation of the IYGP 2025 and Decade of Action for Cryospheric Sciences, 2025-2034. It affirms the importance of glaciers and broader cryosphere for the international agenda and calls on the relevant actors to take action to preserve glaciers and address the impacts of their melting within their respective capacities. The final *Dushanbe Glaciers Declaration* document was adopted by acclamation during the Closing Session of the Conference on 31 May 2025. The Declaration is included as annex 1.

Dushanbe Glaciers Appeal: A Call for Action

The *Dushanbe Glaciers Appeal: A Call for Action* captures the collective spirit of the Conference participants to preserve glaciers and address the wide-ranging and far-reaching impacts of their melting. The Appeal includes a seven-point "Global Glaciers Agenda" inspired by the key messages from the Conference that provides an initial framework towards a common approach. It also outlines how momentum can be sustained after the Conference and International Year of Glaciers' Preservation,

2025 through the Dushanbe Glaciers Process and regular international conferences every three years. The Appeal is included as annex 2.

B. Main Conclusions

Several main conclusions and highlights have been drawn from the first High-level International Conference on Glaciers' Presentation.

1. The Conference catalysed international support and mobilized high-level political commitment to glaciers' preservation at a pivotal moment.

- As the premiere event of the International Year of Glaciers' Preservation 2025, the Conference convened Heads of State, Heads of Government, Ministers, senior officials of the United Nations and international financial institutions, alongside eminent global experts, scientists and researchers in the fields of glaciology and polar science, together with leaders of international organizations, academia, civil society and representing major stakeholder groups including Indigenous Peoples, women, youth and children to address the urgent and complex issues related to accelerated melting of glaciers and the broader cryosphere.
- Government leaders affirmed ambitious commitments to prioritize climate mitigation and adaptation as part of updated NDCs, NAPs and national policies and plans. Numerous heads of delegation announced commitments to provide financial resources, scientific cooperation, technical support and capacity development at multilateral, regional, transboundary and bilateral levels. Several indicated interest to share advanced technologies, data and expertise. Global and regional inter-governmental organisations expressed willingness to use their platforms to support follow-up discussions.
- Overall, speakers concurred that preserving glaciers will require international solidarity and political commitment. Many called for greater attention and urgency to address glacier and cryosphere-related issues as part of international processes, notably in the upcoming COP30 in Brazil and 2026 UN Water Conference in UAE as well as other global and regional events.

2. The Conference heightened global awareness of the deeply concerning situation of melting glaciers and the broader cryosphere and increased understanding about their crucial role for climate, environment, water resources, food systems, energy production and as part of natural and cultural heritage.

- The Conference was attended by over 2600 in-person participants from over 90 countries representing all geographic regions. The twelve thematic sessions, eight pre-conference forums, eighteen side events, the international exhibition, and Glaciers Festival offered formal and informal opportunities for Conference participants to become informed on the latest data, evidence and best practices. The post-conference tours offered an opportunity to experience first-hand examples of glacier degradation, integrated water resources management and water-related sustainable development in Tajikistan.
- As the first of its kind, the landmark conference garnered extensive media attention domestically, regionally, and internationally. The event was widely covered by Tajik and foreign media outlets, ensuring global visibility for its critical environmental message. Media coverage of the Conference was diffused in all six United Nations languages (Russian, English, French, Spanish, Arabic, Chinese), Tajik and other national languages. There were over 1000 unique mentions across television print, and digital platforms. Social media content

reached more than 1.2 million users globally, with high engagement rates and more than 50 blogger partnerships. This approach enhanced youth engagement through relatable, localized messaging.

- The Conference's media strategy successfully elevated the urgency of glacier preservation to a worldwide audience. By combining traditional journalism with dynamic digital outreach, the event set a benchmark for environmental advocacy communications.

3. The importance of glaciers and broader cryosphere for achieving the goals of international agendas was affirmed and connections were forged with global political processes.

- The Conference successfully highlighted the contribution of glacier preservation efforts towards the achievement of global goals for climate, freshwater, energy, oceans and food security, among others.
- The Conference provided a strategic and timely opportunity to call for greater ambition at UNFCCC COP30 at which Parties will renew their Nationally Determined Contributions. The Leaders Roundtables discussions emphasized the need for 1.5°C-consistent climate pledges and urged countries to bring more ambitious NDCs to COP30.
- Many speakers emphasized the need to strengthen vital links between the preservation of glaciers with the 2030 Agenda for Sustainable Development and the Pact of the Future, including commitments to future generations. The presentation of the outcomes of the Conference at the 2025 High-level Political Forum on Sustainable Development and other global events will provide a substantive contribution to the ongoing efforts to accelerate implementation of the sustainable development agenda up to and beyond 2030.
- There was encouragement to use of other upcoming global milestones for multilateral processes such as the eighth session of the Global Platform for Disaster Risk Reduction, 2025 UN Ocean Conference, UN Food Systems Summit Stocktake, Second World Summit on Sustainable Development and the 2026 UN Water Conference and other international and regional events, such as Ramsar Convention COP15, to advance glaciers' preservation by further elevating political will and mobilizing commitments and actions.

4. The Conference offered participants a unique platform for constructive dialogue by facilitating interaction between scientists and policymakers, as well as linking discussions on melting glaciers and polar ice sheets with coastal areas and SIDS to provide a holistic, global approach.

- Conference forums and thematic sessions designed their respective programmes to reflect diverse perspectives and foster genuine interactions between policymakers, scientists, development partners, financial institutions, youth representatives, Indigenous Peoples and local communities.
- For the first time, the issues of melting polar ice sheets and continental glaciers were discussed together, providing a holistic approach and global coverage to address issues of glacier melting and the broader cryosphere. The scope of the Conference offered a unique opportunity to link mountain glacier and polar issues with the downstream impacts on river valleys, water-scarce basins, low-lying coastal areas and SIDS. This stimulated a rich and productive interaction between participants from different geographic regions and country typologies to improve mutual understanding of the interrelated challenges and opportunities, as well as build trust and solidarity.

- The Conference provided a high-level opportunity for scientists and researchers to present scientific data and findings on the causes, consequences and possible solutions to glacier melting to policymakers and stakeholders to "break silos," between science and policy on these issues. Many thematic sessions, forums and side events bridged the science-policy divide and highlighted the invaluable contribution of Indigenous knowledge and local experience to understanding and solving glacier-related challenges.

5. The Conference fostered international, regional and transboundary cooperation and strengthened partnerships to address the challenges of rapid melting of glaciers and explore innovative technologies and solutions.

- The twelve Thematic Sessions and eight Forums featured many good examples of existing partnerships that promote cooperation including through South-South, North-South and Triangular development cooperation modalities. Speakers emphasized the importance of joint planning across shared river basins and highlighted opportunities for greater cooperation including in the areas of science-based international cooperation, notably to expand research and monitoring of glaciers and the broader cryosphere, and climate finance for glacier preservation and the resilience of communities.
- The International Exhibition showcased innovative technologies and solutions using interactive displays and practical demonstrations and facilitated networking opportunities through professional and business connections among Conference participants. Eighteen side events, cultural programmes, social events, and excursions provided additional opportunities for exchanges of experience and stimulating partnerships across cultures and spheres of work.
- Commitments, partnerships, initiatives and actions announced during the Conference are compiled in the *Dushanbe Glaciers Appeal: A Call for Action*.

6. Conference participants advocated for a greater allocation of resources for glaciers' preservation, including through the new climate finance goal decided at UNFCCC COP29 and contributions to the United Nations trust fund to support glaciers' preservation.

- Member States, international financial institutions and funds alongside other development partners stressed the importance of addressing the significant financing gap, notably for climate mitigation and adaptation, glacier research and monitoring, and mitigation of glacier-related hazards and disaster risk reduction, including early warning systems. Speakers emphasized the acute and chronic underinvestment in these critical areas. Several international financing institutions and global funds presented new regional and global programmes to channel financing and funding to glacier preservation and related efforts.
- The Conference participants welcomed the successful outcomes of the twenty-ninth Conference of the Parties to the United Nations Framework Convention on Climate Change, held from 11 to 22 November 2024 in Baku, which delivered a breakthrough decision on the New Collective Quantified Goal (NCQG), being a critical enabler for ensuring that developing countries have the resources to mitigate and adapt to climate change, including effectively supporting glaciers' preservation.
- The final *Dushanbe Glaciers Declaration* encourages governments and stakeholders, including international finance institutions, the private sector, bilateral donors, inter-governmental and non-governmental organizations, to mobilize financing on a voluntary basis, as appropriate, to limit and adapt to glacier and snowpack loss, mitigate cryosphere-related hazards, conserve

biodiversity, and enhance ecosystem services, including to voluntarily join Tajikistan's contribution to the trust fund coordinated by the United Nations Secretary-General to support glaciers' preservation activities.

7. The Conference boosted momentum for the implementation of the IYGP 2025 at its midpoint point and provided a solid foundation for the launch of the Decade of Action for Cryospheric Sciences, 2025-2034.

- As the premiere event of IYGP 2025, the Conference outcomes will be a substantive input into the results of the Year, that are being monitored by UNESCO and WMO under the leadership of the International Advisory Board and will be reported to the 81st session of the UN General Assembly (as decided in A/RES/ 77/158, paragraph 7). The momentum and follow-up actions from the Conference will be parlayed into the IYGP 2025 workplan for the second half of the International Year.
- The Conference outcomes provided a timely input into the high-level political launch of the Decade of Action for Cryospheric Sciences, 2025-2034 held on 8 June 2025 during the Third United Nations Ocean Conference in Nice, France under the leadership of President Emomali Rahmon of Tajikistan, President Emmanuel Macron of France, and the UNESCO Director-General, Ms. Audrey Azoulay.

C. Next steps and follow-up opportunities

The Conference successfully achieved its objectives due to the coordinated efforts and close collaboration of all parties. In terms of next steps, the Government of Tajikistan will present this Chair's Summary, the final *Dushanbe Glaciers Declaration*, and the *Dushanbe Glaciers Appeal* during the 2025 High-level Political Forum on Sustainable Development and other global events.

Participating United Nations Member States and organizations are encouraged to disseminate the Conference outcome documents through their respective networks and to act on the key messages and recommendations within their distinct roles and responsibilities and respective capabilities. Conference participants are encouraged to register new voluntary commitments on international commitment platforms, such as the United Nations SDG Actions Platform (https://sdgs.un.org/partnerships). Member States and other organizations that have already registered commitments on the United Nations SDG Actions Platform, or any of its action networks (e.g. Water Action Agenda), are encouraged to submit a progress report.[6]

The outcomes of the Conference contribute to and support the ongoing implementation of the IYGP 2025. As stated in United Nations General Assembly Resolution 77/158, the Member States invited UNESCO and WMO to keep the United Nations General Assembly informed at its eighty-first session and further sessions about the implementation of the IYGP 2025, including an evaluation of the implementation of the International Year and observance of the World Day.

Going forward beyond IYGP 2025, the Dushanbe Glaciers Process will continue to support the implementation of the Global Glaciers Agenda and support the preparation of future Dushanbe Glaciers Conferences.

[6] For questions on how to submit a progress report for a Water Action Agenda commitment, see FAQs Voluntary Commitments / SDG Actions (https://sdgs.un.org/partnerships/faq).

Expression of appreciation

The Government of Tajikistan sincerely thanks all Member States, partners, and participants for their respective contributions to make the first High-Level International Glaciers' Preservation Conference a successful event. An international event of this magnitude can only be possible through strong partnerships and collective efforts – large and small, local and global. Addressing the complex challenges and the wide-ranging and far-reaching impacts of accelerated melting of the world's glaciers and broader cryosphere is a formidable task, but one that is most worthy of our continued efforts for present and future generations.

ANNEXES

Annex 1. Dushanbe Glaciers Declaration

[*Attached separately*]

Annex 2. Dushanbe Glaciers Appeal: A Call for Action

[*Attached separately*]

Annex 3. List of speakers and statements from the opening and plenary sessions

United Nations Member States and Observers

Angola
Armenia
Azerbaijan
Bulgaria
Cambodia
China
European Union
Finland
France
Gambia
Georgia
Germany
Holy See
India
Indonesia
Iran
Iraq
Japan
Kazakhstan
Korea
Kyrgyzstan
Lesotho
Malaysia
Maldives
Mali
Nepal
Netherlands (video)
Pakistan
Palestine
Paraguay
Peru
Russian Federation
Saudi Arabia

Senegal
Switzerland
Tajikistan
Tanzania
Thailand
Türkiye
Turkmenistan
United Kingdom
Uzbekistan
Zimbabwe

All other Delegations

Asian Development Bank (ADB)
Asian Infrastructure Investment Bank (AIIB)
Commonwealth of Independent States (CIS)
Conference on Interaction and Confidence Building Measures in Asia (CICA)
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention on Wetlands)
Economic Cooperation Organization (ECO)
Energy Charter
Food and Agricultural Organization (FAO)
Global Green Growth Institute (video)
Green Climate Fund (GCF)
International Centre for Integrated Mountain Development (ICIMOD)
International Fund for Saving the Aral Sea (IFAS), Executive Committee
International Union for Conservation of Nature (IUCN)
International Water Management Institute (IWMI)
Islamic Organization for Food Security (IOFS)
Islamic World Educational, Scientific and Cultural Organization (ISESCO)
Organisation of Islamic Cooperation (OIC)
Organization for Security and Co-operation in Europe (OSCE)
Regional Environmental Centre for Central Asia (CAREC)
Shanghai Cooperation Organization (SCO)
United Nations Children's Fund (UNICEF)
United Nations Development Programme (UNDP)
United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
United Nations Economic Commission for Europe (UNECE)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Environment Programme (UNEP)
United Nations Regional Centre for Preventive Diplomacy for Central Asia (UNRCCA)
United Nations Secretariat
United Nations Special Envoy for Water