Central Asia Youth Forum on Drought Monitoring

Side Event of the Space Technology Conference 2026 – Central Eurasia, Uzbekistan

Tashkent, Uzbekistan, and online
31 March & 1 April 2026 (9.00 to 17.00 hrs UTC+5)

In-person

- Day 1: STC 2026 - Intercontinental Hotel, Tashkent (AM) | Youth Forum – Central Asia University, SDG Lab 320 Room (PM)
- Day 2: Youth Forum – Central Asia University, SDG Lab 320 Room

Background

Central Asia is experiencing recurrent and increasingly severe droughts that pose growing challenges to sustainable development, agriculture, and rural livelihoods. To mitigate their impacts, the need to move from reactive drought response toward proactive, risk-informed management is urgent and can be enabled by regional cooperation, early warning systems, and Earth-observation-based monitoring. Despite ongoing progress, there is a scope to bridge research and operational communities to encourage data sharing and develop common drought indicators.

In line with the Jakarta Ministerial Declaration on Space Applications for Sustainable Development in Asia and the Pacific, adopted by ESCAP Member States in 2022, which recognizes the growing importance of space science, technology, and applications for achieving the Sustainable Development Goals (SDGs), this Youth Forum aims to contribute to bridging this gap. The Declaration calls on governments and stakeholders to inspire young people's interest in space activities to accelerate SDG achievement and identifies youth-focused capacity-building as a foundational element of regional action.

By connecting young researchers and professionals with experienced experts from hydrometeorological, agricultural, and Earth observation institutions, the Youth Forum aims to support the emergence of a new generation of innovators who will contribute to enhanced drought resilience in Central Asia.

The Youth Forum is undertaken under the ESCAP-led project "Building the capacity of Central Asian countries to use Earth Observation and geospatial technologies for monitoring agricultural conditions and drought impacts" project which aims to enhance the capacity of Kyrgyzstan, Tajikistan, and Uzbekistan to utilize Earth Observation and geospatial tools in conjunction with statistical data for drought and crop monitoring. The project aims to assist these countries in utilizing recent advances in space technology and geospatial data for drought management and to facilitate timely access to space-derived data, regional expertise, and resources.

The project leverages the regional expertise available through the ESCAP Regional Drought Mechanism and its regional service providers, namely China, India, and the Russian Federation, as well as national partnerships, to develop an operational drought monitoring system. It supports the three countries in addressing the barriers to effectively using EO and geospatial tools, including limited technical expertise, infrastructure constraints, and restricted access to advanced data-sharing platforms.

About the Youth Forum

The Youth Forum seeks to foster a platform for research collaboration, innovation, and capacity development on drought monitoring and early warning in Central Asia. It brings together universities, research centres, space agencies, hydrometeorological agencies and Earth observation industry partners, aligned with the Asia -Pacific Plan of Action on Space Applications for Sustainable Development and the Sustainable Development Goals (SDGs 6, 7, 13, and 17).

The objective is to engage youth and early-career scientists in research, innovation, and entrepreneurship related to drought monitoring and sustainable agriculture, in line with the call of the Jakarta Ministerial Declaration.

The Space Technology Conference – Central Eurasia (STC), which convenes national space agencies, satellite operators, Earth observation companies, and policy stakeholders, provides an appropriate platform to connect the regional EO ecosystem with drought-risk researchers and decision-makers. This Youth Forum will be held as a side event of STC.

Objectives

The Youth Forum aims to foster a sustained regional research and innovation network on drought monitoring and early warning in Central Asia by strengthening collaboration between space agencies, hydrometeorological institutions, universities, research centres, and Earth observation (EO) industry partners. It seeks to bridge research and operational communities through shared agendas, harmonized methodologies, and coordinated pilot activities, while promoting the integration of EO-based approaches into practical drought monitoring and resilience planning.

The core objective of the Youth Forum is to engage and empower youth and early-career professionals in applied research, innovation, and entrepreneurship related to drought monitoring and agricultural resilience, in line with regional priorities and global commitments.

To achieve these objectives, the Youth Forum will:

- Promote sharing of tools, data platforms, and methodologies;
- Strengthen linkages between research outputs and operational drought monitoring and early warning systems;
- Empower youth and early-career scientists through mentoring, internships, and participation in pilot projects;
- Encourage interdisciplinary, youth-led research addressing practical drought monitoring and resilience challenges using EO data and cloud-based tools; and
- Promoting mentorship, peer networking, and international collaboration

Expected Outcomes

- Showcasing of youth-led and early-career research initiatives and innovation concepts.
- Promote an online code repository to enable collaboration on cloud-based geospatial analytics platforms and open-source programming-based drought monitoring.
- Establishment of a youth and early-career network to sustain innovation, peer learning, and leadership in line with the Jakarta Ministerial Declaration.
- Enhanced young researcher engagement and visibility, strengthening the linkage between academic learning and applied practice.
- Expanded cross-institutional and cross-border academic exchange.

Organizers

- ICT and Disaster Risk Reduction Division of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
- The Space Research and Technology Agency (Uzbekspace) under the Ministry of Digital Technologies of the Republic of Uzbekistan
- Central Asian University (CAU)

Participants

- ESCAP Regional Drought Mechanism Nodes: China, India, and the Russian Federation.
- Invited national, regional, and international experts.
- Young researchers (35 years old or younger) from governmental agencies, universities, and higher education institutions of North and Central Asia specializing in climate science, meteorology, hydrology, agriculture, geography, geospatial technologies, data science, and related fields.
- Advanced undergraduate and postgraduate students with demonstrated interest or coursework in Earth observation, remote sensing, GIS, climate services, or agricultural monitoring.

Language

Russian with English interpretation for specific sessions.

Programme (as of 19 March)

Day 1 Venue: STC 2026 - Intercontinental Hotel, Tashkent (AM) Venue: Central Asia University, SDG Lab 320 Room (PM)	
Time	**Topics**
08:30	**Registration at STC 2026 Conference**
08:50	**Official Opening of the STC 2026 Conference**
09:00	Mission 1: Shaping the future of space in Central Eurasia: Insights from the region's space leaders. This plenary brings together the heads of local and international space agencies to discuss the region's evolving space landscape. Leaders will share strategic visions, provide policy updates, explore collaborative opportunities, and highlight innovations driving the development of the space industry in Central Eurasia.
10:30	Exhibition Zone
11:00	Mission 2: Earth Observation and remote sensing technologies as sustainable, regional economic drivers. Leading operators, satellite manufacturers, and geospatial solution providers will discuss industry trends, emerging technologies, and the next generation of earth observation satellites and their role as drivers for sustainable economic development.
12:30	Break - Move to the location of the Youth Forum at Central Asian University (SDG Lab 320 Room)
13:00-14:00	Lunch
14:00-15:00	***Central Asia Drought Monitoring Research Youth Forum*** ***Opening*** *Welcome address from Mr. Khusanboy Makhammadjanov, Head of Industrial Engineering Department, Central Asian University.* *Opening Statements:* • *Ms. Sabine Machl, UN Resident Coordinator in Uzbekistan* • *Ms. Anna Gridneva, Attaché of the Department of the International Organizations, Ministry of Foreign Affairs, the Russian Federation* • *Mr. Khumoyun Rakhmonov, Head of Science, Innovations and Technology Transfer Department, Space Research and Technology Agency under the Ministry of Digital Technologies of the Republic of Uzbekistan* *Group Photo*
15:00-15:15	***Setting the scene:*** *Moderator: Ms. Elena Pronina, Space Applications Section, ESCAP*

	Speakers: 5 minutes per speaker *"Advancing Youth Engagement in Space Applications for Sustainable Development: Efforts by ESCAP and Partners", Ms. Kareff Rafisura, Space Applications Section, ESCAP* *"Bilingual (EN–RU) terminology framework for EO-based agricultural drought monitoring in Central Asia, Ms. Anastasia Murat, Moscow State Institute of International Relations, Odintsovo Branch, Russia*
15:15-18:00 (with coffee break)	***Session 1. Youth Perspectives on Drought Monitoring and Resilience in Central Asia*** Moderator: *Ms. Elena Pronina, Space Applications Section, ESCAP* ***Cluster Presentations by research themes*** *Theme 1: EO/Satellite-Based Drought Monitoring & Early Warning: Advanced Methods, Data Integration, and Predictive Approaches* • *Abdusamad Eshonqul, Agency for Hydrometeorology of the Committee for Environmental Protection under the Government of the Republic of Tajikistan, Tajikistan* • "*Integrated drought monitoring in Central Asia using satellite & geospatial data", Ms. Elina Popova, Kyrgyz State Technical University named after I. Razzakov, Kyrgyzstan* • *"Satellite-Based Drought Early Warning and Transboundary Water Risk Assessment Framework for Central Asia", Mr. Swarnadyuti Sarkar, Indian Institute of Information Technology Dharwad, India* • *"Beyond Rainfall: Integrating Atmospheric and Vegetation-Based Drought Signals for Early Warning in Central Asia", Ms. Aigerim Marat, Budapest University of Technology and Economics, Kyrgyzstan* *Expert Feedback (Mr. Maksim Kulikov, The University of Central Asia)* *Theme 2*: *River Basin Perspectives on Agricultural Drought* • *"Space technologies for early warning (Kafarnigan River Basin, Tajikistan)", Mr. Odinahmad Davronov, Institute of Water Problems, Hydropower and Ecology of the National Academy of Sciences of Tajikistan, Tajikistan* • "*Amu Darya Basin: soil moisture as a forward indicator of vegetation stress* ", *Mr. Ivan Harris Tanyag, University of the Philippines, Philippines* *Expert Feedback (Mr. Rashid Davlyatov, Deputy Head of the Centre for Communication and Automated Technologies, the Agency for Hydrometeorology of*

	the Committee for Environmental Protection under the Government of the Republic of Tajikistan) *Theme 3: Drought Impact Assessment & Management Strategies* • **"***Remote sensing of land fragmentation & crop diversification in Kyrgyzstan & Uzbekistan", Ms. Alena Shishkina, Lomonosov Moscow State University, Russia* • *"Groundwater stress & infrastructure vulnerability in subsiding urban areas", Mr. Daniel Osei, Nusa Putra University, Indonesia* *Expert Feedback (Ms. Maria Dewi, United Nations University - Institute for Environment and Human Security in Bonn and Ms. Kareff Rafisura, ESCAP)*
Day 2 **Venue: Central Asian University, SDG Lab 320 Room**	
Time	**Topics**
09:00-09:45	***Session 1. Youth Perspectives on Drought Monitoring and Resilience in Central Asia (Continued)*** • "*Prioritizing technological solutions for crop adaptation in arid regions", Ms. Aleksandra Kisel, National Research University ITMO, Russia* • ***"****Geospatial legal-ecological framework for drought risk assessment (QGIS-based), Ms. Aizhan Mukhtar Kyzy, Ala-Too International University, Kyrgyzstan* • *Multicriteria socio-economic drought monitoring linking SPEI, ENSO & land use change (Chile case), Mr. Juan Sebastián Reyes Figueroa, Russian State Hydrometeorological University, Russia* *Expert Feedback (Ms. Maria Dewi, United Nations University - Institute for Environment and Human Security in Bonn and Ms. Kareff Rafisura, ESCAP)*

09:00-12:30 (with coffee break)	**Session 2. Practical Clinics & Interactive Sessions** Moderator: *Ms. Elena Pronina, Space Applications Section, ESCAP* ***Format:*** • *Clinics, demonstrations and tutorials* • *Q&A* ***Clinics, Tutorials and Demos*** • ***ESCAP:*** *Mr. Oliver Jerrold Samuel Fletcher-Burgess & Ms. Elena Pronina,* Leveraging Google Earth Engine for cloud-based drought *monitoring analytics* • ***Roscosmos:*** *Mr. Timur Malyshkin, Engineer, Using satellite technologies for drought monitoring* • ***University of Central Asia*** *Mr. Maksim Kulikov, Using SAGA GIS for climate and weather research* • ***AIRCAS:*** *Ms. Nana Yan, Professor, Drought and crop monitoring practices (CropWatch and DroughtWatch)* • ***ISRO:*** *Mr Ahamed Jeelam, Scientist/Engineer, National Remote Sensing Centre, Insights from national-level programmes and integrated data management* ***After the clinics/tutorials/demos, participants should answer:*** *Interactive discussion (plenary):* • *What are your major take away messages and ideas?* • *What is innovative?* • *What could be applied to your current research and other future activities?* • *What types of support are needed to help you incorporate the ideas from this session into your own research and future activities?*
12:30-13:30	**Lunch**
13:30-16:50 (with coffee break)	**Session 3. Youth-Led Lab: Reflections, Networks, and Future Coordination** Moderator: *Mr. Oliver Jerrold Samuel Fletcher-Burgess, Space Applications Section, ESCAP* *Part 1: Panel discussion on opportunities for post-grad studies and fellowships* • *Mr.Arijit Roy, Head, Disaster Management Studies Department, Indian Institute of Remote Sensing (IIRS)& Programme Coordinator, Center for Space Science and Technology Education in Asia and the Pacific)(Affiliated to the United Nations), India* • *Ms. Elena Gershelis, Executive Director of the International Research Center for Ecology and Climate Change, the Sirius University of Science and Technology, Russia*

	• *Ms. Daria Gushchina, Professor of the Department of Meteorology and Climatology, Lomonosov Moscow State University, Russia* • *Mr. Anvar Rasul, Graduate Student, Regional Center for Space Science and Technology Education in Asia and the Pacific (RCSSTEAP), China* • *Mr. Alim Pulatov, Professor, National Research University - Tashkent Institute of Irrigation and Agricultural Mechanization Engineers (NRU TIIAME), Uzbekistan* *Part 2: Plenary session: Participant reflections by thematic area* • *Mr. Alim Pulatov, Sharing results of the 'Joint Drought Research', in line with Theme 2: River Basin Perspectives on Agricultural Drought and Theme 3: Drought Impact Assessment & Management Strategies* • *Share individual remarks with other participants* *Part 3: Network Formation and Future Collaboration* • *Topics: Shared mailing list, shared research repository, study group, publication plans of research teams* • *Next steps and potential future Youth Forum editions* • *Post-event evaluation and feedback*
16:50-17:15	**Closing** *Awarding of certificates* *Closing remarks by co-organizers: Mr. Khusanboy Makhammadjanov, CAU; Mr. Tahkir Kasimov, UzbekSpace Agency; Ms. Kareff Rafisura, ESCAP*

For information, please contact:

Kareff Rafisura (Ms)
Economic Affairs Officer (Space Applications for Sustainable Development)
ICT and Disaster Risk Reduction Division, ESCAP
Email: rafisura@un.org

Elena Pronina (Ms)
Consultant on drought monitoring in Central Asia
Space Applications Section
ICT and Disaster Risk Reduction Division, ESCAP
Email: elena.pronina@un.org