

ACTION PLAN

**ON PARTICIPATION OF THE STATE SCIENTIFIC INSTITUTION
«GLACIER RESEARCH CENTER OF THE NATIONAL ACADEMY OF
SCIENCES OF TAJIKISTAN» IN PREPARATION AND
IMPLEMENTATION OF ACTIVITIES
INTERNATIONAL YEAR OF GLACIER PRESERVATION (2023-2025) IN
COOPERATION WITH PARTNERS**

Dushanbe 2023

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Abbreviations

SSI GRC NAST - State Scientific Institution «Glacier Research Center of the National Academy of Sciences of Tajikistan»

RSD- Remote sensing data (GIS)

IYGP- International Year of Glaciers Preservation (2023-2025)

NAST - National Academy of Sciences of Tajikistan

OC - Organizing Committee

OC IYGP - Organizing Committee for the Preparation and Implementation of the International Year of Glacier Preservation (2023-2025)

GEF - Global Environment Facility

WWF- World Wildlife Fund

WGMS - World Glacier Monitoring Service

SADC - Swiss Agency for Development and Cooperation

SCO in Tajikistan - Swiss Cooperation Office in Tajikistan

WSL ISAR - Institute of Snow and Avalanche Research

UniFR - University of Fribourg

PASSPORT

Name of the document: Action Plan for the participation of the State Scientific Institution "Glacier Research Centre of the National Academy of Sciences of Tajikistan" in the preparation and implementation of the International Year of Glacier Preservation (2025).

Basis for developing the Action Plan: Protocol of the Government of the Republic of Tajikistan. December 29. 2022, no. 12 (p. 16).

Coordinator: National Academy of Sciences of Tajikistan.

Developer of the Action Plan: State Scientific Institution «Glacier Research Center of the National Academy of Sciences of Tajikistan».

Deadline for implementation of the Action Plan: 2023-2025.

Implementers of the Action Plan: SSI «Glacier Research Center of the National Academy of Sciences of Tajikistan» and its departments.

Expected intermediate and final results of the Action Plan:

- assessment of the status of large-scale glaciological and hydrometeorological processes affecting regional and global climate, using a network of State Scientific Institution «Glacier Research Center of the National Academy of Sciences of Tajikistan» for observing the state and pollution of the natural environment and a system for collecting, processing and disseminating information;
- assessment of the current state of the cryosphere (glaciers and permafrost) and encouragement of their research through international cooperation, in particular to predict the evolution under different climate change scenarios;
- promotion of major international projects and programs on regional climate and environmental research carried out by international organizations in which Tajikistan participates;
- improvement and development of existing monitoring systems and technologies for forecasting glaciological and hydrometeorological processes;
- ensuring the effective use of the UN Glacier Trust Fund;
- assessment of the impact of specific natural-climatic and environmental factors of glacial zones on the livelihood and activities of the population;
- recommendations to ensure further sustainable socio-economic development of glacial regions.

Control over the implementation of the Action Plan: analysis and monitoring of the implementation of the Action Plan for the participation of the SSI «Glacier Research Center of the National Academy of Sciences of Tajikistan» is carried out by the Presidium of the National Academy of Sciences of Tajikistan, the organizing committee of the SSI «Glacier Research Center of the National Academy of Sciences of Tajikistan».

1. Goals and tasks of the Action Plan

The goals of this Action Plan include:

- organization of participation of SSI «Glacier Research Center of the National Academy of Sciences of Tajikistan» in the preparation and holding of the International Year of Glacier Preservation (2023-2025);

- obtaining new knowledge about glaciological and hydrometeorological processes in the main river basins of Tajikistan based on a significant increase in the volume of synchronized, coordinated and methodologically coherent glaciological and hydrometeorological observations and isotope studies in key regions of Tajikistan and methods of integrated study, assessments and forecasts of the state of the natural environment;
- achievement of sustainable development of glacial zones of Tajikistan, on the basis of integrated and effective use of natural resource potential, rational and balanced socio-economic development of these zones;
- improving living standards, solving environmental problems and preserving the natural environment.

To achieve the above-mentioned goals, the following main tasks are envisaged:

- improvement and widening of methods of research of glaciers and snow cover;
- assessment of the status and prediction of scientific and technological development in order to attract public resources for scientific research in the study and monitoring of glaciers in a changing climate conditions;
- resumption of permanent stationary observations of the largest glacier in Central Asia - Fedchenko - at the Gorbunov meteorological station;
- development of GIS technology, remote sensing and creation of conditions for access to high quality satellite images;
- publication by 2025 of all volumes of the catalog of glaciers of Tajikistan, the consolidated volume of the catalog of Glaciers of Tajikistan, which generally represent the current state of glaciers in the process of climate change;
- equipment of the laboratory of isotope studies of glaciers and snow cover of the SSI «Glacier Research Center of the National Academy of Sciences of Tajikistan» in order to conduct permanent isotope studies;
- establishment of research, monitoring and modeling of breakthrough glacial lakes to reduce risk and damage from the consequences of their breakthrough;
- studying and creating a monitoring system for pulsating glaciers in the high mountain regions of Tajikistan;
- ensuring a sufficient number of helicopter flight hours (at least 20-30 flight hours per year) for monitoring, aerial photo survey, mapping work on glaciers, as well as safe delivery of staff to hard-to-reach locations at the expense of the state budget and funds from international organizations and foundations;
- formation of state information resources in the field of glacier research and monitoring, creation and maintenance of a unified information database, creation and updating of glacier passports, as well as preparation of a collection of scientific publications on glaciers and water resources.

Priority tasks are:

- development of a network of glaciological and hydrometeorological high altitude stations at an altitude of 3500-5000 m above sea level and establishing work on glacier mass balance studies;

- conduct comprehensive high-altitude expeditions with the participation of national, regional and international partners;
- jointly with development partners to establish work on obtaining core from the largest glaciers in order to conduct chemical, isotopic and radioisotopic studies and determine their age.

One of the key scientific tasks of the IYGP will be to study the physical and social connections of the high mountain ecosystems and valley regions of Tajikistan, which will enable communication of a wide range of scientific disciplines and establish links with education at all levels and with the general public.

2. Brief explanation of the rationale for developing the Action Plan

Tajikistan has the highest percentage of mountainous areas in the region, occupying 93% of the country. More than half of Tajikistan's mountains are 3,000 meters above sea level. Data from 1940 to 2020 show that temperatures have increased in most areas of the country, including low-altitude (up to 1,000 meters above sea level), mountainous (1,000-2,500 meters above sea level), and high-altitude (above 2,500 meters above sea level), but the extent of warming varies by geographic location and climatic factors.

Between 1940 and 2020 there has been a temperature increase of 0.1-0.2 °C for each decade of this period. The number of days with a temperature of 40 °C or higher is increasing. Mountain areas experienced an increase of 0.3-0.5 °C. The autumn temperature was 0.6-1.1 °C higher than average in all mountain areas.

Decreasing glacier mass is one of the clearest indicators of atmospheric warming. Monitoring these changes is one of the main goals of the international climate monitoring strategy developed by the Global Climate Observing System. Long-term measurements of glacier mass balance are also the basis for calibrating and testing models that simulate future glacier runoff. This is very important for Central Asia, which is one of the most arid continental regions in the northern hemisphere. In densely populated regions, water shortages due to reduced glaciation potentially lead to pronounced political instability, dramatic environmental changes, and threats to food security.

Central Asia's future water resources are highly dependent on the cryosphere, especially snow, glaciers and permafrost. These components of the cryosphere contain enormous quantities of freshwater, and as the climate continues to warm, expected changes will play an important role in the future availability of water in the region.

Fluctuations in mountain glaciers have been tracked in various parts of the world for more than a century (Haeberli et al., 2007; Zemp et al., 2015), and glacier changes are considered reliable indicators of global atmospheric warming trends ((IPCC). 2013). Mountain glaciers and ice caps are important for early detection strategies in global climate observations. Consequently, glaciers are one of the "Essential Climate Variables (ECVs)" in the Global Climate Observing System (GCOS).

The Republic of Tajikistan, under the leadership of the Founder of Peace and

National Unity - Leader of the Nation, President of the Republic of Tajikistan, Honorable Emomali Rahmon, has taken a key role in the world policy of protecting glaciers and water resources.

Recent history shows that Tajikistan, among other members of the international community at the global level, actually remains one of the initiators of active actions on the rational use and effective cooperative management of water resources.

The Republic of Tajikistan is the main promoter of the five global water initiatives:

1. Proclaiming of 2003 as International Year of Freshwater by the Resolution of the 55th session of the UN General Assembly of December 20, 2000, 55/196;
2. Proclaiming of 2005-2015 as International Decade for Action "Water for Life" by the Resolution of the 58th session of the UN General Assembly of December 23, 2003, 58/217;
3. Proclaiming of 2013 as International Year of Water Cooperation by the Resolution of the 65th session of the UN General Assembly of December 20, 2010, 65/154;
4. Proclaiming of 2018-2028 as International Year of Water Cooperation by the Resolution of the 65th session of the UN General Assembly of December 20, 2010, 65/154;
5. Resolution of the 77th Session of the United Nations General Assembly of 14 December 2022 on:
 - declaring 2025 the International Year of Glaciers Preservation;
 - declaring March 21 the International Day of Glaciers Preservation;
 - establishing an international trust fund under the United Nations to help preserve glaciers;
 - holding an International Conference on Glacier Protection in Dushanbe in 2025.

In the purpose of implementing this Resolution at the UN the present Action Plan was developed.

3. The system of events

The action plan includes the largest, key to the tasks of the International Year of Glacier Preservation (2025), research activities at the federal, regional and industry level, as well as activities related to the solution of organizational issues and the implementation of information interaction both in the scientific environment and mass media.

The action plan consists of the following sections:

1. Conducting organizational activities.
2. Development of the methodological basis and resource base of activities.
3. Preparation and carrying out research expedition and other scientific-technical works.

4. Preparation and carrying out the system of final measures.

5. Activities in the public and social direction.

Section 1 includes activities on the establishment of the Organizing Committee for the participation of the SSI «Glacier Research Center of the National Academy of Sciences of Tajikistan» in the implementation of activities and distribution of responsibilities and powers of organizational activities at the national and international levels, etc., which are implemented by the Presidium of the National Academy of Sciences of Tajikistan.

Section 2 includes activities for the development of a national research program during the International Year of Glacier Preservation (2023-2025) and participation in international projects of that year. Organization of resource provision implies the inclusion of activities of the International Year of Glacier Preservation (2023-2025) in the annual work plans with the appropriate redistribution of funding within existing programs, as well as the attraction of additional funds for the implementation of these activities.

Section 3 includes a set of expeditionary and scientific-technical works in the areas of complex research of the main river basins of Tajikistan, research related to climate change, atmosphere, cryosphere ecosystems, as well as solving problems of the observation network in the studied regions.

Section 4 includes a group of activities for the management and formation of data during the international year of events (conferences, symposiums, meetings, etc.), and also activities for a comprehensive coverage of the results of the activities of scientists during this period.

Section 5 includes a number of activities aimed at:

- (a) Raising public awareness at the secondary and tertiary levels;
- (b) Raising awareness among decision-makers;
- (c) Gender equality and increasing the role of women in glacier research.

4. Implementation mechanism

The mechanism for implementation of the Action Plan provides for the use of financial and budgetary policy of the National Academy of Sciences of Tajikistan to identify current and assess future climate changes, the state of the environment, taking into account the interests of economic entities, regional and local formations of the Republic of Tajikistan.

The Organization Committee of the Center is responsible for organizing the implementation of the Action Plan.

Participation of other organizations in the implementation and funding of the Action Plan is determined by the interdepartmental agreements.

5. Resource support

The main sources of funding: the republican budget, the budget of the National Academy of Sciences of Tajikistan and non-budgetary funds.

During the period of coordination of activities for the preparation and celebration of the International Year of Glacier Preservation (2023-2025), local executive authorities and interested business entities must confirm their consent to co-financing

of relevant activities, secured by protocols or agreements with the authorized bodies.

Foreign participants can be involved in the realization of activities for the preparation and implementation of the International Year of Glacier Protection (2023-2025) in accordance with the legislation of the Republic of Tajikistan. Major international funds, such as the Global Environment Facility (GEF), the World Wildlife Fund (WWF) and others may be involved.

Carrying out activities for the preparation and implementation of the International Year of Glacier Preservation (2023-2025) will require expenses from the national budget for the restoration and development of the observation network, strengthening scientific and technical research in the field of glacier protection.

The expected benefits to Tajikistan from the International Year of Glacier Preservation (2023-2025) will clearly exceed the costs incurred.

6. Assessment of the effectiveness, socio-economic and environmental impacts of the Action Plan

The socio-economic effectiveness of the implementation of the Action Plan will be evaluated by the dynamics of the main indicators of basic and applied research in accordance with the adopted standards.

The structure of the expected socially significant results includes:

In the field of fundamental climatology development:

- obtaining more reliable information on the status of glaciers in the main river basins of Tajikistan, combined with data on their thickness and quantity;
- assessment of current and predicted changes in hydrological regime of river basins in Tajikistan;
- assessment of the current state of the main parameters of the ice cover and probable scenarios of possible trends in its thickness and volume for the next decades.

In the field of environmental safety:

- obtaining reliable information on the pollution of glaciers in the main river basins of Tajikistan, which can be further used by the industries concerned in planning economic activities;
- assessment of possible environmental impacts of anthropogenic factors on the natural environment in the main river basins of Tajikistan;
- assessment of the possibility of changes in the ecological status of fresh water in the main river basins of Tajikistan under the impact of natural and anthropogenic factors and in connection with different scenarios of climate change;
- assessment of the role of transboundary pollutant carryover;
- quantitative assessment of the contribution of pollutant carryover from pollutant sources located in neighboring and distant regions;
- assessment of multiyear and seasonal variability in the transportation and transformation of pollutants through the territories of neighboring countries;
- characterization of trends in levels of radioactive contamination of glaciers;
- proposals on exclusion or possible limitation of the impact of negative factors on the formation of water quality in the main river basins;
- development of recommendations for environmental protection activities.

In the field of hydrometeorological monitoring system development:

- development of the system of hydrometeorological observations, which will allow full-scale monitoring of the state of glaciers and natural processes in the main river basins of Tajikistan;

- proposals on improving and organizing regime and special observations of the state of the main river basins of Tajikistan in connection with the intensification of exploitation of natural resources and an increase in anthropogenic pressure;

- development of recommendations on improving the monitoring of the state of the natural environment and renewable natural resources in order to forecast their changes in the long term.

In the field of improving the quality of forecasting:

- improvement of global and regional climate models;

- improvement of existing and development of new technologies for forecasting ice and hydrometeorological conditions in major river basins using modern information technologies;

- improving the quality of glacier forecasts.

In the field of implementation of international commitments of Tajikistan:

- contributing to major international projects and programs on climate and polar environment research conducted by WMO and other international organizations in which Tajikistan participates.

In the field of sustainable development of territories:

- a set of recommendations for regional and local executive authorities, organizations and agencies engaged in economic, environmental and other activities in glacial zones, in sectors of the economy sensitive to climate change, to ensure glaciological and hydrometeorological safety, effective use of glaciological and hydrometeorological information, reduction of possible adverse environmental changes due to anthropogenic activities;

- fundamental scientific work "Glaciological and hydrometeorological conditions of the main river basins. Results of the International Year of Glacier Preservation (2023-2025).

One of the main results of the International Year of Glacier Preservation (2023-2025) will be the development of fundamental and applied research aimed at maintaining the equilibrium state of the Arctic ecosystems and ensuring environmental safety, sustainable environmental management, taking into account current climate changes.

7. Organization of management of the Action Plan implementation

Management and coordination of activities of the Action Plan is carried out by the Organizing Committee for the participation of the State Scientific Institution «Glacier Research Center of the National Academy of Sciences of Tajikistan» in the preparation and implementation of the International Year of Glacier Preservation (2023-2025) (OC IYGP).

OC IYGP in cooperation with interested executive authorities assesses the effectiveness of implementation of the Action Plan and submits a report to the Government of the Republic of Tajikistan on the results of participation of the State

Scientific Institution «Glacier Research Center of the National Academy of Sciences of Tajikistan» in the activities of the IYGP (2023-2025).

Plan
for the preparation and implementation of the International Year of the Preservation of Glaciers (2023-2025)

1. Organizational measures

The event	Deadline	Expected results	Head organization
Establishment of an organizing committee for the participation of the State Scientific Institution State Scientific Institution «Glacier Research Center of the National Academy of Sciences of Tajikistan» in IYGP activities (2023-2025)	First quarter 2023	Members of the OC of IYGP Project Provisions of the IYGP	NAST
Development of a Work Plan for the OC IYGP and creation of its working bodies	First quarter 2023.	Work Plan of the OC IYGP for the period 2023-2025. Annual Work Plans of the OC IYGP. Formation of working groups. Provisions on working groups. Working group work plans.	NAST , SSI GRC NAST
Establishment of the OC IYGP secretariat	First quarter 2023	Secretariat composition Provisions on the secretariat	NAST
Supporting the functioning of the OC IYGP and its working bodies	First quarter 2023	Organization of meetings, preparation of plans and materials OC IYGP	NAST , SSI GRC NAST

2. Development of the methodological basis and resource base of measures

Development of a scientific program for the IYGP	First quarter 2023	Scientific program of the IYGP	NAST , SSI GRC NAST
Organization of resource support for IYGP events	2023-2024	Solutions for resource provisioning	NAST

3. Preparation and conducting of research expedition and other scientific and technical works during the IYGP period

The event	Deadline	Expected results	Head organization
Preparation of research expedition and other scientific and technical works on the study of the main river basins of Tajikistan and bordering territories	2023-2024	Programs and plans of expedition works. Resource support	NAST, SSI GRC NAST
Generalization and publication of scientific results of research works of Tajik and foreign scientists in the field of glacier protection within the framework of IYGP (2023-2025).	2025	Publication of the results of research by Tajik and foreign scientists in the field of glacier protection in the scientific and practical journal of the State Scientific Institution «Glacier Research Center of the National Academy of Sciences of Tajikistan» “Cryosphere”	NAST, SSI GRC NAST
Edition of the Catalogue of Tajikistan Glaciers in Volumes	2024	Providing interested organizations and agencies of the Republic of Tajikistan and foreign countries with necessary information about the glaciers of Tajikistan and their condition	NAST, SSI GRC NAST

5. Preparing and implementing a system of final events

The event	Deadline	Expected results	Head organization
Creation of the information infrastructure of the IYGP	2023-2025	Database system, web portal, collection, transmission and storage system	NAST, SSI GRC NAST
Annual conferences, seminars, roundtables, exhibitions devoted to IYGP	2023-2025	Discussion of the results of research expedition and other scientific and technical works during the IYGP period	SSI GRC NAST SADC, WSL ISAR, UNIFR
International Conference "IYGP Results"	2025	Summarizing the conduct of the IYGP	OC IYGP, SADC, WSL
Organization of cooperation with the media	2023-2025	Promotion of IYGP events	OC IYGP

Organizing a photo exhibition "Glaciers of Tajikistan in a changing climate".	2024	Creation of a permanent exhibition "Glaciers of Tajikistan in a changing climate" in the hall of the State Institution "National Museum" of the Executive Office of the President of the Republic of Tajikistan	SSI GRC NAST
Organization of meetings with youth and intellectuals around the IYGP	2023-2025	Holding an action in support of the International Year of Glaciers Preservation	SSI GRC NAST

**Plan
of conducting research, expedition and other scientific and technical
works during the IYGP period (2023-2025)**

Scientific research and expeditions	Deadline	Expected results	Responsibles
Cryosphere			
Studies of permafrost in the high altitude areas of the Eastern Pamirs and the Kofarnigan River basin.	2023-2024	Determination of the volume of ice and their reserves in the permafrost of the mentioned regions and river basins of Tajikistan.	SSI GRC NAST, SADC, WSL ISAR, UNIFR
Study of permafrost distribution by altitude on the territory of Tajikistan	2023-2025	The area of permafrost in Tajikistan's high altitude zones will be determined	SSI GRC NAST, SADC, WSL ISAR, UNIFR
Restoration of remote river observation in Tajikistan river basins	2023-2025	Determination of snow cover height, snow density and snow line in the river basins of Tajikistan	SSI GRC NAST and other partners
Development of remote sensing methods based on GIS technology, the prevalence of snow cover by altitudinal zones of the territory of Tajikistan to predict the water availability of rivers for the vegetation season	2023-2025	Data will be obtained on the area of snow cover in the operational mode, which allows predicting the water content of rivers and flooding	SSI GRC NAST and other partners
Glaciology			

Study of the current state of the Fedchenko Glacier under conditions of climate change	2023	Obtaining information about: - types of glaciers and their exposition; - firn line and moraines; - watercourses; - glacial lakes; - hydrological regime; - climatic conditions of the basin; - ice melting; Solar irradiation and solar radiation; -glacier movement speed; - climate change and glacier degradation prediction by models; - result of glacier state modeling.	SSI GRC NAST, SADC, WSL ISAR, UNIFR
Study of the current state of glaciation in the river basins of Tajikistan	2023-2025	Analysis and assessment of the current state of glaciation of river basins in Tajikistan under conditions of climate change.	SSI GRC NAST and other partners
Study of the current state and assessment of glacier degradation dynamics in the river basins of Tajikistan	2023-2025	Obtaining information about: - condition and quantity of glaciers in the Tajikistan river basin; - current state of climate and trends of climate change; - statistical assessment of meteorological parameters characterizing the state and climate variability.	SSI GRC NAST and other partners
Determination of long-term mass balance of glaciers in the main river basins of Tajikistan	2023-2024	Determination the degradation rate of glaciers	SSI GRC NAST, SADC, WSL ISAR, UNIFR
Glacier mass balance modeling of major river basins in Tajikistan	2023-2024	Determination of glacier degradation rates based on remote sensing and expeditionary work in selected regions of Tajikistan	SSI GRC NAST, SADC, WSL ISAR, UNIFR
Development of a methodology for determining changes in the volume of glaciers, through the use of GIS technology	2023-2024	Determination of the dynamics of ice volume change on glaciers	SSI GRC NAST

Contribution of glaciers in the Zeravshan river basin to the formation of water and energy resources of the territory	2024	Review of research and information on the status and further evolution of glaciers in the Zeravshan River basin	SSI GRC NAST
Isotopic and hydrochemical studies			
Study of isotope content in glaciers, snow cover, and meltwater of major river basins in Tajikistan	2024-2025	Determination of heavy and light isotopes in meltwater from glaciers and snowfields, in order to identify their origin and sources of pollution	SSI GRC NAST, IAEA
Hydrochemical analyses of heavy metals and chemical elements in meltwater from glaciers and snowfields	2024-2025	Determination of the content of heavy metals and chemical elements, as well as the level of pollution of the objects under study.	SSI GRC NAST
Establishment of a network to collect precipitation, meltwater and snow cover samples for isotopic and chemical analysis.		For regular year-round monitoring of isotope content and chemical analysis from the isotope network	SSI GRC NAST, IAEA and other partners
Study of tritium content in glaciers of major river basins in Tajikistan		Determination of tritium concentration to establish the age and dynamics of glaciers in the river basins of Tajikistan.	SSI GRC NAST, IAEA
Hydrometeorology			
Dynamics of changes in hydrometeorological parameters and their correlation with the hydrological regime of the main river basins of Tajikistan	2023	Objective assessment of the dynamics of changes in snow resources, precipitation and accumulation of snow cover, formation and character of river flow in the main river basins of Tajikistan.	SSI GRC NAST, SADC, WSL ISAR, UNIFR, WMO
Hydrological regime and degradation of glaciation of major rivers in Tajikistan under conditions of climate change	2024	Comparative analysis of the hydrological regime of the main river basins of Tajikistan under conditions of climate change and glacier degradation.	SSI GRC NAST, SADC, WSL ISAR, UNIFR

Forecast of the Vakhsh River flow based on the SRM model using MODSNOW satellite data on snow cover	2024	Assessment of the Vakhsh River water availability for the period 2016 -2022 using the snowmelt runoff model (SRM) in order to detail the map of the Vakhsh River watershed, determine its condition during global warming, strategies and prospects for its study.	SSI GRC NAST
Aerological observations	2023-2025	Restoration of aerological stations in Dushanbe and Khorog for obtaining information about: - air temperature; - air humidity; - air pressure; -wind direction and speed. Prediction of convective processes and jet stream processes in the upper troposphere.	SSI GRC NAST, WMO and other partners
Natural disasters			
Analysis of the main exogenous geological processes of Tajikistan	2024	Analysis of the results of monitoring of the main threatening exogenous geological processes of the State Service for monitoring especially dangerous geological processes	SSI GRC NAST
Study, monitoring and modeling of breakthrough glacial lakes	2024	Determine the condition of breakthrough glacial lakes, monitoring and developing measures to reduce damage	SSI GRC NAST, UNESCO
Study and Monitoring of Pulsating Glaciers in Tajikistan	2024	Assessment of the current state of pulsating glaciers and their monitoring based on GIS technology, remote sensing and scientific expeditionary works.	SSI GRC NAST, UNESCO and other partners

Relation of normal and glacial mudflows to changes in meteorological parameters		Qualitative and quantitative study of the link between natural disasters and changes in basic meteorological parameters	SSI GRC NAST, UNESCO
Expeditionary works			
Organization and implementation of expeditionary works on glaciers and snowfields of the upper reaches of the main river basins of Tajikistan:	2023-2025	Assessment of snow reserves on determining the balance of mass and density of snow and snow cover, and their condition by means of drones. Analysis of previous studies and assessment of the current state of the glacier. Studying the condition of the glacier, establishing its permanent monitoring and identifying breakthrough glacial lakes. Conducting scientific glaciological studies and taking core samples in order to determine the age of the glacier.	SSI GRC NAST, SADC, WSL ISAR, UNIFR and other partners
Aerial observations (20 to 30 hours per year) and route snow surveys in the river basins of Tajikistan	2023-2025	Conducting aerial observations to determine snow reserves, snow density and snow line in river basins	SSI GRC NAST and other partners
Studies of glacier mass balance in the glaciological network of the main river basins of Tajikistan	2023-2025	In cooperation with development partners, study the mass balance of glaciers and provide this data to the World Glacier Monitoring Service.	SSI GRC NAST, SADC, WSL ISAR, UNIFR , WGMS and other partners

Conducting expeditionary works to develop and expand the glaciological network from 3500 to 4900 m.	2023-2025	In cooperation with development partners, develop measures to expand the glaciological network, and collect and analyze glaciological and hydro-meteorological data annually to assess the dynamics of changes in the condition of glaciers and snow cover	SSI GRC NAST, SADC, WSL ISAR, UNIFR , WGMS and other partners
Monitoring of the Medvezhy Glacier based on expeditionary work and GIS-technology.	2023-2025	Establishment of permanent monitoring and prediction of glacier pulsation.	SSI GRC NAST, IG RAS
Study and monitoring of the Baralmas Glacier in the Surkhob River headwaters	2023-2025	To establish monitoring and modeling of the degree of breakthrough hazard of glacial lakes, monitoring and developing measures to reduce damage.	SSI GRC NAST, SADC, WSL ISAR, UNIFR , WGMS
Research and monitoring of glaciers of Lake Karakul in the Eastern Pamirs	2023-2025	Study of the current state of glaciers in the Lake Karakul basin, as well as monitoring of the hydrological and hydrochemical state of the lake.	SSI GRC NAST, SADC, WSL ISAR, UNIFR , WGMS
Establishing regular research work on the Fedchenko Glacier	2023-2025	Establishing permanent work at the Gorbunov station and conducting scientific glaciological research and core cutting to study past climate, conduct isotope studies, and determine the age of the glacier.	SSI GRC NAST, SADC, WSL ISAR, UNIFR , WGMS
Study of glacier №383 in the basin of the Obikhingov River, the Nisai River headwaters	2023-2025	Assessment of the condition and determination of the mass balance of the glacier.	SSI GRC NAST, SADC, WSL ISAR, UNIFR , WGMS

RGO Glacier research in the Vanj river basin	2023-2025	Assessment of glacier conditions through the use of drones	SSI GRC NAST and other partners
Ground and satellite monitoring of the Medvezhy Glacier in the Vanj river basin	2023-2025	Studying the condition of the glacier, establishing continuous monitoring and predicting its possible pulsation	SSI GRC NAST and other partners
Permafrost studies in the Eastern Pamirs and Kafirnigan river basin	2023-2025	Study of permafrost in the Eastern Pamirs, in the Kafirnigan river basin	SSI GRC NAST, SADC, WSL ISAR, UNIFR , WGMS and other partners