

United Nations Development Programme



Annual Work Plan 2024

Project Title:	Glaciers & Students - A scientific-based approach to monitor climate and glaciers in Pakistani mountain regions and support hydrogeological risk prevention
OPIII/ Country Programme Outcome:	Strategic Plan Outcome 3: Resilience built to respond to systemic uncertainty and risk CPD Outcome 3: Climate change resilience and environment
Country Programme Output (2023-2027)	Output 3.1. In line with international conventions and national policy frameworks, implementation mechanisms are strengthened to promote, manage and conserve natural resources
Project Outputs	<p>Output 3.2. Efficient and sustainable use of fresh marine and terrestrial ecosystems, including the Indus Basin, for resilient communities through interventions for improved health, livelihoods, green economy and clean energy</p> <ol style="list-style-type: none"> 1. Assessment and monitoring system of mountain glaciers and climate improved in Pakistan contributing to improved planning and management of water resources and natural resources including the sustenance of biological diversity and support to local livelihood base (GEN-01). 2. Collaboration and sharing mechanism among Pakistani and international institutions and students strengthened to build capacities for longer term glaciers monitoring through innovative approaches & technologies (GEN-01).

Project Brief Description

The northern parts of Pakistan are home to some of the vast stretches of glaciers after the northern pole. The glacier reserves feed local livelihood systems and support unique ecosystems of global importance, in addition to serve as source of water for downstream areas. In face of the growing threat from global warming, these resources need assessment and monitoring through scientific technologies. The people living in mountain slopes of GB region are faced with risk of mountain hazards originating from glacier changes under the effect of climate change. The lack of information on climate change and assessment of glacial changes makes it difficult to predict the hazards. This project aims at developing a consolidating program to establish monitoring of high-altitude climate and assessment of glacier changes, in support of environmental monitoring and natural resources management in Pakistan Mountains, Project activities will also contribute to improve risk assessment and prevention, dealing in particular with GLOFs and hydrogeological hazard, thanks to the application of remote sensing and GIS techniques and a dedicated web information system. The project intends to actively involve Pakistan Universities and their students in the monitoring activities through a dedicated training and capacity building program in the field of glaciers monitoring activities and remote sensing *analysis in order to provide the appropriate tools to ensure the pursuing of a long-term research activities at the end of the project.*

Programme Period: July 2021- September 2024

Quantum Project ID: 00132208

Start date: July 2021

End Date: 30 September 2024

LPAC Meeting Date: 18 May 2022

2024 AWP budget:

Total resources required: 143,931 € (156,140 \$)

Total allocated resources: 143,931 € (156,140 \$)

- Other:

Govt of Italy

143,931 € (156,140 \$)

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Agreed by Ev-K2-CNR

Agostino Da Polenza

Agreed by UNDP (RR/DRR):

Agostino Da Polenza

DocuSigned by:

Agostino Da Polenza

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16-Jan-2024



Annual Work Plan 2024

Project ID: 00144462 **Project Title: Glaciers & Students - A scientific-based approach to monitor climate and glaciers in Pakistani mountain regions and support hydrogeological risk prevention**

EXPECTED OUTPUTS <i>And baseline, associated indicators and annual targets</i>	PLANNED ACTIVITIES <i>List activity results and associated actions</i>	Quarterly Targets & Timeframe				RESPONSIBLE PARTY (including potential RPs)	PLANNED BUDGET			
		Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount (Euro)	Amount (USD) (@ 1.0848)
Output 1: Assessment and monitoring system of mountain glaciers and climate improved in Pakistan mountain areas contributing to improved planning and management of water and natural resources including the sustenance of biological diversity and support to local livelihood base”	Activity Result 1.1.1 Climate monitoring network (installation and maintenance)									
	Action 1.1.1 a Recognition survey at Askole and Urdukas station					Ev-K2-CNR	AICS	72100	-	-
	Action 1.1.1 b Planning and installation of weather station restoration activities					Ev-K2-CNR	AICS	72100	-	-
	Action 1.1.1c Weather station restoration at Askole and Urdukas					Ev-K2-CNR	AICS	72100	-	-
	Action 1.1.1d Weather station checking and maintenance					Ev-K2-CNR	AICS	72100	-	-
	Action 1.1.1e Data provision and sharing					Ev-K2-CNR	AICS	72100	-	-
Indicator 1.1: Number of climate	Activity Result: 1.2.1 . Study and monitoring of glaciers and glacial bodies a) multitemporal analysis									

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monitoring stations in glacier region established and maintained to provide data on changing climate patterns for use by MET Deptt and other concerned	Action 1.2.1a Selection of areas for multitemporal glacier analysis					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.1b Data acquisition for glacier area change assessment					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.1c Glacier area change assessment					Ev-K2-CNR	AICS	72100	-	-
	1.2.1d Change assessment report					Ev-K2-CNR	AICS	72100	-	-
	Activity Result 1.2.2 : Study and monitoring of glaciers and glacial bodies b) FIELD MONITORING									
Indicator 1.2: Number of glacial bodies measured, monitored and documented to monitor changes	Action 1.2.2a Review of literature for glacier selection					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2b Selection of glaciers for field activities					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2c Planning of field missions on selected glaciers					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2d Field activities on selected glaciers					Ev-K2-CNR	AICS	72100	-	-

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<p>over time that can provide early warning for natural hazards and contribute in reducing risks faced by mountain communities, particularly women and marginalized groups, in downstream valleys</p> <p>Baseline: 0 Target: 04 (Surveyed glacier bodies, monitored, studied, analyzed and reported) Not planned in 2024\$</p>	Action 1.2.2e Validation of acquired field data					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2f Elaboration of field data for each glacier					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2g Planning of field missions on selected glaciers					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2h Field activities on selected glaciers					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2i Validation of acquired field data					Ev-K2-CNR	AICS	72100	-	-
	Action 1.2.2j Data elaboration and sharing					Ev-K2-CNR	AICS	72100	-	-
Indicator 1.3: Update the Pakistan Glacier Inventory	Activity Result 1.3.1: Pakistan glacier inventory									
	Action 1.3.1a System requirements and work team definition					Ev-K2-CNR	AICS	72100	-	-

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Baseline: 0 (Partial Inventory of CKNP glaciers exist) Target: 04 (Glacier Inventory updated and published , 03 scientific publications in international journals)	Action 1.3.1b Implementation of the processing environment					Ev-K2-CNR	AICS	72100	-	-
	Action 1.3.1c Legend					Ev-K2-CNR	AICS	72100	-	-
	Action 1.3.1d Data acquisition from Automated Weather Stations and Glacial Bodies	X				Ev-K2-CNR	AICS	72100	5,000	5,424
	Action 1.3.1e First classified map for Glacier Inventor					Ev-K2-CNR	AICS	72100	-	-
	Action 1.3.1f Validation of the first map					Ev-K2-CNR	AICS	72100	-	-
	Action 1.3.1g Final classified map	X				Ev-K2-CNR	AICS	72100	7,000	7,594
	Action 1.3.1h Morphometric analysis Glacial Bodies	X				Ev-K2-CNR	AICS	72100	5,000	5,424
	Action 1.3.1i Preparation and publication of the book of the glacier inventory	X				Ev-K2-CNR	AICS	72100	35,000	37,969
	Action 1.3.1j Final event		X			Ev-K2-CNR	AICS	72100	10,000	10,848

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Output 2: Collaboration and sharing mechanism among Pakistani and international institutions and students strengthened to build capacities for longer term glaciers monitoring through innovative approaches and technologies 2.1 Web based GIS climate and glaciers data archiving and sharing system developed and maintained to enable knowledge and data sharing among the authorities responsible e.g. Met	Activity result 2.1.1 : Implementation of the Information System									
	Action 2.1.1a System requirement analysis for updating of the GeoApp					Ev-K2-CNR	AICS	72100	-	-
	Action 2.1.1b New release of the GB GeoApp					Ev-K2-CNR	AICS	72100	-	-
	Action 2.1.1c Requirement analysis for new climate data and metadata publication	X				Ev-K2-CNR	AICS	72100	10,000	10,848
	Action 2.1.1d Updating of the SHARE Geonetwork Platform	X				Ev-K2-CNR	AICS	72100	10,000	10,849
	Action 2.1.1e Publication of the new web service with new high-altitude weather stations data					Ev-K2-CNR	AICS	72100	-	-
	Activity result 2.2.1 Capacity building									

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Deptt, Disaster Management Authorities, Agriculture Deptt, Water Mgt. Deptt & EPA at GB and national level. Baseline:0 Target: 01 2.2 Number of students and faculty members of the local universities in Gilgit-Baltistan trained in glacier inventory and monitoring Baseline: 0 Target: 100 (60 male and 40 females) Not planned in 2024	Action 2.2.1 a Training strategy and logistic arrangements with local partners					Ev-K2-CNR	AICS	72100	-	-
	Action 2.2.1b Training for GEOMATICS					Ev-K2-CNR	AICS	72100	-	-
	Action 2.2.1c Training for glaciological field activities					Ev-K2-CNR	AICS	72100	-	-
	Action 2.2.1d Training on avalanche risk					Ev-K2-CNR	AICS	72100	-	-
	Action 2.2.1e Local researchers for monitoring activities					Ev-K2-CNR	AICS	72100	-	-
	Action 2.2.1f Training for GEOMATICS					Ev-K2-CNR	AICS	72100	-	-
TOTAL									82,000	88,955
UNDP COST										

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Monitoring Evaluation <i>(including travel, end term evaluation)</i>	Monitoring and evaluation	X	X	X		UNDP	AICS	71600	8,296	9,000
GMS (8%)		X	X	X		UNDP	AICS	75100	10,662	11,566
Quality Assurance and Oversight Cost (DPC (CO quality review; Third Party financial spot-checks and audit fee) Operational and Staff Cost.		X	X	X		UNDP	AICS	73400, 64300, 71400 72100, 74500, 73100,	5,531 4,609 22,123 3,687 3,687 3,335	6,000 5,000 24,000 4,000 4,000 3,618
Sub-Total UNDP Cost									61,931	67,184
Total									143,931	156,140

II. Monitoring Plan 2024 *(Include all monitoring and evaluation activities/events)*

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Expected Results (Outcomes & Outputs)	Indicators	Baseline	Targets	Data Collection Plan				
				Source/Method of Collection	Schedule/Frequency	Responsible Staff	Resources (€)	Risks and Assumptions
Obtained from the CPD and project Results Frameworks)	Obtained from the CPD and project Results Frameworks)	At the project start date	At the project end date	Specific publication, evaluation, survey, field observation, interviews, etc	Monthly, quarterly, annually, etc	Staff member responsible for collecting and reporting data	Estimated cost of collecting and reporting data	Any risks or assumptions concerning data collection