



Committee of Emergency Situations & Civil Defense, ECHO and UNDP Tajikistan  
Project "Strengthened Disaster Risk Management in Tajikistan"

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**Minutes of the REACT Meeting**  
**12 March 2010, UN Conference Hall**

Chair: Mr. Khaybullo Latipov, Chairman, Committee of Emergency Situations and Civil Defense (CoES)

Participants: REACT partners (Annex I- attached)

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**1. Introduction**

Mr. Latipov, opened the meeting and welcomed all the participants.

**2. Government recovery action plan in Vanj district:**

• *Committee of Emergency Situations and Civil Defense*

Mr. Latipov, chairman of CoES, briefed participants that following the earthquake occurred in Vanj district on January 2<sup>nd</sup>, 2010, overall 5 different meetings with REACT partners have been convened covering issues related to Vanj earthquake response and recovery operations:

- 1) January 5, 2010 – Extraordinary REACT meeting;
- 2) January 8, 2010 – Meeting with the first deputy Minister of Foreign Affairs;
- 3) January 20, 2010 – Regular REACT meeting;
- 4) February 10, 2010 – Regular REACT meeting;
- 5) February 18, 2010 – Early Recovery Planning meeting.

As of disaster occurrence date up to this date, following response measures have been undertaken by the Government of Tajikistan:

- Governmental Commission under the chairmanship of Prime Minister has visited the disaster site on January 2010;
- Assessment of the caused damage has been conducted;
- Affected households identified and list finalized;
- Delivery of tents to the disaster site organized;
- Land plot identified for relocation of the population and engineering-geological assessment conducted;
- Master Plan of the new settlement, design of the water supply and electricity supply system developed;

Mr. Latipov announced that representatives of specialized state agencies, responsible for recovery actions in Vanj district have been invited to the meeting and passed the floor to invited representatives for more detailed briefing.

Mr. Boltaev, representative of *Agency on Architecture and Construction (AAC)*, informed the participants that AAC was tasked by Government to develop a Master Plan of new settlement to be constructed in Surkhsangoba area. Master Plan of the area has been developed, by special institution within AAC: "Giprostroy". The copy of the Master Plan was presented to the participants (Annex II). The new settlement will be located 17 km away from Vanj district center, on the main road Dushanbe-Vanj. In accordance to Master Plan, new settlement will be 100 meters away from river and 50 meters away from main road. The territory of the new settlement will be 44 ha. Developed Master Plan includes 270 houses, school for 380 schoolchildren, medical point, market place, hotel and other social infrastructure. In accordance to Master Plan 168 land plots for houses are considered as a highest priority. At this stage, marking of the 100 land plots has been completed already. Every land plot is 0.01 ha size. He added that constructions of 5 houses have been started already and so far excavations of trenches for foundations of these houses have been completed.

Mr. Peter Ko, from ADB, asked whether this new land has been affected by flooding in past, since it is located along the river.

Mr. Boltaev, from AAC, replied that in line with the conclusion of engineering-geological assessment of the site, it is foreseen that river bank reinforcement facilities will be constructed. In addition, settlement is located 100 meters away from river and green zone will be located in that 100 meters space, to ensure safety of the settlement from floods.

Mr. Frank Paepke, from GAA, asked whether any cost calculation of new settlement construction has been prepared and who will cover the cost? Will there be any cost share between Government and beneficiaries?

Mr. Boltaev replied that AAC is responsible only for design of the new settlement and Mr. Latipov added that approach used in Khuroson district following the mudflow of May 2009, will be applied in Vanj district as well, to wit main construction materials will be provided by Government to affected households and construction works will be covered by own means of the affected households. However, he emphasized that Government is considering the support from REACT partners.

Mr. Rustam Ubaidulloev, from UNICEF, asked whether funding has been allocated for construction of the school indicated in the Master Plan of the new settlement.

Mr. Saidvaliev, representative of *Directorate on Construction of State Facilities* (infrastructure), replied that Directorate is responsible for construction of school and medical point, so called "Health Center". Funds for construction of these facilities will be allocated by Government of Tajikistan. Moreover, funding will be allocated for equipping and furnishing of the facilities. At this stage, Directorate is developing the design of the premises and estimation of the costs.

Ms. Manzura Nazaramonova from SDC, asked whether Agency on Construction and Architecture will control the construction process of the private houses to be built, to ensure their seismic resistance?

Mr. Boltaev, from AAC, replied that design of the houses to be built in new settlement of Vanj district are identical to those, which were built in Khuroson district which considers seismic safety norms. However, houses in Vanj district will be built using stones, since bricks are not produced in Vanj district and delivery cost from Dushanbe is very high. He pointed that AAC will be responsible for control of construction process and will ensure that all construction works will be accomplished with consideration of building norms.

Mr. Gulov from *Ministry of Melioration and Water Resources* informed participants that Ministry is responsible for construction of river bank reinforcement facilities, to ensure safety of the settlement from floods. State Enterprise "Tojikoblohikashi" (TajikWaterDesigning) under the Ministry of Melioration and Water Resources has developed the design and estimation of river bank reinforcement facilities to be constructed in Surkhsangoba area. According to the estimation overall 90 000 somoni will be required for construction of the river bank reinforcement facilities. Currently design and estimation have been submitted to the Government along with request for allocation of the required funds. It is expected that actual construction works at the site will be started in April 2010.

Mr. Juraev, representative of *Main Geological Department (Glavgeology)*, informed participants that Glavgeology was responsible for engineering-geological assessment of the new allocated land spot. The allocated land is located along with Vanj river and terrace is located 7-8 meters above the river level. In 1980's this land spot was under development and therefore, 40-80 cm layer of clay soil was delivered to the site. The soil of the terrace has complex nature. Observations on the site did not indicate any obvious risk of geological processes. However, the eastern part of the terrace is being washed by river, therefore conclusion of the assessment indicates that river bank reinforcement facilities have to be constructed. Also, conclusion of the assessment indicates that new settlement should be constructed in the area, which is at least 150 m away from river. The historical data indicates that in 1968, 1973 and 1989 floods affecting the allocated land have occurred, which were mostly related to the movement of glacier

Medvejkov. Therefore, close monitoring of the Medvejkov glacier, by relevant agencies such as Hydromet and CoES should be undertaken.

Mr. Guiseppe Bonati from Cesvi, pointed that allocated land is only 7-8 meters above the river level, which puts the land under the threat of flooding and construction of river bank reinforcement facilities is crucial.

Mr. Latipov, replied that movement of Madvejkov glacier is monitored and currently glacier is not moving. He pointed that Vanj district is mountainous area, making availability of area fully safe from risks of natural disasters difficult. He emphasized that decision on location of the new settlement is taken by the Government of Tajikistan. Thus, at this point joint efforts of REACT partners and Government should be focused on completing the construction of houses for affected households, before the next winter season.

### **3. REACT Early Recovery Framework for Vanj district:**

Mr. Stephen Houston from UNDP DRMP informed the participants that on February 18, 2010 an Early Recovery Planning meeting of REACT partners for Vanj district has been convened. During the meeting, the results of different needs assessments conducted in Vanj district and on-going activities have been presented. Following the discussions held during the meeting, needed recovery actions in Vanj district have been identified. The results of the meeting were summarized into the table, which was presented by Mr. Houston (Annex III). Developed table covered actions related to: Health, Education, Water, Sanitation and Hygiene, Infrastructure, Livelihoods, Food Security and Shelter sectors. Review of the recovery actions planned or currently implemented by different REACT partners in different sectors, indicate that the most urgent uncovered needs are still remaining in housing (Shelter) sector. Therefore, Mr. Houston, emphasized that special attention should be paid to construction of new houses for affected population.

### **4. Preliminary forecasts of water level in river basins of Tajikistan during vegetation period of 2010:**

Ms. Jamilya Bayulloeva, representative of Hydro-metrological Agency briefed the participants about the level of precipitation in the country, as well as expected weather temperatures. As it was reported during last REACT meeting (February 2010) precipitations amount was very limited till February 2010, which caused shortage of water in rivers. However, precipitation of the February changed the situation of accumulation in the generation zones. In general, February monthly precipitation amount is 170-240% above the average long-term indicators. In particular, precipitation amount of February versus the norm in different river basins, as follows: Pyanj- 120%, Yakhsu and Kizilsu (south)-150-230%, Varzob and Vakhsh -140%, Zeravshan - 170%. Results of the decade snow-survey, which was conducted on February 28, snow storage in majority of river basins is higher than average long-term indicators up to 120-200%. However, the data on snow storage will be updated following the snow survey on high altitudes, which will be completed, through helicopter flight, early next week. Moreover, forecasts of possible floods on different river basins will be developed as well. Nevertheless, the preliminary forecasts of floods indicate the existence of high risk of floods, due to torrential rains during spring-summer period of 2010. In addition, a sharp increase of weather temperature is expected during 16-20 of March, which will cause speedy melting of the snows, leading to increased risk of flash floods.

Mr. Alisho Shomahmadov, IMAC CoES, added that as soon as forecasts of floods on different river basins will be available, IMAC CoES will provide the exact list of settlements under the risk of floods.

Mr. Andy Baker from Oxfam, informed the participants that river bank destructions have been noticed in Vose district and asked if there is any specific forecast for Eastern part of Khatlon oblast.

Ms. Jamila Bayduloeva replied that unfortunately specific forecasts have not been developed for Vose district, since there is not hydropost in that location. Nevertheless, Vose district is located along with Yakhsu river and as it was indicated above water level in this river basin is currently 120% versus the norm, which indicates existence of flood risk.

Mr. Latipov added that river bank conditions along Yakhsu and Kizilsu rivers are in bad conditions and areas along by the rivers face the problem of floods annually. In connection with this problem, Prime Minister is planning to visit Vose and Hamadoni districts.

Mr. Peter Ko, from ADB informed the participants that currently ADB is funding a project on "Flood management on Pyanj river basin". In frames of the project, Hydromet has been supported in development of hydrological and meteorological database. In addition, project is seeking possibilities to support Hydromet in development of flooding forecasts for Pyandj river. Nonetheless, accomplishment of activities on Pyandj river basin is complicated, since river is considered to be an international and cross-border river. For example, forecasting of the floods will require regular gaging activity on different parts of the river, including both sides of the river banks. These activities, can be undertaken by some mobile team of experts, who would have access to all bridges across the Pyanj river and different parts of river. Mr. Michael Jones, UN Resident Coordinator, replied that UNDP has been successfully implementing different cross-border projects on Tajik-Afghan border for several years, such as BOMBAF project and cooperation can be established between UNDP and ADB project, to solve the raised issue.

### **5. Disaster preparedness and response plans at village level**

Mr. Kenjaev from CoES, informed the participants that in line with Agreement between German Agro Action and CoES, 18 local rapid response teams on village level have been established in Rasht district. All established teams were trained on Search and Rescue operations by Rescue Training Department of CoES and equipped. In addition, CoES experts have developed a draft manual on development of Disaster Preparedness and Response Plans on local levels. He highlighted that this manual is in draft version and will be submitted to special Working Group within CoES for review and approval. Once the manual will be approved by CoES Working Group it will be disseminated to communities in Rasht district for development of Disaster Preparedness and Response Plans for their specific communities. Further on, Mr. Kenjaev briefed the participants about the contents of the manual (Annex IV).

Ms. Marydean Purves from Mission East, pointed that presentation is made by representative of CoES and asked whether this manual should be considered as a standard manual for all REACT partners. She highlighted that numerous REACT partners are involved in different DRM activities, such as risk assessments, development of disaster plans and availability of common standards endorsed by Government would contribute to successful implementation of the projects.

Mr. Latipov reminded that presented manual is the draft version, which needs to be reviewed internally within CoES and thus cannot be considered as an approved standard. As soon as final version of the manual will be approved by CoES, it will be presented to all REACT partners.

Mr. Alisho Shomahmadov, from CoES added that currently National Disaster Risk Management Strategy has been submitted to Government for review and expected to be approved in coming days, which will define standards on national level. Further on, in line with national standards, standards will be developed for oblast and district levels.

### **6. News from Partners**

Mr. Saadi Mirzoev from CoES announced about the planned scientific expedition to Sarez Lake, to be held in August 2010 and invited all interested REACT partners to participate in the expedition. Full version of the announcement and draft programme of the expedition can be found in Annex V.

Mr. Saadi Mirzoev emphasized that considering the given high cost of the expedition, organizing committee of the expedition (CoES) is seeking financial support and would highly appreciate if REACT partners would assist CoES in its fundraising efforts.

Mr. Latipov added that Programme of the expedition has been already provided to key stakeholders for consideration and will be shared with all REACT partners as well.

Mr. Farshed Karimov from IEES, continued the subject of Sarez Lake and highlighted that next year is the 100<sup>th</sup> anniversary of significant earthquake, which formed Sarez Lake back in 1911. In connection to this anniversary, Institute of Earthquake Engineering and Seismology will initiate an international scientific and technical conference in 2011.

Mr. Farshed Karimov also announced to participants that IEES, has completed the seismic vulnerability assessment of social buildings in Dushanbe city, which was undertaken in frames of the UNDP DRMP project and funded by ECHO, in frames of DIEPCHO V programme. The results of the assessment will be presented at the seminar, which will be organized by IEES late next week. The exact date and timing will

be communicated later on, through REACT Secretariat. All REACT partners, are invited to participate at the seminar.

Mr. Craig Hampton from WHO, announced that Japanese Government has allocated US\$1.5 million To WHO for improving healthcare on Tajik-Afghan border.

The yearlong project has two components. The first, being led by WHO, is to improve the ability of 16 Tajik hospitals in vulnerable districts along the 1200 kilometer border with Afghanistan to withstand disasters and emergencies and provide health care in their wake. The second component is being run by ACTED to help communities in the Panj and Kumsangir districts recover from severe flooding that occurred in 2009. Primary health care facilities damaged in the flooding will be rehabilitated, staff will be trained in combating water-borne diseases, preventing and treating childhood infectious diseases and promoting good hygiene, and medicines will be bought and distributed to prevent diarrhea and other similar illnesses.

Ms. Marydean Purves announced about the launch of Synthesis Report on "Review of engagement of NGOs with the humanitarian reform process". The hard copies of Executive Summary of the report were shared with participants of the meetings. The full version of the report is available at:

[www.icva.ch/ngosandhumanitarianreform.html](http://www.icva.ch/ngosandhumanitarianreform.html)

## **7. Any other business**

Mr. Marydean Purves from Mission East raised the issue of activation of REACT Steering Committee. She reminded that representatives of NGOs for REACT Steering Committee have been selected and inquired when the first meeting of Steering Committee will be invited. In addition, she reminded that a Table Top simulation exercise was planned to be held with involvement of REACT partners and inquired whether dates for the exercise have been confirmed.

Mr. Khusrav Sharifov from UNDP DRMP replied that REACT Steering has recently communicated to all REACT partners that activation of REACT Steering Committee is pending the appointment of representatives of few clusters. As soon as remaining clusters will appoint their representatives, REACT Steering Committee will call the first meeting of the Steering Committee. As for Table Top simulation exercise, Mr. Khusrav Sharifov informed that preliminary outline of the exercise is very vast and thus further discussions are required to adjust the exercise content. Consultant responsible for coordination of the exercise is currently out of country and expected to be back early next week. Further progress on planning of the exercise will be communicated to relevant stakeholders.

Mr. Latipov in his closing remarks announced that today representatives of REACT Kyrgyzstan have participated at the meeting. He also informed the participants that Navruz holiday has been announced as an international holiday by UN General Assembly and congratulated all participants with upcoming holidays.

**Annex I:** List of participants, REACT Meeting, 12 March 2010

#	Name ФИО	Organization Организация	Contact details Контактная информация
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2.	Khusrav Sharifov	UNDP DRMP	Khusrav.sharifov@undp.org
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4.	Gulov	Ministry of Melioration and Water Resources	
5.	Syavaliyev	Directorate on construction of state objects	
6.	Juraev Rahimjon	GlavGeology	
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**Annex III: Table of Recovery Needs and Planned Response**

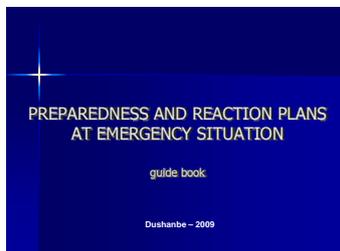
Cluster	Needs Based on Assessments	Planned Response	Budget	Funded or Seeking Funding	Gaps and Shortfalls	Notes
Health	District Health Center severely damaged.	Reconstruction		Funded	None	Funding of reconstruction announced by Office of the President.
	Monitor potential for disease outbreak and worsening of chronic conditions due to cold and overcrowding	Monitoring by Ministry of Health and WHO	\$20,000	Seeking funding		Ministry of Health
		Health post a new site to be constructed by Government				Information provided by Governor of GBAO
	Psychological effects of loss of homes, assets, living in crowded cold tents, etc.	Psychosocial support for affected population.	\$50,000	Seeking funding		Ministry of Health (not funded) WHO (not funded) Red Crescent Society Tajikistan UNICEF
Education	Five schools with major structural damage rendering them unsafe	Reconstruction of five schools	\$890,000	Construction of 1 new school underway, by Ministry of Education.  School at new site to be constructed by District.	Reconstruction of 4 schools. Estimated cost \$890,000. Seeking funding.	School tents provided as an interim measure.  FOCUS doing an in-depth assessment of reconstruction needs and costs for five schools.
WASH	Provision of reliable access to safe drinking water	Construction of water supply systems	\$500,000	Seeking funding	None, if funded	Size and type of water system depends directly on the Resettlement Plan and its implementation.
	Promotion of improved household sanitary facilities	Community training and capacity building for construction of safe sanitary	\$100,000	Seeking funding	None, if funded.	

		facilities				
	Prevention of water borne disease outbreaks	Hygiene education	\$20,000	Funded	None	Ongoing by local NGO under contract to UNICEF
Infrastructure	Cost effective, reliable supply of electricity to designated site.		\$100,000	Seeking funding	None, if funded.	Implemented by FOCUS/Pamir Energy
Livelihoods	Damaged irrigation channels and watercourses	Reconstruction and repair.	T.B.D.	Seeking funding	Requires implementing agency.	FOCUS doing engineering assessment
Food Security	Request from Ministry of Agriculture	20 tons wheat seed, 150 tons potato seed, 45 tons fertilizer.		Funded pending final approval.	None	FAO supply to the approximately 1000 Vanj households severely affected by the earthquake.
		Food for Work	T.B.D.			Discussions between WFP and Global Partners at a preliminary stage.
Shelter	As per the CoES damage assessment, 135 houses to be built to replace those which were totally destroyed or damaged beyond repair.  Plus houses situated within 250 m of the mountain in Gishkun village.			Local Government providing materials.	Families must undertake the labour to build houses and procure or salvage the additional materials.	Some stone and cement are being provided by Government for families to construct houses at the designated sites. Plus approx TJS 1,500 per family for 135 families whose houses destroyed. Housing model provided by CARITAS Switzerland approved by CoES.
		20 houses		Funded		To be implemented by Global Partners
		10 houses	T.B.D.	Funded		Provided by District Government. Information from Governor of GBAO.
		10 houses	CHF 24,230	IFRC Funded	Stones, transportation, labour and builders	RCST branch provided with construction materials for ten houses including nails, roofing irons. Construction tools to 88 households.



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**Annex IV:** Power Point Presentation on Guidebook on Village level Disaster Preparedness and Response Plan



**Annex V:** Announcement about scientific expedition to Sarez Lake and draft Programme of the event

Dear Colleagues,

Problem of Sarez Lake possible outburst in Tajikistan is widely known to the world community. Formed by a powerful earthquake in 1911, today Sarez Lake is a huge reservoir with a capacity around 17 billion m<sup>3</sup>. The outburst of Sarez Lake can cause huge social and economic damage to Tajikistan, Afghanistan, Uzbekistan and Turkmenistan.

For discussion of Sarez Lake problem and selection of the long-term solutions for prevention of possible outburst of the lake International Technical Conference: "Sarez Lake, current status, security problems and prospects of the efficient utilization of its water resources" was organized by the Government of the Republic of Tajikistan with the support of UNESCO and UNDP. Conference was held on 2-4 September 2009 in Norak town with participation of over 60 scientists and experts from Central Asian countries and Afghanistan, representatives of relevant UN agencies, international organizations and academic institutions.

As outcomes of the discussions held during the Conference, series of recommendations for further joint actions were prepared and accepted by participants, which would address Sarez Lake problem. Currently Government of the Republic of Tajikistan is undertaking certain activities toward implementation of accepted recommendations. In particular, a draft Programme of the visit of group of international experts to Sarez Lake, to assess the current state of dam and issues related to its safety has been prepared. The draft Program includes analysis of existing data, conducting visual and instrumental observations, as well as the implementation of geophysical, hydrological, seismological, and other types of activities.

Worth to mention, that number of scientists and researchers, as well as representatives of international organizations, express great interest in participation at the abovementioned expedition. For participation in the expedition, representatives of Central Asian countries and Afghanistan, different international organizations, research institutions and other interested parties are also invited.

Successful conduction of current expedition to Sarez Lake will support development and will contribute to expansion of scientific researches in the field of high natural dams, as well as in ensuring safety of over five million people's lives in the region, their wellbeing and social sustainability. This initiative is considered as one of the additional steps towards solution of Sarez Lake problem.

Taking into account significant contribution of UNDP (here is the name of the organization to which the letter is addressed) in disaster risk reduction sphere, we are honored to invite you and representatives of your organization to participate in the mentioned expedition. We believe that the vast experience and research capacities of your organization will greatly contribute to the work and results of the expedition.

We would highly appreciate, to receive any suggestions from your side, on improvement of organizational process of this important event.

In addition, we would like to inform you that considering the given high cost of the expedition, the Committee for Emergency Situations and Civil Defense under the Government of the Republic of Tajikistan is currently seeking financial support from donor agencies and international organizations. In this regard, we would be grateful for your assistance in supporting us, in our efforts on funding mobilization.

The draft Programme of the expedition is attached, for your information.

The Committee takes this opportunity to recommence its compliments and highest respect to the UNDP Office in Tajikistan (name of organization).

**DRAFT Program  
on organizing and carrying out the International expedition  
to Sarez Lake in 2010**

**1. Introduction (rationale, organization and conduct of the expedition)**

February 18, 1911 in Gorno-Badakhshan Autonomous Region happened a powerful earthquake. As a result of this earthquake from the southern slopes of the Muzkol ridge struck a huge mass of snow, the volume of 2,2 billion cubic meters. The mass sank to the riverbed Murghab and completely blocked the path of water. In place of the incident of collapse located a village Usoy, which was buried alive with a population of 51 individuals, with the households and animals. In a very short time was formed a natural dam with the height of 550 to 730 meters, length of more than 5km.

Because of formed natural dam, the water began to accumulate Murghab River. Thus arose Sarez lake. Characteristics of the lake is now as follows:

- Water level - 3262m
- Length - 60,2 m
- Maximum width, 3,3 km
- Average width - 1,33 km
- Depth - 500m
- Average depth - 202M
- The amount of water mass - 17mlrd3

The level of the lake continues to rise gradually, change the filtration characteristics of the dam. In the bottom layers of the reservoir increases mineralization of water. In the area of the lake there is a real threat of a new large landslides - collapses.

The main problem of Sarez Lake, because of which it is still a dispute - it is the existence of so-called "Right Bank Landslide," four km to the east of dam body, the total amount of which was estimated in 0.9 km<sup>3</sup>. In existing materials research provides data on its structure, mechanism of displacement, the calculations of volume and displacement velocity, size of the overflow waves through the Usoy dam caused a landslide in the fall of the lake, etc. However, there is no instrumental confirmation of the presence of slide surface and sufficiently substantiated calculations of shifting weights volumes, speeds of their displacement and sizes of overflow waves. Existing data are controversial even in one and the same authors. Therefore the question of Usoy Dam security remains open.

In the last decade has been implemented several projects on the Sarez Lake and problems associated with it. In particular, these projects were funded and implemented by the Government of the Republic of Tajikistan, the World Bank, the Government of Switzerland, International humanitarian organization Focus USA and others.

Development of real practical measures to bring the Sarez Lake in safe condition requires not only the involvement of local professionals, but also a continuous exchange of experiences and learn from international experience to manage similar situations in other regions and countries.

The need for expedition of international experts on the Sarez Lake attributed to the Decision of the International Technical Conference on Sarez Lake in Norak town, which was held in September 2-4, 2009, as well as finding the most acceptable way to bring the Sarez Lake in safe condition and to account for the possible use of clean fresh water. In recent decades, the world's acute problem of clean drinking water. Therefore, conservation and use of clean water of Sarez Lake is a very urgent task, not only for Tajikistan, but also for the whole of Central Asia.

## **2. Objectives**

The main purpose of the international experts visit on Sarez Lake are:

1. Analysis and evaluation of results obtained in recent years, the installed monitoring system on the lake.
2. Assessment of the Right Bank of the landslide slope and search for other characteristics of its structure and volume. By using of geophysical methods (using equipment Soy Spy).
3. Evaluation of the proposed methods to bring Sarez Lake in safe condition (mostly - the construction of the tunnel on the left side).

## **3. Time and place of the expedition**

A suitable time for the expedition is August - September 2010. The duration of the expedition - 10 days, including two days of play on the road (there and back).

Considering, that in 2011 in honor of the 100th anniversary of an earthquake and the emergence of Sarez Lake scheduled to hold an international conference, great request to experts for three months prior to the conference to finalize the reports and submit them. The venue of the expedition is Usay Dam and Right Bank Landslide slope.

## **4. The list of research and other activities**

During the expedition and implementation of research projects planned the following activities:

1. Analysis of the results obtained by a group of experts from the monitoring system of Sarez Lake. By this aim the Department of Usay system maintenance and the problems of Sarez lake **needs** to develop and submit the required materials three months before the beginning of expedition.
2. conduct a visual survey on Usay Dam and Right Bank of the landslide slope.
3. implementation of Geophysical Research on Usay Dam and Right Bank of the landslide slope.
4. conducting studies on the structure (by drilling 2 tunnels and 3 channels) within the Right-bank landslide slope.
5. Study of the preliminary findings of the participants during the international expedition.
6. Acquisition of new modern devices and equipment to carry out scientific research on Sarez Lake and continuous study of Usay Dam and Right Bank of the landslide slope changes in geology.

## **5. Members sides**

1. Representatives from relevant organizations of Central Asia (Uzbekistan, Turkmenistan), and Afghanistan should be represented by two persons from each state.
2. Representatives of the institutions of the United Nations (UNESCO, USAID, UNDP program to reduce the risk of natural disasters and others) (for 1 person)
3. Representatives of international organizations that had participated in the study of problems of Lake Sarez: World Bank, the Swiss Agency for Development, a humanitarian organization Focus (USA), Aga Khan Foundation and others.
4. Representatives of international and local scientific - research institutions from among the International Commission on Large Dams, landslides and other relevant organizations and experts.

## **6. Expedition plan**

The expedition consists of 3 groups, and operates in the following areas:

1. Conducting the visual geophysical studies in Usoy dam by using the latest geophysical instruments
2. A study of soils (through the digging of 2 tunnels and 3 channels) in the Right-bank landslide slope.
3. Conducting the hydrogeological work in the area of filtration and around Sarez Lake.

### 7. Expected results of the expedition

1. Assessment of the effectiveness of the monitoring system of Sarez Lake.
2. Assessment of Usoy dam.
3. Assessment of the Right Bank of the landslide slope and the possible consequences of its activation in the event of a major earthquake.
4. Identify opportunities for water conservation Sarez Lake in the event of various hazards.

### 8. Plan of activities for the preparation and holding the international expedition

№	Name of activities	March	April	May	June	July	August	September	October	November	Responsible
		1	2	3	4	5	6	7	8		
1	Prepare a list of international experts	x	x								Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
2	Obtaining the consent of experts and involving them in the working group of the expedition	x	x	x	x						Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
3	Definition of sponsors for funding and organization of the expedition	x	x	x	x						Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
4	Provision of the necessary information to participants of expedition	x	x	x							Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
5	Coordination of program activities with the participants of expedition		x	x	x						Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
6	Organization of the Scientific Council										Committee of

	of expedition			x	x							emergency situations and civil defense under the Government of the Republic of Tajikistan
7	Preparation and mailing of invitations to participants					x	x					Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
8	Preparation of visa support for participants						x	x				Ministry of Foreign Affairs
9	Organization of meetings and placing them in hotels							x				Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
10	Introduction and familiarization of participants with the results of scientific and research works conducted in previous years							x				Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
11	Flight of experts group on Sarez Lake							x				Proportion of the Government of the Republic of Tajikistan
12	Organization and conducting of the research works: - group 1. Conducting a visual and geophysical studies on Usoy dam by utilization of the modern geophysical instrumentation. - group 2. Conducting research (by digging two tunnels and 3-channels in the cracks of the main landslide). -group 3. Conducting of hydro geological work around the Sarez Lake.							x				Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
13	Organization and execution of research works below the Right Bank Landslide.							x				Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
14	Return of the expedition members from Sarez Lake.							x				Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan
15	The results and prior conclusions of the expedition works.							x				Committee of emergency situations and civil defense under the

											Government of the Republic of Tajikistan
16	Conclusions and final reports of the working groups of international expedition.									x	Committee of emergency situations and civil defense under the Government of the Republic of Tajikistan

### 9. The budget of the international expedition

№	Name of activities	Amount in USD
1.	Collection and translation of English materials for the group of experts	6000 USD
2.	Travel costs (plane ticket, car and visa for 22 participants)	30000 USD
3.	Accommodation in a hotel Dushanbe (4 days at USD 100 x 22 people)	8800 USD
4.	Per diem costs (22chel. x 4 days x 40 USD)	3520 USD
5.	Payment of experts: - International experts (22 x 800USD x 5 days) - Local experts (10 x 400 USD x 5 days)	88000 USD 20000 USD
6.	Rent of helicopter to Sarez Lake (10000USD x 4 flights)	40000 USD
7.	Nutrition of participants on Sarez Lake (50 USD x 35 x 5 nights)	8750 USD
8.	Rental of motor boats, provision of tents and bedding at Sarez Lake	10000 USD
9.	Providing transportation for meetings and accommodation of Expedition participants	3000 USD
10.	Performing of the physical works, including the digging of tunnels, wells and canals during the Expedition	5000 USD

Total: 223100 USD