



Central Asia Technical Working Group on Climate Change | Second Meeting

Concept for a Proposed Regional Program for Climate Resilience in Central Asia

Outcomes from National Consultation in Tajikistan

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Almaty, Kazakhstan

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The most important consequences of climate change

Climate forecasts indicate that Tajikistan will experience higher temperatures, changes in precipitation; there will be increase in the frequency of extreme occurrences such as mudslides, floods and droughts. These changes will lead to consequences such as variations in the hydrological cycle - especially the frequency of floods, glacial retreat - with consequential impacts on ecosystems and the regime of water resources, for the life sustenance, power economy, drinking water, irrigation and food security assurance

Impact of Global Warming on the Fedchenko Glarier Area



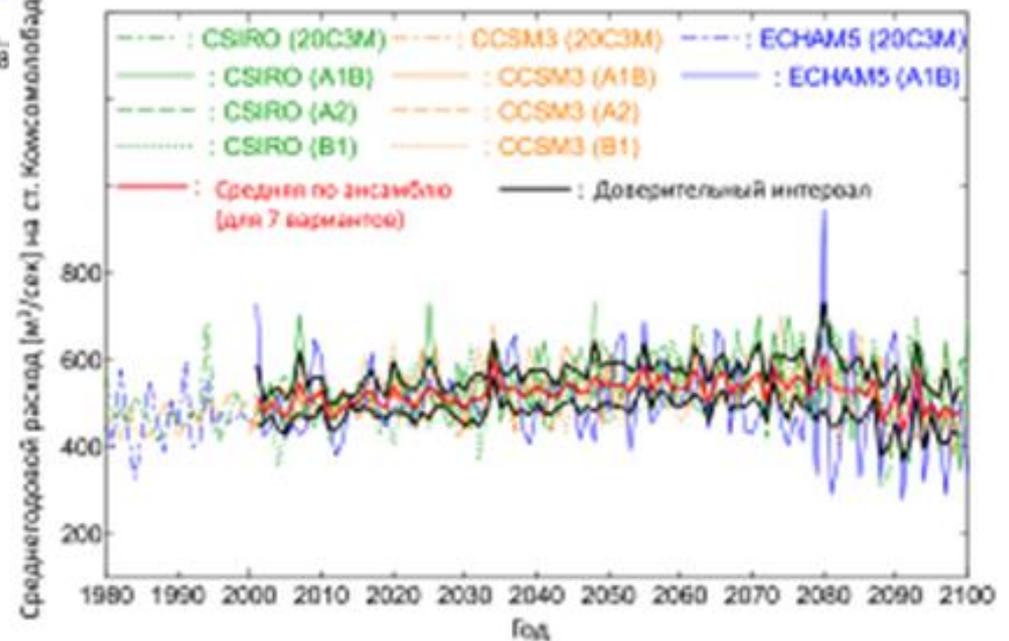
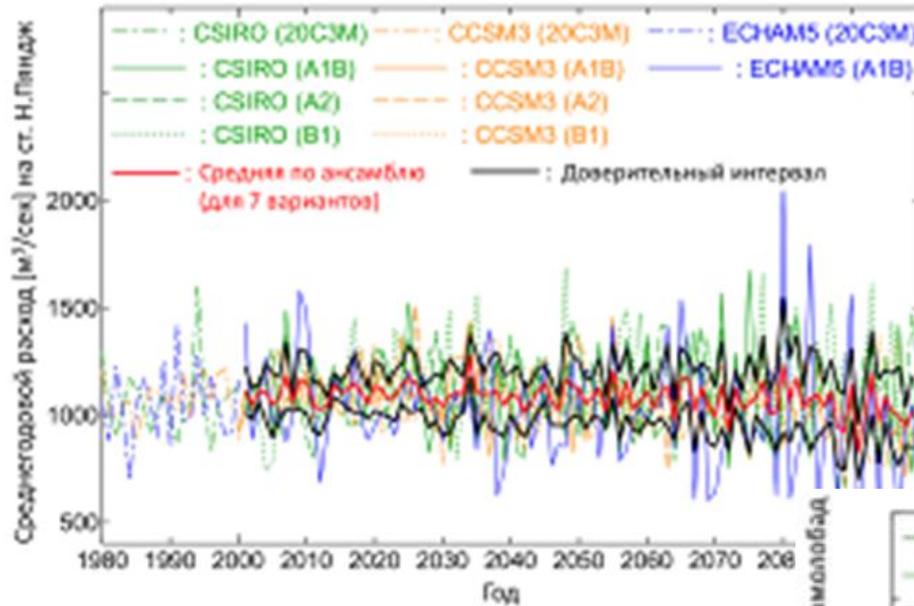
Analysis of the study results showed that in the period of 1966-2000 the systems of Fedchenko glacier contracted up to 44 km sq, i.e., for 6% of the total area.

The results of glaciological studies in 2011 showed that the average rate of retreat is 16 m/year. In general, during the study period (1933-2011) the Fedchenko glacier retreated 1 km and lost more than 15 cubic km (or 1/10) of its mass balance.

Food Assurance and Agriculture

- **Agriculture:** It is expected that agricultural lands in Tajikistan, which are mainly located in the arid and semi-arid areas, will be exposed to a limited and unstable rainfall impact in combination with the water resources due to increase in the temperature, evaporation and reduction of the accumulated snow in mountain glaciers. This will increase the volatility and level of land degradation and desertification.
- Non-irrigated farming is particularly vulnerable to climate change. On the other hand, irrigated farming (over 80% of arable lands in Tajikistan) will suffer not only from the impacts of climate change, but also from outdated infrastructure, low potential and poor maintenance. Crop yields in some regions is forecasted to fall to 30% by the end of this century, carrying the risks of food security.

Historical and Future Annual Flow in Vakhsh and Panj Rivers



Energy Security

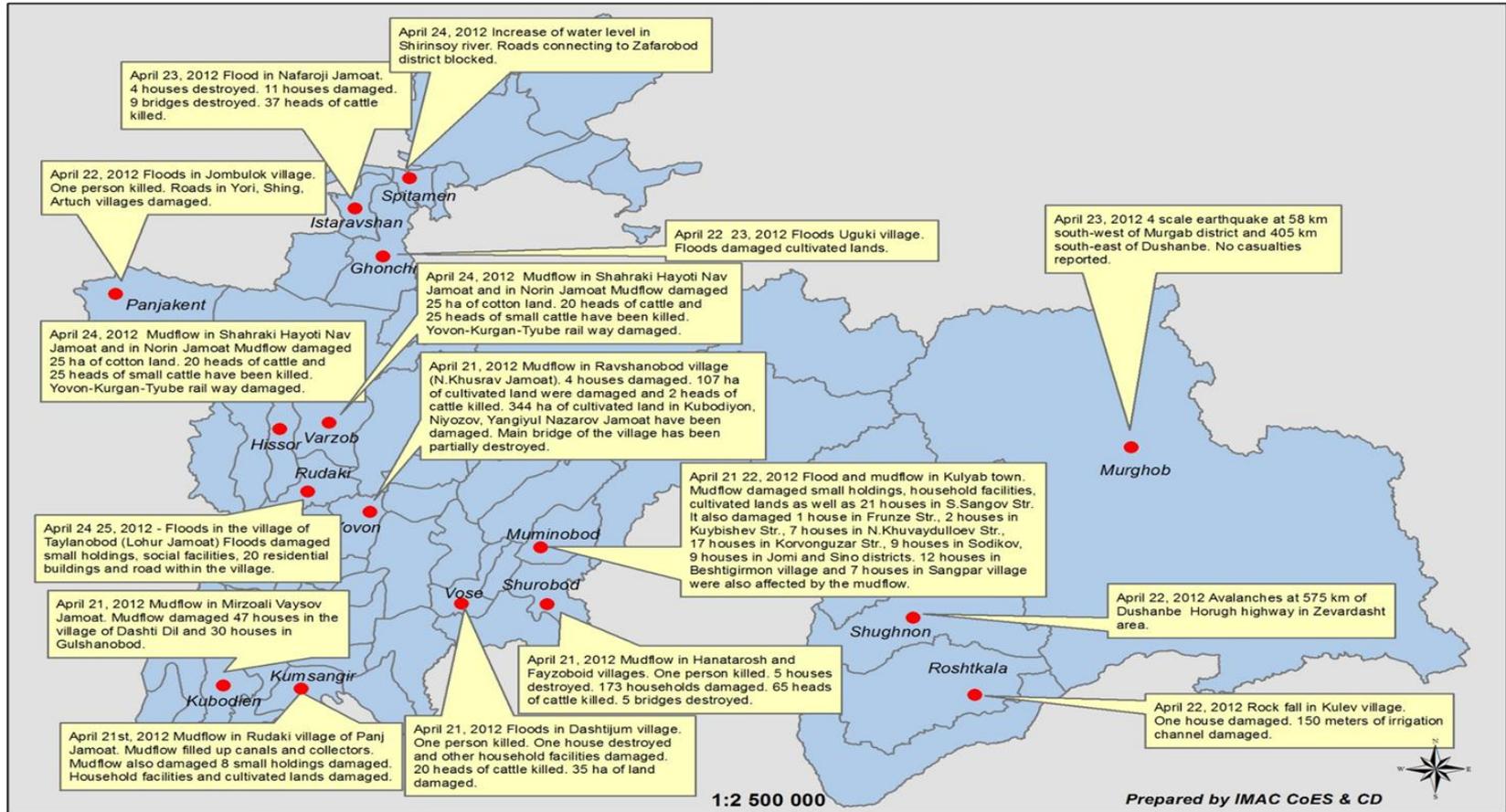
- Energy security is crucial to the country's development and poverty reduction. Despite the huge hydropower potential the country is currently a net importer of energy due to insufficient investments into hydropower infrastructure.
- Most of the country suffers from unreliable and irregular power supply. This aggravates the poverty level, especially in rural and remote areas located on the periphery of the electricity network (where electricity often disconnects, especially in winter), or generally outside the network. Such situation was observed during the harsh winter of 2008, when many families in rural areas had no access to energy sources for heating and cooking.
- Besides, it is important to consider the possible use of alternative energy sources for ensuring proper aggregate supply in remote areas and communities.

Water Supply and Sanitation

- As a result of the expected increase in temperature regime and a possible reduction in the volume of river flow and water sources all together, the drinking water issues remain very sharp. In this regard, the trends in temperature conditions change may adversely affect the already depleted resources and infrastructure management of waste water, which also in turn entails the risk of increasing the incidence of infectious diseases.

Disaster Risk Management

Disasters in Tajikistan 21-24 april 2012



Main Barriers to Solving Problems Associated with CR

- Insufficient human resources potential in national systems for collecting and processing of hydrological and meteorological data, as well as modeling the possible risks of climate change in order to assess the scale of the anticipated consequences in the short and long term;
- Current misallocation of resources due to the deplorable state of infrastructure and lack of qualified professionals, as well as due to lack of investments and access to advanced technology usage;

Main Barriers to Solving Problems Associated with CR

- Major gaps in the research and technology base, particularly in the area of expected consequences associated with possible changes in the hydrological regime, the melting of glaciers and the impact of climate change on mountain areas and ecosystems;
- Lack of integration of the results of climate change impacts and adaptation in national policy, including national development strategies and sectorial investment plans.
- Lack of models used to predict climate change in different sectors of the economy, adapted to the conditions of Tajikistan/CA

Program Objectives

- To study the possible impact of CR on the most vulnerable sectors in the region and to explore their capabilities to adapt.
- To conduct tests based on ongoing initiatives at the national level and include them into the regional program (e.g., adaptive/scale mitigation activities that can extend from the local to the regional level, institutional support in the implementation of the program).
- To conduct an inventory of strategies and plans (which are designed/developed based on CR and define priorities for action); of investments (how current and planned projects include CR problems and their possible extension); of gaps and needs in the understanding of the issue (knowledge enhancement)
- To examine the activities carried out by development partners in the region in order to complement, support and strengthen the existing projects.
- To consider possible cross-border projects/pilot projects with demonstration sites in all countries participating in the Program

Program Structure

- At the national level there are certain institutions already involved in the practical study of issues related to climate change, as well as to the impact of climate issues at the economy sector and human life and activities, however, their role in inter-institutional coordination, even at the national level, is limited;
- It is important to ensure the priorities and the function of "adviser" for these institutions at the national level by assigning them the significance and inter-institutional importance (for example, the PPCR Secretariat);
- It is necessary to sign a framework document, namely Memorandum of Understanding at the regional level to work on this Program and to ensure equal rights and responsibilities of all parties; also in order to coordinate the activities it is possible to use a mechanism similar to the mechanism of PPCR Secretariat in Tajikistan.

Experience Gained during Implementation of Earlier Initiatives

- Tajikistan is the beneficiary of many programs, however, the Pilot Program of Climate Resilience allows to combine and coordinate the work with many development partners, as well as to organize the inter-institutional coordination at the national level.
- Many of the activities planned under the PPCR have not been implemented in full scale due to lack of resources and investments. Projects such as the Project of improvement of resilience to climate change in the basin of the river Panj, Projects of sustainable management of land and water resources, etc.



Phase 1 – Facts from Conducted Studies

- Building a potential
 - Overview of climate change in Tajikistan with institutional arrangements and needs for building a potential
 - Partnership in the area of climatology and modeling of impacts in Tajikistan
 - Raising awareness of the Government of the Republic of Tajikistan on climate change
- Vulnerability assessment
 - Improving the sustainability of the energy sector of the Republic of Tajikistan
 - Analysis of approaches of Sustainable land management under conditions of climate change in Tajikistan
 - Analysis of sustainability approaches in climate change related to river basins