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The regional and national best practices for minimizing the risks of water-related disasters in Central Asia – The cross-sectoral working groups in Kazakhstan and Kyrgyzstan

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Abstract

One of the most important problem of our age is a global climate change. The climate change became a real threat to people's livelihoods, which is inevitably reflected in the social sphere - declining living standards, loss of property and need to leave lived-in places, etc. So, the problems of detection, prevention and prediction of natural disasters have received considerable attention in recent decades. Nevertheless, the solution to this problem in Central Asia (CA) is at noticeably low level even against the background of the CIS countries. For the countries of the former Soviet Union in general and the CA region in particular, the focus has always been on responding and eliminating the consequences of disasters. The climate change and natural disasters are transboundary problems and are dependent on natural resource management conditions. Consequently, the effective prevention of natural disasters requires effective cross-border cooperation and joint work of a number of institutions. The purpose of this article is to review the experience in creation and operation of National Intersectoral Working Groups (IWGs) in Kazakhstan and Kyrgyzstan, to facilitate the exchange of information, knowledge and experience between practitioners and professors (students) on the topic of water-related disaster risk management.

Introduction

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The purpose of this article is to review the experience in creation and operation of National Intersectoral Working Groups (IWGs) in Kazakhstan and Kyrgyzstan, to facilitate the exchange of information, knowledge and experience between practitioners and professors (students) on the topic of water-related disaster risk management.

History of a national IWG

The initiative to establish a National IWG for the analysis and development of transboundary monitoring and early warning systems in CA countries was raised during the implementation of the various stages of the project “Adaptation to climate change through sustainable natural resource management and transboundary cooperation for the prevention of natural disasters in Central Asia” implemented by the German Society for International cooperation (GIZ) in 2011-2013 [7]. As part of the project, the contextual analysis of natural disasters preventive measures in Central Asia was carried out, and also the benefits of intersectoral and cross-border work of agencies dealing with disaster prevention in Western Europe were presented. Kazakhstan was chosen by GIZ as a pilot country. It was proposed to start work of the IWG in Kazakhstan with subsequent replication of experience to other CA countries.

IWG in Kazakhstan

The Intersectoral working group in Kazakhstan (IWG RK) was established in 2012. In Kazakhstan and in the countries of the Aral Sea basin such activities are carried out for the first time [6]. The IWG of RK consists of representatives of 11 organizations: Al-Farabi KazNU, Geography Institute, Kazhydromet, IFAS Executive Directorate in Kazakhstan, Water Resources Committee, Kazseleshchita, National Center for Space Research and Technologies, Regional Center for Hydrology of Central Asia, Regional Environmental Center of Central Asia, Kazgiprovodkhoz, Public organizations. In 2015 the IWG RK initiated the creation of similar groups in other countries of Central Asia and to become the Regional Intersectoral Working Group of Central Asia (RIWG CA). The Executive Director of the Regional Center for Hydrology of Central Asia, Ms. Svetlana Pavlovna Shivareva, was suggested to chair the activities of the RIWG Central Asia.

The principal task of the RIWG is to provide expertise in the prevention of geological hazards in Kazakhstan and Central Asia; to analyze existing water-related disasters, to develop approaches on risk reduction and to report them to decision-makers; to take into account transboundary context, regular interethnic agreement of the developed approaches; to create IWGs in other CA countries.

13 meetings of the RK RIWG in Almaty were held from 2012 to 2016, attended by representatives of 5 countries: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan. Experts from Kyrgyzstan, Tajikistan and Uzbekistan carried out an analytical review on the revealing of water-related disasters and on the considering the possibility of establishing IWGs in their countries.

The advantages of Intersectoral Working Groups are the team-work of specialists from different organizations and with different professional backgrounds; active and cooperative work on the development of Risk registry; focus on one problem (for example, protection of population from the risk of the Shardarin dam failure, from the risk of mudflows), further mutual requests to higher-level agencies.

Taking into account the greatest importance of risks of destruction of the Shardara dam reservoir in case of extreme floods due to climate change, the RK IWG in 2014 appealed to the Government of the Republic of Kazakhstan, to the First Deputy Prime Minister, Mr. Sagintaev B.A., with the request on “Prevention the threat of a Shardarinsky dam failure” The unsolved problem of catastrophic rare occurred floods diversion, presence of a real threat of dam failure, exposure of more than 230 settlements of the South Kazakhstan and Kyzylorda oblasts to the possible flooding were reported in the request. The Water Resources Committee was instructed to develop a program which will take into account the proposals of the RK RIWG, the relevant agencies were given recommendations on the construction of two dam outlets [10].

In 2015 there were two sessions of RK RIWG during which global warming related intensification of mudflows in Kazakhstan was discussed; the Government was requested to review the situation and instruct number of scientific and production institutions to address the issues. As a result of the appeal of the RK RIWG, there was a meeting of Inter-Ministerial State Commission for the prevention and elimination of emergency situations on February 9, 2016, whereon the following instructions were given [11]:

1. To the Ministry of Education and Science of the Republic of Kazakhstan (Science Committee): on basis of subordinate organizations and interested stakeholders (Institute of Geography LLP, Kazselezashchita State Enterprise, RSE Kazgidromet) to develop the Concept on provision of long-term mudflow safety in the Republic of Kazakhstan.
2. To the Ministry of Energy of the Republic of Kazakhstan (RSE “Kazgidromet”): to develop hydro meteorological monitoring and forecasting of mudflows.
3. To the Ministry of Internal Affairs (Committee for Emergency Situations, Kazseleszashita SE): to carry out an inventory, build-up of the technological potential and capacities of the departmental network for monitoring mudflow and landslide processes; to introduce an automated early warning system; to assess the state of engineering protection against mudflows and landslides together with the PC “Institute Kazgiprovodkhoz” and make proposals for its development taking into account global climate changes in the environment.

Participants of the RIWG of the RK (Plekhanov PA, Nikiforova LN) carried out a number of analytical studies: the current situation of natural conditions of the Aral Sea basin; social and economic conditions of the Aral region; the main phases of disaster risk management; consequences of climate change in the Aral Sea basin; proposals for an early warning system for climate risks in Aral Sea basin; analysis of the monitoring and prevention system in

Central Asia; analysis of the filling and evacuation of the Toktogul, Andijan, Kayrakkum, Charvak and Shardara reservoirs in the period of 2012-2015; management of HPSs cascade on Syr Darya river; monitoring system of Syr Darya river; exchange of information with NHMS CA. These studies allowed to form prospects for CA RIWG activities.

IWG in Kyrgyzstan

The main organization for monitoring, prevention and response to emergencies in Kyrgyzstan is Ministry of Emergency Situations of Kyrgyz Republic. The Ministry of Emergency Situations takes direct part in management of natural disasters, in which many dangerous phenomena are consequence of hydrometeorological events. Despite progress in natural disasters management, insufficient inter-institutional and cross-border cooperation in relation to disaster risk management still prevails in the activities of international, regional and national programs in Kyrgyzstan [1].

Taking into account the positive experience of RIWG of Kazakhstan, National Intersectoral Working Group in Kyrgyzstan (KR IWG) has stepped up its activities. The National IWG in Kyrgyzstan was established under the auspices of the Department of Water Resources and Land Reclamation in September 2015. Mrs. Latifa Bulekbayeva is the head of NIWG [4].

The members of the KR NIWG are not politicians, but authorized scientists and representatives of ministries and departments dealing with water issues. However, the political management is provided with full information on results of the meetings.

The KR NIWG consists of leading competent experts – representatives of scientific, educational and governmental institutions working on management, monitoring and prevention of emergency situations in water sector, namely: The Hydrometeorological Agency under Ministry of Emergency Situations (Kyrgyzhydromet), Center for Climate Change in Kyrgyz Republic, the State Agency “Selvodzaschita” under MES KR, the State Agency for geology and mineral resources under the Government of the Kyrgyz Republic, Department of water resources and Land reclamation of Ministry of Agriculture and Melioration of the KR, Monitoring, Emergency Situations Forecasting Department at MES, the Institute of Water Issues and Hydropower of National Academy of Sciences, the Secretariat of Chu-Talas Water Commission (Kyrgyzstan part), Kyrgyz National Agrarian University named after K.I. Scriabin, Kyrgyz-Russian Slavic University named after B.I. Yeltsin [2].

The first KR NIWG meeting took place on September 30, 2015; the meeting participants underlined timeliness of creation of the NIWG in the Kyrgyz Republic for addressing transboundary natural disasters in Kyrgyzstan and Central Asia. The main tasks of the working group were determined. The KR NIWG will use experience of RK RIWG and Commission for Protection of Rhine (Germany); the initiatives and achievements of international cooperation and NGOs’ projects in the Kyrgyz Republic were used [3].

During the second meeting of IWG KR, which was held on January 14, 2016, participants' presentations identified the mudflows as the second main significant risk after earthquake, mudflows are widespread in Kyrgyzstan and cause damage, sometimes human losses. There are 70-80 emergencies, related to mudflows and floods, occur each year in the republic, which

amounts on average to 29-30% of all emergency situations in the republic. The working group of 4 experts was established to study in more detail the main problems of mudflows stepping up, to develop concrete effective recommendations for reducing or eliminating mudflow risks, and to draft appeal to the Government of the Kyrgyz Republic to review current situation of mudflow intensification threat in Kyrgyzstan [7].

At the 3rd meeting on April 29, 2016 the members of KR IWG approved the Group's appeal on mudflow risks and elaborated request was sent to the Government of the Kyrgyz Republic with the request to assist in adoption of mud protection measures proposed by KR IWG; the measures will reduce mudflow risk in Kyrgyzstan for a long-term period. The following proposals and recommendations of National IWG of KR are submitted to the Government of Kyrgyz Republic [13]:

- To consider the possibility of establishing mudflow monitoring service with research unit to organize scientific research of mudflows in the Kyrgyz Republic and to develop the methodology for forecasting mudflow hazards;
- To develop the “Concept for ensuring mudflow security in the Kyrgyz Republic” for a long-term period, with funding for the implementation of research work on mudflow problems;
- To conduct inventory, standardization and to build technological capacity of agency network for monitoring mudflow and landslide processes
- To assess the state of engineering protection against mudflows, avalanches and landslides, to make proposals for these development, taking into account climate change driven global changes in environment;
- To develop the project on arrangement of monitoring of mountain lakes which may potentially cause mudflows; to introduce an automated early warning system;
- To build the human resources capacity of agency network which observes mudflow and landslide processes, to consider the possibility of making changes into legislation to regulate the allocation of land for construction of settlements in the risk zones prone to natural disasters.

The appeal letter from IWG of KR was considered by the First Deputy Prime Minister of the Government of the Kyrgyz Republic. The protocol order from the Government of the Kyrgyz Republic was sent to the Scientific and Technical Council under the Inter-Agency Commission for Civil Protection of Kyrgyz Republic [7].

In 2017 with support of the “Knowledge Network of Central Asia” program, members of the National IWG of KR will develop a “Methodology for predicting mudslides in relation to peculiarities of territory of Kyrgyzstan”. This methodology will be presented at the Scientific Council of Institute of Water Problems and Hydropower of the National Academy of Sciences of the Kyrgyz Republic and at Scientific and Technical Council under the Inter-Agency Commission for Civil Protection of the Kyrgyz Republic.

Conclusions

The team work of specialists from various organizations with different professional backgrounds allowed the members of Regional and National IWG to get real results for reducing the geo-risks related to water resources in their republics.

1. The IWG of Kazakhstan and Kyrgyzstan working on transboundary monitoring and early warning systems for geo-risks found the optimal working format: joint regular workshops with participation of representatives of various state and scientific institutions.
2. Enhanced cross-border coordination and cooperation of representatives of various government and scientific institutions, as well as consolidation of existing capacities is required for effective prevention of natural disasters.
3. The establishment and operation of IWGs in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan will be great basis for future prevention of natural disasters in Central Asia.
4. In mid-term perspective, this initiative can raise the protection level of local population and have positive impact on interstate agreements.
5. Further professional and financial support of the IWGs of CA countries in geo-hazard prevention`s field is required for strengthening cross-border cooperation and sustainable activities.

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