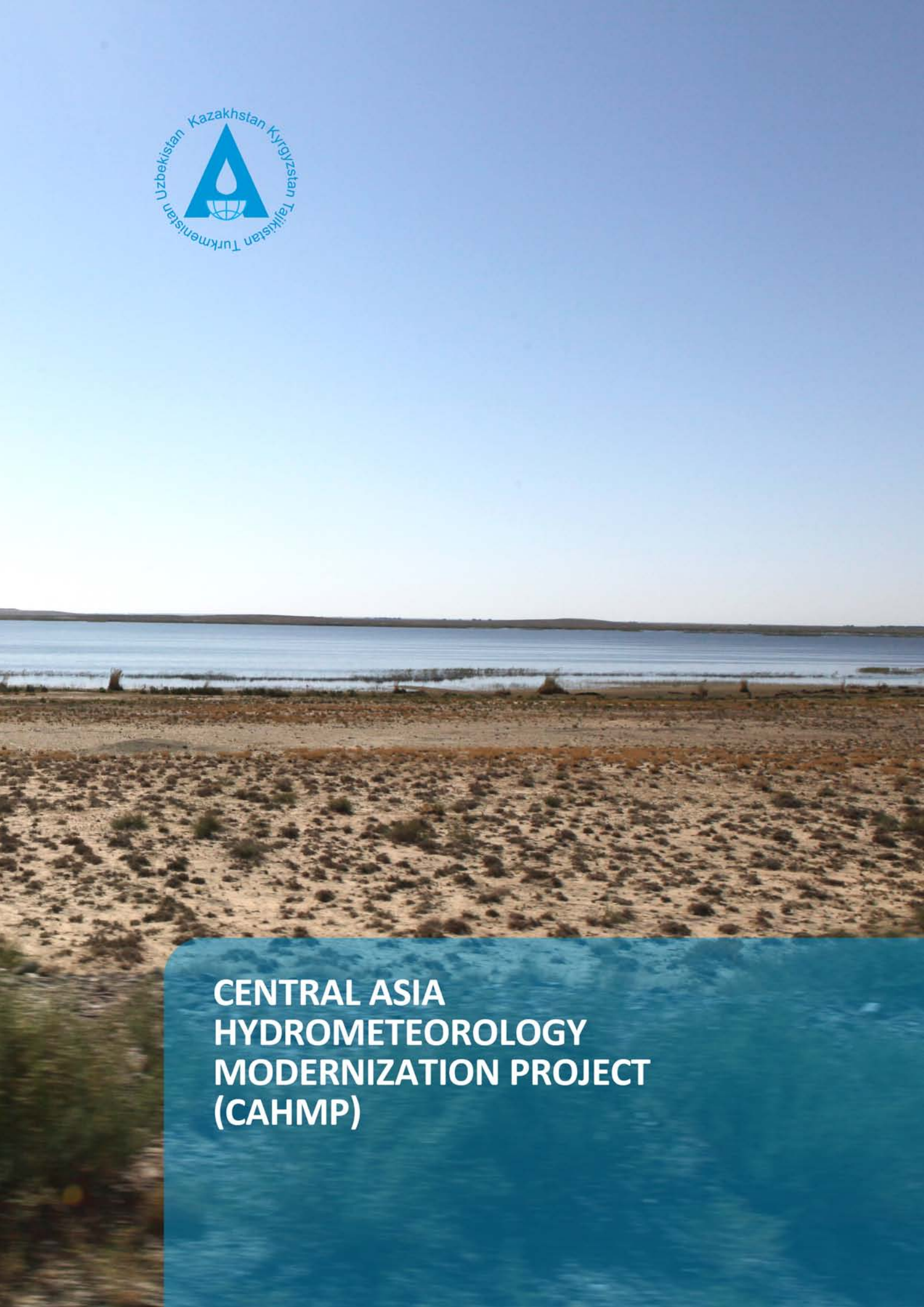


CENTRAL ASIA HYDROMETEOROLOGY MODERNIZATION PROJECT (CAHMP)

THE INTERNATIONAL FUND FOR SAVING THE ARAL SEA
THE REGIONAL CENTER OF HYDROLOGY (RCH)
THE PROJECT MANAGEMENT UNIT (PMU)

CENTRAL ASIA HYDROMETEOROLOGY MODERNIZATION PROJECT (CAHMP)

Almaty, 2012

BACKGROUND

The Central Asian region includes five former Soviet republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Since all of the Central Asian countries are affected by extreme weather events, especially floods and mudslides, drought, frost, snow avalanches, heavy rains, hail and strong winds, the provision of quality meteorological, water and climate services in Central Asia is a very important task for sustainable social and economic development.

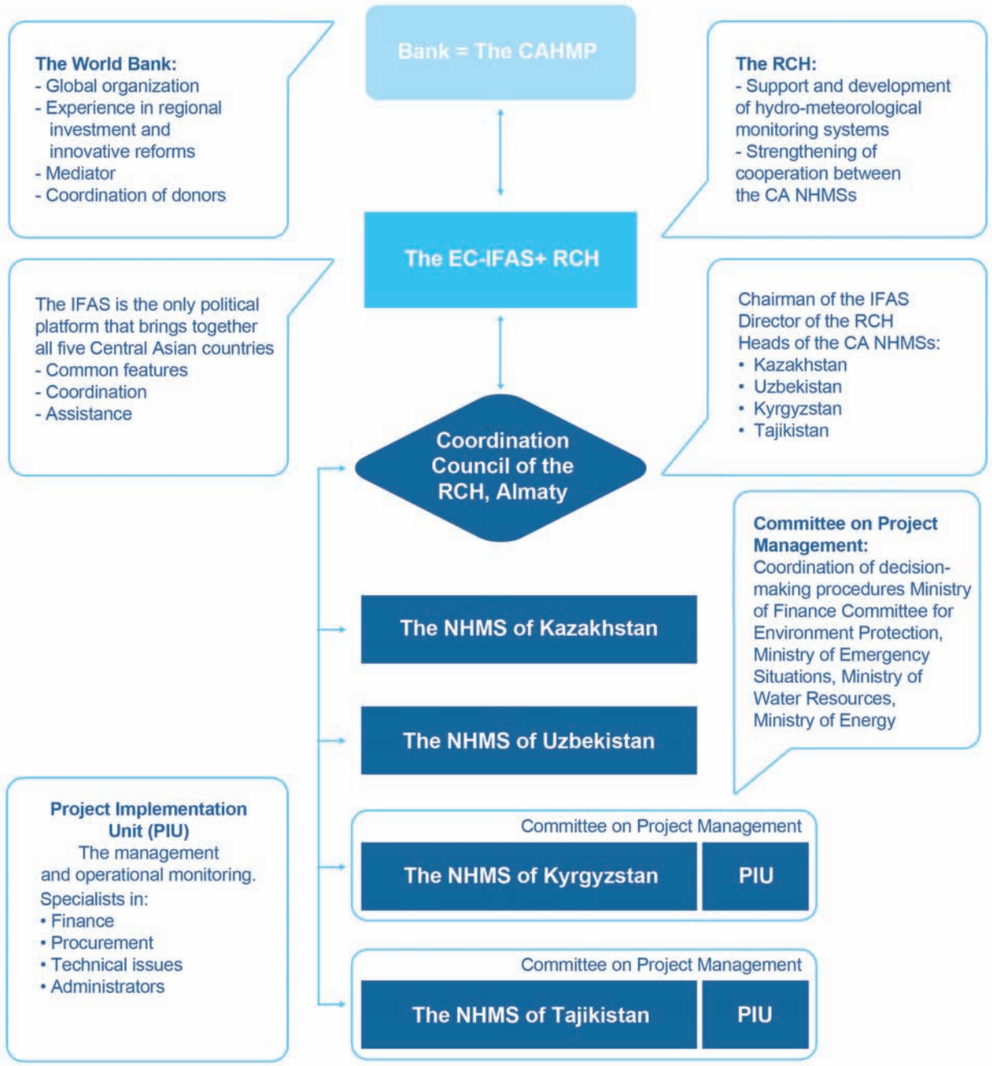
In support of national governments and regional agencies to reconstruct the important CA NHMSs and to promote a common goal of improving the quality of meteorological and climate services in Central Asia, the World Bank developed the project of Modernization of Hydrometeorological Services in Central Asia (**CAHMP**).

In September 2008, the international, regional and national partners have joined forces with the World Bank for the initiation of a program of modernization of regional Hydrometeorological Services (NHMSs), approved by the member countries of the Central Asia Regional Economic Cooperation (CAREC) program as part of a broader the Central Asia and Caucasus Disaster Risk Management Initiative (CAC DRMI).

Regional and national institutions have played a major role in this process. In particular, the Executive Committee of the International Fund for Saving the Aral Sea (IFAS) and its Regional Centre of Hydrology (RCH).

On January 12, 2012, an agreement was signed on implementation of the regional Component of the CAHMP project between the Executive Committee of IFAS and the Corporate Fund - Regional Center of Hydrology.

ORGANISATIONAL STRUCTURE OF THE PROJECT



СЛУЖИТЬ НАРОДАМ
ЦЕНТРАЛЬНОЙ АЗИИ

The World Bank developed the Central Asia Hydrometeorology Modernization Project (CAHMP) in collaboration with the Executive Committee of the International Fund for Saving the Aral Sea (EC-IFAS), the RCH of EC-IFAS and the CA NHMSs.

The objective of the CAHMP is to improve the accuracy and timeliness of information presented by Hydromet Services in Central Asia, with particular focus on Kyrgyz Republic and Republic of Tajikistan.

Project implementation period:
September 1, 2011 - August 30, 2016

WHY WAS THE CAHMP PROJECT INITIATED?

- Because of the slow development of the economies of the Central Asian region, as compared with the leading countries;
- The lack of investments;
- The decline in infrastructure required for development of hydrometeorological monitoring;
- The lack of qualified personnel;
- The lack of cooperation between the Central Asian countries on environmental management.

THE RESULT: REDUCED QUALITY OF WEATHER FORECASTS, LEADING TO SOCIAL AND ECONOMIC PROBLEMS.

NATURAL DISASTERS IN CENTRAL ASIA

Natural disasters, leading to negative social and economic consequences:

- Floods and mudflows
- Landslides
- Avalanches
- Showers and hail
- Frost
- Earthquakes
- Drought

Complex geographical location.
Climate change increases the frequency of natural disasters.

MAIN TASKS OF THE CAHMP PROJECT

Reahibilitation of infrastucture and capacity building

Management of the consequences of climate change

To support the economic development of agriculture, water management, energy and transport

The CAHMP project will support the NHMSs of Kyrgyzstan and Tajikistan to improve the logistics required for:

- Monitoring and forecasting of changes in the environment;
- Capacity building of personnel;
- Development of new business practices to ensure sustainable development of the NHMSs.

The CAHMP project will promote regional cooperation in the field of hydrometeorology, including through the exchange of relevant information. The CAHMP project is also aimed at reducing economic losses which could be caused due to the high degree of uncertainty of forecasts for industry and agriculture, as a result of weather and climate risks. The CAHMP project provides a mechanism for implementation of the key strategic priorities of all the hydrometeorological institutions/the NHMSs.

The Regional Centre of Hydrology (RCH), being a part in the Executive Committee of the International Fund for Saving the Aral Sea (IFAS), is coordinating the activities of the regional cooperation.

REGIONAL LEVEL OF THE CAHMP PROJECT

The CAHMP project consists of three Components:

- **The Regional Component A** is aimed at improving capacities in Central Asia to promote cooperation between the NHMSs on the basis of the IFAS and the RCH, whose mandate is to promote cooperation and coordination between national institutions and to promote the integration of networks of the NHMSs of Central Asia;
- **The Components B and C** are two components at the country level, aimed at increase of capacities both in NHMSs in Kyrgyzstan (Component B) and the NHMSs of Tajikistan (Component C).

At the regional level, the CAHMP project contributes to achieve the goal of a higher level, i.e. to reduce the number of human casualties and economic damage caused by hazardous hydro-meteorological phenomena.

THE CAHMP PROJECT SETS FORTH THE FOLLOWING REGIONAL ACTIVITIES AT REGIONAL LEVEL:

1. Improvement of technical and institutional capacities of the CA NHMSs for the collection and exchange of information;	• Processing • Visualization • Exchange of data • Archiving • Storage
2. Improvement of the regional training and retraining system in the field of meteorology, hydrology and climate in the CA NHMSs;	• Channels of communication • E-learning • Equipment • Maintenance Service
3. Improvement of quality of service provision by improving weather forecasts, storm warnings and evaluation of climate change;	• Access to databases via Internet • Transfer of data in digital format
4. Provision of support for project management and assistance to the NHMSs by providing services of the Consultant for system integration.	• Integration of all observation systems, data collection, data processing, analysis and data storage

The EC- IFAS / CC of the RCH implements the Regional Component of the project with the use of the Project Management Unit (PMU) (RCH), staff of the RCH branches and consultants.

The EC- IFAS defined responsibilities of PMU on some aspects of the program, such as procurement, financial management, disbursement of funds and reporting.

In accordance with the decision of the Coordination Council (CC) of the RCH made on Dec. 3, 2010, the PMU shall be located in Almaty, Kazakhstan for the period of project implementation.

The NHMS of Kazakhstan as a national contribution to the project provided office facilities for the PMU in the building of the Center of hydrometeorological monitoring of Almaty -Kazhydromet.

MEASURES AND EVENTS TO BE IMPLEMENTED AT COUNTRY LEVEL:

- Institutional strengthening of the NHMSs, capacity building and financial stability of the NHMSs (trainings, installation of technical equipment, demonstration of the experience of other NHMSs);
- Improvement of the hydrometeorological monitoring to issue early warnings on natural and severe weather events and for water management (restoration and modernization of the meteorological and hydrological observation networks);
- Improvement of service delivery system (trainings, search and involvement of new customers);
- Management of the Components of the CAHMP project in countries and ensuring integration of systems into a complex regional system.

Strengthening of the NHMSs of Kyrgyzstan and Tajikistan will contribute to regional cooperation through elimination of technical and institutional gaps and exchange of hydrometeorological data on water basins, where a large part of the regional water resources is formed.

PROJECT MANAGEMENT / SYSTEM INTEGRATION

The CAHMP project shall be coordinated and implemented at the regional level through the EC-IFAS, and at the national level – through the NHMSs.

An important element of this approach is integration of systems. System integration of the NHMSs is a challenging task. So, to implement measures within the CAHMP project there is a need in assistance of a System Integrator. The NHMSs agreed to combine the development of a detailed technical design and system integration in consulting services of the System Integrator to provide assistance to the participating NHMSs throughout the Project implementation.

The System Integrator will assist in building regional/national capacities in the NHMSs and strengthen cooperation between the NHMSs, which will be developed between national experts within CAHMP project.

The main tasks of the System Integrator shall be:

- Development of a detailed technical documentation for the implementation of each of the Components of the CAHMP project.
- Provision of effective technical support project to the CAHMP project to achieve the project objectives.
- Preparation of the project to be implemented.
- Technical monitoring.
- Control and monitoring of the project.
- Provision of interoperability of the modernized hydrometeorological system of the project.
- Support in the provision of national meteorological services in the region of Central Asia and during effective implementation of activities of the EC-IFAS.

EXPECTED PROJECT RESULTS

- Development of infrastructure for hydrometeorological monitoring;
- Communication network and IT systems ;
- Develop regulations for information and data exchange;
- Numerical weather prediction;
- Qualified personnel/capacity building;
- Autonomy work of the CA NHMSs;
- Provision of new quality services in the CA NHMSs.

Project results will be widely disseminated. National and regional activities will benefit all the CA NHMSs and, especially, in Kyrgyzstan and Tajikistan through improvement of the reliability and timeliness of meteorological forecasts.

The positive impact is to reduce vulnerability of population to natural disasters and risks of property damage, as well as to reduce overall economic losses from natural disasters.

Improvement of coordination and information exchange between the NHMSs and improvement of regional cooperation to support adaptation to climate changes could lead to numerous additional benefits for the public and private sectors through the provision of better information for economic activities in economy sectors such as agriculture, energy and transport.

FIRST PROJECT RESULTS

During the first year of the project implementation (in 2012), the Project Management Unit (PMU) jointly with the project Components in Kyrgyzstan and Tajikistan, carried out the following events:

I. The STUDY SEMINAR for forecasters:

The theme of the Seminar: "Capacity building to use achievements in the field of numerical weather forecasts and meteorological data of the leading world weather forecast centers, the use of different methods for prognosis including probabilistic analysis and the use of knowledge to issue weather forecasts including dangerous phenomena forecasts."

The seminar was held on **July 2- 6, 2012**, in Almaty, Kazakhstan. The seminar was attended by forecasters from the Central Asian countries: Kazakhstan - 2 people, Kyrgyzstan - one person and Uzbekistan - 1 person.

During the seminar, the invited consultants from the world meteorological centers of the WMO conducted theoretical and practical trainings according to three study directions:

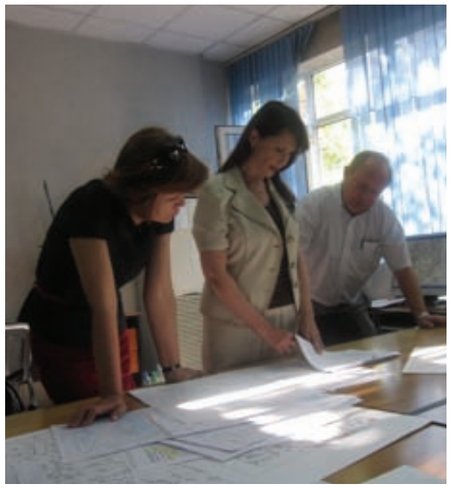
First direction of capacity building: Interpretation of the results of numerical modeling provided by the leading world meteo-centers.

Second direction of capacity building: Analysis of information provided by satellites

Third direction of capacity building: Basics of regional prognosis of dramatic climate changes.

Main goal of the Study Seminar:

Enhancement of qualification of forecast specialists in the NHMSs up to the level, enabling them to effectively use IT technologies and numerical weather forecasts of the leading world forecast centers with purpose to use achievements in the area of digital forecasts and meteorological information, provided by the leading world forecast centers, to apply various methods of prognosis including probabilistic methods and to use received knowledge and skills for issuing weather forecasts including forecasts of dangerous phenomena.



As part of the Study Seminar were provided with the following educational services:

Completed pre-testing and control of trainees' knowledge via e-mail.

They developed the study program and testing tasks for specialists to apply upon completion of trainings. The training program was made, taking into account the large professional experience (as shown by preliminary testing) of audience. The program was focused on practical use of knowledge and the need to apply new working methods and technical skills to obtain practical experience of specialists, as well as understanding of the basics and limitations used in the modern numerical methods of weather forecasting.

Developed training materials in electronic form (presentations).

Completed the final exam in the form of testing and validation of acquired practical techniques.

The proposals for training programs were developed for professional development of forecasting specialists of the CA NHMSs.

In the end of the Seminar, they conducted the final testing according to three directions of trainings. Seminar trainees successfully passed the test and were granted Certificates of training completion.

Additionally, the study seminar participants received study materials in electronic format and in hard copies.

II. Study Tour to China

In the period **July 11 - 20, 2012**, the Study Tour to the People's Republic of China (PRC) took place to get acquainted with work of the Meteorological Service of China under the contract "Study of Experience of the NHMS of China in organization of warning system of dangerous hydro meteorological phenomena and disaster risk reduction".

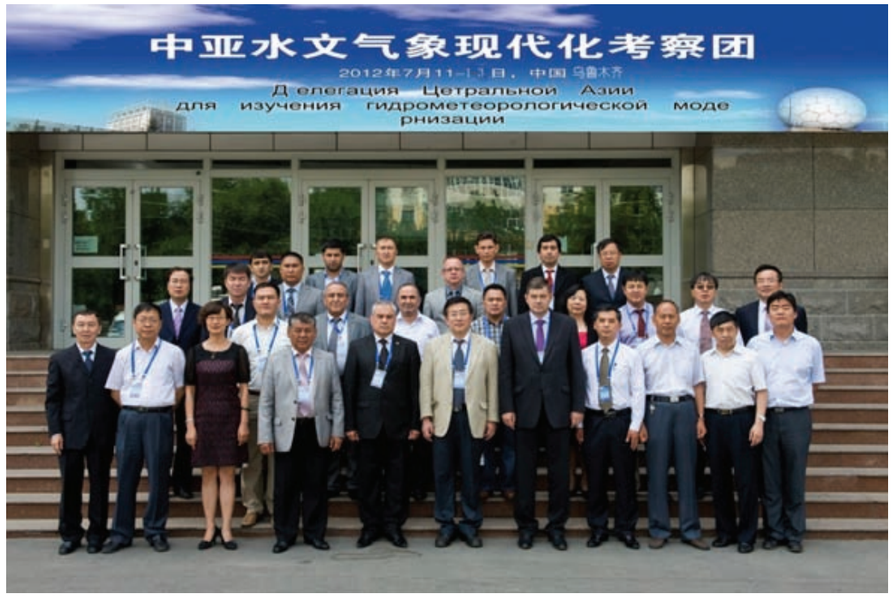
The Study Tour on theme "Experience of the National Weather Service in China related to organization of warnings system on severe weather phenomena, building service system for various customers, the institutional strengthening of the Service" was organized for representatives of the administrative board of Ministries of Economy, Ministries of Finance, Ministries of Emergency Situations, Ministries of Foreign Affairs and the CA NHMSs.

16 representatives from ministries of Kazakhstan (5 people), Kyrgyzstan (4 people), Tajikistan (5 people) and Uzbekistan (2 people) participated in the Study Tour to China.

Taking into account that one of the directions of the CAHMP project is the review and updating of the regulatory framework in the field of meteorology and related fields, strengthening the organizational and management structure and automation of management processes, it was important to conduct study of best practices applied in the National Weather Service to China according to the following directions:

- Organization of warning system on severe meteorological phenomena,
- Building of service system to provide services to various customers and national observation systems.
- Strengthening of institutional framework of the Service.

During the Study Tour, participants got acquainted with the work of CMA units, located in Urumqi, Shanghai, and Beijing. In each city were organized the field visits to local meteorological services, and conducted workshops on China's experience of work with users of weather products, including the Department of Water, Land and Natural Resources, Department of Agriculture, Earthquakes and others.



The group photo of delegation from Central Asia and Meteorological Administration in Xinjiang,China, July 12, 2012.

Business meeting of the Study Tour participants with the Deputy Chairman of the Government of the Xinjiang Mr.ZHANG Ze, July 12, 2012.

A chance to get acquainted with the early warning system and the concept of sustainable functioning of Weather Service, presented by a subsidiary of China Meteorological Administration in Shanghai, was of great significance.

The Shanghai Emergency Response Center, July 16, 2012.

The group picture taken in the China Meteorological Administration, Beijing, July 17, 2012.

During the stay in Beijing, the delegations of the Study Tour had a big picture of the main operational centers of the China Meteorological Administration (CMA) and visited the following centers:

1. The National Satellite Meteorological Center.

2. The National Meteorological Center.

3. The National Meteorological Information Center.

4. Public Meteorological Service Center

5. Beijing- Huafeng Group to provide audio and video information.

6. Center for meteorological observations.

Of great significance for the Study tour participants was a chance to get aqauinted with operation of the National Center for Disaster Reduction under the Ministry of Civil Affairs and the National Centre for the Prevention of floods and droughts under the Ministry of Water Resources.

The study tour participants from their part had the opportunity to make presentations and national reports concerning the organization of work and provision of hydrometeorological services in the countries of Central Asia.

There was a discussion with the CMA at a high level regarding the development of potential of cooperation of the China Meteorological Administration (CMA) with the countries of Central Asia.

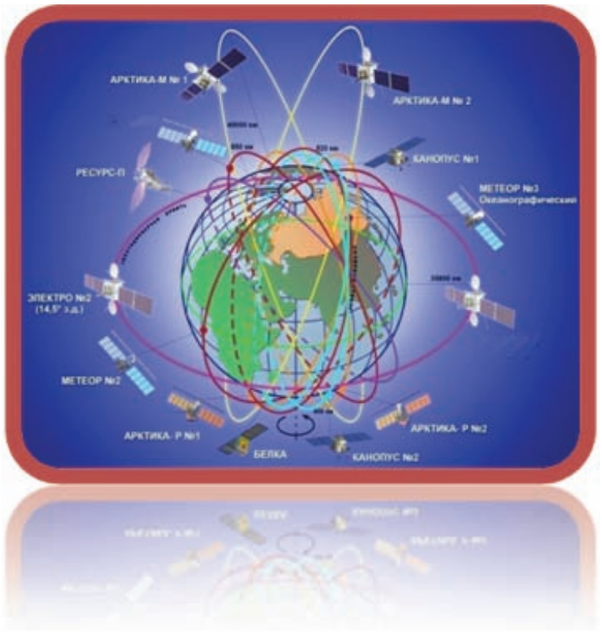
The results of the Study Tour of China:

1. Executives of the CA NHMSs, the Emergencies Ministries, the Foreign Ministries, the Ministries of Economy and Finance of the participating Central Asian countries had

a chance to get acquainted with operation experience of the National Weather Service in China:

- Organization of the warning system of dangerous weather events,
- Organization of operations at the NHMS of China,
- Building up of a system service to provide services to various customers,
- Production of devices and equipment,
- Organization of a national system of meteorological observations,
- Implementation of measures for institutional strengthening of the Service.

2. The gained experience and acquired knowledge will be applied in the Central Asian countries to create warning systems of severe weather events, as well as knowledge required for organization of the NHMSs, improvement of communication within the country among the various agencies to develop the NHMSs and improve service delivery



THE PLANNED EVENTS WITHIN THE CAHMP PROJECT

Until the end of 2012, other activities are planned under the Project which are associated with trainings, procurement of equipment, project development strategy of the CA NHMSs.

The main events of the year:
1. Study Tour to Russia.

The name of the Study Tour: "The experience of the National Hydromet Service of Russia, related to organization of the warning system of dangerous hydrometeorological phenomena, institutional strengthening of the Service and building up the service system to provide services to various customers." The StudyTour will be organized in two phases.

Phase one: Site-visit to the Primorie/Pacific Branch of Roshydromet (Vladivostok city) of by experts of the NHMSs of Kyrgyzstan and Tajikistan.

Phase two: Site-visit to the Roshydromet (Moscow, Saint-Petersburg, Obninsk) of by experts of the NHMSs of Kyrgyzstan and Tajikistan (at the expense of the Components B and C) and by experts of the NHMSs of Kazakhstan and Uzbekistan.

Participants: managers of the NHMSs, department heads and leading specialists of the CA NHMSs.
Timeline: October - November, 2012.

2. Preparation of technical specifications for the bidding documents within the project "Supply and installation of the multipurpose meteorological complex and telecommunication equipment in the WMO Regional Meteorological Centre (Tashkent). December 2012.

3. Preparation of tender documents and start of procurement for the project "Formation of hydrometeorological database on electronic devices for long-term storage". December 2012.

4. Development of a draft of strategy for regional trainings and retraining system, as well as procedures on interaction of the NHMSs. October 2012.

5. Development a regional approach to the "cascade" method/model of the WMO for evaluation of numerical forecasting of severe weather phenomena. October 2012.

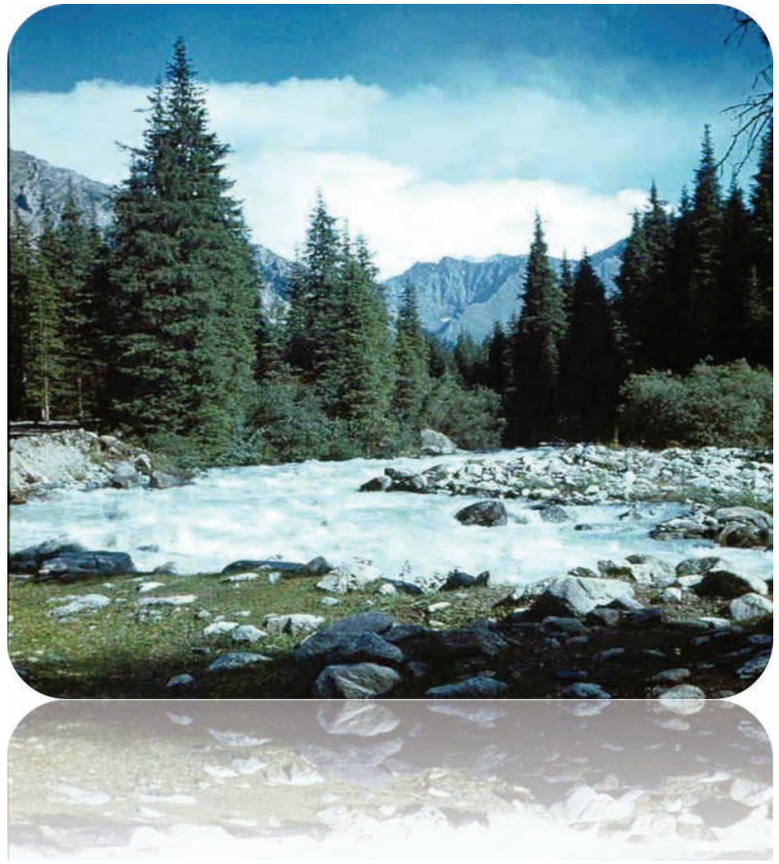
All activities under the CAHMP shall be conducted in accordance with the plans, approved by and coordinated with the National Hydrometeorological Services (NHMSs) of the Central Asian countries, as well as with constant approval of the World Bank.

CONCLUSION

Implementation of the CAHMP project will strengthen the capacities of the NHMSs of Central Asia to provide quantitative social and economic benefits from their core business. Personnel of the CA NHMSs will be trained to understand the requirements of customers and to gain skills required for development of applications made on the basis of forecasts. The project will provide trainings for employees of the CA NHMSs and users to enhance the benefits in decision-making as a result of improved forecasts.

At the regional level, the CAHMP project will contribute in reaching a goal of a higher level, i.e. to reduction in human casualties and economic damage which could be caused by severe hydrometeorological phenomena. The project is also aimed at reducing economic losses which could be caused due to the high degree of uncertainty of forecasts for industry and agriculture, as a result of weather and climate risks. The CAHMP project provides a mechanism for implementation of the key strategic priorities of all the hydrometeorological institutions/ the NHMSs.

The project will strengthen public sector governance through improvement of delivery of public services and the maintenance of the investment climate and long-term growth. The increased efficiency in future and quality of weather forecasting will reduce economic risks and support investments, mitigating the risks of natural disasters and environmental risks. The improved forecasts will mitigate risks of floods, droughts, fires, winds and abnormal weather conditions and increase readiness for emergencies which could be caused by such phenomena. However, to reach these goals, there is a need of cooperation between the NHMSs and the agencies responsible for disaster risk reduction. Through this project and other efforts, the NHMSs will get support for integration with systems of early warning.



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