INTERNATIONAL FUND FOR SAVING THE ARAL
REGIONAL CENTER OF HYDROLOGY CORPORATE FOUNDATION
PROJECT MANAGEMENT GROUP

THE CENTRAL ASIA HYDROMETEOROLOGY MODERNIZATION PROJECT

MAIN OBJECTIVES, GOALS, IMPLEMENTATION PROGRESS

November 10 - 11, 2021, Training Workshop

Executive Director of the RCG
Bultekov N.U.

Almaty, 2021

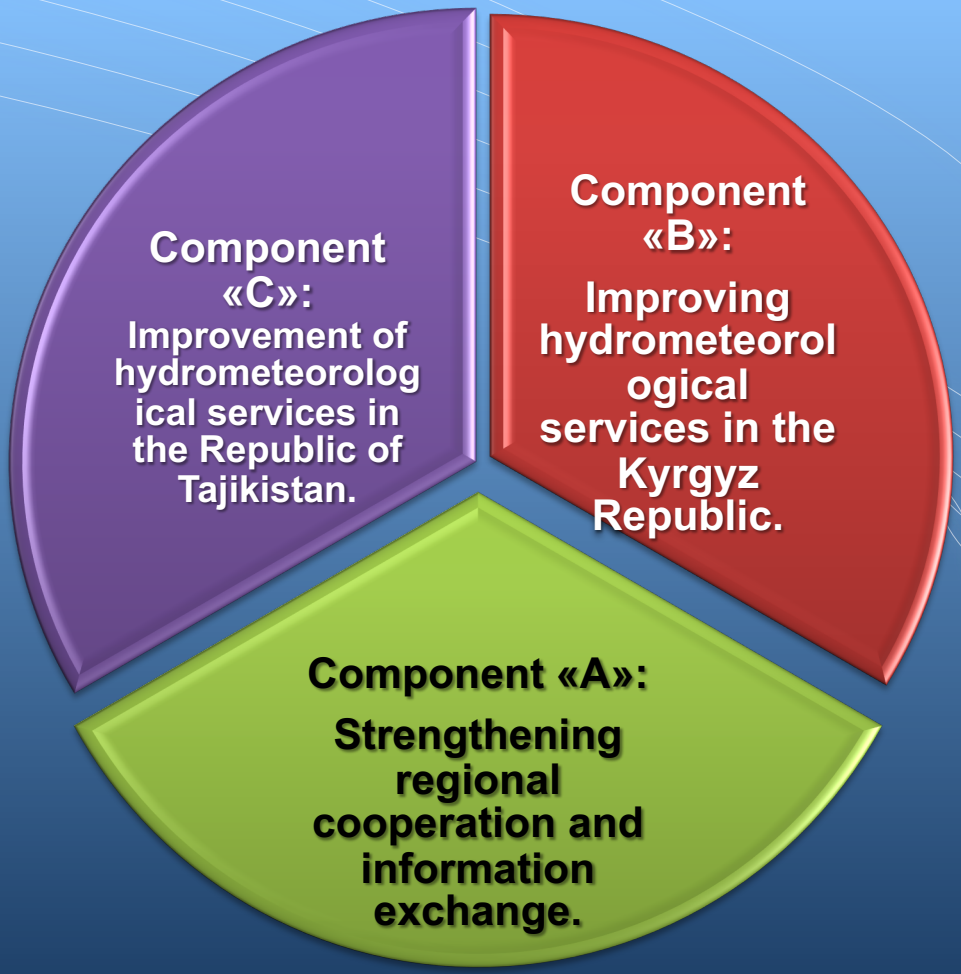
The Central Asia Hydrometeorology Modernization Project (CAHMP) was developed by the World Bank in conjunction with The Executive Committee of **International Fund** for saving the **Aral Sea** (EC IFAS), Corporate Foundation "Regional Center of Hydrology" and National Hydrometeorological services of the Central Asian states (NHMS CA)

The main objective of the Central Asia Hydrometeorology Modernization Project (CAHMP) is to improve the accuracy and lead time of hydrometeorological services in Central Asia, with particular attention to the Kyrgyz Republic and the Republic of Tajikistan.

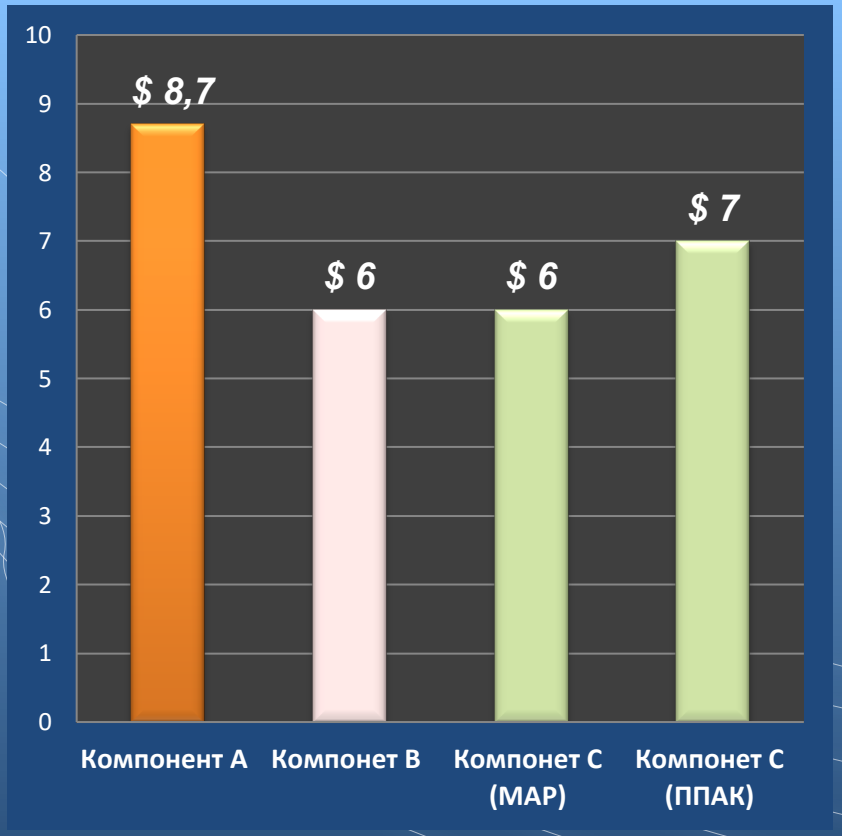
Terms of the Project:
Stage I: September 1, 2011 - December 31, 2018
Stage II: January 1, 2019 - March 30, 2023

Structure of the CAHMP

CAHMP includes three components:



PROJECT FINANCING



TOTAL – USD 27,7 MILLION

Objectives of the CAHMP

- RESTORATION OF INFRASTRUCTURE AND HUMAN RESOURCES

- MANAGING THE IMPACT OF CLIMATE CHANGE

- SUPPORT FOR ECONOMIC DEVELOPMENT OF AGRICULTURE AND WATER, ENERGY AND TRANSPORT

CAHMP promotes the development of regional cooperation in the field of hydrometeorology, including through the exchange of relevant information.

The **PROJECT** provides a mechanism for the implementation of the main strategic priorities of all hydrometeorological institutions.

REGIONAL LEVEL OF CAHMP:

Improving the technical and organizational capacity for the collection and exchange of information for the NMHS of CA

(processing, visualization, data exchange, archiving, storage)

Улучшение региональной системы обучения, подготовки и повышения квалификации кадров служб в области метеорологии, гидрологии и климата *(каналы связи, электронное обучение, техническое оснащение, обслуживание)*

Improving service quality through improved weather forecasts, storm warnings and climate change assessment

(access to databases via the Internet, digitalization of data)

Providing support for project management and assisting the NMHS by providing the services of a consultant for the system integration of the Project (integration of all systems for monitoring, collecting, processing, analyzing and storing data)

COUNTRY LEVEL OF CAHMP

COUNTRY LEVEL ACTIVITIES INCLUDE:

Institutional strengthening of the NMHS, increasing human capacity and financial sustainability of the NMHS (technical equipment, training, demonstration of experience of other services)

Improvement of the hydrometeorological monitoring system for timely warning of natural and dangerous hydrometeorological phenomena and water resources management (restoration and modernization of meteorological and hydrological observation networks)

Improving the service delivery system

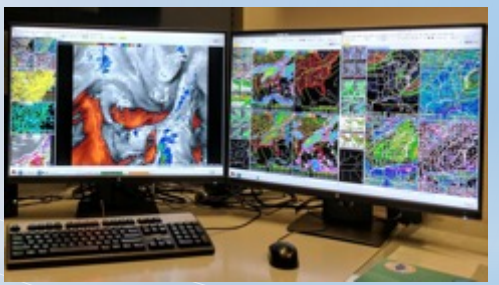
(staff training, search and attraction of new clients)

Management of the CAHMP components by country and ensuring integration into an integrated regional system.

COMPLETED ACTIVITIES OF CAHMP: 2012-2018

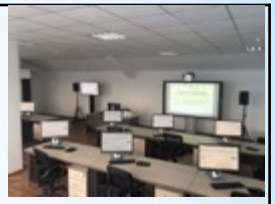
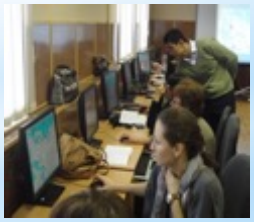
I. Strengthening regional coordination and information exchange

Objective:	Events:
Modernization of the WMO Regional Meteorological Center (Tashkent)	1. Supply and installation of software for the content receiving system at the WMO RSMC (Tashkent); 2. Supply of equipment for the content reception and visualization system in the WMO RSMC (Tashkent); 3. Delivery and installation of telecommunication equipment in the WMO RSMC
Implementation of an information processing system at the level of forecasting services of the NMHS	4. Supply of software for the visualization system to the RSMC WMO (Tashkent);
Creation of a system of online access to information products based on satellite information	5. Supply of hardware and software software for thematic processing space imagery materials: ➢ Kyrgyzhydromet; ➢ Tajikhydromet; ➢ Uzhydromet; ➢ IFAS.



ЗАВЕРШЁННЫЕ МЕРОПРИЯТИЯ ПМГМО ЦА: 2012-2018 гг.

II: Улучшение региональной системы обучения, подготовки и повышения квалификации кадров НГМС ЦА

ЦЕЛЬ	МЕРОПРИЯТИЯ
Переподготовка и повышение квалификации сотрудников наблюдательных подразделений 	1.Поставка оборудования для нового регионального учебного центра по озерам и водохранилищам (Чолпон – Ата, Кыргызская Республика). 
	2.Поставка учебного оборудования для обеспечения переподготовки и повышения квалификации кадров наблюдательных подразделений: • РЦГ ИК МФСА • Кыргызгидромет • Региональный учебный центр ВМО Ташкент 
	3.Поставка оборудования для обработки гидрологических данных Аральского моря (ИК МФСА).
	4.Создание Системы дистанционного обучения: • РЦГ ИК МФСА с филиалом в г. Нур-Султан (Астана) • Кыргызгидромет с филиалом в г. Ош • Таджикгидромет с филиалом в г. Бахтор (Куляб) • Узгидромет 
	5.Приобретение электронных учебных пособий для Системы дистанционного обучения (4 НГМС). 
	6.Повышение квалификации преподавателей и ведущих специалистов НГМС (4 НГМС).

II: Improvement of the regional system of education, training and advanced training of personnel of the NHMS of CA

Components:

Component A
Component B
Conponent C
Total

Country:
Kazakhstan
Uzbekistan
Kyrgyzstan
Tajikistan
Total

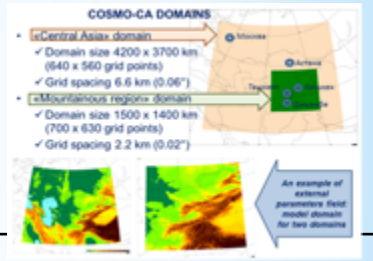
Компоненты:	2012	2013	2014	2015	2016	2017	ВСЕГО:
Компонент А	17	27	13	75	75	9	216
Компонент В	15	14	7	17	21	2	76
Компонент С	13	11	6	18	22	2	72
ВСЕГО:	45	52	26	110	118	13	**364**
Страна:							
Казахстан	11	5	7	40	21	2	86
Узбекистан	6	22	6	35	54	7	130
Кыргызстан	15	14	7	17	21	2	76
Таджикистан	13	11	6	18	22	2	72
ВСЕГО:							**364**

The training of specialists was carried out at the WMO Regional Meteorological Training Center in Moscow and Tashkent, Roshydromet, as well as directly at the Central Asia NMHS (Nur-Sultan, Almaty, Tashkent, Bishkek, Dushanbe). The advanced training of the teaching staff and specialists of the NHMS was carried out in the field of hydrometeorological support of economic sectors, the operation of modern hydrometeorological equipment, the use of information and measuring systems in meteorology, hydrology and agrometeorology.

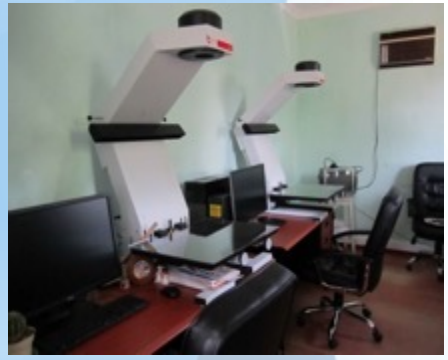
COMPLETED ACTIVITIES OF CAHMP - 2012-2018

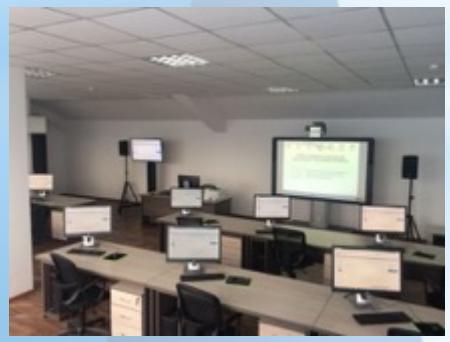
III. Measures to improve the quality of service for users of hydrometeorological products

Objective	Events
Implementation of cascading method for forecasting severe weather conditions in Central Asia.	1. Supply of equipment for numerical forecasting in the practice of the NHMS at the national and regional levels (4 NHMS). Cascading training activities a way to access the results of a numerical forecast (4 NMHS)
Adaptation of COSMO technology in the RSMC WMO Tashkent in the interests of 4 NMHSs of CA	2. Formation of a fund of hydrometeorological data on electronic media for long-term (unlimited) data storage (Kazhydromet)
Improving the quality of customer service with hydrometeorological data and information	3. Development and coordination of the emergency notification procedure at the regional and national levels, based on the analysis of relevant international experience



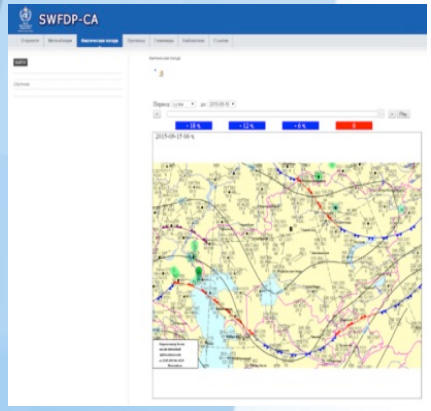
RESULTS OBTAINED FROM THE IMPLEMENTATION OF THE CAHMP FOR 2012-2018

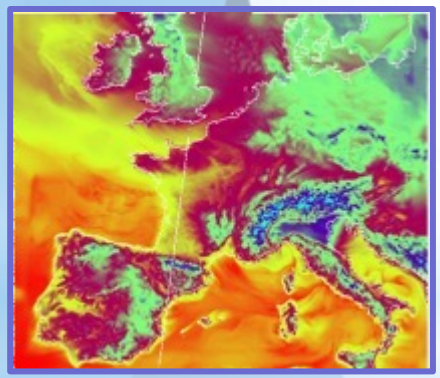




- Development of cooperation between NMHSs of Central Asia regarding the reception, processing and exchange of information in the region;
- Strengthening the technical and organizational capabilities of the NMHS to receive, store and exchange information;
- Providing access to a large array of data and information generated by world data centers and numerical forecasts;
- Improving the quality of service to consumers with hydrometeorological products;
- Implementation of the waterfall method for forecasting severe weather conditions (SWFDP) in Central Asia. Adaptation of COSMO technology at the WMO RSMC (Tashkent) in the interests of 4 NMHSs of CA;
- Creation of a new regional training center for the Central Asian NMHS;
- Retraining and advanced training of employees of supervisory subdivisions.

AT THE REGIONAL LEVEL THE IMPLEMENTATION OF THE CAHMP PROVIDED:





- Further strengthening of coordination between the hydrometeorological services of the Central Asian countries.
- Strengthening the exchange of data and information at the regional level and, in particular, on hazards.
- Create more diverse information products in a user-friendly and customer-centric format.
- Assistance in improving the accuracy of forecasts and the timeliness of the provision of hydrometeorological services in Central Asia.
- Reducing economic losses due to a high degree of uncertainty for industry and agriculture caused by weather and climate risks.
- Improved forecasting as a result of adaptation and implementation of numerical weather forecasts in the NMHS of the region.
- Ensuring mitigation of the risks of floods, droughts and fires, winds and abnormal weather conditions, as well as increasing the preparedness of emergency services for emergencies caused by hazardous and natural phenomena.

ACTIONS OF THE CAHMP FOR ADDITIONAL FINANCING - 2019-2023

Currently, within the framework of additional funding, the following activities are being carried out:

1. Supply and installation of equipment and software designed for continuous monitoring of the condition and use of agricultural land (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan);
2. Supply of equipment for creating the core of the information and telecommunications system Regional Specialized Meteorological Center of WMO (Uzbekistan);
3. Supply of equipment to ensure access, control and security of information - telecommunication system of the Regional Specialized Meteorological Center of WMO;
4. Supply and installation of a structured cabling system in Regional a specialized meteorological center of WMO;
5. Supply and installation of equipment for the CAFEWS project (Early Warning System for floods in Central Asia);
6. Completion of the Distance Learning System created within the framework of the CA HMP electronic training courses (NHMS CA);
7. Training of IT specialists and forecasters on COSMO-CA technologies;
8. Supply and installation of equipment and software for system implementation long-range weather forecast at the Regional Specialized Meteorological Center WMO for the benefit of the CA NMHS;
9. Modernization of a computer cluster in the Regional Specialized the WMO Meteorological Center and the installation of the COSMO CA system for the benefit of the CA NMHS.

CAFEWS Project - Flood Early Warning System in Central Asia

The CAFEWS project is being implemented within the framework of additional financing of the CAHMP.

According to the agreement reached, the NMHSs of the countries of Central Asia participate in the regional initiative of the World Bank. The implementation of this regional initiative began in the second half of 2020. At present, the basic design of the system has been agreed with the NMHSs of CA, WB and WMO. This platform will build on the existing regional obligations of the NMHS of Uzbekistan, which performs the functions of the WMO Regional Specialized Meteorological Center (RSMC WMO) and the NMHS of Kazakhstan, which is the regional center of the Central Asian Regional Flash Flood Management System (CARFFGS).

THE PLATFORM WILL HAVE THE FOLLOWING ELEMENTS:

Data exchange;

Hydrological decision support tools;

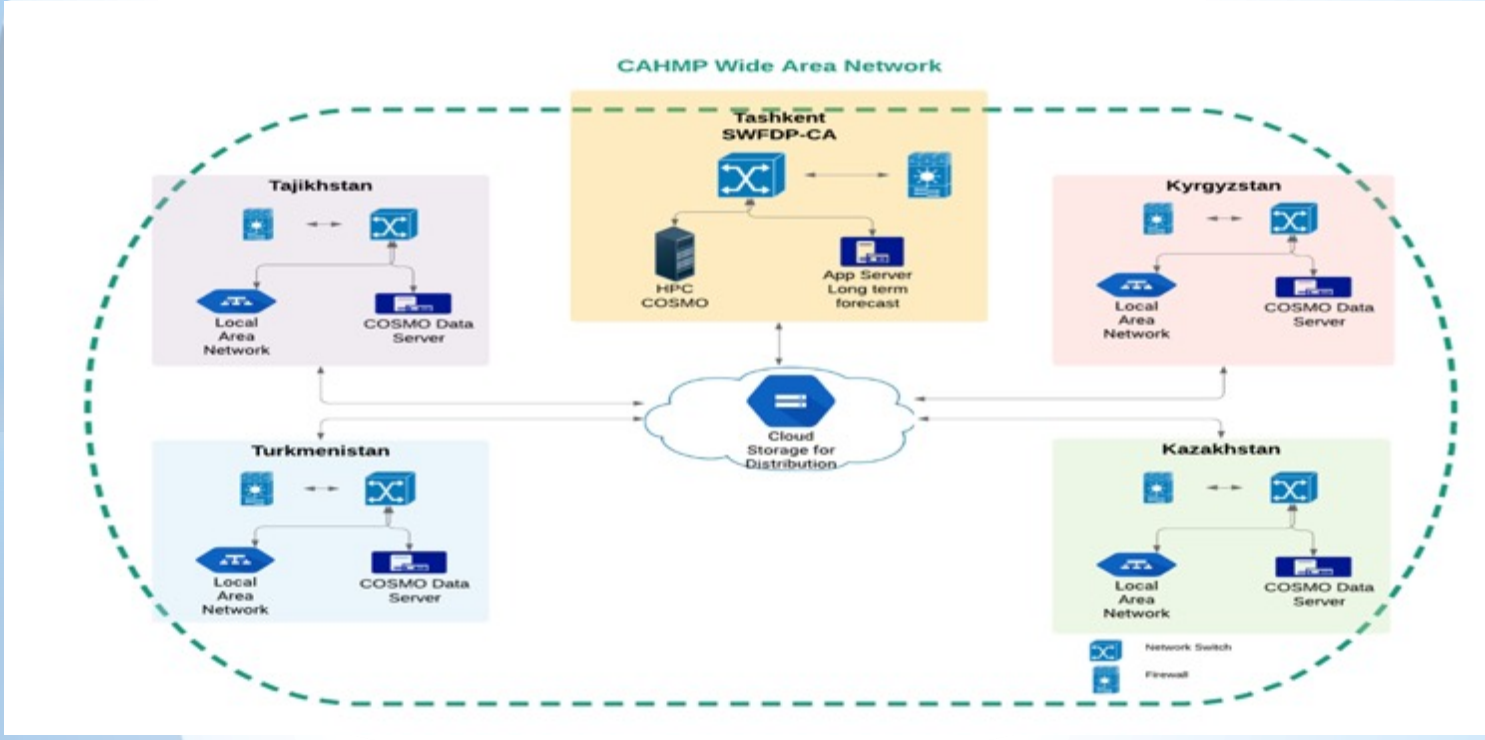
Meteorological forecasting;

Building capacity and regional community for sharing experiences.

MAIN ACTIVITIES PLANNED WITHIN THE CAFEWS PROJECT:

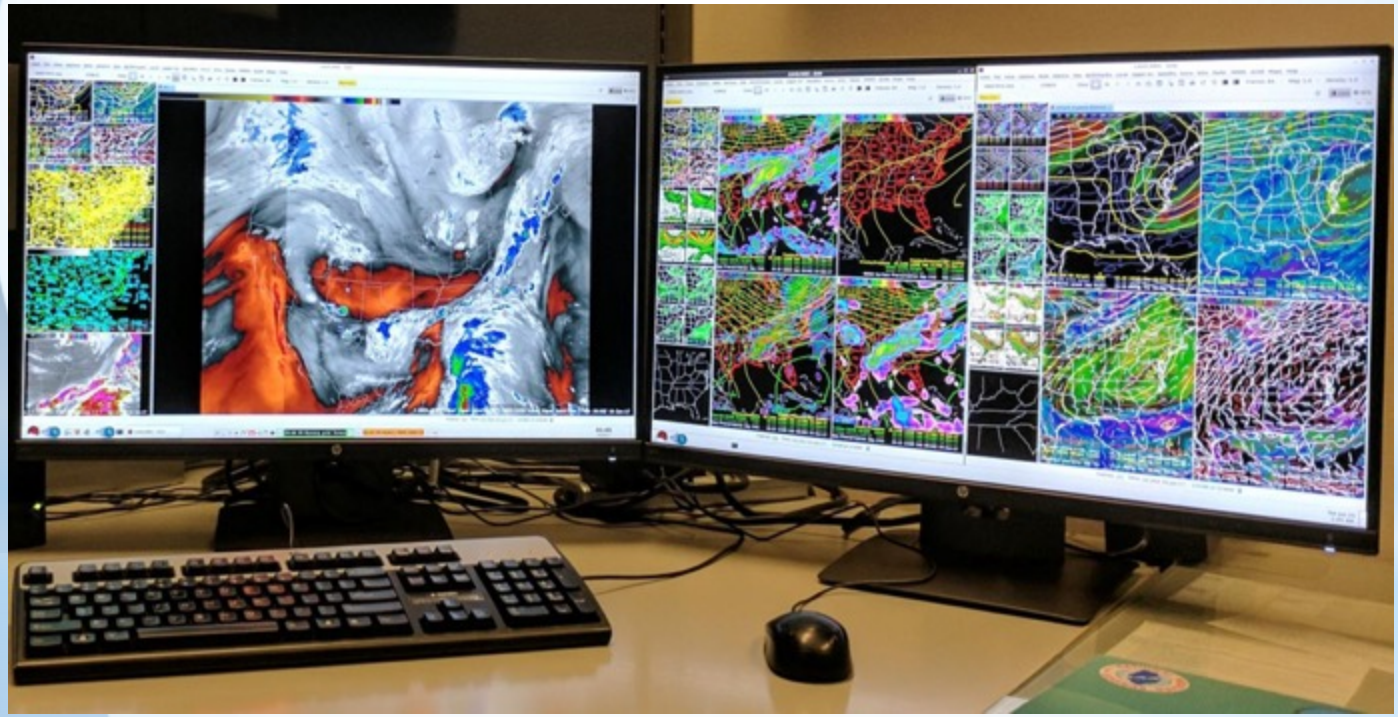
1.Installation of a wide area network (WAN) between NMHS of CA

Within the framework of the project, a global network (WAN) will be installed, which will ensure the smooth exchange of data between the NMHSs of CA. The network will create an “internal” network between the CA NMHSs for secure data exchange. The advantage of installing a wide area network is the rapid exchange of data, which is not limited by the bandwidth (Internet speed).



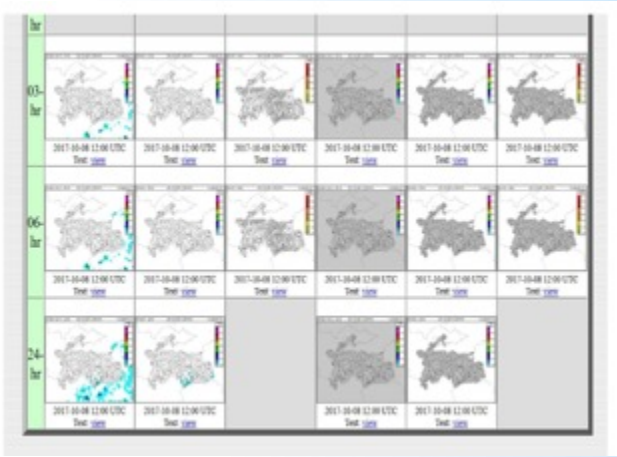
2. Equipping the Central Asia NMHS with a working forecast station

Each NMHS in Central Asia will be equipped with a forecast station that will be connected to the global network. Such a forecasting station must satisfy the needs for local processing and storage of data, as well as for the smooth exchange of data over the global network.



3. Expansion of the Central Asia Regional Flash Flood Management System (CARFFGS) with additional modules and data.

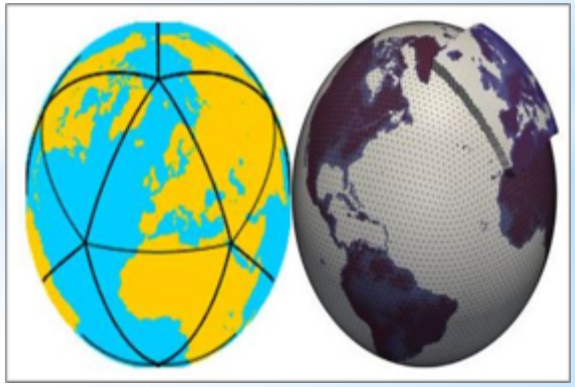
CARFFGS installed in the Hydrometeorological Service of Kazakhstan will be updated with additional modules and data. The landslide susceptibility module will allow predicting landslide events. River routing will allow for ensemble seasonal and sub-seasonal forecasts. CARFFGS will be updated by the Hydrological Research Center (HRC) in San Diego, USA.



4. Introduce and develop capacity in new tools and techniques

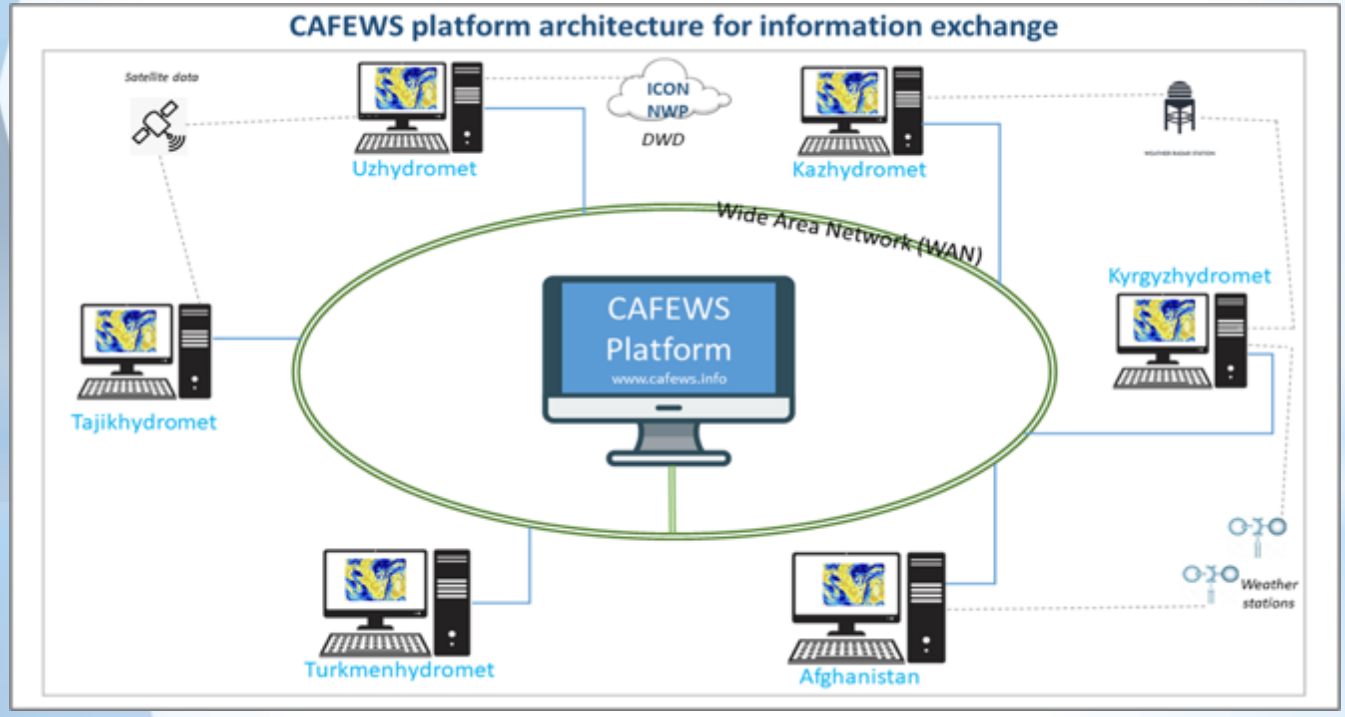
5. ICON in the cloud (ICONIC)

ICON is a numerical forecasting model weather (NWP) for the entire surface of the Earth, developed by the German Meteorological service (DWD). **The CAFEWS** project will conduct a pilot study on the launch of ICON-In-the-Cloud (ICONIC) for a domain in Central Asia.



6. Creation of an online platform (www.cafews.info)

The **CAFEWS** project will develop an online platform to facilitate the exchange of data between various organizations, such as emergency agencies in Central Asia. The CAFEWS platform will be docked to the global network and work forecasting station, which will implement push commands to upload the necessary information to the platform to provide more stakeholders with access to this operational information.



LONG-TERM RESULTS OF THE CAHMP

More diverse and better quality information products are presented in a user-friendly and customer-focused format

Strengthening the exchange of data and information at the regional level and, in particular, on hazards.

Strengthening the exchange of data and information at the regional level and, in particular, on hazards.

TASKS FOR THE REGIONAL CENTER OF HYDROLOGY FOR THE PERSPECTIVE:

- Development of cooperation with international organizations.
- Providing assistance to the Central Asian NMHS with the aim of further improving activities in the field of reducing risks from natural and hazardous weather events.
- Participation in projects organized by international organizations in the field of hydrometeorology, environmental protection and climate change.
- Expansion of interaction with international organizations, donors, environmental and other funds to enhance activities on environmental issues.
- Development of a Flood Early Warning System in Central Asia with the assistance of WMO.
- Completion of the Distance Learning System in the NMHSs of the Central Asian states.
- Conducting training events in order to improve the qualifications of NHMS specialists from Central Asian countries.

Наши партнеры

ВСЕМИРНАЯ МЕТЕОРОЛОГИЧЕСКАЯ ОРГАНИЗАЦИЯ

WORLD BANK GROUP

ИСПОЛНИТЕЛЬНЫЙ КОМИТЕТ СОДРУЖЕСТВА НЕЗАВИСИМЫХ ГОСУДАРСТВ

GFDRR
Global Facility for Disaster Reduction and Recovery

КАЗГИДРОМЕТ

HydroMet Kyrgyzstan

Кыргызгидромет

Таджикгидромет

Узгидромет

ТУРКМЕНГИДРОМЕТ

carec

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