

REPORT
TRAINING ON «JOINT PLANNING OF THE TRANSBOUNDARY MONITORING
NETWORK AND VISUALIZATION OF DATA ON WATER QUALITY»
AND
THE SECOND MEETING OF THE REGIONAL WORKING GROUP (RWG) ON
WATER QUALITY

December 4-5, 2017 – Almaty, Kazakhstan

CONTEXT

The training on "Joint planning of the transboundary monitoring network and visualization of data on water quality" followed by the second meeting of the Regional Working Group (RWG) on water quality were organized in the framework of the “Strengthening cooperation on water quality management in Central Asia” project, which is implemented by the United Nations Economic Commission for Europe (UNECE) in cooperation with the Regional Environmental Centre for Central Asia (CAREC), and funded by Finland and FinWaterWEI. The main goal of the Project is to support improvement of basin-wide, regional cooperation on water quality.

UNECE and CAREC have already been working in this direction within a previous project “Water quality in Central Asia” in 2009-2012, aimed at promoting the development of efficient and coordinated national policies with regard to water quality aspects of integrated water resources management in Central Asia (CA). One of the major project results was the establishment of National and Regional working groups with representation of all Central Asian countries, that participated in the pilot program for transboundary monitoring of surface waters on the Talas River (Kyrgyzstan-Kazakhstan) and the Vakhsh River (Kyrgyzstan-Tajikistan).

GOAL

The main goal of the **training** was to familiarize the trainees with the modern internationally accepted water quality management systems, including peculiarities of water quality monitoring, exchange of monitoring information and use of monitoring data for joint planning.

The overall goal of the **meeting** was to determine the responsibilities of the Regional Working Group on water quality and empower its cooperation mandate within the five countries of Central Asia.

The Agenda is enclosed (Annex 1).

OBJECTIVES

The training:

- To study the international experience in creating goal-oriented transboundary monitoring programs and develop skills in joint design of monitoring networks;
- To learn about the instruments of visualization of data on water quality for improving the process of decision making.

The meeting:

- To elaborate and discuss the Terms of Reference for the Regional Working Group on water quality;

- To present the assessment of needs of water quality systems in five Central Asian countries;
- To brainstorm the ways to ensure sustainable information exchange on water quality between Central Asian countries;
- To look through the progress of the project and to develop an Annual Work Plan 2018.

PARTICIPANTS

Both events were attended by the members of the Regional Working Group on water quality represented hydrometeorological agencies, departments of the state sanitary and epidemiological control, water and environmental ministries of the region. All 5 CA countries were represented at the meeting. The full list of participants is attached as Annex 2 to the Report.

Including representatives of CAREC, RWG members, national and regional experts, altogether more than 20 people participated at the meeting including 8 men (36%) and 14 women (64%). The ratio of female participants of the Second meeting of the RWG in 2017 was sufficiently higher, while gender balance of the First meeting in 2016 was approximately equal with slightly more females (15 men (48%) and 16 women (52%) respectively).

There is a sufficient progress in the way national environmental agencies and ministries nominate their representatives to participate in regional initiatives. In the beginning of 2016 an equal participation of women in any of the project activities required a special notice to respective ministries and other similar efforts. Tajikistan, Turkmenistan and Uzbekistan, in particular, were less likely to support the promotion of gender aspects within national and regional activities. Nevertheless, by the end of 2017 Turkmenistan and Uzbekistan started to empower female professionals (both young and experienced) in sharing their expertise regarding the thorny matters of water resources management and transboundary cooperation.

SUMMARY

On December 4-5, 2017, Almaty hosted a training on "Joint planning of the transboundary monitoring network and visualization of data on water quality" followed by the second meeting of Regional Working Group (RWG) on water quality.

During the First meeting of the preliminary RWG on water quality in November 25, 2016 in Almaty, the participants from 5 Central Asian countries prioritized and selected the activities on addressing water quality issues to be included in the Annual Work Plan (AWP) of the project.

To improve the measures undertaken for effective water quality management, there is a need to enhance the capacity of professionals responsible for water quality assurance and control in Central Asia. Thus, one of the major activities included in the AWP 2017 was the training on a specific water quality issue for respective water specialists. Since the members of the meeting suggested to sharpen the focus of the project activities on matters of water quality monitoring, it was further decided to form the agenda of the training around joint planning of the transboundary monitoring network and visualization of data on water quality.

Thematic content of the training was conducted by Mr. Ruslan Melian, Regional expert of the project, and included basic principles of planning transboundary monitoring networks, the types of such networks and their specifics. In order to familiarize participants with the role of cooperation and partnership in water quality management, the regional expert introduced an interactive task targeted at developing their skills in the joint design of goal-oriented monitoring networks.

The training agenda was complimented by the experience of UzHydromet in applying GIS instruments for visualization of water quality monitoring data. The trainees learned how to

optimize the analysis of monitoring information and simplify its perception among decision-makers.

Such experience-sharing format of the training was well-received by Hydromet representatives of all five countries of the region and it was suggested to include study-tours between Hydromet agencies into the capacity building plan for water quality specialists within the project activities and beyond.

The training was followed by the Second meeting of the Regional Working Group on water quality, where the Regional Expert Group (REG) presented the results of needs assessment of surface water monitoring systems in five CA countries with a focus on national hydrometeorological agencies. The list of major needs included the need to increase the human, technical and laboratory capacity of Hydromet agencies, as well as to optimize the storage, processing and analysis of monitoring data (see Fig.1).

	KZ	KG	TJ	TM	UZ
Planning of monitoring networks	Green	Yellow	Yellow	Red	Yellow
Variety of parameters for monitoring	Yellow	Yellow	Yellow	Yellow	Yellow
Systems of assessment and classification of water resources	Red	Red	Yellow	Yellow	Yellow
Sampling and transportation of samples	Green	Green	Yellow	Green	Yellow
Technical equipment of labs	Green	Red	Red	Yellow	Yellow
Reagents	Green	Green	Red	Yellow	Yellow
Methodologies	Green	Yellow	Yellow	Yellow	Yellow
Human/staff potential	Green	Yellow	Yellow	Yellow	Yellow
System of data storage	Green	Green	Yellow	Red	Yellow
Data analysis and visualization	Green	Yellow	Yellow	Yellow	Yellow
Quality control of sampling	Green	Yellow	Yellow	Green	Green
Quality control of analytical work	Green	Yellow	Red	Green	Green
Information flow on water quality	Green	Yellow	Yellow	Yellow	Yellow
Use of monitoring data	Red	Yellow	Yellow	Red	Yellow
Explanation:					
<i>Need for significant improvement / change/ new reforms</i>	Red				
<i>Need for small improvement / modification / clarification</i>	Yellow				
<i>No need for significant improvement</i>	Green				

Fig.1. Summary of the needs assessment of national water quality monitoring systems in CA

The RWG members provided their comments on the regional report, which were considered by the expert group and incorporated in the final chapter of the report.

Generally speaking, the needs assessment showed the urgent need to reform and modernize this important water management sector, both at the country level and in the regional context. The conducted research allowed the REG to formulate the following basic strategic lines of such reform:

- reforming the water policy for water quality monitoring with respect to the IWRM principles;
- increasing the material and technical, methodological and human capacity of hydrometeorological agencies engaged in water quality monitoring;
- promoting regional cooperation on the transboundary issues of water quality;
- coordinating and integrating the efforts of countries in improving the system of water quality monitoring and management of transboundary water resources.

On the basis of preliminary recommendations from the regional report, RWG members have prioritized short- and long-term actions to address the challenges of water quality in the region.

With respect to the importance of capacity building the idea of experience sharing between national Hydromet agencies of CA countries, the first activity to be included to the project work plan is the study-tour to Uzhydromet. This agency is one of the few in the region who conduct hydrobiological monitoring and can share their methodology and experience with other countries. The study-tour should also include a regional session aimed at discussing the results of the project, drawing conclusions from the project and outlining the areas of future interventions in the area of water quality in the region.

During the final discussion, participants recognized the need for such coordination platform as the Regional Working Group on Water Quality in Central Asia. They discussed the circle of responsibilities of the RWG, which should include the following elements:

- Exchange of relevant information on the issues of water quality management in the region;
- Bringing the issues of water quality management to decision-making level;
- Coordination of pilot approbation of the basin approach for water quality management.

Thus, another action included in the project work plan for 2018 will be the development of the Mandate of the RWG on water quality.

The future activities of the RWG shall also involve health aspects of water quality. The project is already working in close cooperation with CAREC Programme on Environment and Health (EHP), which is aimed to identify the correlation between environmental factors and human health in CA region and to assist in reducing the burden of environmental hazards on health of the population. “Water, sanitary and hygiene” is one of the 4 main directions of the programme’s activities.

OUTCOMES AND RECOMMENDATIONS:

The Regional Working Group on water quality recommended the following prioritised actions to be implemented in the final phase of the project:

- Translation and dissemination of the regional report on needs assessment of water quality monitoring systems in Central Asia;
- Elaboration and endorsement of the mandate of the Regional Working Group on Water Quality in Central Asian countries;
- Organization of a demo-tour to UzHydromet for representatives of respective agencies in Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan to learn about their methodology of hydrobiological monitoring and its application in Uzbekistan.

With regard to the actions beyond the project timeline, it was recommended to strengthen the linkages between the water quality and health aspects, as well as to put efforts towards proper water quality data management at both national and regional levels:

AGENDA

Time	Presentation	Speaker
Training on "Joint planning of the transboundary monitoring network and visualization of data on water quality"		
09.30 – 10.00	Registration of participants	
10.00 – 10.10	Welcoming speech	<i>Dr. Iskandar Abdullaev</i> Executive director, CAREC <i>Mr. Batyr Hajiyev</i> Economic Affairs Officer, UNECE
10.10 – 10.15	Provision of science-based evidence on climate induced water quality challenges in Amu Darya basin	<i>Dr. Iskandar Abdullaev</i> Executive director, CAREC
10.15 – 10.20	Joint initiative of UNECE and CAREC to strengthen cooperation on water quality in Central Asian region: progress of the project	<i>Ms. Assel Amit</i> Water Initiatives Support program specialist, CAREC
10.20 – 10.40	General information on the structure of the training and the tasks. Basic principles of planning monitoring networks: <ul style="list-style-type: none"> • Selection of monitoring points; • Frequency of monitoring; • Selection of water quality parameters for monitoring; • Stages of planning the monitoring networks. 	<i>Mr. Ruslan Melian</i> Scientific Coordinator, Centre for Strategic Environmental Research "ECOS"
10.40 – 11.00	Types of monitoring networks <ul style="list-style-type: none"> • Consecutive; • Hydrographic hierarchy; • Upper-lower source of pollution; • Dual watersheds; • Others. 	<i>Mr. Ruslan Melian</i> Scientific Coordinator, Centre for Strategic Environmental Research "ECOS"
11.00 – 11.30	<i>Coffee break</i>	
11.30 – 13.00	Interactive task — To develop a coordinated monitoring program for a transboundary river basin with respect to limited budget opportunities Trainees shall split in 2 groups, each provided with similar maps indicating the enterprises, cities, villages, agricultural tracts, as well as the position of water users within a particular river basin. The task is as follows:	Facilitator: <i>Ms. Assel Amit</i> Water Initiatives Support program specialist, CAREC <i>Mr. Ruslan Melian</i> Scientific Coordinator, Centre for Strategic Environmental Research "ECOS"

	<ul style="list-style-type: none"> • To conduct a brief analysis of issues related to water quality in the given river basin; • To determine the main purpose of the monitoring to be conducted; • To form the list of experts and specialists to undertake monitoring; • To elaborate the short list of monitoring parameters, standards and indicators, applicable in countries of both lower and upper reaches of the river; • To determine sampling points; • To think through the details of a water quality early warning system; • To set up the requirements and unified format for reporting on the results of a joint transboundary monitoring; • To fit into the budget. 	
13.00 – 14.00	<i>Lunch</i>	
14.00 – 14.20	Presentation of the results of interactive work in groups: <ul style="list-style-type: none"> • The principles of monitoring network planning used; • Analysis of the challenges; • Conclusion. 	<i>Mr. Ruslan Melian</i> Scientific Coordinator, Centre for Strategic Environmental Research "ECOS"
14.20 – 14.50	Tools and instruments for visualization of data on water quality	<i>Mr. Sergey Myagkov</i> Deputy Director, NIGMI-Hydrometeorological Research Institute of Uzhydromet
14.50 – 15.20	Interactive task on computers: mapping and systemization of data and figures on water quality	Facilitator: <i>Mr. Sergey Myagkov</i> Deputy Director, NIGMI-Hydrometeorological Research Institute of Uzhydromet
15.20 – 15.30	Closing discussion, feedback from trainees	Facilitator: <i>Ms Assel Amit</i> Water Initiatives Support program specialist, CAREC
15.30 – 16.00	<i>Coffee break</i>	
The second meeting of the Regional Working Group on water quality		
09.30 – 10.00	Registration of participants	
10.00 – 10.15	Welcoming speech	<i>Ms. Assel Amit</i> Water Initiatives Support program specialist, CAREC

10.15 – 10.30	Joint initiative of UNECE and CAREC to strengthen cooperation on water quality in Central Asian region	<i>Ms. Assel Amit</i> Water Initiatives Support program specialist, CAREC
10.30 – 10.45	Water quality and health	<i>Ms. Irina Bekmirzaeva</i> Environment and Health program manager, CAREC
10.45 – 11.30	Overview on the identified needs of national systems for ensuring the quality of water resources in 5 Central Asian countries <i>5-7 min presentations</i> <i>Q/a</i>	Experts: <i>Ms. Danara Alimbayeva</i> (Kazakhstan) <i>M.s Vera Bondareva</i> (Kyrgyzstan) <i>Mr. Bakhrom Mamadaliev</i> (Tajikistan) <i>Mr. Stanislav Aganov</i> (Turkmenistan) <i>Mr. Sergey Myagkov</i> (Uzbekistan)
11.30 – 12.00	<i>Coffee break</i>	
12.00 – 13.00	Regional report on water quality and monitoring systems in Central Asia <i>General discussion, feedback from the RWG</i>	<i>Mr. Ruslan Melian</i> Scientific Coordinator, Centre for Strategic Environmental Research "ECOS"
13.00 – 14.00	<i>Lunch</i>	
14.00 – 14.15	Transboundary cooperation in the Chu-Talas basin and the impact of joint Kazakh-Kyrgyz monitoring	<i>Ms. Indira Akbozova</i> Head of the Kazakhstan part, Secretariat of the Chu-Talas Water Commission
14.15 – 15.00	Panel discussion Functions of the Regional Working Group on water quality (RWG) — What to include in the circle of responsibilities of the RWG? — What data is important for exchange at the regional level? — How to ensure the information exchange between the RWG members? — Is there a need for an online platform for data sharing between respective national agencies, responsible for water quality management? — How to bring the data that reflects water quality issues to the decision-making	Facilitator: <i>Ms. Assel Amit</i>

	level? How can the RWG contribute to this?	
15.00 – 15.30	Potential measures to improve water quality cooperation – prioritization of actions to be included in the Annual Work Plan 2018	Facilitator: <i>Ms. Assel Amit</i>
15.30 – 15.40	Closing session	<i>Ms. Assel Amit</i>
15.40 – 16.00	<i>Coffee break</i>	

LIST OF PARTICIPANTS

№	Name	Organization	Position	Contacts
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4	Danara Alimbayeva	RSE "Kazhydromet"	Deputy General Director	alimbayeva0808@gmail.com
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5	Vera Bondareva	Agency of hydrometeorology under the Ministry of Emergency Situations of the Kyrgyz Republic	Head of the Department of Surface Waters Monitoring	bondareva.60@inbox.ru
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Republic of Tajikistan				
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Turkmenistan				
10	Dovletgeldy Muhyiev	National Committee of Hydrometeorology under the Cabinet of Ministers of Turkmenistan	Head of the Hydrology Department, Hydrometeorological Center	ytwehab93@gmail.com
11	Stanislav Aganov	Turkmenistan	Independent expert	aganov_stas@mail.ru
Republic of Uzbekistan				
12	Zulfiya Yarullina	State Committee for Ecology and Environmental Protection of the Republic of Uzbekistan	Deputy Head of the Department for Water and Land control	info@uznature.uz
13	Saliya Mamadaliyeva	State Committee of the Republic of Uzbekistan. for Nature Protection	Head of the Department of Monitoring of Wastewater and	info@uznature.uz

			Hydrobiological Control, Center for Specialized Analytical Control	
14	Marina Plotsen	Centre of Hydrometeorological Service under the Cabinet of Ministers of the Republic of Uzbekistan (Uzhydromet)	Head of the Environmental Monitoring Service	s_m_z@meteo.uz uzhymet@meteo.uz uzhymet@gmail.com +998 712 373 511
15	Elena Frolova	Centre of Hydrometeorological Service under the Cabinet of Ministers of the Republic of Uzbekistan (Uzhydromet)	Leading engineer of the Department of automated processing of information on the state of environmental pollution, Environmental Monitoring Service	uzhymet@meteo.uz uzhymet@gmail.com
16	Sergei Myagkov	NIGMI- Hydrometeorological Research Institute of Uzhydromet	Deputy Director	sergik1961@yahoo.com

Other participants

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18	Indira Akbozova	Secretariat of the Chu-Talas Water Commission	Head of the Kazakhstan part	shutalaskz@gmail.com +7 701 750 56 94

CAREC

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22	Aigerim Smagulova	CAREC	Water Initiatives Support programme intern	asmagulova@carececo.org

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	Participants of the training and the meeting
	Participants of the meeting