UNITED NATIONS ORGANIZATION ECONOMIC COMMISSION FOR EUROPE

INTERSTATE COORDINATION WATER COMMISSION OF CENTRAL ASIA SCIENTIFIC-INFORMATION CENTER

# **ACTIVITY REPORT**

on the project

"Support to the network of Russian speaking water management organizations and organization of a water information conference in Bishkek, autumn 2014"

Tashkent - 2015

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Annex 1

Program of the Conference of EECCA water-management organizations "Water Conservation and Effectiveness of Water Use"

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Members of the Network of (basin) water-management organizations from Eastern Europe, Caucasus, and Central Asia

### 1. Introduction

The main project objective is promoting contacts and extending information exchange among water professionals in the countries of Eastern Europe, Caucasus, and Central Asia through the enlargement of membership of the established and maintained Network of Water Management Organizations of EECCA countries and the enhancement of the exchange of information and accumulated experience.

SIC ICWC has achieved the following results for the reporting period:

- 1. Prepared and organized the Conference of the water management organizations in EECCA countries titled "Water Conservation and Effectiveness of Water Use" in Minsk on 21<sup>st</sup> of May 2015 and the Roundtable on improvement of NWO EECCA activity on 22<sup>nd</sup> of May 2015
- 2. Published collection of scientific papers of the NWO EECCA "Water Conservation as a Way for Survival under Growing Water Crisis"
- 3. Published NWO EECCA Conference Proceedings "Water Conservation and Effectiveness of Water Use" (21-22 May, Minsk, Belarus)
- 4. Regularly updated and maintained web-site of the Network
- 5. Contributed to the development of the knowledge base on the CAWater-Info portal as one of the main components of NWO EECCA activity

### 2. Project activity during the reporting period

During the reporting period, the following activities were accomplished:

### 2.1. Organization of the Network Conference

Preparation to the conference of EECCA water management organizations "Water Conservation and Effectiveness of Water Use" was underway since September till November 2014:

- a special work team was established at the head of Academician P.A.Polad-zade (OAO "Vodstroy") and composed of: Prof. V.A.Dukhovny (SIC ICWC), V.I.Sokolov (GWP CACENA), F.F.Beglov (SIC ICWC, executive secretary), Mamataliev N.P. (Kyrgyz branch of SIC ICWC)
- invitations to concerned institutions were disseminated
- conference dates and venue Bishkeke, 4-5 December 2014 were agreed
- hotel was reserved for participants
- agenda of the conference was drawn up, approved and disseminated

However, because of certain circumstances, the conference was postponed.

By the courtesy of the leadership of "Belgiprovodkhoz" Institute, the Conference was finally organized in Minsk (Belarus) on 21<sup>st</sup> of May 2015.

The key topics of the Conference discussion were:

- Report on NWO EECCA activity in 2014
- Growing water scarcity presenting challenges for water security: natural ones climate change; and, anthropogenic ones rising demands, future development, including of hydropower
- Issues related to application of high-tech in water uses (automation, water conservation, energy conservation, etc.)
- Water accounting and quality of water delivery services

The Conference was organized by OAO "Vodstroy", Scientific-Information Center of ICWC, and Belarusian Research Institute for Land Reclamation.

President of NWO EECCA Academician P.A.Polad-Zade opened the Conference.



- B. Libert, Regional Advisor for Environment, UNECE
- S.B.Dunayevskaya, Director, Institute "Belgiprovodkhoz"
- E.Boinet, representative of the International Network of Basin Organizations
- M.K.Kerimov, Head of the Federal Water Resources Agency, Ministry of Natural Resources and Ecology, Russian Federation.





Then, the reports were delivered by:

Prof. V.A.Dukhovny - NWO EECCA activity in 2013-2014 and future tasks

B.Libert - Water-food-energy nexus approach for better water use

N.A. Sukhoy – Specifics of Land Reclamation Program implementation in the Russian Federation

V.I.Sokolov - Water conservation and efficient water use - the base for future survival

Prof. N.B. Prokhorova - Water conservation as a factor of socio-economic development

Acad. B.M.Kizyaev - Water resources and their role for development of the Russia's agroindustry under climate change

A.D.Ryabtsev - Growing water scarcity as a water security challenge and the steps towards water cooperation

A.Sh.Mamedov - Rational methods of water and energy use in highlands

E.Boinet - The action program of the International Network of Basin Organizations and the assessment of the current progress in the implementation of the Water Framework Directive

A.A.Bulinya – Irrigation and drainage in Belarus and development outlook

N.K.Vakhonin - Status of land reclamation system in Belarus and innovative ways of its development

A.K.Fazilov - On-going improvement measures in the water sector of Uzbekistan

Prof. V.A.Stashuk - Characteristics of water use in Ukraine given the agrarian sector reformation and climate change

N.N.Balgabaev - Regional program for irrigation reconstruction and irrigated land reclamation in Kazakhstan with application of resource-conservation technologies: Zhambyl province case-study

V.N.Korneyev - Water resources management in the Neman River Basin in light of adaptation to climate change

Prof. N.Nosirov - Water conservation technologies in irrigated agriculture in Tajikistan

Prof. Ye.M.Kalibekova - Current status of water resources and related challenges in Kazakhstan

L.Kiktenko - Potential of down-top approach for water conservation – CAREC experience in Central Asia

M.Yu.Kalinin - Results of the Beralus-Moldova Project "Promotion of public participation in international cooperation on integrated transboundary river basin management in western countries of EECCA"

K.A.Anzelm - Application of water-saving irrigation technologies in Kazakhstan: South-Kazakhstan province case-study

M.Ya.Makhramov - Water accounting and control along the Amudarya River

A.R.Uktamov - Experience of application of automated water accounting at BWO Syrdarya



The Network President Academician P.A.Polad-Zade in his opening speech highlighted that our time is characterized by strong pressure on the water sector exerted by climate change and the global tendencies and problems. Recently, China has been developing intensively its hydropower projects and has transferred river flow south to north in the area adjacent to the EECCA region. As an example of how transboundary problems are solved, one can site the signature of a document on cooperation between Palestine, Israel, and Jordan for river sharing in the Middle East, taking into account huge reserves of seawater desalination and construction of a canal Red Sea – Dead Sea.

Today, in 50 years since the Program for Land Reclamation in USSR, which resulted in expansion of the irrigated area from 9.5 Mha in 1965 to 21 Mha in 1985, the current status of land use and water management in the Russian Federation causes serious concerns. It seems that, at present, the value of water is largely underestimated in Russia. However, the experience and knowledge accumulated in the country in the previous periods of irrigation and drainage development urge to radical revision of the focus in our water-related practices to serve as the basis of food and energy security and as a driver of progress and development.

Problems in Russia's water sector were addressed in a number of other reports as well. In particular, N.A.Sukhoy analyzed significant shortcomings in the Russian water sector, such as lack of flood control that resulted in catastrophic floods in the Amur River and poor use of reclaimed land. Russia purchases food for \$35 billion, while irrigators and farmers in Kuban demonstrate huge capacities of the Russian irrigated agriculture. Kuban produces as much as 1 Mt of rice annually. Thus, similar development of irrigated agriculture in other areas of the country may reject a need for food import. Unlike Central Asia, Russia does not experience water scarcity. The current water management system is a structural sector for national economy.

However, today it is developed as a central resource-supplying sector. The role of water resources in the change of production patterns and population in Russia urges that the system, large scale multidisciplinary study be undertaken without delay so that to avoid transformation of the projected water crisis into the real-time one.



Mrs. Prokhorova, Director of the RosNIIVH Institute underlined that market conditions do not ensure sustainability and opportunities for survival in the water sector. There are no Federal laws on water use; small hydro is poorly implemented, whereas water resources in Volga, Don, Kuban, and Ural are exhausted virtually. There is growing number of unaccounted water diversions. The current monitoring system, which collects data from 11 departments, should be transformed into a system of forecasting and accounting. Water security practically is not legally supported in Russia.



Prof. V.A. Dukhovny, Executive Secretary of NWO EECCA, in his report highlighted the following contemporary water challenges in EECCA countries:

- Water should be the basis of global security.
- There is growing water scarcity in arid zones and increasing water availability in humid zones.
- Uneven spatial distribution of water.
- Poor water controllability.
- Development of hydro-egoism and difficulties with hydro-solidarity.
- Transboundary problems.
- Anthropogenic-technological risks.
- Need for harmonization of water, soil, climate and nature.

In order to overcome these challenges he proposed to:

- Overcome business as usual in development.
- Widen involvement of basin organizations they see the situation better and more realistically as the lower chain.
- Enhance information exchange and establish an open knowledge bank.
- Focus on training, transfer of knowledge and development of a clear future vision (strategy).
- Restore previous capacities of waterworks facilities and irrigated areas that degraded over 20 years.



V.I.Sokolov delivered the keynote speech on water conservation issues.

In the recent decade, humanity grew aware of the global problems related to intensive water use. Today, it is a known fact that freshwater can be renewed in the global water cycle but their usable share is limited, i.e. with population growth and economic development, humanity has faced growing shortage of freshwater resources. This global phenomenon is aggravated by climate change. Increased scarcity of water for all needs of the society and the nature is observed all over the world, while this process is especially intensive in some regions.

Water demands exceed (especially during dry periods) an amount of technically available water resources in the rivers in Central Asia as a whole. With growing population and socio-economic needs, this creates problems in ensuring water security and, particularly, its food and environmental elements.



Irrigated agriculture in the Central Asian countries undergoes changes related with restructuring of agriculture and water sector.

- The number of individual water users increased enormously;
- Former on-farm irrigation network automatically transformed into inter-farm one (at WUA level);
- Today there are no effective tools for harmonization of different water supply levels in terms of the reduction of water losses at the interface of hierarchical levels (because of lack of coordination of water demand and water supply and weak information mechanism for coordination);
- Poor monitoring of water supply and water disposal that led to low reliability of water accounting. This also causes low efficiency of water pricing;

- Cropping patterns have changed (especially winter wheat areas were increased significantly), with resulted effects for irrigation regime;
- The changes in irrigation regime affected operation of irrigation systems (water is delivered continuously all year round).

The water conservation measures can be divided into two categories:

- water conservation during delivery of water to users
- water conservation during use of water.

A wide circle of issues need to be addressed at the level of water use:

- Need for appropriate system of planning of water distribution and use at the WUA-farmer level;
- Updating of water-duty (hydromodule) zoning and crop water requirement rates;
- Optimization of soil-reclamation regimes against current conditions of drainage and irrigation technique;
- Development of agronomic practices that improve soil fertility;
- Adoption of perfect irrigation methods;
- More financial incentives for water users in water saving transfer from hectare-based water charges to charges determined on the basis of amounts of delivered water.

Here, it is necessary to remember that water conservation is not only a technological process but also an institutional one, which is closely linked with implementation of IWRM.

The Deputy Head of Central Water Administration of Uzbekistan A.Fazilov noted that Uzbekistan is leading in implementation of IWRM. IWRM was adopted in more than 130,000 ha in Fergana province and in additional 450,000 ha in the Zarafshan basin and other provinces in the Republic.

Other directions for improvement of irrigation and drainage system in Uzbekistan are:

- Adoption of up-to-date water conservation technologies
- Implementation of automated water distribution control and monitoring systems
- Improvement of conditions of hydraulic facilities
- Improvement of irrigated land conditions
- Agricultural diversification, etc.



Over the last decade 1,500 km of canals, 400 large hydraulic structures, and 200 pumping stations were constructed or reconstructed in the republic. Every year 5,000 km of main canals, 100,000 km of irrigation canals and ditches, and 10,000 hydraulic structures and gauging stations are cleaned. The total area under drip irrigation is more than 12,000 ha. Flexible hose irrigation and film irrigation are applied in 14,000 ha of irrigated land.

During 2013-2017 land users and farms will receive long-term loans on easy terms, at government's expense, for:

- implementation of drip irrigation system on 25,000 ha
- flexible hose irrigation on 34,000 ha
- film irrigation on 45,600 ha.

These farms will be free from land and other taxes for 5 years.

In opinion of Kazakh experts (A.D.Ryabtsev, D.Balgabaev, Prof. Kallibekova), **Kazakhstan** is the least provided with water per capita. The average long-term runoff of all rivers in Kazakhstan was estimated at 100.5 km<sup>3</sup> in the recent past, whereas now it is estimated at only 85 km<sup>3</sup> by some experts.

Aggravation of water availability issues in Kazakhstan is explained by the following reasons:

- more than 45 % of surface runoff is formed outside the republic and its diversion by riparian countries (China, Uzbekistan, Kyrgyzstan, Russia) increases;
- effect of global and regional climate change on river runoff;
- irregular distribution of water throughout the republic;
- high degree of water pollution.

In order to achieve water security in Kazakhstan and solve geopolitical, interstate, socioeconomic tasks and in context of growing water scarcity, the country plans to re-distribute river runoff, particularly, transfer flow from the Yertis River via the Astana canal so that it would become the second independent source of water for the capital city. A.D.Ryabtsev highlighted an importance of the state water management program, which set main tasks for guaranteed water supply to population, environment, and economic sectors through water conservation, more efficient water management and preservation of aquatic ecosystems. This program will require significant investments up to \$18 billion for 2015-2020; however, redistribution of flows in water-scarce basins within the boundaries of Kazakhstan would help to avoid water scarcity, which is predicted to be 8.5 billion m<sup>3</sup>. The world practices in modern flow re-distribution demonstrate feasibility of such measures. Moreover, neighbors of Kazakhstan, first of all, China already implement such water transfers even along the Irtysh River, particularly through the Irtysh-Karamai and Irtysh-Urumchi canals.

Agriculture is the largest consumer in the republic. It uses 94% of the total water diversion, including 80% for regular irrigation, in the three southern basins.

Irrigated agriculture in three Kazakh provinces should be developed further only through water conservation technologies, primarily drip irrigation. By present, as K.A.Anzelm noted, the drip irrigation area has been extended to 34,000 ha. This is the set of economic, financial, legal, and institutional measures with extended soft financing that allows successful implementation of water-conservation technologies. In doing so, 80 % of water delivery services through modern technique is compensated by the public sector.



**Republic of Tajikistan** has diverse natural-economic zones starting from rainfed land to sub-arid zones, where 98% of irrigated land is under furrow irrigation. Taking into account soil-topography conditions in the republic, the following irrigation methods and technologies are proposed:

- improve quality of furrow irrigation for row crops, orchards and vineyards by cutting micro-furrows;
- portable and stationary tube network is recommended for distribution of water over irrigated fields under furrow irrigation;
- drip irrigation is recommended for high-profitable crops (cotton, citrus plants, fruits and vines) under acute shortage of irrigation water. In this context, Republican scientists suggested various options of low-pressure drip systems for both row crops and perennial

plants. The cost of construction and operation of such systems is 1.5-2 times lower than of traditional ones;

- irrigate fodder crops by impulse sprinkling;
- subsoil irrigation of vines;
- terraced irrigation of citrus plants.



Adoption of new advance irrigation technique and technologies helps to achieve high crop yields: 40-60 centner/ha of cotton; 50-60 centner/ha of cereals; up to 200-250 centner/ha of grapes; 1000 centner/ha of vegetables; 800-1,000 centner/ha of alfalfa. In doing so, productivity of labor increases 3-4 times, while irrigation water saving will be 1.5-3 times higher.

Representatives of **Belarusian** water sector, A.A.Bulinya, N.K.Vakhonin, and V.N.Korneyev underlined the role of water management and land reclamation in their country. Belarus produces almost 1000 kg of grain and 600 kg of potato per capita. Local factories manufacture all equipment for maintenance of national water infrastructure. In 2001, 4,000 tons of fish were produced in the republic, whereas now, through fish farm development, the total fish production amounts to 17,000 tons. The republic implements integrated projects for both national and transboundary water, particularly the Neman River Project, which covers Belarus, Lithuania and partially Russia.



Representative of Azerbaijan A.Sh.Mamedov stressed that given the growing water scarcity, development of off-stream reservoirs that have no a negative effect on richer channels and do not cause competitiveness between hydropower and other water users is of importance.



The Conference adopted the following resolution.

## Resolution of the NWO EECCA International Conference Water Conservation and Effectiveness of Water Use

#### 21 May 2015, Minsk

The participants of the International Conference "Water Conservation and Effectiveness of Water Use" gathered in Minsk on 21<sup>st</sup> of May 2015 within the framework of the Network of Water-Management Organizations (NWO) from Eastern Europe, Caucasus and Central Asia (EECCA) and *discussed* the topical issues related to water use, namely in the three key directions:

- Growing water scarcity and water security challenges: natural climate change; anthropogenic growth of demand, future development, including hydropower;
- Application of high technologies in all areas of water regulation and use (automation, informatization, water conservation, energy saving, etc.);
- Problems related to water accounting and quality of water services;

The participants *have agreed* that the main causes of water tension are:

- growing water consumption as a consequence of population growth, economic development and climate change;
- poor controllability of water as a result of lower attention from the side of national government to water sector in some countries;
- weak policy coordination among water-related sectors, such as agriculture, energy, environment;
- lack of clear advanced planning of water use in many countries, taking into account intensification of destabilizing factors;
- water right is not distinctly affirmed at international, regional, national and basin levels, as well as at the level of water users or consumers and their associations. There are no clearly defined mechanisms for searching tradeoff decisions in case of conflicting interests of water users: agriculture, land reclamation, water transport, fishery, hydropower, etc.;
- at all water hierarchical levels, even if water service fees are applied, there is no real interests of stakeholders in the use of economically-based mechanism for water distribution and use.

The participants *believed it necessary* to enhance efforts to counteract the factors causing water tension through common orientation of water-management organizations and water users towards efficient water use, including stronger coordination among the countries and water-related sectors. This must be a principled line of actions of the world community under coordination of UN organizations and of the national governments, with particular focus on transboundary water cooperation that involves about 40% of the world's water resources.

Solutions on integrated water and land resources management should be based on reasonable water use by all users with the help of decision support system and up-to-date water conservation technologies, through reduction of unproductive water losses, re-use of wastewater in agriculture

and industry, intensification of production of traditional and drought-tolerant crops, and involvement of all stakeholders dealing with food security in solution of problems related to water insecurity.

Taking into account significantly uneven spatial distribution of water resources and aggravation of water scarcity in some of particularly arid zones, as well as global trends, the re-distribution of flow within and between basins is largely a means to overcome temporary and continuous water deficits.

While noting that maintenance of professional community, information exchange and dissemination of best practices through NWO EECCA is of high importance, the participants *made mention of the Network work progress* in 2013-2014, including:

- issue of Network's information collections and scientific publications (http://eeccawater.net/),
- extension of the knowledge base on CAWater-Info portal (http://www.cawaterinfo.net/bk/rubricator.htm) as part of a system of uniform tools for implementation of IWRM that are adapted to specific conditions of water management in river basins subjected to different degrees of water scarcity in arid and semi-arid zones of EECCA countries,
- participation of NWO EECCA members in international events, including in preparatory activities to the 7<sup>th</sup> World Water Forum and in the Forum itself in Korea on 12-17 April 2015.

At the same time, the participants stressed a need for activation of measures directed at wider involvement of basin organizations in NWO EECCA activity. The effectiveness of basin organizations can be improved strongly through public involvement.

The participants welcomed the UNECE proposal (Mr. B.Libert) to organize such first event as part of the Kazakhstan national program and requested a member of the Network's Board of Directors Mr. A.D.Ryabtsev to take the lead of this work together with UNECE.

Summarizing opinions gathered during such events will allow formulating a message to the country governments for further improvement of legal, institutional and technical frameworks of the water sector.

In context of the mentioned above, the participants *thought it necessary* to intensify activity of the Network by:

- 1. Submitting regularly messages on national events in area of water management and information on new publications, software, methodologies and training materials in order to raise awareness among water professionals and encourage water sector development in EECCA.
- 2. Strengthening Network's national centers, their equipping and involving in their activity more water-management, academic and non-governmental organizations in order to create a multistakeholder platform for improvement of national water sectors and overcoming of challenges.
- 3. Building a bridge among the Network's members and water and agriculture decision makers in EECCA countries to inform them about existing global trends in water development as

compared to the existing situation in the national water sectors of our countries so that to raise effectiveness of the Network activity.

- 4. Enhancing cooperation with national focal points of international networks and organizations, such as Global Water Partnership (GWP), International Commission on Irrigation and Drainage (ICID) and others.
- 5. Enhancing support of NWO EECCA from the side of the Permanent Technical Secretariat of the International Network of Basin Organizations (INBO) through:
  - involvement of members of both NWO EECCA and other regional networks of INBO in activities related to extension of the knowledge base;
  - raising of funds for twinning with European basins; exploring possibilities for adaptation of European water directives to conditions and needs of the EECCA region; adjustment of EU financial mechanism to conditions of the EECCA region.

The participants *proposed* to organize a Network conference in 2016 on the theme "Cultural and educational aspects of water management in EECCA countries" and address there the following issues:

- Water and culture;
- Water and civilization;
- Water and ethics;
- Water and education.

Finally, the participants *thanked* UNECE and GWP CACENA for support and assistance provided to the Network, including in organization of this Conference. The participants also thanked the Russian Government for the long standing support of NWO EECCA.

The participants also *appreciated very much* assistance rendered by the Institute of Land Reclamation at the Belarus National Academy of Sciences, the Institute "Belgiprovodkhoz", and the Department for Land Reclamation and Water Management at the Belarusian Ministry of Agriculture in preparation and organization of the Conference.



#### Roundtable on improvement of NWO EECCA activity

The roundtable on improvement of NWO EECCA activity was held on the 22<sup>nd</sup> of May 2015 in the course of the Conference.

The below questions were raised for discussion:

1. What problems were solved or not solved as compared to initially addressed ones (at time of Network establishment)?

- By country
- By topic:
  - a) Water strategy
  - b) Water conservation
  - c) Implementation of IWRM
  - d) Development of governance system
  - e) Intensity of information exchange
  - f) Training
  - g) Improvement of legal framework
- Report on SIC ICWC activity over the 3 last years

2. NWO EECCA - poor involvement of basin organizations

- How can they be encouraged?
- Information on the knowledge base "Water in Central Asia" (SIC ICWC)
- E-learning
- 3. What can our collective advantages be?
- 4. How can partnership advantages be developed?

5. More active transfer of information about activities of the Network members to the Secretariat for filling the web-site

6. Attraction of donors and private companies

7. Conferences with participant fees (paid)

8. Establishment of national points of NWO EECCA

9. Organization of national dialogues among water-management organizations, including basin ones, WUAs and other lower level entities (down-top approach).



#### 2.2. Maintenance of the Network web-site

The web-site (<u>www.eecca-water.net</u>) is maintained to support activity of the Network of Water Management Organizations in EECCA countries. The web-site sections were filled with information from the Network's members and from open Internet sources during the reporting period. The following sections were opened:

- News
- Events (information about workshops, conferences, work meetings)
- Articles
- Publications (information about published books, brochures, monographs, etc.)
- Periodicals (information about published journals and newspapers)
- Information products
- Water economy history
- Brief information about the Network's members (profiles)



Overview of the NWO EECCA web-site

### 2.3. Preparation and publication of the collection of scientific papers

According to the Terms of Reference, the scientific papers were collected from the members of NWO EECCA and then their collection was composed and published under the title "Water Conservation as a Way for Survival under Growing Water Crisis".



Водосбережение как средство выживания человечества в условиях нарастания водного кризиса Сборник научных трудов

This publication included the following papers:

Water Conservation and Water Efficiency as the Basis for Future Survival V.A.Dukhovny

Water Use Trends in Russia under Growing Water and Water-Related Risks N.B.Prokhorova, Yu.B.Merzlikina, Ye.A.Pozdina

Regulation of Water Use in the Byelorussian Industrial Sector M.Yu.Kalinin, L.G.Konopel'ko, R.I.Oborotova

Republic of Moldova: Water Resources and their Conservation I.D.Trombitsky

Basin Check Irrigation Recirculation System for Rice Production V.V.Morozov, L.N.Granovskaya, O.V.Morozov, V.G.Kornberger, Ye.V.Dudtchenko, A.Ya.Polukhov

Modern Water-Saving Irrigation Methods in Kyrgyzstan P.M.Zhooshov, N.P.Mamataliev, T.P.Musaev, A.P.Musaeva

Some of the Problems related to Water Conservation in Uzbekistan and the Ways to Overcome Them E.I.Chembarisov, T.Yu.Lesnik

Improving Irrigation Technique and Technologies for Water Conservation in the Lower Reaches of Amu Darya O.Yu.Karimova, S.Kurbanbaev

The Mechanisms for Water Accounting and Monitoring at BWO Amu Darya A.M.Nazariy

Regarding Development of Advanced Water Measuring Facilities for Irrigation Systems in Uzbekistan A.B.Nasrulin, U.R.Rasulov

Studying Water Use Scenarios under Conditions of Climate Change, Flow Regulation and Water Conservation Technology Application: Fergana Valley Case-Study A.G.Sorokin, T.V.Kadyrov, D.A.Sorokin

Application of High Frequency Irrigation under Water Scarce Conditions O.I.Eshchanov

Institutional Aspects related to Improved Irrigation Water Productivity N.N.Mirzaev

Economical Side of Water Conservation in Uzbekistan B.Gojenko, Sh.Muminov

Practices of Water-Saving Irrigation in the South Kazakhstan Province K.A.Anzelm, M.Yu.Esanbekov

Legal and Institutional Aspects of Information Support for Water Management Sector in Central Asia I.F.Beglov, D.R.Ziganshina

RS-based Dynamics of the Aral Sea Waters D.A.Sorokin, Sh.Sh.Zoitov

Water-Saving Technology for Irrigation of Onion in the foothills of the South Kazakhstan M.S.Mirdadaev

Forecasts of Irrigated Agriculture Development in the Zhambyl Province and Water-Saving Irrigation Technologies and Tools P.A.Kalashnikov, B.M.Kurtebaev

Resource-Saving Technologies in Agriculture T.S.Gritchanaya

Water Rights Trading and Its Effectiveness in Australia Yu.Kh.Rysbekov, A.Yu.Rysbekov

More on Irrigation Water Tariffs in Turkey Yu.Kh.Rysbekov, A.Yu.Rysbekov

The reports presented during the Minsk Conference were generalized in the Collection of scientific papers under the title "Water Conservation and Effectiveness of Water Use: NWO EECCA Conference Proceedings (21-22 May, Minsk, Belarus)"



This collection included the following:

Conference report

Conference resolution

Opening speech of the NWO EECCA President P.A.Polad-Zade

Water conservation and efficient water use – the base for future survival V.I.Sokolov, M.G.Horst

Water conservation as a factor of socio-economic development N.B. Prokhorova

On-going improvements in the water sector of Uzbekistan A.K.Fazilov

Specifics of Land Reclamation Program implementation in the Russian Federation N.A. Sukhoy

Growing water scarcity as a water security challenge and the steps towards water cooperation A.D.Ryabtsev

Rational methods of water and energy use in mountain rivers A.Sh.Mamedov, A.A.Bairamov

Application of water-saving irrigation technologies in Kazakhstan: South-Kazakhstan province case-study K.A.Anzelm

Water conservation as the main principle of integrated water resources management Z.V.Kobuliev, N.K.Nosirov, Ya.E.Pulatov

Development of resource-conservation irrigation technologies in Kyrgyzstan P.M.Zhooshov, K.M.Kulov, A.Zh.Atakanov, N.P.Mamataliev

Water accounting and control along the Amudarya River M.Ya.Makhramov

Improving water use efficiencies in the Kazakh part of Prearalie T.I.Yespolov, A.G.Ray, Ye.M.Kalybekova

Watering pastures in Kazakhstan by using energy-efficient technologies of pumping driven by hydroenergy

T.I.Yespolov, A.A.Yakovlev, Ye.S.Sarkynov, A.Ye.Aldiyarova

Regarding GIS applications for conservation of water resources in the Amu Darya River F.Sh.Shaazizov, A.B.Nasrulin

Potential of down-top approach for water conservation – CAREC experience in Central Asia L.Kiktenko

Formation of soil salt regime under drip irrigation in the Republic of Karakalpakstan

Ye.Kurbanbayev, S.Ye. Kurbanbayev

Small basin councils in Central Asia: opportunities for public involvement in local water management T.Reznikova

#### Annex 1

#### Agenda International Conference of NWO EECCA

#### "Water Conservation and Effectiveness of Water Use"

#### May 21, 2015, Minsk

Opening address by the President of NWO EECCA Academician P.A.Polad-Zade Welcome speeches

- B. Libert, Regional Advisor for Environment, UNECE
- S.I.Letsko, Director, Department of Land Reclamation and Water Resources, Ministry of Agriculture and Food, Republic of Belarus
- E.Boinet, representative of the International Network of Basin Organizations
- M.K.Kerimov, Head of the Federal Water Resources Agency, Ministry of Natural Resources and Ecology, Russian Federation

#### **Reports**

Prof. V.A.Dukhovny, Director SIC ICWC, Executive Secretary of NWO EECCA	NWO EECCA activity in 2013-2014 and future tasks
B.Libert, Regional Advisor for Environment, UNECE	Water-food-energy nexus approach for better water use
V.I.Sokolov, Regional Coordinator, GWP CACENA	Water conservation and efficient water use – the base for future survival
N.B. Prokhorova, Director, FGUP RosNIIVH	Water conservation as a factor of socio-economic development
B.M.Kizyaev, Director, VNIIGiM, Russia	Water resources and their role for development of the Russia's agro-industry under climate change
A.D.Ryabtsev, Director, Kazgiprovodkhoz, Kazakhstan	Growing water scarcity as a water security challenge and the steps towards water cooperation

A.Sh.Mamedov, Merkuri-Inşaat MMC Azerbaijan

E.Boinet, International Network of Basin Organizations

A.A.Bulinya Deputy Director of "Belgiprovodkhoz" Institute, Belarus

N.K.Vakhonin, Director, Institute of Land Reclamation, Belarus

A.K.Fazilov, Central Water Administration, Ministry of Agriculture and Water Resources, Uzbekistan

Prof. V.A.Stashuk, Prof. P.I.Kovalenko, Professional Development Institute, Ukraine

N.N.Balgabaev, Director, KazNIIVH, Kazakhstan

V.N.Korneyev, L.N.Gertman, CNIIKIVR, Belarus

N.Nosirov, leading researcher, Institute of Water Problems, Hydropower Engineering and Environment of the Academy of Sciences, Republic of Tajikistan

Prof. Ye.M.Kalybekova, Kazakh National Agrarian University, Kazakhstan Rational methods of mountain rivers' water and energy use

The action program of the International Network of Basin Organizations and the assessment of the current progress in the implementation of the Water Framework Directive Irrigation and drainage in Belarus and development outlook

Status of land reclamation system in Belarus and innovative ways of its development

On-going improvement measures in the water sector of Uzbekistan

Characteristics of water use in Ukraine given the agrarian sector reformation and climate change

Regional program for irrigation reconstruction and irrigated land reclamation in Kazakhstan with application of resource-conservation technologies: Zhambyl province case-study

Water resources management in the Neman River Basin in light of adaptation to climate change

Water conservation technologies in irrigated agriculture in Tajikistan

Current status of water resources and related challenges in Kazakhstan

L.Kiktenko, CAREC expert,	Potential of down-top approach for water
Kazakhstan	conservation – CAREC experience in Central Asia
M.Yu.Kalinin, Board Chairman, Association of river guardians "Eco- Krones", Belarus	Results of the Beralus-Moldova Project "Promotion of public participation in international cooperation on integrated transboundary river basin management in western countries of EECCA"
K.A.Anzelm, Head, South-Kazakhstan	Application of water-saving irrigation technologies
hydrogeological and land reclamation	in Kazakhstan: South-Kazakhstan province case-
field office, Kazakhstan	study
M.Ya.Makhramov, Head,	Water accounting and control along the Amudarya
BWO Amudarya, Uzbekistan	River
A.R.Uktamov, Deputy Head of division, BWO Syrdarya, Uzbekistan	Experience of application of automated water accounting at BWO Syrdarya

### 22 May 2015

### Roundtable on improvement of NWO EECCA activity

#### Annex 2

#### List of participants International Conference of NWO EECCA "Water Conservation and Effectiveness of Water Use" 21 May 2015, Minsk, Belarus

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- 5. Prokhorova N.B. RosNIIVH
- 6. Kerimov M.K. FAVR MPR Russian Federation
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- 11. Anzelm K.A.- South-Kazakhstan hydrogeological and land reclamation field office
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- 13. Kiktenko L. CAREC
- 14. Kalybekova Ye.M. Kazakh National Agrarian University
- 15. Aldiyarova A. Kazakh National Agrarian University
- 16. Kurmashev K. Kazakh National Agrarian University

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- 19. Sokolov V.I. GWP CACENA
- 20. Beglov I.F. SIC ICWC, Network Secretariat
- 21. Fozilov A. Central Water Administration, Ministry of Agriculture and Water Resources
- 22. Uktamov A. BWO Syrdarya
- 23. Makhramov M.Ya. BWO Amudarya

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25. Libert B.- UNECE

#### France

26. Boinet E.- INBO

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55.	Naryn basin water administration	Sokeyev A.Sh Head		Phone: 03522- 50867 Fax: 3522-51972	Lenin 188, Naryn, 722600, Kyrgyz Republic
56.	Talass basin water administration	Batyrkulov B Head		Phone: 03422- 52827 031254-90-79 Fax: 03422- 53400	1 <sup>st</sup> of May, 212, Talas, 722720, Kyrgyz Republic
57.	Issyk-Kul basin water administration	Kaidulatov B.K. – Head		Phone: 03922- 31295 Fax: 03922-31729	Prjevalskiy 123, Karakol, 722360, Kyrgyz Republic
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59.	Batken basin water administration	Shukurov Zh Head		Phone: 03622-5- 01-56 Fax: 03622-50688	Batken BUVH, Batken, 715100, Kyrgyz Republic
60.	Jalal-Abad basin water administration	Anarkulov B.K Head		Phone: (03722) 5- 51-49 Fax: (03722) 5-24- 43	Moghol 4, Jalal-Abad 715600, Kyrgyz Republic
61.	Kirov Reservoir Authority	Birimkulov A.A Head		Phone: 03459-6- 00-13 0312-29-67- 12 Fax: 03459-6-00- 13	UKV. Chon-Kapka village, 724004, Kyrgyz Republic
62.	Papan Reservoir Authority	Tadjibaev K.E Head		Phone: 03222- 34628 Fax: 03222-78395	UPV, Zainabedinova 4, Osh, 714024, Kyrgyz Republic
63.	Osh basin water administration	Abibillaev P.A Head		Phone: 03222-5- 76-25 Fax: 03222-5-91- 72	Kurmanjan Datka, 234, Osh, 714000, Kyrgyz Republic

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66.	Regional Environmental Center for Caucasus (REC Caucasus)	- Director	info@rec-caucasus.org	Ph/F (99532) 25 36 48 (99532) 25 36 49	Chavchadze avenue, 23, floor 2, Tbilisi, 0179, Georgia
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67.	Agency for Water Resources Management at the Ministry of Environmental Conservation, Republic of Armenia	Narimanyan Volodya Georgievich - Head, Davoyan Araksya - contact person	narimanyan59@mail.ru	Phone: +37410 54 08 67 Fax: +37410 54 08 67 (37477) 426 640	Dom Pravitelstva 3, Republic Square, Yerevan, 0010, Republic of Armenia