

## REPORT

on

### **the national workshop conducted in Turkmenistan within the joint project of UNESCO-IHE and SIC ICWC of Central Asia “Capacity Building for Integrated Water Resources Planning and Management for Central Asia”**

**1. SIC ICWC of Central Asia together with UNESCO-IHE** (Institute for Water Education, UNESCO IHE, Delft, Netherlands) implements the project named “Capacity Building for Integrated Water Resources Planning and Management for Central Asia” (hereinafter – the Project). One of the project objectives is development of the training system in the water sector of the five Central Asian countries.

In 2010-2011, a series of regional workshops on the preparation of national trainers (training of trainers) was delivered with the assistance of key experts of the foreign project partner (Institute for Water Education) and by using the resources of SIC ICWC in four fields:

- Block № 1. Integrated Water Resources Management (IWRM);
- Block № 2. Improvement of Irrigated Agriculture (IIA);
- Block № 3. International Water Law and Policy (IWLP);
- Block № 4. Regional Cooperation in Transboundary Rivers (RCTR).

Leaders of each Block (regional trainers), leading experts of SIC ICWC, have developed training programs, training modules, and prepared a package of required training materials.

**2. The next stage** of the training activity of the project will provide delivery of national workshops in each of the five countries of the Central Asian region.

The first series of the national workshops was conducted in Uzbekistan. The workshops were held during 12-21 September 2011 in Tashkent city (12-14 September), Samarkand (15-17 September), and Fergana (19-21 September) in consideration of regional conditions of the republic. The topic of the national workshops – «Organization of hydrometry, planning of water use, and improvement of WUA activities» fitted the subjects of several modules in the Block № 1 (IWRM) and the Block № 2 (IIA).

The national workshops in Kazakhstan were held in the Southern-Kazakhstan region (Shymkent city, 8-10 November) and Kyzylorda region (Kyzylorda city, 11-12 November). The topics of these workshops covered all the above-mentioned 4 training blocks/directions (IWRM, IIA, IWLP, RCTR).

The national workshop in Kyrgyzstan was held in Bishkek city on 8-9<sup>th</sup> of December 2011. The topic of this national workshop covered all the above-listed 4 training blocks/directions as in Kazakhstan.

**3. The national workshop in Turkmenistan** was held in Ashgabat city on 26-31 of January 2012. The topics of this workshop covered all the training blocks (IWRM, IIA, IWLP, RCTR). The trainees (12 persons - "target" audience) included the heads and the deputy heads of the departments of land reclamation, water use, capital repairs and maintenance of irrigation systems, the leading specialists from the departments of velayat (provincial) and etrap (district) production associations of water sector, from the operating administration of Karakum canal ("Garagumderya - suvkhodjalyk"), from the Ministry of Water Resources (MWR) of Turkmenistan.

The limited number of participants however represented all the country's regions.

Necessary help and assistance in the organization and conduction of the national workshop was provided by the Ministry of Water Resources of Turkmenistan mainly by Mr. Mukhammedov A., the Deputy Minister. The workshop organizers included the national trainers trained at the regional workshops as well as the representative of one NGO from Turkmenistan.

SIC ICWC provided methodological and other assistance in the conducting of the training.

#### **4. Moderators/lecturers:**

(Mukhammedov A.Ya., Deputy Minister of Water Resources of Turkmenistan – welcome speech).

(Mirzaev N.N. – Regional Trainer, SIC ICWC of Central Asia).

1. Akmyradov M. – Head of the department in the MWR of Turkmenistan; National Trainer, trained at the project's regional workshop.
2. Ataev D. – Head of the Information Center "Altyn Asyr" ("Golden Century"); National Trainer, trained at the regional workshop.
3. Berdyev A. – National Expert on Water Resources (invited lecturer).
4. Garaev N.- Ph.D. Technical Sciences, Head of a Chair in the Turkmen Agricultural University (invited lecturer).
5. Djumadurdyev O. – Ph.D. Technical Sciences (invited lecturer).
6. Kepbanov E. – National Expert on Water Resources (invited lecturer).
7. Nazarmammedov O. – Ph.D. Technical Sciences (invited lecturer).
8. Nepesov M.A. – Ph.D. Technical Sciences (invited lecturer).
9. Ovezmuradov G. – Ph.D. Technical Sciences (invited lecturer).
10. Pashiev Ya. – Main Specialist of the MWR Turkmenistan (invited lecturer).

#### **4. Lectures, presentations, main issues considered<sup>1</sup>:**

##### **4.1. Block "IWRM" (Lecturers – Akmyradov M., Djumadurdyev O., Nepesov M.A.).**

Topics (main issues considered):

- 1) Fresh water resources in the World. Water resources and problems in Turkmenistan. Database on water resources. Monitoring and assessment of water bodies and processes.
- 2) Water governance methods and principles. Water supply and demand management. WRM indicators. WRM and environmental requirements consideration.
- 3) Features of development and implementation of IWRM in Turkmenistan. IWRM principles, tools and indicators.
- 4) System of water service payment (methods, tariffs, service fees). Economical incentives for water saving. Need for development and harmonization of operating cost sharing mechanism for water-management projects.
- 5) The ways to improve water sector and agriculture in Turkmenistan. Forms and functions of the departments of the Ministry of Water Resources of Turkmenistan in water resources use and protection. The role and forms of involving government agencies and local authorities in the water allocation governance.

---

<sup>1</sup> Distribution of topics between Block "IWRM" and Block "IIA" in some cases is conditional; it is based on contents of lectures (presentations) - Yu.R.

**4.2. Block “IIA”** (Lecturers - Akmyradov M., Garaev N., Djumadurdyev O., Nazarmammedov O., Ovezmuradov G.).

Topics (main issues considered):

- 1) Natural and climatic conditions and irrigated agriculture development. Current situation specifics in irrigated agriculture in the world and in Central-Asian region. Infrastructure of irrigated agriculture.
- 2) Influence of natural and climatic factors on water use. Crop water requirements. Improvement of crop irrigation regime within different soil conditions.
- 3) Water use organizing and planning for on-farm and inter-farm systems. The water use plan development for associations of daikhans (similar to former kolkhoz and sovkhoz - Yu.R.). Adjustment of the Water Use Plan for associations of daikhans when implementing water rotation.
- 4) Planning water use at the administrative district and main canal levels. Passport system of irrigated fields as a base for effective management of water use.
- 5) Water-saving irrigation technologies and irrigation practices. Improving conventional irrigation methods for effective and productive water and land resources use. Ideal irrigation practice and technology and their usability in Turkmenistan.
- 6) Monitoring of water and salt balance and salinity of irrigated lands. Monitoring of irrigated land conditions (ILC). Database for assessment of ILC and technical condition of irrigation and drainage systems.
- 7) Role and tasks of the velayat (provincial – Yu.R.) hydrogeological and land reclamation service in maintaining favorable reclamation state of irrigated agriculture.
- 8) Complex of measures on construction, water and land reclamation, and agrotechnology for soil salinity control.
- 9) Irrigation system operating and repair. Goals and objectives, operation of waterworks and canals.
- 10) Ways to increase efficiency of irrigation systems. Interfarm irrigation network. Onfarm irrigation network. Irrigation network at the irrigated site. Temporal irrigation network.

**4.3. Blocks: “IWLP” and “RCTR”<sup>2</sup>** (Ataev D., Kepbanov E., Berdyev A., Pashiev Ya.).

- 1) The system of law; Classification of legal systems; Systems of international relations. Sources of International Law (IL). Main principles of IL. IL norms. Codification (systematization) of IL.
- 2) International environmental law (IEL).
- 3) International water law (IWL). IWL fundamentals.
- 4) Responsibility under International Law; resolving international disputes and conflicts. Succession of states. International treaties. International organizations. International conferences.
- 5) Fundamentals of Water Law of Turkmenistan.
- 6) Specifics, principles and experience of basin water management. Transboundary water cooperation: problems and prospects.
- 7) Principles of creating and using automated systems and monitoring of transboundary water resources allocation.

---

<sup>2</sup> Distribution of topics between Block "IWLP" and Block "RCTR" wasn't done. It has to be noted that national trainers from Turkmenistan were trained on "twinned" blocks: 1) IWRM+IIA, 2) IWLP+RCTR - Yu.R.

8) Experience of joint water resources management (WRM) on transboundary rivers of Turkmenistan: Amudarya case study.

9) Organizational arrangement of interstate WRM on transboundary rivers of the Aral Sea Basin; economic mechanisms.

Moreover during discussion the lecturers briefly covered the following themes related to participants' questions:

- current tendencies of irrigated agriculture development in the World,
- water-saving problems when irrigating under different soil and climatic conditions; examples,
- government support of the Ministry of Water Resources for irrigation system operation by the daikhan associations (similar to former kolkhoz and sovkhos - Yu.R.),
- adoption of IWRM principles in the national plans of water sector development,
- type and structure of basin water management organizations in the regions across the World,
- some aspects of international relations and international law,
- forecast of water management situation on the Amudarya river in case of inclusion of Afghanistan into the joint water resources management,
- forms and types of public participation in the WRM at the various hierarchical levels,
- Succession of states relating to transboundary waters (e.g. Turkmenistan is a legal successor of USSR in water relations with the Islamic Republic of Iran).

At the national workshops, the participants were provided with required handouts on each Block.

Practical studies with visual demonstrations of efficient use of water resources were held on 29 January 2012 in the field (sprinkler irrigation systems and others).

**5. Participants of the national training (quantity):**

Altogether, the national workshop was attended by 12 specialists-trainees.

The certificates were given to the participants (trainees) after completion of workshop.

**6. After finishing the training the following trainees were assigned as potential trainers on the basis of evaluation of their active participation and knowledge obtained:**

1) Annaev Maksat - Deputy head of the water use division (WUD) of the Production Association (PA) "Dashoguzsuvhojalyk", Dashoguz Velayat.

2) Atamammedov Khalmukhammet - Head of the land reclamation division of the Production Association (PA) "Balkansuvhojalyk", Balkan Velayat.

3) Begliev Meretdurdy - Head of the water use and irrigation system operation division of the Production Association (PA) "Lebapsuvhojalyk", Lebap Velayat.

4) Bekiev Serdar - Head of the water use division (WUD) of the Production Association (PA) "Marysuvhojalyk", Mary Velayat.

The authority of MWR of Turkmenistan chose those trainees as potential trainers to conduct trainings within water sector across all the regions of the country. According to experts' opinion, namely the expert of SIC ICWC (Mirzaev N.N.), it is advisable to assist the trainers with teaching and educational methods.

**7. Assessment of the training course and teaching quality (the score was given on the basis of a scoring scale (5 - excellent; 4 - good; 3 - satisfactory; 2 - unsatisfactory; 1 - bad; the final mark by positions and in total was determined as arithmetical mean value).**

(Note: in the original questionnaire these scores are given in the following form: "I absolutely agree" (5); "I agree" (4); "Neutral" (3); "I do not agree" (2); "I absolutely disagree" (1)).

A) The training was evaluated by 13 participants (12 trainees and 1 lecturer - on occasion).

(Note: The arithmetic mean value was calculated with consideration of all 13 participants because of anonymous questioning).

Questionnaire items and scores (in brackets - variation limits):

- (1) Teaching quality (training's goal is reached) – 4.9 (4-5);
- (2) Quality of training materials (easy to understand) – 4.6 (1-5);
- (3) Relevance of the prepared training materials (topics) – 5.0 (5-5);
- (4) Enough time for questions, discussions and learning – 4.4 (2-5);
- (5) Theory-practice relation – 4.4 (4-5);
- (6) Method of evaluation of knowledge got by the trainees upon completion of the training courses – 4.7 (4-5).
- (7) Enough time for acquaintance with lecture materials – 4.4 (2-5);

The general (integral) score given to the training course – 5.0 (5-5).

It is striking that very high (absolute) score was given to the item "Relevance (importance) of the prepared training materials (topics)" and to the training course as a whole: 100% of trainees gave the highest score - 5.0.

Under high score of teaching quality (4.9), the trainees especially emphasized high quality of lectures by Akmyradov M.Kh., National Trainer (Block "IWRM+IIA") as well by invited lecturers - Nepesov M.A. ("IWRM"), Djumadurdyev O. ("IWRM"), Garaev N.Sh. ("IIA"), Berdyev A. ("IWLP").

B) Main comments and suggestions of trainees concerning various aspects of training are as follows:

1. More time is needed to learn the training course as a whole.

(Note: it means such thing as the time to study topics of some blocks more deeply: for example, the duration of the training was 36 hours therefore 9 hours on an average was allocated to study the one block topics).

2. Topics which could be added into the training curricula:

2.1. Safety of hydraulic facilities.

2.2. Water use planning and programming with consideration of the natural and climatic conditions in various regions of the country.

2.3. Using practical achievements of developed countries in local conditions.

2.4. Information system development.

2.5. Water recording on transboundary rivers.

2.6 Studying experience of transition to using the sprinkler irrigation systems.

3. According to one trainee opinion, it is reasonable to exclude the topic "Common concepts of international law" in the Block "IWLP" (more than debatable opinion - Yu.R.).

4. The training course should be regular to meet the goal of permanent education and advanced training of water management staff.

**8. The information about the Joint UNESCO-IHE and SIC ICWC Project** "Capacity Building in the Integrated Water Resources Management and Planning in Central Asia" was presented by:

Mr. Mukhammedov A., Deputy Minister of Water Resources of Turkmenistan;

Mr. Mirzaev N.N., Regional Trainer;

Mr. Akmyradov M. and Mr. Ataev D. - national trainers.

The workshop participants thanked the initiators of the joint project of the Institute for Water Education (UNESCO IHE) and SIC ICWC and underscored the importance of the trainings for enhancing the trainees' educational capacity.

Training Center staff carried out preparation of national workshop from September 2011 till January 2012 in cooperation with the persons in charge of the national workshop in Turkmenistan.

The interest and support of the Government and the Minister and Deputy Minister of MWR of Turkmenistan have played a big role in the successful organization of national workshop.

The national workshops held in Turkmenistan like in Uzbekistan, Kazakhstan and Kyrgyzstan, have shown that the national trainers trained at regional workshops have acquired required skills, become armed with training materials, and are able to deliver trainings in the regional countries on their own and at a highly professional level allowing for local specifics.

In all cases (national workshops in Uzbekistan, Kazakhstan, Kyrgyzstan and Turkmenistan), the approaches, methods, training materials worked out and tested by SIC ICWC together with its foreign partners from the Institute for Water Education, UNESCO IHE, Netherlands, were applied.

Currently, the organizational work for second national workshop in Tajikistan is going on. The first workshop was held in Khudjand city on 16-17 February 2012.

**Training Center of SIC ICWC in Central Asia**

**26 March 2012**