WATER AND FOOD SECURITY IN TAJIKISTAN

Bakhrom Gafarov
Republic of Tajikistan
WATER RESOURCES OF TAJIKISTAN

Glaciers – 845 km$^3$ (volume), 11 146 km$^2$ (surface area)

Surface water resources – 64 km$^3$ (55.4% of the Aral Sea Basin river flow)

Lakes - 46 km$^3$ (volume), 705 km$^2$ (surface area)

Reservoirs – 15.34 km$^3$ (volume), 664 km$^2$ (surface area)

Underground water resources – 18.7 km$^3$ (2.8 km$^3$ – useful resources)
Изменение температуры воздуха на ст. Дехавз
Фактические значения и прогноз по модели ECHAM4

Источник: Агентство по гидрометеорологии РТ
Natural phenomena on report Committee on Emergency Situation and Civil Protection for 1997 - 2007

- Rain 27%
- Mudflow 25%
- Wind 12%
- Snowfall 5%
- Drought 1%
- Avalanche 1%
- Landslip 6%
- Rockfall 0%
- Failure, subsidence 0%
- Snowslide
- Hail 6%
- Thunderstorm 0%
- Cold 1%
- Underflooding 1%
- Flood 11%
- Breakthrough 0%
Tajikistan possesses enormous, inexhaustible spares cheap and ecological clean water-power of rivers. The General annual potential facility of water-power in republic – 527 mlrd.kWt.h

Herewith possible note that hydro energy facility practically evenly distributed on the whole territory of republic and there are in sufficient amount in large not only, but also in average and small rivers.
Irrigated agriculture is of fundamental importance for providing the population with food and generating employment in rural areas. More than 90% of agricultural production is produced on irrigated land and job opportunities, food processing capacities, and light and other industries depend on it.

The Republic of Tajikistan is mostly mountainous terrain. 93% of the highlands only 7% are flat part. In Tajikistan, identified only 1500 million hectares available for irrigation of agricultural land, but in today's time are irrigated only 748 hectares, including 350 thousand hectares. irrigated area served by pumping stations.

However, presently the technical conditions of irrigation and drainage infrastructure have deteriorated due to the absence of funds and unsatisfactory performance of operation and maintenance services. Pumped Irrigation is mostly affected by the poor infrastructure conditions. This is because of deterioration of about a third of pumping and power equipment, pressure head and pipelines, due to high cost of the electric power and due to regular electricity shortage during the spring time.
Ministry of melioration and water resources

The Ministry is the central authority in the field of water resources and land reclamation and executes functions on development of a uniform state policy and is standard-legal regulation in this sphere.

The basic directions of activity

- Realization of governmental water politic
- Management, use and protection of water resources
- Development, irrigation and land reclamation
- Rehabilitation of embankments and struggle against flooding
- Including the new technologies and methods of water irrigation
Ministry of melioration and water resources

Main aim and tasks

• Conducting a uniform state policy in the field of land reclamation;
• Working out and realization of long-term and short-term government programs on an effective utilization and protection of water resources, land reclamation development, rural water supply and water pastures, protection of territory against harmful influence of waters;
• Working out of the differentiated tariffs for services in water delivery taking into account market cost of charges and operation of water economic objects;
• Conducting the state account and monitoring of a condition of water resources, the control over a technical condition of water economic objects;
• Assistance rendering on attraction of investments for reconstruction and development of objects of a water economic complex and introduction of modern technologies of management on use and protection of water resources;
• Assistance on granting of the state support on the maintenance and operation of objects of a machine irrigation;
• Drawing up of water economic balances and schemes of complex use of water resources on pools of the rivers, territories and republics as a whole;
• Conducting the State water cadastre;
• Creation and use of a database and information system on formation and use of water resources;
• The organization of vocational training of workers of branch, their retraining, improvement of professional skill and training.
MMWR: Existing management structure

Administrative management

Map legend:
- Sughd region
- Districts of republican submission
- Khatlon region
- Badakhshoni Kuhi autonomous region

- Cities
- Lakes, reservoirs
- Rivers
- Nurek HPP
- Beginning of the Amydarya river

Countries:
- Uzbekistan
- Kyrgyzstan
- China
- Afghanistan

Major cities:
- Dushanbe
- Khorugh
- Kulyab
- Khujand
- Surkhob
- Sughd
- Khatlon
- Badakhshoni Kuhi autonomous region

Regions:
- Zaraksh
- Khujand
- Kulyab
Major factors which have led to deterioration of a condition of land improvement and a water management, are:

- Problems in administration of water resources;
- Insufficient database of legal acts;
- High level of administrative barriers;
- Physical and moral deterioration of buildings and facilities, outdated irrigation system;
- Shortage of equipment and machinery;
- Inadequate funding;
- Low level of collection of payment for water services;
- Lack of industry with highly qualified staff;
- Large receivables and payables. Arrears of agriculture to the industry on 01/01/2013, amounts to 181.37 mln.somoni.
Purpose of the water management reform

The concept of reform of a water management of Republic Tajikistan defines the purposes, problems and ways of reforming of a water management of Republic Tajikistan.

Concept main objective is creation of economic, legal and organizational conditions for break-even activity of branch, the further development and reforming of a water management which is directed on efficiency increase, reliable functioning of all irrigation systems, land improvements and water supply of settlements.
Management structure

National Water Board

POLICY

Secretary

OPERATIONAL

Water supply agency
(Operational functions)

Irrigation

Agency MIROB

Drinking water
and sewerage

Industry

Development

Other

WUA Basin Union

Water users

REGULATORY

Ministry of Integrated water management
(Regulatory function)

Monitoring
and analyze

River basin organizations

Planning

Regulatory / licensing

Water quality

Inspection

Environmental

Development

Demand management

city, irrigation, industry, development and other
Reforming of water management

Main aims:
- Guarantee to supply by irrigation water to dekhan farms
- Improve of water supply for rural population
- Improvement of meliorative situation of the lands
- Developing of new lands
- Rehabilitation of embankments and protection of the land against flooding
- Increasing of potential and personnel training
- Conducting of institutional reforms
- Upgrading of law-right base
- Creation of WUA and increasing their responsibility
- Applying of new Technologies for new Water irrigation methods
- Proper financing
- Decreasing of art nature Created by water
- Rehabilitation and O&M of irrigation-infrastructure objects
National Policy Dialogues on Integrated Water Resources Management in Tajikistan

The UNECE-supported NPD/IWRM in Tajikistan was launched on March 16, 2011, at the meeting of the UNECE Water Convention Secretariat jointly with the Ministry of Land Reclamation and Water Resources, other ministries and agencies, NGOs, international organizations active in Tajikistan. The Dialogue is implemented in cooperation with the Ministry of Land Reclamation and Water Resources.

The National Policy Dialogue on IWRM in Tajikistan is focused on the next key points: support for development water sector reform, improvement of water legislation and to establish transboundary water cooperation with the neighboring states.

To do this, prepared the following reports:
- Preparation Country Report on Mapping of Major Stakeholders and Programmes in Tajikistan;
- Preparation Roadmap of the National Policy Dialogue on IWRM in the Republic Tajikistan;
- Comments and recommendations of the Working Group members to the Water Sector Reforms Strategy Plan for the Republic of Tajikistan
- Analysis of water legislation in order to improve the Water Code;
- Draft statutes and agencies MIROB and Basin Organizations;
- etc.
- We also need to develop an economic mechanism of interaction between sectors in the basin
• Also there is a need to strengthen an economic dimension of the water sector reform:

• It should include an improvement of water taxation and financing systems, identifying the role of the public and private investments, and all other elements, which define the economic sustainability of a water resources management.

• The issue of economic optimization and rationalization of the water sector is closely related to regulation not only the water sector as such, but also other sectors of the economy. It’s a difficult task, but the experience of developed and developing countries shows that it is practically possible.

• We hope that in frame of the NPD, we can work with the OECD to address these issues.
THANK YOU FOR YOUR ATTENTION!