

Republic of Turkmenistan - Country Report

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NATIONAL REPORT OF TURKMENISTAN ON REGIONAL WATER PARTNERSHIP

1. Introduction

- (1) Stated by the President of Turkmenistan Saparmurad Niyazov and recognized by UN policy of continuous and positive neutrality and geopolitical position of Turkmenistan is important stabilizing factor in regional processes including water sector.
- (2) Turkmenistan participation in Global Water Partnership process is very important because almost all water resources are transboundary.
- (3) Transition to integrated water management is especially important because of industrial development, population growth and requirement for biodiversity maintenance.
- (4) In given Report brief description of current situation in water resources management, issues and measures undertaken as well as perspectives of IWRM is made.

2. Main issues and constraints in water resources management at national level

2.1. Irrigation and drainage

- (5) Historical factor limiting water use efficiency is irrigation systems low technical level. Lined canals, flumes and tubes constitute less than 8%. Irrigation network efficiency is 0.57 (1).
- (6) Water losses during conveyance have led to land waterlogging and salinization (35%) (2); area with bonitet less than 40% reaches 19% (3).
- (7) Water organizations potential should be strengthened. Machinery wear is 65% (excavators), 61% (scrapers and tracks), 93% (dragging machines).
- (8) About 3-3.75 km³ collector-drainage water are formed which are disposed to Sarikamish lake. Since 1986 till 1999 Lake's surface grew on 104km flooding arable lands and threatening another catastrophe. Collector-drainage water and peak flow of Murgab and Tedzhen river release outside oasis has led to 4060ha pastures productivity reduction.
- (9) Main restriction in water resources management is available water resources volume. Water strategy of Turkmenistan for long-term perspective (1) defines annually used water resources as 21.26 km³, i.e. efforts will be undertaken to increase water use efficiency and reduce water losses.

2.2. Water supply and sanitation

- (10) Water demand is defined as 746.5mln.m³ per year, actual water supply as 438.0mln.m³ or 60% of demand (3). Good water is delivered only to 30% of population, 51% has not satisfactory access to drinking water at all.
- (11) Only 44% of population has sewerage systems (7). Urban wastes are disposed outside the cities without treatment that causes surface and ground water pollution.

2.3. Biodiversity

- (12) Ground water table rise reaches tens kilometers (6) around oasis and along the mains. This has led to wild life degradation. Endangered species (101) are put in the Red Book of Turkmenistan, 33 species are endemic. (7).
- (13) 4.6mln.ha needs reforestation from which 4.2mln.ha need sowing and the rest - restoration (7).

3. Water sector major issues with regard for regional and transboundary impact

- (14) In AmuDarya midstream 1.8-2.8km³ of collector-drainage water is formed which are disposed into AmuDarya. As a result water salinity in AmuDarya lower reaches reaches 1.44g/l (4), 13 chemicals concentration is over allowable limit (3), that affects population health and reduce agricultural production.
- (15) In result of diversion increase in Iran Tedzhen and Atrek rivers almost every year dry up in summer (8), that aggravate water supply problem.
- (16) Repeated floods on Murgab river lead to catastrophic consequences: inundation of 80 th.ha croplands (8), structure destruction, reservoirs siltation (9). Taking into account that major watershed is located in Afghanistan, this problem can not be resolved in one-side way.

4. Authorized bodies and owners in water sector

- (17) The following agencies are charged to manage water resources on behalf of state: Ministry of Water Resources and its organizations, local administrations (khakims, archins, mirabs, Vodokanals), Ministry of Nature Protection, "Turkmengeologia", Ministry of Construction.
- (18) In agriculture main end users are: deikhan associations (DA), private owners who solve their problems through deikhan associations.
- (19) Private landowners, land leasers and DA brigades manage in-farm irrigation and drainage network by own.

5. Public participation in water resources management

- (20) public participation is reflected in mirab election by "parents council".
- (21) Under scarce finance authorities often prepare irrigation and drainage network by method of "hashar" or public works.
- (22) Water Users Associations and other similar organizations formation should be initiated from grass-root level. For this number of private landowners should be increased, public opinion changed in direction of personal responsibility for water saving and network maintenance. These natural processes go slowly and WUA establishing is not necessary just now.
- (23) In 1999 58 th.ha from 1623.4 th.ha arable lands were in private property and long-term lease (10). Decision about taking land in private property or long-term lease is made by deikhans themselves voluntarily. Artificial acceleration of this process is

prohibited.

6. Existing potential of IWRM development

6.1. Political aspects

- (24) "Strategy of socio-economic transformation in Turkmenistan until 2010" (11, 12) concept of sustainable development foresees range of measures for ecological security provision. Main priorities are the following: combination of industrial development with environment protection; prevention of Aral sea catastrophe consequences and high water quality assurance; pollution control in agriculture; combating land salinization and erosion; emission reduction.
- (25) From point of view of interstate relations in water sector Turkmenistan has package of bilateral agreements and treaties (13-19). Presently it there is no necessity to revise these agreements.
- (26) **Since 1996 "Agreement between Turkmenistan and Uzbekistan about collaboration in water issues" which set out that:**
- Irrigated lands used by Uzbekistan and located on Turkmenistan territory are exclusive property of Turkmenistan;
 - Water structures of Karshi and Amu-Bukhara canals and Tuyamuyun water reservoir, located on Turkmen territory, are exclusive property of Uzbekistan;
 - Lands for Karshi and Amu-Bukhara canals and Tuyamuyun water reservoir are given to Uzbekistan by Turkmenistan in long-term lease;
 - Parties will undertake necessary efforts to provide normal operation of interstate water structures located on their territory;
 - Enterprises and organizations connected with water related structures operation located on the territory of other party fulfill their obligations according to international law and legislation of that party on territory of which they are located;
 - **Amudarya flow allocation (by Kerky gauging station) is executed by equal share (50/50);**
 - **Proportional shares parties directed to the Aral Sea;**
 - **Parties will stop since 1999 drainage water disposal to the river on both banks;**
 - Parties jointly take measures on land reclamation, interstate collectors operation and maintenance, irrigation systems operation, water disposal and withdrawal canals construction;
 - Parties will take measures on prevention of channel deformation and land waterlogging as consequences of Amu-Bukhara, Karshi, Sovietyab, Tashauz, Klychbai and Shavat-Gazavat water systems operation;
 - Parties will take necessary measures against land waterlogging along Daryalik and Ozyorny collectors on Turkmenistan territory, collectors reconstruction and operation with expenses proportional to drainage outflow volume.
- (27) This agreement foresees Amudarya water protection from pollution by drainage water. Protection from industrial and municipal wastes may be a subject for further negotiations.
- (28) Water strategy of Turkmenistan is based on the water resource limit of 22km³ in spite of irrigated lands extension, population growth and industry development. It is very important in Turkmenistan position understanding in view of proposals to change the limits.

6.2. Legal aspects

- (29) Turkmenistan is transiting to the market economy in all sectors and new legislation is underway. New "Water Code of Turkmenistan" is on the agenda. It is important main principles of IWRM with regard for both national and regional interests were reflected in the Code.
- (30) With this purpose would be useful to attract parliament members to discussion of these principles at the regional level to rapprochement of water problem understanding and support.
- (31) Mirab's authority and functions until now have not juridical basis and are regulated by "temporal provision about mirab". His position strengthening is important factor of public involvement in decision making in water management.

6.3. Economic aspects

- (32) Private sector in agriculture has not yet satisfactory potential (financial, technical, technological, human) for full self-reliance. State continues to support agricultural production providing seeds, fertilizers, water supply up to in-farm network, water disposal and privilege taxation.
- (33) Actually income re-distribution occurs from fuel-power complex to agriculture and associated water sector. Rate of these sector development depends on possibility of added value increase in agriculture.
- (34) Under favorable macro-economic conditions economic growth on 50% of planned is possible; fulfillment of all plans requires set of measures allowing to reduce water losses and to increase flow regulation level.
- (35) (35) Until 2010 8.5bln.USD investments in irrigation and drainage infrastructure modernization is foreseen including 5.5-6.0bln.USD for "Turkmen lake" construction (1, 20).
- (36) GNP growth in 2000 was 17.6% (23) that gives support to water sector and its sustainable development.

6.4. Infra-structural aspects

- (37) Search for the most effective water resources management structure is being continued. In June 2000 Ministry of Water Resources has been reestablished. In July 2001 Committee of municipal water supply has been reorganized with transferring main functions to local administrations. Decision is made to create Center of water supply and sanitation activity licensing and appropriate Scientific-Research Institute.
- (38) Infrastructure status rating without taking into account machinery (21) for Turkmenistan as a whole is 0.71. Thus, infrastructure status is assessed as satisfactory.
- (39) Equipment wear is matter of concern (3): excavators and bulldozers-65%, scrapers and tracks-61%, dragging machines-93%, pumps-71%, electric drivers-76%.
- (40) Hydrometry and communication equipment are at the level of 50-es (22).

6.5. Scientific and staff provision

- (41) during last 60 years in Turkmenistan big volume of scientific knowledge is accumulated. There is a base for specialists in irrigation and reclamation training as well as human potential.
- (42) There is Research Institute of Agriculture and Water Management by the Ministry of Agriculture providing research in the following directions: land reclamation, irrigation and drainage systems perfection, irrigation technology, hydro-reclamation

mechanization, brackish water use for irrigation (22).

- (43) Turkmensuvdesgataclama Institute fulfills methodological and technological research.
- (44) Existing potential has not been used effectively. Scientists never were too active introducing their findings in practice because of lack of incentives. Now introduction is limited by scientific production market absence.
- (45) Recent years more attention is paid to practical training of students. But educational programs are still imperfect.
- (46) Last years "brain drain" to other sectors was fixed, including private sector. On the other hand, inflow of students educated abroad is still very small.

6. Transboundary water resources management projects implementation

- (47) In 2000 "Druzhba" reservoir construction is started on transboundary Tedjen river which will be as well as operation executed on parity principle with Iran. Reservoir capacity is 1250mln.m³, dam height-78m. Multipurpose use of reservoir is foreseen by the project: flood control, irrigation and power generation. Power plant capacity is 14MGW.
- (48) At expense of state budget large water intakes were maintained by BWO AmuDarya'Mn 2000 for this purpose 15397mln.manat (2.961th.USD) were spent.
- (49) Within the framework of IF AS project "Management of water resources and environment" gauging stations on AmuDarya reconstruction is being carried out providing information necessary for better river flow regulation.
- (50) Works on water reservoir capacity increase on Karakumdarya that will allow to use transboundary water resources more effectively due to river flow regulation.

7. Perspectives of Turkmenistan participation in the Global Water Partnership process

- (51) All projects implemented on the territory of Turkmenistan go through State Ecological Expertise. Taking into account transboundary character of major rivers it would be useful to acquaint with approaches and experience of countries-neighbors. Comparative analysis of large water projects expertise allowed to improve mutual understanding and collaboration in problems of transboundary impact solution.
- (52) Development of regional water strategy concept faces issue of terminology in legislation of CAR countries. Parliament members should pay more attention to transboundary character of effective water resources management.
- (53) As practice shows, texts of multilateral international acts contain terms allowing different meanings. Development and confirmation of common glossary, used in international acts, are necessary.
- (54) Possible direction of many issues solution is recognizing higher efficiency of bilateral interstate agreements and development of common understanding. It would be useful to discuss what questions can be solved based on the regional collaboration and what can be quicker regulated by bilateral agreements.

8. Sources of information

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