

Workshop on transboundary water management in Eastern and Northern Europe

Present state of surface water monitoring of Republic of Moldova

Svetlana Stirbu

Environmental Quality Monitoring Department
State Hydrometeorological Service

27-29 April 2010, Kiev

Physical and demographic structure of Republic of Moldova

- The territory of the country is 33.8 thousand km²
- North to South – 350 km
- West to East - 150 km

- **Population: 4,1 mln.**
- **125.1 pers./sq. km**
- **Climate:**
- **moderate continental**

- **The average temperature:**
between – 3,5°C in January
and +21,4°C in July,
Rainfall varies from 618 to 307 mm
Warm and sunny days: 190 annually



The land fund of the Republic of Moldova

- Total area of land resources is 3385 million ha
- Forest area 433 thousand ha - 9,6%
- Agricultural land: 75,5%
- Other land: 12,1%
- Water resources: 2,8%

Water resources

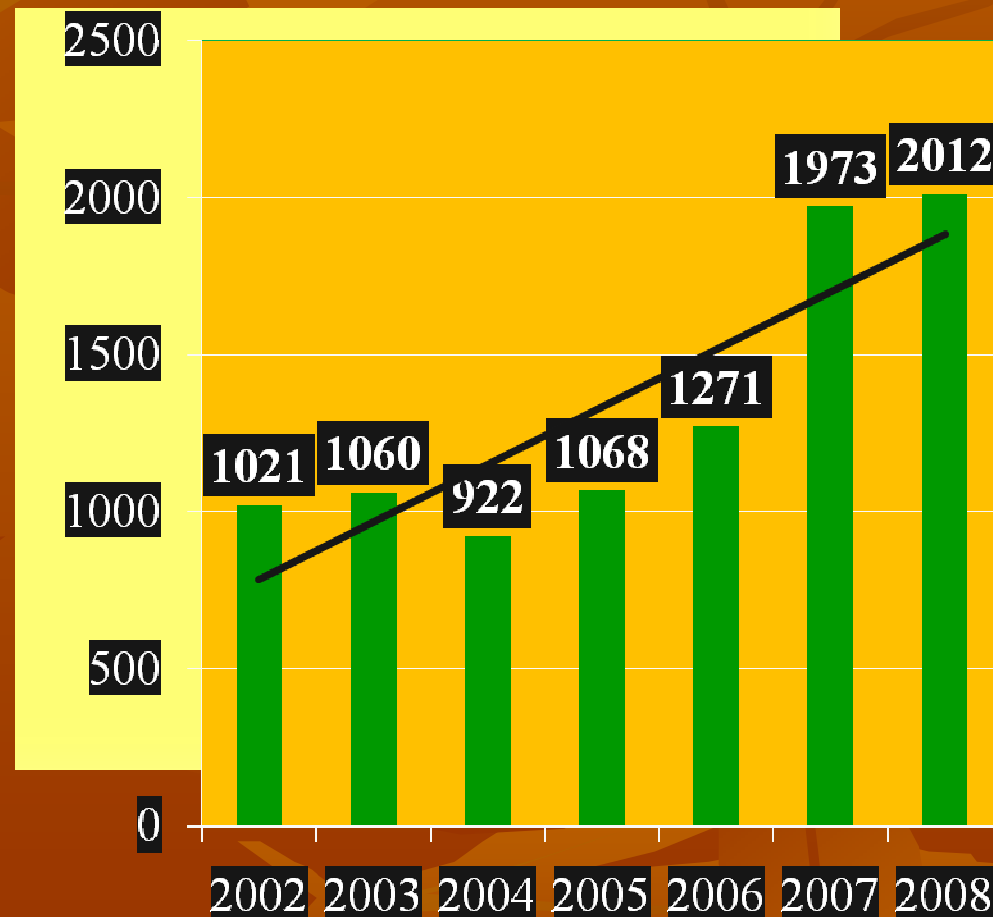
- Surface waters
 - 3621 rivers with total length 16000km
 - 4117 natural lakes and artificial reservoirs
- Ground waters
 - Over 7000 artesian wells and 166542 wells fed from ground waters

Drinking water sources in Republic of Moldova

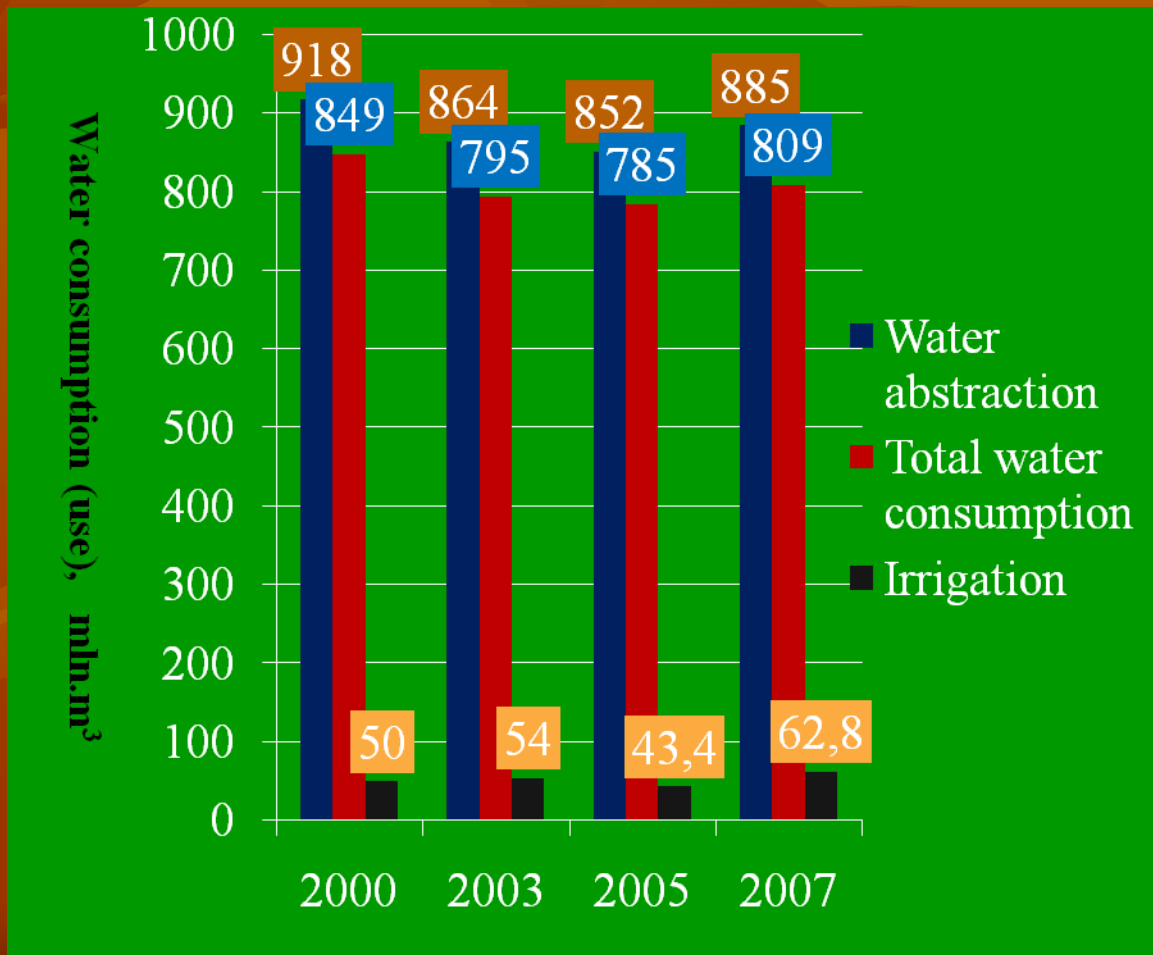
- Main sources of drinking waters in Republic of Moldova are:
 - Dniester River - 83 %
 - Prut River – 1.8 %
 - Underground sources – 15%
 - Other surface water sources – 0.2%

Main users of water resources

Evolution of users number for the years of 2002-2008



Total water consumption from natural resources during 2000-2008



During the 2000-2008 years, total water consumption from natural resources was decreased from 918 mln m³ to 883 mln.m³. Water using for household needs was reduced from 146 mln.m³ to 123 mln.m³. The decrease of the total water consumption was conditioned by the decline of industrial activity, save on and metering of water used by population.

Potential pollution sources for natural water resources

- communal services sector (wastewater treatment plants, sewage, inadequate management of solid wastes)
- agriculture (livestock manure, pesticide storage)
- energy sector (oil storage, petrol stations, Polychlorinated Biphenyl , etc.)
-

Transboundary waters

- Danube River, Dniester River, Prut River,
- Kogylnik River, Yalpug River,
- Cahul Lake, **Kuchurgan liman**
- The objective of monitoring that is performed by State Hydrometeorological Service is the systematic observation of changes in water quality of tranboundary waters due to human impact. Samples are taken monthly; in case of very high pollution and accidents extra samples are taken. Variables include phisico-chemical parameters, nutrients, pesticides, organic micropollutants, oil products, etc.
- Routine biological monitoring takes place 3 times /year (vegetation period).
- Variables are phytoplankton, zooplankton, macroinvertebrates, periphyton, bacterioplankton and macrophytes.



Transboundary Surface water quality monitoring - Cooperation

- Bilateral Cooperation Agreement between Republic of Moldova and Ukraine on the mutual exchange of information and data on water quality of the Dniester and Prut Rivers in the transboundary sections is realized.
- Bilateral Cooperation Agreement between Republic of Moldova and Romania (“Regia Apelor Române” concern, Iași branch) is realized. The Centre is investigating the water quality of the Prut River in 7 jointly established monitoring sites, analyzing 39 hydro chemical indices and 3 groups of hydrobiological elements.

Surface Water Quality Monitoring Center Environmental Quality Monitoring Department of State Hydrometeorological Service

The centre started its activity in 1964, aiming to control the water quality of the transboundary rivers – Prut and Dniester. At present the activity of the Centre has extended and now it carries out systematic observations on surface water quality in 55 monitoring sites set up on 17 big and small rivers, 6 reservoirs, 3 natural lakes and 1 liman, analyzing 49 hydrochemical indices and 6 groups of hydrobiological elements.

Rețeaua națională de monitoring a calității apelor de suprafață după indicatorii hidrochimici și hidrobiologici Amplasarea secțiunilor de control

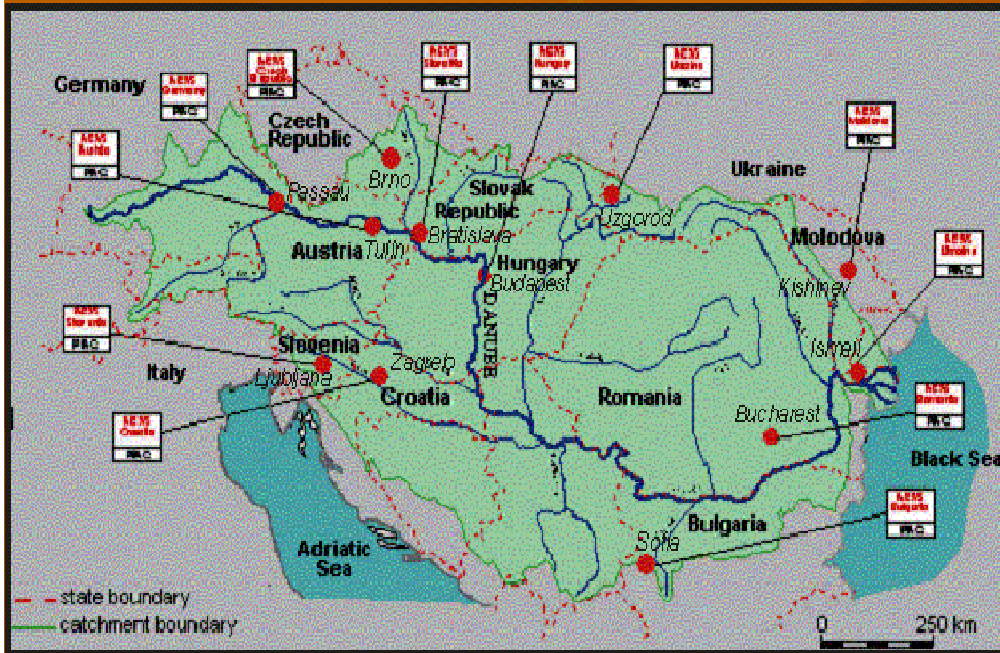


Proficiency tests

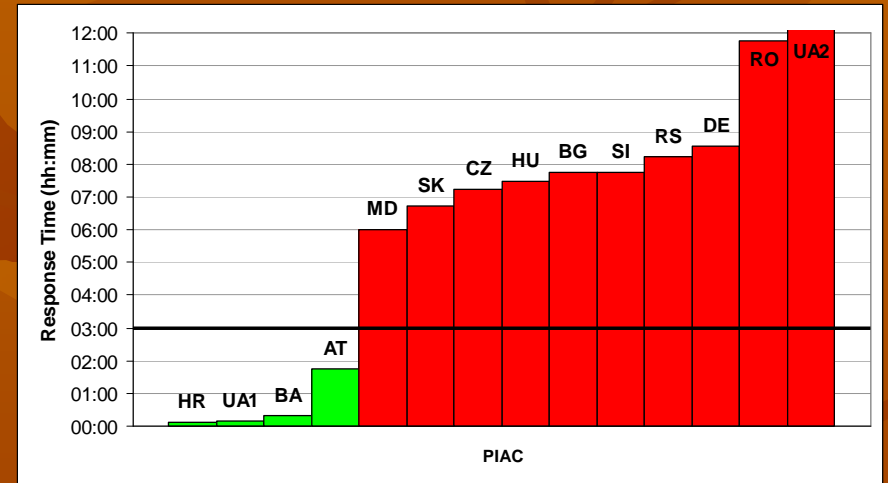
- Every three months the Centre participates in the external international laboratory control (Qualco Danube) in cooperation with the VITUKI Environmental Protection and Water Resources Research Institute, Hungary. This activity contributes to increasing of the veracity and competitiveness of the analyses carried out in the laboratories of the Department.



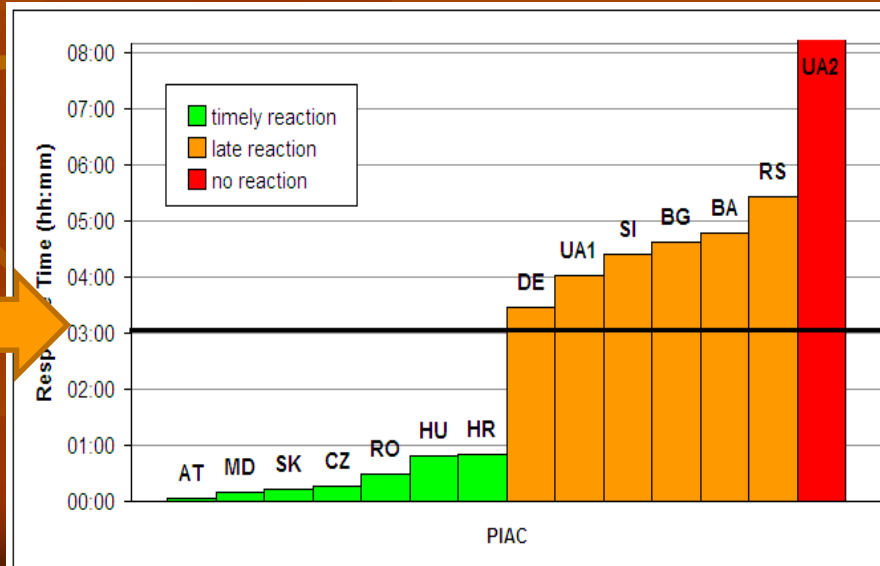
Accident Emergency Warning System (AEWS) Danube River



Moldova
PIAC - 10



Test of the
Danube
AEWS in
March 2010



Test of the Danube
AEWS in November
2009

Project on Environmental Collaboration for the Black Sea (ECBSea) launched in the EECCA countries – Georgia, Moldova and Ukraine.

■ The legislative and institutional component

- **Report on Water Directives Convergence Evaluation in the Republic of Moldova (in Romanian and English)**
- **Convergence plans for the three EU water Directives for the Republic of Moldova:**
 - **● Water Framework Directive 2000/60/EC (in Romanian and English)**
 - **Urban Wastewater Treatment Directive 91/271/EEC (in Romanian and English)**
 - **The Protection of Waters against Pollution caused by Nitrates ... Directive 91/676/EEC (in Romanian and English)**
- **Draft Regulation on Surface Water Protection for the Republic of Moldova (in Romanian and Russian)**

The relevant documents

- Explanatory note for Draft RWP (in Romanian and Russian)
- Draft Regulation on Identification, Delimitation and Classification of Water Bodies for the Republic of Moldova (in Romanian and Russian)
- Regulatory Impact Assessment for the draft Regulation on Surface Water Protection for the Republic of Moldova (in Romanian, Russian and English)

- *Guidelines for developing an integrated monitoring program of surface water in Republic of Moldova*

- BIOLOGICAL QUALITY ELEMENTS OF THE EU WATER FRAMEWORK DIRECTIVE: REQUIREMENTS, EXPERIENCE, NEEDS, RECOMMENDATIONS TACIS/2008/137-153 (EC)

Thank you for your kind attention

- When the well is dry, we know the worth of water.
- All the water that will ever be is, right now.
- “Water which is too pure has no fish”
- Email : svetlana.stirbu@gmail.com