WATER MANAGEMENT IN TURKEY

Prof. Dr. Cumali KINACI
DG WATER MANAGEMENT

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   • Monitoring System according to EU Standards
   • Water Data Base
   • National Basin Management Strategy
   • Flood Plans
5. Coordination Committee of Water Management
WATER POTENTIAL IN TURKEY
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Precipitation</td>
<td>501 billion m³</td>
</tr>
<tr>
<td>Annual Usable Surface Water</td>
<td>98 billion m³</td>
</tr>
<tr>
<td>Annual Usable Ground Water</td>
<td>14 billion m³</td>
</tr>
<tr>
<td>Annual Total Usable Water</td>
<td>112 billion m³</td>
</tr>
<tr>
<td>Population of Turkey (2010)</td>
<td>74 million</td>
</tr>
<tr>
<td>Annual Water Amount per person</td>
<td>1500 (m³/person-year)</td>
</tr>
</tbody>
</table>
Irrigation: 32 billion m³ (%73)
Drinking Water: 7 billion m³ (%16)
Industrial Water: 5 billion m³ (%11)
Total Used Water: 44 billion m³
Usage Ratio of Water Potential: (%40)
Annual Water Amount per person: 1500 (m³/person-year)
### TURKEY: Not a WATER-RICH Country

#### Annual Water Amount per person (m³/year)

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>2005</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-Rich Countries</td>
<td>10.000+</td>
<td>8.000+</td>
</tr>
<tr>
<td>(Canada, ABD, North and West European Countries)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
<td>2.110</td>
<td>1.400</td>
</tr>
<tr>
<td>Turkey</td>
<td>1.600</td>
<td>1.300*</td>
</tr>
<tr>
<td>Syria</td>
<td>1.420</td>
<td>950</td>
</tr>
<tr>
<td>Israel</td>
<td>300</td>
<td>150</td>
</tr>
<tr>
<td>Jordan</td>
<td>250</td>
<td>90</td>
</tr>
<tr>
<td>Palestine</td>
<td>100</td>
<td>40</td>
</tr>
</tbody>
</table>

* Estimated calculation made as population of Turkey will be approximately 85 million in 2023.
INSTITUTIONAL AND LEGISLATIVE STRUCTURE OF WATER MANAGEMENT
WATER RELATED INSTITUTIONS IN TURKEY
( CURRENT STRUCTURE )

PRIME MINISTRY

MINISTRY OF DEVELOPMENT

MINISTRY OF FORESTRY AND WATER AFFAIRS
• Su Yönetimi GM
• General Directorate of Combating Desertification and Erosion
• General Directorate of Nature Conservation and National Parks

• GD of SHW
• GD of Forestry
• GD of Meteorology

MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK
• General Directorate of Agriculture Reform
• General Directorate of Fishery and Fishery Products

MINISTRY OF ENERGY AND NATURAL RESOURCES
General Directorate of Mineral Research and Exploration

• GD of Forestry
• GD of Meteorology

MINISTRY OF ENVIRONMENT AND URBANIZATION
• GD of Environmental Management
• GD of Environmental Impact Assessment and Planning
• GD of Disaster Affairs

• GD of Provincial Bank
• GD of Natural Heritage

MINISTRY OF INTERNAL AFFAIRS
• GD of Local Authorities
• GD of Provincial administration

• Presidency of Sanitation Centre
• Presidency of Health Group

MINISTRY OF HEALTH

MINISTRY OF CULTURE AND TOURIZM
• Presidency of Sanitation Centre
• Presidency of Health Group

GD of Publicity
LAWS RELATED TO WATER

- The Law About Water no:831 (1926)
- The General Sanitation Law No:1593 (1930)
- Protection Law against Flood Water and Inundation No: 4373 (1943)
- DSİ Law No: 6200 (1953)
- The Law on Drinking Water for Villages No: 7478 (1960)
- The Law about Aquaculture No:1380(1971)
- The Law on Foundation and Servieces of ISKI No: 2560 (1981)
- The Law on Territorial Water No: S2674 (1982)
- Coastal Law No: 3621 (1990)
- Municipality Law No: 5393 (2005)
- The Law of Provincial Special Administration 5302 (2005)
- Environmental Law No: 2872 (2006)
- The Law on Jeothermal Sources & Sparkling Mineral Water No: 5686 (2007)
- The Law for Provincial Bank No: 6107 (2011)
<table>
<thead>
<tr>
<th>Law / By law</th>
<th>Status</th>
<th>Related EU Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Law</td>
<td>Draft, under consideration of other institutions</td>
<td>Water Framework Directive</td>
</tr>
<tr>
<td>By Law of Basin Protection</td>
<td>Sent to Prime Ministry for publication</td>
<td>Water Framework Directive</td>
</tr>
<tr>
<td>By Law of Special Provision On Drinking Water Protection</td>
<td>Will be sent to Prime Ministry asap</td>
<td></td>
</tr>
<tr>
<td>By Law of Water Monitoring</td>
<td>Preparation ongoing</td>
<td>Water Framework Directive</td>
</tr>
<tr>
<td>Law / Bylaw</td>
<td>Status</td>
<td>Related EU Legislation</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Bylaw of quality required of surface water intended for to be obtained or planned to be obtained of drinking water</td>
<td>Published in Official Gazette (29.06.2012 - No. 28338)</td>
<td>Surface Water Directive</td>
</tr>
<tr>
<td>By Law of Wastewater Recycling</td>
<td>Preparation ongoing</td>
<td></td>
</tr>
<tr>
<td>By Law of Water Tariff</td>
<td>Preparation ongoing</td>
<td></td>
</tr>
<tr>
<td>By Law for Prevention of Water Loss and Leakage</td>
<td>Preparation ongoing</td>
<td>Water Framework Directive</td>
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</tbody>
</table>
BYLAWS WILL BE PROMULGATED BY THE COORDINATION WITH OTHER INSTITUTIONS

<table>
<thead>
<tr>
<th>Law / By law</th>
<th>Status</th>
<th>Related EU Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Law on Bathing Water Quality</td>
<td>Preparations ongoing under coordination of Ministry of Health</td>
<td>Bathing Water Directive</td>
</tr>
<tr>
<td>By Law of Water Protection Against Nitrates Pollution From Agriculture</td>
<td>Preparations ongoing under coordination of Agricultural Reform DG with support of Water Management DG</td>
<td>Nitrates Directive</td>
</tr>
<tr>
<td>By Law of Fresh Water Quality in Demand of Protection and Recruitment for Fish Life Sustainability</td>
<td>Preparations ongoing with Ministry of Food, Agriculture and Livestock</td>
<td>December 2012</td>
</tr>
</tbody>
</table>
1- **Inefficiency of the Water Law No: 831 (1926)**
   - Water constructions (There was only Çubuk Dam in 1926)
   - Industrial water needs
   - Hydroelectric energy production
   - Groundwater usage
   - Irrigation
   - Sectoral Allocation
   - Wastewater management
   - Pollution of receiving environment
   - Water Private Sector
   - Nature life conservation

2- **Turmoil of authority and responsibility in existing water legislation: Decreasing the number of authorized and responsible institutions and organizations as much as possible.**
   - Minister of Forestry and Water Affairs
   - Ministry of Environment and Urbanization
   - Ministry of Food, Agriculture and Livestock
   - Ministry of Health
   - Ministry of Energy and Natural Resources
   - Ministry of Internal Affairs (Municipality, Licence)
   - Ministry of Culture and Tourism

3- **Necessity of accordance with the EU Water Framework Directive**

4- **Filling gaps about the water legislation**

5- **Obligation of considering not just the quantity but the quality of water**
1) Basin Based Water Management
2) Water Management by quantity and quality
3) Water as a Property and Disposal of State
4) Full Cost Principle (User/Polluter Pays)
5) Basin Based Allocation
6) Participation of Shareholders
7) Providing Coordination in Water Management
8) Preparation of Flood Management Plans and Consideration of these Plans in Master Plans
9) Preparation of National Water Plan
10) Establishing Supreme Court for Water Management
11) Inclusion of Sparkling Mineral Water in Water Law
ROLES AND RESPONSIBILITIES IN WATER MANAGEMENT

Coordination, Policy and Law-Making

Water use
Agriculture, Drinking water, hydro-power, industry etc.

License, incentive

Operational Water Management, permits, monitoring, sanctions, inspection

Water investments
Dams, dikes, weirs, pumping stations, sets, river beds etc.

Maintenance Construction

Integration with Other Policies
GENERAL DIRECTORATE OF WATER MANAGEMENT (GDWM)
A NEW INSTITUTION

By Promulgation in 4 July 2011 Dated and 27984 (Repetitive) Numbered Official Gazette

GENERAL DIRECTORATE OF WATER MANAGEMENT is Established in Turkey
TASKS OF GDWM - I

• 1. Planning (Basin and Special Provision)
• 2. Coordination
• 3. Water Policy
• 4. Transboundary Water
• 5. Water Legislation
• 6. Developing Legislation
• 7. Inventory and Water Data System
• 8. Sectoral Water Allocation
• 9. Qualitative Classification of Water
• 10. Developing Water Discharge Standards and Criterion
• 11. Water Quality Standards For Receiving Environment
• 12. Sensitive Areas
• 13. Water Treatment Systems Water Technology
• 14. Preparing Quality Monitoring Programme
• 15. Coordinating Quality Measurements
• 16. Preparing Flood Risk and Hazard Maps
• 17. Planning Flood Management
• 18. Planning Drought Management
• 19. Climate Change and Water Resources
• 20. International Relations With Regard to Water
• 21. Water Efficiency
ORGANIZATIONAL STRUCTURE OF GDWM
GENERAL DIRECTORATE OF WATER MANAGEMENT

- Basin Management Planning Department,
- Water Legislation and Policy Department,
- Inventory and Allocation Department,
- Water Quality Management Department,
- Monitoring department,
- Flood and Drought Management Department,
- Management Services department,
BASIN BASED PLANNED TERM IN WATER MANAGEMENT
Aproach to basin-based solution instead of individual solution:

- Wastewater Treatment Action Plan
- Basin Protection Action Plan
- River Basin Management Plans (WFD)
Preparing Basin Protection Action Plans.
The plans have been completed for 11 Basins, being updated for 5 Basins and started for 9 Basins.
These plans will be prepared within the scope of Water Framework Directive and form a base to River Basin Management Plans.
1. Stream remediation
2. DSI is responsible for constructing municipalities WWPs
3. Individual industries are rehabilitated as organized industrial sites
4. Common advanced wastewater treatment plants are under construction for industries
5. Less water, energy and pollutant usage in industrial processes
6. Afforestation to combat against erosion in Maritza-Ergene
7. A planned era in Maritza-Ergene, 1/25.000 plans taking action
8. Solid waste recycling and disposal plants are under construction

9. Agricultural pollution is under control

10. Real time monitoring in Maritza-Ergene

11. Frequency of inspections are increased

12. Water discharge standards are reorganised, colour standard takes action.

13. Flood early warning system is under construction

14. Usage of underground water is about to be taken under control

15. Irrigation systems will be built by several dams and ponds.
1. Control of domestic wastewaters
2. Control of industrial wastewaters
3. Control of olive mill wastewater
4. Inert and hazardous waste control
5. Agricultural waste control
6. Stream remediation
7. Afforestation and erosion combat
We are determining Special Provisions to protect Drinking Water Basins
EFFICIENT WATER USE

Taking action against water loss and leakage.
Standardisation.

USAGE OF TREATED DOMESTIC WATEWATER IN IRRIGATION

Carry on works or studies about recycling treated domestic wastewaters
SA-01: Define a legal and institutive framework by coorparation & coordination with related institutes to restore quality of all ground and surface waters including coastal and transitional waters. (6 Actions)

SA-02: Corporative capacity improvement and developement of technical and economical instruments in water management. (8 Actions)

SA-03: To define measures and track action for protection and restoration of water bodies quality. (12 Actions)
Treatment Plants will be designed, constructed and operated according to standards and norms.

Definitions of designing treatment plants for drinking, utility and waste water will be made.
Sectoral Allocation Planning in BASIN aspect

Individual Allocations will be made according to Sectoral Allocation

Allocation Commision will be constituted.
We will instantly monitor Maritza-Ergene water quality from Ankara by July 2012.

We are establishing a monitoring network by connecting all the water quality and quantity monitoring points.

A Biological Monitoring Network is under establishment to enlist our countries aquatic flora & fauna.
National Basin Management Strategy (2012-2023)

We prepared our Basin Management Strategy by combining all these works and other components of a basin under one strategy.
Flood Management Plan preparation is ongoing.

Flood Protection Action Plans were started for West Blacksea Territory.

Draught term strategies are defining.

Effects of climate change are defining.
WATER MANAGEMENT
COORDINATION COMMITTEE
“Water Management Coordination Commitee” was established with numbered 2012/7, Prime Ministry Notice.
Tasks of Water Management Coordination Commitee

- Determination of necessary measures to conserve the water resources within the framework of integrated river basin management,
- Providing inter-sectoral coordination, collaboration and speeding up investment in water provision for an effective water management,
- Developing strategy, policy and plan for the realization of the objectives set out in the documents of national and international,
- Evaluation of implementation of the issues that must be met in public institutions and organizations in basin plans,
- Ensuring a high level of coordination and cooperation.
<table>
<thead>
<tr>
<th>Minister of Forestry and Water Affairs</th>
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<tbody>
<tr>
<td><strong>Ministry of European Union Undersecretary</strong></td>
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<tr>
<td><strong>Ministry of Environment and Urbanization Undersecretary</strong></td>
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<td><strong>Ministry of Energy and Natural Resources Undersecretary</strong></td>
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<td><strong>Ministry of Internal Affairs Undersecretary</strong></td>
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<tr>
<td><strong>Ministry of Culture and Tourism Undersecretary</strong></td>
</tr>
<tr>
<td><strong>State Hydraulic Works General Director</strong></td>
</tr>
<tr>
<td><strong>Nature Conservation and National Parks General Director</strong></td>
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<tr>
<td><strong>Meteorology General Director</strong></td>
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<tr>
<td><strong>Ministry of Science, Industry and Technology Undersecretary</strong></td>
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<tr>
<td><strong>Ministry of Foreign Affairs Undersecretary</strong></td>
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<tr>
<td><strong>Food, Agriculture and Livestock Undersecretary</strong></td>
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<tr>
<td><strong>Ministry of Development Undersecretary</strong></td>
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<tr>
<td><strong>Ministry of Health Undersecretary</strong></td>
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<tr>
<td><strong>Water Management General Director</strong></td>
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<tr>
<td><strong>Combating Desertification and Erosion General Director</strong></td>
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<tr>
<td><strong>Head of Water Institute</strong></td>
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</tbody>
</table>
Thank you....