National Strategy for Water Sector

Lamarti Sefian Narjiss
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Summary

- Climatic context
- Realizations
- Constraints and majors challenges
- National strategy for water sector
Climatic Context

Rainfall

Average annual rainfall

Runoff

Precipitations:
- Ioukkos: 51.4\% Sup
- Sebou: 92.4\% Sup
- Moulouya: 49\%
- Bouregreg: 22\%
- Oum er-Rbia: 18\%
- Tensift: 18\%
- Souss-Massa-Draa: 18\%
- Guir-Ziz-Rhêts: 18\%
- Sakia El Hamra et Oued Eddahab: 18\%

Water resources potential

Precipitations: 140 Billions m³

Natural flow:
- 22 Billions m³

Groundwater:
- 4 Billions m³

Runoff:
- 18 Billions m³
Realizations
Water resources mobilisation

- 128 large dams with a capacity of 17 Billions m$^3$
- 13 transfer systems: 1100 km et 210 m$^3$/s
- Very important network of wells and boreholes

Drinking Water supply

- Urban area: Satisfaction and securing
  - Rate coverage about 100%
  - Securing against drought
- Rural area: important advance

Rate coverage was brought from 14% in 1994 to 80% in 2008
**Irrigation development**

Irrigation of 1.5 million hectares (47% GH, 30% IP, 23%PMH) which allows:

- 45% in terms of added value of the agriculture revenues
- 75% of sector exportations and the creation of about 40% of jobs in rural area and 25% at the national level

**Hydroelectric energy**

- Hydroelectric frims totalise 2700 MW as installed power (10% national production)

**Flood protection**
Water law (10-95) innovations:

- **Institutionnal**: decentralisation et deconcentration
  - Institutionnalisation of High Council of Water and Climate
  - Creation of Basins Agencies
  - Creation of the water provincial committee

- **Planification**:
  - National Water Plan
  - Regional Water Plans

- **Protection**:
  - Quantity: Instauration of protection perimeters for the important aquifers
  - Quality: protection perimeters

- **Financial**: Taxes for water intake et pollution flux
 CONSTRAINTS AND MAJORS CHALLENGES

- Water resources scarcity,
- Overexploitation of groundwater resources,
- Pollution of water resources,
- Soil erosion et dams reservoirs silting up,
- Limited valorisation of mobilised water.
CONSTRANTS AND MAJORS CHALLENGES

- Water resources scarcity,
- Overexploitation of groundwater resources,
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- Soil erosion and dams reservoirs silting up,
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Strategy for Water sector Development
In Morocco
MAJOR OBJECTIFS AND STRATEGIC ORIENTATIONS

• Consolidate the realisations,
• Tackle the constrains et take up the challenges,
• Sustain the economic development,
• Change the behaviours in terms of water uses and water resources management,
• Resort to new methods and non conventional techniques.
National strategy for Water Sector

1. Demand Management and maximizing water valorisation
2. Development of Water supply
3. Preservation and protection of Water resources and fragile ecosystems
4. Reduction of the vulnerability for risks and adaptation to climate changes
5. Pursue the institutional and regulation reform
6. Modernisation of information systems and building capacities
1- Water demand management et enhancing water valorization

Water economy in Irrigation:

- Conversion to localised irrigation: potential of 2 Billons m³/year with a rate of 40 000 ha/year,
- Improve efficiencies of the irrigation networks: potential of 400 millions de m³/year.

Water economy in drinking, industrial and tourism sectors: 120 Millions m³/year as a potential:

- Improve efficiencies of urban drinking water network distribution: 80% as a national average,
- Encourage the use of technology enhancing the water economy,
- Revision of costs framework.

Bridge the gap in terms of hydro-agricole equipment in area dominated by the dams: 108 000 ha
2- Management and development of the water supply

Mobilisation of conventional water resources: 2.5 Billions m³/year

- Building 59 big dams (1.7 Billions m³),
- Building one thousand small dams for local development purposes,
- North–South Transfer: 800 Millions m³/year from Sebou and Loukkos-Laou basins.

Mobilisation non conventional water resources

- Desalination of sea water and demineralisation of the brackish groundwater: 400 Millions m³/year,
- Reuse of waste water treated: 300 Millions m³/year,
- Direct capture of rainfall water.
2- Management and development of the water supply

- **Protection of the groundwater resources et recovery of the aquifers reserves**
  
Pumping Limitation from the aquifers, reinforcement of the control system (Water police), Instauration of interdiction perimeters, artificial recharge of the aquifers (180 Millions m³/year), reinforcement of Basins Agencies responsibilities in the aquifers management et generalisation of aquifers contracts.

- **Protection of the water quality and combating pollution**
  
  - Accelerating the implementation of sanitation and waste water treatment : the target is to reach 90 % as the rate access to sanitation systems in 2030,
  
  - National Programme of Industrial Pollution Prevention,
  
  - Implementation of national plan of domestic wastes.
3- Preservation and protection of Water resources and fragile ecosystems

- Watershed protection upstream of dams in order to limit the erosion,
- Programme of springs protection,
- Programme of humid zones and natural lakes protection,
- Oasis preservation and combating the desertification,
- Coastal zones protection.
4- Reduction of the vulnerability for risks and adaptation to climate changes

- Improving flood protection level: humans and infrastructure
  - Achieve of the implementation Flood Protection Plan: the target is the treatment of 20 sites/year,
  - Integrate the flood risk in the land development and urbanism plan,
  - Improving the hydrometeorology prevision and establishing rescues plans.

- Mitigation of the drought impacts: Regional plan for drought management
  - Implementation of structural measures: diversify the water resources supply, elaboration of emergency plan,
  - Instauration of financial mitigation mechanisms such as insurances and natural catastrophes funds.
5- Pursue legal and institutional reforms

- Reinforcement and revision of the legal framework - Water Law 10-95.

- Introduce new legal tools encouraging a more rational water costs setting.

- Accelerate the process aiming to clarify the legal status of Hydraulics Public Domain and improve the authorizations procedures of its use.

- Reactivate and reinforce the decision making authorities instituted by Water Law.
6- Modernisation of information systems and building capacities

- Research and development
- Modernisation of monitoring and measurement networks
- Capacities building
- Modernisation of Water Administration and development of information systems
Actions on water demand and supply development

- Water demand management: economy of 2.5 Billions m³/year,
- Water supply increasing: 2.5 Billions m³/year as additional resource.

Mobilization and transfer projects will beneficial to national economy

Other impacts of the new strategy:

- More responsible water use through changing the water consummation behaviors,
- Economic valorization of the water resources lost to the sea and groundwater recovery,
- Securing the drinking water supply in urban area and generalization of the access to water in rural area,
- Pollution reduction, improve the rate access to sanitation services and generalization of waste water treatment.
Thank you for your attention