Concept Note
On
Improved Water Allocation for Agriculture

Tunisia Team
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Climate: *Mediterranean* climate in the *north* and a *desert* climate in the *south*

Average Annual precipitation: *230 mm/year*

Surface water: *North* have *60%* of the country’s total water potential, the *South* have *23%* and the *Centre* have only *17%* of the potential

Groundwater: *South* and *centre* of *Tunsia* have the most important potential of water
Precipitations: 3700 Mm³/year

Green water: Evapotranspiration 2200 Mm³/year

Evaporation and runoff not recupered: 800 Mm³/year

Blue water 4900 Mm³/year

Surface water 2700 Mm³/year

Groundwater 2200 Mm³/year

Source (water 2050)
Water Resources

Shallow Aquifer (746 Mm³)
- South: 50%
- Centre: 34%
- North: 16%

Deep Groundwater (1429 Mm³)
- South: 23%
- Centre: 22%
- North: 55%

Surface Water (2700 Mm³)
- South: 81%
- Centre: 7%
- North: 12%
Water Demand

Total demand: 2690 Mm³/year

- Irrigation: 2140 Mm³
- Drinking water: 548 Mm³

Irrigated perimeters: 435000 ha

- Public perimeters: 254000 ha
- Private perimeters: 181000 ha
Water Infrastructures

- 35 Big dams (2,2 00 Mm3)
- 234 Small dams (285 Mm3)
- 909 lakes (95 Mm3)
- + 150000 wells in shallow aquifer
- +21000 Deep boreholes
- +120 plant waste water treatment
- Complex transfert axes
Water use pattern

- Agricultural use: 77.4%
- Domestic water use in urban area: 17.1%
- Domestic water use in rural area: 2.5%
- Industrial water use: 2.7%
- Tourism water use: 0.3%
Current Water Situation

**Ratio en m³/hab/an de quelques pays méditerranéens**

- **France**: 3300 m³/hab/an
- **Italie**: 3315 m³/hab/an
- **Hongrie**: 655 m³/hab/an
- **Maroc**: 970 m³/hab/an
- **Egypte**: 880 m³/hab/an
- **Tunisie**: 480 m³/hab/an
- **Algérie**: 475 m³/hab/an
- **Jordanie**: 200 m³/hab/an

- **Seuil minimum de confort hydraulique**: 1700 m³/hab/an
- **Seuil de pauvreté en eau**: 350 m³/hab/an

**Situation de la Tunisie dans son contexte Méditerranéen et Maghrébin en matière de ressources en eau**

- **Tunisie**: 71.7 milliards m³
- **Italie**: 191.3 milliards m³
- **Espagne**: 111.5 milliards m³
- **France**: 200 milliards m³
- **Palestine**: 1.67 milliards m³
- **Liban**: 1.8 milliards m³
- **Syrie**: 18.2 milliards m³
- **Égypte**: 3.3 milliards m³
- **Lybie**: 3.6 milliards m³
- **Maroc**: 1.8 milliards m³
- **Tunisie**: 17 milliards m³
- **Algérie**: 21 milliards m³

**Pays de la Méditerranée**

**Pays**
Water Policy


Mobilization of 85% of the water resources potential
drilling boreholes and improves monitoring networks
Results: Creation of 21 dams, 203 small dams and 580 lakes


Objective:
Mobilization 90% of the water resources potential
Improve drinking water quality (less than 1.5 g/l)
Results: the construction of 11 dams and 50 small dams
Interconnection of the dams in the north
Improve water quality and ensure water supply of Tunis city and the major coastal cities
Mobilizing 90% of the water resources potential
Drilling borehole’s, finish the interconnection program of dams
Actions: integrated water resources management
Climate change adaptation
Securing access to drinking water and irrigation,
Interconnection of North and Central Dams for the operation of excess surface water in excess years,
Desalination of brackish and sea waters: coastal and southern Tunisian areas.

Mobilize water resources
the use of unconventional resources
Policy of water conservation and pollution
In a context of resource scarcity, the water governance approach has created a conversion from supply management to demand management.

Two strategies are being developed in 2020:

- the elaboration of the National Master Plan for the reuse of treated wastewater in Tunisia
- the Vision of the Water Strategy 2050 for Tunisia.
Pilot area
Nebhana system

Rainfall

Evaporation

Nebhana dam

Runoff

Infiltration

Evapotranspiration

Drinking water for coastal areas

Irrigated perimeters of Kairouan, Sousse, Monastir and Mahdia (7000 ha)

groundwater
Nebhana system

Oueslatia station

Period: 23 years
9 years below the average
9 years above the average
5 average years
The Nebhana area is characterized by low rainfall, high evapotranspiration, general drawdown of the piezometric level, and irregular inputs to Dam.

The water demand is about 30 Mm$^3$ for the irrigated perimeters and 5 Mm$^3$ for drinking water, in the other side, the average volume entering to the dam is about 20 Mm$^3$.

Manage water allocation between different users seems to be difficult
Objectives

Help the administration to better manage water resources by improving demand management policy

Improve water allocation in Nebhana system to agriculture and within agriculture

Strengthening the mission of the Concertation about water allocation, developing the capacities of the actors
Ideas for action plan

1- Performance of irrigation scheduling calendars based on agrometeorological conditions
2- Aligned water allocation plan with the farming schedule
3- Move towards new cropping systems (or to reinforce existing ones) less demanding in water and whose products allow important revenues
4- Make water savings at the stages of transport and use
5- Give main importance to rainfed agriculture to play a regulatory role on water demand.
Thank you