WATER AND TERRITORIAL PLANNING STRATEGY IN ALGERIA

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Algeria, between the Mediterranean basin and Africa... under an arid to semi-arid climate
Since 1980, some new texts and many water works...

Water related law n° 83-17 (16/07/1983) having be modified and completed by the Order n°96-13 (16/06/1996) > introduction of the sustainable strategy

> New water related law 05-12 (04/08/2005)
But, today
* A general preoccupying insanitary urban context...
* A global insatisfaction of the demand: ~ 50%
* Many water related risks: Scarcity, pollution, floods,

No compatibility between the territorial planning and the water resources strategies.
1 - In spite of important hydrous potentialities...

Littoral: 400 - 700 mm/year

High Plains: 400 - 250 mm/year

Sahara: 200 - 50 mm/year

* 12.4 billion m³ of surface water
* 2.8 billion m³ of subsoil water
* 16% of mobilized water resources
... a general water scarcity....

Available water resources in the Northern hydrographic basins

- Oranie Chott Chergui: 1200 Hm³/year
- Chellif Zahrez: 2200 Hm³/year
- Algérie Hodna Soummam: 4900 Hm³/year
- Constantinois Seybouse Mellague: 5900 Hm³/year

Available allocation per capita in the Northern hydrographic basins m³/inhab/year by 2000 / 2020-2030

- Water stress = 1000 m³/inhab/year.
- Water scarcity = 500 m³/inhab/year (W B)

1500 m³/inhab/year in 1962!
2- Territorial planning strategy by 2025:

New settlements + ...

- Urban sprawling
- New settlements

- Reorganising the Tell
- Intensifying the development within the High Plains and the Sahara
...interbasin transferring
Sidi Abdellah, a new town within Algiers’ perimeter

- 150,000 inhabitants expected
- Yet water shortage
- No urban wastewaters treatment

8,212,500 m³/year
Boughezoul, a new town yet suffering from shortage in the High Plains
Expected growth by 2025...

- Demographic growth > 30% 
- Water demand increase > 50%. 
- Water available resources decrease > 30% 

Necessity of previous studies concerning:

- High Plains’ real available water resources before intensifying the development 
- Local climatic and hydrographical criteria before implementing any new settlements 
- Local drinking water and sewage networks’ capacities + risk prevention in the case of local urban sprawling
In Algeria, since 1995, the sustainable development concept officially calls for:

- a balanced distribution of the land use
  - the urbanisation threshold

- A synergic program towards the preservation of the water resources and the management of the water related risks
  - the water resources load capacity

What about the territorial planning tools and guidelines in Algeria?
Water, environmental and territorial schemes prescriptions...

- **Water resources’ national scheme**: Protecting perimeter around the public water domain.
  - Water related law 05-12 (04/08/2005)

- **Environmental planning scheme**: Water resources’ exploitation threshold.
  - Environmental preservation within the framework of sustainable development law 03-10 (19/07/2001)

- **Territorial planning scheme**: A compatibility with the general environmental load capacity of the territories.
  - Territorial planning within the framework of sustainable development law 01-20 (12/12/2001)
Methodological principle

Conformity of the space arrangements with the inherent local natural characteristics

Definition of some specific constraints related to the public water domain

Adaptation of the spatial arrangements to the really available hydrous potentialities
Acting program

Urban Planning

Land use
- Qualitative protection
- Sewage and waste management
- Alternatives techniques
- Quantitative protection

Environmental Planning

Water Resources Planning
- Rainfall management

URBAN PLANNING
WATER RESOURCES PLANNING
ENVIRONMENTAL PLANNING
**Principal insufficiencies of the territorial planning tools in term of water management**

<table>
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<tr>
<th>Level studied</th>
<th>Principal insufficiencies in term of flood risk management</th>
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</table>
| Juridical level (public services)    | - No juridical texts manage the co-ordination between the Water and the urban development related acting program.  
- Lack of any text related to the natural or flood risks prevention plan.  
- No specified role of the local city services in term of natural risk prevention. |
| Regular level (master schemes)       | - No regulating framework to elaborate the Flood prevention plan.  
- No sufficient and clear urban land nomenclature.  
- No spatial delimitation of the protected or the exposed urban perimeters. |
| Operational level (plans)            | - No local prescription of any flood prevention.  
- No specified communal prescriptions in term of servitudes tied to the flood risk.  
- No intercommunal approach of the flood prevention.  
- Difficulty in prescribing servitudes tied to flooded areas. |
Complementarities between the urban, the environmental and the hydraulic planning processes.

<table>
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<tr>
<th>INTERVENTION'S LEVEL</th>
<th>ACTION PROGRAMMES</th>
<th>OBJECTIVES</th>
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<td>Urban ecosystem</td>
<td>Flooding and landslides risks' management.</td>
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<td>Urban water cycle</td>
<td>Qualitative preservation of the water resources.</td>
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<tr>
<td></td>
<td>Natural water cycle</td>
<td>Quantitative preservation of the water resources.</td>
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<td></td>
<td>Hydraulic planning</td>
<td>Adapting urban development to the water potentialities which are really able to be mobilized.</td>
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**Urban planning**
- Rainwater's managing: Adapting the laying out and the form of the roads + arranging exutories or retaining basins.
- Controlling ground's using: Adapting urban arrangement's forms to the sites' geomorphology.

**Environmental planning**
- Domestic and industrial discharges' management.
- Performance of the hydraulic structures and equipments.
- Prevention of the pollution..

**Hydraulic planning**
- Water resource mobilisation's limit.
- Economy of water.
- Developing alternative techniques of water supplying.

**Complementarities**
- Conformity of urban arrangements with natural characteristics of the site.
- Determining the specific servitudes of the hydraulic public domain.
A territory expecting a sustainable development by term