

Case Study: South Lebanon

Water Resources

The reservoirs water, running water of rivers, springs water and exploited groundwater, constitute the available water resources that can be invested in accordance with acceptable economic and technical conditions. The water quantities within these categories are as follows:

- 800 million m³ in the seven months (or more) of draught season.
- 600 million m³ groundwater that can be invested.
- 800 million m³ surface water that can be reserved.
- Total = 2200 million m³.

While the currently invested water is estimated to be around 1600 million m³, 200 million m³ of which is in that of reservoirs.

The most demanding uses of water are respectively:

1. Drinking (domestic uses),
2. Irrigation.
3. Industry.

In compliance with the international standards of the individual's minimum water needs, which are 1000 m³ (the water poverty line), Lebanon needs 4000 million m³. But due to Lebanon's climate, the available quantity is presently estimated to be 2500 million m³, as the rainy season extends for five months and over the period of 70-80 days annually.

The obstacles facing water resources have a natural and geographical character.

While the rainfall on western mountains that are close to the sea reaches over 1000 mm annually it does not exceed 250 mm in the northern part of the Biqaa' Valley which in years of draught goes down by 40% of that average. Thus, it's fair to say that the distribution of rainfall suffers from sever discrepancies.

The steepish nature of the western mountains overlooking the sea and the geological limestone character of around 65% of the lithologic formations in Lebanon make control over 70% of rainfall (estimated to be 8600 million m³) a difficult, expensive and sometimes impossible task. Huge quantities just go down to the sea, while more than 900 million m³ moves

to Syria and the occupied Palestine whether as groundwater or surface water.

Added to these problems is the fact that the intensity of rain is met with a special geological nature abundant of faults and acute steep.

There are other problems like the oldness of the main and secondary water networks that have not been regularly maintained due to the disrupting events in Lebanon. Moreover, there is a real shortage in the specialised, technical and managerial manpower.

The most serious problem that needs to be addressed is that of contamination and the disposal of untreated sewage water in water canals and valleys.

The treatment of sewage water is still a new venture in Lebanon. The treatment plants already constructed or still under construction are only fifteen plants throughout the country, a number that needs to be doubled for a better protection of water resources. It's worth mentioning, however, that the intensity of rainfall minimizes contamination and rinses water resources.

Before the year 2000, there were 21 administrations of water, agriculture and industry and more than 200 local committees formed by the Ministry of Energy and Water, working under its supervision, in the absence of any administration for the treatment of sewage water.

Following the issuance of new legislations from 1994 to 2000, the administration and investment of water sector (drinking water, agriculture, industry and sewage) in Lebanon was authorized to four institutions:

- Beirut and Lebanon Mountain Water Corporation.
- North Water Corporation.
- Bqaa' Water Corporation.
- South Water Corporation.

The authorities of these corporations include the integrated management of water for drinking, agricultural and industrial purposes and the sewage water.

Infrastructure

The Ministry of Water and Energy has designed a ten-year plan to construct dams, springs and mountain reservoirs of all sizes in order to reserve around 800 million m³ and make up for the shortages in drinking, industry and agriculture water. This ministry is responsible for water policies in Lebanon and for monitoring the activities of water organizations in managing, investing, maintaining and protecting water constructions for all applications.

90.85% of water resources for all uses are supplied to agricultural and industrial areas and local communities through containers and canals that are mainly renovated on a large scale and sometimes maintained.

The above mentioned corporations are responsible for the maintenance and management of the infrastructure of water installations and facilities. In each of these corporations there are specialized staffs for that purpose. Otherwise, they resort to private sector companies as evident in the operation and management of the water treatment plants. Some of these plants are managed by the corporation while others are being undertaken by a private sector firm when the corporation does not have a technically qualified staff to perform such management.

Local Case Study

Overview

The local case study is within the boundaries of the South Water Corporation which are as follows:

- From the north, Al-Awwali River (north of Sidon).
- From the west, the Mediterranean.
- From the south, the occupied Palestine.
- From the East, Syria.

This area covers 20% of Lebanon and is considered the poorest in water springs in this country, excluding the two areas of Jizzeen and Hasbayya. The poorest area is in particular the one extending from Az-Zahrani River and the borders with the occupied Palestine specially An-Nabateyyeh, Tyre and Bent Jbail.

Therefore, we find the domestic and agricultural uses in these areas heavily reliant on groundwater and whatever that can be drawn from Al-Litani River and Al-Qara'oon Reservoir.

In its lowest point, and moving southward, Al-Litani River reaches just before Marje'oon then turns westward to its destination ten kilometres to the north of the city of Tyre.

Resources

The area is covered by four main projects that have been independently managed but now about to be rendered to the sole administration of the South Water Corporation. These projects are:

- Sidon Water Project whose sources are a gravity-fed spring in Farweh and some wells.
- At-Taaseh Spring Water Project whose main source had been At-Taaseh Spring. But now it started drawing upon several wells like those in Fakhr Ad-Deen Valley and the Toffahta wells that provide the quantities needed by the citizens in addition to few other miscellaneous wells.
- Aamel Mountain Water Project, which can be divided into two parts: First is a gravity-fed from Sheb'a Springs and later enhanced from wells in "Ebel As-Saqi." The second draws its water from Al-Litani River after being treated in At-Taybeh Plant and pumped from the River to the hilly areas of At-Taybeh town. There are also a number of wells the most important of which is Jeelo Valley wells.