Chapter 18
Anti-Lebanon

INVENTORY OF
SHARED WATER RESOURCES IN WESTERN ASIA (ONLINE VERSION)

german cooperation
DEUTSCHE ZUSAMMENARBEIT

BGR Bundesanstalt für Geowissenschaften und Rohstoffe

ESCWA
United Nations Economic and Social Commission for Western Asia

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EXECUTIVE SUMMARY

The Anti-Lebanon Mountain range is located at the Lebanese-Syrian border between the Bekaa Plain in the west and the Damascus Plain in the east. The mountain range stretches from the Homs Plain in the north to beyond its highest peak, Mount Hermon, in the south. The Anti-Lebanon receives significant precipitation, especially along its western flank, and is an important source of water, both locally and in the wider regional context, as it forms the source of a number of rivers in the Mashrek. The hydrology and hydrogeology of this deeply faulted mountain range is highly complex and poorly understood to date, also in terms of the transboundary nature of surface and groundwater basins. Groundwater in the Anti-Lebanon is mainly stored in highly fractured and karstified Jurassic and Cretaceous (Cenomanian-Turonian) carbonate rocks, which often extend across political borders. Several large springs emanate from these aquifers and contribute to the Awaj, Barada, Litani, Orontes and (Upper) Jordan Rivers.

This chapter describes the Anti-Lebanon Mountain range in general terms, introduces the main aquifer systems and provides more detailed information on the catchments of the Anjar-Chamsine, Barada and Figeh Springs as examples of shared groundwater resources in the mountain range (see table opposite). Despite the potential benefits of joint investigations, management and protection schemes, there is limited cooperation between Lebanon and Syria on shared water resources in the Anti-Lebanon. The springs and catchments that originate in the southern part of the Anti-Lebanon and contribute to the headwaters of the Jordan River are covered in more detail in Chapter 6.

BASIN FACTS

RIPARIAN COUNTRIES	Lebanon, Syria
MAIN AQUIFERS	Cretaceous (Cenomanian-Turonian), Jurassic
ALTERNATIVE NAMES	-
SHARED BASINS	Anjar-Chamsine, Barada, Figeh
RENEWABILITY	Medium to high (20 - >100 mm/yr)
HYDRAULIC LINKAGE WITH SURFACE WATER	Strong
ROCK TYPE	Carbonate, karstic
AQUIFER TYPE	Anjar-Chamsine: unconfined-confined Barada: .. Figeh: unconfined, semi-confined, confined
EXTENT OF CATCHMENT	Anjar-Chamsine: 248 km^2 Barada: 149 km^2 Figeh: 658 km^2
AGE	Mesozoic (Upper Cretaceous, Jurassic)
LITHOLOGY	Limestone, dolomites, marls
THICKNESS	Anjar-Chamsine: 900 m (AVG) Barada: 2,000-2,200 m Figeh: 480-680 m
AVERAGE ANNUAL ABSTRACTION	-
STORAGE	-
WATER QUALITY	Anjar-Chamsine: .. Barada: <500 mg/L TDS Figeh: 200-600 mg/L TDS
WATER USE	Agricultural, domestic and industrial
AGREEMENTS	-
SUSTAINABILITY	Local abstractions and contamination in catchments may impact quantity and quality of discharge from springs

OVERVIEW MAP