- **Topography and Geomorphology of Jordan**

The country consists mainly of a plateau between 700 meters and 1,200 meters high, divided into ridges by valleys and gorges, and a few mountainous areas. West of the plateau, land descents form the East Bank of the Jordan Rift Valley. The valley is part of the north-south Great Rift Valley, and its successive depressions are Lake Tiberias (Sea of Galilee; its bottom is about −258 meters), Jordan Valley, the Dead Sea (its bottom is about −730 meters), Arabah, and the Gulf of Aqaba at the Red Sea. Jordan's western border follows the bottom of the rift. By far the greatest part of the East Bank is desert, displaying the land forms and other features associated with great aridity. Most of this land is part of the Syrian Desert and northern Arabian Desert. There are broad expanses of sand and dunes, particularly in the south and southeast, together with salt flats. Occasional jumbles of sandstone hills or low mountains support only meager and stunted vegetation that thrives for a short period after the scanty winter rains. These areas support little life and are the least populated regions of Jordan.

The drainage network is coarse and incised. In many areas the relief provides no eventual outlet to the sea, so that sedimentary deposits accumulate in basins where moisture evaporates or is absorbed in the ground. Toward the depression in the western part of the East Bank, the desert rises gradually into the Jordanian Highlands—a steppe country of high, deeply cut limestone plateaus with an average elevation of about 900 meters. Occasional summits in this region reach 1,200 meters in the northern part and exceed 1,700 meters in the southern part; the highest peak is Jabal Ramm at 1,754 meters (though the highest peak in all of Jordan is Jabal Umm al Dami at 1854 meters. It is located in a remote part of southern Jordan). These highlands are an area of long-settled villages; see Figure (1).

The western edge of this plateau country forms an escarpment along the eastern side of the Jordan River-Dead Sea depression and its continuation south of the Dead Sea. Most of the wadis that provide drainage from the plateau country into the depression carry water only during the short season of winter rains. Sharply incised with deep, canyon-like walls, whether flowing or dry the wadis can be formidable obstacles to travel.

The Jordan River is short, but from its mountain headwaters (approximately 160 kilometers north of the river's mouth at the Dead Sea) the riverbed drops from an elevation of about 3,000 meters above sea level to more than 400 meters below sea level. Before reaching Jordanian territory the river forms the Sea of Galilee, the surface of which is 212 meters below sea level. The Jordan River's principal tributary is the Yarmouk River. Near the junction of the two rivers, the Yarmouk forms the boundary between Israel on the northwest, Syria on the northeast, and Jordan on the south. The Zarqa River, the second main tributary of the Jordan River, flows and empties entirely within the East Bank.

A 380-kilometer-long rift valley runs from the Yarmouk River in the north to Al Aqaba in the south. The northern part, from the Yarmouk River to the Dead Sea, is commonly known as the Jordan Valley. It is divided into eastern and western parts by the Jordan River. Bordered by a steep escarpment on both the eastern and the western side, the valley reaches a maximum width of twenty-two kilometers at some points. The valley is properly known as *Al Ghawr* or *Al Ghor* (the depression, or valley).

The rift valley on the southern side of the Dead Sea is known as the Southern *Ghor* and the Wadi al Jayb (popularly known as the Wadi al Arabah). The Southern Ghor runs from Wadi al Hammah, on the south side of the Dead Sea, to Ghor Faya, about twenty-five kilometers south of the Dead Sea. Wadi al Jayb is 180 kilometers long, from the southern shore of the Dead Sea to Al Aqaba in the south. The valley floor varies in level. In the south, it reaches its lowest level at the Dead Sea (more than 400 meters below sea level), rising in the north to just above sea level. Evaporation from the sea is extreme due to year-round high temperatures. The water contains about 250 grams of dissolved salts per liter at the surface and reaches the saturation point at 110 meters.

The Dead Sea occupies the deepest depression on the land surface of the earth. The depth of the depression is accentuated by the surrounding mountains and highlands that rise to elevations of 800 to 1,200 meters above sea level. The sea's greatest depth is about 430 meters, and it thus reaches a point more than 825 meters below sea level. A drop in the level of the sea has caused the former Lisan Peninsula to become a land bridge dividing the sea into separate northern and southern basins.

The Jordan Valley

The Jordan Valley, which extends down the entire western flank of Jordan, is the country's most distinctive natural feature. The Jordan Valley forms part of the Great Rift Valley of Africa, which extends down from southern Turkey through Lebanon and Syria to the salty depression of the Dead Sea, where it continues south through Aqaba and the Red Sea to eastern Africa. This fissure was created 20 million years ago by shifting tectonic plates.

The northern segment of the Jordan Valley, known in Arabic as the *Ghor*, is the nation's most fertile region. It contains the Jordan River and extends from the northern border down to the Dead Sea. The Jordan River rises from several sources, mainly the Anti-Lebanon Mountains in Syria, and flows down into Lake Tiberias (the Sea of Galilee), 212 meters below sea level. It then drains into the Dead Sea which, at 407 meters below sea level, is the lowest point on earth. The river is between 20 and 30 meters wide near its endpoint. Its flow has been much reduced and its salinity increased because significant amounts have been diverted for irrigational uses. Several degrees warmer than the rest of the country, its year-round agricultural climate, fertile soils, higher winter rainfall and extensive summer irrigation have made the *Ghor* the food bowl of Jordan.

The Jordan River ends at the Dead Sea, which, at a level of over 407 meters below

sea level, is the lowest place on the earth's surface. It is landlocked and fed by the Jordan River and run-off from side *wadis*. With no outlet to the sea, intense evaporation concentrates its mineral salts and produces a hypersaline solution. The sea is saturated with salt and minerals–its salt content is about eight times higher than that of the world's ocean–and earns its name by virtue of the fact that it supports no indigenous plant or animal life. The Dead Sea and the neighboring Zarqa Ma'en hot springs are famous for their therapeutic mineral waters, drawing visitors from all over the world.

South of the Dead Sea, the Jordan Valley runs on through hot, dry Wadi 'Araba. This spectacular valley is 155 kilometers long and is known for the sheer, barren sides of its mountains. Its primary economic contribution is through potash mining. Wadi 'Araba rises from 300 meters below sea level at its northern end to 355 meters above sea level at Jabal Risha, and then drops down again to sea level at Aqaba.

The seaside city of Aqaba is Jordan's only outlet to the sea. Its 40 kilometer long coastline houses not only a tourist resort and Jordan's only port, but also some of the finest coral reefs in the world. The rich marine life of these reefs provides excellent opportunities for snorkeling and diving.

The Mountain Heights Plateau

The highlands of Jordan separate the Jordan Valley and its margins from the plains of the eastern desert. This region extends the entire length of the western part of the country, and hosts most of Jordan's main population centers, including Amman, Zarqa, Irbid and Karak. We know that ancient peoples found the area inviting as well, since one can visit the ruins of Jerash, Karak, Madaba, Petra and other historical sites which are found in the Mountain Heights Plateau. These areas receive Jordan's highest rainfall, and are the most richly vegetated in the country.

The region, which extends from Umm Qais in the north to Ras an-Naqab in the south, is intersected by a number of valleys and riverbeds known as *wadis*. The Arabic word *wadi* means a watercourse valley which may or may not flow with water after substantial rainfall. All of the *wadis* which intersect this plateau, including Wadi Mujib, Wadi Mousa, Wadi Hassa and Wadi Zarqa, eventually flow into the Jordan River, the Dead Sea or the usually-dry Jordan Rift. Elevation in the highlands varies considerably, from 600 meters to about 1,500 meters above sea level, with temperature and rainfall patterns varying accordingly.

The northern part of the Mountain Heights Plateau, known as the northern highlands, extends southwards from Umm Qais to just north of Amman, and displays a typical Mediterranean climate and vegetation. This region was known historically as the Land of Gilead, and is characterized by higher elevations and cooler temperatures.

South and east of the northern highlands are the northern steppes, which serve as a buffer between the highlands and the eastern desert. The area, which extends from Irbid through Mafraq and Madaba all the way south to Karak, was formerly

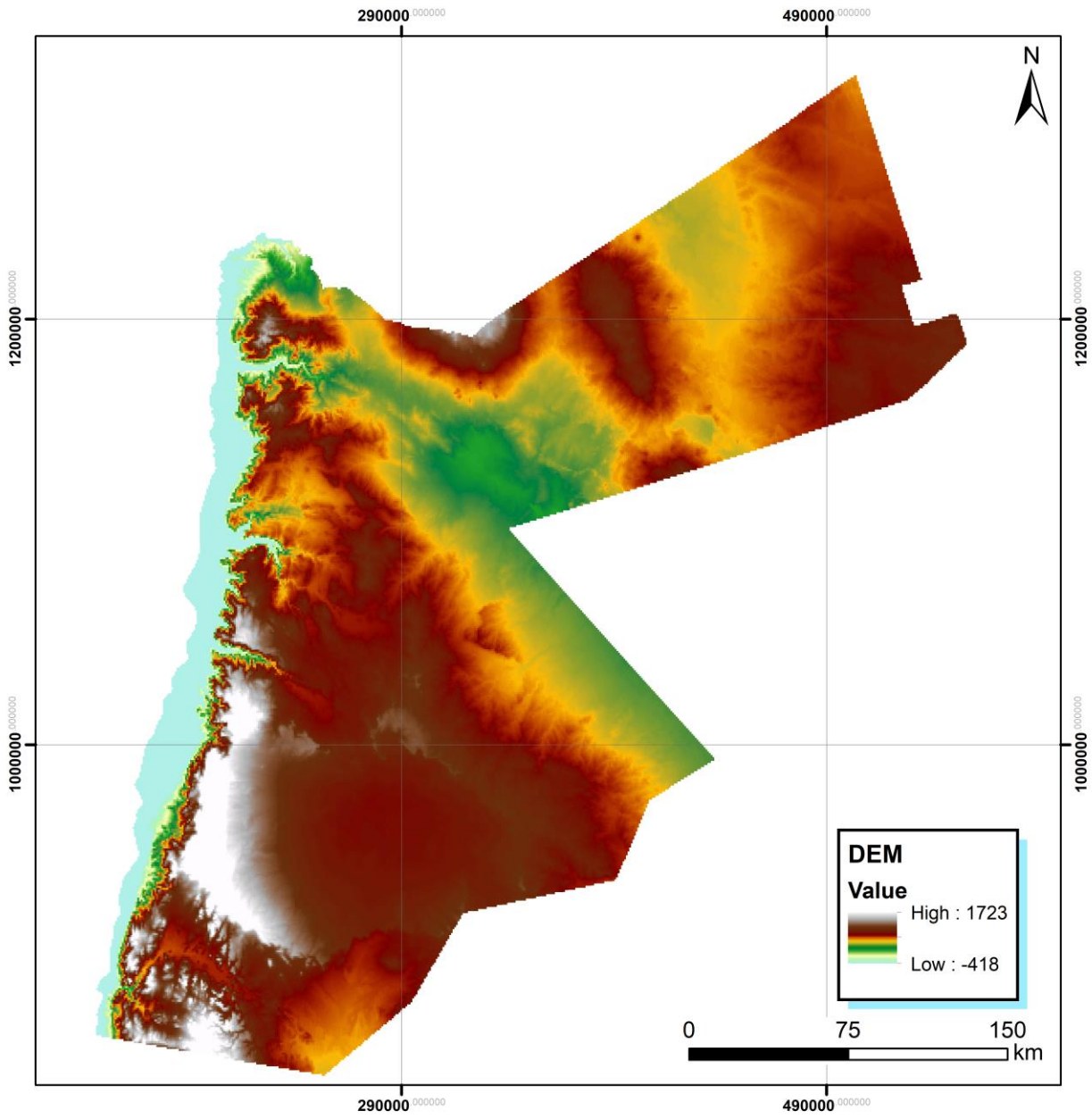
covered in steppe vegetation. Much of this has been lost to desertification, however. In the south, the Sharra highlands extend from Shoubak south to Ras an-Naqab. This high altitude plain receives little annual rainfall and is consequently lightly vegetated.

The Eastern Desert or Badia Region

Comprising around 75% of Jordan, this area of desert and desert steppe is part of what is known as the North Arab Desert. It stretches into Syria, Iraq and Saudi Arabia, with elevations varying between 600 and 900 meters above sea level. Climate in the Badia varies widely between day and night, and between summer and winter. Daytime summer temperatures can exceed 40°C, while winter nights can be very cold, dry and windy. Rainfall is minimal throughout the year, averaging less than 50 millimeters annually. Although all the regions of the *Badia* (or desert) are united by their harsh desert climate, similar vegetation types and sparse concentrations of population, they vary considerably according to their underlying geology.

The volcanic formations of the northern Basalt Desert extend into Syria and Saudi Arabia, and are recognizable by the black basalt boulders which cover the landscape. East of the Basalt Desert, the Rweishid Desert is an undulating limestone plateau which extends to the Iraqi border. There is some grassland in this area, and some agriculture is practiced there. Northeast of Amman, the Eastern Desert is crossed by a multitude of vegetated *wadis*, and includes the Azraq Oasis and the Shomari Wildlife Reserve

To the south of Amman is the Central Desert, while Wadi Sirhan on Jordan's eastern border drains north into Azraq. Al-Jafr Basin, south of the Central Desert, is crossed by a number of broad, sparsely-vegetated *wadis*. South of al-Jafr and east of the Rum Desert, al-Mudawwara Desert is characterized by isolated hills and low rocky mountains separated by broad, sandy *wadis*. The most famous desert in Jordan is the Rum Desert, home of the wondrous Wadi Rum landscape. Towering sandstone mesas dominate this arid area, producing one of the most fantastic desert-scapes in the world.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