



## GEOGRAPHY OF IRAQ

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DOI: [10.33329/ijoe.8.6.1](https://doi.org/10.33329/ijoe.8.6.1)



### ABSTRACT

Iraq is located between the coordinates of 3300 north and 4400 east, and it occupies a total area of 437,072 square kilometres. The land area is 432,162 square kilometres, while water makes up 4,910 square kilometres of the total area. Iraq borders Turkey to the north. Iran to the east, Syria to the west, Saudi Arabia and Kuwait to the south. Iraq can be divided according to the nature of the terrain into 4 regions (mountainous regions, plateau and hilly regions, the Mesopotamian plain, the island and the western plateau). The climate is continental, subtropical and arid. The mountainous region has a Mediterranean climate. Generally, it rains from December to February or from November to April in the mountainous region. During the winter season, the average daily temperature is around 16 ° C and drops to 2 ° C at night with the possibility of frost. However, it is hot in the summer with an average temperature of over 45 ° C during the months of July and August and it goes down to 25 ° C at night.

Keywords: Iraq, Desert, Tigris, Euphrates

### I. INTRODUCTION

Iraq is located between the geographical coordinates 3300 North and 4400 East (see Figure 1), and it occupies a total area of 437.072 km<sup>2</sup>, the land area is 432,162 square kilometres, while water constitutes 4,910 square kilometres of the total area. Iraq is bordered to the north by Turkey, 352 km, Iran to the east, 1458 km, Syria and Syria to the west, 605 km and 181 km respectively, and Saudi Arabia and Kuwait to the south, 814 km and 240 km respectively.

The total population of Iraq is about 40,000,000. The majority are Arabs (75-70%), followed by the Kurds (15-20%), Turkmen and Assyrians (5%) (Figures 2 and 3). At least 95% of the population is Muslim and has a minority of other religions, for example Christians and boys. The official language is Arabic and Kurdish. The

Kurdish language is the language used in the Kurdish region.

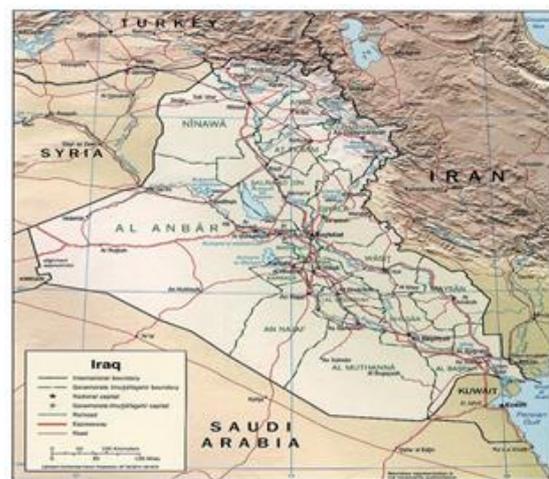


Figure 1: Iraq's General Map.

Other languages, for example Armenian and Assyrian are used locally but they are not official. Iraq consists of 18 governorates (Figure 4).

They are Anbar, Basra, Muthanna, Qadisiyah, Najaf, Sulaymaniyah, Tamim, Babylon, Baghdad, Dhi Qar, Diyala, Erbil, Karbala, Maysan, Nineveh, Salah al-Din and Wasit. The National Legislature: a council of 250 members elected by popular vote for a period of four years.

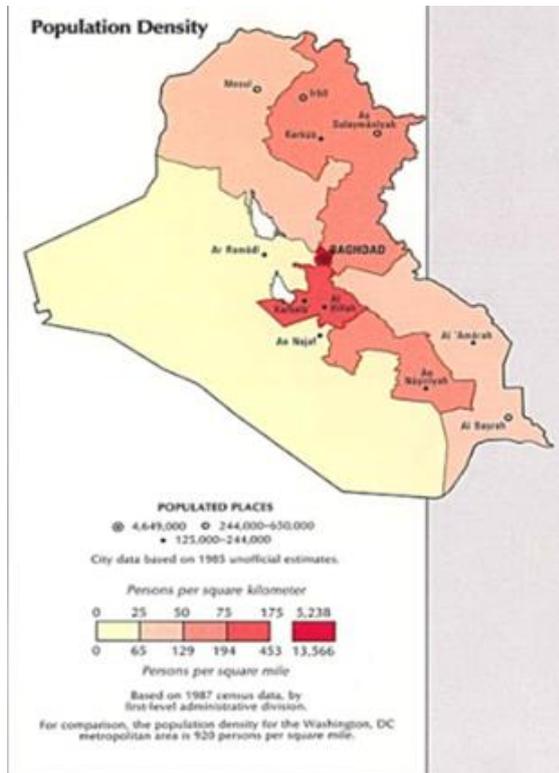


Figure 2: Iraq's population density.

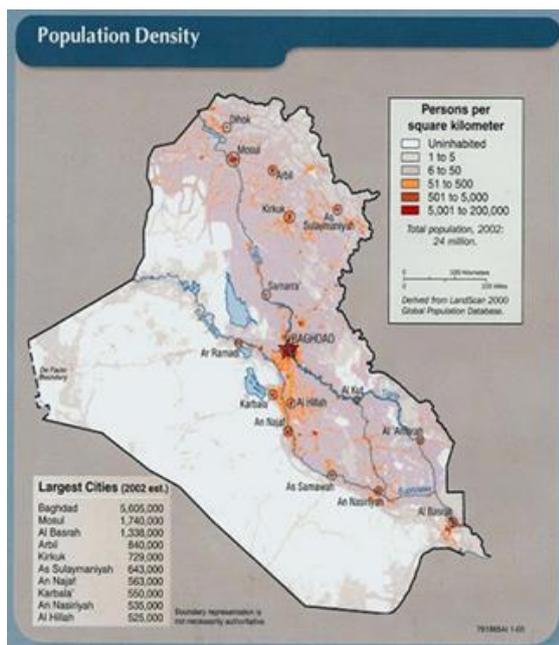


Figure 3: POPULATION IN MAJOR CITIES OF IRAQ.

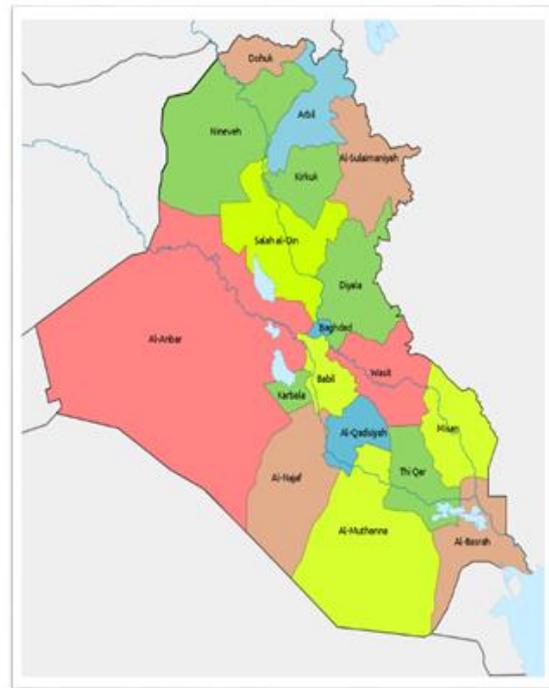


Figure 4: The Iraq Governorates.

Iraq was part of the Ottoman Empire, and it was occupied by Britain around the world in the First War. In 1920, it was declared a League of Nations mandate under the administration of the European Union. Iraq gained its independence as a kingdom in 1932. On July 14, 1958, Iraq was declared a republic.

### 1.1 Topography

Iraq can be divided according to the nature of its terrain into four regions (5, 6 and 7) as follows [1], [2], [3], [4] and [5].

#### 1.1.1 Mountain Region

This area occupies 5% of Iraq, Figure 7, and is located in the northern part of the country. This region is part of the Zagros Mountains region. Altitude is between 3000-1000 meters above sea level. In the north, the mountains range from the eastern region emerging from the northwest curve to the southeast in the northeastern part of Iraq in Iraq - the border of Iran. The average annual rainfall in this region is 1000 mm, and the mountain peaks are covered with snow. This is the part of Iraq to be the most important part of its water resources.

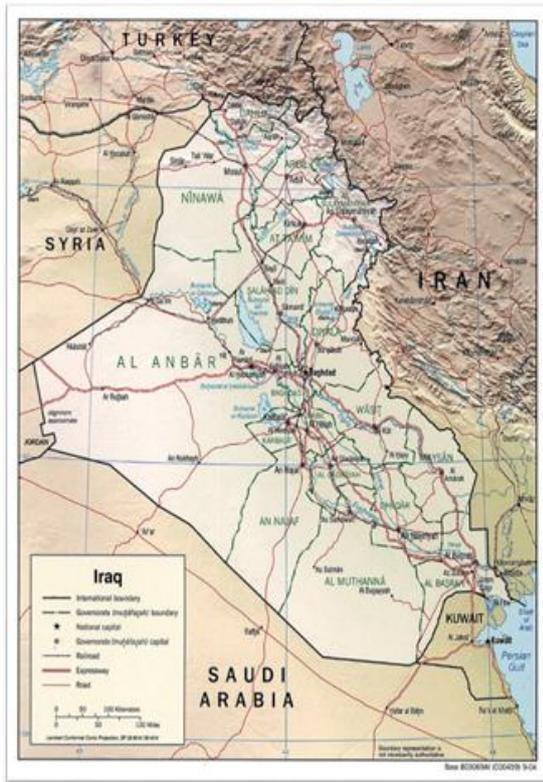


Figure 5: Iraq's Physiography.



Figure 7: Iraq's topographical division.

Deep valleys with narrow plains are especially common among mountain ranges. Rich people cross the plains to meet the Tigris River (such as the Great Zab, Lower Zab, and Khabur). The most important mountains in this region are Hisarwast, Paramam, Sevin, Izmir, Hurman and Penguin.

### 1.1.2 Plateau and Hills Regions

The height of the plateau ranges between 200 and 1000 meters above sea level in this region. This area represents 15% of the area of Iraq (Figure 7). This region is located in the north of the mountains and in the southern plain of Mesopotamia. Sinjar, Ibrahim, Bashiqa, Makhmour and Hamrin are the country's highest mountainous regions. The average annual rainfall ranges between 200 and 500 mm in this region. Therefore, in this region there is a great deal of dry valleys. All the wealthy people of the Tigris cross this region where, for example, the main barracks are located. Hamri and Moussa Dam, Dokan, Darbandikhan. Dams were built in this area because the mountains are close to the main streets of the rivers, making the rivers active. The best places to build dams are these conditions.

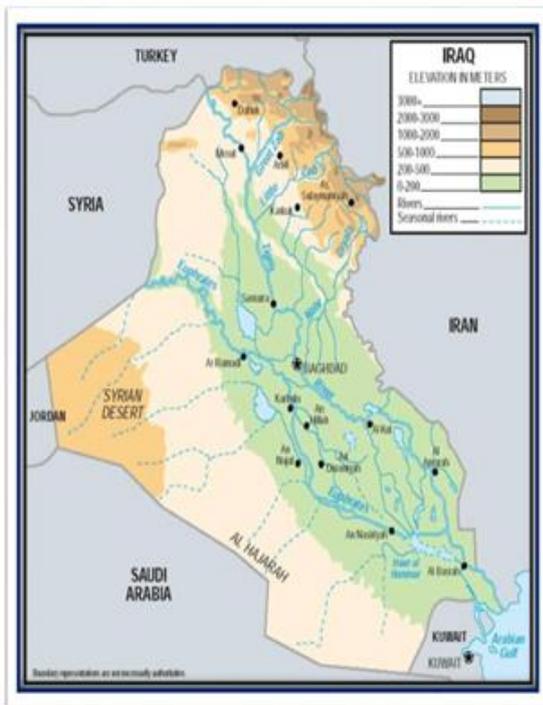


Figure 6: Land Elevation in Iraq.

### 1.1.3 The Mesopotamian plain

It is limited between the Tigris and Euphrates rivers. It represents 20% of the total territory of Iraq. From the north at Samarra on the Tigris River to the strike on the Euphrates to J0048 in the north in the south of the Gulf, Figure 7. The area is characterized by its very temperate sides from north to south. The average annual precipitation is around 250 mm. Agriculture depends on the drainage channels of the Tigris and Euphrates rivers.

### 1.1.4 Jazera and Western Plateau

Figure 7: This area covers 60% of the total land in Iraq. In some areas, altitudes can exceed 900 meters above sea level. The western slope of the plateau extends eastward from the west along the Euphrates. The plateau is characterized by its wide dry valleys. It is the largest valley with a length of 485 km, and Wadi al-Tharthar with a length of 300 km, which is the most important in the Jazirah region. The average precipitation in the region is no more than 200 mm per year. For this reason, small dams have been built in the valleys of the Western Sahara to harvest water in the rainy season for use in the summer.

## 1.2 Climate

Climates are primarily continental and subtropical semi-arid. Mediterranean climate in the mountainous region. Generally, rainfall in the mountainous region occurs between December and February or between November and April. The average maximum temperature during winter is around 16 ° C and drops at 2 ° C during the night, with the risk of frost. But in the months of July and August, this temperature drops to more than 25 ° C at night [2], [3] and [4], with an average temperature of more than 45 ° C in the summer.

### 1.2.1 Rainfall

The average annual precipitation in Iraq ranges from about 150 mm in the western desert, and about 1000 mm in the mountainous regions in the north to about 200 mm in the east, Figure 8. Average annual rainfall is 213 mm annually. The rainy season runs from October to April. Figure 8 and Table 1 show that, as a result of their

topographic influence, the annual precipitation increases from southwest to northeast. Moreover, the topographic regions have their own climatic conditions and precipitation values. Often they are noticed. However, all regions have average common climate characteristics, taking into account local climatic changes. It must be remembered. This is because all of Iraq is affected by its geographical location. Two seasons can be observed where precipitation is used to classify the climate: from April to September, the dry season. The rainy season starts between October and May.

### 1.2.2 Temperature, Sunshine and Evaporation

Regular temperatures vary greatly from day to night depending on the continental climate. Moreover, the temperature rise is the opposite of the prevailing trend in precipitation, while the trend from northeast to southwest rises in Table 2. During the dry season, the total daily temperatures can rise to over 50 ° C during precipitation. The rains. The rains. The rains. The rains. The rains. Is raining. Little rain. The temperature in Al Rutba and Baghdad can reach 14 ° C (Figures 9 and 10). The temperature in summer is lower than that in the surrounding areas, especially in Basra, due to the high humidity in it near the Gulf.

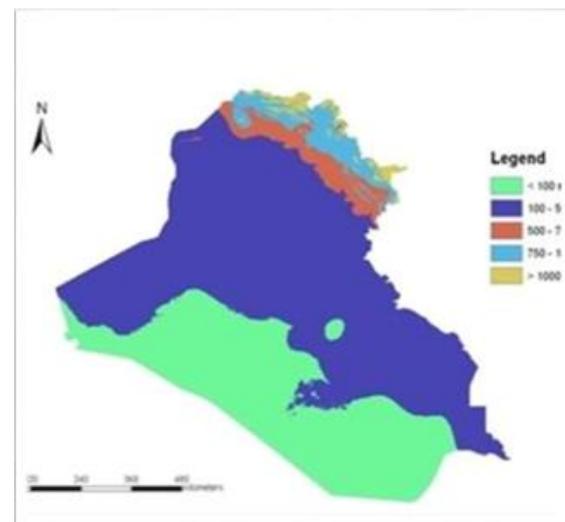


Figure 8: Average annual precipitation in Iraq.

Table 1: Annual average rainfall at some of the main stations in Iraq (Record duration of 35 years)

Month	Mosul	Baghdad	Anbar	Basrah
Oct.	7.6	4.1	3.6	0.66
Nov.	38	12.6	14	17.8
Dec.	59	25.6	16.3	36
Jan.	60	36.8	13	6
Feb.	62.1	25	15.8	12
Mar.	65.8	22	25	18
Apr.	58	21	11	6
May.	21.6	8.5	0	24
Jun.	0	0	0	6.3
Jul.	0	0	0	0
Aug.	0	0	0	0
Sep.	0	0	0	0
Total	372.1	155.6	98.7	143.36

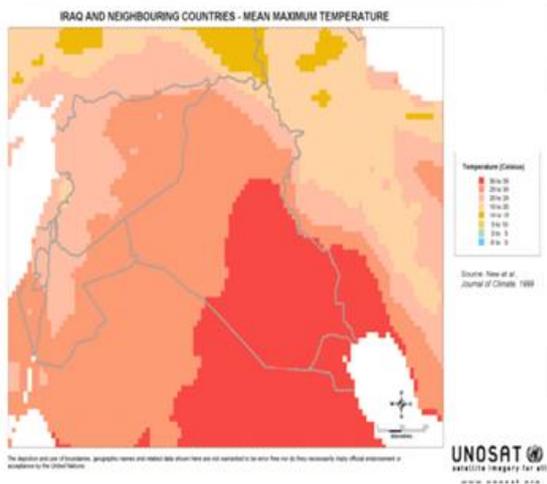


Figure 9: Maximum mean in Iraq temperature.

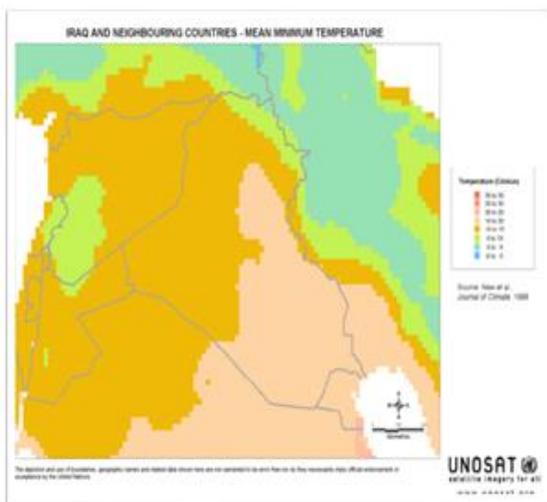


Figure 10: Mean Minimum Iraq Temperature.

The sunshine record, appendix A, shows that during the dry season, May - September, the average value of the rainy season (October - April) is more than 500 kcal / cm<sup>2</sup>/ day. The values of evaporation and transpiration were calculated using the pen method by a meteorological log. Observations in Fig.11 indicate an average of 1900 mm of transpiration per year. In comparison, the values indicate that the temperature from the northeast to the southwest is gradually converging.

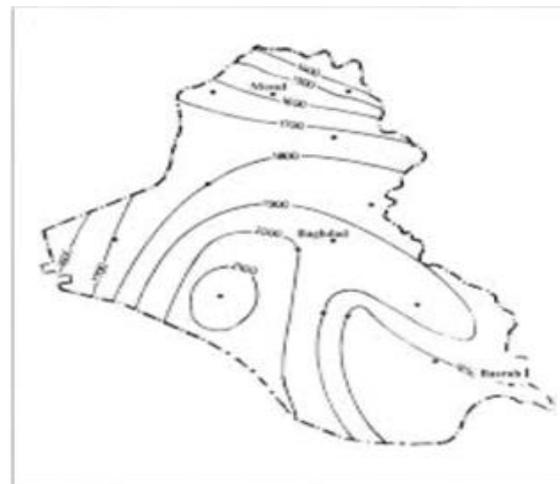


Figure 11: The counters in evaporation of Iraq.

## REFERENCES

- [1]. Al-Rimmawi, H. (2012). Middle East Chronic Water Problems: Solution Prospects. Energy and Environment Research, 2(1). <https://doi.org/10.5539/eer.v2n1p28>
- [2]. Bettinelli, P., Avouac, J. P., Flouzat, M., Bollinger, L., Ramillien, G., Rajaure, S., & Sapkota, S. (2008). Seasonal variations of seismicity and geodetic strain in the Himalaya induced by surface hydrology. Earth and Planetary Science Letters, 266(3-4), 332-344. <https://doi.org/10.1016/j.epsl.2007.11.021>
- [3]. Elaiwi, A. H., Hasan, K., & Al-Hadithi, M. (2020). Management of Natural Iraqi Water Resources, Aims and Challenges. In IOP Conference Series: Materials Science and Engineering (Vol. 881). Institute of Physics Publishing. <https://doi.org/10.1088/1757-899X/881/1/012181>



- [4]. Istepanian, H., Alwash, A., Tollast, R., & Al-Shibaany, Z. Y. (2018). Towards Sustainable Water Resources Management In Iraq. Iraq Energy Institute, (August), 1–45.
  - [5]. Obeed Al-Azawi, A. A., & Ward, F. A. (2017). Groundwater use and policy options for sustainable management in Southern Iraq. *International Journal of Water Resources Development*, 33(4), 628–648.  
<https://doi.org/10.1080/07900627.2016.1213705>
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