

*Long-term annual mean precipitation for the period from 1981 - 2019

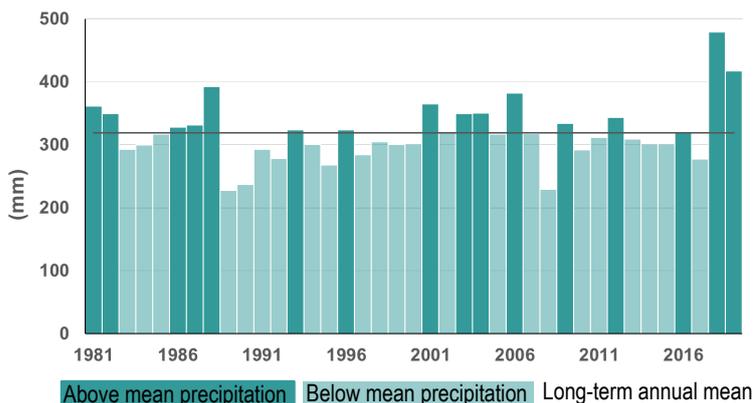
Background

In Iraq, various long term challenges related to water shortages and flooding have raised a new set of cross-sectoral issues with implications for WASH interventions, yet detailed information on water surface areas is limited. To support the WASH Cluster in Iraq in the coordination of strategic planning regarding the emergency risk response, REACH conducted a preliminary precipitation analysis of the Euphrates-Tigris Basin, as part of a wider water surface change analysis.

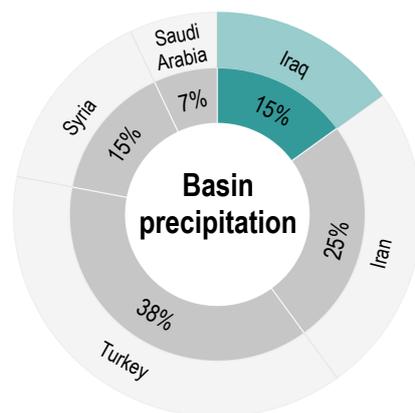
Basin precipitation distribution

Despite Iraq covering nearly half of the Euphrates-Tigris basin (47%) the country receives just a small fraction (15%) of the annual basin precipitation. Furthermore, the long-term precipitation pattern reveals that incoming rainfall is mostly concentrated in the northern areas whereas the south of the country often remains dry. In contrast, neighbouring countries such as Turkey, Iran and Syria overall receive the main share (85%) of the annual basin precipitation, which is distributed over just 53% of the basin area. The Turkish part of the basin in particular receives the highest share of the annual basin precipitation (38%) while Turkey covers only 21% of the total basin area.

Annual mean basin precipitation (1981-2019)



Annual mean basin precipitation by country



River flow

It is estimated¹ that Turkey contributes approximately 89% and Syria 11% of the annual flow of the Euphrates. The annual flow of the Tigris originates for approximately 51% in Turkey and 10% in Iran. Despite the fact that the remaining 39% originates in Iraq, all the tributaries that feed the Tigris within Iraq originate in either Turkey or Iran. In addition, dams along both rivers and their tributaries control the inflow into Iraq and within Iraqi territory.¹

Methodology

Basin boundary was extracted with Arc Pro using USGS HydroSHEDS digital elevation model. Satellite precipitation data (Climate Hazards Group InfraRed Precipitation with Station data) was processed in Google Earth Engine for the period between 1981 - 2019.

¹ FAO (2009) Irrigation in the Middle East region in figures