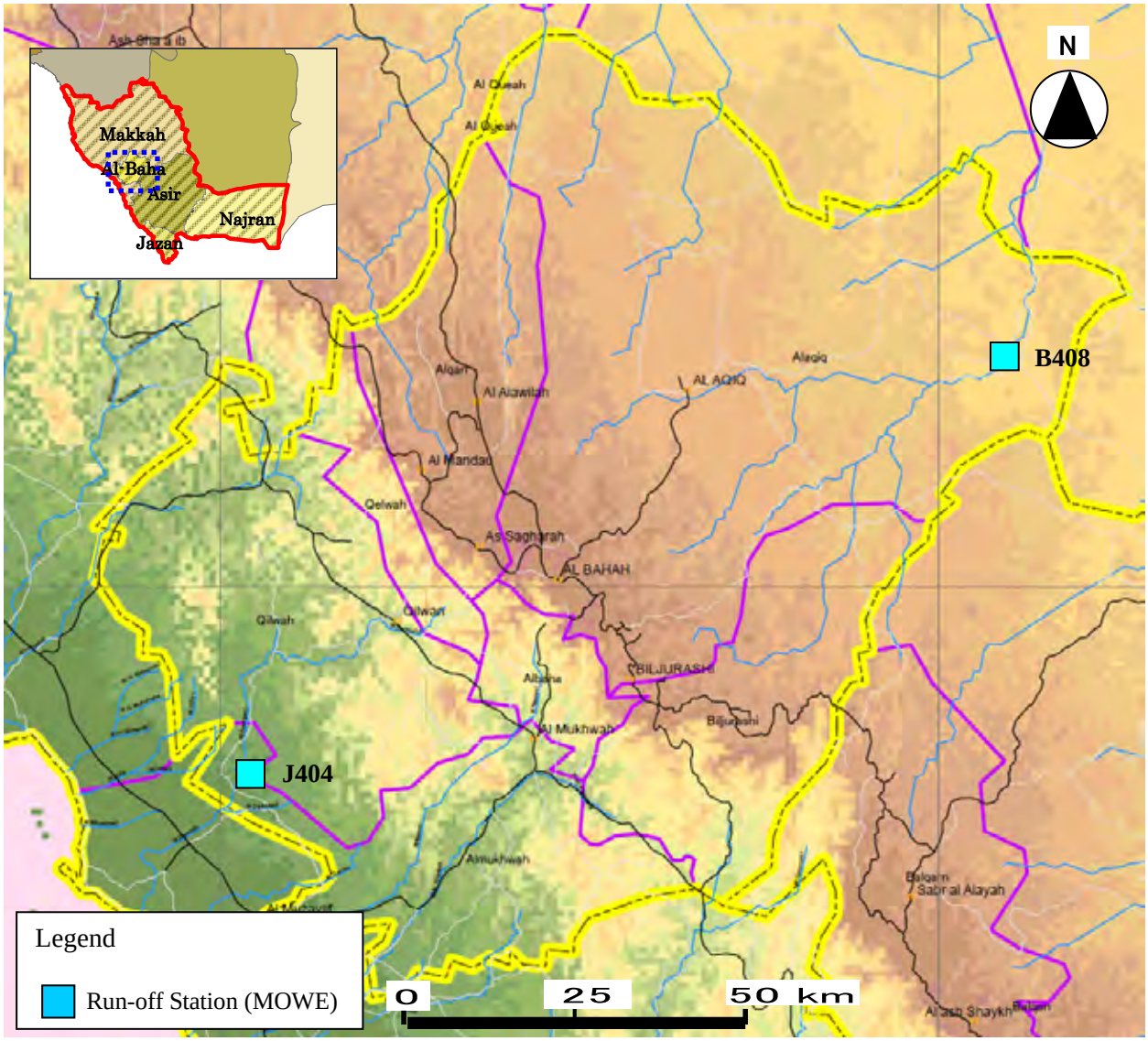


Figure1-9 Runoff Stations in Al Baha Region

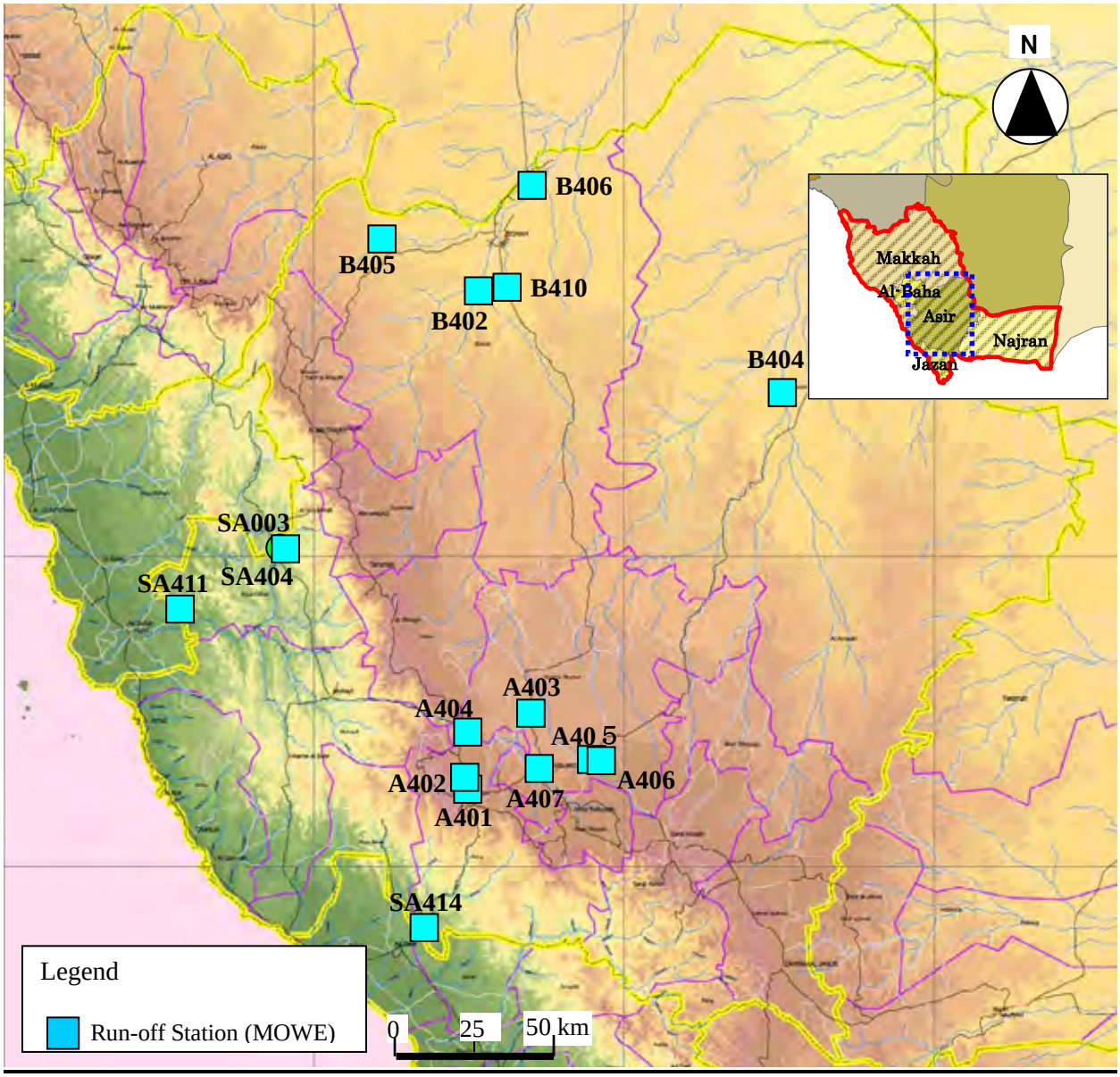


Figure1-10 Runoff Stations in Asir Region

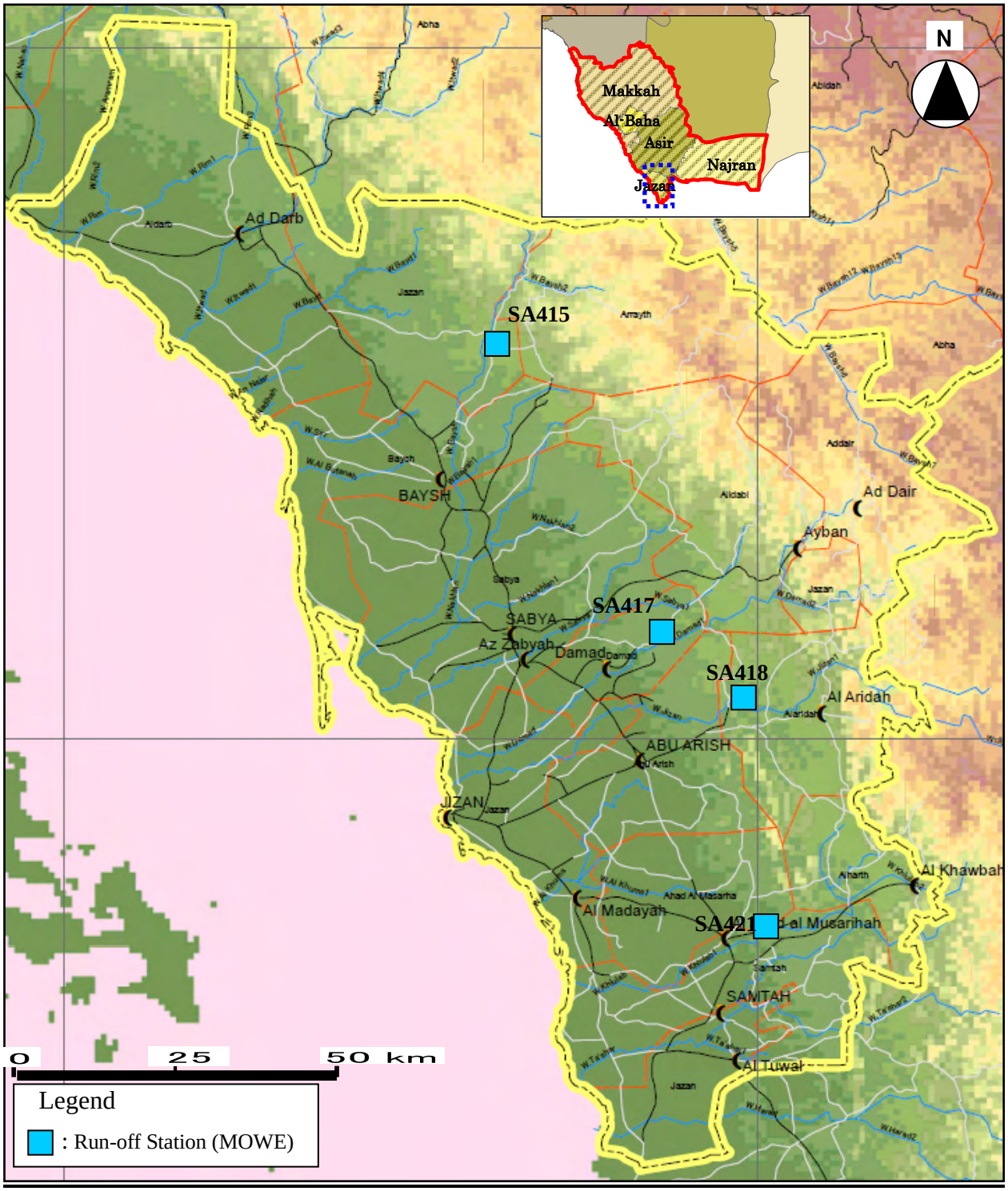


Figure1-11 Runoff Stations in Jazan Region

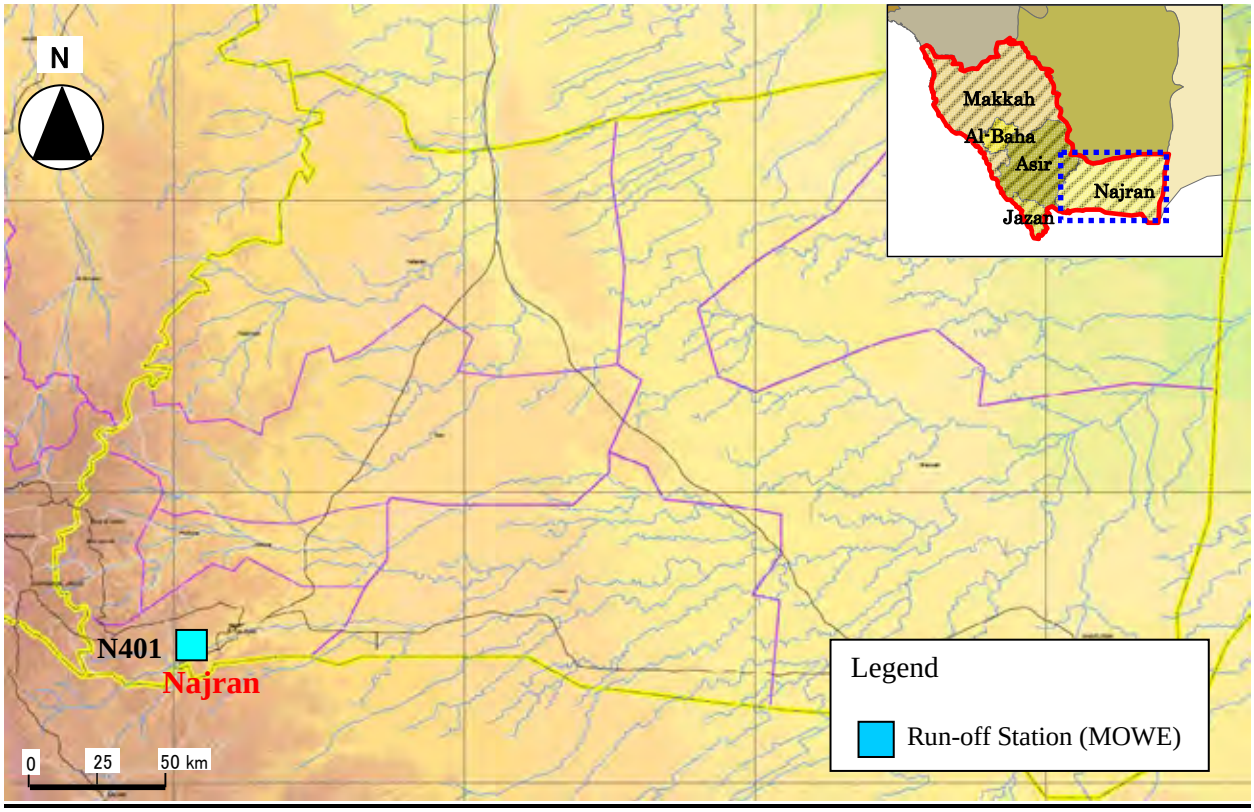


Figure1-12 Runoff Stations in Najran Region

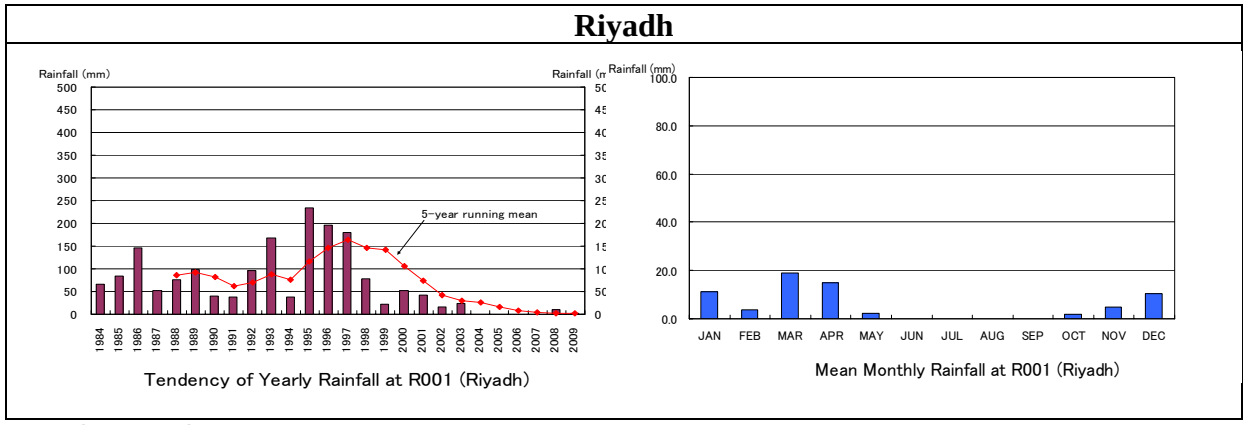
2. Hydrological Characteristics

2.1 Rainfall Characteristics in the Study Area

Figure2-1 shows the isohyetal map of the study area using the mean annual rainfall data. The change over the years and the distribution of monthly rainfall are arranged and shown in Figure2-3 based on the rainfall data of rainfall stations shown in Figure2-2.

The rainfall characteristics in the study area is summarized below with reference to the figure.

- There is a lot of rain in Hijaz Asir Highland with over 200 mm, even to 400 mm or 500 mm in mean annual rainfall.
- Except Hijaz Asir Highland and the surrounding area, there is 200 mm below in mean annual rainfall.
- There is a little rain with 50 mm below in a northeastern part, facing the Red Sea, in Makkah Region, a eastern part of Asir Region and most of Najran Region especially.
- As mentioned above, the annual rainfall of the study area except Hijaz Asir Highland and the surrounding area is 50 mm below or 50 mm to 100 mm, which is equal to the annual rainfall in Riyadh as the capital of KSA. (seer to the figure below)
- Most of the study area has a lot of rain through October into May and a little rain through June into July, but on the other hand, Jazan Region has a lot of rain through July into September and a little through December into February.



Sources:MOWE

Change Over Years and Monthly Rainfall Distribution in Riyadh

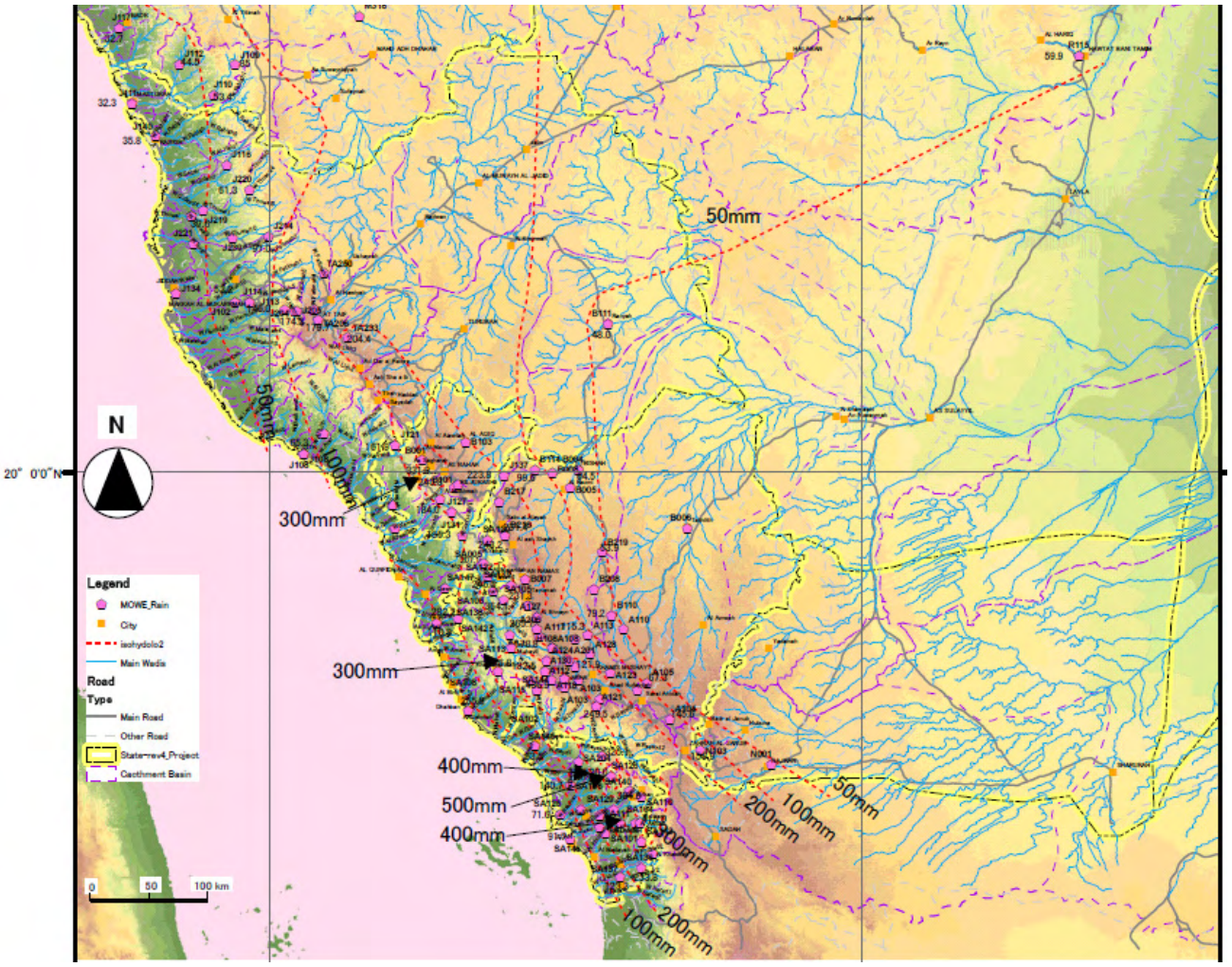


Figure2-1 Isohyetal Map in the Study Area

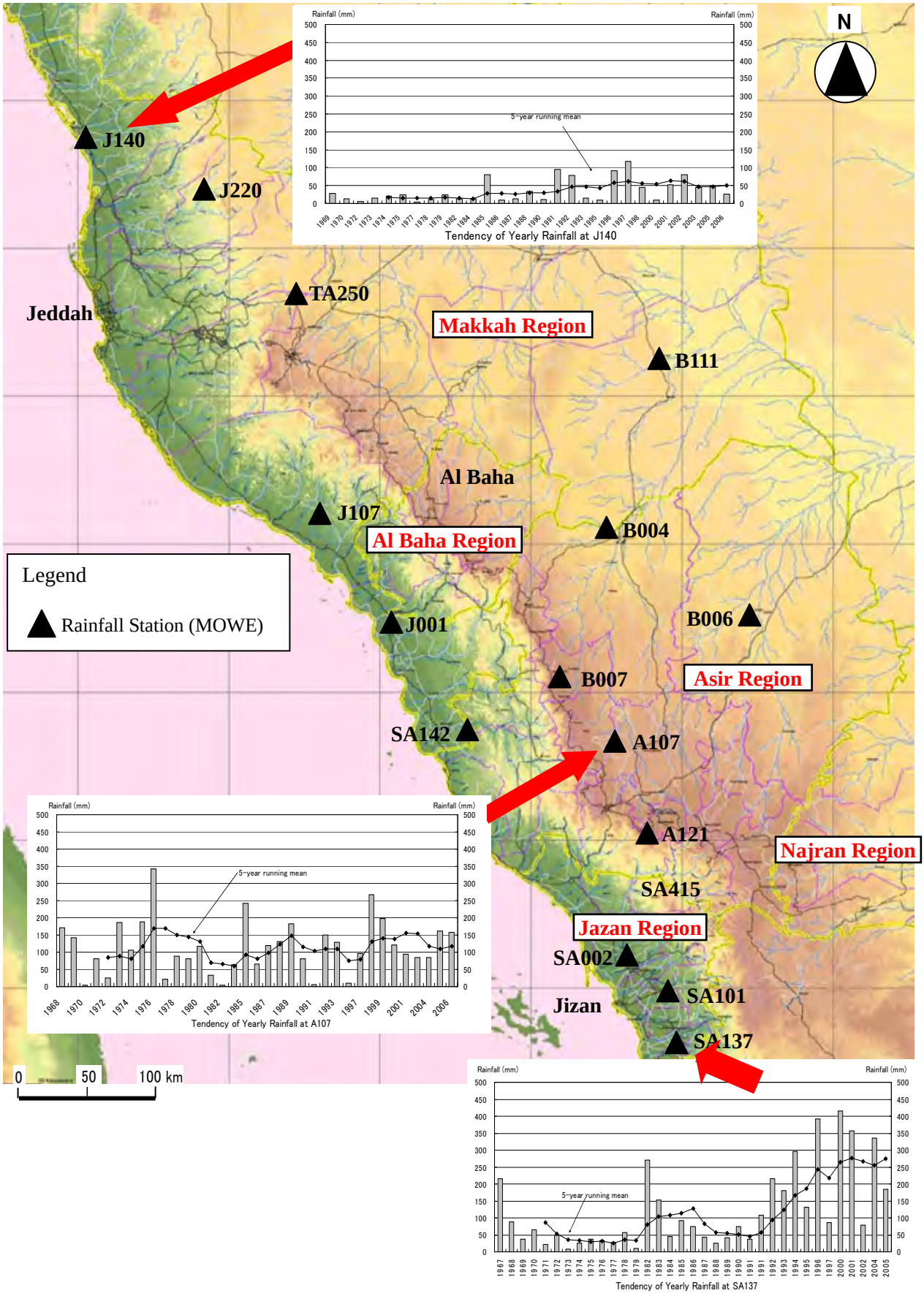
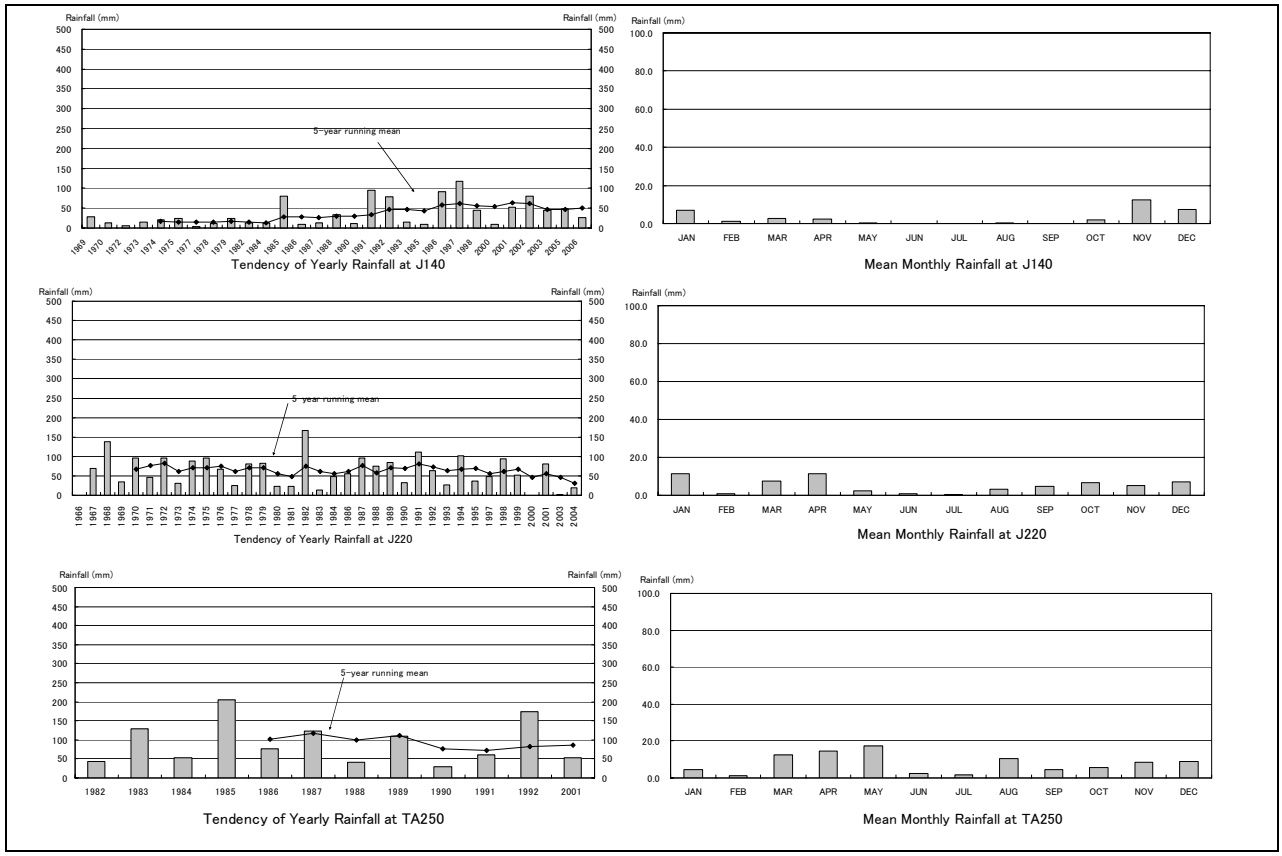
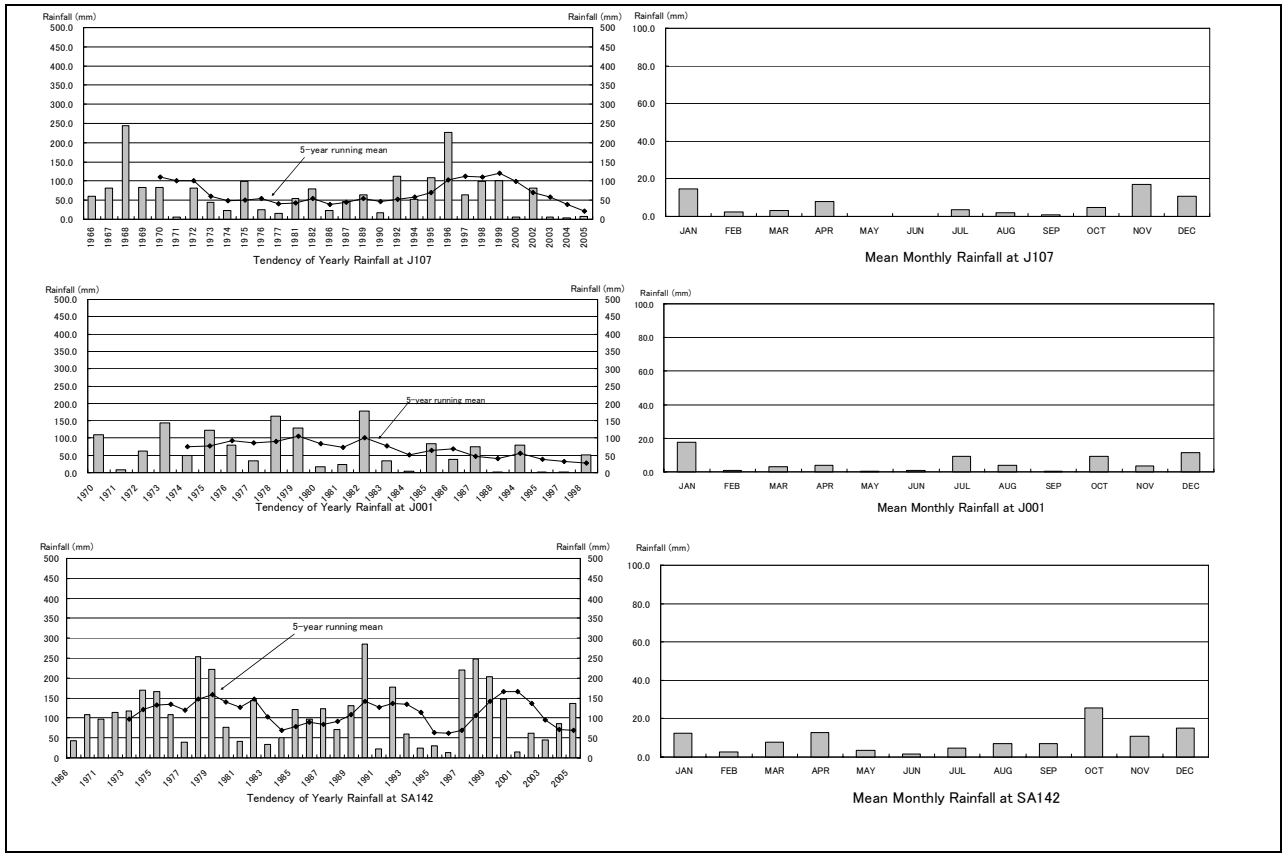


Figure2-2 Typical Rainfall Stations in the Study Area



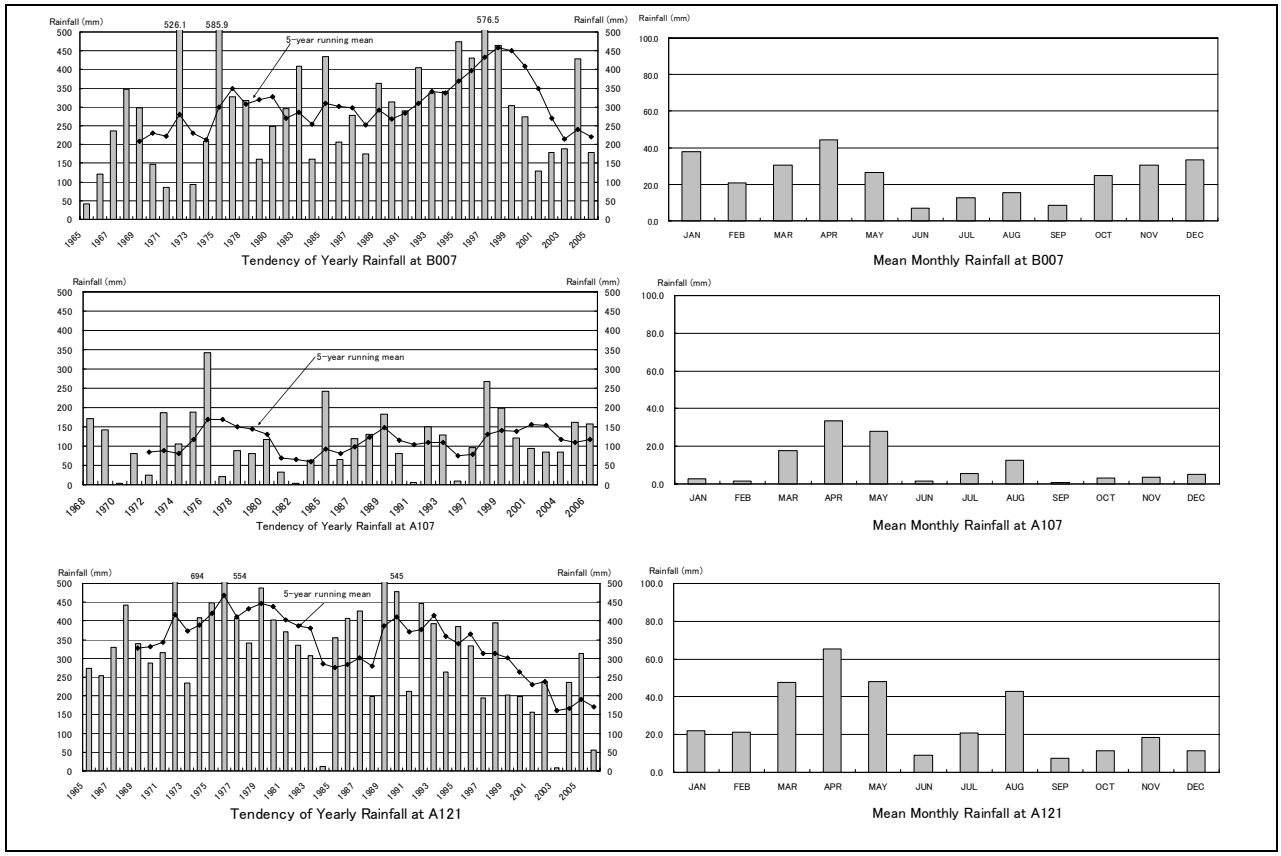
Sources:MOWE

Figure2-3(1) Change Over Years and Monthly Rainfall Distribution in Northern Part



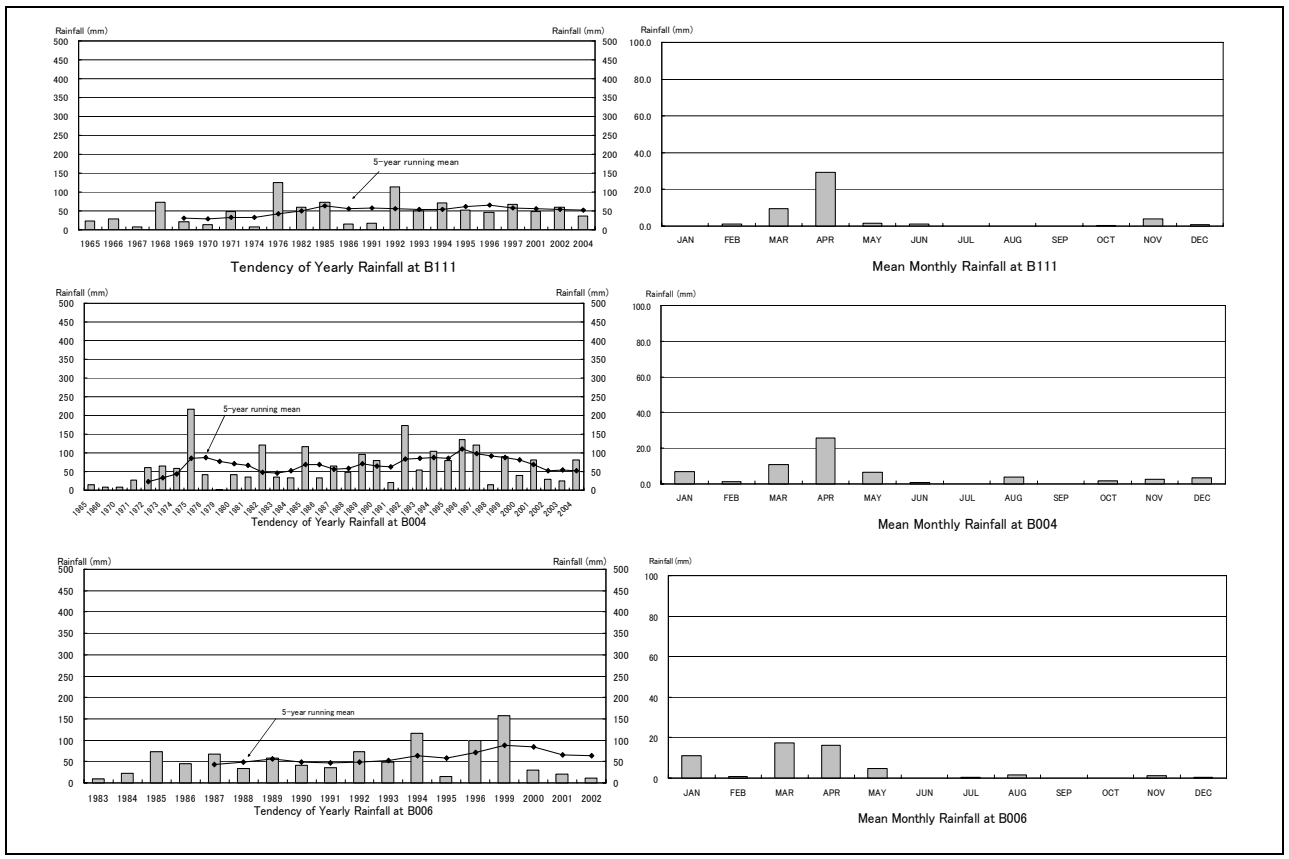
Sources:MOWE

Figure2-3(2) Change Over Years and Monthly Rainfall Distribution in Western Part



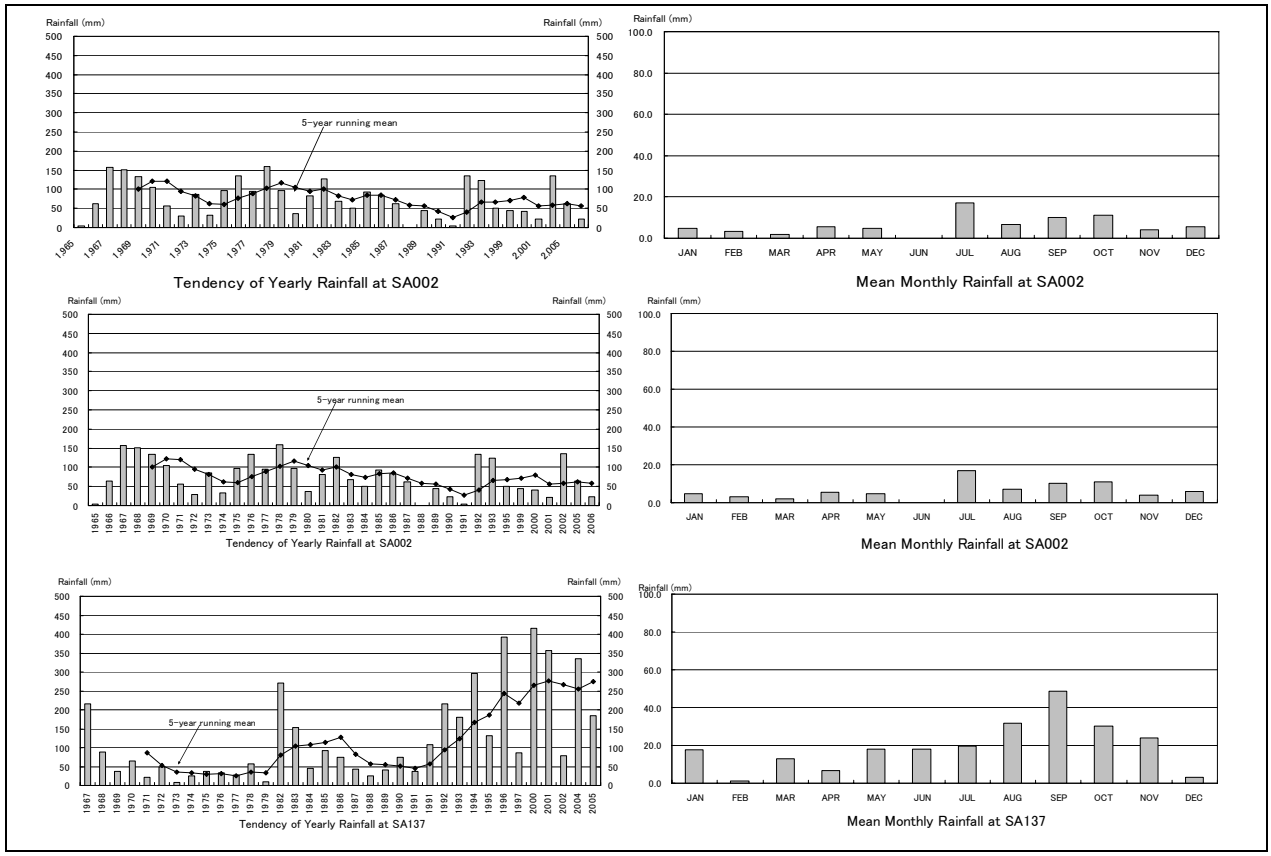
Sources:MOWE

Figure2-3(3) Change Over Years and Monthly Rainfall Distribution in Hijaz Asir Highland



Sources:MOWE

Figure2-3(4) Change Over Years and Monthly Rainfall Distribution in Eastern Part



Sources:MOWE

Figure2-3(5) Change Over Years and Monthly Rainfall Distribution in Southern Part

2.2 Rainfall Characteristics in Regions

(1) Makkah Region

There are 34 Rainfall Stations under the control of MOWE as shown in Figure2-4, besides these stations, PME has 4 Rainfall Gauges. The tendencies for rainfall distribution are arranged and shown in Figure2-5 based on the typical stations data.

The rainfall characteristics in Makkah Region are summarized below.

- Annual Rainfall varies rises or falls fluctuating widely every year.
- There is a lot of rain with over 200 mm, even to 300 mm in mean annual rainfall in the neighborhood of Hijaz Asir Highland near the border with Al Baha Region.
- On the other hand, except Hijaz Asir Highland, there is 200 mm below in mean annual rainfall.
- There is a little rain with 50 mm below in the flatland facing the Red Sea and the eastern part .
- There is a lot of rain through November into January or through March into May, and a little rain through June into July.
- As there is a lot of rain in southern part near Hijaz Asir Highland, the water resources potential seems to be also limited in this area.
- The mean annual rainfall of Makkah Region is 109 mm calculated by the Isohyetal Map.

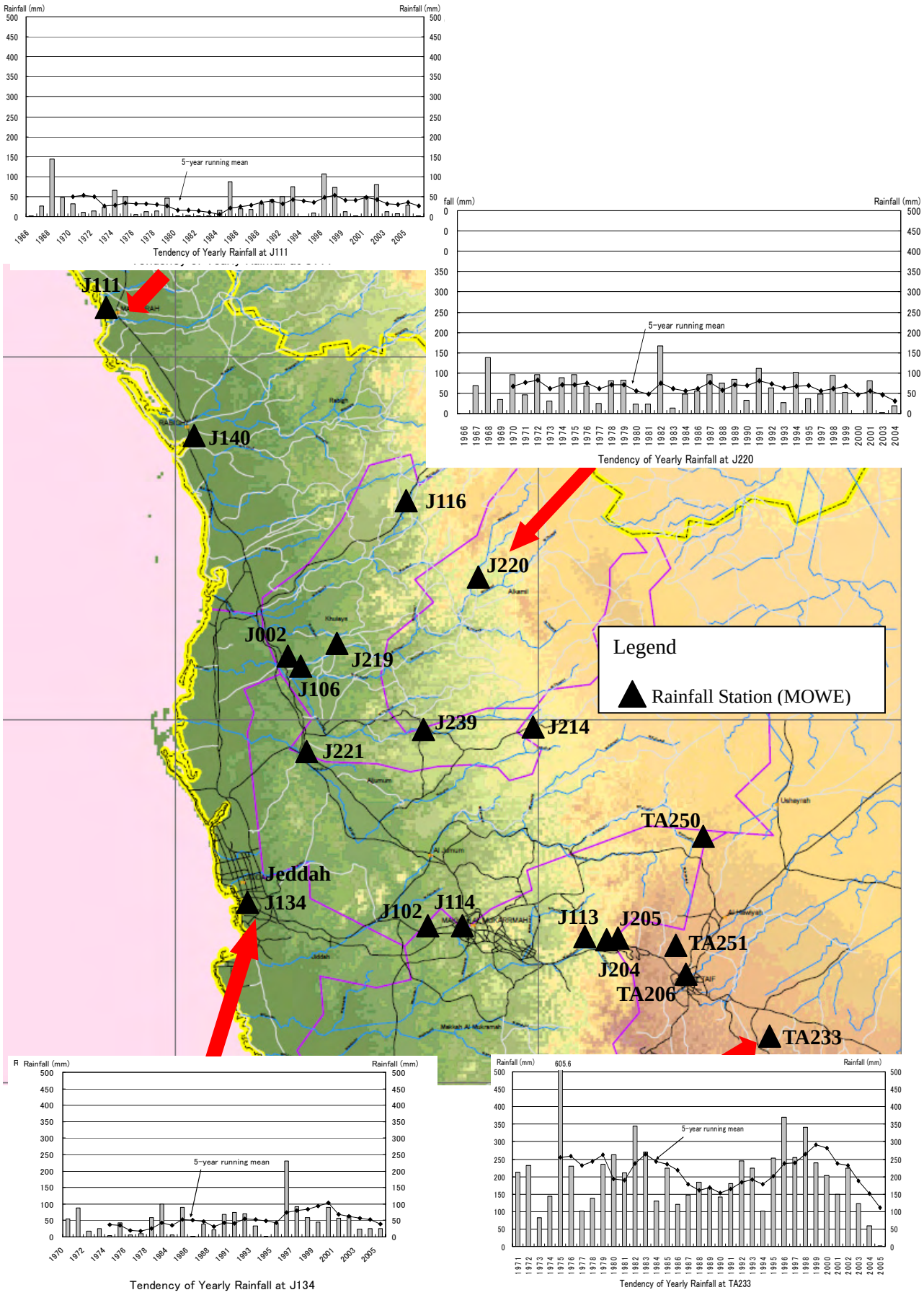


Figure2-4(1) Rainfall Stations in Makkah Region

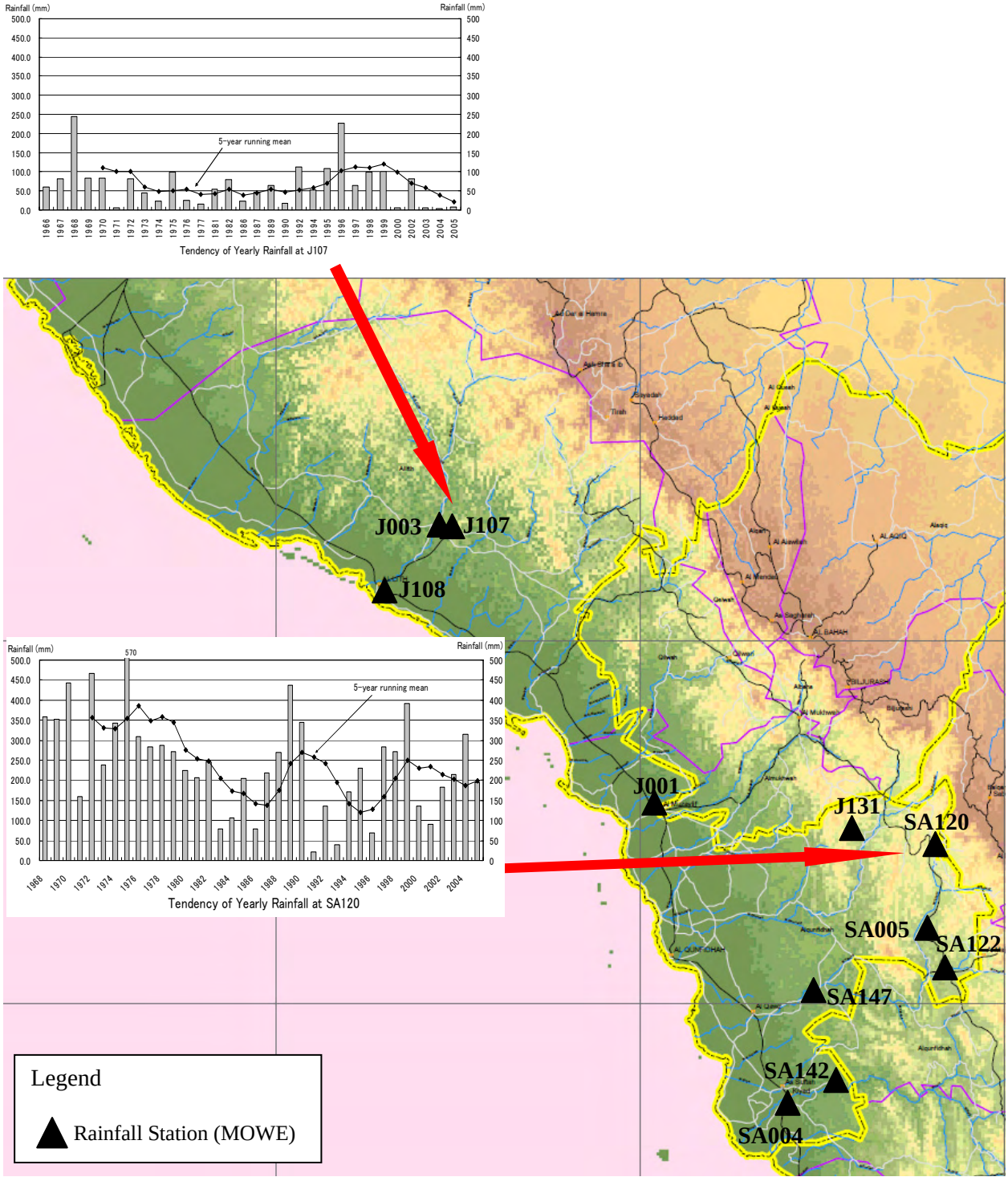


Figure2-4(2) Rainfall Stations in Makkah Region

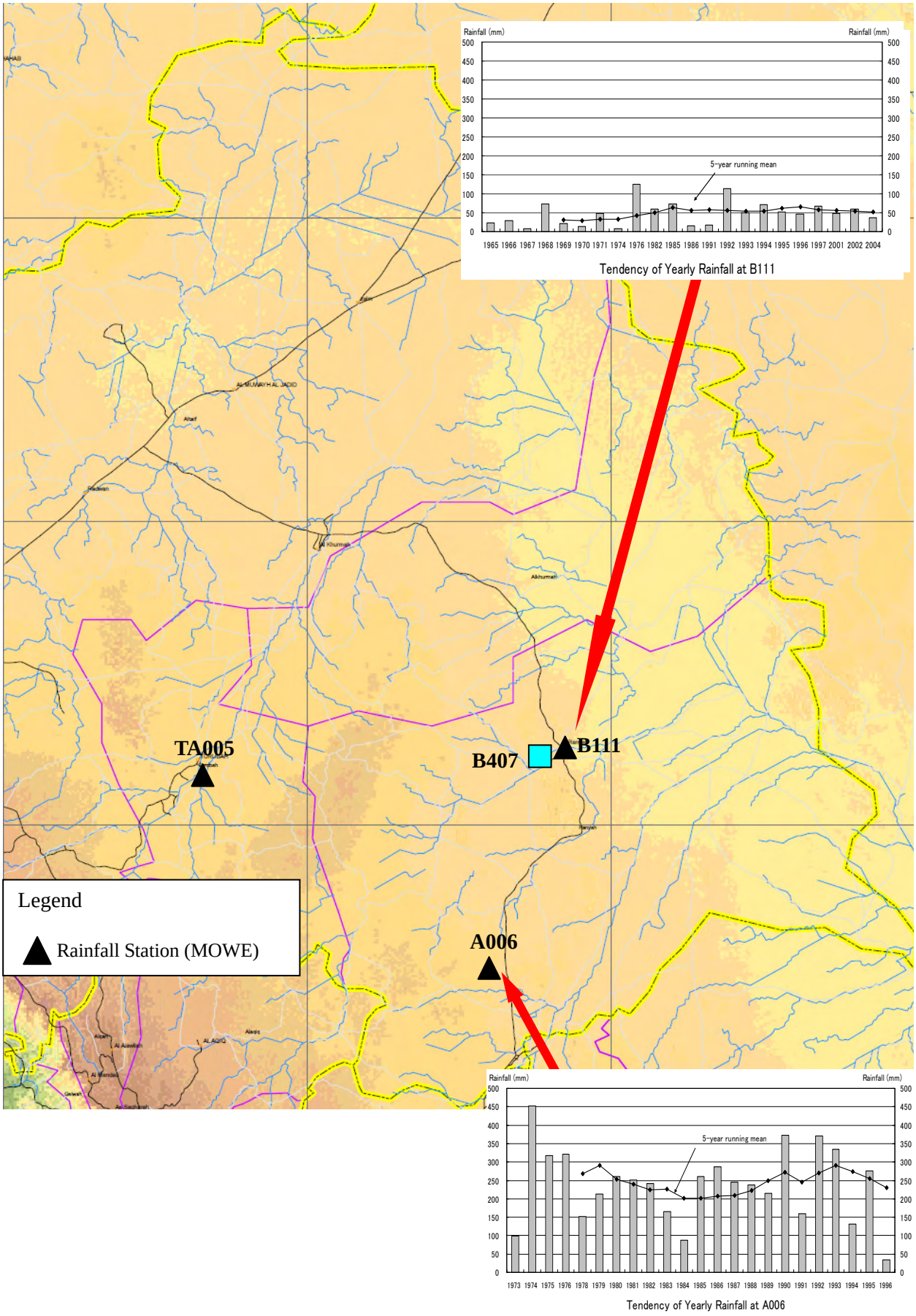


Figure2-4(3) Rainfall Stations in Makkah Region