Government of Nepal
Ministry of Energy, Water Resource and Irrigation
Department of Hydrology and Meteorology
Climate Division (Climate Analysis Section)
Babarmahal, Kathmandu

November 10, 2019

Preliminary Precipitation Summary

Monsoon Season (June-September), 2019

Highlight

Monsoon entered in Nepal on 20th June and withdrew from Nepal on 12th October this year. The normal monsoon onset and withdrawal date in Nepal is 10th June and 23rd September respectively.

This summary is prepared based on the total precipitation received during monsoon season (June to September) of 2019 at 38 meteorological stations. It is also expressed as percentage of normal precipitation. The normal rainfall is computed for the period of 1981-2010. The analysis shows Far-Western province, southern parts of province 5, most parts of Gandaki province and northern parts of province 1 received below normal precipitation. On the contrary, southern part of province 1 and southwestern part of province 5 received above normal precipitation. Rest of the country received normal rainfall (Figure 1). Among the 38 stations, Lumle recorded the highest rainfall of 4095.2 mm (87.5% of normal rainfall) whereas Jomsom recorded the lowest rainfall of 201.3 mm (138.3% of normal rainfall) as usual. In terms of the normal rainfall, the highest (166.2%) and the lowest (67.1%) percentage of normal rainfall is recorded at Udayapurgadhi and Pokhara airport respectively. Based on the average of 38 stations shown in figure 1, Nepal received 96.2% of the normal rainfall during the season. However, based on the average of 20 stations shown in figure 4, Nepal received only 91.4% of normal precipitation of the season. In general, 90 to 110% of normal rainfall is considered as the normal rainfall for the season.

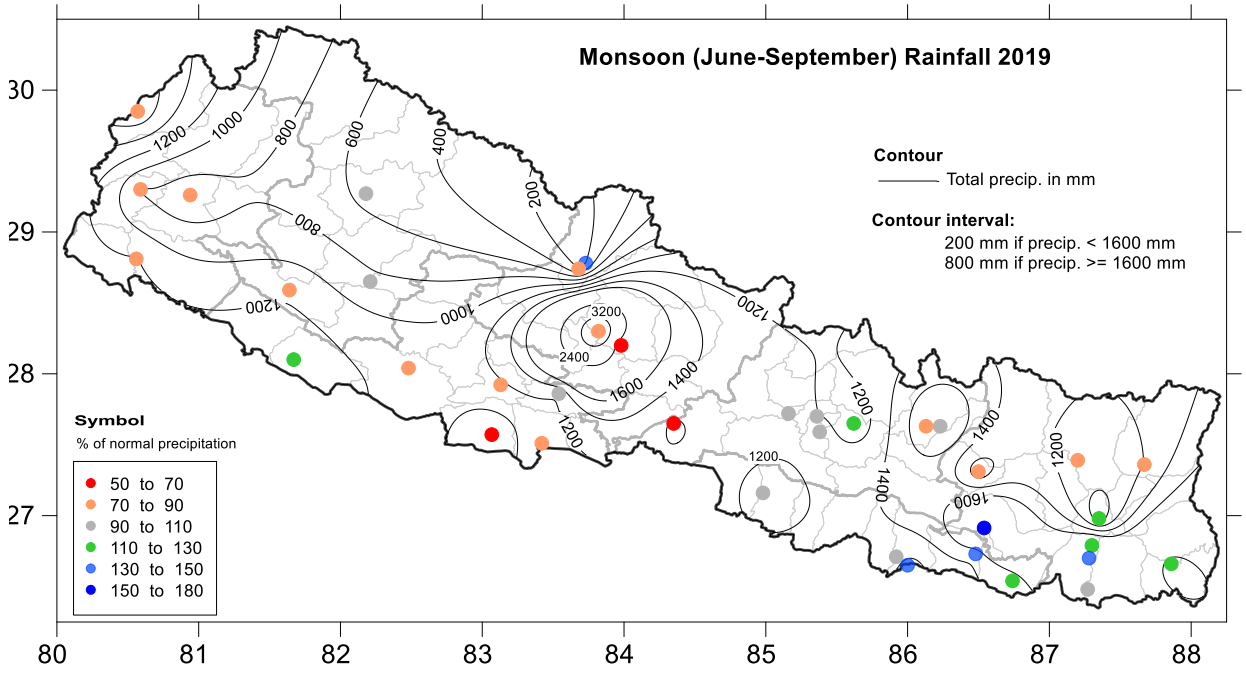

Figure 1: In the above map, contour lines indicate the total precipitation during June-September 2019 in mm and coloured circles indicate the percentage of normal precipitation at the meteorological stations. The normal precipitation is defined as the average of total precipitation of June to September from 1981 to 2010.

Figures 2 and 3, respectively, show the temporal distribution of the average precipitation of 20 stations shown in figure 4 compared with annual and monsoon season. When we analyzed the temporal distribution of average of daily accumulated precipitation of 20 stations throughout the year (Jan - Dec), it is seen that above normal precipitation occurred from end of January to mid-June and then normal precipitation until almost mid-August. However, precipitation is below normal after the mid-August (Figure 2). Similarly, the temporal distribution of average of daily accumulated precipitation of 20 stations during monsoon season shows below normal precipitation until July 12 and then normal precipitation until July 28. Then after below normal precipitation was observed.

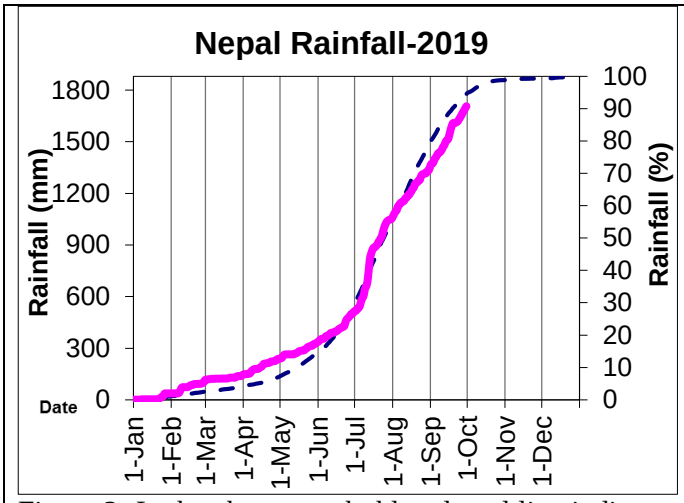

Figure 2: In the above graph, blue dotted line indicates the average of daily accumulated normal precipitation of 20 stations throughout the year (Jan - Dec) and pink solid line indicates the average of daily accumulated precipitation of this year. The 20 stations are shown in figure 4.

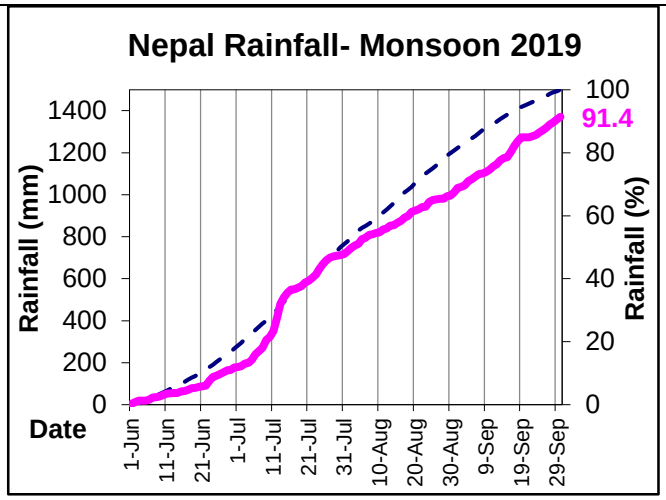

Figure 3: In the above graph, blue dotted line indicates the average of daily accumulated normal precipitation of 20 stations during monsoon season (Jun - Sep) and pink solid line indicates the average of daily accumulated precipitation of this monsoon. The 20 stations are shown in figure 4.

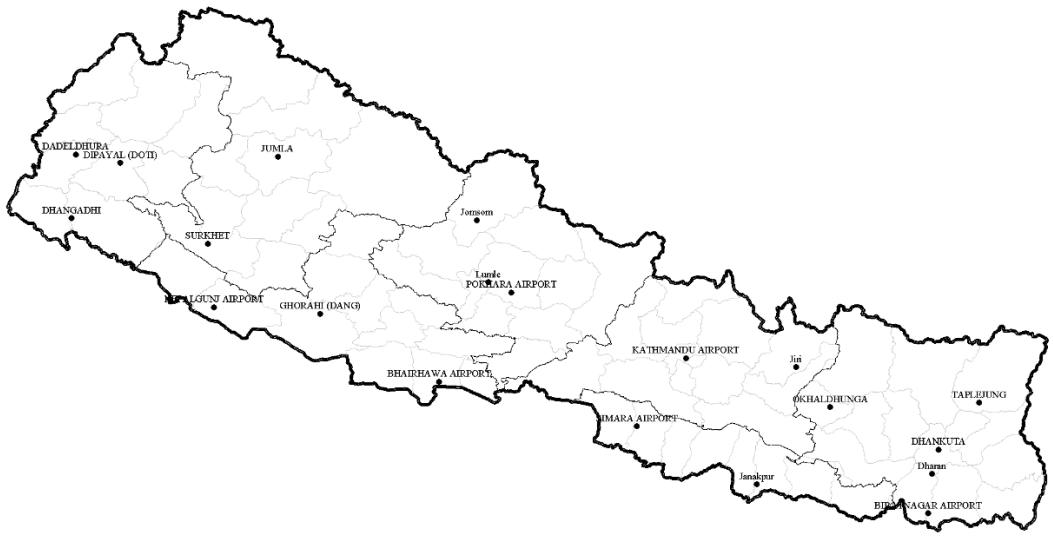

Figure 3: Location map of 20 stations used in the above graphs.