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Date: 16-09-2021

Extended range forecast for Gujarat region, Saurashtra-Kutch and Diu, Daman, Dadar Nagar Havelli

Current weather status for last week (09th September to 15th September 2021)& outlook for next two weeks (17th September to 30th September 2021)

1) Realized weather (09th September to 15th September 2021):

1.1) Main Features

Monsoon was vigorous over Saurashtra-Kutch and active over Gujarat region during 08th September 2021; active over Gujarat region on 09th September 2021; vigorous over Gujarat region and active over Saurashtra-Kutch on 10th and 11th September 2021; vigorous over Gujarat State on 12th and 13th September 2021; vigorous over Saurashtra- Kutch; active over Gujarat region on 14th September 2021.

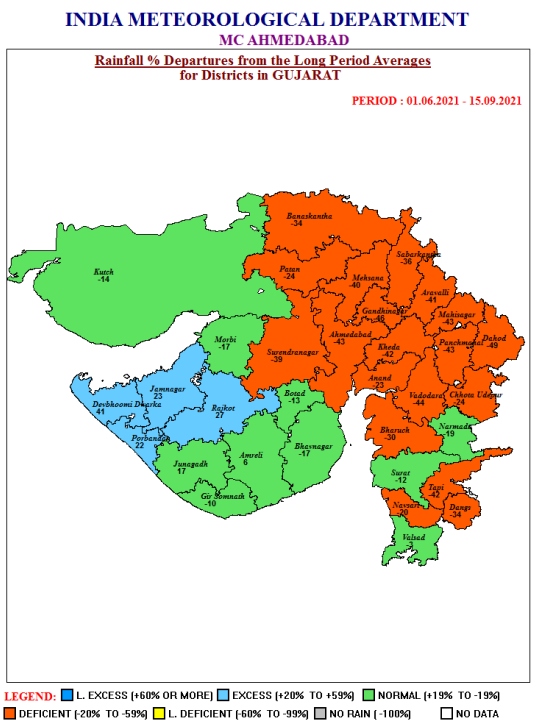
Exceptionally heavy rainfall occurred at isolated places in the districts of Saurashtra namely Rajkot, Jamnagar & Junagadh on 13th September 2021.

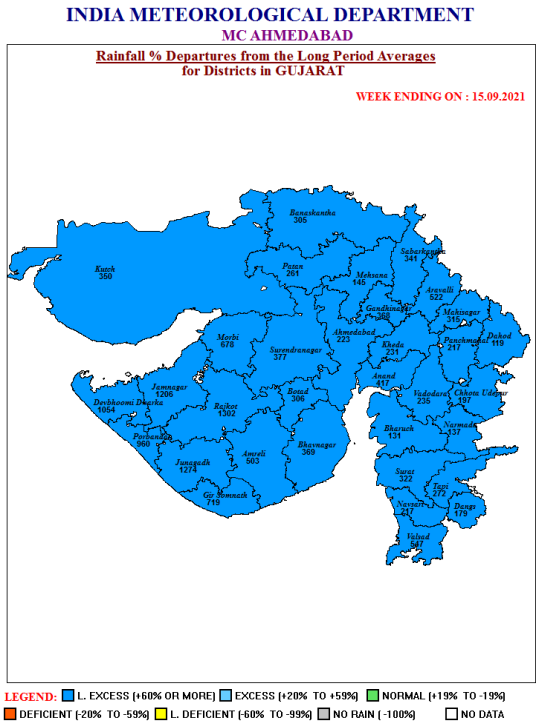
Extremely heavy rainfall occurred at isolated places in Gir-Somnath district of Saurashtra during on 8th September ; in Rajkot district of Saurashtra on 13th September 2021.

Very heavy rainfall occurred at isolated places in district of Saurashtra namely Amreli, Dwarka, Gir-Somnath, Junagadh, Porbandar and Rajkot, in district Mahisagar of North Gujarat during on 08th September 2021; in Valsad district of South Gujarat region and

in the districts of Saurashtra namely Jamnagar and 0n 12th September 2021; in the districts of Saurashtra namely Rajkot, Porbandar, Junagadh and Gir Somnath; in the districts of South Gujarat region namely Valsad, Dang and in Daman, Dadra Nagar Haveli on 13th September 2021; in Surat district of South Gujarat region and in Junagadh district of Saurashtra on 14th September 2021.

Heavy rainfall occur at isolated places in districts of Saurashtra. Bhavnagar, Botad, Dwarka, Gir-Somnath, Jamnagar, Junagadh, Morbi, Porbandar and Rajkot, in districts of North Gujarat namely Aravalli, Sabarkantha, Banaskantha on 08th September 2021;in the districts of North Gujarat region namely Banaskantha, Sabarkantha, Gandhinagar and Aravalli on 09th September 2021 ; in the districts of Gujarat region namely Sabarkantha, Banaskantha, Gandhinagar, Aravalli, Mehsana, Vadodara and Surat and in the districts of Saurashtra-Kutch namely Surendranagar, Morbi and Kutch on 10th September 2021 , in the districts of Gujarat region namely Mahisagar, Panchmahal, Aravalli, Vadodara, Valsad and in Dadara Nagar Haveli & in Bhavnagar district of Saurashtra during 24 hours ending at 0830 hours IST of 12th; in the districts of Gujarat region namely Anand, Dang, Navsari and in Dadara Nagar Haveli and in the districts of Saurashtra namely Rajkot, Dwarka, Junagadh, Jamnagar and Porbandar on 12th September 2021; in the districts of Saurashtra namely Rajkot, Jamnagar, Porbandar, Junagadh, Amreli, Morbi, and Dwarka & Gir Somnath & in the districts of Gujarat region namely Ahmedabad, Chhota Udepur, Dangs, Navsari, Valsad, Tapi and in Daman, Dadra Nagar Haveli on 13th Septemebr 2021 ,in the districts of South Gujarat region namely Surat and Chhota Udepur & in the districts of Saurashtra- Kutch namely Junagadh, Jamnagar, Rajkot, Amreli, and Dwarka & Kutch on 14th September 2021.





Season's rainfall for the period from 01-06-21 to 15-09-2021

Week's rainfall for the week ending on 15/09/2021

1.1) DISTRIBUTION OF RAINFALL:

REGION/DATE	09.09.2021	10.09.2021	11.09.2021	12.09.2021	13.09.2021	14.09.2021	15.09.2021
NORTH / SOUTH GUJARAT	WS/ WS	WS/ WS	WS/WS	WS/WS	WS/ WS	WS/ WS	WS/ FWS
SAURASHTRA/ KUTCH	WS/ WS	SCT/ ISOL	FWS/ WS	FWS/ WS	WS/ WS	WS/ WS	WS/ WS

Legends: Dry: No rain, ISOL: At isolated places, SCT: At a few places, FWS: at many places, WS: at most places

2)Chief synoptic conditions:

2.1 Chief synoptic condition 09th to 15th September 2021:

A Low Pressure Area was seen over central parts of West Madhya Pradesh & adjoining East Rajasthan on 08th September became less marked on 09th September 2021. The shear zone seen roughly along Latitude 20°N between 3.1 km & 5.8 km above mean sea level on 08th became less marked on 09th.

A cyclonic circulation lied over central parts of West Madhya Pradesh & adjoining East Rajasthan extending up to 7.6 km above mean sea level tilting southwestwards with height on 09th September 2021. The cyser intensified into a Low Pressure Area over East Rajasthan & neighbourhood and associated cyclonic circulation extended up to 5.8 km above mean sea level tilting southwestwards with height on 10th September, same system persisted and the associated cyclonic circulation extended up to 7.6 km above mean sea level tilting south westwards with height on 11th September . The Low Pressure Area over East Rajasthan & neighbourhood lay over southwest Rajasthan & adjoining Gujarat Region with the associated cyclonic circulation extending up to 5.8 km above mean sea level tilting southwest wards with height on 12th September and persisted on 13th September. The Low Pressure Area over Gujarat region & neighbourhood became less marked, however, the associated cyclonic circulation now lied over south Gujarat Region and extends up to 5.8 km above mean sea level on 14th September, persisted and extended up to 3.1 km above mean sea level on 15th September 2021 .

A trough ran between 3.1 km & 5.8 km above mean sea level from Northeast Arabian Sea to north Odisha across south Gujarat, south Madhya Pradesh and north Chhattisgarh tilting southwards with height on 09th September 2021, ran from Northeast Arabian Sea to Eastcentral Bay of Bengal across Gujarat, cyclonic circulation associated with Low Pressure Area over East Rajasthan & neighbourhood, Madhya Pradesh, Chhattisgarh, Odisha between 3.1 km & 7.6 km above mean sea level tilting southwards with height on 10th September 2021, ran from Northeast Arabian Sea to Eastcentral Bay of Bengal across Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Odisha and extends between 1.5 km & 7.6 km above mean sea level tilting southwards with height on 11th September, ran from the cyclonic circulation associated with the Low Pressure Area over southwest Rajasthan & adjoining Gujarat Region to the cyclonic circulation associated with the Well-Marked Low Pressure Area over Northwest & adjoining West central Bay of Bengal across East Rajasthan,

Madhya Pradesh, Chhattisgarh and Odisha between 1.5 km & 5.8 km above mean sea level tilting southwards with height on 12th September 2021. The trough ran from the cyclonic circulation associated with the Low Pressure Area over south Gujarat region & neighborhood to the cyclonic circulation associated with the Deep Depression over north coastal Odisha across south Madhya Pradesh and Chhattisgarh between 1.5 km & 5.8 km above mean sea level tilting southwards with height on 13th Septemebr, ran from the cyclonic circulation over south Gujarat region & neighborhood to the cyclonic circulation associated with the Depression over north Chhattisgarh & adjoining north interior Odisha across south Madhya Pradesh between 1.5 km & 5.8 km above mean sea level on 14th Sptember, ran from the cyclonic circulation over south Gujarat region & neighborhood to Gangetic West Bengal across the cyclonic circulation associated with the Well marked Low Pressure Area over central parts of north Madhya Pradesh & neighbourhood and seen between 1.5 km & 3.1 km above mean sea level on 15thSeptember 2021.

The monsoon trough at mean sea level passed through Naliya, centre of Low Pressure Area over south Gujarat region and neighborhood, Khandwa, Balaghat, Raipur, Sambalpur, centre of Deep Depression over north coastal Odisha and thence southeastwards to Eastcentral Bay of Bengal extending up to 0.9 km above mean sea level on 13th Septemeber 2021, passed through Deesa, Ahmadabad, Indore, Hosangabad, centre of Depression over north Chhattisgarh & adjoining north interior Odisha, Gopalpur and thence southeastwards to Eastcentral Bay of Bengal and extends up to 0.9 km above mean sea level on 14th Septemebr 2021, passed through Amreli, Vadodara, Shajapur, centre of Well-marked Low Pressure Area over central parts of north Madhya Pradesh & neighbourhood, Ambikapur, Jharsuguda, Balasore and thence southeastwards to Eastcentral Bay of Bengal and extends up to 0.9 km above mean sea level on 15th Septemeber 2021.

2.2 Chief synoptic conditions as on 16th September 2021:

Monsoon trough at mean sea level now passes through Dwarka, Ahmedabad, centre of Well-marked Low Pressure Area over central parts of north Madhya Pradesh & neighbourhood, Sidhi, Daltonganj, Balasore and thence southeastwards to Eastcentral Bay of Bengal and extends upto 0.9 km above mean sea level.

A trough runs from Northwest Arabian Sea to the cyclonic circulation associated with the Well-marked Low Pressure Area over central parts of north Madhya Pradesh &

neighbourhood across Gujarat and East Rajasthan and extends up to 3.1 km above mean sea level.

Cyclonic circulation over south Gujarat Region & neighbourhood extending up to 3.1 km above mean sea level has merged with the above trough.

3) Large scale features

3.1 Currently, neutral ENSO conditions are prevailing over equatorial Pacific region. The latest MMCFS forecast indicates cool neutral ENSO conditions likely to continue for next few seasons.

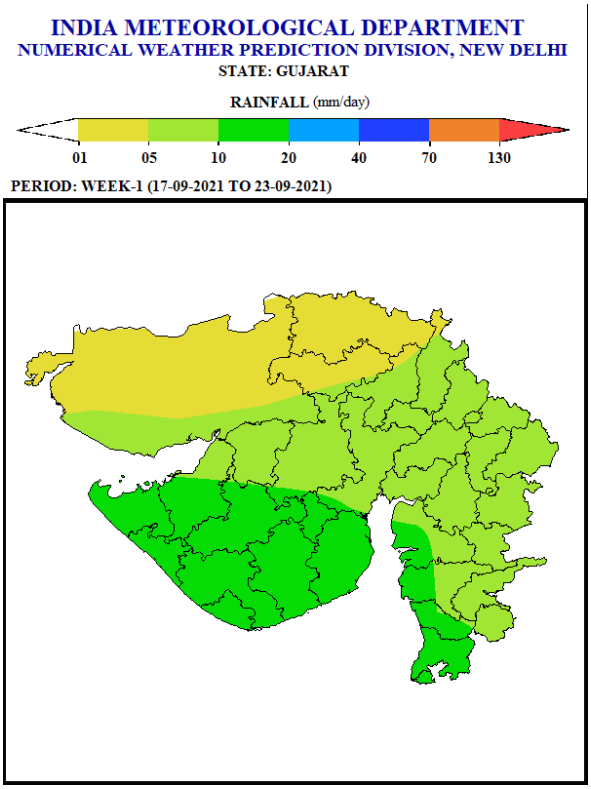
3.2 At present, negative IOD conditions are present over Indian Ocean and the latest MMCFS forecast indicates these negative IOD conditions likely to continue till OND season.

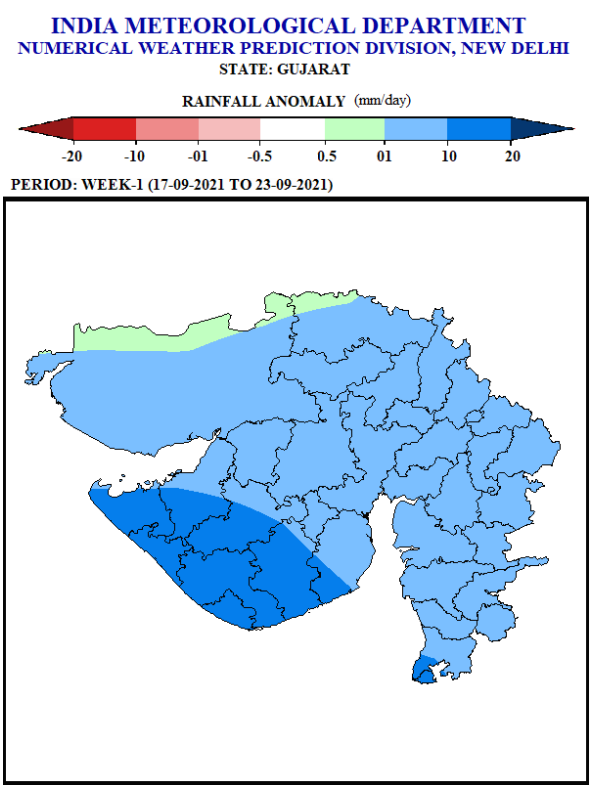
3.3 • The Index of Madden Julian Oscillation (MJO) currently lies in Phase 3 with amplitude more than 1. It is likely to continue in same phase with amplitude gradually decreasing but remaining more than 1 during first half of week 1 and becoming less than 1 during later part of week 1. Thereafter, it will enter in phase 4 with amplitude becoming less than 1 during week 2. The MJO will thus support enhancement of convective activity over the north Indian Ocean during weeks 1 & 2.

4) Forecast for next two weeks(17th September to 30th September 2021)

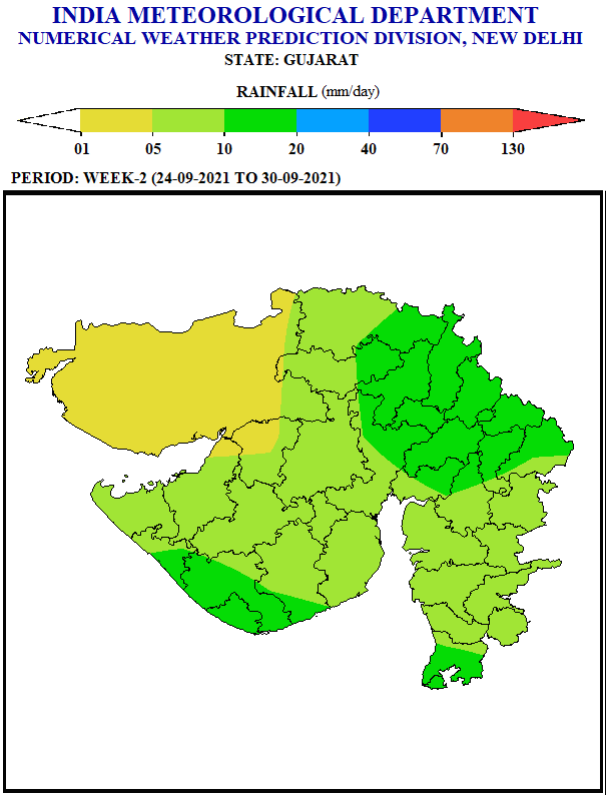
(4.1) Rainfall forecast for week I: (17th September to 23rd September 2021)

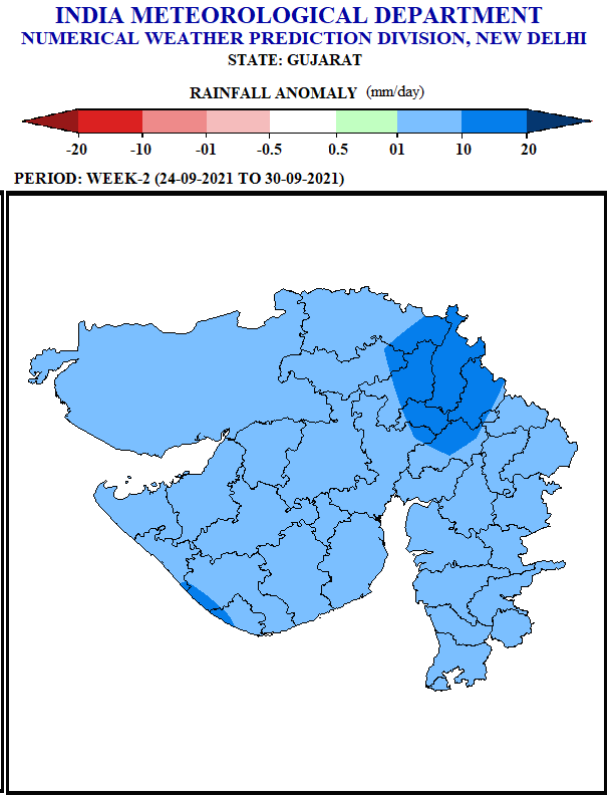
Cumulatively, excess rainfall likely in Saurashtra Kutch and normal rainfall likely ovwe Gujarat region subdivisions during week I. During week 1 likely chances of wide spread rainfall with isolated heavy to very heavy rainfall events in Gujarat region and isolated heavy rainfall likely over Saurashtra Kutch Subdivisions.





(4.1) Rainfall forecast for week II: (24th September to 30th September 2021)



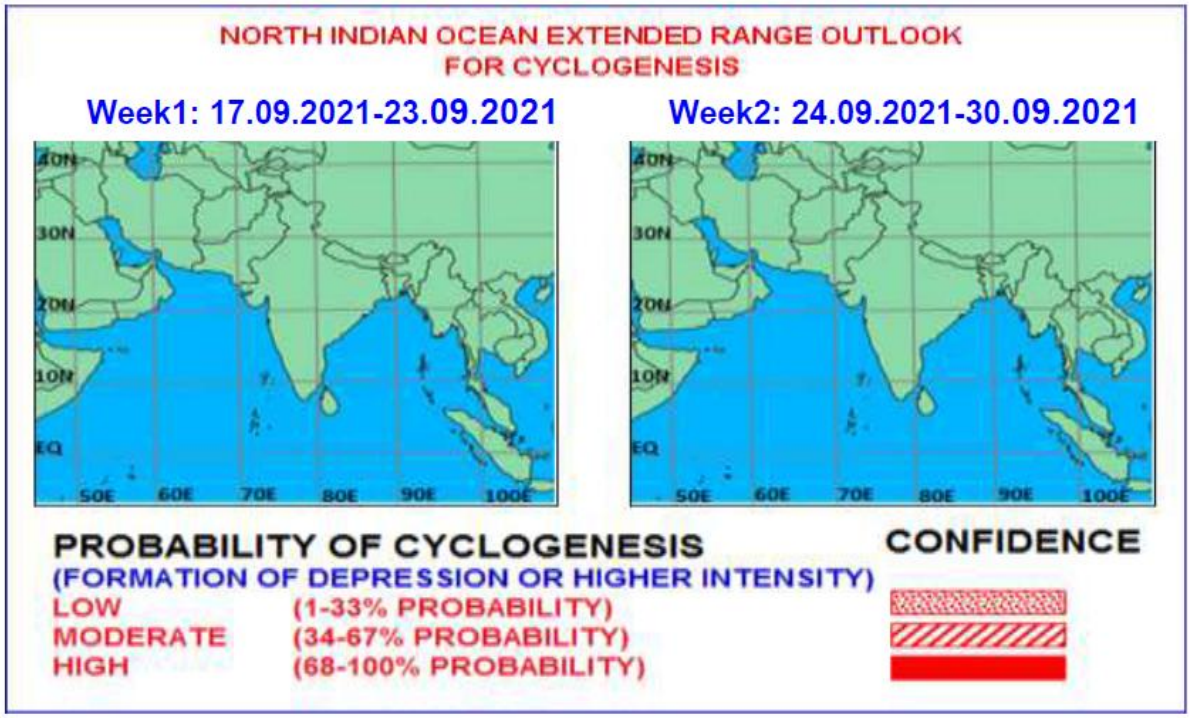


Cumulatively, normal rainfall likely in the Gujarat region and Saurashtra Kutch subdivisions during week II .

5) Probability of Cyclogenesis (formation of depression) over north Indian Ocean.

Considering the ongoing active phase of southwest monsoon, the extension of seasonal mean sea level trough upto west Pacific and the model guidance, it may be inferred that there would be formation of cyclonic circulations over the north Indian Ocean at regular intervals. As on today, a cyclonic circulation has formed over east central BoB and adjoining Myanmar coast. It is likely to move towards northwest BoB off Odisha – West Bengal coasts during the first half of week 1 with subsequent west-north-westward movement across east & central India. There is also likelihood of development of another cyclonic circulation over east-central BoB during the beginning of week 2 with a near similar pattern of movement as the first one.

However, the probability of cyclogenesis is NIL over the region during next two weeks.



Next bulletin will be issued on 23rd September 2021.