

National Agromet Advisory Service Bulletin

Friday 20th June 2014

(For the period 20th to 24th June 2014)



Issued by

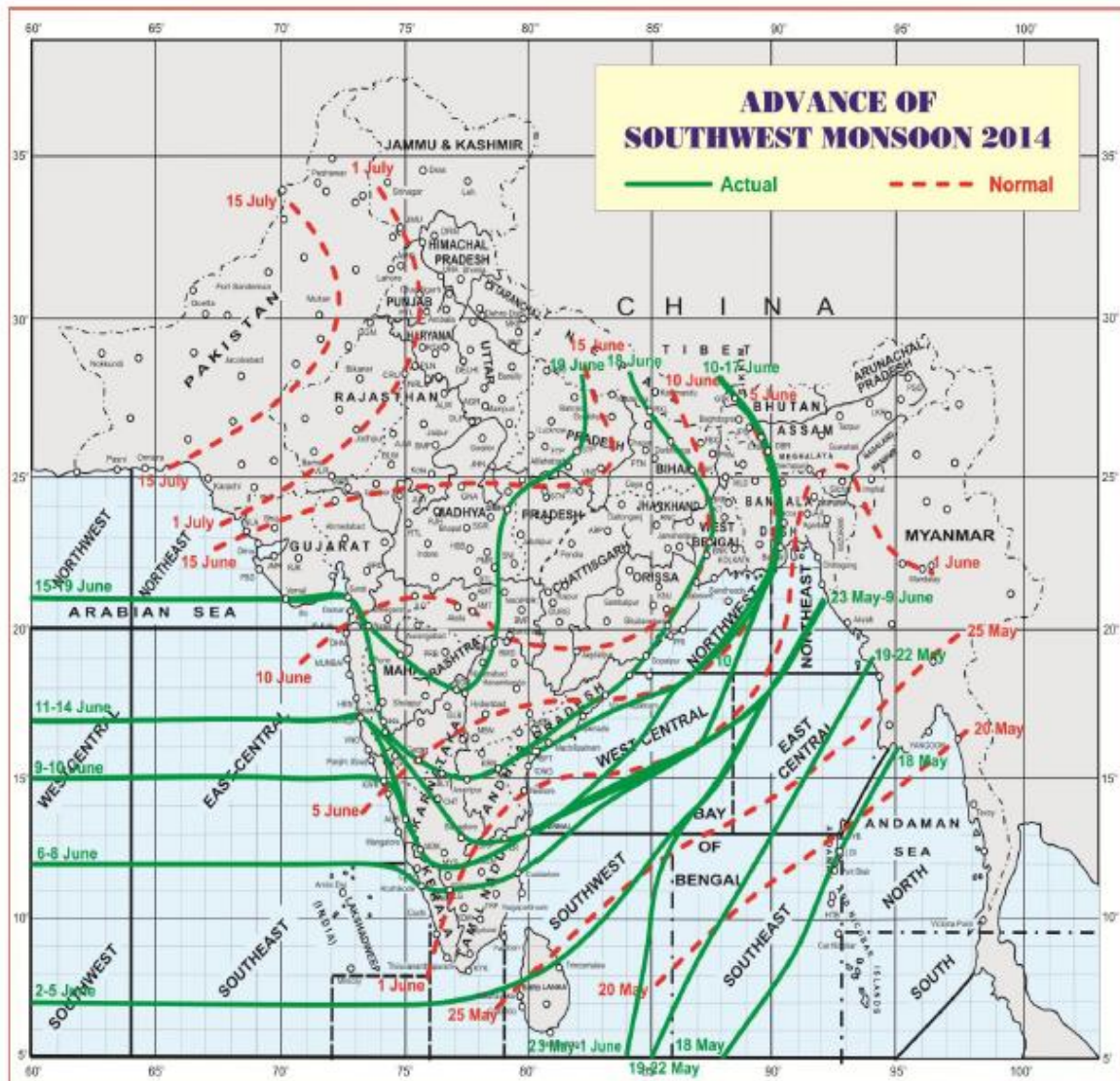
**National Agrometeorological Advisory Service Centre,
Agricultural Meteorology Division,
India Meteorological Department, Shivajinagar, Pune.**



Monsoon Watch

FRIDAY 20 JUNE 2014

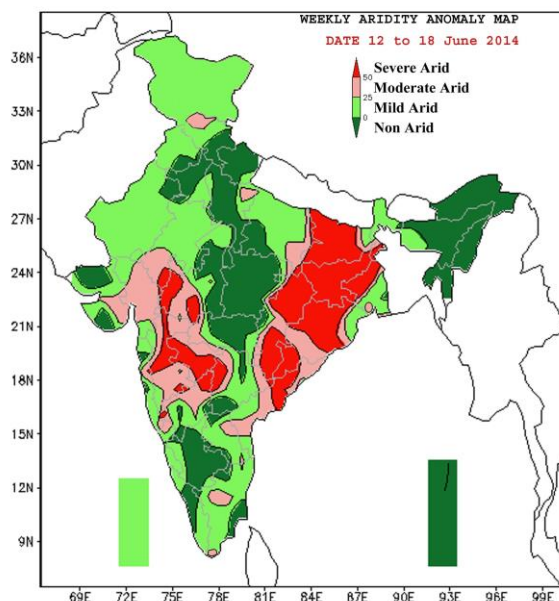
Northern Limit of Monsoon



- The Northern Limit of Monsoon (NLM) continues to pass through Lat. 21°N / Long. 60°E, Lat.21°N / Long. 65°E, Veraval, Surat, Nashik, Bidar, Adilabad, Damoh, Sultanpur and Lat.28°N / Long. 82°E.
- Conditions are favourable for further advance of Southwest Monsoon into remaining parts of north interior Karnataka, Telangana, east Madhya Pradesh and east Uttar Pradesh and some more parts of Vidarbha during next 48 hours

WEEKLY SUMMARY (12 – 18 JUNE, 2014) OF ARIDITY CONDITIONS OVER INDIA

भारत मौसम विज्ञान विभाग
अनावृष्टि अनुसंधान अनुभाग - पुणे
INDIA METEOROLOGICAL DEPARTMENT
DROUGHT RESEARCH UNIT - PUNE



During the week (12-18 June, 2014) the aridity anomaly map indicated the following aridity conditions over the country.

- **Areas mainly affected by moderate arid conditions:**

Some eastern and southeastern parts of East Uttar Pradesh and adjoining some southwestern parts of Bihar, some western parts of Chattisgarh, some central parts of Odisha and eastern parts of Coastal Andhra Pradesh, some eastern parts of Telangana, some southwestern parts of Coastal Andhra Pradesh adjoining some eastern parts of Rayalaseems; some eastern parts of Bihar and some southern parts of Sub-Himalayan West Bengal; some northeastern, central and southwestern parts of Gangetic West Bengal, northeastern and southeastern parts of Odisha; some southern parts of East Rajasthan, major parts of Gujarat, some central and southeastern parts of Saurashtra & Kutch, western and southwestern parts of West Madhya Pradesh, most of the parts of Madhya Maharashtra and adjoining some southern parts of Konkan & Goa and northern parts of Coastal Karnataka, most of the parts of North Interior Karnataka, some western parts of Telangana, some northern parts of Marathwada and adjoining some western parts of Vidarbha. Isolated areas around Contai (Gangetic West Bengal), Bareilly (West Uttar Pradesh), Dharmasala (Himachal Pradesh), Bhopal (West Madhya Pradesh), Tirupathi (Rayalaseema) and Salem and Kanyakumari (Tamil Nadu).

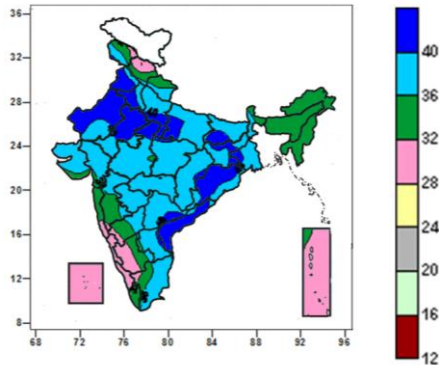
- **Areas mainly affected by severe arid conditions:**

Most of the parts of Bihar, Jharkhand, Chattisgarh, major parts of Odisha, northwestern parts of Gangetic West Bengal and adjoining some southern parts of Sub- Himalayan West Bengal; southern parts of Chattisgarh, southwestern parts of Odisha, some central parts of Coastal Andhra Pradesh and adjoining some northeastern parts of Rayalaseema; some southern parts of East Rajasthan and adjoining some eastern parts of Gujarat Region, some western parts of West Madhya Pradesh, most of the central parts of Madhya Maharashtra, major parts of Marathwada, some western parts of Telangana and adjoining some northeastern parts of North Interior Karnataka. Isolated areas around Khandwa (West Madhya Pradesh), Sholapur (Madhya Maharashtra) and Belgaum (North Interior Karnataka).

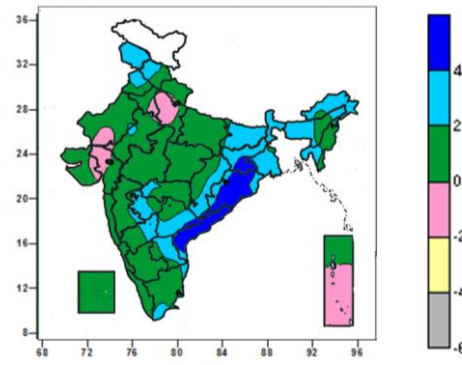
- Rest of the area of the country is under mild to non-arid conditions.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 18.06.2014

Actual Mean Maximum Temperature (°C) in India for the week ending 18.06.2014



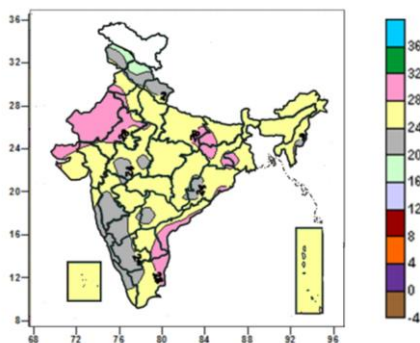
Mean Maximum Temperature (°C) Anomaly in India for the week ending 18.06.2014



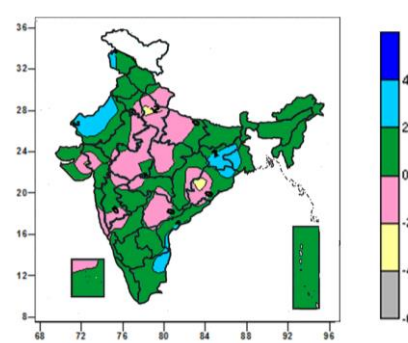
- 40 to 44°C over many parts of Punjab, Haryana, Delhi, Rajasthan, Odisha, Coastal Andhra Pradesh, some parts of Uttar Pradesh, Bihar, Jharkhand, Central India, Telangana and Rayalaseema.
- 36 to 40°C over many parts of Uttar Pradesh, Bihar, Jharkhand, West Bengal, Central India, Telangana, Rayalaseema, Tamil Nadu, Marathwada, Vidarbha, Gujarat, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, Odisha, Coastal Andhra Pradesh, Interior Karnataka, and Madhya Maharashtra.
- 32 to 36°C over many parts of NorthEast India, Madhya Maharashtra, Konkan, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sub-Himalayan West Bengal & Sikkim, Tamil Nadu, Kerala, Interior Karnataka, Saurashtra and Andaman & Nicobar Islands,.
- 28 to 32°C over many parts of Coastal Karnataka, Goa, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Tamil Nadu, Kerala, Interior Karnataka, Konkan and Madhya Maharashtra.

- 4 to 6°C over many parts of Odisha, Coastal Andhra Pradesh, some parts of Jharkhand, Gangetic West Bengal, Telangana.
- 2 to 4°C over many parts of Jammu & Kashmir, Bihar, Jharkhand, West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Tripura, Marathwada, Rayalaseema, Telangana, some parts of Himachal Pradesh, Punjab, Odisha, Chhattisgarh, Vidarbha, Andhra Pradesh, Tamil Nadu, North Interior Karnataka, Madhya Maharashtra and Rajasthan.
- 0 to 2°C over entire country except Jammu & Kashmir, West Uttar Pradesh, Bihar, Jharkhand, West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Tripura, Madhya Maharashtra, Odisha, Coastal Andhra Pradesh, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Punjab, Jharkhand, Gangetic West Bengal, Odisha, Chhattisgarh, West Madhya Pradesh, Vidarbha, Andhra Pradesh, Tamil Nadu, North Interior Karnataka, Madhya Maharashtra and Rajasthan.
- -2 to 0°C over many places over West Uttar Pradesh, Andaman & Nicobar Islands, some parts of Haryana, Delhi, West Rajasthan, Gujarat and West Madhya Pradesh.

Actual Mean Minimum Temperature (°C) in India for the week ending 18.06.2014



Mean Minimum Temperature (°C) Anomaly in India for the week ending 18.06.2014



- 28 to 32°C over many parts of Rajasthan, Coastal Andhra Pradesh, some parts of Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Rayalaseema, Tamil Nadu and Gujarat.

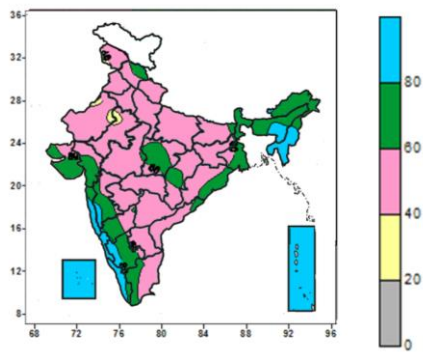
- 2 to 4°C over many parts of West Rajasthan, Jharkhand, some parts of Jammu & Kashmir, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh, Rayalaseema and Tamil Nadu.
- 0 to 2°C over entire country except many parts of

- 24 to 28⁰C over many parts of Punjab, Haryana, Delhi, Uttar Pradesh, East India, North East India, Central India, Telangana, Rayalaseema, Tamil Nadu, Marathwada, Vidarbha, Gujarat, Lakshadweep, Andaman & Nicobar Islands, some parts of Uttarakhand, Coastal Andhra Pradesh, Kerala, Interior Karnataka, Madhya Maharashtra and Konkan.
- 20 to 24⁰C over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Kerala, Karnataka, Konkan & Goa, Madhya Maharashtra, some parts of Odisha, West Madhya Pradesh, Telangana and Tamil Nadu.
- 16 to 20⁰C over some parts of Jammu & Kashmir, Himachal Pradesh.

- Uttarakhand, Uttar Pradesh, Madhya Pradesh, Telangana, Goa, West Rajasthan, Jharkhand, some parts of Jammu & Kashmir, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh, Rayalaseema, Haryana, Delhi, East Rajasthan, Odisha, Chhattisgarh, North Interior Karnataka, Maharashtra, Gujarat and Tamil Nadu.
- -2 to 0⁰C over many parts of Uttarakhand, Uttar Pradesh, Madhya Pradesh, Telangana, Goa, some parts of Haryana, Delhi, East Rajasthan, Odisha, Chhattisgarh, Coastal Andhra Pradesh, Rayalaseema, North Interior Karnataka, Maharashtra and Gujarat.

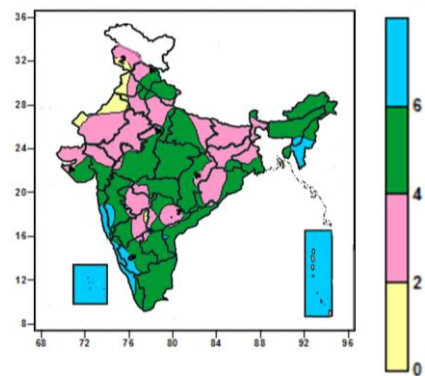
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 18.06.2014

Relative Humidity (%) over India for the week ending 18.06.2014



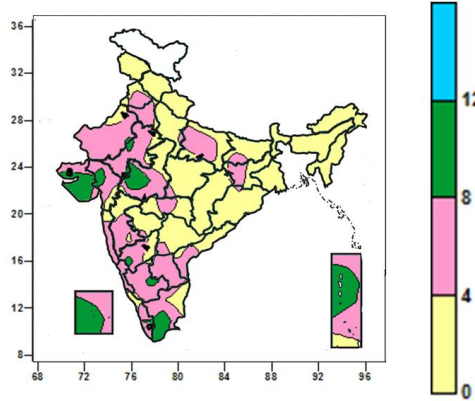
- 80 to 100% over many parts of Manipur, Mizoram, Tripura, Coastal Karnataka, Kerala Konkan & Goa, Lakshadweep and Andaman & Nicobar Islands, some parts of Assam & Meghalaya, South Interior Karnataka and Madhya Maharashtra.
- 60 to 80% over many parts of West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, East Madhya Pradesh, Interior Karnataka, Madhya Maharashtra, Gujarat, some parts of Himachal Pradesh, Bihar, Coastal Odisha, Chhattisgarh, West Madhya Pradesh, Coastal Andhra Pradesh, Tamil Nadu, Kerala and Konkan.
- 40 to 60% over many parts North India, Bihar, Jharkhand, Odisha, West Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Marathwada, Vidarbha, Tamil Nadu, some parts of Gangetic West Bengal, East Madhya Pradesh, Madhya Maharashtra, Interior Karnataka and Gujarat.
- 20 to 40% over some parts of Rajasthan, West Madhya Pradesh.

Cloud amount (okta) over India for the week ending 18.06.2014



- 6 to 8 okta over many parts of Mizoram, Tripura, Kerala Coastal Karnataka, Konkan & Goa, Lakshadweep, Andaman & Nicobar Islands some parts of Assam & Meghalaya, Mizoram, South Interior Karnataka and Madhya Maharashtra.
- 4 to 6 okta over many parts of Uttarakhand, East Uttar Pradesh, Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Central India, Andhra Pradesh, Tamil Nadu, Interior Karnataka, Madhya Maharashtra, Vidarbha, Gujarat, some parts of Himachal Pradesh, Punjab, Haryana, West Uttar Pradesh, Jharkhand, West Bengal, Manipur, Odisha, Kerala, Marathwada and Madhya Maharashtra.
- 2 to 4 okta over many parts of Jammu & Kashmir, Himachal Pradesh, Haryana, Delhi, West Uttar Pradesh, Rajasthan, Bihar, Jharkhand, West Bengal, Odisha, Marathwada, some parts of Uttarakhand, Punjab, East Uttar Pradesh, Chhattisgarh, Telangana, Rayalaseema, Interior Karnataka, Vidarbha, Gujarat, West Madhya Pradesh.
- 0 to 2 okta over some parts of Jammu & Kashmir, Punjab, North Interior Karnataka and East Rajasthan.

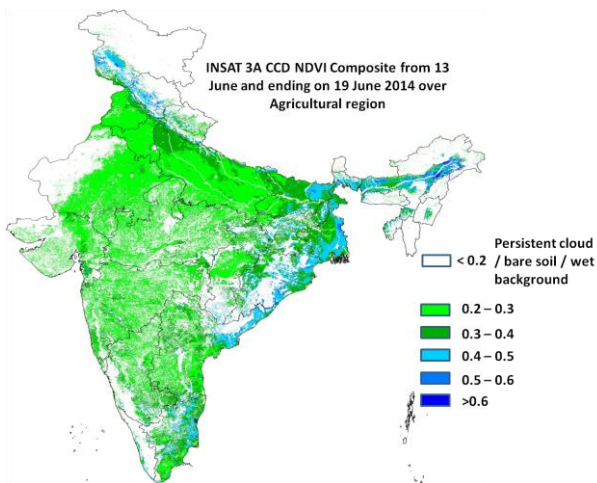
Wind speed (knots) over India for the week ending 18.06.2014



- 8 to 12 knots over many parts of Saurashtra, some parts of Rajasthan, Gujarat, West Madhya Pradesh, Interior Karnataka, Tamil Nadu, Lakshadweep and Andaman Nicobar Islands.
- 4 to 8 knots over many parts of Rajasthan, Punjab, Haryana, Delhi, West Uttar Pradesh, Jharkhand, Gujarat, Rayalaseema, Tamil Nadu, Kerala, Karnataka, Konkan & Goa, Madhya Maharashtra, some parts of East Uttar Pradesh, Bihar, Odisha, Madhya Pradesh, Coastal Andhra Pradesh, Telangana, Marathwada, Vidarbha, Lakshadweep, Andaman Nicobar Islands.
- 0 to 4 knots over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West Uttar Pradesh, East India, North East India, Central India, Rayalaseema, Marathwada, Konkan, Vidarbha, some parts of Rajasthan, Punjab, Delhi, Gujarat, Coastal Andhra Pradesh, Tamil Nadu, Kerala, Interior Karnataka.

INSAT 3A CCD NDVI COMPOSITE OVER AGRICULTURAL REGION

13th – 19th June 2014



Source: SAC, Ahmedabad

- Agricultural vigour is moderate over many pockets of central and south West Bengal and Coastal Odisha and Andhra Pradesh, where NDVI varies between 0.4 to 0.5 upto 19th June 2014. The NDVI remained within the range of 0.2 to 0.3 over rest of India. There is further decrease in NDVI as compared to last week in rest part of India specially in north and central India.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 23rd June, 2014)

- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during the period.
- Rain/thundershowers would occur at many places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during the period.
- Rain/thundershowers would occur at most places over West Bengal & Sikkim during the period.
- Rain/thundershowers would occur at many places over Bihar, Jharkhand and Odisha during the period.
- Rain/thundershowers would occur at most places over Coastal Karnataka; at many places over Kerala during the period.
- Rain/thundershowers would occur at a few places over Coastal Andhra Pradesh, South Interior Karnataka and Lakshadweep during the period.
- Rain/thundershowers would occur at many places over Chhattisgarh and at a few places over Vidarbha during the period.
- Rain/thundershowers would occur at isolated places over Jammu & Kashmir, Punjab, Haryana & Delhi, East Rajasthan, Gujarat State, Madhya Maharashtra, Marathwada, Telangana, Rayalaseema, Tamilnadu & Pudducherry and North Interior Karnataka during the period.
- Rain/thundershowers would occur at a few places over Himachal Pradesh and Uttarakhand during the period.
- Rain/thundershowers would occur at most places over Konkan & Goa during next 24 hours and at many places thereafter.
- Rain/thundershowers would occur at many places over East Uttar Pradesh and East Madhya Pradesh during next 24 hours and at a few places thereafter.
- Rain/thundershowers would occur at isolated places over West Uttar Pradesh during next 24 hours and at a few places thereafter.
- Rain/thundershowers would occur at a few places over West Madhya Pradesh during next 48 hours and at isolated places thereafter.
- Mainly dry weather would prevail over West Rajasthan during the period.
- No significant change in maximum temperatures likely over northwest India during next 2-3 days.

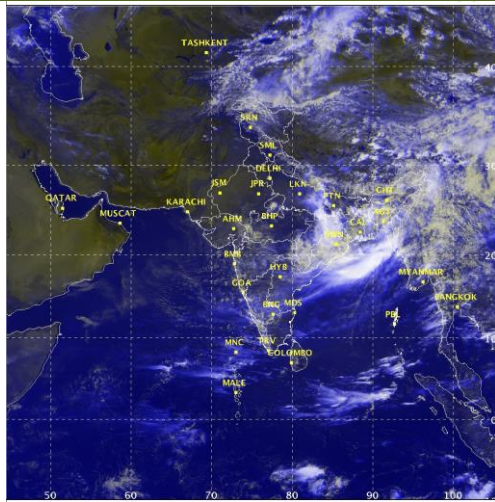
Weather Warning during next 3 days

- **20 June (Day 1):** Heavy to very heavy rainfall would occur at isolated places over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim. Heavy rainfall would occur at isolated places over Jharkhand, Chhattisgarh, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, Odisha, Konkan & Goa and coastal Karnataka.
- **21 June (Day 2):** Heavy to very heavy would occur at isolated places over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim. Heavy rainfall would occur at isolated places over Jharkhand, Chhattisgarh, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa and coastal Karnataka.
- **22 June (Day 3):** Heavy to very heavy would occur at isolated places over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim. Heavy rainfall would occur at isolated places over Jharkhand, Chhattisgarh, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa and coastal Karnataka.

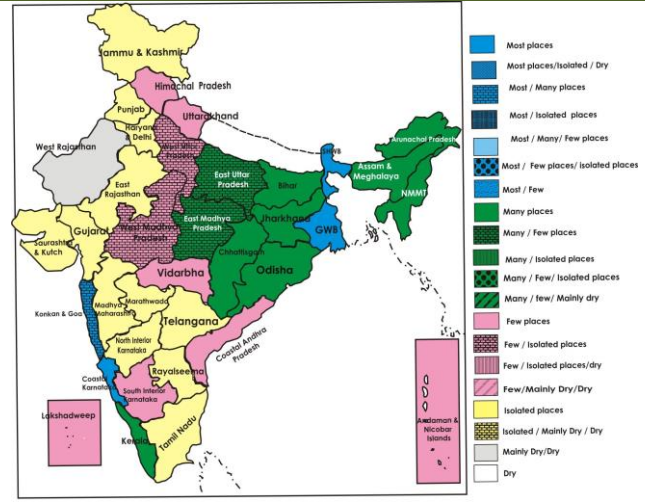
Weather Outlook for subsequent 4 days from 23rd June to 27th June 2014

- Rain/thundershowers would occur at most places over northeastern state and Sub-Himalayan West Bengal & Sikkim
- Rain/thundershowers would occur at many places over east India, along west coast and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over rest of the country outside Rajasthan, Gujarat and interior peninsular India where it may be isolated.

Satellite image dated 20.06.2014, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 23rd June, 2014)



Salient Advisories

- Continue transplanting of *Virippu* rice in the Southern, Central and Northern Zones and continue direct sowing of rice (Uma variety) and planting of coconut seedlings in the Problem Area Zone of **Kerala**.
- Continue nursery sowing of *kharif* rice in Udupi and Dakshina Kannada districts and continue drill sowing of *kharif* rice in Uttarkannad district of **Coastal Zone of Karnataka**. Undertake sowing of maize, groundnut and red gram in the **Southe Interior Karnataka**.
- Undertake land preparation for nursery sowing of rice and planting of rainfed sugarcane in the North Coastal Zone of **Andhra Pradesh** utilizing the realized rainfall.
- In **Assam** and **Meghalaya**, continue nursery sowing of *sali* rice and in **Arunachal Pradesh** continue sowing of *kharif* rice, soybean, black gram and green gram.
- Continue nursery sowing of *aman* rice in **West Bengal** and **Tripura**.
- Undertake land preparation and nursery sowing of rice and sowing of other *kharif* crops in **Chhattisgarh, Odisha, Bihar** and **Jharkhand**.

Detailed Zonewise Agromet Advisories

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP]



Land preparation/ Sowing

Rice Nursery

Sugarcane

Okra

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Thiruvananthapuram; in all districts of Coastal Karnataka; in Chikmagalur, Kodagu and Shimoga districts of South Interior Karnataka; Adilabad and Karimnagar districts of Telangana. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Coastal Karnataka; at many places over Kerala during the period. Rain/thundershowers would occur at a few places over Coastal Andhra Pradesh, South Interior Karnataka and Lakshadweep during the period. Rain/thundershowers would occur at isolated places over Telangana, Rayalaseema, Tamilnadu & Pudducherry and North Interior Karnataka during the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Coastal Karnataka during next three days.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over interior peninsular India.
- **Advisories:**

▪ **Kerala:**

- Continue transplanting of *Virippu* rice in the Southern, Central and Northern Zones of Kerala.
- Continue direct sowing of rice (Uma variety) and planting of coconut seedlings in the Problem Area Zone of Kerala.
- As rain/thundershowers would occur at many places over Kerala, postpone intercultural operations and application of plant protection measures and fertilizers to the standing crops.
- In the Southern Zone of Kerala, in banana fields where *sigatoka* leaf spot incidence is acute, apply Propiconazole (Tilt) @ 1ml/ litre, after current spells of rain, on the lower side of leaves after cutting and removing the badly affected leaves.

▪ **Karnataka:**

- Continue nursery sowing of *kharif* rice in Udipi and Dakshina Kannada districts; continue drill sowing of *kharif* rice in Uttara Kannada district of Coastal Zone of Karnataka.
- Undertake land preparation and wait for sowing of *kharif* crops till receipt of sufficient rainfall in North Interior Karnataka.
- Undertake sowing of maize, groundnut and red gram in the Southern Transition Zone of Karnataka.
- As rain/thundershowers would occur at most places over Coastal Karnataka during the period along with isolated heavy spells, postpone intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of crops and keep harvested produce at safe places. Arrange for adequate drainage facilities in crop fields to remove excess water.

▪ **Andhra Pradesh:**

- Undertake sowing of rainfed crops like cotton, maize, groundnut, jowar, soybean, pulses etc., only after receiving cumulative rainfall of 50-75 mm or the soil should be wet up to top 15 cm in the Southern Telangana Zone of Andhra Pradesh. Undertake nursery sowing of tomato, brinjal and chillies and direct sowing of gourds, beans and bhendi wherever irrigation facility is available.
- Undertake land preparation for nursery sowing of rice and planting of rainfed sugarcane in the North Coastal Zone of Andhra Pradesh utilizing the realized rainfall.
- Continue nursery sowing of rice and groundnut with irrigation and land preparation for sowing of maize, cotton, castor and vegetables in the Scarce Rainfall Zone of Andhra Pradesh utilizing the realised rainfall.

▪ **Tamil Nadu:**

- Undertake nursery preparation of *kuruvai* rice and SRI cultivation in the Cauvery Delta Zone of Tamil Nadu with irrigation. Since mainly dry weather would prevail, apply irrigation in black gram, sugarcane and rice fallow cotton.
- Undertake sowing of green gram in the Southern Zone of Tamil Nadu with irrigation. Irrigate banana adopting drip irrigation @ 10-15 litres/ plant/ day and cotton as mainly dry weather is prevailing.

NORTHEAST INDIA [ARUNACHAL PRADESH, NMM&T, ASSAM, MEGHALAYA]



Rice Nursery



Land preparation/Sowing



Okra



Jute

- **Realised Rainfall:** Rainfall occurred in East Siang, Papumpara, Tawang, Tirap, Upper Siang, West Kameng and West Siang districts of Arunachal Pradesh; Barpeta, Bongaigaon, Cachar, Chirang, Darrang, Dhubri, Dibrugarh, Goalpara, Hailakandi, Kamrup(Metro), Karimganj, Kokrajhar, Nalbari, Sonitpur and Tinsukia districts of Assam; East Garo Hills, East Khasi Hills, Ribhoi, South Garo Hills and West Garo Hills districts of Meghalaya; Aizwal, Saiha and Serchhip districts of Mizoram; Chandel, Churachandpur, Imphal East, Imphal West and Senapati districts of Manipur; Dimapur and Phek districts of Nagaland; all districts of Tripura. Mainly dry weather prevailed over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during the period.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Assam & Meghalaya and heavy rainfall would occur at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura during next three days.
- **Weather Outlook:** Rain/thundershowers would occur at most places over northeastern states.
- **Advisories:**

▪ **Assam & Meghalaya, Arunachal Pradesh:**

- In Assam and Meghalaya, continue nursery sowing of *sali* rice and in Arunachal Pradesh continue sowing of *kharif* rice, soybean, black gram and green gram utilizing the realized and expected rainfall.
- In Central Brahmaputra Valley Zone of Assam, undertake sowing of arhar.
- Continue sowing of groundnut and soybean in Meghalaya utilizing the realized and expected rainfall.
- As rain/thundershowers would occur at many/most places over Assam and Meghalaya along with isolated heavy to very heavy spells during the period, postpone intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields to avoid water stagnation.
- Due to humid weather and increase in humidity, there is chance of attack of blast, Gundhi bug and stem borer in *ahu* rice in Temperate Sub Alpine Zone of Meghalaya. Spray Mancozeb @ 2g/litre of water or Carbendazim @ 1 g/litre of water against blast, spray Malathion 5% dust @ 6.25kg/ha against rice Gandhi bug and Chloropyriphos @0.02% or Monocrotophos @ 0.04% for stem borer after current spells of rain.
- Due to cloudy and humid weather conditions, there is chance of attack of powdery mildew, red pumpkin beetle and fruit fly in cucurbitaceous crops in Hill Zone of Assam. Spray Bavistin 0.1% or Karathane WP 0.05% against powdery mildew and Malathion 50 EC @ 2 ml/ litre of water against red pumpkin beetle and fruit fly after current spells of rain.
- Due to high humidity, mite infestation and tip blight may occur in chilli in Central Brahmaputra Valley Zone of Assam. Spray Ethion @ 1.5 ml or Rogor @ 2 ml/litre water to reduce mite infestation and spray Malathion @ 2 ml per litre of water for tip blight after current spells of rain.

▪ **Nagaland, Manipur, Mizoram and Tripura:**

- In Mizoram, continue sowing of soybean, groundnut, cucurbits, okra, brinjal and planting of ginger and turmeric utilizing the realized and expected rainfall.
- In Nagaland, continue nursery sowing of *kharif* rice.
- Continue nursery sowing of *aman* rice in Tripura.
- In Mild Tropical Plain Zone of Tripura, continue nursery preparation of *aman* rice and planting of banana utilizing the realized and expected rainfall. Avoid planting of banana during heavy rain.
- As rain/thundershowers would occur at many places along with isolated heavy spells during the period over Nagaland, Manipur, Mizoram and Tripura, postpone intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields to remove excess water.
- Warm and humid conditions may cause canker, aphids and Psyllid attack in young and new shoots of khasi mandarin in Mid Tropical Hill Zone of Mizoram. It can be controlled by pruning and burning the infected shoots and then smearing the cut portions with 1 % Bordeaux paste and spray Streptomycin 1g/ litre of water against canker and spray Imadaclopid @ 1.5 ml/litre of water against aphids and psyllid after current spells of rain.
- Due to cloudy weather and increase in humidity, there is chance of attack of blast disease in *jhum* rice in Mild Tropical Hill Zone of Nagaland. Spray Carbendazim @ 1 g/litre of water after current spells of rain.

• **Animal Husbandry**

- Monsoon weather could lead to gastrointestinal parasites infection in poultry in Tripura. Farmers are advised to keep good sanitary conditions in poultry sheds. Give Piperzine @ 250-300 mg/kg body weight in feed and Amprolium (single dose) @ 25-65 mg/kg of feed in water once or twice a day for 4-5 days.

EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]



Sugarcane



Jute



Onion



Land Preparation/Sowing

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Island; in all districts of Sub-Himalayan West Bengal except Malda; in all districts of Sikkim except South Sikkim; in Hoogly, Howrah, Kolkata, Nadia, North 24 Parganas and Purulia districts of Gangetic West Bengal; in Darbhanga, Katihar, Madhubani, Sheohar, Sitamarhi, Supaul and West Champaran districts of Bihar; in East Singbhum, Hazaribag, Jamtara, Latehar and West Singbhum districts of Jharkhand; in Keonjhar, Mayurbhanj, Nawapara and Nawarangpur districts of Odisha.
- **Weather Forecast** Rain/thundershowers would occur at most places over West Bengal & Sikkim during the period. Rain/thundershowers would occur at many places over Bihar, Jharkhand and Odisha and at a few places over Andaman

& Nicobar Islands during the period.

- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim and heavy rainfall would occur at isolated places over Jharkhand during next three days.
- **Weather Outlook:** Rain/thundershowers would occur at most places over Sub-Himalayan West Bengal & Sikkim and at many places over the region.
- **Advisories:**
 - **West Bengal:**
 - In West Bengal, undertake land preparation and nursery sowing of *aman* rice utilizing the realised and expected rainfall.
 - Continue land preparation for sowing of direct seeded *aman* rice in Coastal Saline Zone and undertake preparation of pit for plantation of coconut, guava and mango utilising the realised and expected rainfall.
 - Undertake land preparation for nursery sowing of *kharif* rice in Old Alluvial Zone of West Bengal utilising the realised and expected rainfall.
 - As rain/ thundershowers would occur at most places along with heavy to very heavy rainfall at isolated places over Sub - Himalayan West Bengal & Sikkim during the period and heavy rainfall at isolated places over Gangetic West Bengal on 20th and 21st June, postpone intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to remove excess water.
 - In New Alluvial Zone of West Bengal, prevailing high temperature and humidity is congenial for attack of fruit-rot in pointed gourd. Remove the infected fruits and spray Blitox @4 g per litre of water. Also there is chance of attack of caterpillar and mite in jute. To control apply Monocrotophos @ 1.5 ml per litre of water after current spells of rain.
 - In Laterite and Red Soil Zone of West Bengal, in the prevailing weather condition, attack of white fly, jassids may be observed in ladies finger and brinjal. Apply Imidachloprid 17.8 S. L. @ 4 ml per 10 litres of water to control white fly and apply 0.75 g Cartap hydrochloride 50 S.P. per litre of water to control jassids after current spells of rain.
 - Due to high humidity, there is chance of attack of blight and root rot in cucumber in Coastal Saline Zone of West Bengal. Drenching should be done at the base with Diathane –M-45 @ 2.5g/litre of water current spells of rain.
 - **Andaman & Nicobar Islands:**
 - In North, Middle and South Andaman, undertake land preparation and nursery sowing of rice. Arrange adequate drainage in vegetable fields to avoid water stagnation.
 - **Odisha:**
 - In North Eastern Coastal Plain Zone of Odisha, continue land preparation and direct sowing of *kharif* rice taking the advantage of the expected rainfall.
 - In Western Undulating Zone of Odisha, undertake sowing of maize, arhar and cotton in upland areas taking the advantage of the expected rainfall.
 - As rain/ thundershowers would occur at many places along with heavy rainfall at isolated places over Odisha on 20th and 21st June, postpone intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to remove excess water.
 - Due to humid weather there is chance of occurrence of fruit & shoot borer in brinjal and tomato in North Central Plateau Zone of Odisha. Collect the infested fruit and shoot and bury it in the soil and spray Spinosad 48 EC @ 1 ml in 4 litres of water after current spells of rain.
 - In Mid Central Table Land Zone of Odisha fruit and shoot borer in brinjal has been reported and likely to continue. To control it, install Pheromone trap @ 12 nos /ac. Alternately, spray Cartap Hydrochloride 50 SP @ 400 g/ha or Triazophos 40 EC @ 1000 ml/ha after current spells of rain.
 - **Bihar:**
 - In North West Alluvial Plain Zone of Bihar, continue land preparation for sowing of *kharif* crops and prepare the nursery for sowing of long duration rice varieties with expected rainfall. Undertake sowing of *kharif* maize.
 - Undertake nursery sowing of *kharif* onion and prepare nursery for sowing of medium duration hybrid rice varieties in South Bihar Alluvial Zone. Undertake sowing of *kharif* maize with expected rainfall.
 - In North East Alluvial Plain Zone of Bihar, undertake sowing of *kharif* maize and jute. Prepare the nursery for sowing of long duration rice varieties.
 - Due to high temperature, there is chance of infestation of early shoot borer in sugarcane in North East Alluvial Plain Zone of Bihar; spray Chlorpyrifos 20 EC @ 2 litres/ha or Phorate 10G @ 1kg /ha after current spells of rain.
 - Due to high temperature, there is chance of stem borer in sugarcane in North West Alluvial Plain Zone of Bihar; apply Cartaphydrochloride 4% granules @ 10 kg/acre after current spells of rain.
 - **Jharkhand:**
 - In South Eastern Plateau Zone of Jharkhand, undertake land preparation for sowing of direct seeded upland rice and prepare the nursery for sowing of long duration rice varieties and undertake land preparation for sowing of maize and pigeon pea with expected rainfall.
 - Continue land preparation in upland areas for sowing of *kharif* crops and prepare land for sowing/nursery sowing of

rainy season vegetables in Western Plateau Zone of Jharkhand with expected rainfall. Undertake nursery bed preparation for *kharif* rice.

- In Central & North Eastern Plateau Zone of Jharkhand, undertake land preparation for sowing of maize and pigeon pea with expected rainfall.
- As rain/ thundershowers would occur at many places along with heavy rainfall at isolated places over Jharkhand, on 21st and 22nd June, postpone intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
- **Animal Husbandry**
 - Keep the cattle in the sheds during heavy rainfall periods in West Bengal.
 - In South Bihar Alluvial Zone, to carry out vaccination of animals against Galgotu disease to protect them during rainy season.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Land Preparation/Sowing

Okra

Green Gram

- **Realised Rainfall:** Rainfall occurred in Chindwara, Damoh, Jabalpur, Mandla, Sagar, Seoni, Siddhi, Singrauli and Umaria districts of east Madhya Pradesh and Burhanpur, Raisen and Rajgarh districts of west Madhya Pradesh; in Koriya, Kowarda, Narayanpur and Raipur districts of Chhattisgarh.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Chhattisgarh during the period. Rain/thundershowers would occur at many places over East Madhya Pradesh during next 24 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over West Madhya Pradesh during next 48 hours and at isolated places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Chhattisgarh during next three days.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - Undertake land preparation for nursery sowing of rice in Malwa Plateau Zone and Kymore Plateau Zone of Madhya Pradesh. Undertake land preparation for sowing of *kharif* crops and nursery sowing of vegetables in Satpura Plateau Zone, Vindhya Plateau Zone and Bundelkhand Zone of Madhya Pradesh utilizing the realized and expected rainfall.
 - Undertake sowing of maize, soybean and jowar in Kymore Plateau Zone and nursery sowing of rice in Bundelkhand Zone of Madhya Pradesh utilizing the realized and expected rainfall.
 - Due to partly cloudy weather, there is possibility of attack of fruit and stem borer in vegetables in Bundelkhand Zone of Madhya Pradesh. For control, spray Malathion 50 E.C. @ 1.0 ml per litre of water after current spells of rain.
 - Due to cloudy weather, there is possibility of attack of sucking insect and leaf curl disease in vegetables in Central Narmada Valley Zone of Madhya Pradesh, spray Imidachlorpid @ 0.03% solution at 15 days interval after current spells of rain.
 - **Chhattisgarh:**
 - In Chhattisgarh, undertake land preparation and nursery sowing of rice, sowing of soybean and tuber crops utilizing the expected rainfall.
 - In view of likely occurrence of rainfall, undertake sowing of *kharif* crops like rice in Chhattisgarh.
 - In North Hill Zone of Chhattisgarh undertake land preparation for sowing/nursery sowing of rainy season vegetables.

NORTH INDIA [Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh & Rajasthan]



Land Preparation

Sugarcane

Bottle Gourd

Onion

- **Realised Rainfall:** Rainfall occurred in Rajouri and Reasi districts of Jammu & Kashmir; in Mandi and Solan districts of Himachal Pradesh; in Rewari districts of Haryana; in Haridwar and Pithorgarh districts of Uttarakhand; in Gonda, Kannauj, Kheri and Sitapur districts of East Uttar Pradesh and in Baghpat district of West Uttar Pradesh. Weather remained mainly dry over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over East Uttar Pradesh during next 24 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Himachal Pradesh and Uttarakhand during the period. Rain/thundershowers would occur at isolated places over Jammu & Kashmir, Punjab, Haryana & Delhi, East Rajasthan during the period. Rain/thundershowers would occur at isolated places over West Uttar Pradesh during next 24 hours and at a few places thereafter. Mainly dry weather would prevail over West Rajasthan during the period.
No significant change in maximum temperatures likely over northwest India during next 2-3 days.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over rest of the region outside Rajasthan where it may be isolated.
- **Advisories:**
 - **Jammu & Kashmir:**
 - Complete nursery sowing of rice and sowing of maize in Intermediate Zone of Jammu & Kashmir and undertake sowing of moong, sunflower, vegetables in Valley Temperate Zone of Jammu & Kashmir utilizing the available moisture.
 - Complete direct sowing of spinach, carrot, beet root, coriander and fenugreek in Cold Arid Zone of Jammu & Kashmir.
 - **Himachal Pradesh:**
 - Continue nursery sowing of rice; undertake direct sowing of rice and maize; planting of ginger, turmeric, colcocosia and elephant foots and transplanting of tomato, chilli, capsicum and brinjal in Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh utilizing the realised rainfall.
 - Continue sowing of peas and undertake nursery sowing of cabbage, cauliflower and summer squash on raised beds in High Hill Temperate Dry Zone of Himachal Pradesh.
 - Due to prevailing hot weather conditions, there are chances of attack of white grubs in maize in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh. Apply Chloropyriphos 20 EC @ 2 litres mixed with 25 kg of sand per hectare on a non rainy day.
 - Due to hot weather conditions, there is chance of attack of mites in apple orchards in Mild Hills Sub-Humid Zone of Himachal Pradesh. For control, spray Megister/Megistic @ 50 ml in 200 litres of water on a non rainy day.
 - **Uttarakhand:**
 - Complete nursery sowing of rice, direct sowing of finger millets in Sub Humid Sub Tropical Zone of Uttarakhand.
 - Undertake earthing up in 20-25 day old potato in Hill Zone of Uttarakhand and also undertake sowing of palak, methi, coriander, okra and French bean.
 - Under partly cloudy weather conditions, fruit borer may damage tomato & capsicum, spray Prophenophas 50 EC @ 1 ml per litre of water for control on a non rainy day.
 - **Punjab, Haryana and Delhi:**
 - As mainly dry weather conditions are prevailing, apply irrigation in chilli, bell pepper, cucurbits, okra and fruit plants in Western Zone and Central Plain Zone of Punjab.
 - In Undulating Plain Zone and Central Plain Zone of Punjab, undertake transplanting of rice with irrigation facilities.
 - As mainly dry weather would prevail, harvest matured summer moong and sunflower. To avoid fruit drop in Kinnow orchards, apply irrigation at 3-4 days interval (with Basin irrigation system) or 6-7 hours/day in drip irrigation system in Sub-Montane Undulating Zone of Punjab.
 - In Eastern Zone of Haryana, continue nursery sowing of rice with irrigation facilities. Increase the frequency of irrigation during critical growth stages of vegetable and horticulture crops.
 - In Western Zone of Haryana it is advised to do intercultural operations and give frequent irrigation in vegetable and

fruit crops. Undertake field preparation for sowing of guar, bajra and maize.

- In Delhi, apply irrigation in all vegetable crops in the morning or evening hours. Optimum moisture level should be maintained in cucurbitaceous crops by applying light and frequent irrigation, as dry conditions may lead to poor pollination and thus drop in yield. Continue nursery preparation of rice, early cauliflower and brinjal with irrigation facilities and undertake sowing of pigeon pea during the period. Where irrigation facilities are limited it is advised to cultivate crops such as arhar, pearl millet, guar and pulses etc which require less water.

- **Uttar Pradesh**

- Undertake land preparation for sowing of groundnut and arhar in Central Plain Zone of Uttar Pradesh utilizing the expected rainfall.
- Complete harvesting of urad, moong and sunflower in Central Plain Zone of Uttar Pradesh in clear weather.
- Under prevailing hot weather conditions, there are chances of attack of leaf eating caterpillar in vegetables in Western Plain Zone of Uttar Pradesh. Spray Diclovas @ 1 ml per litre of water for control on a non rainy day.

- **Rajasthan:**

- High temperature may cause damage to horticultural crops in Flood Prone Eastern Plain Zone of Rajasthan. Apply light and frequent irrigation or apply mulch to reduce the damage.
- Due to high temperature, there may be attack of mealy bug in okra in Flood Prone Eastern Plain Zone of Rajasthan. To control spray solution of Acephate 70 SP @ 1.0 g or Profenophos @ 3ml per litre water.
- Due to high temperature, there may be fruit drop in citrus fruits in Transitional Plain Zone of Rajasthan. To control spray Planofix @ 1 ml /4.5 litre water.
- Under hot and dry weather condition, there are chances of attack of fruit fly in cucurbits in Arid Western Plain Zone of Rajasthan. Apply Malathion 50 EC @ 1.0 ml per litre water. Also apply 1st irrigation in cotton.

- **Floriculture**

- Under prevailing dry weather condition, undertake intercultural operations and weeding in summer annual plantations in Mid Hills Sub-Humid Zone of Himachal Pradesh.

- **Animal Husbandry**

- Due to prevailing hot weather condition, there are chances of attack of ticks and mites in cattles in Mid-Hills Sub-Humid Zone and Sub-Montane Low Hills Sub-Tropical Zone of Himachal Pradesh. For control, spray Butox @ 2.0 ml per litres of water on the body of animals.
- Due to prevailing high temperature in Arid Western plain Zone of Rajasthan, Ecto and endo parasites may attack on livestock. To control ecto parasites like lice, mite, joke etc. apply Butox/Tickle @ 1 ml per litre on the body of animal.

- **Poultry**

- Due to prevailing hot weather conditions, give balanced feed to the poultry birds in Rajasthan. Make proper ventilation in poultry sheds and keep the sheds clean. White wash the poultry shed from outside especially the roof. This will help to reflect the sun rays.
- Prevailing hot and humid weather condition is congenial for attack of Diathermia and Cocksedia in poultry birds in Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh. For precautionary measure, spray Formaline 40% @ 1 litre in 9 litres of water outside or surrounding of farm.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Land Preparation/ Sowing

Sugarcane

Rice Nursery

Okra

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa; in Kolhapur district of Madhya Maharashtra; in all districts of Vidarbha except Akola, Bhandara, Buldhana and Washim districts. Rainfall occurred in Navsari, Valsad and Surat districts of Gujarat region; in Junagarh and Porbandar districts of Saurashtra and Kutch region. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Konkan & Goa during next 24 hours and at many places thereafter. Rain/thundershowers would occur at a few places over Vidarbha and at isolated places over Madhya Maharashtra and Marathwada during the period. Rain/thundershowers would occur at isolated places over Gujarat State during the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Konkan & Goa during next three days.

- **Weather Outlook:** Rain/thundershowers would occur at many places along west coast.
- **Advisories:**
 - **Maharashtra:**
 - As rain / thundershowers would occur at most/many places over Konkan & Goa during the period along with isolated heavy spells during the period, drain out excess water from rice nursery to avoid water stagnation. Ploughing and puddling may be done in main rice fields.
 - In Vidarbha, undertake nursery sowing of *kharif* rice in Chandrapur, Gadchiroli, Gondia and Bhadara districts. Undertake land preparation and sowing of *kharif* crops like cotton, soybean, red gram, jowar, green gram, sunflower and black gram.
 - As rain is expected at isolated places in Madhya Maharashtra, continue intercultural operations and fertilizer application in sugarcane and vegetables. Continue preparatory tillage and keep the fields ready for sowing of *kharif* crops like cotton, soybean, red gram, jowar, bajra, groundnut, green gram, sunflower and black gram. Complete drill sowing of *kharif* rice in Kolhapur region and complete nursery sowing of *kharif* rice in Western part of Pune district, Western Ghat Zone and Sub-Montane Zone. Considering the high temperature in North Madhya Maharashtra, apply mulch of crop residues and other plant waste product in the orchards and sugarcane trash in sugarcane. Apply irrigation to sugarcane by alternate furrow method in water stress condition.
 - Undertake preparatory tillage and keep the fields ready for sowing of *kharif* crops like cotton, soybean, red gram, jowar, green gram, sunflower and black gram in Marathwada. As no significant rain is expected, apply irrigation to summer sugarcane, orchard crops like banana, pomegranate, fig (drip irrigation) and vegetable crops in morning or evening hours. Apply irrigation in banana orchards through drip, apply mulch to preserve the soil moisture.
 - Due to cloudy weather and light rain there may be incidence of powdery mildew on papaya, okra, chilli and tomatoes in Pune region; spray 80% Sulphur @ 20 g per 10 litres of water with sticker.
 - **Gujarat:**
 - Undertake land preparation and sowing of groundnut, cotton, soybean, castor, maize and vegetable crops in Junagarh and Porbandar districts of Saurashtra and Kutch Zone and land preparation for sowing of *kharif* crops in Navsari, Valsad and Surat districts of Gujarat region utilising the realised rainfall and keep farm inputs ready. Wait for sowing of the crops till sufficient rain occurs.
 - Continue land preparation for sowing of *kharif* groundnut, pulses, sesame, pearl millet and rainfed cotton in North Saurashtra Zone, for sowing of *kharif* crops in Bhal and Coastal Zone and Middle Gujarat Zone utilising the realised rainfall and keep farm inputs ready.
 - In North West Zone, carry out intercultural operation and gap filling in earlier sown groundnut crop. Prepare the pits of proper size before monsoon for horticultural crops. Make necessary arrangement to recharge rainwater into wells and tube wells. Make farm pond in lower region of field for harvested rainwater. Carry out land levelling and bunding to increase water holding capacity of the soil.
 - As mainly dry weather is expected, continue harvesting of pearl millet in Middle Gujarat Zone. Continue the work of digging out pits of proper size at proper distance for new cultivation of orchard crops and carry out bunding in order to harvest rainwater in North Saurashtra Zone. Clean the farm ponds to harvest rain water in Bhal and Coastal Zone.
- **Animal Husbandry**
 - In Gujarat, vaccinate animals against FMD and BQ to avoid disease outbreak during monsoon season. Provide 6-8 kg good quality dry roughage with 15-20 kg green fodder to the animals. Keep animals under shade/in sheds during noon time and provide plenty of cool and clean drinking water.
 - Considering the prevailing high temperature in North Madhya Maharashtra and Marathwada, hang gunny bags from outside the poultry shed and sprinkle it with water. Cover the roof with grass or gunny bags.

Districtwise realised rainfall and % departure for past three weeks is given below in Annexure I

Annexure I
Week by week Rainfall Distribution

Sub-Divisions	04.06.14		11.06.14		18.06.14	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	29.8	-62	58.5	-59	25.5	-78
Dibang Valley	0.0	-100	0.0	-100	0.0	-100
East Kameng	5.8	-88	22.1	-70	4.6	-95
East Siang	59.2	-37	178.7	16	32.4	-84
Kurung Kumey	**	**	**	**	**	**
Lohit	52.9	-35	28.7	-68	11.7	-88
Lower Dibang Valley	39.1	-53	89.8	-4	10.7	-87
Lower Subansari	**	**	**	**	**	**
Papumpara	212.2	24	198.6	45	40.2	-68
Tawang	40.0	-64	9.0	-94	35.0	-78
Tirap	20.6	-82	123.0	12	116.0	-27
Upper Siang	40.2	-68	144.6	-38	53.2	-72
Upper Subansari	24.2	-48	135.4	217	7.6	-74
West Kameng	70.4	-37	262.6	75	53.0	-66
West Siang	29.0	-61	116.0	20	51.5	-53
Assam&Meghalaya						
Assam						
Baksa	28.1	-82	121.9	-23	18.3	-89
Barpeta	58.7	-63	258.0	62	50.8	-70
Bongaigaon	62.4	-50	361.2	130	86.8	-43
Cachar	67.9	-37	138.4	-2	105.2	-4
Chirang	122.5	-1	556.7	255	92.8	-39
Darrang	15.0	-82	117.0	30	35.0	-70
Dhemaji	87.0	-11	80.0	-31	19.0	-85
Dhubri	47.7	-66	371.0	196	48.8	-67
Dibrugarh	20.6	-72	45.6	-44	74.5	-18
Goalpara	88.1	-27	63.5	-46	39.3	-74
Golghat	15.0	-70	18.1	-69	7.2	-89
Hailakandi	58.3	-47	132.5	-1	109.2	5
Jorhat	51.2	-14	45.1	-36	28.5	-61
Kamrup(Rural)	27.2	-67	124.4	56	15.4	-82
Kamrup(Metro)	21.5	-74	17.8	-78	55.2	-36
Karbi Anglong	36.1	14	25.9	-50	17.2	-74
Karimganj	171.3	4	256.0	70	73.9	-56
Kokrajhar	150.3	-10	504.5	220	84.9	-62
Lakhimpur	101.6	4	89.9	-22	14.7	-88
Morigaon	55.8	28	26.6	-53	2.6	-97
N.C.Hills	19.7	-77	71.0	-28	22.8	-70
Nowgong	28.1	-47	23.5	-65	21.3	-69
Nalbari	30.9	-69	106.6	-26	65.8	-54
Sonitpur	70.9	-7	97.5	9	45.8	-46
Sibsagar	37.2	-36	7.0	-86	11.6	-81

Tinsukia	37.5	-43	37.5	-59	43.2	-52
Udalgiri	29.0	-65	104.6	16	13.6	-88
Meghalaya						
East Garo Hills	46.0	-46	529.2	280	63.5	-62
East Khasi Hills	130.9	-44	246.1	-26	37.9	-89
Jaintia Hills	0.0	-100	0.0	-100	**	**
Ribhoi	14.0	-79	58.3	1	51.2	-41
South Garo Hills	**	**	166.0	33	90.0	-28
West Garo Hills	43.8	-54	259.3	107	35.4	-72
West Khasi Hills	1.0	-99	1.0	-99	**	**
NMMT						
Mizoram						
Aizwal	47.2	-55	17.0	-84	64.2	-44
Champhai	0.0	-100	0.0	-100	0.0	-100
Kolasib	1.0	-99	1.0	-99	1.0	-99
Lawngtlai	**	**	**	**	**	**
Lunglei	1.0	-99	0.0	-100	0.0	-100
Mamit	**	**	5.0	-95	**	**
Saiha	9.0	-85	91.0	-1	131.0	36
Serchhip	23.0	-67	30.0	-66	32.0	-70
Manipur						
Bishnupur	1.0	-99	0.0	-100	**	**
Chandel	3.0	-95	50.0	-65	82.0	-59
Churachandpur	4.0	-96	11.0	-89	65.0	-37
Imphal east	23.4	-67	29.4	-67	189.1	97
Imphal west	104.9	121	187.3	122	101.7	8
Senapati	24.0	-66	11.0	-87	57.0	-37
Tamenglong	**	**	**	**	**	**
Thoubal	3.0	-95	0.0	-100	20.0	-81
Ukhrul	1.0	-98	0.0	-100	10.0	-88
Nagaland						
Dimapur	39.9	-11	11.0	-88	44.8	-3
Kephire	**	**	**	**	**	**
Kohima	42.3	-8	25.6	-68	20.9	-75
Longleng	**	**	**	**	**	**
Mokokchung	45.0	-25	11.0	-94	19.0	-89
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	8	-83	10	-88	56	-32
Tuensang	**	**	**	**	**	**
Wokha	5.0	-93	1.0	-99	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	131.0	9	12.8	-90	89.3	-33
North tripura	158.4	24	28.1	-78	75.1	-39
South tripura	97.3	7	49.7	-56	109.6	-13
West tripura	102.8	0	37.8	-64	81.9	-29
Himachal Pradesh						
Bilaspur	14.0	50	0.0	-100	16.9	-27

Chamba	14.8	62	2.5	-84	4.3	-83
Hamirpur	20.3	65	0.0	-100	13.0	-46
Kangra	37.6	233	0.0	-100	21.4	-19
Kinnaur	6.3	-19	0.0	-100	1.0	-88
Kullu	19.0	79	0.0	-100	9.6	-47
Lahaul and Spiti	15.7	27	0.0	-100	0.0	-100
Mandi	14.6	-24	0.0	-100	53.2	83
Shimla	13.9	-4	0.0	-100	24.4	11
Sirmaur	21.8	132	0.0	-100	19.0	-14
Solan	12.1	-7	0.0	-100	60.0	127
Una	12.6	74	0.0	-100	12.3	5
Punjab						
Amritsar	0.2	-93	0.0	-100	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	5.0	150	0.0	-100	5.0	-26
Faridkot	0.0	-100	0.0	-100	0.0	-100
Fatehgarh Saheb	0.0	-100	0.0	-100	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	0.6	-88	0.0	-100	2.9	-73
Hoshiarpur	5.1	5	0.0	-100	0.7	-95
Jalandhar	0.0	-100	0.0	-100	0.0	-100
Kapurthala	0.0	-100	0.0	-100	0.0	-100
Ludhiana	0.7	-78	0.0	-100	2.9	-69
Mansa	0.5	-77	0.0	-100	4.9	-34
Moga	0.5	-62	0.0	-100	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	2.2	-41	0.0	-100	9.5	-41
Patiala	0.0	-100	0.0	-100	8.0	-26
Ropar	1.7	-51	0.0	-100	4.7	-57
Sangrur	0.0	-100	0.0	-100	1.9	-78
Mohali	0.0	-100	0.0	-100	17.5	48
TarnTaran	2.5	213	0.0	-100	0.0	-100
Haryana,Chd,Delhi						
Haryana						
Ambala	0.0	-100	0.0	-100	20.8	-6
Bhiwani	9.7	214	0.0	-100	16.0	166
Chandigarh	0.0	-100	0.0	-100	41.4	44
Faridabad	0.0	-100	0.0	-100	25.7	209
Fatehabad	2.5	-49	0.0	-100	6.0	22
Gurgaon	2.3	-22	0.0	-100	6.6	12
Hissar	4.2	8	0.0	-100	16.9	168
Jhajar	2.2	-30	0.0	-100	14.4	106
Jind	12.5	257	0.0	-100	0.7	-92
Katihah	1.0	-64	0.0	-100	11.0	49
Karnal	0.0	-100	0.0	-100	23.1	67
Kurukshetra	0.0	-100	0.0	-100	28.8	130
Mahendragarh	9.9	81	0.0	-100	10.5	61
Mewat	1.0	-50	0.0	-100	10.0	108
Palwal	0.0	-100	0.0	-100	7.9	24

Panchkkula	0.0	-100	0.0	-100	17.3	-5
Panipat	0.0	-100	0.0	-100	7.9	-23
Rewari	7.6	111	0.0	-100	32.0	527
Rohtak	2.6	-56	0.0	-100	5.3	-40
Sirsa	4.5	29	0.0	-100	8.4	45
Sonepat	8.0	196	0.0	-100	3.4	-74
Yamunanagar	1.5	-78	0.0	-100	27.2	37
Delhi						
Central Delhi	3.0	-33	0.0	-100	5.0	-64
East Delhi	1.0	-78	0.0	-100	26.0	87
New Delhi	0.7	-86	0.0	-100	8.0	-43
North Delhi	10.1	124	0.0	-100	23.5	69
North East Delhi	16.0	256	0.0	-100	9.0	-35
North West Delhi	3.0	-33	0.0	-100	17.0	22
South Delhi	2.0	-56	0.0	-100	12.8	-8
South West Delhi	0.4	-91	0.0	-100	15.5	12
West Delhi	3.0	-33	0.0	-100	14.0	1
Jammu & Kashmir						
Anantnag	21.9	53	0.1	-99	0.9	-93
Badgam	10.4	37	0.0	-100	0.1	-99
Bandipore	**	**	**	**	**	**
Baramula	19.0	-22	1.4	-91	8.8	-58
Doda	16.4	40	0.0	-100	3.6	-78
Ganderbal	13.2	36	0.0	-100	0.0	-100
Jammu	1.2	-75	0.0	-100	1.6	-87
Kargil	0.0	-100	0.0	-100	0.0	-100
Kathua	1.6	-64	0.0	-100	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	19.8	38	0.0	-100	1.2	-92
Kupwara	37.2	135	1.6	-85	0.7	-95
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100
Poonch	8.5	-60	0.0	-100	3.3	-86
Pulwama	12.1	44	0.0	-100	0.0	-100
Rajouri	10.3	7	0.0	-100	36.9	227
Ramban	7.3	-37	0.5	-96	4.8	-71
Reasi	13.6	36	0.0	-100	32.2	94
Samba	6.0	28	0.0	-100	3.6	-70
Shopian	16.0	90	0.0	-100	2.0	-84
Srinagar	13.1	35	0.0	-100	0.2	-99
Udhampur	8.2	-18	0.0	-100	0.0	-100
East Madhya Pradesh						
Anuppur	0.0	-100	0.0	-100	17.9	-50
Balaghat	0.7	-84	0.2	-99	27.2	-7
Chhatarpur	0.6	-81	0.0	-100	29.9	125
Chindwara	0.0	-100	0.0	-100	38.7	30
Damoh	1.0	-79	0.0	-100	59.7	198
Dindori	0.0	-100	0.0	-100	0.0	-100
Jabalpur	0.0	-100	1.7	-89	80.4	233
Katni	0.0	-100	0.0	-100	18.2	10

Mandla	0.0	-100	0.0	-100	50.3	90
Narsingpur	0.0	-100	0.0	-100	21.7	-6
Panna	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	0.0	-100	20.5	33
Sagar	0.0	-100	2.3	-84	41.8	90
Satna	1.0	-43	0.0	-100	29.5	80
Seoni	0.0	-100	0.0	-100	36.4	-2
Shahdol	0.0	-100	0.0	-100	5.0	-72
Sidhi	0.0	-100	0.0	-100	56.8	217
Singrauli	0.0	-100	0.0	-100	38.0	77
Tikamgarh	0.0	-100	0.0	-100	24.0	62
Umaria	1.3	-54	0.0	-100	33.4	137
West Madhya Pradesh						
Alirajpur	0.0	-100	5.4	-71	0.7	-98
Asoknagar	0.0	-100	0.0	-100	5.5	-60
Badwani	0.0	-100	0.0	-100	19.2	-36
Betul	0.0	-100	0.0	-100	25.0	-17
Bhind	0.0	-100	0.0	-100	6.2	-30
Bhopal	0.0	-100	0.0	-100	18.0	-27
Burhanpur	0.0	-100	0.0	-100	48.7	48
Datia	3.0	114	0.0	-100	18.6	107
Dewas	0.0	-100	0.0	-100	14.8	-47
Dhar	0.0	-100	0.0	-100	17.7	-47
Guna	0.0	-100	0.0	-100	25.7	79
Gwalior	6.8	300	0.0	-100	5.8	-59
Harda	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	0.0	-100	24.1	0
Indore	0.0	-100	0.2	-99	8.4	-73
Jhabua	0.0	-100	0.5	-96	0.0	-100
Khandwa	4.0	25	0.0	-100	0.0	-100
Khargone	1.6	-74	0.7	-97	16.3	-47
Mandsaur	0.0	-100	0.0	-100	1.3	-94
Morena	0.0	-100	0.0	-100	1.3	-84
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	1.0	-94	66.4	198
Rajgarh	0.0	-100	0.0	-100	35.6	79
Ratlam	0.0	-100	0.0	-100	0.4	-98
Sehore	0.0	-100	0.0	-100	5.1	-79
Shajapur	0.0	-100	0.0	-100	15.8	-27
Sheopur Kalani	0.0	-100	0.0	-100	8.0	-26
Shivpuri	0.0	-100	0.0	-100	13.8	7
Ujjain	0.0	-100	3.6	-75	22.6	-14
Vidisha	0.0	-100	0.0	-100	29.9	52
Chhattisgarh						
Bastar	42.5	217	1.0	-96	5.7	-86
Bijapur	0.0	-100	0.0	-100	17.7	-68
Bilaspur	2.7	-72	0.0	-100	13.5	-58
Dantewara	7.6	-34	0.0	-100	27.1	-36
Dhamtari	6.4	-10	0.0	-100	20.4	-29

Durg	0.5	-93	0.0	-100	25.0	-22
Janjgir	0.0	-100	12.0	-29	6.8	-83
Jashpurnagar	7.7	-58	4.0	-89	0.6	-99
Kanker	0.0	-100	0.0	-100	6.3	-83
Korba	0.0	-100	0.0	-100	2.7	-94
Koriya	0.7	-94	0.0	-100	41.3	56
Kawardha	8.1	-5	0.0	-100	45.1	48
Mahasumund	2.0	-82	0.0	-100	15.9	-56
Narayanpur	0.0	-100	6.0	-77	46.0	17
Raigarh	**	**	**	**	**	**
Raipur	5.7	-29	1.1	-95	31.4	-7
Rajandgaon	0.0	-100	0.0	-100	16.5	-54
Surguja	0.0	-100	0.6	-97	7.0	-82
East Uttar Pradesh						
Allahabad	0.0	-100	0.0	-100	11.0	-21
Ambedkar Nagar	2.0	-66	0.0	-100	0.0	-100
Azamgarh	3.5	-43	0.0	-100	0.0	-100
Bahraich	0.2	-98	0.0	-100	23.9	-22
Ballia	0.0	-100	2.0	-86	17.4	-38
Balrampur	0.0	-100	1.6	-91	6.4	-79
Banda	2.4	-20	0.0	-100	28.4	173
Barabanki	7.0	35	0.0	-100	13.1	-51
Basti	0.6	-94	0.0	-100	5.2	-76
Chandauli	1.0	-60	0.0	-100	0.0	-100
Deoria	3.5	-63	0.0	-100	18.3	-24
Faizabad	7.7	-3	0.0	-100	1.6	-92
Farrukhabad	0.0	-100	0.0	-100	11.5	-12
Fatehpur	0.0	-100	0.0	-100	8.8	-25
Gazipur	17.0	227	1.3	-91	0.5	-98
Gonda	0.0	-100	0.0	-100	32.0	38
Gorakhpur	2.3	-83	2.5	-92	12.8	-58
Hardoi	2.9	-40	0.0	-100	1.6	-88
Jaunpur	4.1	-23	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	50.1	332
Kanpur City	0.0	-100	0.0	-100	18.8	55
Kanpur Dehat	0.0	-100	0.0	-100	7.2	-38
Kaushambi	0.0	-100	0.0	-100	0.0	-100
Kheri	1.6	-81	0.0	-100	61.6	127
Kushi nagar	3.0	-81	2.5	-93	6.0	-84
Lucknow	0.3	-95	0.2	-98	7.4	-40
Maharajganj	13.0	6	27.5	-38	28.0	-30
Mau	3.0	-47	4.5	-81	3.5	-84
Mirzapur	1.7	-66	0.0	-100	1.0	-93
Pratapgarh	12.7	273	0.0	-100	15.0	9
RaiBareilly	0.4	-84	0.0	-100	7.0	-49
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnnagar	1.3	-86	10.0	-57	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	28.0	67
Shrawasti	0.0	-100	0.0	-100	12.6	-59

Sidharthnagar	0.0	-100	1.2	-95	4.4	-85
Sitapur	0.0	-100	0.0	-100	36.9	54
Sonbhadra	0.8	-85	0.0	-100	19.0	-17
Sultanpur	6.1	43	0.0	-100	4.7	-67
Unnao	1.8	-64	0.0	-100	13.5	-4
Varanasi	1.3	-60	0.0	-100	2.9	-82
West Uttar Pradesh						
Agra	0.0	-100	0.0	-100	3.3	-57
Aligarh	2.3	-43	0.0	-100	24.8	249
Auraiya	0.0	-100	0.0	-100	4.8	-59
Badaun	1.6	-78	0.0	-100	1.4	-88
Baghpat	1.9	-42	0.0	-100	52.6	526
Bareilly	0.0	-100	0.0	-100	11.0	-40
Bijnor	0.0	-100	0.0	-100	6.1	-62
Bulandsahar	1.0	-75	0.0	-100	10.4	2
Etah	0.0	-100	0.0	-100	1.3	-84
Etawah	0.0	-100	0.0	-100	14.5	33
Firozabad	0.0	-100	0.0	-100	0.0	-100
GBNagar	3.0	50	0.0	-100	15.0	355
Ghaziabad	1.7	-48	0.0	-100	5.7	-33
Hamirpur	2.8	-26	0.0	-100	24.2	132
Jalaun	11.7	185	0.0	-100	3.2	-72
Jhansi	0.7	-81	0.0	-100	2.4	-82
Jotiba Phule Nagar	0.0	-100	0.0	-100	1.5	-81
Kanshiramnagar	0.0	-100	0.0	-100	18.0	100
Lalitpur	0.0	-100	0.0	-100	20.5	39
Mahamaya Nagar	6.1	117	0.0	-100	3.0	-62
Mahoba	0.0	-100	0.0	-100	5.2	-7
Mainpuri	0.0	-100	0.0	-100	12.2	53
Mathura	0.0	-100	0.0	-100	3.6	-55
Meerut	1.4	-75	0.0	-100	6.7	-38
Moradabad	0.0	-100	0.0	-100	4.2	-71
Muzzaffarnagar	0.0	-100	0.0	-100	17.0	20
Pilibhit	0.0	-100	0.0	-100	28.8	48
Rampur	0.0	-100	0.0	-100	2.5	-91
Saharanpur	0.0	-100	0.0	-100	20.0	40
Shahjahanpur	0.0	-100	0.0	-100	14.1	-15
Uttarakhand						
Almora	2.5	-86	0.0	-100	23.0	-18
Bageshwar	1.1	-94	0.0	-100	8.3	-70
Chamoli	0.3	-98	0.7	-96	19.8	-12
Champawat	1.3	-92	0.0	-100	10.5	-69
Dehradun	43.2	136	0.0	-100	17.5	-44
Garhwal Pauri	12.5	-24	0.0	-100	9.8	-38
Garhwal Tehri	1.5	-92	0.0	-100	10.0	-51
Haridwar	2.5	-66	0.0	-100	32.9	70
Nainital	10.1	-61	0.7	-97	13.3	-63
Pithorgarh	7.0	-70	25.0	-55	61.9	-14
Rudraprayag	0.0	-100	0.0	-100	26.3	-53

Udham Sing Nagar	10.5	-33	0.0	-100	16.5	-58
Uttarkashi	0.0	-100	0.0	-100	23.5	-2
Bihar						
Araria	26.8	-23	130.2	159	18.2	-70
Arwal	5.5	-20	0.0	-100	0.0	-100
Aurangabad	5.7	-10	0.0	-100	3.4	-89
Banka	13.2	-12	0.0	-100	28.6	-23
Begusarai	39.3	397	40.1	46	0.0	-100
Bhabua	5.0	11	0.0	-100	0.0	-100
Bhagalpur	23.8	30	16.0	-53	9.6	-76
Bhojpur	1.4	-68	0.0	-100	0.0	-100
Buxar	1.2	-88	0.0	-100	0.0	-100
Darbhanga	0.4	-98	34.3	50	37.6	11
East Champaran	16.5	2	19.5	-32	2.4	-94
Gaya	19.6	201	0.0	-100	0.4	-99
Gopalganj	3.6	-68	3.9	-87	2.3	-93
Jahanabad	3.9	-33	0.0	-100	0.0	-100
Jamui	19.3	94	0.0	-100	4.4	-88
Kathihar	48.6	79	22.0	-39	33.7	-40
Khagadia	14.0	-17	14.2	-54	2.6	-93
Kishanganj	118.4	139	225.5	345	45.1	-55
Lakhisarai	20.6	65	5.0	-85	22.0	-38
Madhepura	5.0	-78	29.4	-25	1.3	-98
Madhubani	1.1	-94	53.6	27	46.2	15
Monghyar	14.1	13	20.2	-39	1.4	-96
Muzaffarpur	1.5	-90	12.0	-55	3.3	-89
Nalanda	3.1	-66	0.0	-100	0.0	-100
Nawada	12.3	13	0.0	-100	0.0	-100
Patna	13.8	84	0.2	-99	16.0	-49
Purnea	135.6	240	41.0	-2	8.1	-88
Rohtas	7.5	436	0.0	-100	0.0	-100
Saharsha	0.0	-100	12.3	-74	0.0	-100
Samstipur	0.0	-100	18.5	17	2.3	-94
Saran	0.0	-100	0.0	-100	0.0	-100
Sheikpura	6.4	-44	0.0	-100	0.0	-100
Sheohar	25.2	11	30.2	-20	45.8	8
Sitamarhi	5.0	-78	10.9	-71	36.4	-14
Siwan	3.2	-69	0.0	-100	15.2	-45
Supaul	14.2	-42	75.2	37	34.4	-27
Vaishali	2.1	-73	5.4	-59	0.0	-100
West Champaran	16.8	-14	29.5	-28	61.0	27
Jharkhand						
Bokaro	5.9	-66	0.0	-100	15.7	-56
Chatra	4.5	-46	0.0	-100	9.8	-70
Deoghar	4.7	-59	0.0	-100	1.2	-97
Dhanbad	20.0	15	0.9	-98	10.1	-77
Dumka	20.9	14	29.5	-12	10.6	-77
East Singbhum	10.1	-50	17.3	-53	46.6	-11
Garhwa	1.0	-86	0.0	-100	0.0	-100

Giridih	15.4	4	2.1	-93	14.1	-67
Godda	41.2	210	6.0	-82	0.0	-100
Gumla	0.0	-100	3.7	-89	11.5	-80
Hazaribagh	3.3	-65	0.0	-100	35.7	-19
Jamtara	17.9	-22	0.3	-99	43.1	-14
Khunti	0.0	-100	32.0	-3	16.0	-72
Koderrna	9.4	-47	0.0	-100	3.9	-90
Latehar	2.0	-82	4.0	-81	46.4	27
Lohardagga	0.0	-100	0.0	-100	0.0	-100
Pakur	51.2	81	23.5	-39	22.1	-59
Palamau	1.5	-80	7.3	-62	5.6	-82
Ramgarh	3.8	-74	16.0	-49	27.8	-42
Ranchi	3.1	-82	8.4	-73	12.7	-73
Sahebganj	5.4	-78	55.0	32	3.0	-95
Saraikela	6.3	-58	8.1	-79	2.5	-96
Simdega	0.0	-100	4.0	-85	17.1	-69
West Singbhum	0.0	-100	6.2	-84	51.4	8
East Rajasthan						
Ajmer	0.0	-100	0.0	-100	0.4	-95
Alwar	18.4	424	0.0	-100	5.7	-21
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.0	-100	15.5	6
Bharatpur	0.0	-100	0.0	-100	5.9	-23
Bhilwara	0.2	-95	0.5	-92	4.3	-64
Bundi	0.0	-100	0.0	-100	14.2	19
Chittorgarh	0.1	-98	0.9	-86	1.5	-89
Dausa	15.2	334	0.0	-100	3.2	-54
Dholpur	0.0	-100	0.0	-100	9.8	0
Dungarpur	0.0	-100	0.3	-95	0.0	-100
Jaipur	7.6	90	0.0	-100	4.4	-51
Jhalawar	0.0	-100	0.0	-100	27.4	71
Jhunjhunu	10.6	80	0.0	-100	20.1	78
Karauli	0.0	-100	0.0	-100	12.6	55
Kota	0.0	-100	0.0	-100	13.8	-2
Pratapgarh	0.0	-100	2.8	-71	0.0	-100
Rajsamand	0.0	-100	0.7	-89	0.0	-100
Sawai Madhopur	0.0	-100	0.0	-100	9.9	3
Sikar	12.7	131	0.0	-100	10.6	31
Sirohi	6.1	-17	0.0	-100	1.3	-90
Tonk	0.9	-80	0.1	-99	1.6	-84
Udaipur	1.0	-79	2.0	-64	0.0	-100
West Rajasthan						
Barmer	4.3	-11	0.0	-100	0.0	-100
Bikaner	0.9	-81	0.0	-100	0.0	-100
Churu	15.9	280	0.0	-100	4.9	-29
Hanumangarh	4.0	38	0.0	-100	10.3	21
Jaisalmer	0.2	-93	0.0	-100	0.0	-100
Jalore	3.6	-21	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100

Nagaur	1.7	-65	0.0	-100	0.0	-100
Pali	0.3	-96	1.2	-70	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.7	-89
Gujarat Region						
Ahmedabad	1.3	-49	0.0	-100	3.1	-81
Anand	0.0	-100	0.0	-100	2.8	-86
Banaskantha	0.9	-74	0.0	-100	2.8	-72
Baroda	0.1	-98	0.0	-100	5.2	-82
Broach	0.0	-100	0.0	-100	22.8	-29
DNH	**	**	0.0	-100	64.7	-17
Dahod	0.0	-100	0.6	-95	0.0	-100
Daman	**	**	0.0	-100	62.0	-20
Dangs	0.0	-100	0.0	-100	5.5	-92
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	2.7	-87
Mehsana	0.8	-69	0.0	-100	4.7	-67
Narmada	0.0	-100	0.0	-100	14.0	-67
Navsari	0.0	-100	0.0	-100	36.3	-43
Panchmahal	0.1	-99	0.0	-100	0.8	-96
Patan	0.0	-100	0.0	-100	8.9	-20
Sabarkantha	4.1	-20	0.0	-100	0.2	-99
Surat	0.0	-100	0.0	-100	31.5	-27
Tapi	0.0	-100	0.0	-100	12.7	-78
Valsad	0.0	-100	0.0	-100	50.9	-33
S K & Diu region						
Amreli	5.3	-27	0.0	-100	12.7	-29
Bhavnagar	1.0	-92	0.2	-99	19.4	-11
Diu	0.0	-100	0.0	-100	224.2	1284
Jamnagar	0.0	-100	0.0	-100	14.2	56
Junagarh	0.0	-100	0.0	-100	118.9	344
Kutch	0.0	-100	0.0	-100	2.7	-38
Porbandar	0.0	-100	0.0	-100	65.1	294
Rajkot	1.1	-78	0.0	-100	29.7	120
Surendranagar	1.1	-72	0.0	-100	14.0	-12
Maharashtra & Goa						
Konkan & Goa						
Mumbai City	0.0	-100	0.2	-99	54.1	-62
Mumbai Suburban	2.0	-92	0.0	-100	77.9	-45
North Goa	15.2	-75	42.3	-75	249.6	-2
Raigad	0.0	-100	2.3	-97	114.8	-24
Ratnagiri	23.1	-49	17.6	-84	193.7	-6
Sindhudurg	23.4	-60	62.9	-62	258.8	12
South Goa	19.3	-68	54.6	-66	261.3	5
Thane	0.6	-97	0.1	-99	87.4	1
Madhya Maharashtra						
Ahmednagar	4.2	-61	12.7	-51	0.4	-99
Dhule	2.3	-72	26.3	27	18.9	-33
Jalgaon	0.8	-89	3.0	-85	15.3	-47
Kolhapur	12.9	-48	21.0	-57	37.3	-50

Nandurbar	2.1	-70	3.3	-86	5.3	-85
Nasik	18.9	63	6.0	-79	11.8	-67
Pune	10.4	-13	11.8	-64	8.2	-74
Sangli	13.1	-31	39.6	39	4.9	-82
Satara	29.9	76	15.9	-49	8.2	-73
Solapur	6.6	-57	32.0	19	0.7	-98
Marathwada						
Aurangabad	2.1	-81	10.3	-66	4.5	-86
Beed	4.9	-66	13.9	-55	2.1	-94
Hingoli	0.5	-95	1.1	-95	14.7	-67
Jalna	4.0	-68	2.9	-89	1.4	-96
Latur	0.0	-100	10.6	-62	15.0	-49
Nanded	0.5	-95	3.2	-87	14.3	-62
Usmanabad	4.4	-77	30.7	-3	0.2	-99
Parbhani	0.3	-98	6.6	-75	11.1	-72
Vidarbha						
Akola	2.8	-67	1.5	-92	15.2	-61
Amraoti	0.9	-88	1.2	-93	47.3	39
Bhandara	0.0	-100	5.3	-74	27.1	-17
Buldhana	3.1	-59	1.2	-94	14.4	-59
Chandrapur	6.1	-15	7.4	-56	41.4	8
Gadchiroli	0.0	-100	0.0	-100	55.9	19
Gondia	0.0	-100	1.1	-94	39.0	19
Nagpur	0.1	-99	4.5	-76	51.9	54
Wardha	0.4	-96	3.3	-84	65.6	63
Washim	2.6	-62	14.1	-36	28.4	-27
Yeotmal	0.7	-93	0.8	-96	51.2	16
Odisha						
Angul	8.4	-64	13.9	-58	5.7	-90
Balasore	16.0	-51	20.7	-65	12.5	-80
Bargarh	0.9	-92	0.0	-100	3.0	-94
Bhadrak	3.7	-86	6.5	-85	19.6	-65
Bolangir	0.0	-100	0.0	-100	3.6	-92
Boudh	0.0	-100	5.4	-79	0.0	-100
Cuttack	7.3	-75	4.4	-88	17.7	-66
Deogarh	10.3	-33	2.5	-92	17.4	-62
Dhenkanal	0.9	-96	4.5	-88	12.6	-74
Gajapati	11.0	-49	1.6	-96	13.7	-83
Ganjam	16.5	-8	11.8	-59	4.1	-92
Jagatsingpur	3.4	-87	9.1	-75	6.0	-91
Jajpur	13.3	-56	8.5	-83	1.6	-98
Jharsuguda	0.3	-98	3.9	-89	7.4	-84
Kalahandi	0.0	-100	0.0	-100	14.9	-71
Kandhamal	2.5	-89	3.6	-86	13.8	-75
Kendrapara	13.5	-51	0.8	-97	18.8	-66
Keonjhar	3.7	-88	16.6	-62	31.2	-49
Khurda	10.3	-51	7.7	-68	5.9	-89
Koraput	7.8	-66	2.3	-92	23.6	-54
Malkangiri	17.0	25	5.8	-73	11.2	-78

Mayurbhanj	6.9	-72	13.5	-77	39.8	-38
Nawapara	0.0	-100	0.0	-100	38.4	-11
Nawarangpur	25.9	-13	20.1	-42	59.1	-8
Nayagarh	24.3	2	15.1	-52	4.8	-92
Puri	3.0	-85	2.1	-91	19.8	-59
Rayagada	1.8	-90	5.1	-81	12.3	-79
Sambalpur	8.7	-44	0.8	-97	2.2	-95
Sonepur	1.0	-91	0.0	-100	7.3	-84
Sundargarh	3.3	-80	2.2	-93	21.1	-57
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	115.0	30	98.4	56	60.4	-3
North & Middle Andaman	37.2	-69	170.1	20	242.3	128
South Andaman	26.5	-79	148.3	21	177.5	84
GWB						
Bankura	26.9	6	9.7	-78	4.6	-89
Birbhum	18.5	-29	9.9	-74	19.6	-59
Burdwan	33.1	36	18.8	-52	31.0	-30
East Midnapore	50.5	34	2.2	-96	6.8	-87
Hooghly	49.4	58	2.1	-96	52.9	14
Howrah	89.6	165	3.4	-93	51.9	1
Kolkata	56.4	37	0.0	-100	72.1	15
Murshidabad	26.0	-7	10.0	-84	12.9	-72
Nadia	94.2	205	0.0	-100	56.4	5
24 Pargana (N)	39.1	-15	0.0	-100	60.0	0
Purulia	11.5	-48	10.7	-76	34.5	-22
24 Pargana (S)	78.2	189	1.5	-98	28.3	-62
West Midnapore	17.1	-52	11.1	-77	18.3	-63
SHWB & Sikkim						
Cooch Behar	122.0	6	345.3	183	45.0	-76
Darjeeling	104.2	56	101.1	-4	72.9	-44
East Sikkim	46.6	-41	164.5	115	90.5	-27
Jalpaiguri	166.7	55	264.8	121	70.0	-62
Malda	56.1	85	29.8	-25	12.3	-77
North Dinajpur	**	**	**	**	**	**
North Sikkim	66.7	-41	210.9	84	139.9	13
South Dinajpur	62.6	33	112.4	100	40.4	-57
South Sikkim	35.7	-55	50.6	-34	22.2	-82
West Sikkim	50.7	-55	138.0	21	53.7	-57
Karnataka						
Coastal Karnataka						
Dakshin Kannada	25.6	-74	70.5	-63	266.4	9
Udupi	2.5	-98	84.6	-62	320.8	18
Uttar Kannada	11.1	-81	42.4	-69	188.0	-3
N I Karnataka						
Bagalkote	14.3	-32	19.3	1	6.2	-70
Belgaum	26.0	17	31.0	26	8.5	-66
Bidar	7.0	-56	10.3	-63	13.8	-61

Bijapur	3.0	-83	21.3	-11	1.6	-94
Dharwad	6.1	-72	19.6	-22	7.4	-71
Gadag	25.1	19	34.8	42	5.2	-73
Gulbarga	14.6	3	17.2	-23	8.5	-74
Haveri	51.5	172	1.2	-95	7.7	-67
Koppal	8.8	-45	23.3	26	12.3	-34
Raichur	12.5	1	2.8	-82	18.1	-15
Yadgir	2.4	-84	8.2	-62	5.8	-81
S I Karnataka						
Bangalore Rural	23.4	-8	21.0	-10	2.1	-87
Bangalore Urban	32.9	12	35.8	58	1.9	-89
Bellary	51.8	163	25.8	43	5.5	-68
Chamarajnagar	75.5	197	1.1	-91	0.3	-98
Chichballapur	38.8	81	3.6	-78	3.0	-82
Chickmagalur	54.3	63	15.2	-79	45.8	-46
Chitradurga	79.5	357	3.4	-77	2.9	-78
Davangere	53.8	183	0.3	-98	8.7	-48
Hassan	51.4	150	8.8	-64	11.0	-61
Kodagu	38.4	-16	17.7	-82	60.8	-51
Kolar	42.2	82	23.6	39	0.1	-99
Mandya	83.0	328	2.0	-85	0.0	-100
Mysore	74.9	227	2.3	-87	1.3	-93
Ramnagara	62.8	116	22.9	7	0.0	-100
Shimoga	27.1	4	10.9	-83	84.0	11
Tumkur	47.2	89	16.1	-4	8.5	-45
Kerala						
Alappuzha	19.5	-81	183.6	5	85.1	-36
Kannur	48.0	-54	162.4	-7	221.8	7
Ernakulam	27.6	-77	201.7	17	161.3	-7
Idukki	21.7	-73	84.9	-43	72.7	-51
Kasaragod	48.8	-58	99.6	-55	308.0	23
Kollam	26.1	-68	115.0	-15	36.2	-63
Kottayam	28.6	-75	183.5	9	113.3	-26
Kozhikode	83.3	-34	175.1	-17	187.3	-12
Malappuram	54.5	-36	134.6	-7	84.6	-47
Palakkad	59.1	13	51.6	-44	46.2	-60
Pathanamthitta	23.1	-74	157.9	2	93.0	-28
Thiruvananthapuram	24.6	-65	65.5	-42	14.0	-80
Thrissur	63.6	-41	150.0	-12	141.9	-14
Wayanad	60.6	-1	96.0	-30	82.7	-45
Tamil Nadu						
Ariyalur	12.5	-22	2.3	-84	0.0	-100
Chennai	11.2	93	35.3	176	0.0	-100
Coimbatore	15.6	40	19.2	205	12.3	59
Cuddalore	23.9	120	2.1	-83	1.0	-94
Dharmapuri	44.4	75	21.9	46	0.0	-100
Dindigul	51.3	259	1.8	-85	0.0	-100
Erode	31.6	145	11.6	38	0.0	-100
Kanchipuram	9.9	-7	38.7	161	1.1	-95

Kanyakumari	7.8	-82	22.5	-61	1.7	-96
Karikal	37.5	89	0.0	-100	6.2	-59
Karur	27.7	219	0.0	-100	0.0	-100
Krishnagiri	41.9	75	22.6	46	0.9	-93
Madurai	44.2	263	0.9	-93	1.2	-90
Nagapattinam	19.2	134	0.7	-92	4.3	-64
Namakkal	33.0	109	6.6	-45	0.0	-100
Nilgiris	27.8	14	27.6	-15	7.8	-79
Perambalur	19.0	86	2.0	-78	0.0	-100
Puducherry	32.0	338	2.2	-83	1.6	-90
Pudukottai	19.7	55	2.2	-78	0.0	-100
Ramanathapuram	6.7	42	0.0	-100	0.0	-100
Salem	40.2	101	11.9	-25	0.1	-99
Sivaganga	18.8	40	0.0	-100	0.3	-98
Thanjavur	10.4	-3	1.8	-83	0.1	-99
Theni	17.0	118	7.1	39	1.6	-61
Tirunelveli	0.6	-92	1.1	-89	2.1	-72
Tirupur	60.2	473	0.0	-100	0.0	-100
Tiruvallur	5.0	-56	40.3	225	3.6	-84
Tiruvannamalai	21.6	31	11.4	-25	0.8	-95
Tiruvarur	0.7	-90	0.8	-90	0.6	-95
Toothukudi	4.6	36	0.1	-96	0.0	-100
Trichy	7.3	-37	0.0	-100	0.0	-100
Vellore	22.4	8	31.6	94	1.4	-92
Villupuram	23.1	138	15.7	33	3.5	-72
Virudhunagar	40.1	305	1.6	-66	0.0	-100
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	5.8	-63	2.8	-86	0.6	-98
Guntur	3.3	-73	0.0	-100	6.8	-69
Krishna	12.1	-10	0.0	-99	2.7	-91
Nellore	3.2	-54	12.0	0	4.4	-69
Prakasam	10.1	-12	2.5	-83	0.0	-100
Sirkakulam	22.0	62	4.7	-81	4.8	-89
Visakhapatnam	23.6	27	21.1	-10	5.1	-87
Vizianagram	42.9	104	4.3	-84	1.2	-97
West Godavari	7.6	-39	1.2	-94	1.4	-96
Telangana						
Adilabad	5.5	-48	9.7	-58	62.5	42
Hyderabad	48.1	304	0.0	-100	5.9	-79
Karimnagar	15.3	26	12.4	-42	49.1	14
Khammam	5.3	-60	0.2	-99	6.8	-83
Mehabubnagar	51.6	377	0.0	-100	10.2	-54
Medak	15.3	9	1.2	-94	7.7	-77
Nalgonda	15.8	19	0.0	-100	1.1	-96
Nizamabad	3.0	-74	10.0	-64	19.9	-54
Rangareddy	37.8	232	0.0	-100	8.1	-72
Warangal	7.4	-45	1.7	-93	24.4	-35

Rayalaseema						
Anantapur	45.5	140	8.1	-47	1.4	-90
Chittoor	17.5	11	33.0	86	0.0	-100
Cuddapah	21.6	46	19.6	10	2.0	-90
Kurnool	49.5	246	16.3	-17	6.9	-67

<u>Legends</u>			
	<u>(20% or more) excess rainfall</u>		<u>(-60 to -99 %) scanty rainfall</u>
	<u>(-19 to +19%) normal rainfall</u>		<u>(-100%) no rainfall</u>
	<u>(-20 to -59%) deficient rainfall</u>	**	<u>Data not available</u>