

National Agromet Advisory Service Bulletin

Tuesday 15th July 2014

(For the period 15th to 18th July 2014)



Issued by

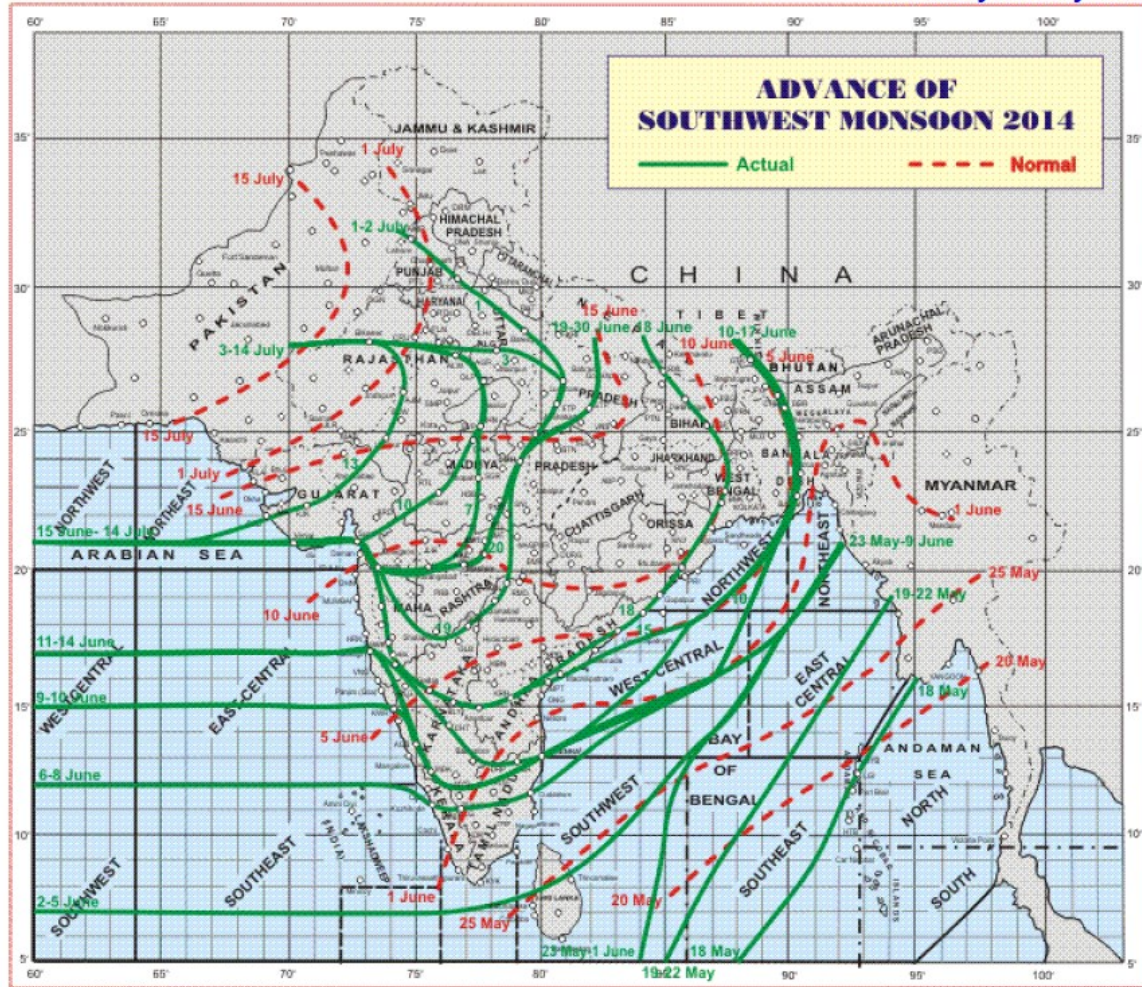
**National Agrometeorological Advisory Service Centre,
Agricultural Meteorology Division,
India Meteorological Department, Shivajinagar, Pune.**



Monsoon Watch

Northern Limit of Monsoon

Tuesday 15 July 2014



- The Northern Limit of Monsoon (NLM) continues to pass through Lat. 21°N / Long. 60°E, Lat. 21°N / Long. 65°E, Porbandar, Rajkot, Surendernagar, Udaipur, Ajmer, Bikaner and Lat. 28°N / Long. 72°E.
- Conditions are favourable for further advance of southwest monsoon into remaining parts of the country during next 2-3 days.

Realised Weather as on 15th July 2014

Rainfall: (From 0830 hours IST to 1730 hours IST of yesterday): Rain/thundershowers occurred at many places over west Uttar Pradesh, Gangetic West Bengal, Assam & Meghalaya, Madhya Pradesh, Madhya Maharashtra, Marathwada, Coastal & south interior Karnataka and Kerala; at a few places over Bihar, Jharkhand, Chhattisgarh and north interior Karnataka and at isolated places over Himachal Pradesh, Odisha, Telangana and Andaman & Nicobar Islands. Weather remained mainly dry/dry over rest parts of the country. The amounts of rainfall (3 cm or more) recorded at 1730 hours IST of yesterday were: Shahajahanpur-12; Hosangabad, Raisen and Bhopal-5 each; Kozhikode-4; Damoh, Nowgong, Haldia and Bareilly-3 each.

Temperatures: Heat wave conditions prevailed at isolated places over north Rajasthan. Maximum temperature of 43°C or more recorded at: Bikaner-43.8 and Ganganagar-43.4. Yesterday, maximum temperatures were above normal by 2-5°C at many places over east Uttar Pradesh and west Rajasthan; at a few places over Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Saurashtra & Kutch, north Madhya Pradesh and Sub-Himalayan West Bengal & Sikkim and at isolated places over Bihar, Chhattisgarh, Marathwada and Vidarbha. They were below normal by 2-4°C at a few places over south Madhya Pradesh and Kerala and at isolated places over coastal Andhra Pradesh and Tamilnadu and near normal over rest parts of the country.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 18th July, 2014)

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

Weather Warning during next 3 days

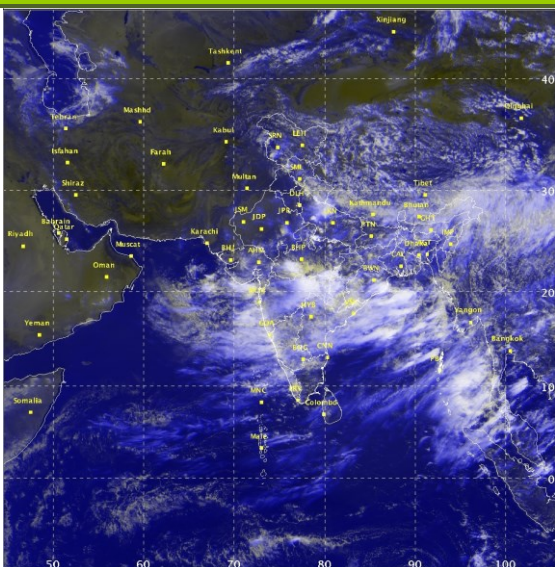
- **15 July (Day 1):** Heavy to very heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Konkan & Goa, coastal Karnataka and Kerala.
Heavy rainfall would occur at isolated places over Uttarakhand, Madhya Pradesh, Chhattisgarh, Odisha, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, South Interior Karnataka, Coastal Andhra Pradesh, Telangana and Andaman & Nicobar Islands.
- **16 July (Day 2):** Heavy to very heavy rainfall would occur at isolated places over Uttarakhand, Sub-Himalayan West Bengal & Sikkim and coastal Karnataka.
Heavy rainfall would occur at isolated places over Uttar Pradesh, east Rajasthan, Gujarat state, Konkan & Goa, Arunachal Pradesh, Assam & Meghalaya, Jharkhand, Bihar, South Interior Karnataka and Kerala.
- **17 July (Day 3):** Heavy to very heavy rainfall would occur at isolated places over Uttarakhand, Sub-Himalayan West Bengal & Sikkim and coastal Karnataka.
Heavy rainfall would occur at isolated places over Uttar Pradesh, east Rajasthan, Gujarat state, Konkan & Goa, Arunachal Pradesh, Assam & Meghalaya, Jharkhand, Bihar, South Interior Karnataka and Kerala.

Weather Outlook for subsequent 4 days from 18th to 22nd July 2014.

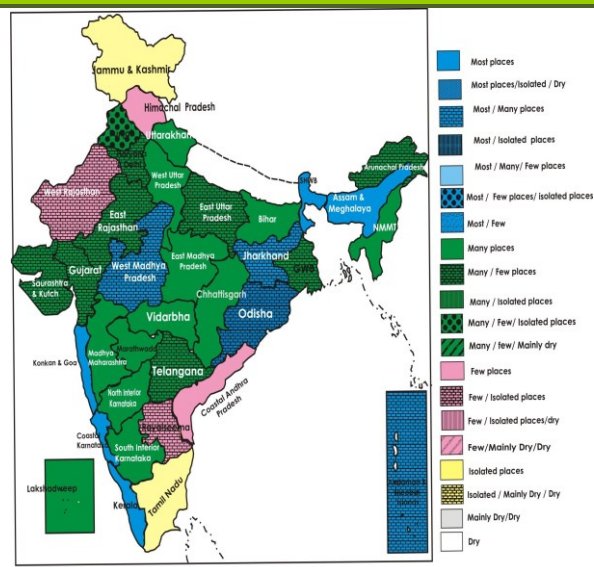
- Rain/thundershowers would occur at many places over northeast, east & central India and along west coast.
- Increase in rainfall activity over northwest India.
- Subdued rainfall activity would continue over interior peninsular India.
- Rain/thundershowers would occur at isolated places over rest parts of the country.

over many parts of northwest India & northwest Madhya Pradesh. However, it would fall by 2-3°C over Uttar Pradesh and central India during next 48 hours.

Satellite image dated 15.07.2014, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 18th July, 2014)



Salient Advisories

- Continue transplanting of *Virippu* rice in the Central and Northern Zones of **Kerala**.
- Continue transplanting of *kharif* rice in **Coastal Zone of Karnataka**, continue sowing of *kharif* crops like sorghum, pulses viz., cowpea, green gram, black gram and oilseed crops like sesamum and transplanting of ragi in the Southern Dry Zone with realised/ expected rainfall. Continue sowing of bajra, pigeonpea, groundnut, sesamum, niger, foxtail millet, horsegram and castor in **North Interior Karnataka**.
- Continue nursery sowing and direct sowing of rice and planting of rainfed sugarcane in the North Coastal Zone of **Andhra Pradesh**.
- In **Assam and Meghalaya**, continue nursery sowing and transplanting of *Sali* rice and in **Arunachal Pradesh** continue transplanting of *kharif* rice utilizing the realised and expected rainfall. Drain out excess water from rice nursery.
- Continue transplanting of main *kharif* rice and early cauliflower, sowing of black gram and rice bean in **Manipur**, continue transplanting of rice and sowing of soybean in **Nagaland** and continue nursery sowing and transplanting of *aman* rice in **Tripura**.
- In **West Bengal**, continue nursery sowing and transplanting of *aman* rice utilizing the realised and expected rainfall.
- In East and South Eastern Coastal Plain Zone of **Odisha**, continue transplanting of *kharif* rice under SRI cultivation utilizing the realised and expected rainfall and beushening in 21 days old direct sown rice in low land areas. Also continue sowing of ragi, maize, groundnut and sesame.
- Continue transplanting of rice in low and medium land areas and sowing of maize in **Bihar** and sowing of maize, pigeon pea, urad, moong, groundnut, soybean and sesame in **Jharkhand**.
- Continue direct sowing of *kharif* rice in Sub Montane and Low Hills Sub Humid Zone of **Himachal Pradesh** and continue transplanting of *kharif* rice in **Uttarakhand**.
- As rain/thundershowers would occur at most/many places over **Odisha, Bihar and Jharkhand** along with heavy spells at isolated places and heavy to very heavy rainfall at isolated places over **Sub-Himalayan West Bengal & Sikkim**, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.

Detailed Zonewise Agromet Advisories

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



Land preparation/ Sowing

Rice Nursery

Sugarcane

Okra

- **Realised Weather:** Rain/thundershowers occurred at many places over Coastal & south interior Karnataka and Kerala; at a few places over north interior Karnataka and at isolated places over Telangana. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were below normal by 2-4°C at a few places over Kerala and at isolated places over coastal Andhra Pradesh and Tamilnadu and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Coastal Karnataka and Kerala, at many places over Interior Karnataka, at a few places over Coastal Andhra Pradesh and at isolated places over Tamilnadu & Pudducherry during the period. Rain/thundershowers would occur at many places over Telangana during next 24 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Rayalaseema during next 48 hours and at isolated places thereafter.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over coastal Karnataka during the period and over Kerala on 15th July. Heavy rainfall would occur at isolated places over South Interior Karnataka during the period and over Coastal Andhra Pradesh and Telangana on 15th July and over Kerala on 16th and 17th July.
- **Weather Outlook:** Subdued rainfall activity would continue over interior peninsular India. Rain/thundershowers would occur at isolated places over rest parts of the region.
- **Advisories:**
 - **Karnataka:**
 - As rain/thundershowers would occur at most places over Coastal Karnataka along with heavy to very heavy rainfall at isolated places and at many places over Interior Karnataka along with heavy rainfall at isolated places South Interior Karnataka during the period, postpone intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
 - Continue transplanting of *kharif* rice in the Coastal Karnataka.
 - Continue sowing of maize and cotton and nursery raising for lowland and upland rice utilising the realized and expected rainfall in the Hill Zone of Karnataka.
 - Continue sowing of *kharif* crops like sorghum, pulses viz., cowpea, green gram, black gram and oilseed crops like sesamum in Southern Dry Zone of Karnataka. Undertake sowing of jowar-CHS-5, jowar+red gram(2:1) and groundnut+red gram(4:1 or 8:2) by using seed drill under rainfed situation.
 - Continue sowing of red gram, ragi, groundnut and maize in the Eastern Dry Zone of Karnataka. Continue sowing of maize, irrigated cotton, red gram and intercropping in places where bajra is grown and transplanting of chillies in Bellary, Gulbarga Yadgir and Raichur districts; sowing of tur, niger, castor, groundnut, bajra, sorghum individually or by intercropping with tur and sowing / dibbling of irrigated cotton in Gulbarga, Koppal and Yadgir districts in the North East Dry Zone of Karnataka utilizing the realized and expected rainfall.
 - Continue sowing of soybean, pigeon pea, jowar and undertake sowing of black gram and green gram in the North East Transition Zone of Karnataka.
 - Continue sowing of bajra, pigeonpea, groundnut, sesamum, niger, foxtail millet, horsegram, castor, bajra + pigeonpea (2:1), bajra + castor (2:1), groundnut + pigeonpea (4:2) bajra + groundnut (2:4), bajra + pigeonpea (2:1) in North Dry Zone of Karnataka utilizing the realized and expected rainfall.
 - **Kerala:**
 - As rain/thundershowers would occur at most places along with heavy to very rainfall at isolated places on 15th, heavy rainfall on 16th and 17th July, postpone intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
 - Continue transplanting of *virippu* rice in the Central Zone of Kerala.
 - Continue direct sowing of rice in the Problem Area Zone of Kerala. Also continue mat nursery preparation in places where mechanized transplanting can be done, planting of Nendran banana and transplanting of brinjal and chilli.
 - Due to humid weather conditions, there is chance of leaf folder and stem borer attack in rice in the Central Zone of Kerala. To manage them, use Trichogramma cards @ 2CC per acre and apply Quinalphos (2ml per one litre of water) or Cartap hydrochloride (25g per one hectare) if the attack is severe after current spells of rain.

- **Andhra Pradesh:**

- Continue nursery sowing of rice, direct seeding of rice under aerobic conditions and planting of rainfed sugarcane. Continue sowing of maize, green gram, black gram and red gram utilizing the realised rainfall in the North Coastal Zone of Andhra Pradesh.
- In Southern Telangana Zone of Andhra Pradesh, continue sowing of rainfed crops like cotton, maize, groundnut, pulses etc. Continue nursery sowing and transplanting of tomato, brinjal and chilli and direct sowing of cucurbits, beans and bhendi utilizing the realised and expected rainfall.
- Continue sowing of direct seeded rice and chillies and pulses in upland areas and land preparation for cotton sowing in the Krishna Godavari Zone of Andhra Pradesh.
- Continue sowing of red gram and groundnut in the rainfed tracts in the Scarce Rainfall Zone of Andhra Pradesh. In rainfed areas in Kurnool district, intercropping of korra + red gram @ 5:1 and Groundnut + red gram 7:1 intercropping can be sown up to 3rd week of July. Continue sowing of castor, raising of onion nursery and planting of medium and long duration varieties of turmeric. Continue sowing of lady's finger and cluster bean under irrigation, cotton in black soils rainfed groundnut, red gram, castor and bajra utilizing realized rainfall in Anantapur district.
- Continue sowing of groundnut, red gram and nursery sowing of rice in the Southern Zone of Andhra Pradesh.

- **Tamil Nadu:**

- Continue transplanting of *kuruvai* rice in the Cauvery Delta Zone of Tamil Nadu with irrigation.
- Undertake propping up of banana crop of more than five months to prevent lodging due to high wind speed and undertake land preparation for sowing of groundnut in the Western and South Zone of Tamil Nadu.
- Partly cloudy and moderate humid weather is conducive for the incidence of sigatoka leaf spot in banana in the South Zone of Tamil Nadu. Spray Carbendazim @ 1 g/ litre of water, if incidence is noticed.
- Suitable varieties are given in Annexure II.

- **Animal Husbandry**

- Prevailing weather conditions are congenial for Anthrax in cattles in the Scarce Rainfall Zone of Andhra Pradesh. Vaccinate the animals to prevent the disease.

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



Rice Nursery



Land preparation/Sowing



Okra



Jute

- **Realised Weather:** Rain/thundershowers occurred at many places over Assam & Meghalaya. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were near normal over the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Assam & Meghalaya and at many places over Nagaland, Manipur, Mizoram and Tripura during the period. Rain/thundershowers would occur at many places over Arunachal Pradesh during next 24 hours and at a few places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Arunachal Pradesh, Assam & Meghalaya during the period.
- **Weather Outlook:** Rain/thundershowers would occur at many places over northeast India.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - As rain/thundershowers would occur at most places over Assam and Meghalaya along with isolated heavy spells during the period, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In Assam, complete nursery sowing of *sali* rice. If necessary, farmers are advised to sow the seeds of medium and short duration rice varieties like - IR-36, Jaya, Pankaj, Lakhimi, Salpona, Prasadbhog, Gobind bhog, Satyaranjan, Basundhara etc. Continue main field preparation and transplanting of *sali* rice.
 - In Meghalaya, continue transplanting of *sali* rice, sowing of pigeon pea and planting of khasi mandarin.
 - In Arunachal Pradesh, complete transplanting of local varieties of *Kharif* rice. Continue transplanting of HYV of *Kharif* rice.
 - In Central Bramhaputra Valley Zone, continue nursery sowing of medium duration (130-135 days) *sali* rice varieties like Satyaranjan, Basundhara, Jaya, IR 36 etc. can be sown upto 20th July and 25-30 days old seedlings can

be transplanted till 15-20 August. Continue land preparation and sowing of jute for seed purpose.

- Continue sowing of arhar and sesame in Hill Zone and Central Brahmaputra Valley Zone, continue sowing of sesame and groundnut in Lower Brahmaputra Valley Zone of Assam.
- Due to prevailing humid weather conditions, there is chance of attack of aphid on black gram in Arunachal Pradesh. Spray Methyl Demeton 25 EC or Dimethoate @ 500 ml /500 litres of water per ha after current spells of rain. Also there is chance of fruit flies in cucurbits, for control, spray Malathion @ 3ml per litre of water after current spells of rain.
- Due to humid weather and increase in humidity, there is chance of attack of blast, Gundhi bug and stem borer in arhu rice in Temperate Sub Alpine Zone of Meghalaya. Spray Mancozeb @ 2 g/litre of water or Carbendazim @ 1 g/litre of water against blast, spray Malathion 5% dust @ 6.25 kg/ha against rice Gandhi bug and Chloropyriphos @ 0.02 % or Monocrotophos @ 0.04 % for stem borer after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Mizoram, continue sowing of groundnut and soybean and transplanting of rice utilizing the realized and expected rainfall
- In Nagaland, continue sowing of soybean, groundnut and pulses like black gram, green gram utilizing the realized and expected rainfall. Continue transplanting of rice.
- Continue transplanting of main *kharif* rice and sowing of black gram in Manipur utilizing the realized and expected rainfall. Undertake nursery raising of early cauliflower in raised beds.
- In Mild Tropical Plain Zone of Tripura, continue transplanting of *aman* rice and continue sowing of vegetables.
- As rain/thundershowers would occur at many places over Nagaland, Manipur, Mizoram and Tripura, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops.
- In Tripura, due to cloudy and humid weather there is chance of infestation of sheath blight in *jhum* rice. Spray Surf @ 1g per litre of water. Also monsoon weather is conducive for Panama wilt disease in banana. Drench with Bavistin @1g per litter of water and Trichodermaviride and pseudomonas fluorescence may be incorporated in the soil after current spells of rain. Also cloudy and humid weather is conducive for the attack of leaf curl disease in summer brinjal, chilli etc. To manage the attack, apply Imidachloprid @ 2ml per litre of water after current spells of rain.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- In the Northeastern States, animal sheds should be kept dry and avoid dampness during rainy days.
- Monsoon weather could lead to gastrointestinal parasites infection in pigs and poultry in Tripura. Farmers are advised to keep good sanitary conditions in pig and poultry sheds.
- **Fisheries**
- In flood affected areas of Lower Brahmaputra Valley Zone of Assam, protect the fish ponds by putting nylon net or bamboo net around the ponds. Due to heavy rainfalls & muddy water influx from the surrounding areas into the ponds may results reduction of dissolved oxygen. Stirring the water with a bamboo pole will help in increasing the oxygen and protect the fishes from suffocation.

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



Sugarcane



Jute



Onion



Land Preparation/Sowing

- **Realised Weather:** Rain/thundershowers occurred at many places over Gangetic West Bengal; at a few places over Bihar, Jharkhand and at isolated places over Odisha and Andaman & Nicobar Islands. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were above normal by 2-5°C at a few places over Sub-Himalayan West Bengal & Sikkim and at isolated places over Bihar and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Sub-Himalayan West Bengal & Sikkim and at many places over Bihar during the period. Rain/thundershowers would occur at most places over Odisha and Jharkhand during next 48 hours and at many places thereafter. Rain/thundershowers would occur at most places over Andaman & Nicobar Islands during next 24 hours and at many places thereafter. Rain/thundershowers would occur at many places over Gangetic West Bengal during next 24 hours and at a few places thereafter.
- **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 the period. Heavy rainfall would occur at isolated places over Odisha, Andaman & Nicobar Islands on 15th and over Bihar on 16th and 17th July.

- **Weather Outlook:** Rain/thundershowers would occur at many places over east India.
- **Advisories:**
 - **West Bengal:**
 - As rain/thundershowers would occur at most places over Sub Himalayan West Bengal and Sikkim during the period along with heavy to very heavy spells at isolated places, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In West Bengal, continue nursery sowing and transplanting of *aman* rice utilizing the realised and expected rainfall.
 - Complete sowing of direct seeded *aman* rice in Coastal Saline Zone.
 - In New Alluvial Zone of West Bengal, continue planting of banana and continue land preparation and sowing of direct seeded Upland rice in Laterite and Red Soil Zone.
 - Due to humid weather betel vine plants may be attacked by chital disease in Coastal Saline Zone of West Bengal. Apply 0.5% Bordeaux mixture at 15-20 days interval after current spells of rain. Apply Bavistin/ Carbendazin @ 1 g/liter of water against stem rot in Elephant foot yam after current spells of rain.
 - Due to humid weather, there is chance of attack of whitefly and Jassid in ladies finger in Laterite and Red Soil Zone of West Bengal. For white-fly, apply Imidachloprid 17.8 S. L. @ 4 ml per 10 litre of water and for Jassid, spray Thiamethoxon @1g/10liter of water after current spells of rain.
 - **Andaman & Nicobar Islands:**
 - In Andaman & Nicobar Islands, drain out excess water from rice nurseries and vegetable crop fields.
 - **Odisha:**
 - As rain/thundershowers would occur at most/many places over Odisha along with heavy spells at isolated places on 15th, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In East and South Eastern Coastal Plain Zone of Odisha, continue transplanting of *kharif* rice under SRI cultivation utilizing the realised and expected rainfall and beushening in 21 days old direct sown rice in low land areas. Also continue sowing of ragi, maize, groundnut and sesame.
 - In Western Undulating Zone of Odisha, continue sowing of maize, arhar and cotton in upland areas taking the advantage of the realised and expected rainfall.
 - In North Eastern Plateau Zone of Odisha, continue sowing of maize, groundnut, green gram and black gram, ragi, arhar, maize and sesame, sowing of okra and cluster bean in North Central Plateau Zone of Odisha. Also continue nursery raising of brinjal, tomato and chilli in upland areas.
 - Fruit and shoot borer in brinjal has been found in East and South Eastern Coastal Plain Zone of Odisha. To control it install Pheromone traps and spray Sevin WP @ 4 g or Malathion @ 2 ml in 1 litre water alternatively. Drying of fruit and stem of brinjal has been occurred. Spray 2 g Saaf or Sixer or Companion in 1 litre water. Root rot of pointed gourd. Spray 10 g Plantomycine along with 20 g Blitox 50 in 10 litre water. Fruit fly in cucurbit and bitter gourd. Spray 3 ml Sevin WP in 1 litre water after current spells of rain.
 - **Bihar:**
 - As rain/thundershowers would occur at many places over Bihar along with heavy spells at isolated places on 16th and 17th July postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In North West Alluvial Plain Zone of Bihar, continue transplanting of rice in low and medium land areas with realised and expected rainfall. Continue sowing of arhar, urd and kulthi in upland areas.
 - Complete nursery sowing of short duration rice varieties in South Bihar Alluvial Zone. Undertake planting of Mango, Litchi, Guava and Papaya. Undertake transplanting of long or medium duration rice variety which is 21-25 days old.
 - In North East Alluvial Plain Zone of Bihar, continue transplanting of 20-25 days old paddy seedling in low and medium land areas with realised rainfall. Continue nursery sowing of Chilli. Prepare drainage channels to drain out excess water from field of vegetables, jute and elephant foot yam.
 - **Jharkhand:**
 - As rain/thundershowers would occur at most/many places over Jharkhand along with heavy spells at isolated places during the period, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In South Eastern Plateau Zone of Jharkhand, complete sowing of direct seeded upland rice and continue sowing of maize and pigeon pea, urad, moong, groundnut, soybean, sesame and also rainy season. Continue transplanting of rice in low and medium land areas with realised and expected rainfall.
 - In Western Plateau Zone of Jharkhand, continue transplanting of rice in low and medium land areas and transplanting of finger millet. Undertake sowing of medium duration varieties of maize for green cob and early duration varieties for grain purpose.
 - In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of urad, til and groundnut and continue

transplanting of rice and planting of mango, guava and litchi.

➤ Suitable varieties are given in Annexure II.

● **Animal Husbandry**

➤ Keep the cattle in the sheds during heavy rainfall periods in Sub-Himalayan West Bengal.

➤ Provide dry and clean shelter to dairy animals in Old Alluvial Zone of West Bengal. Clean and hygienic water should be provided to dairy animals.

➤ In Coastal Saline Zone of West Bengal, cattle may be attacked by foot and mouth disease in the rainy weather. Wash the wound with Potassium per Manganet solution. Feed the cattle Albomar or Albozen for deworming @1bolus/150kg body wt.

➤ In South Bihar Alluvial Zone, to carry out vaccination of animals against *Anthrax*, *Black Quarter (Dakaha)*, *Galghotu* disease to protect them during rainy season.

● **Poultry**

➤ In Nicobar Islands, South, North and Middle Andaman, egg laying poultry birds should be provided with extra light during night as well as cloudy days through electric bulb or through other lamp to about 16 to 17 hours to maintain egg production.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Land Preparation/Sowing

Okra

Green Gram

● **Realised Weather:** Rain/thundershowers occurred at many places over Madhya Pradesh; at a few places over Chhattisgarh. Maximum temperatures were above normal by 2-5°C at a few places over north Madhya Pradesh and at isolated places over Chhattisgarh. They were below normal by 2-4°C at a few places over south Madhya Pradesh.

● **Weather Forecast:** Rain/thundershowers would occur at most places over West Madhya Pradesh during next 48 hours and at many places thereafter. Rain/thundershowers would occur at many places over East Madhya Pradesh and Chhattisgarh during the period.

No significant change in maximum temperatures over many parts of northwest Madhya Pradesh. However, it would fall by 2-3°C over the region during next 48 hours.

● **Weather Warning:** Heavy rainfall would occur at isolated places over Madhya Pradesh and Chhattisgarh on 15th July.

● **Weather Outlook:** Rain/thundershowers would occur at many places over the region.

● **Advisories:**

➤ As rain/thundershowers would occur at most/many places over Madhya Pradesh and Chhattisgarh during the period along with isolated heavy spells on 15th July, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops.

▪ **Madhya Pradesh:**

➤ Continue nursery sowing of rice and sowing of maize, soybean in east Madhya Pradesh utilizing the realized and expected rainfall.

➤ Continue sowing of early maturing varieties of maize and soybean and also undertake sowing of rice, sorghum and barely in Jhabua Hill Zone of west Madhya Pradesh utilizing the realized and expected rainfall. Continue sowing of early maturing varieties of maize and soybean and nursery sowing of *kharif* vegetables in Grid Zone of west Madhya Pradesh utilizing the realized rainfall.

➤ Continue transplanting of rice in Bundelkhand Zone and continue sowing of cotton in Nimar Valley Zone of Madhya Pradesh utilizing the realized and expected rainfall.

➤ As rain/thundershowers would occur at most/many places over Madhya Pradesh and Chhattisgarh during the period, postpone intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.

➤ Due to partly cloudy weather, there is possibility of attack of fruit and stem borer in brinjal and tomato 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.

➤ If soybean, maize and sorghum could not be sown due to subdued rainfall in West Madhya Pradesh undertake the contingency crops given in Annexure I.

➤ Suitable varieties are given in Annexure II.

▪ **Chhattisgarh:**

- In Chhattisgarh Plain Zone, continue nursery sowing of rice and sowing of maize, soybean, moong and urad utilizing the realized and expected rainfall and also continue nursery sowing /transplanting of *kharif* vegetables.
- Continue nursery sowing of rice, line sowing of rice and transplanting of tomato, brinjal, cauliflower, cabbage and chilli in North Hill Zone and continue nursery sowing of rice, sowing of maize and urad in Bastar Plateau Zone of Chhattisgarh utilizing the realized and expected rainfall.

NORTH INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]



Land Preparation

Sugarcane

Bottle Gourd

Onion

- **Realised Weather:** Rain/thundershowers occurred at many places over west Uttar Pradesh and at isolated places over Himachal Pradesh. Weather remained mainly dry/dry over rest parts of the region. Heat wave conditions prevailed at isolated places over north Rajasthan. Maximum temperatures were above normal by 2-5°C at many places over east Uttar Pradesh and west Rajasthan; at a few places over Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana. They were near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Uttarakhand and West Uttar Pradesh; at a few places over Himachal Pradesh and at isolated places over Jammu & Kashmir during the period. Rain/thundershowers would occur at a few places over East Uttar Pradesh and East Rajasthan during next 24 hours and over Haryana & Delhi during next 48 hours and at many places thereafter. Rain/thundershowers would occur at isolated places over Punjab during next 24 hours and over West Rajasthan during next 48 hours and increase thereafter. No significant change in maximum temperatures over many parts of northwest India. However, it would fall by 2-3°C over Uttar Pradesh during next 48 hours.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Uttarakhand on 16th and 17th July. Heavy rainfall would occur at isolated places over Uttarakhand on 15th July and over Uttar Pradesh and east Rajasthan on 16th and 17th July.
- **Weather Outlook:** Increase in rainfall activity over northwest India.
- **Advisories:**
 - **Jammu & Kashmir:**
 - Continue sowing of carrot, transplanting of knol-khol, cabbage and continue transplanting of rice and sowing of maize in Intermediate Zone of Jammu & Kashmir and apply irrigation to vegetables viz. tomato, brinjal, chilli, capsicum, cucurbits, beans, bhindi etc. at regular intervals to avoid flower and fruit dropping. Also continue sowing of moong, sunflower in Valley Temperate Zone of Jammu & Kashmir.
 - Due to prevailing humid weather conditions, there are chances of fruit borer in tomato, fruit and shoot borer in brinjal in Sub Tropical Zone of Jammu & Kashmir
 - Due to prevailing humid weather condiyion, there are chances of scab in apple in Valley Temperate Zone of Jammu & Kashmir, to control spray with Flusilazole 40 EC @ 20 ml per 100 litre of water or Penconazole 10 EC@ 50 ml per 100 litre of water.
 - **Himachal Pradesh:**
 - Continue transplanting of rice and sowing of cucurbits like cucumber, bitter gourd, bottle guard and summer squash; 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 and expected rainfall. Complete sowing of maize.
 - Due to prevailing humid weather conditions, there are chances of attack of cut worms and white grubs in maize in Mid-Hills Sub-Humid Zone and Sub-Monatanane & 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 prevailing humid weather conditions, there are chances of attack of red pumpkin beetle and fruit fly in cucurbits in Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh. Spray Malathion 50EC @ 1ml per litre of water on a non rainy day.
 - Due to prevailing humid weather conditions, there are chances of scab infestation in apple orchards in Mild Hills Sub-Humid Zone of Himachal Pradesh. Spray Miclobutanil (boon) @ 80g per 200 litres of water on a non rainy day.

▪ **Uttarakhand:**

- As rain/thundershowers would occur at many places along with heavy to very heavy rainfall at isolated places over Uttarakhand during the period, postpone intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- Continue transplanting of rice and sowing of sorghum, millets, groundnut, soybean and pigeon pea in Bhabar & Tarai Zone of Uttarakhand utilizing the realised and expected rainfall.
- Continue sowing of direct seeded rice with short duration varieties like Pant-4, Narendra-359, and Saket-4 etc. in Sub Humid Sub tropic Zone of Uttarakhand.
- Due to humid weather conditions there are chances of fruit borer in vegetables, spray Neem oil @ 20-25ml in 5 litres of water every after 10 to 15 days in Hill Zone of Uttarakhand after current spells of rain.

▪ **Punjab, Haryana and Delhi:**

- In Western Zone of Punjab complete transplanting of rice with 25 to 30 days old seedlings utilizing realised and expected rainfall and continue nursery sowing of basmati rice, sowing of okra and cow pea.
- In Undulating Plain Zone of Punjab, continue transplanting of rice and complete sowing of maize and continue sowing of mung, mash and til.
- In Central Plain Zone and in Western Plain Zone of Punjab, complete transplanting of rice and continue sowing of okra, radish and cucurbits.
- Due to partly cloudy weather, there are chances to occurrence of sucking pest viz. white fly and jassid in cotton in Western Zone of Punjab. Monitor the crops and if pest population reaches ETL level, then spray Oberon @200ml/acre for white fly and Ulala @ 80 g/acre for the management of jassid.
- In Eastern Zone of Haryana, transplant one month old rice seedlings with irrigation. Undertake sowing of guar, bajra and pulses with expected rainfall.
- In Western Zone of Haryana, undertake sowing of guar, bajra, pulses, fodder crops such as jowar mixed with cowpea to increase the nutritive value for continuous supply of green fodder with expected rainfall and transplanting of rice
- In Delhi, continue nursery preparation of rice, early cauliflower and brinjal. Undertake transplanting of brinjal, chilli and early cauliflower if the seedlings are ready. Undertake sowing of pigeon pea, maize, guar, bajra, cluster bean, spinach, amaranths, okra and cucurbits during the week with expected rainfall.

▪ **Uttar Pradesh:**

- As rain/thundershowers would occur at many places along with heavy rainfall at isolated places over Uttar Pradesh during the period, postpone intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- In Central Plain Zone of Uttar Pradesh, undertake transplanting of rice and sowing of arhar, jowar, maize and groundnut. Continue sowing of urad, mung, cucurbits like bottle guard, cucumber, bitter guard, tinda and planting of fruit crops utilizing the realised and expected rainfall. Undertake land preparation for planting of banana.
- In Western Plain Zone of Uttar Pradesh, continue direct sowing of rice in lowland areas and undertake sowing of guar, bajra, jowar and moong as fodder crops in uplands utilizing the realised and expected rainfall.
- Due to humid weather condition, there are chances of attack of shoot/fruit borer in ladies finger in Central Plain Zone of Uttar Pradesh. Remove the infected stem/fruits from the plants and spray Quinolphos @ 2 ml per litre of water or Carbryl @ 4 g per litre of water after current spells of rain.
- Due to humid weather condition, there are chances of attack of aphids in Anola orchard in Central Plain Zone of Uttar Pradesh. Spray Monocrotophos 0.04% for control after current spells of rain.

▪ **Rajasthan:**

- Continue sowing of short duration varieties of *kharif* crops like pearl millet, cowpea, green gram, moth bean and urad bean etc. in Semi Arid Eastern Plain Zone of Rajasthan, utilizing the realised rainfall. Undertake sowing of green gram and sesame in Flood Prone Eastern Plain Zone of Rajasthan, utilizing the realised and expected rainfall.
- Undertake sowing of short duration varieties of maize, soybean in Southern Humid Plain Zone of Rajasthan, utilizing the realised and expected rainfall.
- Continue land preparation and sowing of maize, jowar, soybean, moong, urad, til, groundnut and arhar in southern humid Plain Zone, utilizing the realised and expected rainfall and maize, moong, urad, cow pea in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.
- Continue land preparation and sowing of bajra, moong, moth, guar and groundnut in Arid Western Plain Zone and bajra, moong, moth, guar and til in Irrigated North Western Plain Zone of Rajasthan.
- Detailed contingency measures given in Annexure I.
- Suitable short duration varieties are given in Annexure II.

• **Floriculture**

- Due to prevailing humid weather condition there are chances of incidence of gladiolus bilght in gladiolus in Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh. Spray Dithane M45 (Mancozeb) @ 25 g in 10 litres of water on a non rainy day.

• **Horticulture**

- Due to prevailing humid weather condition, there are chances of attack of citrus canker in horticultural crops like

peach, pear, plum, almonds, apricot and apple in Mid-Hills Sub-Humid Zone of Himachal Pradesh & also in Intermediate Zone of Jammu & Kashmir.

- Due to prevailing humid weather condition there be chance of Black tip disease in mango crop, to control spray borax @ 1 % or other alkaline solutions like caustic 0.8 % or washing soda 0.5 % regularly at 10 days interval in Sub Humid Sub Tropic Zone of Uttarakhand, on a non rainy day.
- Due to expected good rainfall during this week in Bhabar and Tarai Zone of Uttarakhand, continue planting of mango, guava and lemon fruiting saplings in early made pits.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Land Preparation/ Sowing

Sugarcane

Rice Nursery

Okra

- **Realised Weather:** Rain/thundershowers occurred at many places over Madhya Maharashtra, Marathwada. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were above normal by 2-5°C at a few places over Saurashtra & Kutch and at isolated places over Marathwada and Vidarbha. They were near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Konkan & Goa; at many places over Madhya Maharashtra, Marathwada and Vidarbha during the period. Rain/thundershowers would occur at a few places over Gujarat State during next 24 hours and at many places thereafter.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Konkan & Goa on 15th and heavy rainfall would occur at isolated places over Gujarat State and Konkan & Goa on 16th and 17th July.
- **Weather Outlook:** Rain/thundershowers would occur at many places along west coast.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, continue transplanting of rice with 20-22 days old seedlings of rice and finger millet. Provide adequate drainage in crop fields to remove excess water. Undertake sowing of early maturing variety of rice in upland areas.
 - As rainfall would occur at many places in Madhya Maharashtra, continue transplanting of rice in Western parts of Kolhapur, Pune and Nasik districts. Sowing of sunflower, soybean, cotton, hybrid jowar, hybrid pearl millet, red gram, bean and sesame may be undertaken. It is also advised to take up intercropping of pearl millet+red gram in 2:1, sunflower+red gram in 2:1, soy bean+red gram in 3:1 and guar+red gram in 2:1 ratios. For sowing of red gram, use Vipula variety.
 - In Marathwada, undertake sowing of *kharif* crops like cotton, soybean, red gram, jowar, sunflower and maize.
 - As rainfall is expected at many places in Vidarbha, continue sowing of cotton, red gram, soybean and sunflower.
 - Due to subdued rain during last week in East Vidarbha, there may be attack of army worm in rice seedlings, spray Cypermethrin 10 % @ 6 ml per 10 litres of water after current spells of rain.
 - **Gujarat:**
 - Due to non-receipt of rainfall during June, in the districts like Ahmedabad, Anand, Dahod, Kheda, Panachmahal, and Vadodara, cotton and other crops could not been sown. Under this situation and expected rainfall during the period, contingent crops like cotton (Desi Hybrid: Deshi hybrid-7, Deshi hybrid-9, Guj. Cot-13, Guj. Cot-21, Anand Deshi Cot-1), and recommended varieties of maize, paddy, soybean, black gram, green gram, cowpea, pigeon pea, castor, pearl millet etc. (see the Annexure I) could be sown. In the rest of the districts of the region, still there is time to sow the normal crops.
 - **Gujarat region:**
 - As rain /thundershowers would occur at many places, undertake nursery sowing of mid / late maturing varieties of rice, sowing of pearl millet, groundnut and pigeon pea; select short duration and late sowing crop varieties for sowing of *kharif* crops in Middle Gujarat Zone. Postpone intercultural operations, application of fertilizers and plant protection measures in standing crops.
 - In North Gujarat Zone, undertake sowing of bajra with elect moderate duration variety GHB-744 and early maturity variety GHB-558, GHB-538, GHB-719 and select high yielding varieties of groundnut viz., GG-2, GG-5, GG-7, TG-26, GG-20 for sowing. Continue sowing of vegetables Continue nursery preparation for *kharif* vegetables like brinjal, tomato, chilli etc. utilising the expected rainfall; carryout weeding, intercultural operation and mulching in already sown crops to conserve soil moisture in Bhal and Coastal Zone.
 - Continue transplanting of tomato, brinjal, chilli and other vegetables and transplanting of rice seedlings at 4-5

leaves stage in South Gujarat Heavy Rainfall Zone utilising the expected rainfall.

- Due to prevailing mainly dry weather conditions in Gujarat Region, detailed contingency measures and moisture conservation measures for alternate crops recommended for July first fortnight is given in Annexure I.
- **Saurashtra & Kutch:**
- As rain /thundershowers would occur at many places, undertake sowing of pearl millet, pulses, sesame and castor, prefer bunch varieties of groundnut (GG-2, GG-5, TAG-24, TG-37 A, TPG-41, TLG-45) and short to medium duration BG-II cotton varieties for sowing in North Saurashtra Zone.
- In North West Zone, undertake sowing of groundnut is recommended with varieties like GAU-10, GG-20, GG-11,12,13, prefer downey mildew resistant variety & high yielding varieties of Bajra like GHB-15, 235, 316, MH-169, GHB-27. Carry out sowing of castor and sowing of maize, sorghum, lucern –bajara and cowpea.
- Cloudy and humid weather are conducive for the incidence of sigatoka leaf spot in banana in South Gujarat Zone; spray Carbendazim @1 g / 1 liter of water, if incidence is noticed.
- Due to prevailing mainly dry conditions in North Saurashtra Zone, detailed contingency measures and moisture conservation measures for alternate crops recommended for July first fortnight is given in Annexure I.
- Detailed contingency measures given in Annexure I.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- In Gujarat, HF vaccination is recommended in cattle if not done earlier during the season. Spray phenyl in the animal shed to avoid flies, mosquitoes.

Annexure I Contingency measures for the meteorological subdivisions

1. North Interior Karnataka

- Bajra, Pigeonpea, Groundnut, Sesamum, Niger, Faxtail millet, Horsegram, , Castor, Bajra + Pigeonpea (2:1), Bajra + castor (2:1), Groundnut + pigeonpea (4:2) Bajra + groundnut (2:4), Bajra + pigeonpea (2:1). Sow the crops across the slope.
- Soak the seeds for recommended time in Calcium Chloride solution before sowing.
- Select short duration, drought resistant crops and variety.
- Take up sowing of crops in wider rows to overcome moisture stress and to get higher yields

Contingency planning for North Interior Karnataka

| Meteorological subdivision | Districts | Major crops | District wise Contingency planning for crops if monsoon delayed by 4 weeks |
|----------------------------|-----------|---|--|
| North Interior Karnataka | Bidar | Jowar, red gram, soybean, black gram | Red gram, soybean and bajra. |
| | Bagalkote | Sorghum, sugarcane, maize, greengram, groundnut | Pearl millet, sunflower |
| | Dharwad | Maize, rice, soybean, groundnut , cotton | Maize+Redgram (4:2), Groundnut + Redgram (4:2) |
| | Belgaum | Sugarcane, maize, cotton, soybean, groundnut | Short duration varieties of Groundnut |
| | Bellary | Rice, maize, sorghum, sunflower, groundnut | Bajra, pigeonpea, groundnut or sunflower |
| | Koppal | Sunflower, rice, bajra, sorghum, groundnut | Sesamum and castor |

2. Gujarat Region and Saurashtra & Kutch

| Region | Crops | Varieties | |
|--------------------------|--------------------------------------|---|---|
| South and Middle Gujarat | Cotton | (Deshi Hybrid: Deshi hybrid-7, Deshi hybrid-9, Guj. Cot-13, Guj. Cot-21, Anand Deshi Cot-1) | |
| | Paddy | Early | GURJARI. GR-5, 8 |
| | | Medium | GR-3, 4, 7, 9, GNR-2, IR-64, NAUR-1, GNR-3, IR-28 |
| | | Late | GR-12, 11, GAR-13, JAYA, MASURI, GR-101, 102, 103 & 104 and Narmada |
| | | Drilled paddy | Sathi-34-36, Sukhvel-20, GR-5, GR-8, GR-9, GR-12, Ashoka-200F, I.R.-28, ADR-1 |
| | Soybean | Gujarat Soybean-1, 2, JS-335, NRC-37 | |
| | Greengram | K-851, GM-4, Meha | |
| | Blackgram | T-9, Guj.Urd-1 | |
| | Cowpea | Gujarat cowpea-1, Gujarat cowpea-2, Gujarat cowpea-4 | |
| | Pigeonpea | BDN-2, ICPL-87, GT-100,GT-101, Guj.AnandTur-102, AGT-2, Vaishali | |
| | Castor | GAUC-1, GCH-2, GCH-4, GCH-5, GCH-7 | |
| | Pearl millet | GHB-577, GHB-558 and MH-179 | |
| sunflower | (cv. Modern and EC-68414 and Guj-1), | | |
| Saurashtra region | groundnut | erect types groundnut (GG-2,5,7) | |

3. Maharashtra

Contingency planning for Madhya Maharashtra, Marathwada and Vidarbha

| Subdivision | District | Contingency crops if monsoon is delayed by 6-8 weeks |
|--------------------|---|--|
| Madhya Maharashtra | Madhya Maharashtra except Western Ghat Region | Sunflower, Soybean, Cotton, hybrid Jowar, hybrid pearl millet, Red gram short duration, Groundnut short duration variety. intercropping of pearl millet+redgram in 2:1, sunflower+redgram in 2:1, soybean+redgram in 3:1 and guar+redgram in 2:1 ratios. |
| Marathwada | Marathwada | Soybean + tur 4:2 Cotton + tur 6:2 Jowar + tur 4:2 Same/Soybean + tur 4:2 Soybean + tur 4:2 |
| Vidarbha | East Vidarbha | Drilled rice with early maturing variety Instead of soybean, cotton and red gram, take early rabi jowar, sesamum, linseed, maize |
| | West Vidarbha | Three tier intercropping of cotton:sorghum:pigeonpea:sorghum in 6:1:1:1 or 3:1:1:1 ratio is recommended. Red gram |

4. Madhya Pradesh

If soybean, maize and sorghum could not be sown due to subdued rainfall in West Madhya Pradesh, sowing of pigeonpea, greengram, blackgram, sesame in place of soybean, maize and Sorghum may be undertaken. Recommended varieties for Pigeonpea- Pragati , Jagriti, Asha, Number-148, JKM-7, JA-4, Type-21-Pusa- 855, ICPL-85063 (Laxmi), JKM-189, for Greengram- Pusa vishal,K851,JM721,Jawahar 99 -37,Hum-1, Hum-2, Tarme-1 L.G.450, T.M.98-50,JM-98-90, PDM 11, 54 and 139, for Blackgram – JU-2,JU-3,JU-86,T- 9,JBG-623,LBG684,TAU- 1, Berkha and for Sesame - TKG -306, TKG-35, JGS-8, JT-21, JT-22, JT-55,PKTS-11, PKTS-12,JT-1

5. Rajasthan

Undertake following improved short duration varieties of the crops.

East Rajasthan

Maize: Navjot, GM-6, Mahi Kanchan, Pratap Hybrid Maize-1, Pratap Hybrid Maize-2, PEHM-1 and PEHM-2.

Sorghum: CSV-17, SPV-837

Soybean: PK-472, JS-71-05, Pratap Soya-1, Pratap Soya-2, Pratap Raj Soya-24

Pearl millet: Raj-171, Hybrid: RHB-173, RHB-177, ICMH-356, HHB-60, HHB-67(improved)

Green gram:RMG-492, RMG-268, SML-668 and RMG-344

Cowpea:C-152, RS-9, FS-68, RC-19 and RC-101.

Mothbean:improved varieties are: RMO-40, RMO-225, RMO-435, IPCMO-912.

Urad bean improved varieties are: Pant U-19, Krishna, T-19.

West Rajasthan

Bajra:HHB-60, RHB-121, HHB-67, RHB-90 and ICMH-356.

Moong :SML-668, MUM-2, RMG-62, RMG-268 and K-851.

Moth: RMO-257, 225, 435, 423 and 40.

Guar RGC-936, 197,986, 1002 and 1003. Groundnut HNG-10, Chandra, M-13, T.G. 37A and T.B.G.-39.

Annexure II List of varieties

Andhra Pradesh:

Castor: PCH-111, PCH-222, Kranti, GCH-4, Haritha

Irrigated groundnut: Kadiri-6, Kadiri-9, Narayani and dharani

Red gram: black soils LRG-41, ICPL-85063 and for red soils PRG-158, PRG-100.

Tamil Nadu:

Kuruvai rice : ADT 36, ADT 43, ADT 45 and ADT 47

Karnataka:

Redgram : TTB -7, BRG -01, BRG- 02, HYD -3C, BSMR 736, TS-3R

Medium to Long Duration Varieties of redgram: PT-221, GS-1, ICP-8863 (Maruti), ICPL-87119 (Asha) WRP-1, **Short Duration Varieties of redgram:** ICPL-87(Pragati), Selection-31(irrigated areas), GCS-11-39

Ragi: GPU- 28,MR -01, 02 and 06, KMR-301

Green gram : Selection – 4, BGS-9, China mung, Pusa bisaki

Black gram : TAU – 1, DU – 1

Soybean : JS – 335

Jowar : DSV – 2, CSV-15, DSV-3, and DSV-6

Maize: Hybrid – DMH-2 and Arjun

Groundnut:

Bunch type – GPBD-4, JL-24 and TMV-2

Spreading type – DSG-1 and JSP-39

Cotton: DHH-11, NCH-145, NHH-44, DHB-105 and Sahana

Irrigated green gram: VBN 2, VBN 3 and CO (Gg) 7

Assam:

Sali rice: Ranjit, Bahadur, Vasundhara, Kushal, Piyoli, Moniram, Rangali, Bhogali, Ketkijah

Long duration varieties: Pankaj, Mashuri, Manohar Sali and other tall varieties.

Short duration varieties : Vivek Dhan 82

Groundnut : TG-1A, JL-24

Pigeon pea : T-21

Sesame : SP1181, GOURI, VINAYAK

Meghalaya:

Red gram : UPAS-120, ICPL 87 (short duration), WB 20, Pusa 9 & Sarita (long duration)

Odisha

Rice: Heera, ZHU-11-26, Pathara, Vandana, Khandagiri and Parijat

Ragi: Dibyasingh, Godavari, Subhra, Vairabi, Neelachala, Chilika

Maize: Navjot, Sakti-1, Decan-103, Ganga-5, Kargil

Groundnut: Smruti, TAG-26, TAG-24, ICGS-11, JL-24

Sesame: Kanak, Kalika, Uma, Usha, Tilotama, Nilima, Prachi

Greengram: K-851, PDM-11, PDM-54, OUM-11-5

Blackgram: T-9, Pant U-11, Pant U-19, Pant U-30

Cowpea: SEB-2, Pusa Barsati Niger: Deomali, Niger-1 and for Okra: Utkal Gourav.

West Bengal

Aman rice: BCC-17, BCC-33, BCC-02, BCC-01, BCC-09

Onion: Rupsa, Sukhsagar.

Sunflower: Surya (90-95days), Pack(104days)KBSH(90-95 days).

Green Gram: Sonali, T44, Samrat, PDM-84, Basanti.

Sesame: Tilottoma, B-64, B-14.

Mango: Himsagar, Mallicka, Langra.

Coconut: Eastcoastal, Hazari.

Moong : Sonali (B-1), Panna (B-105), Pusa-Baishakhi.

Bihar

Kharif Maize: Shaktiman 1, 2. Pusa agat sankar makka-3and ganga, hybrid: Shaktiman-1, Shaktiman-2, Pusa early hybrid maize-3, Ganga-11, and composite: Suawan and Devki.

Rice: short duration rice: Turanta, Prabhat, Richhariya, Saroj, Dhanlakshmi, Saketwork. Scented rice var. Sugandha, Kamini, Rajendra suwasini, Rajendra kasturi and Rajendra bhagwati

Kharif finger millet: GPU 45, 67, 28 and RAU 8

Jharkhand:

Rice: short duration: Birsa Dhan - 108, Birsa Vikas Dhan 109 & 110, Vandana etc.

Maize: short duration: Birsa maize-1, Birsa Vikas maize-2 etc

Pigeon Pea: Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671

Groundnut: short duration: A.K.-12-24, Birsa Bol

Madhya Pradesh

Rice: Short duration-JR-201, JRH -4, JRH-5, JRH -8

Medium- IR-36, IR-64, Pusa sugandha-5, MTU-1001, MTU-1010, MTU-81, Mahamaya

Late-Mahsuri, Safari-17, Syamla, Swarna

Maize: Short duration-JVM- 421, JM-12, JM-13, JM- 216, JS-20-29, JS-20-34.

Medium- Navjot, Arun, H-216, JM-13, Sartaj, Daccan 107

Late-Ganga-11, Prabhat, Trisulta, Daccan 103, Daccan 105

Soybean: Short duration-JS 95-60 (85 days), JS- 93-05(95 days), JS-97-52, JS-335, JS-20-29, JS-20-34

Medium-JS 335 (105 days), NRC 37(110 days)

Black gram: JU 86, JU- 3, T- 9

Jowar: Jawahar- 741, Jawahar -938, Jawahar- 1022

Arhar: Early: TJT-501, JKM-189,

Medium : ICPL-87-119, ICPL88039

Chhattisgarh

Rice: MTU 1010, Mahamaya, IR 36

Maize: Pusa early, Navjot 3, Chandana 3

Ragi: JPU 28, JPU 45, JK 155

Maharashtra

Kharif jowar:- Hybrid- CSH5, CSH 9, CSH13, CSH14, CSH16, CSH17, CSH18, CSH2, Improved- SPV 462, CSV 13, CSV15, CSV17, PKV 801 for Pune region and CSH14, CSH16, CSH25 for Marathwada.

Kharif bajra:- Hybrid variety Shraddha (RHRBH 8609), Saburi (RHRBH 8924), Phule Shanti (RHRBH 9808) and Improved variety – ICTP 8203, ICMV – 155 for Pune region and GHB558, Shraddha, Saburi, Pratibha for Marathwada.

Kharif groundnut – SD 11, Phule Pragati, Phule Vyas, Phule Unnati, TPG 41, TG 26.

Red Gram – ICPL 87, Vipula, BSMR-853, BSMR-736, AKT8811, Amol for Madhya Maharashtra, ICPL-87119 (Asha), C-11 for Central Vidarbha and BSMR 736, BSMR 853, BDN 711 (for rain shadow area) for Marathwada.

Sunflower – EC-68414, SS-56 and Bhanu.

Soyabean – JS-335, Phule Kalyani (DS-228) for North Madhya Maharashtra, MAUS 71, JS-335 for Marathwada.

Kharif Rice – PKVHMT, PKV Khamang, PKV Makarand, PKV Ganesh, PKV Kisan, Sindewahi 2001, Sindewahi 1 for East Vidarbha.

Kharif Cotton: – Improved variety – AKA-5, AKA-7, AKA-8, American improved variety – AKH-081, PKV-Rajat, AKH-8828 and PKV DH-1 (hybrid) for Central Vidarbha Zone.

Green Gram: - Jalgaon 781, S8, Phule M2 for Western Maharashtra Scarcity Zone, BM-2002-1, BM 2003-2, AKM-4 and Green Gold for Marathwada.

Gujarat

Paddy: GR-3, GR-4, IR – 28, Gurjary.

Pearl millet: GHB-558,577,538,719,732,744.

Kharif groundnut: GG-20, GG-11,13, GG-7, GAUG-10, Semi spreading- GG-2, GG-5, TAG-24, TG-37 A, TPG-41, TLG-45, TG-26.

Cotton: GCH-4,6, GCH-8, Agritop-444, Solar-76, Beejdhan-2, Ajit-155, Mallika, RCH-II, Vikram-5, Sankar-4,6,8,10.

Green gram: GM-3, GM-4, K-851.

Black gram: T-9, GU-1.

Cowpea: Gujarat cowpea-1,2,4, pusa falguni.

Pigeon pea: BDN-2, GT-100, GTH-1.

Sesame: GT-1, GT-2 or GT-3 variety.

Soybean: Gujarat soyabean-1, 2, 3.

Castor: GAUCH-1, GCH-2,4,5,6,7 and GC-2,3.

Maize: Ganga safed-2, Ganga-5, African tall.

Okra: Gujarat Bhinda -2, Gujarat hybrid bhinda-1, Parbhani kranti

Brijal: PLR-1, PUSA hybrid-5,6 ,GBH-1,2.

Tomato: PUSA rubi, Gujarat Tameti-1,2, Hybrid-2,4, Pusa hybrid-2,4.