

State: Uttar Pradesh  
Agriculture Contingency Plan for District: Chitrakoot

|   |  |  |           |          |
|---|--|--|-----------|----------|
| 1.0   | District Agriculture profile   |  |           |          |
| 1.1   | Agro-Climatic/ Ecological Zone   |  |           |          |
|   | Agro-Ecological Sub Region(ICAR)   | Central Plain Zone   |           |          |
|   | Agro-Climatic Zone (Planning Commission)                                       | Central Plateau and Hill Region  |           |          |
|   | Agro-Climatic Zone (NARP)  | Bundelkhand zone (U.P-10)  |           |          |
|   | List all the districts falling the NARP Zone* (^ 50% area falling in the zone) | Lalitpur, Jhansi, Jalaun, Chitrakoot, Mahoba, Banda and Hamirpur   |           |          |
|   | Geographical coordinates of district headquarters                              | Latitude   | Longitude | Altitude |
|   |  | 25° 20' N  | 80° 22' E |          |
|   | Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS                      | Zonal research Station, Bharari  |           |          |
|   | Mention the KVK located in the district with address                           | Project Head, Krishi Vigyan Kendra, Ganiwan, Chitrakoot Dt, 09450221025, email kvkganiwan@rediffmail.com |           |          |
| Name and address of the nearest Agromet Field Unit(AMFU,IMD)for agro advisories in the Zone | C.S. Azad University of Agriculture and Technology, Kanpur                     |  |           |          |

|     |                       |                |                            |                                       |   |
|-----|-----------------------|----------------|----------------------------|---------------------------------------|---|
| 1.2 | Rainfall              | Normal RF (mm) | Normal Rainy Days (Number) | Normal Onset (Specify week and month) | Normal Cessation (Specify week and month) |
|     | SW monsoon (June-sep) |                | 55                         | 2 <sup>nd</sup> week of June          | 3 <sup>rd</sup> week of September         |
|     | NE monsoon (Oct-Dec)  |                | 10                         | 3 <sup>rd</sup> week of December      | 2 <sup>nd</sup> week of January           |
|     | Winter (Jan-March)    |                | -                          | -                                     | -   |
|     | Summer (Apr-May)      |                | -                          | -                                     | -   |
|     | Annual                |                | 65                         |                                       |   |

|     |  |                   |                 |             |                                 |                    |                      |                                       |                              |                 |               |
|-----|--|-------------------|-----------------|-------------|---------------------------------|--------------------|----------------------|---------------------------------------|------------------------------|-----------------|---------------|
| 1.3 | Land use pattern of the district (Latest statistics) | Geographical area | Cultivable area | Forest area | Land under non-agricultural use | Permanent pastures | Cultivable wasteland | Land under Misc.tree crops and groves | Barren and uncultivable land | Current fallows | Other fallows |
|     | Area (000' ha)                                       | 338.9             | 174.5           | 59.7        | 29.3                            | 0.05               | -                    | 26.3                                  | -                            | 13.54           | 5.2           |

|     |             |               |                     |
|-----|-------------|---------------|---------------------|
| 1.4 | Major Soils | Area('000 ha) | Percent(%) of total |
|     | Rakar Soil  |               |                     |
|     | Parwa soils |               |                     |
|     | Kabar soils |               |                     |
|     | Maar soils  |               |                     |

|     |                       |               |                        |
|-----|-----------------------|---------------|------------------------|
| 1.5 | Agricultural land use | Area('000 ha) | Cropping intensity (%) |
|     | Net sown area         | 174.5         |                        |

|  |                          |   |  |
|--|--------------------------|---|--|
|  | Area sown more than once | - |  |
|  | Gross cropped area       |   |  |

|  |  |                           |               |                                    |
|--|--|---------------------------|---------------|------------------------------------|
| 1.6  | Irrigation   | Area('000 ha)             |               |                                    |
|  | Net irrigation area  | 45.2                      |               |                                    |
|  | Gross irrigated area   | -                         |               |                                    |
|  | Rain fed area  | 129.3                     |               |                                    |
|  | Sources of irrigation  | Number                    | Area('000 ha) | Percentage of total irrigated area |
|  | Canals   |                           | 12.4          |                                    |
|  | Tanks  |                           | -             |                                    |
|  | Open wells   |                           | -             |                                    |
|  | Bore wells   |                           | 31.5          |                                    |
|  | Lift irrigation schemes  |                           | -             |                                    |
|  | Micro-irrigation   |                           | -             |                                    |
|  | Other sources  |                           | 1.3           |                                    |
|  | Total Irrigated Area   |                           | 45.2          |                                    |
|  | Pump sets  |                           | -             |                                    |
|  | No. of Tractors  |                           | -             |                                    |
|  | Groundwater availability and use*<br>(Data source: State/ Central Ground<br>water Department/ Board) | No of blocks-<br>Tehsils- | (%)area       | Quality of water                   |
|  | Over exploited   |                           |               |                                    |
|  | Critical   |                           |               |                                    |
|  | Semi-critical  |                           |               |                                    |
|  | Safe   |                           |               |                                    |
| Waste water availability and use   |  |                           |               |                                    |
| Ground water quality   |  |                           |               |                                    |
| *over-exploited groundwater utilization > 100%; critical: 90-100%; semicritical: 70-90%; safe: < 70% |  |                           |               |                                    |

### 1.7 Area under major field crops & (As per latest figures 2013-14)

|         |                              |               |          |       |           |          |       |        |       |
|---------|------------------------------|---------------|----------|-------|-----------|----------|-------|--------|-------|
| 1.7     | Major field crops cultivated | Area('000 ha) |          |       |           |          |       | Summer | Total |
|         |                              | Kharif        |          |       | Rabi      |          |       |        |       |
|         |                              | Irrigated     | Rain fed | Total | Irrigated | Rain fed | Total |        |       |
|         | Rice                         |               |          |       |           |          |       |        |       |
|         | Wheat                        |               |          |       |           |          |       |        |       |
|         | Pulses                       |               |          |       |           |          |       |        |       |
|         | Oilseeds                     |               |          |       |           |          |       |        |       |
| Millets |                              |               |          |       |           |          |       |        |       |

|       |  |  |  |  |  |  |  |  |
|-------|--|--|--|--|--|--|--|--|
| Total |  |  |  |  |  |  |  |  |
|-------|--|--|--|--|--|--|--|--|

### 1.8 Production and productivity of major crops (Average of last 5 years)

| 1.7 | Major field crops cultivated | Area('000 ha)       |                      |                     |                      |                     |                      |                     |                      | Crop residue as fodder ('000 tons) |
|-----|------------------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|------------------------------------|
|     |                              | Kharif              |                      | Rabi                |                      | Summer              |                      | Total               |                      |                                    |
|     |                              | Production ('000 T) | Productivity (KG/HA) | Production ('000 T) | Productivity (KG/HA) | Production ('000 T) | Productivity (KG/HA) | Production ('000 T) | Productivity (KG/HA) |                                    |
|     | Rice                         |                     |                      |                     |                      |                     |                      |                     |                      |                                    |
|     | Wheat                        |                     |                      |                     |                      |                     |                      |                     |                      |                                    |
|     | Pulses                       |                     |                      |                     |                      |                     |                      |                     |                      |                                    |
|     | Oilseeds                     |                     |                      |                     |                      |                     |                      |                     |                      |                                    |
|     | Millets                      |                     |                      |                     |                      |                     |                      |                     |                      |                                    |
|     | Total                        |                     |                      |                     |                      |                     |                      |                     |                      |                                    |

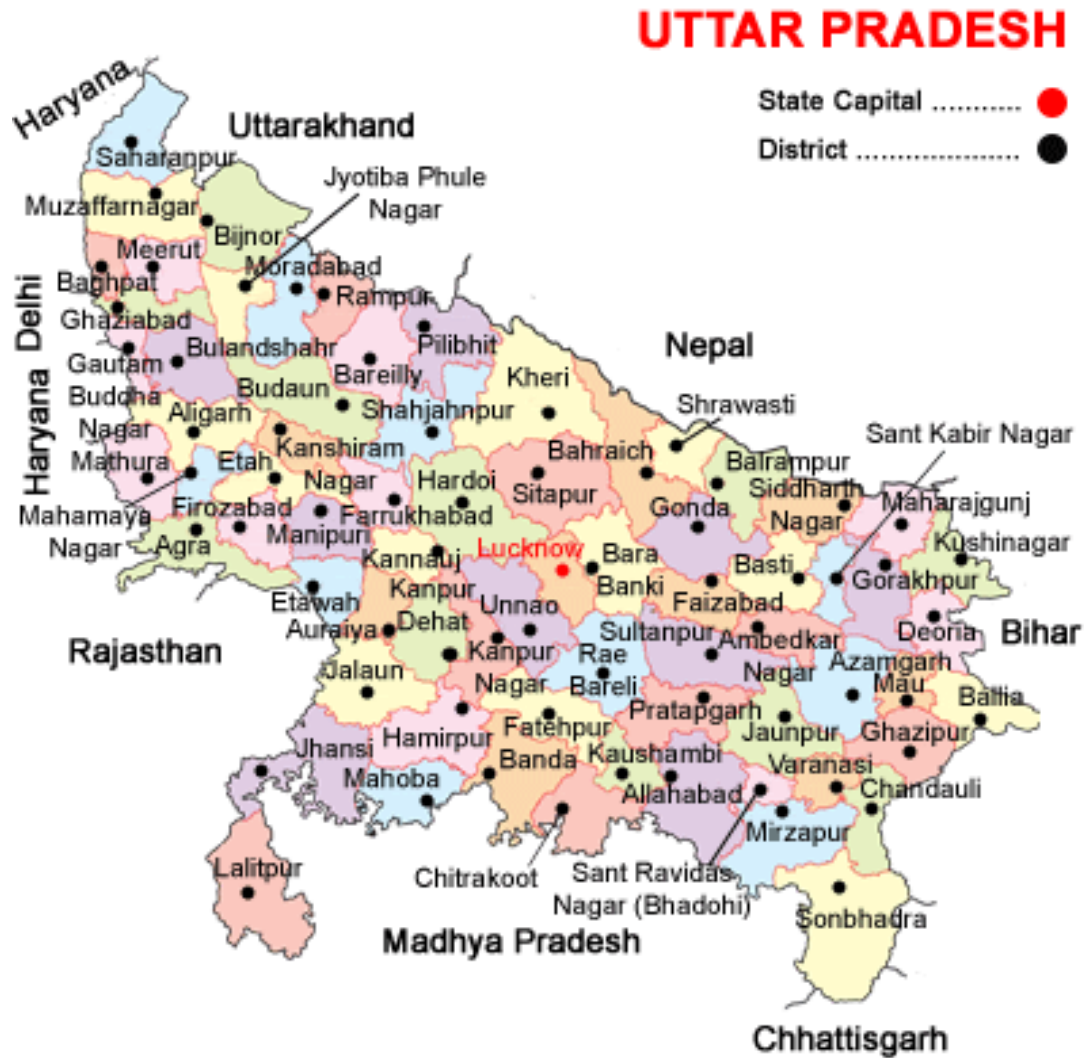
| 1.8 | Sowing window for 5 major field crops | Sesame | Jowar     | Bajra     | Black Gram       | Green gram | Pigeon Pea | Gour | Wheat    | Pea              | Gram             | Lentil   | Mustard   |
|-----|---------------------------------------|--------|-----------|-----------|------------------|------------|------------|------|----------|------------------|------------------|----------|-----------|
|     | Kharif –Rainfed                       | July   | June-July | June-July | April, June-July | June-July  | July       | -    | -        | -                | -                | -        | -         |
|     | Kharif - Irrigated                    | July   | June-July | June-July | April, June-July | June-July  | July       | July | -        | -                | -                | -        | -         |
|     | Rabi –Rainfed                         | -      | -         | -         | -                | --         | -          | -    | -        | October-November | October-November | November | September |
|     | Rabi - Irrigated                      | -      | -         | -         | -                | -          | -          | -    | December | October-November | October-November | November | September |

| 1.9 | What is the major contingency the district is prone to? | Regular | Occasional | None |
|-----|---|---------|------------|------|
|     | Drought   | ✓       | -          |      |
|     | Flood   | -       | -          |      |
|     | Cyclone   | -       | -          |      |
|     | Hail storm  | -       | -          |      |
|     | Heat wave   | ✓       | -          |      |

|  |  |   |   |  |
|--|--|---|---|--|
|  | Cold wave  | - | - |  |
|  | Frost  | - | - |  |
|  | Sea water intrusion  | - | - |  |
|  | Sheath Blight, Stemborrorer , Pyrilla loos smut, Heliothis, Rust etc white grub. | - | - |  |

|   |  |                |
|---|--|----------------|
| <b>Include Digital maps of the district for</b> | Location map of district with in State as Annexure I | Enclosed : Yes |
|   | Mean annual rainfall as Annexure 2                   | Enclosed : No  |
|   | Soil map as Annexure 3                               | Enclosed : No  |

Annexure 01: Location map of the Uttar Pradesh state and district Chitrakoot



## 2.0 Strategies for weather related contingencies

### 2.1 Drought

#### 2.1.1 Rainfed situation

| Condition  |   |   | Suggested contingency measures   |   |                          |
|--|---|---|--|---|--------------------------|
| Early season drought (delayed onset)             | Major farming situation                       | Normal crop/ Cropping systems   | Change in crops/ Cropping systems  | Agronomic measures  | Remark on implementation |
| Delay by 2 weeks<br>4 <sup>th</sup> week of June | Deep soil, Rakar, Parwa, Kabar, and maar Soil | Rice- Wheat<br>Sesame- Pea<br>Sesame-Gram<br>Black Gram- Pea/Gram<br>Jowar- Wheat<br>Bajra- Wheat<br>Pigeon Pea<br>Green Gram- Lentil | Rice- Short duration<br>Maize- Hybrid, HQPM-1<br>Pearl Millets- Raj-171 & Hybrid,<br><b>Sorghum</b> - Csv-13,15 & Hybrid   | Mulching, Line Sowing , Light Irrigation, Weed Management and thinning,                   | Mixed farming            |
| Delay by 4 weeks<br>4 <sup>nd</sup> week of July | Deep soil, Rakar, Parwa, Kabar, and maar Soil | Sesame- Pea<br>Sesame-Gram<br>Black Gram- Pea/Gram<br>Jowar- Wheat<br>Bajra- Wheat<br>Pigeon Pea<br>Green Gram- Lentil                | Replace rice with Green gram, Black Gram & Sorghum,<br><b>Green Gram</b> - PM-8, PDM-11, Samrat, Jyoti, Jagriti, Janpriya,<br><b>Black Gram</b> - T-9 PU-19,PU-40,PU-35 Sekhar-1,2&3 | Sesame on ridges, Mulching, Line Sowing , Light Irrigation, Weed Management and thinning, | Inter cropping           |
| Delay by 6 weeks<br>4 <sup>th</sup> week of July | Deep soil, Rakar, Parwa, Kabar, and maar Soil | Black Gram- Pea/Gram<br>Jowar- Wheat<br>Bajra- Wheat<br>Pigeon Pea<br>Green Gram- Lentil<br>Sesame- Pea<br>Sesame-Gram                | Replace rice with Green gram and pearl millet<br><b>Green Gram</b> - PM-8, PDM-11, Samrat, Jyoti, Jagriti, Janpriya<br>Pearl Millets- Raj-171 & Hybrid,                              | Wider spacing 25 enhanced nutrients   | Inter cropping           |
| Delay by 8weeks<br>2nd week of August            | Deep soil, Rakar, Parwa, Kabar, and maar Soil | Black Gram- Pea/Gram<br>Jowar- Wheat<br>Bajra- Wheat<br>Pigeon Pea<br>Green Gram- Lentil<br>Sesame- Pea<br>Sesame-Gram                | Plan for toria   |   |                          |

| Condition  |                         |  | Suggested contingency measures   |   |                          |
|--|-------------------------|--|--|---|--------------------------|
| Early season drought (Normal onset)  | Major farming situation | Normal crop/ Cropping systems  | Crop management  | Soil nutrient & moisture conservation measures                | Remark on implementation |
| Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/ op stand | Irrigated upland        | Sesame- Pea<br>Sesame-Gram<br>Pigeon Pea   | Pigeon Pea- NDR-1,<br>NDR-2,MA-6, MA-13  | Ridge-furrow sowing,  |                          |
|  | Irrigated lowland       | Rice-Wheat<br>Black Gram- Pea/Gram<br>Jowar- Wheat<br>Bajra- Wheat<br>Green Gram- Lentil | Use of drought tolerant rice varieties- NDR-97, Susk Samrat<br>Resowing & Gap filling Inter row harrowing                      | Use of additional Urea, Zink Sulphate, Mulching,              |                          |
|  | Un Irrigated upland     | Sesame- Pea<br>Sesame-Gram<br>Pigeon Pea   | Til-T-78, Pragti, Sekhar   | Ridge-furrow sowing,  |                          |
|  | Un Irrigated lowland    | Black Gram- Pea/Gram   | <b>Green Gram-</b> PM-8, PDM-11, Samrat, Jyoti, Jagriti, Janpriya,<br><b>Black Gram-</b> T-9 PU-19,PU-40,PU-35<br>Sekhar-1,2&3 | Ridge-furrow sowing,  |                          |
| Mid season drought (Long dry spell consecutive 2 weeks rainless( .2.5mm period)                  |                         |  |  |   |                          |
| At vegetative stage  | Irrigated upland        | Sesame- Pea<br>Sesame-Gram<br>Pigeon Pea   | Pigeon Pea- NDR-1,<br>NDR-2,MA-6, MA-13  | Life saving Irrigation, straw Mulch, Thinning, Inter cropping |                          |
|  | Irrigated lowland       | Rice-Wheat<br>Black Gram- Pea/Gram<br>Jowar- Wheat<br>Bajra- Wheat<br>Green Gram- Lentil | Use of drought tolerant rice varieties- NDR-97, Susk Samrat<br>Resowing & Gap filling Inter row harrowing                      | Life saving Irrigation, straw Mulch, Thinning, Inter cropping |                          |
|  | Un Irrigated upland     | Sesame- Pea<br>Sesame-Gram<br>Pigeon Pea   | Til-T-78, Pragti, Sekhar   | Life saving Irrigation, straw Mulch, Thinning, Inter cropping |                          |
|  | Un Irrigated lowland    | Black Gram- Pea/Gram   | <b>Green Gram-</b> PM-8, PDM-11, Samrat, Jyoti, Jagriti,   | Life saving Irrigation, straw Mulch, Thinning, Inter cropping |                          |

|   |                      |  |  |  |                                 |
|---|----------------------|--|--|--|---------------------------------|
|   |                      |  | Janpriya,<br><b>Black Gram- T-9</b><br>PU-19,PU-40,PU-35<br>Sekhar-1,2&3 |  |                                 |
| At flowering / fruiting stage                 | Irrigated upland     | Sesame- Pea<br>Sesame-Gram<br>Pigeon Pea   | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Spraying of 2% urea as foliar application<br>KCI Spray |                                 |
|   | Irrigated lowland    | Rice-Wheat<br>Black Gram- Pea/Gram<br>Jowar- Wheat<br>Bajra- Wheat<br>Green Gram- Lentil | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Spraying of 2% urea as foliar application<br>KCI Spray |                                 |
|   | Un Irrigated upland  | Sesame- Pea<br>Sesame-Gram<br>Pigeon Pea   | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Spraying of 2% urea as foliar application<br>KCI Spray |                                 |
|   | Un Irrigated lowland | Black Gram- Pea/Gram   | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Spraying of 2% urea as foliar application<br>KCI Spray |                                 |
|   |                      | <b>Normal crop/ Cropping systems</b>   | <b>Crop management</b>   | <b>Rabi Crop planning</b>                              | <b>Remark on implementation</b> |
| Thermal drought (Early withdrawal of monsoon) | Irrigated upland     | Sesame- Pea<br>Sesame-Gram   | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Toria  | Early Rabi                      |
|   | Irrigated lowland    | Jowar- Wheat<br>Bajra- Wheat<br>Green Gram- Lentil                                       | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Toria  | Early Rabi                      |
|   | Un Irrigated upland  | Sesame- Pea<br>Sesame-Gram<br>Pigeon Pea   | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Toria  | Early Rabi                      |
|   | Un Irrigated lowland | Black Gram- Pea/Gram   | Life saving<br>Irrigation, straw<br>Mulch, Thinning,<br>Inter cropping   | Toria  | Early Rabi                      |



## 2.1.2 Drought –Irrigated situation

| Condition  |                         |  | Suggested contingency measures   |  |                          |
|--|-------------------------|--|--|--|--------------------------|
| Early season drought (delayed onset)                   | Major farming situation | Normal crop/ Cropping systems            | Change in crops/ Cropping systems                                      | Agronomic measures                             | Remark on implementation |
| Delayed release of water in canals due to low rainfall | Sandy Loam soils        | Rice- Wheat                              | Rice- Short duration Varieties- NDR-97, UPS-212, Susk Smrat, SSahbhagi | Direct sowing, Drum Seeder<br>Micro irrigation |                          |
|  |                         | Millets- Mustard<br>Pigeon Pea           | No change  | Micro irrigation/Thinning,<br>Weed control     |                          |
|  |                         | Sesame- Lentil<br>Black gram/ Green gram | No change  | Micro irrigation/Thinning,<br>Weed control     |                          |
|  | clay /Silt loam soils   | Soybean-Gram                             | No change  | Micro irrigation/Thinning,<br>Weed control     |                          |
|  |                         | -  | -  | -  | -                        |
|  |                         | -  | -  | -  | -                        |
| Limited release of water in canals due to low rainfall | Sandy Loam soils        | Rice- Wheat                              | Rice- Short duration Varieties- NDR-97, UPS-212, Susk Smrat, Sahbhagi  | Direct sowing, Drum Seeder<br>Micro irrigation |                          |
|  |                         | Millets- Mustard<br>Pigeon Pea           | No change  | Micro irrigation/Thinning,<br>Weed control     |                          |
|  |                         | Sesame- Lentil<br>Black gram/ Green gram | No change  | Micro irrigation/Thinning,<br>Weed control     |                          |
|  | clay loam soils         | Soybean-Gram                             | No change  | Micro irrigation/Thinning,<br>Weed control     |                          |
|  |                         | -  | -  | -  | -                        |
|  |                         | -  | -  | -  | -                        |
| Non release of water in canals under delayed           | Sandy Loam soils        | Rice- Wheat                              | Rice may be replaced by Pulses   | Direct seeding in small beds, Use of Micro-    |                          |

|   |   |  |   |   |  |
|---|---|--|---|---|--|
| onset of monsoon in catchment                   |   |  | Green Gram- Samrat, Janpriya, Jagriti<br>Black Gram- T-9, PU-40, PU-35 Azad-3                                   | irrigation/ Sub surface irrigation  |  |
|   |   | Millets- Mustard<br>Pigeon Pea           | No change   | Sowing of Pigeon pea at 90 cm+ two rows of inter crops on ridges<br>Use of Micro- irrigation/<br>Sub surface irrigation |  |
|   |   | Sesame- Lentil<br>Black gram/ Green gram | No change   | Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation   |  |
|   | clay loam soils                                   | Soybean-Gram                             | No change   | Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation   |  |
|   |   | -<br>-                                   |   |   |  |
| Insufficient water recharge due to low rainfall | Upland tube well irrigated canal Sandy Loam soils | Rice- Wheat                              | Rice may be replaced by Pulses<br>Green Gram- Samrat, Janpriya, Jagriti<br>Black Gram- T-9, PU-40, PU-35 Azad-3 | Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation   |  |
|   |   | Millets- Mustard<br>Pigeon Pea           | No change   | Sowing of Pigeon pea at 90 cm+ two rows of inter crops on ridges<br>Use of Micro- irrigation/<br>Sub surface irrigation |  |
|   |   | Sesame- Lentil<br>Black gram/ Green gram | No change   | Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation   |  |
|   | Lowland tube well irrigated canal clay loam soils | Soybean-Gram                             | No change   | Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation   |  |
|   |   |  |   |   |  |

## 2.2 Unusual rains –(Untimely, unseasonal etc)

| Condition  |                         |  | Suggested contingency measures    |                              |                       |
|--|-------------------------|--|-----------------------------------|------------------------------|-----------------------|
| <b>Continuous high rainfall in a short span leading to water logging</b> | <b>Vegetative stage</b> | <b>Flowering stage</b>                   | <b>Crop maturity stage''</b>      |                              | <b>Post harvest''</b> |
| Soybean Black gram/ Green gram/  | Provide Drainage        | Proper bunding<br>Drain out excess water | Harvest at physiological maturity |                              | Shift to safer side   |
| Sesame/ Pigeon pea   | Provide Drainage        | Proper bunding<br>Drain out excess water | Harvest at physiological maturity |                              | Shift to safer side   |
| Condition  |                         |  | Suggested contingency measures    |                              |                       |
| <b>Heavy rainfall with high speed winds in a short span</b>              | <b>Vegetative stage</b> | <b>Flowering stage</b>                   |                                   | <b>Crop maturity stage''</b> | <b>Post harvest''</b> |
| Soybean Black gram/ Green gram/  | Provide Drainage        | Proper bunding<br>Drain out excess water | Harvest at physiological maturity |                              | Shift to safer side   |
| Sesame/ Pigeon pea   | Provide Drainage        | Proper bunding<br>Drain out excess water | Harvest at physiological maturity |                              | Shift to safer side   |
| Condition  |                         |  | Suggested contingency measures    |                              |                       |
| <b>Outbreak of pests and diseases due to unseasonal rains</b>            | <b>Vegetative stage</b> | <b>Flowering stage</b>                   | <b>Flowering stage</b>            | <b>Crop maturity stage''</b> | <b>Post harvest''</b> |
| Soybean Black gram/ Green gram/  | Bio pesticides use      | Bio pesticides use                       | Bio pesticides use                | Bio pesticides use           | Shift to safer place  |
| Sesame/ Pigeon pea   | Bio pesticides use      | Bio pesticides use                       | Bio pesticides use                | Bio pesticides use           | Shift to safer place  |

## 2.3 Floods

| Condition  | Suggested contingency measures |                         |   |                                   |
|--|--------------------------------|-------------------------|---|-----------------------------------|
| <b>Transient water logging/ partial inundation</b> | <b>Seedling/Nursery stage</b>  | <b>Vegetative stage</b> | <b>Reproductive stage</b>                   | <b>At harvest</b>                 |
| Soybean Black gram/ Green gram/                    | Provide drainage               | Provide drainage        | Provide drainage/<br>Prevent premature seed | Harvest at physiological maturity |
| Sesame/ Pigeon pea                                 | Provide drainage               | Provide drainage        | Provide drainage/<br>Prevent premature seed | Harvest at physiological maturity |
| Pearl Millets                                      | Provide drainage               | Provide drainage        | Provide drainage/<br>Prevent premature seed | Harvest at physiological maturity |
| Sorghum  | Provide drainage               | Provide drainage        | Provide drainage/<br>Prevent premature seed | Harvest at physiological maturity |

