# State: Rajasthan

# Agriculture Contingency Plan for District: DHOLPUR

| | | | | | |
|---|---|---|---|---|---|
| **1.0 District Agriculture profile** | | | | | |
| **1.1** | **Agro-Climatic/Ecological Zone** | | | | |
| | Agro Ecological Sub Region (ICAR) | Northern Plain (And Central Highlands) Including Aravallis, Hot Semi-Arid Eco-Region (4.1) | | | |
| | Agro-Climatic Zone (Planning Commission) | Central Plateau And Hills Region (VIII) | | | |
| | Agro Climatic Zone (NARP) | Flood Prone Eastern Plain Zone (RJ-6) | | | |
| | List all the districts or part thereof falling under the NARP Zone | Dholpur(Dholpur, Rajakhera, Bari, Saipau, Basedi) | | | |
| | Geographic coordinates of district headquarters | Latitude | Longitude | Altitude | |
| | | $26^{0.}$ 0& $26^{0.}$ 27' 0 N | $77.14^{0}$' & $77^{0}$ 17' E | 177 msl | |
| | Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS | Zonal Director Research, A.R.S., Navgaon (S.K.R.A.U., Bikaner), Distt.: Alwar. | | | |
| | Mention the KVK located in the district | K.V.K., Dholpur | | | |
| **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): | 671 | 28 | 3rd week of June | 3rd week of September |
| | NE Monsoon(Oct-Dec): | 41 | 2 | | |
| | Winter (Jan- March) | 30 | 3 | - | - |
| | Summer (Apr-May) | 12 | 2 | - | - |
| | Annual | 754 | 35 | - | - |

| 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)** | 300913 | 197705 | 27173 | 16381 | 15854 | 9081 | 19051 | 58439 | 18426 | 11725 |

| 1. 4 | **Major Soils (common names like red sandy loam deep soils (etc.,)*** | **Area ('000 ha)** | **Percent (%) of total** |
|---|---|---|---|
| | 1.Deep black clayey | - | 1.66 |
| | 2. Medium black clayey | - | 1.68 |
| | 3. Deep brown loamy | - | 67.44 |
| | 4. Medium brown loamy | - | 23.14 |
| | 5. Red gravelly loamy hill | - | 6.09 |
| | Others (specify): | - | |

* mention colour, depth and texture (heavy, light, sandy, loamy, clayey etc) and give vernacular name, if any, in brackets

| 1.5 | **Agricultural land use** | Area ('000 ha) | Cropping intensity % |
|---|---|---|---|
| | Net sown area | 141.380 | 140 |
| | Area sown more than once | 56.325 | |
| | Gross cropped area | 197.705 | |

| | | | | |
|---|---|---|---|---|
| **1.6** | **Irrigation** | Area (‘000 ha) | | |
| | Net irrigated area | 99.624 | | |
| | Gross irrigated area | 101.724 | | |
| | Rainfed area | 95.981 | | |
| | **Sources of Irrigation** | Number | Area (‘000 ha) | Percentage of total irrigated area |
| | Canals | 0 | 0 | |
| | Tanks | 0 | 0 | |
| | Open wells | 14750 | 3.325 | 3.27 |
| | Bore wells | 7963 | 89.409 | 87.89 |
| | Lift irrigation schemes | - | - | - |
| | Micro-irrigation | | - | - |
| | Other sources (please specify) | | - | - |
| | Total Irrigated Area | | - | |
| | Pump sets | 18743 | | |
| | No. of Tractors | | | |
| | **Groundwater availability and use* (Data source: State/Central Ground water Department /Board)** | No. of blocks/ Tehsils (5) | (%) area | Quality of water (specify the problem such as high levels of arsenic, fluoride, saline etc) |
| | Over exploited | 4 | 80 | Sodic, fluoride |
| | Critical | 1 | 20 | |
| | Semi- critical | - | - | |
| | Safe | - | - | |
| | Wastewater availability and use | - | - | |
| | Ground water quality | | | |
| *over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70% | | | | |

**1.7 Area under major field crops & horticulture (as per latest figures) (Specify year - 2008-09) final estimates**

| 1.7 | Major field crops cultivated | Area ('000 ha) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | *Kharif* | | | *Rabi* | | | | |
| | | **Irrigated** | **Rainfed** | **Total** | **Crop** | **Irrigated** | **Rainfed** | **Summer** | **Grand total** |
| | Bajra | 0 | 69.923 | - | Wheat | 50.770 | - | - | - |
| | Guar | 0 | 0.675 | - | Barley | 0.868 | - | - | - |
| | Til | 0 | 2.701 | - | Gram | 0.864 | 2.783 | - | - |
| | Cotton | - | - | - | Mustard | 54.709 | 69.802 | - | - |
| | Arhar | - | 0.675 | - | - | - | | - | - |
| | Groundnut | 0.075 | - | - | - | - | | - | - |

| | **Horticulture crops - Fruits** | **Area ('000 ha)** | | |
|---|---|---|---|---|
| | | **Total** | **Irrigated** | **Rainfed** |
| | | | | |
| | **Horticulture crops - Vegetables** | **Total** | **Irrigated** | **Rainfed** |
| | Onion | 0.004 | 0.004 | - |
| | Potato | 4.183 | 4.183 | - |
| | Chilly | 0.226 | 0.226 | - |

| | | | | |
|---|---|---|---|---|
| | Pea | 0.065 | 0.065 | - |
| | Coriander | 0.004 | 0.004 | - |
| | | | | |
| | **Medicinal and Aromatic crops** | **Total** | **Irrigated** | **Rainfed** |
| | Methi | 0 | 0 | - |
| | **Plantation crops** | **Total** | **Irrigated** | **Rainfed** |
| | **Eg., industrial pulpwood crops etc.** | | | |
| | **Fodder crops** | **Total** | **Irrigated** | **Rainfed** |
| | Jowar | | 0 | 0.089 |
| | **Total fodder crop area** | | | |
| | **Grazing land** | | | |
| | **Sericulture etc** | | | |
| | **Others (specify)** | | | |

| **1.8** | **Livestock** | **Male (‘000)** | **Female (‘000)** | **Total (‘000)** |
|---|---|---|---|---|
| | Non descriptive Cattle (local low yielding) | - | - | 60749 |
| | Crossbred cattle | - | - | 1153 |
| | Non descriptive Buffaloes (local low yielding) | - | - | 310037 |
| | Graded Buffaloes | - | - | NA |
| | Goat | - | - | 146098 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Sheep | | | - | - | | 6113 |
| | Others (Camel, Pig, Yak etc.) | | | - | - | | 4256 |
| | Commercial dairy farms (Number) | | | | | | |
| **1.9** | **Poultry** | | | **No. of farms** | **Total No. of birds ('000)** | | |
| | Commercial | | | - | NA | | |
| | Backyard | | | -- | - | | |
| **1.10** | **Fisheries** (Data source: Chief Planning Officer) | | | | | | |
| | **A. Capture** | | | | | | |
| | **i) Marine** (Data Source: Fisheries Department) | **No. of fishermen** | **Boats** | | **Nets** | | **Storage facilities (Ice plants etc.)** |
| | | | Mechanized | Non-mechanized | Mechanized (Trawl nets, Gill nets) | Non-mechanized (Shore Seines, Stake & trap nets) | |
| | | | | | | | |
| | **ii) Inland** (Data Source: Fisheries Department) | **No. Farmer owned ponds** | | **No. of Reservoirs** | | **No. of village tanks** | |
| | | | | | | | |
| | **B. Culture** | | | | | | |
| | | **Water Spread Area (ha)** | | **Yield (t/ha)** | | **Production ('000 tons)** | |
| | i) **Brackish water** (Data Source: MPEDA/ Fisheries Department) | - | | - | | - | |
| | ii) **Fresh water** (Data Source: Fisheries Department) | - | | - | | - | |
| | **Others** | - | | - | | - | |

**1.11 Production and Productivity of major crops**

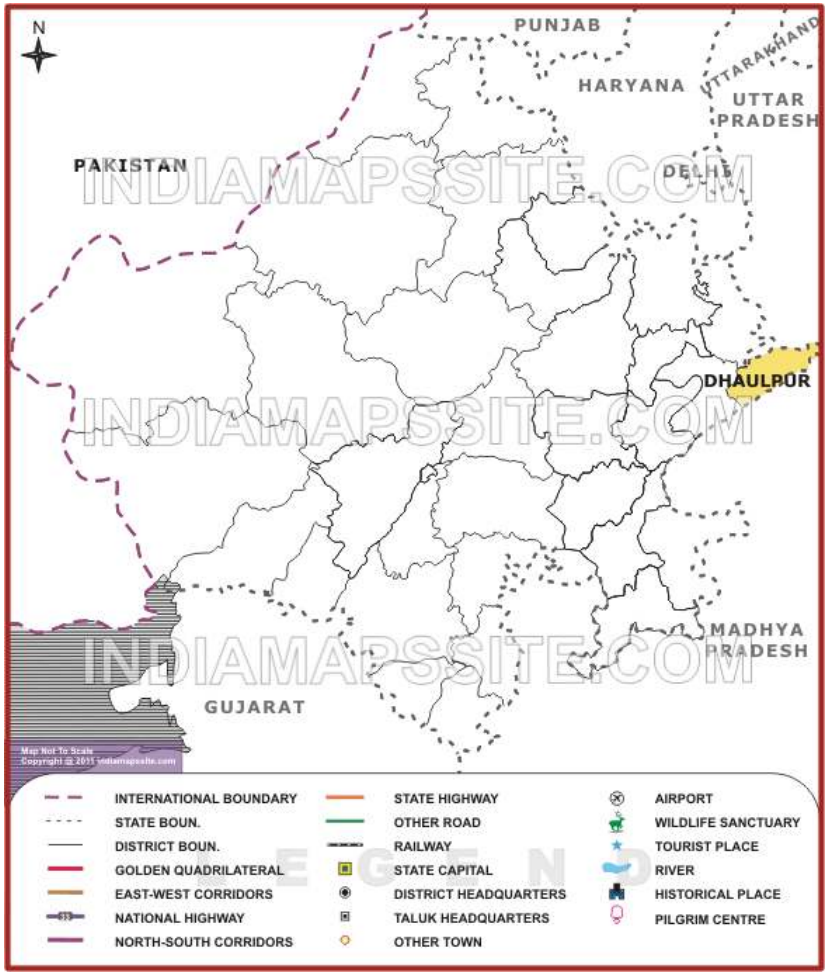
| 1.11 | Name of crop | Kharif | | Rabi | | Summer | | Total | | Crop residue as fodder (‘000 tons) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Production ('000 t) | Productivity (kg/ha) | Production ('000 t) | Productivity (kg/ha) | Production ('000 t) | Productivity (kg/ha) | Production ('000 t) | Productivity (kg/ha) | |
| **Major Field crops (Crops to be identified based on total acreage)** | | | | | | | | | | |
| | Bajra | 127.948 | 1875 | 151.130 Wheat | 3256 | - | - | - | - | - |
| | Guar | 0.809 | 850 | 2.218 Barley | 2365 | - | - | - | - | - |
| | Til | 1.378 | 458 | 2.400 Gram | 949 | - | - | - | - | - |
| | Cotton | 11 Bales | 312 | 93.197 Mustard | 1313 | - | - | - | - | - |
| | Arhar | 0.651 | 874 | | - | - | - | - | - | - |
| | Groundnut | 0.285 | 1524 | | | | | | | |
| **Major Horticultural crops (Crops to be identified based on total acreage)** | | | | | | | | | | |
| | Methi | - | - | - | - | - | - | - | - | - |

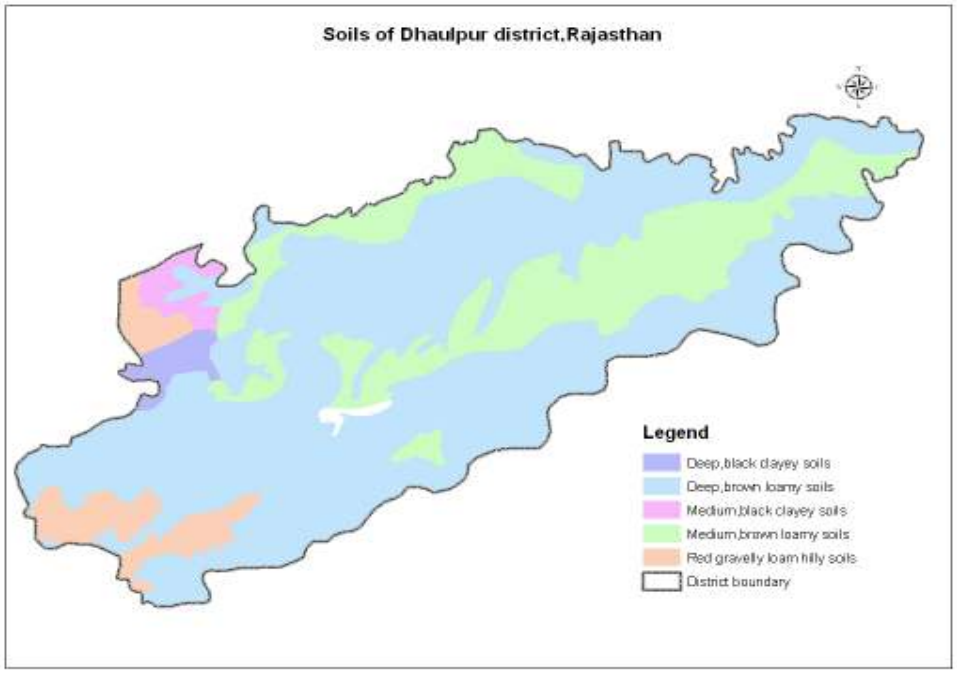
| **1.12** | **Sowing window for 5 major field crops** (start and end of normal sowing period) | Bajra | Guar | Wheat | Barley | Mustard |
|---|---|---|---|---|---|---|
| | Kharif- Rainfed | 15th June – 15th July | 15th June – 15th July | - | - | - |
| | Kharif-Irrigated | 15th June – 15th July | 15th June – 15th July | - | - | - |
| | Rabi- Rainfed | - | - | - | 1st Nov.–30th Nov | 15th Sep.-15th Oct. |
| | Rabi-Irrigated | - | - | 15th Nov.–25th Dec. | 1st Nov.–30th Nov | 15th Oct.-15th Nov. |

| 1.13 | **What is the major contingency the district is prone to?** (Tick mark) | **Regular** | **Occasional** | **None** |
|---|---|---|---|---|
| | Drought | | √ | |
| | Flood | | | √ |
| | Cyclone | | | √ |
| | Hail storm | | | √ |
| | Heat wave | | √ | |
| | Cold wave | √ | | |
| | Frost | | √ | |
| | Sea water intrusion | | | √ |
| | Pests and disease outbreak (specify) | | | |
| | Others (specify) | | | |

| 1.14 | **Include Digital maps of the district for** | Location map of district within State as Annexure I | Enclosed: Yes |
|---|---|---|---|
| | | Mean annual rainfall as Annexure 2 | Enclosed: No |
| | | Soil map as Annexure 3 | Enclosed: Yes |

**Location map**






**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[a]** | **Normal Crop / Cropping system[b]** | **Change in crop / cropping system[c] including variety** | **Agronomic measures[d]** | **Remarks on Implementation[e]** |
| **Delay by 2 weeks (Specify month)* July 1st week** | Rainfed -Deep brown loamy soil (high rain) | Bajra/<br>Guar/<br>Til/ | **Bajra-**HHB-67, HHB- 94, ICMH-356, MH-169, RHB-30, HHB 60, ICTP | Wider spacing in Bajra 45x45/30 cm, thinning, inter culture operation of weed | Seed drill under RKVY, supply of seed through RSSC, NSC, |

| | | | | | |
|---|---|---|---|---|---|
| | Rainfed-<br>Medium brown loamy soil (medium rain) | Mustard/<br><br>Wheat/ barley/ gram | 8203.<br><br>**Guar-**RGC—486, 1003, 1017, 1002, 1091, 936., RGM 112,<br><br>**Til**- RT-46, RT-125, RT-127, GT-1. | control at 25 DAS.<br>Inter cropping of Bajra( Paired 2 rows of bajra at 30 cm & only one row of moong / guar) | Bio-fertilizers, plain water harvesting structures, for regular fodder supply planting of Ardu, subabul, etc. at farmer & village level.<br>Desilting of ponds to increase their capacity. |

| **Condition** | | | **Suggested Contingency measures** | | |
|---|---|---|---|---|---|
| **Early season drought (delayed onset)** | **Major Farming situation[a]** | **Normal Crop/cropping system[b]** | **Change in crop/cropping system[c] (short duration)** | **Agronomic measures[d]** | **Remarks on Implementation[e]** |
| **Delay by 4 weeks (Specify month) July III week** | Rainfed- Deep brown loamy soil (high rain)<br><br>Rainfed<br>Medium brown loamy soil (medium rain) | Bajra/<br>Guar/<br>Til/<br>Mustard/<br><br>Wheat/ barley/ gram | **Guar-**RGC-936, 1003, 1002, 1017, RGM 112<br><br>**Bajra**-HHB-67, ICMH-356, HHB-60, RHB-30. | Prepare seed nursery of bajra & transplant in July end.<br>Inter cropping of bajra( Paired 2 rows of bajra at 30 cm & only one row of moong / guar) | Seed drill under RKVY, supply of seed through RSSC, NSC, Bio-fertilizers, plain water harvesting structures, for regular fodder supply planting of Ardu, subabul, etc. at farmer & village level.<br>Desilting of ponds to increase their capacity. |

| Condition | | | Suggested Contingency measures | | |
|---|---|---|---|---|---|
| **Early season drought (delayed onset)** | **Major Farming situation[a]** | **Normal Crop/cropping system[b]** | **Change in crop/cropping system[c]** | **Agronomic measures[d]** | **Remarks on Implementation[e]** |
| **Delay by 6 weeks (Specify month) August I week** | Rainfed- Deep brown loamy soil (high rain)<br>Rainfed Medium brown loamy soil (medium rain) | Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram | Bajra, Jowar can be grown for fodder purpose.<br>Guar-green manuring | Increase seed rate, Proper nutrient management | Supply of seed / through RSSC, NSC. |

| Condition | | | Suggested Contingency measures | | |
|---|---|---|---|---|---|
| **Early season drought (delayed onset)** | **Major Farming situation[a]** | **Normal Crop/cropping system[b]** | **Change in crop/cropping system[c]** | **Agronomic measures[d]** | **Remarks on Implementation[e]** |
| **Delay by 8 weeks (Specify month) N.A. Situation did not arise in last 20 years** | Rainfed- Deep brown loamy soil (high rain)<br>Rainfed Medium brown loamy soil (medium rain) | Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram | Prepare land for rainfed rabi crops | - | - |

| Condition | | | Suggested Contingency measures | | |
|---|---|---|---|---|---|
| Early season drought **(Normal onset)** | **Major Farming situation[a]** | **Normal Crop/cropping system[b]** | **Crop management[c]** | **Soil nutrient & moisture conservation measues[d]** | **Remarks on Implementation[e]** |
| **Normal onset followed by 15-20 days dry spell** | Rainfed- Deep brown loamy soil (high rain) | Bajra/ Guar/ | Thinning, weeding, gap filling of thinned plants. (Transplanting in case of | Mulching. | Supply of pesticides under RKVY. Supply of |

| | | | | | |
|---|---|---|---|---|---|
| **after sowing leading to poor germination/crop stand etc.** | Rainfed Medium brown loamy soil (medium rain) | Til/ Mustard/ Wheat/ barley/ gram | pearlmillet) Resowing, if necessary. Only short duration Varieties. | | intercultural Implements and other inputs. |

| **Condition** | | | **Suggested Contingency measures** | | |
|---|---|---|---|---|---|
| **Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)** | **Major Farming situation[a]** | **Normal Crop/cropping system[b]** | **Crop management[c]** | **Soil nutrient & moisture conservation measues[d]** | **Remarks on Implementation[e]** |
| **At vegetative stage** | Rainfed- Deep brown loamy soil (high rain)<br>Rainfed Medium brown loamy soil (medium rain) | Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram | Life saving irrigation , thinning, weeding. Spraying of 1% thiourea in bajra, guar, etc. | | Supply of interculture implements through RKVY. |

| **Condition** | | | **Suggested Contingency measures** | | |
|---|---|---|---|---|---|
| **Mid season drought (long dry spell)** | **Major Farming situation[a]** | **Normal Crop/cropping system[b]** | **Crop management[c]** | **Soil nutrient & moisture conservation measues[d]** | **Remarks on Implementation[e]** |
| **At flowering/ fruiting stage** | Rainfed- Deep brown loamy soil (high rain)<br>Rainfed Medium brown loamy soil (medium rain) | Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram | Life saving irrigation, spray of 0.1% thiourea + 0.2%, $FeSO_4$ 0.5%, $K_2SO_4$ / KCI + 1% urea. | Mulching. | Supply of interculture implements through RKVY. |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |

| **Condition** | | | **Suggested Contingency measures** | | |
|---|---|---|---|---|---|
| **Terminal drought** (Early withdrawal of monsoon) | **Major Farming situation**[a] | **Normal Crop/cropping system**[b] | **Crop management**[c] | **Rabi Crop planning**[d] | **Remarks on Implementation**[e] |
| | Rainfed- Deep brown loamy soil (high rain)<br>Rainfed Medium brown loamy soil (medium rain) | Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram | Life saving irrigation, harvest the crop for fodder purpose. Weed free field. | Harvested field: prepare the field followed by soil planking to conserve moisture for rabi rainfed crops. | Supply of interculture implements through RKVY. |

**2.2 Unusual rains (untimely, unseasonal etc)** (for both rainfed and irrigated situations)

| **Condition** | **Suggested contingency measure** | | | |
|---|---|---|---|---|
| **Continuous high rainfall in a short span leading to water logging** | **Vegetative stage**[k] | **Flowering stage**[l] | **Crop maturity stage**[m] | **Post harvest**[n] |
| Crop1 (specify) - Bajra, guar, til. | Provide drainage, control water inlet from outside | Provide drainage, control of water inlet from outside | Provide drainage, harvesting at Physiological maturity stage. | Shift safer places harvested crop plants heaped upright, threshed produced turned frequently, safe storage |

| | | | | |
|---|---|---|---|---|
| **Heavy rainfall with high speed winds in a short span** | - | - | - | - |
| **Outbreak of pests and diseases due to unseasonal rains** | Need based plant protection IPDTI for all crops | -do- | -do- | -do- |

**2.3 Floods-Not applicable**

| **Condition** | **Suggested contingency measure[o]** | | | |
|---|---|---|---|---|
| **Transient water logging/ partial inundation[1]** | **Seedling / nursery stage** | **Vegetative stage** | **Reproductive stage** | **At harvest** |
| **Continuous submergence for more than 2 days[2]** | | | | |
| **Sea water intrusion[3]** | | | | |

**2.4 Extreme events: Heat wave / Cold wave/Frost/ Hailstorm /Cyclone**

| **Extreme event type** | **Suggested contingency measure[r]** | | | |
|---|---|---|---|---|
| | **Seedling / nursery stage** | **Vegetative stage** | **Reproductive stage** | **At harvest** |
| **Heat Wave[p]** | Life saving irrigation | Spraying of thiourea | Spraying of thiourea + $FeSO_4$ | |
| Crop1 – Bajra | | | or KCI / $K_2SO_4$ + urea spray. | |
| Crop2 – Guar | | | | |
| Crop3 – Til | | | | |
| **Cold wave[q]** | N.A. | | | |
| **Frost** | N.A. | | | |
| **Hailstorm** | N.A. | | | |
| **Cyclone** | N.A. | | | |

## 2.5 Contingent strategies for Livestock, Poultry & Fisheries

### 2.5.1 Livestock

| | Suggested contingency measures | | |
|---|---|---|---|
| | **Before the event[s]** | **During the event** | **After the event** |
| **Drought** | | | |
| Feed and fodder availability | Provide Enough feed & fodder | Provide sufficient feed & fodder along with mineral mixture. Harvest and use all failed crop material as fodder. Use MNB, urea treatment of poor fodder | Provide sufficient feed & fodder along with mineral mixture. |
| Drinking water | Enough water for drinking | Provide sufficient water along with mineral mixture, Hygiene and sanitation, avoid wallowing of animals in water bodies | Provide sufficient water along with mineral mixture Specify option for drinking water reserves |
| Health and disease management | | Vaccinate against contagious diseases., organization of mass animal health camps | Vaccinate against contagious diseases |
| **Floods** | | | |
| Feed and fodder availability | Provide Enough feed & fodder | Provide dry fodder and feed in sufficient amount | Provide dry fodder and feed in sufficient amount |
| Drinking water | | Provide safe drinking water, maintain sanition | Provide safe drinking water |
| Health and disease management | | Organization of mass animal health camp, Spraing of fly repellents | Deworming, proper disposal of dead animals |

| | | | |
|---|---|---|---|
| **Cyclone** | | | |
| Feed and fodder availability | | | |
| Drinking water | | Cover the shelter from north side/west side and use heaters/coolers, Grazing during morning and evening time | Normal condition |
| Health and disease management | | | |
| **Heat wave and cold wave** | | | |
| Shelter/environment management | Normal condition | Cover the shelter from north side/west side and use heaters/coolers | Normal condition |
| Health and disease management | Normal condition | Vaccinate against diseases | Normal condition |

[s] based on forewarning wherever available

### 2.5.2 Poultry

| | Suggested contingency measures | | | Convergence/linkages with ongoing programs, if any |
|---|---|---|---|---|
| | **Before the event[a]** | **During the event** | **After the event** | |
| | | | | |
| **Drought** | | | | |
| Shortage of feed ingredients | Provide Enough feed, store house hold grains | Provide sufficient feed along with mineral mixture | Provide sufficient feed along with mineral mixture | Provide Enough feed |
| Drinking water | Enough water for drinking | Provide sufficient water along with mineral mixture | Provide sufficient water along with mineral mixture | Enough water for drinking |
| Health and disease management | | Vaccinate against contagious diseases | Vaccinate against contagious diseases | |

| | | | | |
|---|---|---|---|---|
| **Floods** | | | | |
| Shortage of feed ingredients | Provide Enough feed & fodder | Provide dry fodder and feed in sufficient amount | Provide dry fodder and feed in sufficient amount | Provide Enough feed & fodder |
| Drinking water | | Provide safe drinking water | Provide safe drinking water | |
| Health and disease management | | | | |
| **Cyclone** | | | | |
| **Heat wave and cold wave** | | | | |
| Shelter/environment management | Normal condition | Cover the shelter from north side/west side and use heaters/coolers | Normal condition | Normal condition |
| Health and disease management | Normal condition | Vaccinate against diseases | Normal condition | Normal condition |
| | | | | |

[a] based on forewarning wherever available

**2.5.3 Fisheries/ Aquaculture: NA**