

## State: Arunachal Pradesh

### Agriculture Contingency Plan for District: Lower Dibang Valley

1.0 District Agriculture profile*				
1.1	<b>Agro-Climatic/Ecological Zone</b>			
	Agro Ecological Sub Region (ICAR)	16.3 Arunachal Pradesh (Subdued Eastern Himalayas), warm to hot, perhumid eco-subregion (C1A10)		
	Agro-Climatic Zone (Planning Commission)	Eastern Himalayan Region, Zone- III		
	Agro Climatic Zone (NARP)	Sub-Tropical Sub- Humid.		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Lower Dibang Valley District		
	Geographic coordinates of district headquarters	<b>Latitude</b>	<b>Longitude</b>	<b>Altitude</b>
		27°30'N to 28°33'N	95°15'E to 96°30'E	390 mtrs.
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ICAR Research Complex for NEH Region, Basar, Arunachal Pradesh		
	Mention the KVK located in the district with full address	Krishi Vigyan Kendra, Balek, Lower Dibang Valley District, Arunachal Pradesh PIN-792110		
Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	<b>ICAR Research Complex Centre, Basar Lower Dibang Valley</b>			

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):	2147.4	-	-	-
	NE Monsoon(Oct-Dec):	234.9	-	-	-
	Winter (Jan- February)	146.9	-	-	-
	Summer (March-May)	861.7	-	-	-
	Annual	3390.9	-	-	-

<b>1.3</b>	<b>Land use pattern of the district</b> (latest statistics)	Geographical Area ('000ha)	Cultivable area ('000ha)	Forest area ('000ha) *	Land under non-agricultural use ('000ha)	Permanent Pasture ('000ha)	Cultivable wasteland('000ha)	Land under Misc. tree crops and groves ('000ha)	Barren and uncultivable land ('000ha)	Current Fallows ('000ha)	Other fallows('000ha)
		390 Sq Km	30.4 ha	932.1ha @	0.52 ha	0.75ha	1.89 ha	0.71	0.42 ha	1.64 ha	1.80

@ Inclusive of Kurung kumey district

\*FST: Forest Survey of India, Ministry of Environment, Forest climate change-2011

2011Stats Directorate of Economics and Statistics, Ministry of Agriculture, Govt. of India

<b>1.4</b>	<b>Major Soils (common names like red sandy loam deep soils (etc.,))*</b>	<b>Area ('000 ha)**</b>	<b>Percent (%) of total geographical area</b>
1.	Black	1.553	22%
2.	Sandy loams	22.019	278%
	Others (specify):		

\* mention colour, depth and texture (heavy, light, sandy, loamy, clayey etc) and give vernacular name, if any, in brackets (data source: Soil Resource Maps of NBSS & LUP); \*\* Pl. give the details of the major soils occupying more than 5% of total geographical area. Degree of soil acidity (pH) may also be indicated

<b>1.5</b>	<b>Agricultural land use</b>	<b>Area ('000 ha)</b>	<b>Cropping intensity %</b>
	Net sown area	24.35 ha	119 %
	Area sown more than once	4.68	
	Gross cropped area	29.04 ha	

2011Stats Directorate of Economics and Statistics, Ministry of Agriculture, Govt. of India

<b>1.6</b>	<b>Irrigation</b>	<b>'000ha</b>
	Net irrigated area	3.96
	Gross irrigated area	3.96
	Rainfed area	15.1

@ Inclusive of Upper Dibang Valley districts Forest Area

	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals	-		Area may be indicated
	Tanks	2 Nos.		
	Open wells	-		
	Bore wells	-		
	Lift irrigation schemes	-		
	Micro-irrigation	-		
	Other sources (spring)	3 Nos.		
	Total Irrigated Area	-	2431 ha	
	Pump sets	-		
	No. of Tractors	10		
	<b>Groundwater availability and use* (Data source: State/Central Ground water Department /Board)</b>	No. of blocks/ Tehsils	(%) area	Quality of water (specify the problem such as high levels of arsenic, fluoride, saline etc)
	Over exploited			
	Critical			
	Semi- critical			
	Safe			
	Wastewater availability and use			
	Ground water quality			

\*over-exploited: groundwater utilization &gt; 100%; critical: 90-100%; semi-critical: 70-90%; safe: &lt;70%

1.6. a.	Fertilizer and Pesticides use	Type	Total quantity (tonnes)
1	Fertilizers*	Urea,SSP&MOP	15,9,4(Total NPK 28)
2	Chemical Pesticides*	Insecticides, Fungicides, Weedicides, Others (Specify)	

\* If break up is not available, indicate total quantity used in the district for any recent year, mention here the year and source of statistic

1.7 Area under major field crops & horticulture (as per latest figures) (2006-07)

1.7	Sl.No.	Major field crops cultivated	Area ('000 ha)							
			Kharif			Rabi			Summer	Grand total
			Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
1	Paddy	-	-	-	-	-	-	-	11.46	
2	Maize	-	-	-	-	-	-	-	8.09	
3	Millet	-	-	-	-	-	-	-	1.515	
4	Wheat	-	-	-	-	-	-	-	0.28	
5	Pulse	-	-	-	-	-	-	-	0.95	
6	Oilseeds	-	-	-	-	-	-	-	5.33	
7	Potato	-	-	-	-	-	-	-	0.375	
2011 Stats Directorate of Economics and Statistics, Ministry of Agriculture, Govt. of India										
@ NEDFI Databank website										
	Sl.No.	Horticulture crops - Fruits	Area ('000 ha)							
			Total		Irrigated		Rainfed			
1	Orange	2.025								
2	Banana	0.250								
3	Litchi	0.098								
4	Pine-apple	0.195								
5										
	Sl. No.	Horticulture crops - Vegetables	Total		Irrigated		Rainfed			
1			0.387							
2										
3										
	Sl. No.	Medicinal and Aromatic crops	Total		Irrigated		Rainfed			
1			0.125							
2										
3										
		Spices crops	Total		Irrigated		Rainfed			
1		Ginger	0.815							
2		Black Pepper	0.165							
3		Large Cardamom	0.280							
4										
		Plantation crops	Total		Irrigated		Rainfed			
1										
2										

3				
	<b>Fodder crops</b>	<b>Total</b>	<b>Irrigated</b>	<b>Rainfed</b>
1				
2				
3				
	<b>Total fodder crop area</b>			
	<b>Grazing land</b>			
	<b>Sericulture etc</b>			
	<b>Others (specify)</b>			

<b>1.8</b>	<b>Livestock</b> (Data source: Live stock Census 2007)	<b>Male ('000)</b>	<b>Female ('000)</b>	<b>Total ('000)</b>			
	Indigenous cattle	9.62	13.24	22.86			
	Improved / Crossbred cattle	1.44	1.73	3.17			
	Buffaloes (local low yielding)	0.35	1.81	2.16			
	Improved Buffaloes						
	Goat	6.58	9.10	15.68			
	Sheep						
	Pig	5.28	5.01	10.29			
	Mithun			15.61			
	Yak						
	Others (Horse, mule, donkey etc., specify)						
	Commercial dairy farms (Number)						
<b>1.9</b>	<b>Poultry</b>	<b>No. of farms</b>	<b>Total No. of birds ('000)</b>				
	Commercial	-	76.66				
	Backyard	-					
<b>1.10</b>	<b>Fisheries</b> (Data source: Chief Planning Officer)						
	<b>A. Capture</b>						
	<b>i) Marine</b> (Data Source: Fisheries Department)	<b>No. of fishermen</b>	<b>Boats</b>		<b>Nets</b>		<b>Storage facilities (Ice plants etc.)</b>
			Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)	
	<b>ii) Inland</b> (Data Source: Fisheries Department)	<b>No. Farmer owned ponds</b>		<b>No. of Reservoirs</b>		<b>No. of village tanks</b>	

	<b>B. Culture</b>			
		<b>Water Spread Area (ha)</b>	<b>Yield (t/ha)</b>	<b>Production ('000 tons)</b>
	i) <b>Brackish water</b> (Data Source: MPEDA/ Fisheries Department)			
	ii) <b>Fresh water</b> (Data Source: Fisheries Department)			
	<b>Others</b>			

Source: Fishery department, Govt. of Arunachal Pradesh

### 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)	
<b>Major Field crops (Crops to be identified based on total acreage)</b>										
Crop 1	Paddy	-	-	-	-	-	-	22.233	1904	
Crop 2	Maize	-	-	-	-	-	-	10.517	1300	
Crop 3	Millet	-	-	-	-	-	-	1.212	800	
Crop 4	Wheat	-	-	-	-	-	-	0.420	1500	
Crop 5	Pulse	-	-	-	-	-	-	0.855	900	
Crop 6	Oilseeds	-	-	-	-	-	-	5.063	905	
Crop 7	Potato	-	-	-	-	-	-	3.0	8000	
2012-13 Statistical Abstract of Arunachal Pradesh @ NEDFI Databank website										
<b>Major Horticultural crops (Crops to be identified based on total acreage)</b>										
Crop 1	Orange	-	-	-	-	-	-	3000		
Crop 2	Banana	-	-	-	-	-	-	680		
Crop 3	Litchi	-	-	-	-	-	-	30		
Crop 4	<i>Pine apple</i>	-	-	-	-	-	-	550		
Crop 5	Vegetables	-	-	-	-	-	-	387		
<b>Major spice crops</b>										
Crop 1	Black pepper	-	-	-	-	-	-	6		
Crop 2	Ginger	-	-	-	-	-	-	2960		
Crop 3	Large Cardamom	-	-	-	-	-	-	10		

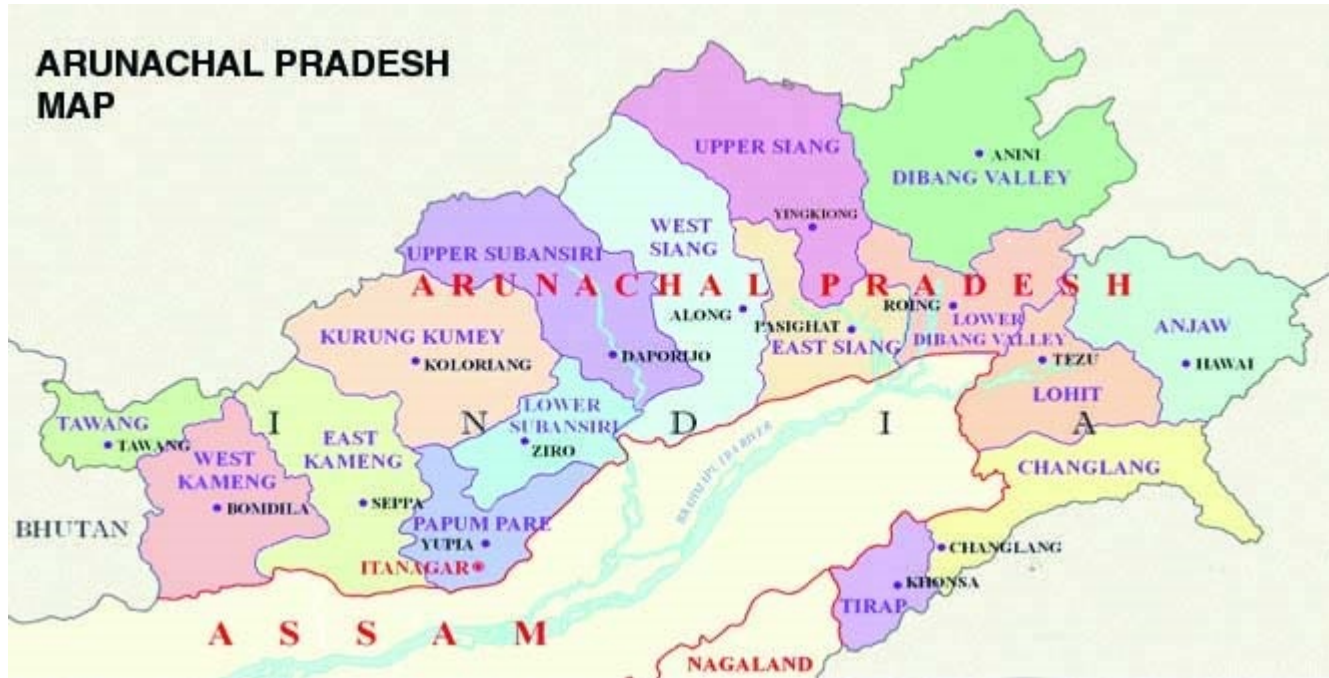
<b>1.12</b>	<b>Sowing window for 5 major field crops</b> (start and end of normal sowing period)	Rice	Maize	Black gram	Rapeseeds	Ginger	
	Kharif- Rainfed	May to June	Mid of March to April				
	Kharif-Irrigated						
	Rabi- Rainfed		Mid of Sept to Oct	Sept to Oct	Sept to Oct	March to April	
	Rabi-Irrigated						

<b>1.13</b>	<b>What is the major contingency the district is prone to? (Tick mark)</b>	<b>Regular*</b>	<b>Occasional</b>	<b>None</b>
		Drought		
	Flood			√
	Cyclone			√
	Hail storm			√
	Heat wave			√
	Cold wave			√
	Frost			√
	Sea water intrusion			√
	Snowfall			√
	Landslides			√
	Earthquake			√
	Pests and disease outbreak (specify)			√
	Others (like fog, cloud bursting etc.)			√

<b>1.14</b>	<b>Include Digital maps of the district for</b>	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: No

Annexure I

Location map of Lower Dibang Valley





## 2.0 Strategies for weather related contingencies

### 2. Drought

#### 2.1 Drought (Rainfed situation)

##### Drought-Pre-Monsoon (Last week of March to First week of April) Normal

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop /cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 2 weeks ( 2 <sup>nd</sup> to 3 <sup>rd</sup> week of April)	Very gently sloping plain with shallow loamy soils	Maize	No change <ul style="list-style-type: none"> <li>▪ Short duration crops/varieties like RCM-1-75, RCM-1-76</li> <li>▪ Maize + groundnut/soya bean/rice bean inter cropping.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Conservation of pre-monsoon soil moisture through soil/straw/grass mulching practices</li> <li>▪ Hydropriming/ seed soaking in water for 24hr and followed by shade drying before sowing.</li> <li>▪ Application of organic manure before sowing.</li> </ul>	
		Millet	No change Short duration crops/varieties of finger millet (VR-708, GPU-67), foxtail millet (SR-16, Meera		
		Vegetable crops	<p><b><u>Bottle gourd</u></b></p> <ul style="list-style-type: none"> <li>▪ Punjab Round, Pusa Sandesh, Narendra Shishir, Punjab Komal.</li> </ul> <p><b><u>Chilli</u></b></p> <ul style="list-style-type: none"> <li>▪ Kashi Anmol, Arka Lohit, Kashi Early, IIHR -Sel.</li> </ul>	<p><b><u>Bottle gourd</u></b></p> <ul style="list-style-type: none"> <li>▪ Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha)</li> <li>▪ Raise crop on ridge-furrow or raised bed planting system</li> <li>▪ Conservation of soil moisture through soil/straw/grass mulching practices.</li> </ul> <p><b><u>Chilli</u></b></p> <ul style="list-style-type: none"> <li>▪ Raise crop on ridge-furrow raised bed planting system</li> <li>▪ Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha) to enhance water holding capacity of soil</li> </ul>	

			132	<ul style="list-style-type: none"> <li>Conservation of soil moisture through soil/straw/grass mulching practices.</li> <li>Do not allow weeds to grow during plant's early growth stage.</li> <li>Mixed cropping of various vegetable crops.</li> </ul>	
<b>Nearly label plan with very deep coarse loamy soils</b>	Maize	<p>No change</p> <ul style="list-style-type: none"> <li>Short duration crops/varieties like RCM-1-75, RCM-1-76, Allrounder, HQPM-1, DA-61 A</li> <li>Maize + groundnut/soya bean/ rice bean inter cropping.</li> </ul>		<ul style="list-style-type: none"> <li>Conservation of pre-monsoon soil moisture through soil/straw/grass mulching practices</li> <li>Hydropriming/ seed soaking in water for 24hr and followed by shade drying before sowing.</li> <li>Application of organic manure before sowing.</li> </ul>	
	Millet	<p>No change</p> <p>Short duration crops/varieties of finger millet (VR-708, GPU-67), foxtail millet (SR-16, Meera)</p>			
	Vegetable crops	<p><b><u>Bottle gourd</u></b></p> <ul style="list-style-type: none"> <li>Punjab Round, Pusa Sandesh, Narendra Shishir, Punjab Komal.</li> </ul> <p><b><u>Chilli</u></b></p> <ul style="list-style-type: none"> <li>Kashi Anmol, Arka Lohit, Kashi Early, IHR -Sel. 132</li> </ul> <p>Mixed cropping of various vegetable crops.</p>	<p><b><u>Bottle gourd</u></b></p> <ul style="list-style-type: none"> <li>Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha)</li> <li>Raise crop on ridge-furrow or raised bed planting system</li> <li>Conservation of soil moisture through soil/straw/grass mulching practices.</li> </ul> <p><b><u>Chilli</u></b></p> <ul style="list-style-type: none"> <li>Raise crop on ridge-furrow raised bed planting system</li> <li>Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha) to enhance water holding capacity of soil</li> <li>Conservation of soil moisture through soil/straw/grass mulching practices.</li> <li>Do not allow weeds to grow during plant's early growth stage.</li> </ul>		

2.1.2 **Drought-irrigated situation** : NA in this district

**Normal onset of pre- monsoon**

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset )					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Very gently sloping plain with shallow loamy soils	Maize	<ul style="list-style-type: none"> <li>▪ If the germination is less than 30% of optimum plant population, re sowing should be done</li> <li>▪ Gap filling to be done to maintain optimum plant density</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA
		Millet(Finger Millet)	<ul style="list-style-type: none"> <li>▪ If the germination is less than 30% of optimum plant population re sowing should be done</li> <li>▪ Gap filling to be done to maintain optimum plant density</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Vegetable crops(Bottle gourd, Chilli, beans, okra, brinjal)	<ul style="list-style-type: none"> <li>▪ Gap filling with available seedlings.</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Prefer Drip/sprinkler irrigation</li> <li>▪ Mulching with locally available material</li> </ul>	Protected cultivation to be promoted
	Nearly level plain with very deep coarse loamy soils	Maize	<ul style="list-style-type: none"> <li>▪ If the germination is less than 30% of optimum plant population, re sowing should be done</li> <li>▪ Gap filling to be done to maintain optimum plant density</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA
		Millet(Finger Millet)	<ul style="list-style-type: none"> <li>▪ If the germination is less than 30% of optimum plant population re sowing should be done</li> <li>▪ Gap filling to be done to maintain optimum plant density</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Vegetable	<ul style="list-style-type: none"> <li>▪ Gap filling with available seedlings.</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Prefer Drip/sprinkler irrigation</li> <li>▪ Mulching with locally</li> </ul>	Protected cultivation to be promoted Promoted rain

				available material	water harvesting structure
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Condition	Major Farming situation	Normal Crop /cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)					
Vegetative stage	Very gently sloping plain with shallow loamy soils	Maize	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Millet(Finger Millet)	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Vegetable crops(Bottle gourd, Chilli, beans, okra, brinjal)	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Prefer Drip/sprinkler irrigation</li> <li>▪ Mulching with locally available material</li> </ul>	
	Nearly level plain with very deep coarse loamy soils	Maize	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MoP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Millet(Finger Millet)	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Prefer Drip/sprinkler irrigation</li> <li>▪ Mulching with locally available material</li> </ul>	
		Vegetable crops(Bottle gourd, Chilli, beans, okra,	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mulching with locally available material</li> </ul>	

		brinjal)		
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Condition	Major Farming situation	Normal Crop /cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)					
Reproductive stage	Very gently sloping plain with shallow loamy soils	Maize	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Millet(Finger Millet)	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Vegetable crops(Bottle gourd, Chilli, beans, okra, brinjal)	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Prefer Drip/sprinkler irrigation</li> </ul>	
			<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
	Nearly level plain with very deep coarse loamy soils	Maize	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Millet(Finger Millet)	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Mulching with locally available material</li> </ul>	
		Vegetable crops(Bottle gourd, Chilli,	<ul style="list-style-type: none"> <li>▪ Weeding</li> <li>▪ Interculture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> <li>▪ Prefer Drip/sprinkler irrigation</li> </ul>	

		beans, okra, brinjal)			
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Condition	Major Farming situation	Normal Crop/cropping system <sup>b</sup>	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)		Millet(Finger Millet)	▪ Harvest at physiological maturity.	▪ Planning for early sowing of pulse crop like Blackgam/Greengram and buckwheat	Schemes from Line Deptt./RKVY/ATMA
		Vegetable crops(Bottle gourd, Chilli, beans, okra, brinjal)	▪ Harvesting at optimum age	▪ Planning for early cole crops like cabbage, cauliflower, knolKhol	Schemes from Line Deptt./RKVY/ATMA
	Nearly label plan with very deep coarse loamy soils	Maize	Maize	▪ Harvest at physiological maturity.	▪ Planning for early sowing of pulse crop like Blackgam/Greengram and buckwheat
		Millet(Finger Millet)	Millet(Finger Millet)	▪ Harvest at physiological maturity.	▪ Planning for early sowing of pulse crop like Blackgam/Greengram and buckwheat
		Vegetable crops(Bottle gourd, Chilli, beans, okra, brinjal)	Vegetable crops(Bottle gourd, Chilli, beans, okra, brinjal)	▪ Harvesting at optimum age	▪ Planning for early cole crops like cabbage, cauliflower, knolKhol

**Normal onset of monsoon**

**2.2 Drought-Normal onset of Monsoon ( 1<sup>st</sup> week of June) Normal**

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop /cropping system including variety	Agronomic measures	Remarks on Implementation
<b>Delay by 2 weeks ( 2<sup>nd</sup> to 3<sup>rd</sup> week of April)</b>	<b>Very gently sloping plain with shallow loamy soils</b>	Paddy	No change Short duration varieties Mahsuri,CAU-R1, IR-8, Shillong Rice,Disang,Luit ,Kolabeera	-	
		Maize	▪ Short duration crops/varieties like RCM-1-75, RCM-1-76, Allrounder, HQPM-1 , DA-61 A	-	
	<b>Nearly label plan with very deep coarse loamy soils</b>	Paddy	Medium duration varieties Mahsuri,CAU-R1, IR-8,Joymoti, Kanaklata,Mula gobhoru,TTB-404,TTB-303	-	
		Maize	▪ Short duration crops/varieties like RCM-1-75, RCM-1-76, Allrounder, HQPM-1 , DA-61 A	-	

**Normal onset of monsoon**

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset )					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Very gently sloping plain with shallow loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Resowing or raising of seedling with short duration variety</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Gap filling</li> <li>▪ Weeding</li> <li>▪ Foliar application of 1% MOP</li> <li>▪ Application of organic manure, wherever possible</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA
	Nearly level plain with very deep coarse loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Resowing or raising of seedling with short duration variety</li> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Gap filling</li> <li>▪ Weeding</li> <li>▪ Foliar application of 1% MOP</li> <li>▪ Application of organic manure, wherever possible</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA

Condition	Major Farming situation	Normal Crop /cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)					
Vegetative stage	Very gently sloping plain with shallow loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> <li>▪ Timely plant protection of measures for gundhi bug</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	
	Nearly level plain with very deep coarse loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> <li>▪ Timely plant protection of measures for gundhi bug</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	



Condition	Major Farming situation	Normal Crop /cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)					
Reproductive stage	Very gently sloping plain with shallow loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> <li>▪ Timely plant protection of measures for gundhi bug</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt./RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	
	Nearly level plan with very deep coarse loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> <li>▪ Timely plant protection of measures for gundhi bug</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	Schemes from Line Deptt./RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Foliar application of 1% MOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide irrigation from the available sources</li> </ul>	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)					
	Very gently sloping plain with shallow loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planning for zero tillage cultivation of pea, toria etc.</li> <li>▪ Preparation for cole crops and potato</li> </ul>	Schemes from Line Deptt./RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planning for zero tillage cultivation of pea, toria etc.</li> </ul>	Schemes from Line Deptt./RKVY/ATMA
	Nearly level plan with very deep coarse loamy soils	Paddy	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planning for zero tillage cultivation of pea, toria etc.</li> <li>▪ Preparation for cole crops and potato</li> </ul>	Schemes from Line Deptt./RKVY/ATMA
		Maize	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planning for zero tillage cultivation of pea, toria etc.</li> </ul>	Schemes from Line Deptt./RKVY/ATMA

2.1.2 Drought-irrigated situation : NA in this district

2.2 Unusual rains (untimely, unseasonal etc) (for both rainfed and irrigation situation)

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging				
paddy	Drainage of excess water from the field	Immediate provision of drainage system	<ul style="list-style-type: none"> <li>▪ Drain out excess water</li> <li>▪ Harvest at physiological maturity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting to a safer place</li> <li>▪ Dry in shade and in well ventilated space</li> </ul>
Maize	Provide drainage	Provide drainage	<ul style="list-style-type: none"> <li>▪ Drain out excess water</li> <li>▪ Harvest at physiological maturity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting to a safer place</li> <li>▪ Dry in shade and in well ventilated space</li> </ul>
Millet	Drainage of excess water	Immediate provision of drainage system	<ul style="list-style-type: none"> <li>▪ Drain out excess water</li> <li>▪ Harvest at physiological maturity</li> </ul>	Proper drying
<b>Horticulture</b>				
Orange	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss</li> <li>▪ If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection.</li> <li>▪ Proper nutrient management to be followed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ .Provide proper drainage</li> <li>▪ Foliar application of micronutrient/multiplex @ 0.2% should be done to prevent flower drop</li> <li>▪ Control aphids and mealy bugs etc</li> </ul>	<ul style="list-style-type: none"> <li>▪ If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>▪ Harvesting can be delayed upto 60-75 days by spraying pre-harvest chemical i.e. 2-4D at 20ppm + GA at 10ppm + 0.2% Kcl on maturing fruits.</li> <li>▪ Harvesting can be delayed. In citrus even after full maturity, the fruits can be left on the tree for 2-3 weeks without deterioration which facilitates prolong harvesting.</li> <li>▪ While picking, the stem end should be cut close to the fruit without damaging the rind. Hence avoiding fungal infection.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fruits are to be stored in well aerated farm shed or house to avoid loses.</li> <li>▪ Storing at 8 – 10 0 C with 85 – 90 % RH is preferred.</li> </ul>

			<ul style="list-style-type: none"> <li>Collect the good fruits and store them. Damaged fallen fruits to be disposed off</li> </ul>	
Apple	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss</li> <li>If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>Nutrient management to be done</li> </ul>	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>Half moon terraces to be done to prevent nutrient loss</li> <li>Pruning of damaged branches and application of Bordeaux Paste to be done</li> <li>Nutrient management along with foliar application micronutrient to be done</li> </ul>	<ul style="list-style-type: none"> <li>Spray 2,4,5-T @ 20ppm or 2,4,5-TCPA @ 15ppm to inhibit fruit drop</li> <li>Collect the good fruits and store them. Damaged fallen fruits to be separated and disposed off</li> <li>Necessary to maintain adequate drainage</li> </ul>	<ul style="list-style-type: none"> <li>Stored the fruits for 4-8 months at -1.1 to 0°C and 85-90 % RH.</li> <li>Spray growth regulators Like Alar @ 1000 ppm to improve storability</li> </ul>
Pineapple	<ul style="list-style-type: none"> <li>Make trenches/furrows in between ridges to facilitate drainage of excess water</li> <li>Remove the excess suckers to maintain the quality of plant</li> <li>Nutrient management to be followed</li> </ul>	<ul style="list-style-type: none"> <li>Application of Ethephon 2mg in 100-140mg, Bentonite or NAA @ 25ppm or 2, 4-D @ 5-10 ppm should be applied for uniform flower induction.</li> </ul>	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>Spraying of insecticides and fungicide</li> <li>Fruits can be protected with locally available material to protect the mature fruit from unusual rains</li> </ul>	<ul style="list-style-type: none"> <li>Store fruits in well aerated farm shed or house to avoid loses.</li> <li>Pineapples can be stored at a temperature of 7.5-12°C and RH 70-90% for 4 weeks.</li> </ul>
Kiwifruit	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss</li> <li>If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>Nutrient management to be done</li> </ul>	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>Half moon terraces to be done to prevent nutrient loss</li> <li>Pruning of damaged branches and application of Bordeaux Paste to be done</li> <li>Nutrient management along with foliar application micronutrient to be done</li> </ul>	<ul style="list-style-type: none"> <li>Heavy pruning should not done as the fruit will be affected by rain</li> <li>Drain out excess water</li> </ul>	<ul style="list-style-type: none"> <li>Stored the fruits at 0 to 4°C and 80-90 % RH.</li> <li>Spray growth regulators Like Alar @ 1000 ppm to improve storability</li> </ul>
Banana	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>Nutrient management to be done</li> <li>Propping or staking should be done</li> <li>Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>Nutrient management to be done along with application of micronutrient</li> <li>Propping or staking should be done</li> <li>Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>Provide proper drainage</li> <li>Nutrient management to be done</li> <li>Propping to be done</li> <li>Bagging to be done to protect the bunch from unusual rains.</li> <li>Denavelling to be done to improve the bunch weight (removal of male bud)</li> </ul>	<ul style="list-style-type: none"> <li>Store the fruits/ bunch in well aerated farm shed or house to avoid loses.</li> <li>Storing at 10 – 12° C with 70 – 80 % RH</li> </ul>
Large cardamom	<ul style="list-style-type: none"> <li>It grows luxuriantly in moist and humid climate. So continuous rain is not a problem during its vegetative growth.</li> <li>Provide adequate drainage</li> <li>Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>Rain during flowering is detrimental. So water logging should be avoided.</li> <li>Proper drainage system should be followed.</li> <li>Shade regulation may be taken up providing 50-60%</li> </ul>	<ul style="list-style-type: none"> <li>Harvesting can be delayed</li> <li>Proper drainage system should be followed.</li> </ul>	<ul style="list-style-type: none"> <li>Collect and dry the produce in fuel kiln overnight at 50°-60°C or in drier for 14-18 hours at 45°-50°C</li> </ul>

		shade.		
Ginger	<ul style="list-style-type: none"> <li>▪ Provide proper drainage channels to avoid stagnation of water</li> <li>▪ Earthing up to be done at proper soil moisture level</li> <li>▪ Nutrient management to be followed</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up should be followed by manuring.</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dry weather before harvesting is necessary. So harvesting can be delayed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting of the produce to a drier place.</li> <li>▪ Drying to remove excess moisture of produce.</li> </ul>
Turmeric	<ul style="list-style-type: none"> <li>▪ Provide proper drainage channels to avoid stagnation of water</li> <li>▪ Earthing up to be done at proper soil moisture level</li> <li>▪ Nutrient management to be followed</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up should be followed by manuring.</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dry weather before harvesting is necessary. So harvesting can be delayed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting of the produce to a drier place.</li> <li>▪ Drying to remove excess moisture of produce.</li> </ul>
Vegetables (cucurbits)	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up to be done at proper soil moisture condition followed by manuring</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Staking should be properly followed. Rainy season crops can be trained on a bower made of bamboos and sticks.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spray maleic hydrazine (MH) and 2, 4-5 tri-iodobenzoic acid (TIBA) @ 50ppm for Sex expression. Boron @ 3ppm and calcium @ 20ppm is also effective.</li> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up followed by manuring</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Take up proper plant protection measures</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fruits to be harvested immediately without causing injury to fruits</li> <li>▪ Remove all damaged fruit</li> <li>▪ Take up appropriate plant protection measures</li> </ul>	<ul style="list-style-type: none"> <li>▪ The fruits can be stored for 2-3 weeks at 15-20°C and RH 75% in a well-ventilated chamber</li> </ul>
<b>Heavy rainfall with high speed winds in a short span</b>				
<b>Horticulture</b>				
Orange	<ul style="list-style-type: none"> <li>▪ Earthing up of young plants to avoid uprooting due to wind.</li> <li>▪ Provide proper drainage facilities.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Wind break around the orchard to protect crop from wind damage</li> </ul>	<ul style="list-style-type: none"> <li>▪ Propping heavy bearing tree and weak tree by bamboo pole.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fruits are to be stored in well aerated farm shed or house to avoid loses.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Staking to avoid falling off of plants</li> <li>▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss</li> <li>▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>▪ Proper nutrient management to be followed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be followed along with foliar spray of micronutrient</li> <li>▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting can be delayed upto 60-75 days by spraying pre-harvest chemical i.e. 2-4D at 20ppm + GA at 10ppm + 0.2% Kcl on maturing fruits.</li> <li>▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pack the fruit in perforated polythene bag, boxes, crates, etc. and store at temperature of 10-11°C &amp; 92 % RH.</li> </ul>
Apple	<ul style="list-style-type: none"> <li>▪ Earthing up of young plants to avoid uprooting due to wind.</li> <li>▪ Provide proper drainage facilities.</li> <li>▪ Staking to be done to avoid falling off of plants.</li> <li>▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss</li> <li>▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>▪ Proper nutrient management to be followed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Wind break around the orchard</li> <li>▪ Maintain the half moon terraces to avoid soil nutrient loss</li> <li>▪ Proper nutrient management to be followed along with foliar application of micronutrient</li> <li>▪ Prune out all damage branches with appropriate plant protection measures</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvest ripe fruits</li> <li>▪ Propping heavy bearing tree and weak tree by bamboo pole.</li> <li>▪ Use of plant bio-regulators to delay ripening with Daminozide or Alar @ 1000ppm sprayed before 60 days before harvest.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store fruits for 4-8 months at -1.1 to 0°C and 85-90 % RH.</li> </ul>
Pineapple	<ul style="list-style-type: none"> <li>▪ Earthing up plants for better development and anchorage.</li> <li>▪ Make trenches/furrows in between ridges to facilitate drainage of excess water.</li> <li>▪ Nutrient management to be followed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Earthing up to prevent uprooting.</li> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be followed</li> <li>▪ Spray NAA @ 25ppm or 2, 4-D @ 5-10 ppm should be applied for uniform flower induction.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fruits can be protected with locally available material to protect the mature fruit from unusual rains</li> <li>▪ Spraying of insecticides and fungicide</li> <li>▪ Earthing up plants for better development and anchorage.</li> <li>▪ Make trenches/furrows in between ridges to facilitate drainage of excess water</li> </ul>	<ul style="list-style-type: none"> <li>▪ .Store fruits in well aerated farm shed or house to avoid loses.</li> <li>▪ Pineapples can be stored at a temperature of 7.5-12°C and RH 70-90% for 4 weeks.</li> </ul>
Kiwifruit	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Support the plant using T-Bar system</li> <li>▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss</li> <li>▪ If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Half moon terraces to be done to prevent nutrient loss</li> <li>▪ Pruning of damaged branches and application of Bordeaux Paste to be done</li> <li>▪ Nutrient management along with foliar application micronutrient to be done</li> </ul>	<ul style="list-style-type: none"> <li>▪ Heavy pruning should not done as the fruit will be affected by rain</li> <li>▪ Drain out excess water</li> <li>▪ Maintain the plant using T-Bar trellis supporting system</li> <li>▪ Nutrient management along with foliar application micronutrient to be done</li> </ul>	<ul style="list-style-type: none"> <li>▪ Stored the fruits at 0 to 4°C and 80-90 % RH.</li> <li>▪ Spray growth regulators Like Alar @ 1000 ppm to improve storability</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Nutrient management to be done</li> </ul>			
Banana	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be done</li> <li>▪ Propping or staking should be done</li> <li>▪ Spraying of insecticides and fungicide</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be done along with application of micronutrient</li> <li>▪ Propping or staking should be done</li> <li>▪ Spraying of insecticides and fungicide</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be done</li> <li>▪ Propping to be done</li> <li>▪ Bagging to be done to protect the bunch from unusual rains.</li> <li>▪ Denavelling to be done to improve the bunch weight (removal of male bud)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store the fruits/ bunch in well aerated farm shed or house to avoid loses.</li> <li>▪ Storing at 10 – 12° C with 70 – 80 % RH</li> </ul>
Large cardamom	<ul style="list-style-type: none"> <li>▪ For newly planted crops, staking should be provided.</li> <li>▪ Provide adequate drainage</li> <li>▪ Spraying of insecticides and fungicid</li> <li>▪ Follow proper nutrient management</li> <li>▪ Earthing up to be done</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proper drainage system should be followed.</li> <li>▪ Follow proper nutrient management</li> <li>▪ Earthing up to prevent uprooting.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity stage or can be delayed</li> <li>▪ Proper drainage system should be followed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collect the harvest and dry the produce in fuel kiln overnight at 50°-60°C or in drier for 14-18 hours at 45°-50°C</li> </ul>
Ginger	<ul style="list-style-type: none"> <li>▪ Provide proper drainage channels to avoid stagnation of water</li> <li>▪ Earthing up to be done at proper soil moisture level</li> <li>▪ Nutrient management to be followed</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up should be followed by manuring.</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity stage.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting of the produce to a drier place.</li> <li>▪ Drying to remove excess moisture of produce (moisture level 10%)</li> </ul>
Turmeric	<ul style="list-style-type: none"> <li>▪ Provide proper drainage channels to avoid stagnation of water</li> <li>▪ Earthing up to be done at proper soil moisture level</li> <li>▪ Nutrient management to be followed</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up should be followed by manuring.</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dry weather before harvesting is necessary. So harvesting can be delayed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting of the produce to a drier place.</li> <li>▪ Drying to remove excess moisture of produce.</li> </ul>
Vegetables (cucurbits)	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up to be followed</li> <li>▪ Ensure proper staking of crop wherever required</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spray maleic Hydrazide @ 50ppm aqueous solution at 2 and 4 leaf stages to stimulate vine growth, giving more female flowers.</li> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Wind break around the</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fruits to be harvested immediately without causing injury to fruits</li> <li>▪ Remove all damaged fruit</li> <li>▪ Take up appropriate plant protection measures</li> </ul>	<ul style="list-style-type: none"> <li>▪ The fruits can be stored for 2-3 weeks at 15-20°C and RH 75% in a well-ventilated chamber.</li> </ul>

		<p>orchard to protect crop from wind damage</p> <ul style="list-style-type: none"> <li>▪ Earthing up and propping to prevent uprooting.</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> </ul>		
<b>Outbreak of pests and diseases due to unseasonal rains : NA</b>				
Paddy (Blast)	<ul style="list-style-type: none"> <li>▪ Use trap crops for prediction of disease.</li> <li>▪ Removal and destruction of weed hosts in the field bunds and channels</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Mancozeb @ 2g/ltr or spraying of Carbendazim @ 1 g/ltr.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Drain out excess water to avoid flooded conditions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sun drying to prevent spoliage and sprouting of the harvested grains.</li> </ul>
Paddy (Brown Spot)	-Do-	-Do-	-Do-	-Do-
Paddy (Bacterial leaf blight)	<ul style="list-style-type: none"> <li>▪ Destruction of weed hosts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of streptomycin and tetracycline.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Drain out excess water to avoid flooded conditions.</li> </ul>	-Do-
Paddy (Yellow Stem Borer)	<ul style="list-style-type: none"> <li>▪ Collection and destruction of egg masses.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Chloropyriphos 20 EC @ 0.02 %.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting at the right stage.</li> </ul>	-Do-
Paddy (Gall Midge)	<ul style="list-style-type: none"> <li>▪ Removal of alternate host plants including weeds and grasses and destruction of infected plants.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Providing proper drainage system.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting at the right stage.</li> </ul>	-Do-
Maize (Stalk rot)	<ul style="list-style-type: none"> <li>▪ Removal of accumulated water around the stalks by proper drainage.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rouging of affected plant and its destruction.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of streptocycline @ 0.020 %.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sun drying of the harvested cob to prevent spoilage.</li> </ul>
<b>Horticulture</b>				
Orange (Citrus Leaf miner)	<ul style="list-style-type: none"> <li>▪ Spraying of Fenvalerate and Cypermethrin for controlling leaf minor.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Fenvalerate and Cypermethrin for controlling leaf minor.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting at the right stage and proper handling of the produce.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store in cool place in crates, boxes etc</li> </ul>
Orange (Citrus butterfly)	<ul style="list-style-type: none"> <li>▪ Hand picking of caterpillars and pupae in the nursery.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Neem formulation to control citrus butterfly.</li> </ul>	Do	<ul style="list-style-type: none"> <li>▪ Store in cool place in crates, boxes etc</li> </ul>
Orange (Powdery mildew in citrus)	<ul style="list-style-type: none"> <li>▪ Spraying of wettable sulphur and carbendizim to control powdery mildews.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of wettable sulphur, bavistin (0.1 %) and calixin (0.1 %).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of wettable sulphur and carbendizim to control powdery mildews.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store in cool place in crates, boxes etc.</li> </ul>
Tomato	<ul style="list-style-type: none"> <li>▪ Removal of accumulated water by proper drainage.</li> <li>▪ Destroy the heavily infested/infected plant parts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Sulfex @ 2 g/ltr of water.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting at the right stage and proper handling.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store in cool/dry place packed in crates, boxes etc.</li> </ul>
Brinjal	<ul style="list-style-type: none"> <li>▪ Removal of accumulated water by proper drainage.</li> <li>▪ Destroy the heavily infested/infected plant parts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Sulfex @ 2 g/ltr of water.</li> <li>▪ Soil dranching with captan/Tiram @ 2/ltr of water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting at the right stage and proper handling of the produce.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store in cool/dry place packed in crates, boxes etc.</li> </ul>

Cabbage	<ul style="list-style-type: none"> <li>▪ Removal of accumulated water by proper drainage.</li> <li>▪ Destroy the badly infested/infected plant parts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Sulfex @ 2 g/lit of water.</li> <li>▪ Soil dranching with captan/Tiram. @ 2/lit of water</li> <li>▪ Streptocycline spray</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting at the right stage and proper handling of the produce.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store in cool/dry place</li> </ul>
Cucurbits	<ul style="list-style-type: none"> <li>▪ Manual collection &amp; destruction of eggs/grubs/larvae.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of carbaryl against leaf eating caterpillars, Metalaxyl against Powdery mildew, Carbendazim against leaf spot &amp; blight</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying of Malathion against fruit fly.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store in cool/dry place</li> </ul>
Large Cardamom	<ul style="list-style-type: none"> <li>▪ Proper drainage.</li> <li>▪ Uprooting and destruction of Chirke and Foorkey infected cardamom plants.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Removal of affected plant from the field.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvesting at the right stage and proper handling of the produce.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quick drying of harvested capsule.</li> </ul>
Ginger (Soft rot)	<ul style="list-style-type: none"> <li>▪ Removal of accumulated water in the field by proper drainage.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Removal and destruction of affected plants.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Spraying with Blitox – 50 (3 g/lit) or Dithane – Z-78 (2.5 g / lit).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store in cool/dry place</li> </ul>

### 2.3 Floods

Condition	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Transient water logging/partial inundation</b>				
Rice	<ul style="list-style-type: none"> <li>▪ Drainage of the Nursery bed.</li> <li>▪ Re -sowing if not possible</li> </ul>	<ul style="list-style-type: none"> <li>▪ Drainage of excess water.</li> <li>▪ Gap filling In partially damaged field by redistributing the tillers.</li> <li>▪ Management of pests &amp; diseases</li> </ul>	<ul style="list-style-type: none"> <li>▪ Drainage of excess water. If flood comes during reproductive stage, emphasis should be given on forthcoming rabi crops.</li> <li>▪ Utilization of residual soil moisture and use of recharged soil profile for growing pulses</li> </ul>	<ul style="list-style-type: none"> <li>▪ Drainage of excess water. If flood comes during reproductive stage, emphasis should be given on forthcoming rabi crops.</li> <li>▪ Utilization of residual soil moisture and use of recharged soil profile for growing pulses</li> </ul>
<b>Horticulture/Plantation crops</b>				
Banana	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be done</li> <li>▪ Propping or staking should be done</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be done</li> <li>▪ Propping or staking should be done</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide proper drainage</li> <li>▪ Nutrient management to be done</li> <li>▪ Propping to be done</li> </ul>	<ul style="list-style-type: none"> <li>▪ Store the fruits/ bunch in well aerated farm shed or house to avoid loses.</li> <li>▪ Storing at 10 – 12° C with 70 – 80 % RH</li> </ul>



Ginger	<ul style="list-style-type: none"> <li>▪ Provide proper drainage channels to avoid stagnation of water</li> <li>▪ Earthing up to be done at proper soil moisture level</li> <li>▪ Nutrient management to be followed</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up should be followed by manuring.</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Application of fungicide and insecticides</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity stage or can delay harvesting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting of the produce to drier place.</li> </ul>
Turmeric	<ul style="list-style-type: none"> <li>▪ Provide proper drainage channels to avoid stagnation of water</li> <li>▪ Earthing up to be done at proper soil moisture level</li> <li>▪ Nutrient management to be followed</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Spraying of insecticides and fungicide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of drainage to remove excess water.</li> <li>▪ Earthing up should be followed by manuring.</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Application of fungicide and insecticides</li> </ul>	<ul style="list-style-type: none"> <li>▪ Harvest at physiological maturity stage or can delay harvesting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shifting of the produce to drier place</li> </ul>
Vegetables (cucurbits)	<ul style="list-style-type: none"> <li>▪ Proper drainage of the nursery bed, If not possible go for re-sowing.</li> <li>▪ Raised bed method should be followed in the nursery.</li> <li>▪ Earthing up to be followed</li> <li>▪ Ensure proper staking of crop wherever required</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proper drainage of the nursery bed, If not possible go for re-sowing.</li> <li>▪ Earthing up to be followed</li> <li>▪ Ensure proper staking of crop wherever required</li> <li>▪ Field bunding to prevent entry of water from surrounding areas.</li> <li>▪ Follow appropriate nutrient management practices</li> </ul>	<ul style="list-style-type: none"> <li>▪ Drainage of excess water. If flood comes during reproductive stage, emphasis should be given on forthcoming rabi crops</li> <li>▪ Growing of cole crops or winter vegetables after receding flood water and adoption of integrated farming system to obtain more income and to compensate the loss during kharif vegetables.</li> </ul>	<ul style="list-style-type: none"> <li>Shifting of the produce to drier place and store fruits in a well-ventilated chamber</li> </ul>
<b>Continuous submergence for more than 2 days<sup>2</sup></b>				
Crop1	NA	NA	NA	NA
<b>Horticulture / Plantation crops</b>				
Crop1 (specify)	NA	NA	NA	NA

<b>Sea water intrusion<sup>3</sup></b>				
Crop1	NA	NA	NA	NA

#### 2.4 Extreme events: Heat wave / Cold wave/Frost/ Hailstorm /Cyclone: Not Applicable

Extreme event type	Suggested contingency measure <sup>f</sup>			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Horticulture</b>				
<b>Heat Wave<sup>p</sup></b>				
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA
Banana	NA	NA	NA	NA
Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
<b>Horticulture</b>				
<b>Cold wave<sup>q</sup></b>				
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA
Banana	<ul style="list-style-type: none"> <li>▪ Protect the plant by construction of wind brakes made of shade net.</li> <li>▪ Maintain the seedling in polyhouse</li> </ul>	<ul style="list-style-type: none"> <li>▪ Protect the plant by construction of wind brakes made of shade net</li> </ul>	<ul style="list-style-type: none"> <li>▪ Protect the plant by construction of wind brakes made of shade net</li> <li>▪ Protect the bunch by bagging with polyethylene bag or jute bag</li> </ul>	NA
Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
<b>Horticulture</b>				
<b>Frost</b>				
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA

Banana	<ul style="list-style-type: none"> <li>Protect the plant by construction of wind brakes made of shade net.</li> <li>Maintain the seedling in polyhouse</li> </ul>	<ul style="list-style-type: none"> <li>Protect the plant by construction of wind brakes made of shade net</li> </ul>	<ul style="list-style-type: none"> <li>Protect the plant by construction of wind brakes made of shade net</li> <li>Protect the bunch by bagging with polyethylene bag or jute bag</li> </ul>	NA
Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
<b>Horticulture</b>				
<b>Hailstorm</b>				
Orange	<ul style="list-style-type: none"> <li>Nursery raising under polyhouse.</li> </ul>	<ul style="list-style-type: none"> <li>Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>Nutrient management to be followed along with foliar spray of micronutrient</li> </ul>	<ul style="list-style-type: none"> <li>Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>Nutrient management to be followed along with foliar spray of micronutrient</li> </ul>	<ul style="list-style-type: none"> <li>Harvest ripe fruit</li> </ul>
Apple	<ul style="list-style-type: none"> <li>Nursery raising under polyhouse.</li> </ul>	<ul style="list-style-type: none"> <li>Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>Nutrient management to be followed along with foliar spray of micronutrient</li> </ul>	<ul style="list-style-type: none"> <li>Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection</li> <li>Nutrient management to be followed along with foliar spray of micronutrient</li> </ul>	<ul style="list-style-type: none"> <li>Harvest ripe fruit</li> </ul>
Pineapple	NA	<ul style="list-style-type: none"> <li>Shade regulation may be followed</li> </ul>	NA	<ul style="list-style-type: none"> <li>Harvest and value addition</li> </ul>
Kiwifruit	<ul style="list-style-type: none"> <li>Nursery raising under polyhouse</li> </ul>	<ul style="list-style-type: none"> <li>Nutrient management to be followed along with foliar spray of micronutrient</li> </ul>	<ul style="list-style-type: none"> <li>Nutrient management to be followed along with foliar spray of micronutrient</li> </ul>	<ul style="list-style-type: none"> <li>Harvest ripe fruits</li> </ul>
Banana	<ul style="list-style-type: none"> <li>Nursery raising under polyhouse</li> </ul>	<ul style="list-style-type: none"> <li>Follow nutrient management</li> </ul>	<ul style="list-style-type: none"> <li>Bagging the fruit bunch with polyethylene bag or jute bag</li> </ul>	<ul style="list-style-type: none"> <li>Harvest the mature bunch</li> </ul>
Large Cardamom	<ul style="list-style-type: none"> <li>Nursery raising under polyhouse.</li> </ul>	<ul style="list-style-type: none"> <li>Shade regulation may be followed by planting trees providing 50-60% shade. Ultis cum large cardamom plantation is highly recommended</li> </ul>	NA	NA
Ginger	<ul style="list-style-type: none"> <li>Nursery raising under</li> </ul>	<ul style="list-style-type: none"> <li>Shade regulation may be</li> </ul>	NA	NA

	polyhouse.	followed		
Turmeric	▪	▪		
Vegetables (cucurbits)	<ul style="list-style-type: none"> <li>▪ Nursery raising under polyhouse.</li> <li>▪ Provide shade to protect from damage or resowing of the crops</li> </ul>	<ul style="list-style-type: none"> <li>▪ Polyhouse cultivation &amp; proper irrigation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Polyhouse cultivation &amp; proper irrigation</li> <li>▪ Proper crop management for the succeeding years</li> </ul>	<ul style="list-style-type: none"> <li>▪ Picking of fruits at right edible stage depends upon individual varieties and marketing requirements. Fruits are harvested, packed in baskets and transported to markets.</li> </ul>
<b>Horticulture</b>				
<b>Cyclone</b>	NA	NA	NA	NA
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA
Banana	NA	NA	NA	NA
Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
<b>Sand deposition or heavy siltation</b>				
Specify crop /horticulture/plantation	NA	NA	NA	NA

## 2.5 Contingent strategies for Livestock, Poultry & Fisheries

### 2.5.1 Livestock

	Suggested contingency measures		
	Before the event <sup>s</sup>	During the event	After the event
<b>Drought</b>			
Feed and fodder availability	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories.</li> <li>▪ Awareness on fodder cultivation &amp; identification of locally available, natural fodder of area.</li> <li>▪ Excess fodder may be stored as hay/silage or converted into feed block in the flush season, for lean period.</li> <li>▪ Stacking of paddy straws.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use of unconventional feed/fodders resources.</li> <li>▪ Grazing in the peri peri of forest areas.</li> <li>▪ Feeding according to body weight requirement</li> <li>▪ Improvement of the poor quality roughages (urea treatment, soaking, poultry litter(&gt; 37%).</li> <li>▪ Use of feed additives to improve digestibility.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Avail the benefits of schemes under drought, from state or central for feeds and fodder.</li> <li>▪ Supplementary feeding of livestock to regain the general physiological imbalanced.</li> <li>▪ Proper irrigation of fodder plot and cultivation of leguminous fodders to meet the demand of green fodders</li> </ul>

		<ul style="list-style-type: none"> <li>▪ use of stored Hay and Silage</li> </ul>	
Drinking water	<ul style="list-style-type: none"> <li>▪ Construction of water harvesting structures.</li> <li>▪ Harvesting rain water &amp; water from natural source</li> <li>▪ Developing watershed areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use of stored water from water harvesting structure.</li> <li>▪ Fetching water from watershed areas and natural stream/river.</li> <li>▪ Avail subsidy water supply through tankers from state or central Govt.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Submitting a memorandum to state or central Govt. regarding amount of water shortfall during drought and action to be initiated accordingly.</li> <li>▪ Construction of permanent water harvesting structure with a planning to fulfill the water requirement during drought.</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> <li>▪ Proper ventilation system of Housing to reduce heat stress.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ selective culling of disease animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to Drought and remedies to be taken accordingly for future.</li> <li>▪ Mini vaccine unit could be established for covering a perimeter 30-50 km.</li> </ul>
<b>Floods</b>			
Feed and fodder availability	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories.</li> <li>▪ Awareness on fodder cultivation &amp; identification of locally available, natural fodder of the area.</li> <li>▪ Excess fodder may be stored as hay/silage or converted into feed block in the flush season, for lean period.</li> <li>▪ Stacking of paddy straws.</li> <li>▪ Installation of feed block machines and creating feed/fodder block banks to be used in emergency.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Avoid feeding of damp feeds and fodders</li> <li>▪ Storage of feeds and fodder in high raised platform.</li> <li>▪ Use of unconventional feed/fodders resources (water hyacinth)</li> <li>▪ Shifting of livestock to high raised areas.</li> <li>▪ Use of feed additives to improve digestibility.</li> <li>▪ Provision of UMB etc.</li> <li>▪ Use of stored Hay and Silage</li> </ul>	<ul style="list-style-type: none"> <li>▪ Submitting a reports, damage caused by flood to feed and standing fodder</li> <li>▪ Supplementary feeding of livestock to regain the general physiological imbalance.</li> <li>▪ Proper irrigation of fodder plot and cultivation of leguminous fodders to meet the demand of green fodders.</li> <li>▪ Avail the benefits of schemes under flood, from state or central for feeds and fodder.</li> </ul>
Drinking water	<ul style="list-style-type: none"> <li>▪ Storage of safe drinking water in community tanks / water harvesting structures which is not prone to seepage of flood water.</li> <li>▪ Installation of large sized sand filters with charcoal.</li> <li>▪ Tying up with PHED Deptt. of</li> </ul>	<ul style="list-style-type: none"> <li>▪ Chlorination of the drinking water and use of sand filter</li> <li>▪ Incorporation of aquatic plants in feeds as a supplementary source of water</li> <li>▪ If possible supply of fresh drinking water from nearby district.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cleaning of water storage tanks, canals and drainage system.</li> <li>▪ Cleaning and disinfection of water source with suitable water purifying agent, available in the area as per the recommended dose.</li> <li>▪ Relief for damaged tanks and community</li> </ul>

	<p>neighboring district to supply water at needy time.</p> <ul style="list-style-type: none"> <li>▪ Creating awareness amongst public how to conserve water and judiciously use in flood situation.</li> </ul>		<p>pipe line for reconstruction.</p> <ul style="list-style-type: none"> <li>▪ Avoid shallow source of water</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Vaccination of FMD, BQ and HS.</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> <li>▪ Construction of shelters in high raised areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.</li> </ul>
<b>Cyclone</b>	NA	NA	NA
Feed and fodder availability	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories.</li> <li>▪ Proper storage of feeds and fodder in well constructed house</li> <li>▪ Planting of trees as a wind break in farm area</li> <li>▪ Excess fodder may be stored as hay/silage or converted into feed block in the flush season, for lean period.</li> <li>▪ Stacking of paddy straws.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Avoid feeding grazing in open field</li> <li>▪ Animal should be confined in well construct house.</li> <li>▪ Use of feed additives to improve digestibility.</li> <li>▪ Provision of UMB etc.</li> <li>▪ Use of stored Hay and Silage</li> </ul>	<ul style="list-style-type: none"> <li>▪ Submitting a reports, damage caused by cyclone of standing fodder</li> <li>▪ Avail the benefits of schemes under flood, from state or central for feeds and fodder.</li> </ul>
Drinking water	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories for preparedness to combat the situation.</li> <li>▪ Storage of safe drinking water in community tanks / water harvesting structures</li> <li>▪ Creating awareness amongst public how to conserve water and judiciously use in flood situation.</li> <li>▪ Tying up with PHED Deptt. of neighboring district to supply water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Chlorination of the drinking water and use of sand filter</li> <li>▪ Provide fresh potable water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cleaning of water storage tanks, canals and drainage system.</li> <li>▪ Cleaning and disinfection of water source with suitable water purifying agent, available in the area as per the recommended dose.</li> <li>▪ Relief for damaged tanks and community pipe line for reconstruction.</li> <li>▪ Avoid shallow source of water</li> </ul>

	at needy time.		
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ selective culling of injured animal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ selective culling of injured animal</li> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.</li> </ul>
<b>Heat wave</b>			
<b>Cattle</b>			
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories for preparedness to combat the situation.</li> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Increase the concentrate feed amount and reduce the roughage diet.</li> <li>▪ Adlib provision of potable water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to heat wave</li> <li>▪ reduce upto 20% of the ration</li> <li>▪ provide nutretical</li> <li>▪ Adlib provision of potable water</li> <li>▪ Avoid movement of animal</li> <li>▪ Sprinkling of water during the extreme heat to the animal</li> <li>▪ Breeding should be done in morning hours.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adlib provision of potable water</li> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> <li>▪ provide nutretical</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories for preparedness to combat the situation.</li> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming and vaccination</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts</li> </ul>	<ul style="list-style-type: none"> <li>▪ Life saving treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ Oral supplementation of electrolyte and medicines</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ Selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.</li> </ul>

	<ul style="list-style-type: none"> <li>from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>		
Mithun			
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories for preparedness to combat the situation.</li> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Increase the concentrate feed amount and reduce the roughage diet.</li> <li>▪ Adlib provision of potable water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to heat wave</li> <li>▪ reduce upto 20% of the ration</li> <li>▪ provide nutretical</li> <li>▪ Adlib provision of potable water</li> <li>▪ Avoid movement of animal</li> <li>▪ Sprinkling of water during the extreme heat to the animal</li> <li>▪ Breeding should be done in morning hours.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adlib provision of potable water</li> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> <li>▪ provide nutretical</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ selective culling of injured animal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ selective culling of injured animal</li> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.</li> </ul>
Goat/Sheep			
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories for preparedness to combat the situation.</li> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Increase the concentrate feed amount and reduce the roughage diet.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to heat wave</li> <li>▪ reduce upto 20% of the ration</li> <li>▪ provide nutretical</li> <li>▪ Adlib provision of potable water</li> <li>▪ Avoid movement of animal</li> <li>▪ Sprinkling of water during the extreme heat to the animal</li> <li>▪ Breeding should be done in morning hours.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adlib provision of potable water</li> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> <li>▪ provide nutretical</li> </ul>



	<ul style="list-style-type: none"> <li>▪ Adlib provision of potable water</li> </ul>		
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ selective culling of injured animal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ selective culling of injured animal</li> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.</li> </ul>
Pig			
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories for preparedness to combat the situation.</li> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Increase the concentrate feed amount and reduce the roughage diet.</li> <li>▪ Adlib provision of potable water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to heat wave</li> <li>▪ reduce upto 20% of the ration</li> <li>▪ provide nutretical</li> <li>▪ Adlib provision of potable water</li> <li>▪ Avoid movement of animal</li> <li>▪ Sprinkling of water during the extreme heat to the animal</li> <li>▪ Breeding should be done in morning hours.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adlib provision of potable water</li> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> <li>▪ provide nutretical</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ selective culling of injured animal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ selective culling of injured animal</li> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.</li> </ul>
Cold wave			

<b>Cattle</b>			
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Feed balance ration to withstand the cold wave prior to occurrence.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to cold wave</li> <li>▪ provide extra bedding materials</li> <li>▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.</li> </ul>
<b>Mithun</b>			
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Feed balance ration to withstand the cold wave prior to occurrence.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to cold wave</li> <li>▪ provide extra bedding materials</li> <li>▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ 1. Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ 2. Supplementary feeding of vitamin and mineral to improve general body health.</li> </ul>	<ul style="list-style-type: none"> <li>▪ 1. Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ 2. Immediate attention to the ailing animals.</li> <li>▪ 3. Sanitization of the shed and surrounding areas.</li> <li>▪ 4. selective culling of animal</li> <li>▪ 5. Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.</li> </ul>
<b>Pig</b>			

Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Feed balance ration to withstand the cold wave prior to occurrence.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to cold wave</li> <li>▪ provide extra bedding materials</li> <li>▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ Selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.</li> </ul>
<b>Goat/Sheep</b>			
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Feed balance ration to withstand the cold wave prior to occurrence.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to cold wave</li> <li>▪ provide extra bedding materials</li> <li>▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> </ul>
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ Selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.</li> </ul>
<b>Snowfall</b>	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines,</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.</li> </ul>
<b>Earthquake</b>	NA	NA	NA
<b>Landslides</b>	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ immediate rescue operation</li> <li>▪ Shifting of livestock to safe areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to landslides and remedies to be taken accordingly for future.</li> </ul>

<sup>s</sup> based on forewarning wherever available

### 2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event	During the event	After the event	
<b>Drought</b>				
Shortage of feed ingredients	<ul style="list-style-type: none"> <li>▪ Awareness on maize, pea and oil seed cultivation for use of poultry feed</li> <li>▪ Procurement of feed ingredients in bulk.</li> <li>▪ Installation of feed mixing plant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use of stored feed</li> <li>▪ Use of feeds from the local resources</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Availing insurance for the crop loss.</li> <li>▪ Availing subsidiary schemes from line deptt.</li> </ul>	Schemes from Line Deptt./RKVY/ATMA
Drinking water	<ul style="list-style-type: none"> <li>▪ Construction of water harvesting structures.</li> <li>▪ Harvesting rain water &amp; water from natural source</li> <li>▪ Developing watershed areas.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp;</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of potable water</li> <li>▪ Use of stored water from water harvesting structure.</li> <li>▪ Fetching water from watershed areas and natural stream/river.</li> <li>▪ Avail subsidy water supply through tankers from state or</li> </ul>	<ul style="list-style-type: none"> <li>▪ Submitting a memorandum to state or central Govt. regarding amount of water shortfall during drought and action to be initiated accordingly.</li> <li>▪ Construction of permanent water harvesting structure with a</li> </ul>	

	Don'ts from experts.	central Govt.	planning to fulfill the water requirement during drought.	
Health and disease management	<ul style="list-style-type: none"> <li>▪ Regular deworming and vaccination against viral disease.</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> <li>▪ Proper ventilation system of Housing to reduce heat stress.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to reduce heat stress</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ selective culling of bird</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of poultry due to Drought and remedies to be taken accordingly for future.</li> </ul>	
<b>Floods</b>				
Shortage of feed ingredients	<ul style="list-style-type: none"> <li>▪ Awareness on maize, pea and oil seed cultivation for use of poultry feed</li> <li>▪ Procurement of feed ingredients in bulk and store in raise floor.</li> <li>▪ Installation of feed mixing plant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use of stored feed</li> <li>▪ Use of feeds from the local resources</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Availing insurance for the crop loss.</li> <li>▪ Availing subsidiary schemes from line deptt.</li> </ul>	
Drinking water	<ul style="list-style-type: none"> <li>▪ Storage of safe drinking water in community tanks / water harvesting structures which is not prone to seepage of flood water.</li> <li>▪ Installation of large sized sand filters with charcoal.</li> <li>▪ Tying up with PHED Deptt. of neighboring district to supply water at needy time.</li> <li>▪ Creating awareness amongst public how to conserve water and judiciously use in flood situation.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Chlorination of the drinking water and use of sand filter</li> <li>▪ Supply of fresh drinking water from nearby district.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cleaning of water storage tanks</li> <li>▪ Relief for damaged tanks and community pipe line for reconstruction.</li> </ul>	
Health and disease management	<ul style="list-style-type: none"> <li>▪ Regular deworming and vaccination against viral disease.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> </ul>	

	<ul style="list-style-type: none"> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> <li>▪ Proper ventilation system of Housing to reduce heat stress.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supplementary feeding of vitamin and mineral to reduce heat stress</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ selective culling of bird</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of poultry due to Drought and remedies to be taken accordingly for future.</li> </ul>	
<b>Cyclone</b>				
Shortage of feed ingredients	NA	NA	NA	NA
Drinking water	NA	NA	NA	NA
Health and disease management	NA	NA	NA	NA
<b>Heat wave</b>				
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Advance early warning system through Agromet advisories for preparedness to combat the situation.</li> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Increase the concentrate feed amount and reduce the roughage diet.</li> <li>▪ Adlib provision of potable water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the animal in protected shelter</li> <li>▪ prevent them direct expose to heat wave</li> <li>▪ reduce upto 20% of the ration</li> <li>▪ provide nutretical</li> <li>▪ Adlib provision of potable water</li> <li>▪ Avoid movement of animal</li> <li>▪ Misting of water during the extreme heat to the animal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adlib provision of potable water</li> <li>▪ Analysis of the present experience and remodeling of housing structure.</li> <li>▪ provide nutretical</li> </ul>	
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ selective culling of injured animal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ selective culling of injured animal</li> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> </ul>	

	<ul style="list-style-type: none"> <li>if arise.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>		<ul style="list-style-type: none"> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.</li> </ul>	
<b>Cold wave</b>				
Shelter/environment management	<ul style="list-style-type: none"> <li>▪ Good shelter with well ventilation and bedding materials</li> <li>▪ Construction of shelters in wind shed areas.</li> <li>▪ Feed balance ration to withstand the cold wave prior to occurrence.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confine the bird in protected shelter</li> <li>▪ provide extra light to keep them warm</li> <li>▪ prevent them direct expose to cold wave</li> <li>▪ provide extra bedding materials</li> <li>▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> </ul>	<ul style="list-style-type: none"> <li>Analysis of the present experience and remodeling of housing structure.</li> </ul>	
Health and disease management	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load and vaccination to protect viral disease</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.</li> </ul>	
Snowfall	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load and vaccination to protect against viral disease</li> <li>▪ Stocking of veterinary</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> </ul>	NA

	<p>medicines, vitamin and mineral supplements.</p> <ul style="list-style-type: none"> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<p>general body health.</p> <ul style="list-style-type: none"> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to snow fall and remedies to be taken accordingly for future.</li> </ul>	
Earthquake, Landslides etc	<ul style="list-style-type: none"> <li>▪ Ensure livestock insurance</li> <li>▪ Deworming to reduce worm load and vaccination to protect against viral disease</li> <li>▪ Stocking of veterinary medicines, vitamin and mineral supplements.</li> <li>▪ Training of paravets and identifying key man in each village to combat the situation if arise.</li> <li>▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Supplementary feeding of vitamin and mineral to improve general body health.</li> <li>▪ immediate rescue operation</li> <li>▪ Shifting of livestock to safe areas.</li> <li>▪ Regular radio/TV telecast to follow the instruction of Do &amp; Don'ts from experts</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly.</li> <li>▪ Immediate attention to the ailing animals.</li> <li>▪ Sanitization of the shed and surrounding areas.</li> <li>▪ selective culling of animal</li> <li>▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to landslides and remedies to be taken accordingly for future.</li> </ul>	NA

<sup>a</sup> based on forewarning wherever available