



								and groves			
	Area ('000 ha)	132.7	50.748	63.661	9.613	1.407	5.751	2.572	-	2.001	2.538

1.4	Major Soils (common names like red sandy loam deep soils (etc.))*	Area ('000 ha)**	Percent (%) of total geographical area
	1. Tillah land (red soil)	1.852	3.6
	2. Alluvial soil	17.794	31.4
	3. Sandy soil	5.547	9.6
	4. Sandy loam	21.028	37.8
	5. Clay and clay loam	9.812	17.6
	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)\*\*

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	45.157	137%
	Area sown more than once	5.400	
	Gross cropped area	50.554	

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	1.832		
	Gross irrigated area	1.832		
	Rainfed area	44.393		
	<b>Sources of Irrigation</b>	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals			
	Tanks			
	Open wells			
	Bore wells			
	Lift irrigation schemes	18	Defang	Nil
	Micro-irrigation			
	Other sources (please specify)			
	Total Irrigated Area			
	Pump sets	1832	1.792	3.97%

No. of Tractors			
<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 > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%

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

1.7	Major field crops cultivated	Area (*000 ha)							
		Kharif			Rabi			Summer	Grand total
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
Paddy	-	39.060	39.060	-	4.040	4.040	5.710	48.810	
Pulses	-	0.150	0.150	-	2.150	2.150	1.200	3.500	
Oilseeds	-	-	-	-	0.922	0.922	-	0.922	
Sugarcane	-	0.180	0.180	-			-	0.180	
Maize	-	0.026	0.026	-			-	0.026	

	Horticulture crops - Fruits	Area (*000 ha)		
		Total	Irrigated	Rainfed
	Banana	1.587	-	1.587
	Pineapple	0.550	-	0.550
	Jack fruit	0.367	-	0.367
	Assam lemon	0.200	-	0.200
	Others	0.556	-	0.556
	<b>Horticulture crops - Vegetables</b>	<b>Total</b>	<b>Irrigated</b>	<b>Rainfed</b>

Cauliflower	1.399	-	1.399
Cabbage	1.167	-	1.167
Radish	0.934	-	0.934
Knolkhol	0.700	-	0.700
Colocasia	0.030	-	0.030
Others	0.469	-	0.469
<b>Medicinal and Aromatic crops</b>	<b>Total</b>	<b>Irrigated</b>	<b>Rainfed</b>
Medicinal crops	0.40		0.40
<b>Plantation crops</b>	<b>Total</b>	<b>Irrigated</b>	<b>Rainfed</b>
Arecanut	2.850		2.850
Cashewnut	0.285		0.285
Coconut	0.280		0.280
Eg., industrial pulpwood crops etc.			
<b>Fodder crops</b>	<b>Total</b>	<b>Irrigated</b>	<b>Rainfed</b>
Oat	0.162	-	0.162
Napier	0.003	-	0.003
Maize	0.003	0.003	-
Total fodder crop area	0.169	0.003	0.166
Grazing land	0.019	-	0.019
Sericulture etc	-	-	-
Others (specify)	-	-	-

<b>1.8</b>	<b>Livestock</b>	<b>Male ('000)</b>	<b>Female ('000)</b>	<b>Total ('000)</b>
	Non descriptive cattle (local low yielding)	79.306	61.295	140.601
	Improved / Crossbred cattle	4.661	121.081	16.742
	Non descriptive Buffaloes (local low yielding)	14.901	18.580	33.481
	Graded Buffaloes	0.100	0.066	0.166
	Goat	22.347	47.323	69.670
	Sheep	5.509	7.997	13.506
	Pig	1.894	2.776	4.675
	Commercial dairy farms (Number)	-	-	-

<b>1.9</b>	<b>Poultry</b>	<b>No. of farms</b>	<b>Total No. of birds ('000)</b>				
	Commercial	84	25.200				
	Backyard	-	378.490				
	Ducks	-	173.200				
	Others	-	23.527				
<b>1.10</b>	<b>Fisheries (Data source: Chief Planning Officer)</b>						
	<b>A. Capture NA</b>						
	<b>i) Marine (Data Source: Fisheries Department)</b>	<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 (Data Source: Fisheries Department)</b>	<b>No. Farmer owned ponds</b>		<b>No. of Reservoirs</b>		<b>No. of village tanks</b>	
		12335		-		620	
	<b>B. Culture</b>						
				<b>Water Spread Area (ha)</b>	<b>Yield (t/ha)</b>	<b>Production ('000 tons)</b>	
	<b>i) Brackish water (Data Source: MPEDA/ Fisheries Department)</b>						
	<b>ii) Fresh water (Data Source: Fisheries Department)</b>			7761	1.06	6.280	
	<b>Others</b>						

### 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>										
	Paddy	93.744	2400	10.504	2600	2.160	1800	106.408	2267	85.126
	Pulses	0.870	5800	124.700	5800	6.240	5200	131.810	5600	11.862
	Oilseed	-	-	4.057	4400	-	-	4.057	4400	3.654

	Sugarcane	73.440	4080	-	-	-	-	73.440	4080	58.752
	Maize	0.019	730	-	-	-	-	0.019	730	0.016
<b>Major Horticultural crops (Crops to be identified based on total acreage)</b>										
	Banana	19.996	12600	-	-	-	-	19.996	12600	-
	Pineapple	7.550	13700	-	-	-	-	7.550	13700	-
	Assam lemon	1.792	8900	-	-	-	-	1.792	8900	-
	Jack fruit	2.886	7800	-	-	-	-	2.886	7800	-
	Guava	2.640	19200	-	-	-	-	2.640	19200	-
	Mango	1.473	11250	-	-	-	-	1.473	11250	-
	Colocasia	0.039	13100	-	-	-	-	0.039	13100	-
	Kharif vegetables	2.724	12640	-	-	-	-	2.724	12640	-
	Rabi vegetables	-	-	7.888	17530	-	-	7.888	17530	-
	Turmeric	0.013	545	-	-	-	-	0.013	545	-
	Ginger	0.012	920	-	-	-	-	0.012	920	-

<b>1.12</b>	<b>Sowing window for 5 major field crops</b> (start and end of normal sowing period)	Paddy	Pulses-Rajmah	Oilseed-Toria	Potato	Pea
	Kharif- Rainfed	1 <sup>st</sup> wk of April to 1 <sup>st</sup> wk of May	-	-	-	
	Kharif-Irrigated	2 <sup>nd</sup> wk of August	-	-	-	
	Rabi- Rainfed	2 <sup>nd</sup> wk of July to 1 <sup>st</sup> wk of Aug.	1 <sup>st</sup> wk of Sept to 1 <sup>st</sup> wk of Oct	Last wk of Oct to 1 <sup>st</sup> wk of Nov.	1 <sup>st</sup> wk of Oct-Last Wk of Oct	Last wk of Nov to 1 <sup>st</sup> wk of Dec
	Rabi-Irrigated	-	-	-	-	-
	Summer-Rainfed	1 <sup>st</sup> wk of Nov. to 2 <sup>nd</sup> wk Dec.	1 <sup>st</sup> wk Feb to 1 <sup>st</sup> wk of Mar.	-	-	-

<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			√
	Pests and disease outbreak (specify)	√		
	Others (specify)			

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

## 2.0 Strategies for weather related contingencies

### 2.1 Drought

#### 2.1.1 Rainfed situation

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation <sup>a</sup>	Normal Crop / Cropping system <sup>b</sup>	Change in crop / cropping system <sup>c</sup> including variety	Agronomic measures <sup>d</sup>	Remarks on Implementation <sup>e</sup>
Delay by 2 weeks (June 3 <sup>rd</sup> week)	Rainfed low land	<b>Sali mono crop</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur	Does not require change in cropping system  High Yielding Variety Ranjit, Bahadur, Pankaj, Kushal, Moniram, Local bao paddy, Scented rice: Badsabhog	Preparation of seed bed & main field immediately after rainfall,  Rainwater harvesting by making bund of 30cm height, Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc,  Decrease spacing	Supply of HYV of Sali paddy in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY

		<p><b>Sali rice-boro rice</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Boro rice:</b> Bahadur</p>	<p>Does not require change in cropping system</p> <p>For Sali rice var. same as above</p> <p>Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)</p>	<p>For Sali rice same as above</p> <p>For boro rice, timely land preparation, sowing and transplanting</p>	<p>Same as above</p>
		<p><b>Sali rice-ahu rice</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Ahu rice:</b> Toposil (Local)</p>	<p>Does not require change in cropping system</p> <p>For Sali rice var. same as above</p> <p>Ahu rice (transplanted): Luit, Disang, Krishna, Gopinath, Jaya, Cauvery, IR-36, IR-50, Culture-1, Socket-4</p> <p>Ahu rice (Direct seeded): Koimurali, Luit</p>	<p>For Sali rice same as above,</p> <p>For ahu, timely land preparation, sowing, integrated weed management</p>	<p>Same as above</p>



	Rainfed Medium land	<p><b>Sali rice-Oilseeds/pulses</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Oilseeds:</b> Rapeseed:M-27, TS-29, Linseed: Local var, Sesamum: Local var,</p> <p><b>Pulses:</b> Rajmah (Local), Pea (Local)</p>	<p>Does not require change in cropping system</p> <p><b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur, Pankaj, Kushal, Moniram, Local bao paddy, Scented rice: Badsahbhog</p> <p><b>Oilseeds: Rapeseed:</b>M-27, TS-36, TS-38, TS-29, <b>Linseed:</b>T-397 &amp; Local <b>Sesamum:</b> Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-1&amp; Local <b>Pulses: Rajmah</b> (Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T-163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)</p>	<p>For Sali rice same as rainfed lowland situation</p> <p>Early sowing of rapeseed for utilization of residual soil moisture, minimum/zero tillage for rapeseed, other moisture conservation measures such as mulching, Ridge and furrow cultivation of Raimah, Cultivation of short duration pulses like blackgram, pea etc. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc</p>	<p>Same as above. Supply of mechanical weeder under RKVY, Supply of water pumps, STW, LLP under RKVY</p>
		<p><b>Sali rice-winter vegetable</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Winter vegetables:</b> Varieties of <b>Cabbage, Cauliflower, tomato, brinjal, coriander, spinach, Dolichos bean, potato, pumpkin, cowpea</b> as per the variety available</p>	<p>Does not require change in cropping system</p> <p><b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur, Pankaj, Kushal, Moniram, Local bao paddy, Scented rice: Badsahbhog <b>Winter vegetables:</b> <b>Cabbage</b> (Drum head, Pride of India, Golden acre) <b>Cauliflower</b> (Snowball-16, Pusa snowball, Pusa Deepali</p>	<p>For Sali rice same as Rainfed low land situation</p> <p>Selection of important early season winter vegetables, timely land preparation, sowing, soil conservation measures such as mulching, application of organic manures like cowdung, vermicompost etc, mixed cropping, intercropping to be practised. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural</p>	<p>For Sali paddy same as above</p> <p>Timely supply of HYV, short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY</p>

			<p><b>Tomato</b>(Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b>( JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP-41,Pusa 860, <b>Spinach</b>( All Green, Pusa Jyoti, local <b>Dolichos bean</b>( Pusa Early Profile, HD-18) <b>Potato</b>(Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin(Local)</b>, <b>Cowpea</b> (Pusa Barsati, Local)</p>	depressions etc	
		<p><b>CS3.Sali rice-ahu rice</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur  <b>Ahu rice:</b> Toposil (Local)</p>	<p>Does not require change in cropping system</p> <p>For Sali rice var. same as above</p> <p>Ahu rice: Var. same as rainfed low land situation</p>	<p>For Sali rice same as above,</p> <p>For ahu, timely land preparation, sowing, integrated weed management</p>	<p>Supply of HYV of Sali paddy in time.  Procurement of certified seeds from ASC Ltd &amp; RARS, AAU. Supply of water pumps, STW,LLP under RKVY</p>
	Rainfed upland	<p><b>Summer &amp; Kharif vegetables-rabi vegetables</b>  <b>Summer &amp; Kharif vegetables:</b>  brinjal,snakegourd, okra, ridgegourd,bottlegourd, bittergourd, cucumber etc as per the variety available  <b>Winter vegetables:</b> Var. same as rainfed medium land situation</p>	<p>Does not require change in cropping system</p> <p><b>Summer &amp; Kharif vegetables:</b>  <b>Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b>( Pusa Nasdar, AAUJ-2, AAUJ-3, local),<b>Bottlegourd</b>(Pusa</p>	<p>Timely sowing/planting of summer vegetables, drip irrigation,moisture conservation measures like mulching,use of more organic manures, ridge and furrow cultivation,rain water harvesting in tanks, Utilization of waters for irrigation from nearby beels,ponds, rivers,natural depressions etc</p> <p>For winter vegetables same as rainfed medium land situation</p>	<p>Timely supply of HYV , short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY</p>

			<p>Summer Prolific Long, Pusa Summer Prolific round, <b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon), <b>Cucumber</b> ( Chinese green, Pusa sanyog, Poinsette, AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b> Var same as Rainfed Medium land situation</p>		
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Condition	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Suggested Contingency measures		
			Change in crop/cropping system <sup>c</sup>	Agronomic measures <sup>d</sup>	Remarks on Implementation <sup>e</sup>
Early season drought (delayed onset)					
<b>Delay by 4 weeks (July 1<sup>st</sup> week)</b>	Rainfed Low land	<b>Sali mono crop</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur	Medium duration Sali rice var :Basundhara, Satyaranjan and short duration var like Disang, Luit, Kopilee, Kolong High Yielding Variety: Pankaj, Lakhimi, Prafulla, Gitesh, Scented rice: Badsabhog	Preparation of seed bed & main field immediately after rainfall, Rainwater harvesting by making bund of 30cm height, Irrigate rice field only and when necessary. Care should be taken so that cracks does not develop in the field	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY

		<p><b>Sali rice-boro rice</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Boro rice:</b> Bahadur</p>	<p>For Sali rice same as above</p> <p>Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)</p>	<p>For Sali rice same as above</p> <p>For boro rice, timely land preparation, sowing and transplanting, Rainwater harvesting, utilization of water from nearby beels, ponds, rivers, natural depressions etc.</p>	<p>Same as above</p>
		<p><b>Sali rice-ahu rice</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Ahu rice:</b> Toposil (Local)</p>	<p>For Sali rice var. same as above</p> <p>Ahu rice (transplanted): Luit, Disang, Krishna, Gopinath, Jaya, Cauvery, IR-36, IR-50, Culture-1, Socket-4</p> <p>Ahu rice (Direct seeded): Koimurali, Luit</p>	<p>For Sali rice same as above,</p> <p>For ahu, timely land preparation, sowing, integrated weed management, Rainwater harvesting, utilization of water from nearby beels, ponds, rivers, natural depressions etc, use of drum seeder</p>	<p>Same as above</p>

	Rainfed medium land	<p><b>Sali rice-Oilseeds/pulses</b></p> <p><b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Oilseeds:</b> Rapeseed:M-27, TS-29, Linseed: Local var, Sesamum: Local var,</p> <p><b>Pulses:</b> Rajmah (Local), Pea (Local)</p>	<p><b>Sali rice:</b> Medium duration Sali rice var :Basundhara, Satyaranjan and short duration var like Disang, Luit, Kopilee, Kolong High Yielding Variety Pankaj, Lakhimi, Prafulla, Gitesh, Scented rice: Badsahbhog</p> <p><b>Oilseeds: Rapeseed:</b> M-27, TS-36, TS-38, TS-29, <b>Linseed:</b> T-397 &amp; Local var, <b>Sesamum:</b> Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-1 &amp; Local var,</p> <p><b>Pulses: Rajmah</b> (Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T-163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)</p>	<p>For Sali rice same as rainfed lowland situation</p> <p>Early sowing of rapeseed for utilization of residual soil moisture, minimum/zero tillage for rapeseed, other moisture conservation measures such as mulching, Ridge and furrow cultivation of Raimah, Cultivation of short duration pulses like blackgram, pea etc. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc</p>	<p>Same as above. Supply of mechanical weeder under RKVY, Supply of water pumps, STW, LLP under RKVY</p>
		<p><b>Sali rice-winter vegetable</b></p> <p><b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Winter vegetables:</b> Varieties of <b>Cabbage, Cauliflower, tomato, brinjal, coriander, spinach, Dolichos bean, potato, pumpkin, cowpea</b> as per the variety</p>	<p><b>Sali rice:</b> For Sali rice var same as above</p> <p><b>Winter vegetables:</b> <b>Cabbage</b> (Drum head, Pride of India, Golden acre) <b>Cauliflower</b> (Snowball-16, Pusa snowball, Pusa Deepali) <b>Tomato</b> (Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b> (JC-1), Pusa Purple round, Pusa</p>	<p>For Sali rice same as Rainfed low land situation</p> <p>Selection of important early season winter vegetables, timely land preparation, sowing, soil conservation measures such as mulching, application of organic manures like cowdung, vermicompost etc, mixed cropping, intercropping to be practised. Utilization of waters for irrigation from nearby</p>	<p>For Sali paddy same as above</p> <p>Timely supply of HYV, short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY</p>

		available	Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP-41, Pusa 860, <b>Spinach</b> ( All Green, Pusa Jyoti, local <b>Dolichos bean</b> ( Pusa Early Profile, HD-18) <b>Potato</b> (Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin(Local)</b> , <b>Cowpea</b> (Pusa Barsati, Local)	beels,ponds, rivers,natural depressions etc	
		<b>Sali rice-ahu rice</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur <b>Ahu rice:</b> Toposil (Local)	For Sali rice var same as above  Ahu rice: Var. same as rainfed low land situation	For Sali rice same as above,  For ahu, timely land preparation, sowing, integrated weed management	Supply of HYV of Sali paddy in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW,LLP under RKVY
	Rainfed upland	<b>Summer &amp; Kharif vegetables-rabi vegetables</b> <b>Summer &amp; Kharif vegetables:</b> brinjal,snakegourd, okra, ridgegourd,bottlegourd, bittergourd, cucumber etc as per the variety available <b>Winter vegetables:</b> Var. same as rainfed medium land situation	<b>Summer &amp; Kharif vegetables:</b> <b>Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b> ( Pusa Nasdar, AAUJ-2, AAUJ-3, local), <b>Bottlegourd</b> (Pusa Summer Prolific Long, Pusa Summer Prolific round, <b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon), <b>Cucumber</b> ( Chinese green, Pusa	Timely sowing/planting of summer vegetables, drip irrigation,moisture conservation measures like mulching,use of more organic manures, ridge and furrow cultivation,rain water harvesting in tanks, Utilization of waters for irrigation from nearby beels,ponds, rivers,natural depressions etc  For winter vegetables same as rainfed medium land situation	Timely supply of HYV , short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY

			sanyog, Poinsette, AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b> Var same as Rainfed Medium land situation		
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Condition	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Suggested Contingency measures		
			Change in crop/cropping system <sup>c</sup>	Agronomic measures <sup>d</sup>	Remarks on Implementation <sup>e</sup>
Early season drought (delayed onset)	Rainfed Lowland	<b>Sali mono crop</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur	Pankaj, Lakhimi, Swarnaprova, Monoharsali, Andrewsali, Prafulla, Gitesh (Transplanted) Luit and Disang (direct seeded)	Preparation of seed bed & main field immediately after rainfall, Rainwater harvesting by making bund of 30cm height, Irrigate rice field only and when necessary. Care should be taken so that cracks do not develop in the field. Divert some area from paddy to pulses and oilseeds in medium land, application of organic matter, closer spacing, stager planting	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY
		<b>Sali rice-boro rice</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur  <b>Boro rice:</b> Bahadur	For Sali rice same as above  Boro rice: Kanaklata, Joymati, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)	For Sali rice same as above  For boro rice, timely land preparation, sowing and transplanting, Rainwater harvesting, utilization of water from nearby beels, ponds, rivers, natural depressions etc.	Same as above
		<b>Sali rice-ahu rice</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur	For Sali rice var. same as above  Ahu rice (transplanted): Luit, Disang, Gopinath, Jaya,	For Sali rice same as above,  For ahu, timely land preparation, sowing,	Same as above

		<b>Ahu rice:</b> Toposil (Local)	Ahu rice (Direct seeded): Koimurali, Luit	integrated weed management, Rainwater harvesting, utilization of water from nearby beels, ponds, rivers, natural depressions etc, use of drum seeder	
Rainfed medium land		<b>Sali rice-Oilseeds/pulses</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur  <b>Oilseeds:</b> Rapeseed:M-27, TS-29, Linseed: Local var, Sesamum: Local var,  <b>Pulses:</b> Rajmah (Local), Pea (Local)	<b>Sali rice:</b> Pankaj, Lakhimi, Swarnaprova, Monoharsali, Andrewsali, Prafulla, Gitesh (Transplanted) Luit and Disang (direct seeded)  <b>Oilseeds: Rapeseed:</b> M-27, TS- 36, TS-38, TS-29, <b>Linseed:</b> T- 397 & Local var, <b>Sesamum:</b> Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-1 & Local var,  <b>Pulses: Rajmah</b> (Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T- 163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)	For Sali rice same as rainfed lowland situation  Early sowing of rapeseed for utilization of residual soil moisture, minimum/zero tillage for rapeseed, other moisture conservation measures such as mulching, Ridge and furrow cultivation of Raimah, Cultivation of short duration pulses like blackgram, pea etc. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc	Same as above. Supply of mechanical weeder under RKVY, Supply of water pumps, STW, LLP under RKVY
		<b>Sali rice-winter vegetable</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur  <b>Winter vegetables:</b> Varieties of <b>Cabbage,</b> <b>Cauliflower,</b> <b>tomato, brinjal, coriander,</b> <b>spinach, Dolichos</b> <b>bean, potato, pumpkin,</b>	<b>Sali rice:</b> For Sali rice var same as above <b>Winter vegetables:</b> <b>Cabbage</b> (Drum head, Pride of India, Golden acre) <b>Cauliflower</b> (Snowball-16, Pusa snowball, Pusa Deepali) <b>Tomato</b> (Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b> ( JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP-	For Sali rice same as Rainfed low land situation  Selection of important early season winter vegetables, timely land preparation, sowing, soil conservation measures such as mulching, application of organic manures like cowdung, vermicompost etc, mixed cropping, intercropping to be practised.	For Sali paddy same as above  Timely supply of HYV, short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY



		<b>cowpea</b> as per the variety available	41,Pusa 860, <b>Spinach</b> ( All Green, Pusa Jyoti, local <b>Dolichos bean</b> ( Pusa Early Profile, HD-18) <b>Potato</b> (Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin(Local), Cowpea</b> (Pusa Barsati, Local)	Utilization of waters for irrigation from nearby beels,ponds, rivers,natural depressions etc	
		<b>Sali rice-ahu rice</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur <b>Ahu rice:</b> Toposil (Local)	For Sali rice var same as above  Ahu rice: Var. same as rainfed low land situation	For Sali rice same as above,  For ahu, timely land preparation, sowing, integrated weed management	Supply of HYV of Sali paddy in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW,LLP under RKVY
	Rainfed upland	<b>Summer &amp; Kharif vegetables-rabi vegetables</b> <b>Summer &amp; Kharif vegetables:</b> brinjal,snakegourd, okra, ridgegourd,bottlegourd, bittergourd, cucumber etc as per the variety available <b>Winter vegetables:</b> Var. same as rainfed medium land situation	<b>Summer &amp; Kharif vegetables:</b> <b>Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b> ( Pusa Nasdar, AAUJ-2, AAUJ-3, local), <b>Bottlegourd</b> (Pusa Summer Prolific Long, Pusa Summer Prolific round, <b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon), <b>Cucumber</b> ( Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b> Var same as Rainfed Medium land situation	Timely sowing/planting of summer vegetables, drip irrigation,moisture conservation measures like mulching,use of more organic manures, ridge and furrow cultivation,rain water harvesting in tanks, Utilization of waters for irrigation from nearby beels,ponds, rivers,natural depressions etc  For winter vegetables same as rainfed medium land situation	Timely supply of HYV , short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY

Condition	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Suggested Contingency measures		
			Change in crop/cropping system <sup>c</sup>	Agronomic measures <sup>d</sup>	Remarks on Implementation <sup>e</sup>
Early season drought (delayed onset)  Delay by 8 weeks (August 1 <sup>st</sup> week)	Rainfed low land	<b>Sali mono crop</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur	Monoharsali, Andrewsali, Prafulla, Gitesh (Transplanted) Luit and Disang (direct seeded)	Preparation of seed bed & main field immediately after rainfall, closer spacing with more no. of seedlings (4-5) per hill, stagger planting/ double transplanting with 50-60 days old seedling Rainwater harvesting by making bund of 30cm height, Irrigate rice field only and when necessary. Care should be taken so that cracks do not develop in the field. Divert some area from paddy to pulses and oilseeds in medium land, application of organic matter,	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY
		<b>Sali rice-boro rice</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur  <b>Boro rice:</b> Bahadur	For Sali rice same as above  Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)	For Sali rice same as above  For boro rice, timely land preparation, sowing and transplanting, Rainwater harvesting, utilization of water from nearby beels, ponds, rivers, natural depressions etc.	Same as above
		<b>Sali rice-ahu rice</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur  <b>Ahu rice:</b> Toposil (Local)	For Sali rice var. same as above Ahu rice (transplanted): Luit, Disang, Gopinath, Jaya, Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4	For Sali rice same as above,  For ahu, timely land preparation, sowing, integrated weed	Same as above

			Ahu rice (Direct seeded): Koimurali, Luit	management, Rainwater harvesting, utilization of water from nearby beels, ponds, rivers, natural depressions etc, use of drum seeder	
Rainfed medium land		<p><b>Sali rice-Oilseeds/pulses</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Oilseeds:</b> Rapeseed:M-27, TS-29, Linseed: Local var, Sesamum: Local var,</p> <p><b>Pulses:</b> Rajmah (Local), Pea (Local)</p>	<p><b>Sali rice:</b> Monoharsali, Andrewsali, Prafulla, Gitesh (Transplanted) Luit and Disang (direct seeded)</p> <p><b>Oilseeds: Rapeseed:</b>M-27, TS-36, TS-38, TS-29, <b>Linseed:</b>T-397 &amp; Local var, <b>Sesamum:</b> Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-1&amp; Local var, <b>Pulses: Rajmah</b> (Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T-163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)</p>	<p>For Sali rice same as rainfed lowland situation</p> <p>Early sowing of rapeseed for utilization of residual soil moisture, minimum/zero tillage for rapeseed, other moisture conservation measures such as mulching, Ridge and furrow cultivation of Raimah, Cultivation of short duration pulses like blackgram, pea etc. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc</p>	Same as above. Supply of mechanical weeder under RKVY, Supply of water pumps, STW, LLP under RKVY
		<p><b>Sali rice-winter vegetable</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur</p> <p><b>Winter vegetables:</b> Varieties of <b>Cabbage, Cauliflower, tomato, brinjal, coriander, spinach, Dolichos bean, potato, pumpkin, cowpea</b> as per the variety</p>	<p><b>Sali rice:</b> For Sali rice var same as above</p> <p><b>Winter vegetables:</b>  <b>Cabbage</b> (Drum head, Pride of India, Golden acre)  <b>Cauliflower</b> (Snowball-16, Pusa snowball, Pusa Deepali)  <b>Tomato</b> (Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b> (JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP-41, Pusa 860,</p>	<p>For Sali rice same as Rainfed low land situation</p> <p>Selection of important early season winter vegetables, timely land preparation, sowing, soil conservation measures such as mulching, application of organic manures like cowdung, vermicompost etc, mixed cropping, intercropping to be practised. Utilization of waters for irrigation from</p>	<p>For Sali paddy same as above</p> <p>Timely supply of HYV, short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY</p>

		available	<b>Spinach</b> ( All Green, Pusa Jyoti, local <b>Dolichos bean</b> ( Pusa Early Profile, HD-18) <b>Potato</b> (Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin(Local), Cowpea</b> (Pusa Barsati, Local)	nearby beels,ponds, rivers,natural depressions etc	
		<b>Sali rice-ahu rice</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur <b>Ahu rice:</b> Toposil (Local)	For Sali rice var same as above  Ahu rice: Var. same as rainfed low land situation	For Sali rice same as above,  For ahu, timely land preparation, sowing, integrated weed management	Supply of HYV of Sali paddy in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW,LLP under RKVY
	Rainfed upland	<b>Summer &amp; Kharif vegetables-rabi vegetables</b> <b>Summer &amp; Kharif vegetables:</b> brinjal,snakegourd, okra, ridgegourd,bottlegourd, bittergourd, cucumber etc as per the variety available <b>Winter vegetables:</b> Var. same as rainfed medium land situation	<b>Summer &amp; Kharif vegetables:</b> <b>Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b> ( Pusa Nasdar, AAUJ-2, AAUJ-3, local), <b>Bottlegourd</b> (Pusa Summer Prolific Long, Pusa Summer Prolific round, <b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon), <b>Cucumber</b> ( Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b> Var same as Rainfed Medium land situation	Timely sowing/planting of summer vegetables, drip irrigation,moisture conservation measures like mulching,use of more organic manures, stand establishment method, ridge and furrow cultivation,rain water harvesting in tanks, Utilization of waters for irrigation from nearby beels,ponds, rivers,natural depressions etc  For winter vegetables same as rainfed medium land situation	Timely supply of HYV , short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY

Condition	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Suggested Contingency measures		
			Crop management <sup>c</sup>	Soil nutrient & moisture conservation measures <sup>d</sup>	Remarks on Implementation <sup>e</sup>
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Rainfed Lowland	<b>Sali mono crop</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur, Pankaj, Kushal, Moniram, Local bao paddy, Scented rice: Badsahbhog	1. Thinning and gap filling the existing crop 2. Resowing with short duration variety, seeds should be treated with 4% MOP for 24 hrs & drying in shade 3. Mat nursery technique to meet the shortage of seedlings	1. Top dressing of N, P & K top dressing in the line sown crops, Apply P upto 3 weeks after seeding & K upto flowering 2. Application of sufficient FYM and weeding 3. Rainwater harvesting by 30 cm high bunding	Buffer seed stock Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY
		Sali rice-Boro rice For Sali rice same as above  Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)	-Do-	-Do-	-Do-
		<b>Sali rice-Ahu rice</b> For Sali rice var. same as CS1 Ahu rice (transplanted): Luit, Disang, Gopinath, Jaya, Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4 Ahu rice (Direct seeded): Koimurali, Luit	Same as CS1	Same as CS1	Same as CS1
	Rainfed medium land	<b>Sali rice-Oilseeds/pulses</b> For Sali rice var. same as rainfed lowland situation <b>Oilseeds:</b> <b>Rapeseed:</b> M-27, TS-36, TS-38, TS-29, <b>Linseed:</b> T-397 & Local var, <b>Sesamum:</b> Madaavi, Gouri,	1. Thinning and gap filling the existing crop 2. Resowing with short duration variety, seeds should be treated with 4% MOP for 24 hrs & drying in shade 3. Mat nursery technique to	1. Top dressing of N, P & K top dressing in the line sown crops, Apply P upto 3 weeks after seeding & K upto flowering 2. Application of	Buffer seed stock Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds

		Vinayak, Punjab tall No.1, RT-1 & Local var, <b>Pulses: Rajmah</b> (Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T-163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)	meet the shortage of seedlings 5. Timely land preparation and sowing of oilseeds	sufficient FYM and weeding 3. Rainwater harvesting by 30 cm high bunding 4. Ridge and furrow cultivation of Rajmah 5. Zero tillage for toria and mulching	from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY
		<b>Sali rice-winter vegetables</b> For Sali rice var same as rainfed lowland situation <b>Winter vegetables:</b> <b>Cabbage</b> (Drum head, Pride of India, Golden acre) <b>Cauliflower</b> (Snowball-16, Pusa snowball, Pusa Deepali) <b>Tomato</b> (Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b> (JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP-41, Pusa 860, <b>Spinach</b> (All Green, Pusa Jyoti, local <b>Dolichos bean</b> (Pusa Early Profile, HD-18) <b>Potato</b> (Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin</b> (Local), <b>Cowpea</b> (Pusa Barsati, Local)	For Sali rice same as above  Timely land preparation and sowing of vegetables	For Sali rice same as above	Same as above
		<b>Sali rice- Ahu rice</b> For Sali rice var same as rainfed lowland situation Ahu rice (transplanted): Luit, Disang, Gopinath, Jaya, Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4	Same as rainfed low land situation for both Sali and Ahu	Same as rainfed low land situation for both Sali and Ahu	Same as rainfed low land situation for both Sali and Ahu

		Ahu rice (Direct seeded): Koimurali, Luit			
	Rainfed upland	<p><b>.Summer &amp; Kharif vegetables-rabi vegetables</b></p> <p><b>Summer &amp; Kharif vegetables:</b>  <b>Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b>( Pusa Nasdar, AAUJ-2, AAUJ-3, local),<b>Bottlegourd</b>(Pusa Summer Prolific Long, Pusa Summer Prolific round,<b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),<b>Cucumber</b> ( Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b>  Var same as Rainfed Medium land situation</p>	<p>1.Thinning and gap filling  2. Resowing with short duration variety</p>	<p>1.Application of sufficient amount of organic manure-vermicompost, FYM etc  2.Rainwater harvesting  3.Ridge and furrow cultivation  4.Apply N as top dress. P &amp; K also top dress if not applied as basal in line sown crop</p>	<p>Supply of seeds through national Calamity relief fund in time.  Procurement of certified seeds from ASC Ltd &amp; RARS, AAU.  Supply of water pumps, STW,LLP under RKVY</p>

Condition	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Suggested Contingency measures		
			Crop management <sup>c</sup>	Soil nutrient & moisture conservation measues <sup>d</sup>	Remarks on Implementation <sup>e</sup>
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Crop management <sup>c</sup>	Soil nutrient & moisture conservation measues <sup>d</sup>	Remarks on Implementation <sup>e</sup>
At vegetative stage	Rainfed lowlad	<p><b>CS1.Sali mono crop</b></p> <p><b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur, Pankaj,Kushal,</p>	<p>1. Resowing with short duration variety, seeds should be treated with 4% MOP for 24</p>	<p>1.Top dressing of N, P &amp; K top dressing in the line sown crops, Apply</p>	<p>Buffer seed stock  Supply of seeds through national</p>

		Moniram, Local bao paddy, Scented rice: Badsabhog	hrs & drying in shade 2. Mat nursery technique to meet the shortage of seedlings 3. Life saving irrigation 4. Integrated weed Management	P upto 3 weeks after seeding & K upto flowering 2. Application of sufficient FYM and weeding 3. Rainwater harvesting by 30 cm high bunding 4. Top dress with additional quantities of MOP @ 5 kg/bigha & incorporate it 5. Spray 2% KET solution on leaves	Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY
		Sali rice-Boro rice For Sali rice same as above  Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)	Same as above	Same as above	Same as above
		<b>Sali rice-Ahu rice</b> For Sali rice var. same as CS1 Ahu rice (transplanted): Luit, Disang, Gopinath, Jaya, Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4 Ahu rice (Direct seeded): Koimurali, Luit	Same as CS1	Same as CS1	Same as CS1
	Rainfed Medium land	<b>Sali rice-Oilseeds/pulses</b> For Sali rice var. same as rainfed lowland situation <b>Oilseeds:</b> <b>Rapeseed:</b> M-27, TS-36, TS-38, TS-29, <b>Linseed:</b> T-397 & Local var, <b>Sesamum:</b> Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-1 & Local var, <b>Pulses:</b> <b>Rajmah</b>	1. Resowing with short duration variety, seeds should be treated with 4% MOP for 24 hrs & drying in shade 2. Mat nursery technique to meet the shortage of seedlings 3. Life saving irrigation 4. Integrated weed Management 5. Direct seeding of short	1. Top dressing of N, P & K top dressing in the line sown crops, Apply P upto 3 weeks after seeding & K upto flowering 2. Application of sufficient FYM and weeding	Buffer seed stock Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU.



		(Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T-163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)	duration late Sali var (Luit, Disang etc) 6.Divert some area from paddy to pulses & oilseeds	3. Rainwater harvesting by 30 cm high bunding 4. For Sali rice, top dress with additional quantities of MOP @ 5 kg/bigha & incorporate it 5. Spray 2% KET solution on leaves 6.Ridge and furrow cultivation of Rajmah 7.Zero tillage for toria and mulching	Supply of water pumps, STW,LLP under RKVY
		<b>Sali rice-winter vegetables</b> For Sali rice var same as rainfed lowland situation <b>Winter vegetables:</b> <b>Cabbage</b> (Drum head, Pride of India, Golden acre) <b>Cauliflower</b> (Snowball-16,Pusa snowball, Pusa Deepali <b>Tomato</b> (Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b> ( JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP- 41,Pusa 860, <b>Spinach</b> ( All Green, Pusa Jyoti, local <b>Dolichos bean</b> ( Pusa Early Profile, HD-18) <b>Potato</b> (Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin(Local), Cowpea</b> (Pusa Barsati, Local)	For Sali rice same as above  Divert some area from paddy to early winter vegetables	For Sali rice same as above  Ridge and furrow cultivation of vegetables	Same as above
		<b>Sali rice- Ahu rice</b> For Sali rice var same as rainfed lowland situation	Same as rainfed low land situation for both Sali and Ahu	Same as rainfed low land situation for both Sali and Ahu	Same as rainfed low land situation for both Sali and Ahu

		Ahu rice (transplanted):Luit, Disang, Gopinath, Jaya,Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4 Ahu rice (Direct seeded): Koimurali, Luit			
	Rainfed Upland	<b>Summer &amp; Kharif vegetables-rabi vegetables</b> <b>Summer &amp; Kharif vegetables:</b> <b>Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b> ( Pusa Nasdar, AAUJ-2, AAUJ-3, local), <b>Bottlegourd</b> (Pusa Summer Prolific Long, Pusa Summer Prolific round, <b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon), <b>Cucumber</b> ( Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b> Var same as Rainfed Medium land situation	1.Thining and gap filling the existing crop 2. Re-sowing with short duration varieties 3.Integrated Weed Management	1.Application of sufficient amount of organic manure-vermicompost, FYM etc 2.Rainwater harvesting 3.Ridge and furrow cultivation 4.Apply N as top dress. P & K also top dress if not applied as basal in line sown crop 5. P should be applied upto 3 weeks after seeding and K upto flowering	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW,LLP under RKVY

Condition			Suggested contingency measures		
Mid season drought (long dry spell)	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Crop management <sup>c</sup>	Soil nutrient & moisture conservation measues <sup>d</sup>	Remarks on Implementation <sup>e</sup>

<b>At flowering/ fruiting stage</b>	Rainfed lowland	<b>Sali mono crop</b> <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur, Pankaj, Kushal, Moniram, Local bao paddy, Scented rice: Badsabhog	1. Life saving irrigation 2. Direct seeding of short duration late variety (Luit, Disang etc) 3. Integrated weed Management	1. Top dressing of urea may be delayed upto heading stage 2. Apply K upto flowering 3. Application of sufficient FYM and weeding 4. Rainwater harvesting by 30 cm high bunding 5. Top dress with additional quantities of MOP @ 5 kg/bigha & incorporate it 6. Spray 2% KET solution on leaves	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW, LLP under RKVY
		Sali rice-Boro rice For Sali rice same as above  Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)	Same as above	Same as above	Same as above
		<b>Sali rice-Ahu rice</b> For Sali rice var. same as CS1 Ahu rice (transplanted): Luit, Disang, Gopinath, Jaya, Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4 Ahu rice (Direct seeded): Koimurali, Luit	Same as CS1	Same as CS1	Same as CS1
	Rainfed medium land	<b>Sali rice-Oilseeds/pulses</b> For Sali rice var. same as rainfed lowland situation <b>Oilseeds:</b> <b>Rapeseed:</b> M-27, TS-36, TS-38, TS-29, <b>Linseed:</b> T-397 & Local var, <b>Sesamum:</b> Madaavi, Gouri,	1. Life saving irrigation 2. Integrated weed Management 3. Direct seeding of short duration late Sali var (Luit, Disang etc) 4. Divert some area from paddy to pulses & oilseeds	1. Top dressing of N, P & K top dressing in the line sown crops, Apply P upto 3 weeks after seeding & K upto flowering 2. Application of	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd &

		Vinayak, Punjab tall No.1, RT-1 & Local var, <b>Pulses: Rajmah</b> (Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T-163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)		sufficient FYM and weeding 3. Rainwater harvesting by 30 cm high bunding 4. For Sali rice, top dress with additional quantities of MOP @ 5 kg/bigha & incorporate it 5. Spray 2% KET solution on leaves 6. Ridge and furrow cultivation of Rajmah 7. Zero tillage for toria and mulching	RARS, AAU. Supply of water pumps, STW, LLP under RKVY
		<b>Sali rice-winter vegetables</b> For Sali rice var same as rainfed lowland situation <b>Winter vegetables:</b> <b>Cabbage</b> (Drum head, Pride of India, Golden acre) <b>Cauliflower</b> (Snowball-16, Pusa snowball, Pusa Deepali) <b>Tomato</b> (Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b> (JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP-41, Pusa 860, <b>Spinach</b> (All Green, Pusa Jyoti, local <b>Dolichos bean</b> (Pusa Early Profile, HD-18) <b>Potato</b> (Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin</b> (Local), <b>Cowpea</b> (Pusa Barsati, Local)	For Sali rice same as above  Divert some area from paddy to early winter vegetables	For Sali rice same as above  Ridge and furrow cultivation of vegetables	Same as above
		<b>Sali rice- Ahu rice</b>	Same as rainfed low land situation for both Sali and Ahu	Same as rainfed low land situation for both	Same as rainfed low land situation

		For Sali rice var same as rainfed lowland situation Ahu rice (transplanted):Luit, Disang, Gopinath, Jaya,Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4 Ahu rice (Direct seeded): Koimurali, Luit		Sali and Ahu	for both Sali and Ahu
	Rainfed up land	<b>Summer &amp; Kharif vegetables-rabi vegetables</b> <b>Summer &amp; Kharif vegetables:</b> <b>Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b> ( Pusa Nasdar, AAUJ-2, AAUJ-3, local), <b>Bottlegourd</b> (Pusa Summer Prolific Long, Pusa Summer Prolific round, <b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon), <b>Cucumber</b> ( Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b> Var same as Rainfed Medium land situation	1.Thining and gap filling the existing crop 2. Re-sowing with short duration varieties 3.Integrated Weed Management 4. Divert some area for early winter vegetables	1.Application of sufficient amount of organic manure-vermicompost, FYM etc 2.Rainwater harvesting 3.Ridge and furrow cultivation 4. Apply N as top dress. P & K also top dress if not applied as basal in line sown crop 5. P should be applied upto 3 weeks after seeding and K upto flowering	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW,LLP under RKVY

Condition	Major Farming situation <sup>a</sup>	Normal Crop/cropping system <sup>b</sup>	Suggested Contingency measures		
			Crop management <sup>c</sup>	Rabi Crop planning <sup>d</sup>	Remarks on Implementation <sup>e</sup>
Terminal drought (Early withdrawal of monsoon)					

1 ) Rainfed lowland	<p><b>Sali mono crop</b>  <b>Sali rice:</b> High Yielding Variety Ranjit, Bahadur, Pankaj,Kushal, Moniram, Local bao paddy, Scented rice: Badsahbhog</p>	<p>1. Life saving irrigation  2.Harvest at physiological maturity stage</p>	<p>Winter vegetables, Pulses, early ahu</p>	<p>Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd &amp; RARS, AAU. Supply of water pumps, STW,LLP under RKVY</p>
	<p><b>Sali rice-Boro rice</b>  For Sali rice same as above</p> <p>Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)</p>	<p>Same as CS1 for Sali rice, Timely land preparation &amp; sowing of boro rice</p>	<p>Boro rice</p>	<p>Same as CS1</p>
	<p><b>Sali rice-Ahu rice</b>  For Sali rice var. same as CS1</p> <p>Ahu rice (transplanted):Luit, Disang, Gopinath, Jaya,Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1, Socket-4</p> <p>Ahu rice (Direct seeded): Koimurali, Luit</p>	<p>Same as CS1 for Sali rice  Divert some <i>Sali</i> area for early <i>ahu</i>  Timely land preparation &amp; sowing of <i>ahu</i> rice</p>	<p><i>Ahu</i> rice</p>	<p>Same as CS1</p>
2) Rainfed medium land	<p><b>Sali rice-Oilseeds/pulses</b>  For Sali rice var. same as rainfed lowland situation</p> <p><b>Oilseeds: Rapeseed:</b>M-27, TS-36, TS-38, TS-29,  <b>Linseed:</b>T-397 &amp; Local var,  <b>Sesamum:</b> Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-</p>	<p>1. Life saving irrigation  2.Ridge and furrow cultivation of Rajmah  3.Harvesting of <i>Sali</i> rice at physiological maturity stage  4.Divert some area from paddy to pulses &amp; oilseeds</p>	<p>Oilseed and pulses</p>	<p>Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd &amp; RARS, AAU. Supply of water pumps, STW,LLP</p>

		1& Local var, <b>Pulses: Rajmah</b> (Local, Uday, PDR-14) <b>Pea:</b> (Azad P-1, T-163, Boneville), <b>Blackgram</b> (Local, T-9, T-27, KU-309)			under RKVY
		<b>Sali rice-winter vegetables</b> For Sali rice var same as rainfed lowland situation <b>Winter vegetables:</b> <b>Cabbage</b> (Drum head, Pride of India, Golden acre) <b>Cauliflower</b> (Snowball- 16,Pusa snowball, Pusa Deepali <b>Tomato</b> (Arka Alok, Surakha hybrid, Pusa Ruby), <b>Brinjal</b> ( JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Chilli</b> (Pusa Jwala, Krishna), <b>Coriander</b> (UP- 41,Pusa 860, <b>Spinach</b> ( All Green, Pusa Jyoti, local <b>Dolichos bean</b> ( Pusa Early Profile, HD-18) <b>Potato</b> (Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), <b>pumpkin(Local), Cowpea</b> (Pusa Barsati, Local)	1. Life saving irrigation 2.Ridge and furrow cultivation of Rajmah 3.Harvesting of <i>Sali</i> rice at physiological maturity stage 4.Divert some area from paddy to pulses & oilseeds	Winter vegetables	Supply of seeds through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Supply of water pumps, STW,LLP under RKVY
		<b>Sali rice- Ahu rice</b> For Sali rice var same as rainfed lowland situation Ahu rice (transplanted):Luit, Disang, Gopinath, Jaya,Krishna, Cauvery, IR-36, IR-50, Ratna, Culture-1,	Same as rainfed low land situation for both Sali and <i>Ahu</i>	<i>Ahu</i> rice	Same as rainfed low land situation for both Sali and Ahu

		Socket-4 Ahu rice (Direct seeded): Koimurali, Luit			
	Rainfed upland	<b>Summer &amp; Kharif vegetables-rabi vegetables</b> <b>Summer &amp; Kharif vegetables: Brinjal</b> JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, <b>Snakegourd</b> (Long green, Long white, Extra long, local) <b>Okra</b> (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), <b>Ridge gourd</b> ( Pusa Nasdar, AAUJ-2, AAUJ-3, local), <b>Bottlegourd</b> (Pusa Summer Prolific Long, Pusa Summer Prolific round, <b>Bittergourd</b> (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon), <b>Cucumber</b> ( Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, <b>Winter Vegetables:</b> Var same as Rainfed Medium land situation	1. Life saving irrigation 2. Timely land preparation and sowing of early winter vegetables 3. Divert some area for early winter vegetables 4. Application of sufficient amount of organic manure- vermicompost, FYM etc 5. Harvest at physiological maturity stage	Early winter vegetables, normal winter vegetables	Same as rainfed low land situation for both Sali and Ahu

### 2.1.2 Drought - Irrigated situation: Not applicable

Condition	Suggested Contingency measures				
	Major Farming situation <sup>f</sup>	Normal Crop/cropping system <sup>g</sup>	Change in crop/cropping system <sup>h</sup>	Agronomic measures <sup>i</sup>	Remarks on Implementation <sup>i</sup>
Delayed release of water in canals due to low rainfall					
Limited release of water in canals due to low rainfall					



Condition	Suggested Contingency measures				
	Major Farming situation <sup>f</sup>	Normal Crop/cropping system <sup>g</sup>	Change in crop/cropping system <sup>h</sup>	Agonomic measures <sup>i</sup>	Remarks on Implementation <sup>j</sup>
Non release of water in canals under delayed onset of monsoon in catchment					
Lack of inflows into tanks due to insufficient /delayed onset of monsoon					
Insufficient groundwater recharge due to low rainfall					

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

Condition	Suggested contingency measure			
	Vegetative stage <sup>k</sup>	Flowering stage <sup>l</sup>	Crop maturity stage <sup>m</sup>	Post harvest <sup>n</sup>
<b>Continuous high rainfall in a short span leading to water logging</b>				
Paddy	Provide drainage, Gap filling in damaged patches if seedlings are available, Top dressing of urea after the recess of rains	Provide drainage, Provide necessary control measures against outbreak of caseworm, gandhi bug and stem borer.	Drain out the water, Harvesting at physiological maturity stage	Shift to safer place Dry in shade in a well ventilated space to optimum moisture level, Seed treatment with fungicide against insects & diseases
Rajmah	Provide drainage Re-sowing of short duration late variety.	Provide drainage	Drain out Harvesting at physiological maturity stage and Harvest of <i>rajmah</i> for vegetable purpose, Use as fodder	Shift to safe place. Dry in shade and turn frequently, sale the produce

Potato	Provide drainage Take protective measures against late blight of potato.	Provide drainage Take protective measures against late blight of potato.	Drain out excess water Harvest at physiological maturity stage	Dry in shade, Safe storage against storage pests and diseases (seed treatment with fungicide)
Toria	Provide drainage, Re-sowing of short duration late variety, use as leafy vegetable	Provide drainage, Take protective measures against aphids.	Drain out excess water Harvest at physiological maturity stage	Dry in shade. Safe storage against storage pests and diseases
Pea	Provide drainage Resowing of short duration late variety.	Provide drainage	Drain out excess water, Harvest for vegetable purpose, Use as animal fodder	Dry in shade and turn frequently. Safe storage against storage pest and disease
<b>Horticulture</b>				
Kharif vegetables	Provide drainage, Re-sowing of short duration late variety, Need based protective measures against pests and diseases.	Provide drainage	Drain out, Harvesting at physiological maturity stage, Use as fodder	Segregation of infested vegetables & destruction Use as fodder
Winter vegetables	Provide drainage, Re-sowing of short duration late variety, Need based protective measures against pests and diseases.	Provide drainage Need based protective measures against pests and diseases.	Drain out, Harvesting at physiological maturity stage, Use as animal feed	Segregation of infested vegetables & destruction Use as animal feed
Chilli	Provide drainage Re-sowing of short duration late variety, Need based protective measures against pests and diseases.	Provide drainage Need based protective measures against pests and diseases.	Drain out Harvesting at physiological maturity stage Harvest for processing	Segregation of infested vegetables & destruction Dry in well ventilated space.
Heavy rainfall with high speed winds in a short span <sup>2</sup>	NA			
Outbreak of pests and diseases due to unseasonal rains				
Paddy	Application of chlorpyrifos or Monocrotophos against hispa, stem borer and case worm	Application of chlorpyrifos or Monocrotophos against case worm, Adopt ITK measures		Safe storage against storage pest and diseases

Rajmah	Rough out infested plants, Application of dimethoate or malathion against aphids, jassids & beetles.	Application of dimethoate or malathion against aphids, jassids & beetles.		Safe storage against storage pest and diseases
Potato	Application of metaxyl alternating with mancozeb for late blight of potato Application of MOC to reduce infestation of red & white ants.	Application of metaxyl alternating with mancozeb for late blight of potato		Safe storage against storage pest and diseases
Toria	Application of chlorpyrifos against insect-pests	Application of chlorpyrifos against insect-pests		Safe storage against storage pest and diseases
Pea	Application of dichlorovos 100 EC or malathion 50 EC against pod borer, leaf miner and aphids. Spray wettable sulphur or tridemorph or dinocap for powder mildew.	Application of dichlorovos 100 EC or malathion 50 EC against pod borer, leaf miner and aphids. Spray wettable sulphur or tridemorph or dinocap for powder mildew.		Safe storage against storage pest and diseases
<b>Horticulture</b>				
Kharif vegetables	Spray malathion 50 EC against fruit fly, malathion 5% dust for cut worm, and 1% Bordeaux mixture against downy mildew and Bavistin 0.1% against powdery mildew.	Spray malathion 50 EC against fruit fly, malathion 5% dust for cut worm, and 1% Bordeaux mixture against downy mildew and Bavistin 0.1% against powdery mildew.	Use as fodder	Segregation of infested vegetables & destruction Use as fodder
Winter vegetables	Spray malathion 50 EC against caterpillar and fruit and shoot borer, malathion 5% dust for cut worm. Application of metaxyl alternating with mancozeb against late blight o tomato	Spray malathion 50 EC against caterpillar, malathion 5% dust for cut worm, Application of metaxyl alternating with mancozeb against late blight o tomato		Segregation of infested vegetables & destruction Use as animal feed
Chilli		Spray captan 50 WP against fruit or anthracnose disease		Segregation of infested vegetables & destruction

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### 2.3 Floods

Condition	Suggested contingency measure <sup>o</sup>			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation <sup>1</sup> Paddy	Seed bed preparation in raised bed, Drainage of the Nursery bed	<ul style="list-style-type: none"> <li>In partially damaged field. gap filling may be done by redistributing the tillers</li> <li>Plant protection measures</li> <li>Drawing of rope through the crop to prevent from dislodging of mud,</li> <li>Top dressing with MOP,</li> <li>Drainage of excess water.</li> <li>Apply 50% N + 50% K<sub>2</sub>O as top dressing during the tillering stage.</li> <li>Wet seeding of sprouted seeds (@75-80 kg/ha) Andrewsali and Monoharsali</li> <li>If transplanting is not possible before mid September, then early varieties such as Sonamukhi, Luit, Culture 1, Chandmoni may be grown as direct seeded rice.</li> <li>Closure planting to check late tillers in case of late planting.</li> </ul>	<ul style="list-style-type: none"> <li>Top dressing with urea and MOP @ 15kg/ha</li> <li>Drainage of excess water.</li> <li>emphasis should be given on forthcoming rabi crops.</li> <li>Utilization of residual soil moisture for growing pulses and oilseeds</li> <li>Growing of vegetables after receding flood water and adoption of integrated farming system to compensate the loss of <i>kharif</i> rice</li> </ul>	<ul style="list-style-type: none"> <li>Early harvest &amp; Proper drying before storage</li> <li>Drainage of excess water, emphasis should be given on forthcoming rabi crops</li> <li>Supply of seeds and other agro-inputs of <i>rabi</i> crops at subsidized rate, provision of bank loan etc.</li> <li>Cultivation of boro rice</li> </ul>
Kharif vegetables	Seed bed preparation in raised bed Re sowing	Drainage facility to be provided for quick drainage of water Top dressing with urea after water recedes	Improved drainage Plant protection measures	Early harvesting

Winter vegetables	NA			
Chilli	NA			
<b>Continuous submergence for more than 2 days<sup>2</sup></b>				
Paddy	Provide drainage facilities, re - sowing	<ul style="list-style-type: none"> <li>• Drawing of rope through the crop to prevent from dislodging of mud</li> <li>• Plant protection measures to be adopted</li> <li>• Top dressing with MOP</li> <li>• Gap filling</li> </ul>	<ul style="list-style-type: none"> <li>• Top dressing with urea and MOP @ 15kg/ha</li> <li>• Growing of vegetables after receding flood water</li> <li>• adoption of integrated farming system.</li> </ul>	<ul style="list-style-type: none"> <li>• Early harvest &amp; Proper drying before storage</li> <li>• Supply of seeds and other agro-inputs of <i>rabi</i> crops at subsidized rate, provision of bank loan etc. Wet seeding of short duration</li> <li>• Utilization of residual soil moisture for growing pulses and oilseeds</li> <li>• Cultivation of boro rice</li> </ul>
Rajmah	Re-sowing	Provide drainage Resowing of late varieties Use as fodder	Harvest for vegetable purpose Use as fodder	Harvest and dry in shade, Seed treatment against chemicals
Potato	Re-sowing	Provide drainage Resowing of late varieties	Provide drainage	Harvest and dry in shade as soon as possible, Treat the seeds to protect from stored pest & diseases
Toria	Re-sowing	Provide drainage Resowing of late varieties	Provide drainage Use as fodder	Harvest and dry in shade as soon as poss
Pea	Re-sowing	Provide drainage, Re-sowing of late varieties	Provide drainage, Use as fodder	Harvest and dry till optimum storage moisture level, Seed treatment to prevent seed borne insect pest
<b>Horticulture</b>				
Kharif vegetables	Seed bed preparation in raised bed, Re sowing	<ul style="list-style-type: none"> <li>• Drainage facility to be provided for quick drainage of water,</li> <li>• Top dressing with urea</li> </ul>	<ul style="list-style-type: none"> <li>• Improved drainage</li> <li>• Plant protection measures</li> <li>• Top dressing with</li> </ul>	<ul style="list-style-type: none"> <li>• Early harvest</li> </ul>

		after water recedes • Plant protection measures	urea	
Winter vegetables				
Chilli	NA			
<b>Sea water intrusion<sup>3</sup></b>	NA			

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

Extreme event type	Suggested contingency measure <sup>f</sup>			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Heat Wave<sup>p</sup></b>	Not experienced			
<b>Cold wave<sup>q</sup></b>	Not experienced			
<b>Frost</b>	Not experienced			
<b>Hailstorm</b>				
Paddy (Feb. – March)	Short duration variety like Luit, Dishang should be grown	Damage negligible, nothing to do	Damage negligible, nothing to do	Proper drying, emphasis should be given to rabi vegetables
Rajmah	Re-sowing	Damage negligible, nothing to do	Damage negligible, nothing to do	NA
Potato	Re-sowing	Damage negligible, nothing to do	Damage negligible, nothing to do	NA
Toria	Re-sowing	Damage negligible, nothing to do	Damage negligible, nothing to do	NA
Pea	Re-sowing	Damage negligible, nothing to do	Damage negligible, nothing to do	NA
<b>Horticulture</b>				
Kharif vegetable	Shade net should be provided Re-seeding may be done	Shade net should be provided	Shade net should be provided	
Winter vegetables	NA			
Chilli				
<b>Cyclone</b>	Not experienced			

## 2.5 Contingent strategies for Livestock, Poultry & Fisheries

### 2.5.1 Livestock

	<b>Suggested contingency measures</b>		
	<b>Before the event<sup>s</sup></b>	<b>During the event</b>	<b>After the event</b>
<b>Drought</b>			
Feed and fodder availability	Insurance of animals Stock of rice polish, wheat bran, green and dry fodder Fodder cultivation in large scale Storage of fodder in the form of silage and hay	Utilization of perennial fodder Utilization of fodder as silage and hay Transportation of fodder from nearby area Use of feed mixtures	Training of farmers on feed and fodder storage Maintenance and repair of silo pits, feed and fodder store
Drinking water	Construction of water reservoir and preservation for drinking purpose Excavation of bore well	Utilization of stored water for drinking	Proper management of reservoirs For future use if and when required
Health and disease management	Stocking of sufficient medicine and vaccines	Treatment camps and treatment of diseased animal	Culling of weak and sick animals Treatment camps and treatment of diseased animal
<b>Floods</b>			
Feed and fodder availability	Insurance of animals Stock of rice polish, wheat bran, green and dry fodder Fodder cultivation in large scale in upland areas Storage of fodder in the form of silage and hay	Utilization of perennial fodder Utilization of fodder as silage and hay Transportation of fodder from nearby area Use of feed mixtures	Claiming of insurance Culling of unproductive animals
Drinking water	Construction of water reservoir in higher upland areas and preservation for drinking purpose Excavation of bore well	Utilization of stored water after proper treatment for drinking	Proper management of reservoirs For future use if and when required

Health and disease management	Stocking of sufficient medicine and vaccines	Treatment camps and treatment of diseased animal	Vaccination and treatment of animals Culling of weak and sick animals
<b>Cyclone</b>	<b>No Cyclone affected district</b>		
<b>Heat wave and cold wave</b>			

### 2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event <sup>a</sup>	During the event	After the event	
<b>Drought</b>				
Shortage of feed ingredients	Insurance and stocking of feed ingredients	Utilization of reserved feed	Availing insurance and strengthening feed reserve	ATMA
Drinking water	Construction of water reservoir and reservation for drinking purpose Excavation of bore well	Utilization of stored water after proper treatment for drinking	Proper management of reservoirs For future use if and when required	
Health and disease management	Stocking of sufficient medicine and vaccines for utilization during flood	Treatment camps, mass vaccination and treatment of diseased animal	Culling of affected birds Disposal of dead birds by burning/burying with lime powder/salting	
<b>Floods</b>				
Shortage of feed ingredients	Insurance and stocking of feed ingredients	Utilization of reserved feed	Availing insurance and strengthening feed reserve.	
Drinking water	Construction of water reservoir in elevated areas	Utilization of stored water after proper	Proper management of reservoirs	



	and preservation for drinking purpose Excavation of bore well	treatment for drinking	For future use if and when required	
Health and disease management	Stocking of sufficient medicine and vaccines for utilization during flood.	Treatment camps, mass vaccination and treatment of diseased animal	Culling of affected birds Disposal of dead birds by burning/burying with lime powder/salting	
<b>Cyclone</b>	<b>No Cyclone affected district</b>			
<b>Heat wave and cold wave</b>				

### 2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event <sup>a</sup>	During the event	After the event
<b>1) Drought</b>			
<b>A. Capture</b>			
<b>B. Aquaculture</b>			
(i) Shallow water in ponds due to insufficient rains/inflow	Insurance of fish and fish pond Storage of water. Conservation of rivers/reservoir/ponds. Re-excavation of local canals and reservoirs.	Use stored water. Use surface water flow. Divert water from unutilized areas.	Need based monitoring through possible measures. Construction of water reservoirs. Construction of Jal kund for rain water harvesting. Compensation claims. Prepare vulnerability map and place it to management committee.
(ii) Impact of salt load build up in ponds / change in water quality	Prohibit dumping of solid and liquid waste in water sources.  Stocking of chemicals, disinfectants and therapeutic drugs.	Use disinfectants and therapeutic drugs.  Adoption of bio-remedial measures	Water quality analysis and adoption of possible remedial measures  Need based research data should be generated on water quality.  Dumping of solid and liquid waste should be stopped through enactment of legislation.

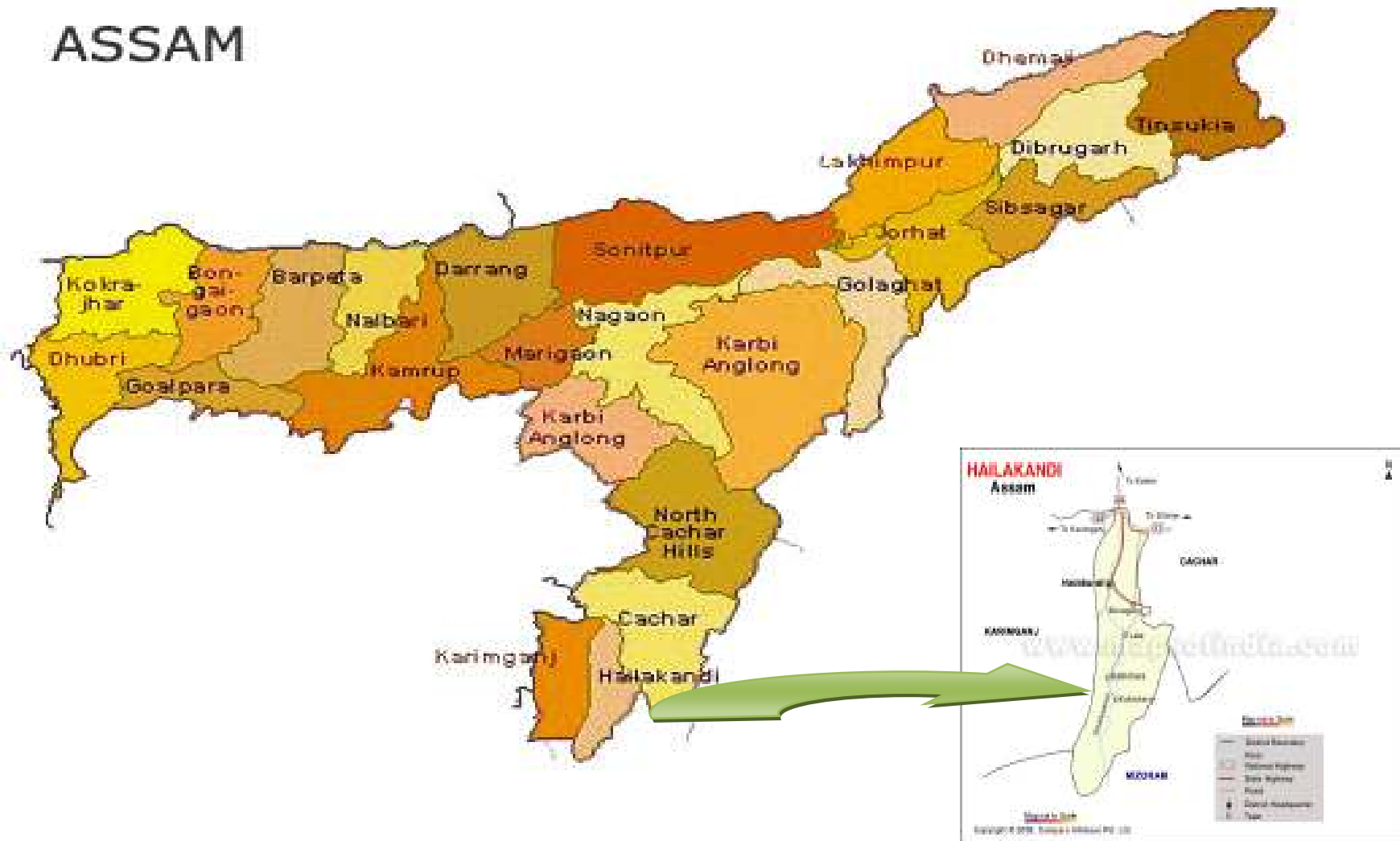
(iii) Any other			
<b>2) Floods</b>			
A. Capture			
B. Aquaculture			
(i) Inundation with flood water	<p>Proper construction and maintenance of ponds for stock safety.</p> <p>Development of flood control management plan.</p> <p>Preparedness with emergency backup equipment on site.</p> <p>Stock insurance.</p> <p>Adoption of preventive measures against entry of alien/wild organisms through flood water.</p>	<p>Arrangement for evacuation.</p> <p>Restoration of essential services, security and protection of property.</p> <p>Coordination of assistance.</p> <p>Damage and need assessment.</p> <p>Immediate management of relief supplies.</p> <p>Release excess water from fishery unit</p>	<p>Rehabilitation, training and awareness</p> <p>Reallocation of fish to maintain appropriate biomass.</p> <p>Adoption of suitable measures to maintain the dissolve oxygen level.</p> <p>Strengthening of water bodies/ponds.</p> <p>Loss assessment &amp; insurance claim.</p>
(ii) Water contamination and changes in water quality	<p>Store chemicals, disinfectants and therapeutic drugs</p> <p>Develop flood control management plan</p>	<p>Draining of contaminated water.</p> <p>Improve water quality through emergency aeration.</p> <p>Use of disinfectants, chemicals and therapeutic drugs for purifying water.</p> <p>Need based bioremediation.</p>	<p>Maintain water quality, need based research.</p> <p>Prompt adoption of remedial measures for cleaning of water bodies.</p> <p>Regular monitoring of water bodies for formulation of management plan.</p>
(iii) Health and diseases	<p>Advance planning and preparedness.</p> <p>Storage of chemicals, disinfectants and therapeutic drugs.</p>	<p>Identification of diseases.</p> <p>Immediate treatment of disease infected fish.</p> <p>Use appropriate amount of disinfectants, chemicals and therapeutic drugs.</p>	<p>Laboratory diagnosis of diseased fish, generation of data about type or kind of disease spread.</p> <p>Surveillance and monitoring.</p> <p>Proper disposal of dead fish.</p> <p>Loss assessment &amp; insurance claim.</p>

		Determination of nature and speed of transmission of diseases. Emergency aeration or splashing in water bodies.	
(iv) Loss of stock and inputs (feed, chemicals etc)	Keep the stock/input at safe place for emergency purpose. Develop flood control management plan. Stock material insurance.	Search/locate the stock/input. Purchase/hire valuable stock/inputs from distant areas not affected by flood.	Strengthening of stocks. Assessment of total loss. Insurance claims.
(v) Infrastructure damage (pumps, aerators, huts etc)	Educate and provide training for the repair of infrastructure. Store raw materials for repairing of pumps aerators, huts etc. Infrastructure insurance.	Notify utilities of the critical demand. ii)Coordination of assistance. Immediate management of relief supplies.	Damaged infrastructure enumeration and need assessment. Locate backup equipment and verify its operation. Repair of damaged infrastructure. Loss assessment & insurance claim.
(vi) Any other			
<b>3. Cyclone / Tsunami</b>	<b>Not a Cyclone affected district</b>		
A. Capture			
B. Aquaculture			
<b>4. Heat wave and cold wave</b>			
A. Capture			
B. Aquaculture			

**Annexure I**

Location map of district within State

# ASSAM



**Annexure 2**

Mean annual rainfall of Hailakandi 2008

