

**State: Tripura**  
**Agriculture Contingency Plan for District: West Tripura**

<b>1.0 District Agriculture profile</b>				
1.1.	<b>Agro-Climatic/Ecological Zone</b>	The Humid Eastern Himalayan Region and the islands		
	Agro Ecological Sub Region (ICAR)	15biii Dc2 3h B <sub>2</sub> 10 (Humid Hyperthermic with LGP .300 days and moisture index 40-60%. Soils red and lateritic)		
	Agro –Climatic Region (Planning Commission)			
	Agro-Climatic Zone (NARP)	Humid Dissected Mounts and Valleys, Sub-Humid Dennuded Hills		
	List all the districts or part thereof falling under the NARP Zone	Parts of South, Dhalai and North districts		
	Geographic coordinates of district	Latitude	Longitude	Altitude
		23 <sup>0</sup> 16' to 24 <sup>0</sup> 14' North	91 <sup>0</sup> 09' to 91 <sup>0</sup> 47' East	12.8-244m (msl)
	Name and address of the concerned ZRS/ ZARS/RARS/RRS/RRTTS/HRC	ICAR RCNEHR, Lembucherra and Horticulture Research Complex (HRC), Nagicherra.		
Mention the KVK located in the district	Divyodaya Krishi Vigyan Kendra, West Tripura, Chebri, Khowai			

1.2	<b>Rainfall</b>	Normal RF(mm)	Normal Rainy Days (Number)	Normal (specify week and month)	Normal cessation (specify week and month)
	SW monsoon (June-Sep)	1650.2	75.3	1 <sup>st</sup> week June	3 <sup>rd</sup> week September
	NE Monsoon (Oct-Dec)	272.5	12.8	1 <sup>st</sup> week October	2 <sup>nd</sup> week December
	Winter (Jan – March)	58.4	5	2 <sup>nd</sup> week March	3 <sup>rd</sup> week January
	Summer (Apr-May)	635.4	24.3	2 <sup>nd</sup> week May	2 <sup>nd</sup> week April
	Annual	2610.1	117.5	June	December

1.3	Land use Pattern of the District (latest Statistics)	Geographical Area	Forest area	Land under Non-agricultural use	Permanent pastures	Cultivable wasteland	Land under Misc.tree Crops and groves	Barren and Uncultivable Land	Currest Follows	Other follows
	Area (000 ha.)	299	114	20	32	13	49	14	0.6	0.6

1.4	Major Soils (common names like Shallow red soils etc.)	Area ('000 ha.)	Percent (%) of total
	1. Tilla land(lateritic red soil)	90	43
	2. Plain and lunga land(Sandy loam)	110	52
	3. Marshy land(Alluvial soil)	10	5
	Others (specify)		

1.5	Agricultural land use	Area ('000 ha.)	Cropping intensity %
	Net sown area	114	184
	Area sown more than once	96	
	Gross cropped area	210	

1.6	Irrigation	Area ('000 ha.)		
	Net irrigated area	18.16		
	Gross irrigated area	76.72		
	Rainfed area	95.84		
	Sources of Irrigation	Number	Area ('000 ha.)	Percentage of total irrigated area
	Lift irrigation	452	76.72	-
	Deep tube well	105		-
	Diversion	14		-
	Shallow tube well	2222		-
	Over flow	6035		-
	Pump sets	1759		-
	Water harvesting structure	1354		-
	Common tanks	221		-
	Irrigation tank/pond	358		-
	Groundwater availability and use* (Data source: State/Central Ground water Department/Board)	No.of blocks/Tehisils		(%) area
	Over exploited	Data Not Available		
	Critical			
	Semi Critical			
	Safe			
	Waste water availability and use			

\* Over-exploited groundwater utilization>100%; critical: 90-100%, semi critical : 70-90%; safe : < 70%

1.7 Area under major field crops & horticulture etc. (2014-15)

1.7	Major Field Crops cultivated	Area ('000 ha.)						Total
		Kharif(May-Sept)		Rabi(Oct-Jan)		Pre-Kharif		
		Irrigated	Rainfed	Irrigated	Rainfed	Irrigated	Rainfed	
1	Rice	Data Not available						94
2	Rape seed and Mustard.							1.7
3	Pea							0.9
4	Lentil							0.7
5	Maize							1.3
	<b>Horticulture crops-Fruits</b>	<b>Total area</b>		<b>Irrigated</b>		<b>Rainfed</b>		
1	Mango	2.56		NA				
2	Pine apple	2.5						
3	Orange	0.32						
4	Jack fruit	1.54						
5	Banana	4.9						
	<b>Horticulture crops-Vegetables</b>	<b>Total area</b>		<b>Irrigated</b>		<b>Rainfed</b>		
1	Potato	2.4		Data not available		NA		
2	Summer Vegetables	7.8		Data not available		Data not available		
3	Winter Vegetables	6.1		Data not available		NA		
	<b>Medicinal and Aromatic crops</b>	<b>Total area</b>		<b>Irrigated</b>		<b>Rainfed</b>		
1	Lemon grass	-		Data not available				
2	Aloe vera	-						
3	Cinnamon	-						
4	Nut mag	-						
5	Spices	-						
	<b>Plantation crops</b>	<b>Total area</b>		<b>Irrigated</b>		<b>Rainfed</b>		
1	Rubber	51.292		NA				
2	Tea	-						
3	Teak	-						
4	Kuroi	-						
	<b>Fodder crops</b>	<b>Total area</b>		<b>Irrigated</b>		<b>Rainfed</b>		
1	Napier	Data not available						
2	Para							
3	Guinea							

	4	Mulberry	Data not available
		<b>Total fodder crop area</b>	
		Grazing land	
		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	-	-	-
	Crossbred cattle	-	-	-
	Non descriptive Buffaloes(local low yielding	-	-	-
	Graded Buffaloes	-	-	-
	Goat	-	-	-
	Sheep	-	-	-
	Others(Camel, Pig, Yak etc.), Pig	-	-	-
	Commercial dairy farms (Number)	-	-	-
<b>1.9</b>	<b>Poultry</b>	<b>No.of farms</b>	<b>Total No. of birds ('000)</b>	
	Commercial		304.47	
	Backyard		274.05	
<b>Fisheries (Data source: Chief Planning Officer)</b>				

<b>A. Capture</b>						
i) <b>Marine</b> (Data Source: Fisheries Department)	No. of Fishermen	<b>Boat</b>		<b>Nets</b>		<b>Storage facilities (ice plants etc.)</b>
		Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake and trap nets)	
ii) <b>Inland</b> (Data Source: Fisheries Department)	<b>No. of farmers owned ponds</b>		<b>No. of Reservoirs</b>		<b>No. of village tanks</b>	
	59853		NIL		Data not available	
<b>B. Culture</b>						
	<b>Water Spread Area (ha)</b>	<b>Yield (t/ha)</b>		<b>Production ('MT)</b>		
i) <b>Brackish Water</b> (Data source: MPEDA/Fisheries Department)	-	-		-		
ii) <b>Fresh water</b> (Data source: Fisheries Department)	7254.48	2.325		15170.64		
<b>Others</b>	<b>7254.48</b>	<b>2.325</b>		<b>15170.64</b>		

**1.11 Production and productivity of major crops (Average of last 5 years)**

1.11	Name of crop	Kharif		Rabi		Pre-Kharif		Total		Crop Residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)							
<b>Major Field crops (Crops to be identified based on total acreage)*</b>										
Crop 1	Rice	155.238	3611	6.544	2874	88.774	3995	250.556	3493	No record
Crop 2	Wheat	-	-	-	-	-	-	0.677	1900	-Do-
Crop 3	Maize	-	-	-	-	-	-	0.504	933	-Do-
Crop 4	Pulse	0.6098	647.6	0.6936	627.2	-	-	1.3034	637.4	-
Crop 5	Rape and Mustard	0.304	665.2	-	-	-	-	0.304	665.2	-
Crop 6	Potato	-	-	23.4912	15969.2	-	-	23.4912	15969.2	-
Crop 7	Ground nut	0.1784	1080	0.0502	1034.0	-	-	0.225	1057	-
Others	-	-	-	-	-	-	-	-	-	-
<b>Major Horticultural crops (Crops to be identified based on total acreage)*</b>										
Crop 1	Cucurbits	-	-	-	-	-	-	33.451	13480	-
Crop 2	Bhendi	-	-	-	-	-	-	5.440	6990	-
Crop 3	Brinjal	-	-	-	-	-	-	14.338	17980	-
Crop 4	Cabbage	-	-	-	-	-	-	21.303	23980	-
Crop 5	Cauliflower	-	-	-	-	-	-	9.872	12300	-
Crop 6	Tomato	-	-	-	-	-	-	12.500	20000	-
Crop 7	Mango	-	-	-	-	-	-	2.484	3100	-
Crop 8	Pine apple	-	-	-	-	-	-	28.050	17290	-
Crop 9	Jackfruit	-	-	-	-	-	-	71.155	52660	-
Crop 10	Banana	-	-	-	-	-	-	48.441	12730	-

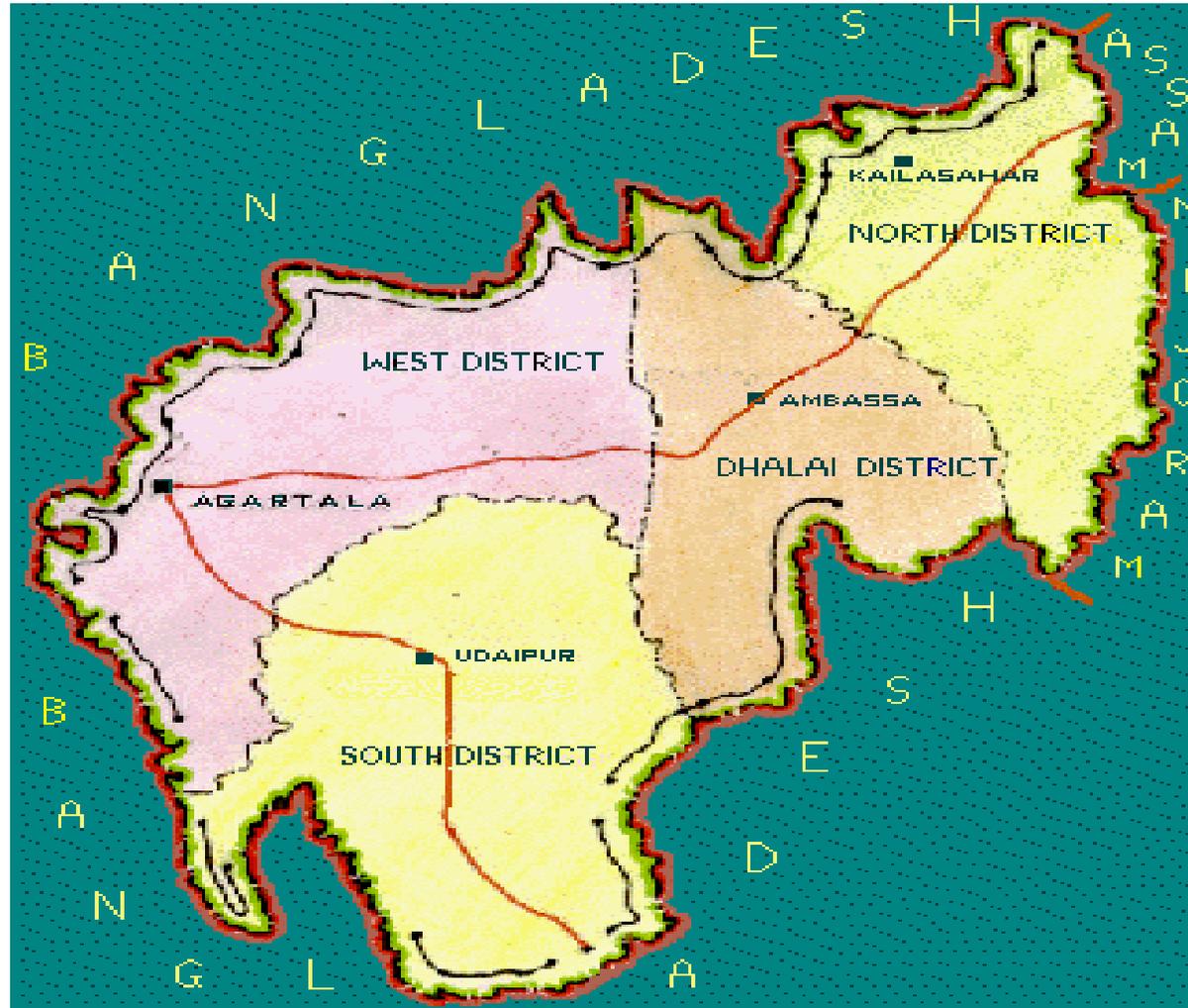
\*Source: SREP, West Tripura, GOT

1.12	<b>Sowing window for 5 major field crops (Pre Kharif-Rainfed-Irrigated)</b>	Crop 1: Rice	2. Mustard	3. Maize	4. Groundnut	5. Lentil
	Pre-Kharif- Rainfed	3 <sup>rd</sup> Week of May to 1 <sup>st</sup> Week of June	-	-	-	-
	Kharif – Rainfed	1 <sup>st</sup> Week of July- 4 <sup>th</sup> Week of July	-	1 <sup>st</sup> week of July	June-July	-
	Kharif – Irrigated	1 <sup>st</sup> July -15 <sup>th</sup> of August	-	-	-	-
	Rabi – Rainfed	Nov-Dec	15 <sup>th</sup> Oct-15 <sup>th</sup> Nov	-	-	Mid Oct- Mid Nov
	Rabi - Irrigated	Nov-Dec	-	1 <sup>st</sup> week of November	Mid Sept- Mid Oct	-

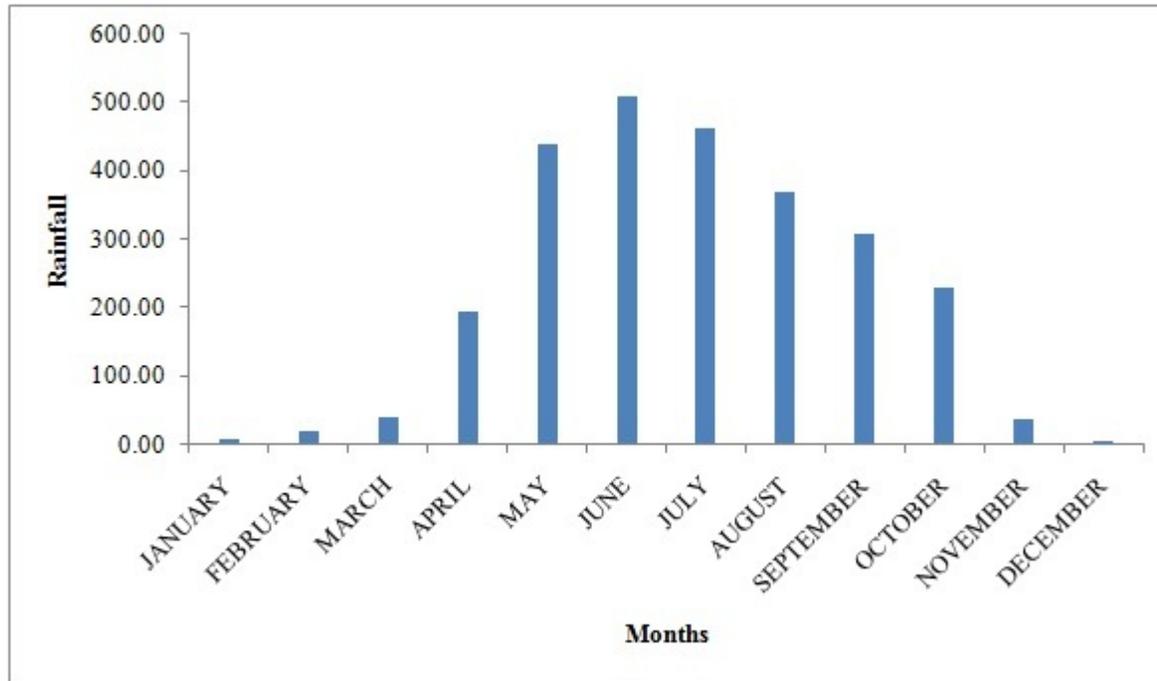
1.13	<b>What is the major contingency the district is prone to? (Tick mark and mention years if known during the last 10 year period)</b>	Regular			Occasional		None
	Drought				√2009,2010,2003		
	Flood						√
	Cyclone						√
	Hail storm						√
	Heat wave						√
	Cold wave						√
	Frost						√
	Sea water intrusion						√
	Pests and diseases (specify)						√
	Late blight of potato		√				
	Root rot of vegetables				√		
	Brinjal fruit and shoot borer		√				
	Fruit fly of cucurbits		√				
	Red mite				√		
	Downey mildew of cucurbits		√				
	Others						

1.14	<b>Include Digital maps of the district for</b>	Location map of district within State as Annexure 1	Enclosed : Yes
		Mean annual rainfall as Annexure 2	Enclosed : Yes
		Soil map as Annexure – 3	Enclosed : Yes

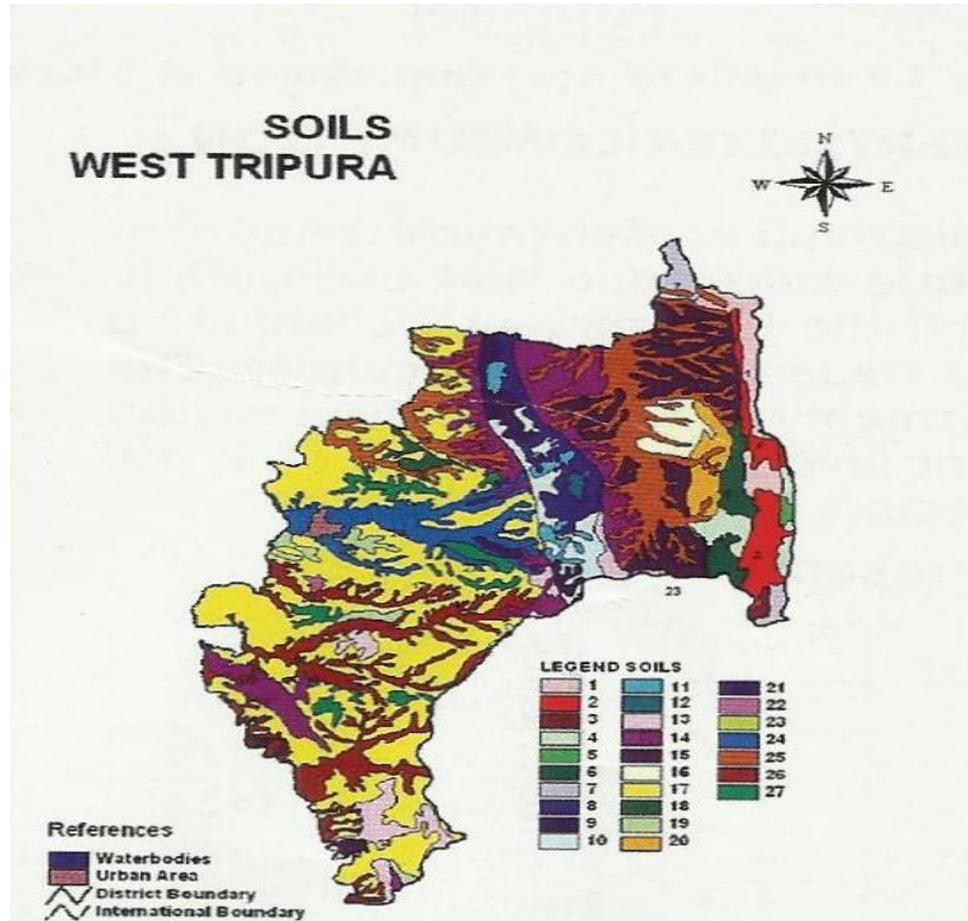
Location map of district West Tripura within State as Annexure 1



**Mean annual rainfall of District West Tripura as Annexure 2**



Soil map of District West Tripura as Annexure – 3



## 2.0 Strategies for weather related contingencies

### 2.1 Drought

#### 2.1.1. Rainfed situation(Pre-Kharif)

Condition			Suggested Contingency measures		
			Change in crop/cropping System	Agronomic Measures	Remarks on Implementation
Early season drought (delayed onset)	Major Farming Situation	Normal Crop/Cropping System			
Delay by 2 Weeks (Specify Month)* May 3 <sup>rd</sup> Week to June 1 <sup>st</sup> Week)	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation of rice, maize Mono cropping of Paddy/Maize	Short or medium duration HYV paddy should be introduced,  Single crossed hybrid maize can be introduced.	Conservation practices should be encouraged; instead of burning decomposition of plant parts should be encouraged.  Mulching, Rain water Harvesting, Contour planting of should be encouraged instead of Jhum cultivation to check soil and water loss.	IWMP, MGNREGA, RKVY, NFSM

	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Maize - Mustard/Lentil/Pea/Ground nut/Maize Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Ground Nut	Green manuring of Dhaincha can be included prefer medium duration HYV paddy varieties, Single cross hybrid variety of maize can be included. Summer green gram can also be included where paddy cultivation is problematic due to scarcity of water.	Adopt SRI paddy cultivation, Adopt zero or minimum tillage, Use paddy transplanted machine for timely quick sowing, Promote community nursery bed, Raised bed furrow irrigation method of maize.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, NFSM
	Very gently sloping flood plains with very deep fine loamy soils	Paddy/Summer Vegetables – Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy Paddy-Pea/Lentil/Mustard/Rape Seed /Maize/Vegetables	Green manuring of Dhaincha can be included prefer medium duration HYV paddy varieties.	Timely land preparation, sowing & Transplanting. Rain water harvesting by 30 cm high bunding. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc. Medium duration drought tolerant crops should be grown. , Promote community nursery bed, Zero tillage or minimum tillage should be encouraged in case of mustard, lentil.	AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA RKVY, IWMP, NHM, NFSM)
	Very gently sloping flood plains with deep	Paddy/Summer Vegetables – Mustard/Pea/Lentil/Winter	Green manuring of Dhaincha can be included	Timely land preparation, sowing & Transplanting. Rain	

	clayey soils	Vegetables/Ground nut Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	prefer medium duration HYV paddy varieties.	water harvesting by 30 cm high bunding. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc. Medium duration drought tolerant crops should be grown. , Promote community nursery bed, Zero tillage or minimum tillage should be encouraged in case of mustard, lentil.	
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### 2.1.2. Rainfed situation(Kharif)

Condition	Major Farming Situation	Normal Crop/Cropping System	Suggested Contingency measures		
			Change in crop/cropping System	Agronomic Measures	Remarks on Implementation
Early season drought (delayed onset)					
<b>Delay by 2 Weeks (Specify Month)* June 3<sup>rd</sup> Week</b>	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation of rice, maize. Mono cropping of Paddy/Maize	Short or medium duration HYV paddy should be introduced, Single crossed hybrid maize can be introduced.	Conservation practices should be encouraged instead of burning decomposition of plant parts should be encouraged.  Mulching, Community Paddy nursery, inter cropping of cow pea can be encouraged along with maize.	IWMP, RKVY, MGNREGA, NFSM

	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Maize - Mustard/Lentil/Pea/Ground nut/Maize  Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Fallow	No change. Preference should be given to medium duration paddy varieties.	Adopt SRI paddy cultivation, Adopt zero or minimum tillage in case of lentil, mustard, Use paddy transplant machine for timely quick sowing, Promote community paddy nursery bed	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS,NFSM
	Very gently sloping flood plains with very deep fine loamy soils	Paddy –Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy/Fallow  Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	No change, prefer medium duration HYV paddy varieties.	Timely land preparation, sowing & Transplanting. Rain water harvesting by 30 cm high bunding. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc, SRI Technology should be properly adopted, Timely weeding, at critical growth stages and short duration drought tolerant crops should be grown.	AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM,NFSM)

	<p>Very gently sloping flood plains with deep clayey soils</p>	<p>Paddy –Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow</p>	<p>No change, prefer medium duration HYV paddy varieties.</p>	<p>Preparation of seed bed &amp; main field immediately after rainfall. Rain water harvesting by 30 cm high bunding. Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc. Keep constant visit in the field to check any cracks &amp; crevices and take immediate measures by repairing/mud plastering. SRI Technology should be properly adopted, Timely weeding, at critical growth stages and short duration drought tolerant crops should be grown.</p>	<p>RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS,NFSM AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM,NFSM)</p>
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Condition	Major Farming Situation	Normal Crop/Cropping System	Suggested Contingency measures		
			Change in crop/cropping System	Agronomic Measures	Remarks on Implementation
Early season Drought (delayed onset)					
Delay by 4 Weeks (Specify Month) July 1 <sup>st</sup> week	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation of rice, maize. Mono cropping of Paddy/Maize	Short or medium duration HYV paddy should be introduced, Single crossed hybrid maize can be introduced.	Conservation practices should be encouraged instead of burning decomposition of plant parts should be encouraged.  Mulching, Community Paddy nursery, inter cropping of cow pea can be encouraged along with maize.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, IWMP, MGNREGA, RKVY, NHM, NFSM
	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Maize - Mustard/Lentil/Pea/Ground nut/Maize Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Fallow	No change. Prefer short duration of paddy varieties (MTU 1010, Naveen), Adopt relay cropping in <i>rabi</i> season in pulses and oil seeds.	Transplant 3-4 seedlings/hill in conventional cultivation of paddy, Adopt SRI paddy cultivation, Adopt zero or minimum tillage in lentil and mustard, Use paddy transplant machine for timely quick sowing, Promote community seed bed	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS

	<p>Very gently sloping flood plains with very deep fine loamy soils</p>	<p>Paddy –Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy/Fallow</p> <p>Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow</p>	<p>No change, prefer short duration paddy variety</p>	<p>Resowing or delay sowing , Timely weeding, Community paddy nursery, proper adaptation of SRI, Early sowing of rapeseed. Soil &amp; moisture conservation measures (Organic mulches + more FYM).Timely land preparation &amp; sowing. Seed soaking for toria. Weeding &amp; breaking of soil mulch by finger weeder.</p> <p>Ridge &amp; furrow cultivation of Maize. Grow</p> <p>short duration pulses (Black gram, Pea etc.). Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc.</p>	<p>DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HR MGNREGA (RKVY, IWMP, NHM,NFSM)</p>
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	<p>Very gently sloping flood plains with deep clayey soils</p>	<p>Paddy –Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow</p>	<p>No change, prefer short duration paddy variety</p>	<p>Resowing or delay sowing , Timely weeding, Community paddy nursery, proper adaptation of SRI, Early sowing of rapeseed. Soil &amp; moisture conservation measures (Organic mulches + more FYM).Timely land preparation &amp; sowing. Seed soaking for toria. Weeding &amp; breaking of soil mulch by finger weeder.  Ridge &amp; furrow cultivation of Maize. Grow short duration pulses (Black gram, Pea etc.). Utilization of waters for irrigation from nearby beels, ponds, rivers, natural depressions etc.</p>	<p>DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM,NFSM)</p>
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Condition	Major Farming Situation	Normal Crop/Cropping System	Suggested Contingency measures		
			Change in crop/cropping System	Agronomic Measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 6 Weeks (Specify Month July 3 <sup>rd</sup> week)	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation of rice, maize. Mono cropping of Paddy/Maize	Cultivation of short duration rice variety, Single cross hybrid for maize.	Conservation practices should be encouraged instead of burning decomposition of plant parts should be encouraged.  Mulching, Community Paddy nursery, inter cropping of cow pea can be encouraged along with maize.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS NHM, , MGNREGA RKVY,NFSM, State Agril. department
	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Arahar/Maize/Ground nut.- Mustard/Lentil/Pea-Fallow  Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Fallow	Cultivation of paddy may be withdrawn, if paddy is considered only very short duration i.e. 90-110 days variety to be sown, no change for maize-pulse cropping system	Adopt DSR technique, zero tillage, , relay cropping in next to paddy, community nursery bed	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS
	Very gently sloping flood plains with very deep fine loamy soils	Paddy, Maize, Ground nut Vegetables  Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	Cultivation of paddy may be withdrawn, if paddy is considered only very short duration i.e. 90-110 days variety to be sown,	Adopt DSR technique, zero tillage in next to paddy , , relay cropping in lentil and mustard, community	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS,NFSM

			no change for maize and in place of paddy <i>kharif</i> pulse or Groundnut may be taken as alternative crop	nursery bed	
	Very gently sloping flood plains with deep clayey soils	Paddy –Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	Cultivation of paddy may be withdrawn, if paddy is considered only very short duration i.e. 90-110 days variety to be sown, no change for maize and in place of paddy <i>kharif</i> pulse or Groundnut may be taken as alternative crop	Adopt DSR technique, zero tillage in next to paddy , relay cropping in lentil and mustard, community nursery bed	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS,NFSM

Condition			Suggested Contingency measures		
Early season Drought (Normal Onset)	Major Farming Situation	Normal Crop/Cropping System	Crop Management	Soil Nutrient & Moisture conservation measures	Remarks on Implementation
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination /crop stand etc.	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation including rice, maize. Mono cropping of Paddy/Maize	Gap filling or retranslating, Timely weeding	Straw mulching in maize. Use of erosion resisting crop like cow pea can be grown as inter crop with Maize.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS

	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Arahar/Maize/Ground nut.- Mustard/Lentil/Pea-Fallow  Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Fallow	Transplant the seedlings in gaps raised from available nursery or by splitting the tillers from the surviving hills, Timely weeding, Gap filling or resowing. Foliar spray with 2% Urea during the dry spell, Postpone top dressing with N,	Life saving irrigation (fertigation)	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS
	Very gently sloping flood plains with very deep fine loamy soils	Paddy,Arahar,MaizeGround nut Vegetables  Paddy- Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	Transplant the seedlings in gaps raised from available nursery or by splitting the tillers from the surviving hills, Timely weeding, Gap filling or resowing Foliar spray with 2% Urea during the dry spell, Postpone top dressing with N	Life saving irrigation (fertigation)	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS
	Very gently sloping flood plains with deep clayey soils	Paddy – Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy  Paddy- Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	Transplant the seedlings in gaps raised from available nursery or by splitting the tillers from the surviving hills, Timely weeding, Gap filling or resowing Foliar spray with 2% Urea during the dry spell, Postpone top dressing with N	Life saving irrigation (fertigation)	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS

Condition			Suggested contingency measures		
Mid season Drought (long dry spell, Consecutive 2 weeks rainless (>2.5 mm) Period)	Major Farming Situation	Normal Crop/Cropping System	Crop Management	Soil Nutrient & Moisture conservation measures	Remarks on Implementation
At vegetative stage	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation including rice, maize.  Cropping system: Mono cropping of Paddy/Maize	Weeding, Transplant the seedlings from available nursery	Mulching in maize, life saving irrigation in paddy.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS
	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Arahar/Maize/Ground nut.- Mustard/Lentil/Pea-Fallow  Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Fallow	Transplant the seedlings in gaps raised from available nursery or by splitting the tillers from the surviving hills. Timely weeding, Gap filling or resowing Postpone top dressing with N	Life saving irrigation (fertigation), application of anti transparent and mulching.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS
	Very gently sloping flood plains with very deep fine loamy soils	Paddy, Arahar, Maize, Ground nut, Vegetables  Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	Transplant the seedlings in gaps raised from available nursery or by splitting the tillers from the surviving hills, <input type="checkbox"/> Timely weeding, Gap filling or resowing, Relay cropping (Lentil and Mustard) Postpone top dressing with N	Life saving irrigation (fertigation), application of anti transparent and mulching.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS

	Very gently sloping flood plains with deep clayey soils	Paddy –Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	Transplant the seedlings in gaps raised from available nursery or by splitting the tillers from the surviving hills Timely weeding, Gap filling or resowing, Relay cropping(Lentil and Mustard) Postpone top dressing with N	Life saving irrigation (fertigation), application of anti transparent and mulching.	RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS
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Condition		Suggested Contingency measures			
Mid season Drought(long dry spell)	Major Farming Situation	Normal Crop/Cropping System	Crop Management	Soil Nutrient & Moisture conservation measures	Remarks on Implementation
Flowering stage	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation including rice, maize. Mono cropping of Paddy/Maize	In extreme condition crops should be harvested for fodder . In maize cobs should be plucked early	Life saving irrigation should be given Lower leaves should be nipped off to save moisture, in paddy anti transparent can be used.	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM) 9

	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Arahar/Maize/Ground nut.- Mustard/Lentil/Pea-Fallow  Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Fallow	In extreme condition crops should be harvested for fodder In maize cobs should be plucked early,	Life saving irrigation should be given Lower leaves should be nipped off to save moisture, in paddy anti transparent can be used In case of crops like lentil and mustard zero tillage cultivation should be practiced.	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM)
	Very gently sloping flood plains with very deep fine loamy soils	Paddy, Maize, Ground nut, Vegetables  Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	In extreme condition crops should be harvested for fodder In maize cobs should be plucked early	Life saving irrigation should be given Lower leaves should be nipped off to save moisture, in paddy anti transparent can be used in case of crops like lentil and mustard zero tillage cultivation should be practiced in harvested water from water bodies should be utilized in case of vegetables.	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM)
	Very gently sloping flood plains with deep clayey soils	Paddy –Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy  Paddy-Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy/Fallow	-	-	-

Condition	Major Farming Situation	Normal Crop/Cropping System	Suggested Contingency measures		
			Crop Management	Soil Nutrient & Moisture conservation measures	Remarks on Implementation
Terminal drought	Moderately steeply sloping hill top and hill slopes with deep to very deep fine loamy soils	Jhum cultivation including rice, maize. Mono cropping of Paddy/Maize	In maize cobs should be plucked early. In extreme condition crops should be harvested for fodder. Control pests and diseases, reduce plant population, control weed	Apply a life saving irrigation. Lower leaves should be nipped off to save moisture	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM).
	Gently to moderately sloping undulating plains with deep fine loamy soils	Paddy/Arahar/Maize/Ground nut.- Mustard/Lentil/Pea-Fallow Paddy/Maize – Lentil/Pea/Maize/Mustard/Rape Seed/Fallow	In maize cobs should be plucked early. In extreme condition crops should be harvested for fodder. Control pests and diseases, reduce plant population, control weed	Apply a life saving irrigation. Lower leaves should be nipped off to save moisture	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM)

### 2.1.2 Irrigated situation(Pre-Kharif)

Condition	Major Farming Situation	Normal Crop/Cropping System	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release Of water in Canals due to Low rainfall	Not applicable				
Limited release of water in canals due to low rainfall	Not applicable				

Non release of water in canals under delayed onset of monsoon in catchment	Not applicable				
Lack of inflows into streams due to Insufficient/ delayed onset of monsoon	Very gently sloping flood plains with very deep fine loamy soils	Summer Vegetables, Paddy Cropping System: Fallow/Summer Vegetables-Aus Paddy-Fallow/Winter Vegetables/Mustard/Lentil/Pea/Paddy	Summer Green gram can be cultivated in the fallow areas and Dhaincha can be grown as green manuring crop instead of keeping lands fallow.	Use more organic manure to improve water holding capacity of soil and use of life saving irrigation.	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM, NFSM, ISOPOM).
	Very gently sloping flood plains with deep clayey soils	Aush paddy, Summer Vegetables Cropping System: Aus Paddy/Summer Vegetables- Aman Paddy-Boro Paddy/Winter Vegetables	Photosensitive rice varieties up to 45 days old seedling can be transplanted, double transplanting of rice with 45 days old seedlings of long duration variety (Gomati).	Delay sowing and transplanting, use ground water, apply low dose of nitrogen,	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM, NFSM, ISOPOM).

### 2.1.3 Irrigated situation(Kharif)

Condition	Suggested Contingency measures				
	Major Farming Situation	Normal Crop/Cropping System	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
<b>Insufficient ground Water recharge due to low rainfall</b>	Very gently sloping flood plains with very deep fine loamy soils	Paddy – Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy  Paddy- Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy	No change, prefer medium duration HYV paddy varieties	SRI in Paddy.	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM, NFSM, ISOPOM).

	Very gently sloping flood plains with deep clayey soils	Aush paddy, Aman Paddy, Boro Paddy Paddy-Paddy	HYV paddy varieties should be introduced.	SRI in Paddy.	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM, NFSM, ISOPOM).
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Condition	Suggested Contingency measures				
	Major Farming Situation	Normal Crop/Cropping System	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release Of water in Canals due to Low rainfall	Not applicable				
Limited release of water in canals due to low rainfall	Not applicable				
Non release of water in canals under delayed onset of monsoon in catchment	Not applicable				

Lack of inflows into streams due to Insufficient/delayed onset of monsoon	Very gently sloping flood plains with very deep fine loamy soils	Paddy – Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy Paddy- Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/Paddy	Photosensitive rice varieties up to 45 days old seedling can be transplanted, double transplanting of rice with 45 days old seedlings of long duration variety (Gomati).	Delay sowing and transplanting, use ground water, apply low dose of nitrogen and SRI in paddy.	DMR, RARS-AAU, IIPR, CRRI, ICAR-  Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM, NFSM, ISOPOM).
	Very gently sloping flood plains with deep clayey soils	Aush paddy, Aman Paddy, Boro Paddy Paddy-Paddy	Photosensitive rice varieties up to 45 days old seedling can be transplanted, double transplanting of rice with 45 days old seedlings of long duration variety (Gomati).	Delay sowing and transplanting, use ground water, apply low dose of nitrogen,	DMR, RARS-AAU, IIPR, CRRI, ICAR- Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM, NFSM, ISOPOM).

Condition	Suggested Contingency measures				
	Major Farming Situation	Normal Crop/Cropping System	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
<b>Insufficient ground Water recharge due to low rainfall</b>	Very gently sloping flood plains with very deep fine loamy soils	Paddy – Mustard/Pea/Lentil/Winter Vegetables/Ground nut/Paddy Paddy- Pea/lentil/Mustard/Rape Seed/Maize/Vegetables/ Paddy	Photosensitive rice varieties up to 45 days old seedling can be transplanted, double transplanting of rice with 45 days old seedlings of long duration variety (Gomati).	SRI, Direct sowing of rice, tillage practices to minimize run-off and evapo-transpiration. Increase row spacing,	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, MGNREGA , RKVY, IWMP, NHM, NFSM, ISOPOM).
	Very gently sloping flood plains with deep clayey soils	Aush paddy, Aman Paddy, Boro Paddy Paddy-Paddy	Photosensitive rice varieties up to 45 days old seedling can be transplanted, double transplanting of rice with 45 days old seedlings of long duration variety (Gomati).	SRI, Direct sowing of rice, tillage practices to minimize run-off and evapo-transpiration. Increase row spacing,	DMR, RARS-AAU, IIPR, CRRI, ICAR-Tripura centre, HRS, (MGNREGA, RKVY, IWMP, NHM, NFSM, ISOPOM).

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

Condition	Suggested Contingency measures			
	Vegetable stage	Flowering stage	Crop maturity stage	Post harvest
<b>Continuous high rainfall in a short span leading to water logging</b>				
Crop 1. Rice.	1. Proper drainage. 2. Raised bed 3. Proper drainage 4. Proper drainage	Application of hormones/nutrient sprays to prevent flower drop or promote quick flowering/fruiting	Shifting of produce to safer place and protection against pest/disease damage in storage etc.	Shifting of produce to safer place for drying and maintaining the quality of grain/fodder and protection against pest/disease damage in storage etc.
Crop 2. Maize				
Crop 3. Cow Pea				
Crop 4. Green gram				
<b>Horticulture</b>				
Crop 1. Pine apple	Proper drainage of the basin	Application of hormones/nutrient sprays to	Shifting of produce	Shifting of produce to safer place for drying and
Crop 2. Orange				

Crop 3. Mango		prevent flower drop or promote quick flowering/fruiting	to safer place and protection against pest/disease damage in storage etc.	maintaining the quality of grain/fodder and protection against pest/disease damage in storage etc.
Crop 4.				
Crop 5.				
<b>Heavy rainfall with high speed winds in a short span<sup>2</sup></b>				
Crop 1. Rice.	Proper drainage of the soil.	Application of hormones/nutrient sprays to prevent flower drop or promote quick flowering/fruiting, staking the maize plants.	Measures for preventing seed germination, shifting produce to safer place and protection against pest/disease damage in storage etc.	Shifting of produce to safer place for drying and maintaining the quality of grain/fodder and protection against pest/disease damage in storage etc.
Crop 2. Maize				
Crop 3. Cow Pea				
Crop 4.Green gram				
Horticulture				
Crop 1. Pine apple	Proper drainage of the soil,	Application of hormones/nutrient sprays to prevent flower drop or promote quick flowering/fruiting	Measures for preventing seed germination, shifting produce to safer place and protection against pest/disease damage in storage etc.	Shifting of produce to safer place for drying and maintaining the quality of grain/fodder and protection against pest/disease damage in storage etc.
Crop 2. Orange				
Crop 3. Mango				
Crop 4.				
Crop 5.				
<b>Outbreak of pests and diseases due to unseasonal rains</b>				
Crop 1. Rice.	Foliar spray with systemic fungicide like carbendazim @0.3%, Soil application of bioagent like <i>Trichoderma</i> spp @5g/lit along with CMC	Foliar spray of chlorpyrifos @ 2 ml/ lit, neem based insecticides, use of bird perches,	Harvest at proper stage of maturity, spraying of imidacloprid @ 4 ml/10 lit, chlorpyrifos @ 2	1. Clean & white wash the store before storing. 2. Cleared dry garon with <12 % moisture should stored. 3. Gunny bag treatment with malathion
Crop 2. Maize				
Crop 3. Cow Pea				
Crop 4.Green gram				

	@0.2% (W/V), <i>Pseudomonas</i> @5 g/lit, neem based insecticides.		ml/lit, NSKE 5% at 10 days intervals.	1ml/li of water or dichlorvos @2ml/lit of water. 4. Spraying godown wall with malathion @ 2ml/lit of water. 5. Disinfect the storage with formaldehyde @4%. 6. Use improved storage bin. 7. Rodent management by using rodent trap or poison bait.
<b>Horticulture</b>				
Crop 1. Pine apple	Spray mancozeb 75 WP @ 2g/lit, blitox @ 4g/lit	Use of NAA @200 ppm, ANAA @ 1ml/4.5 lit of water. @ 1ml/ lit,	Spray malathion @ 1 ml/lit of water. Use Ethephon @ 100 ppm for uniform ripening.	Shift the freshly harvested produce to dry and cool place. Damaged, diseased harvest should not kept storage. Value addition to the harvest. Vacuum packaging.
Crop 2. Orange				
Crop 3. Mango				
Crop 4.				
Crop 5.				

### 2.3 Floods. NA

Condition	Suggested Contingency measure			
	Seedling/nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Transient water logging/ partial Inundation</b>				

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

Extreme event type	Suggested contingency measure <sup>r</sup>			
	Seedling/nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Heat Wave</b>	NA	NA	NA	NA
Crop 1	-	-	-	-
Crop 2	-	-	-	-
Crop 3	-	-	-	-
Crop 4	-	-	-	-
Crop 5	-	-	-	-
<b>Horticulture</b>	-	-	-	-
Crop 1 (specify)	-	-	-	-
Crop 2	-	-	-	-
Crop 3	-	-	-	-
<b>Cold Wave</b>	NA	NA	NA	NA
Crop 1	-	-	-	-
Crop 2	-	-	-	-
Crop 3	-	-	-	-
Crop 4	-	-	-	-
Crop 5	-	-	-	-
<b>Horticulture</b>	-	-	-	-
Crop 1 (specify)	-	-	-	-
Crop 2	-	-	-	-
Crop 3	-	-	-	-
<b>Frost</b>	NA	NA	NA	NA
Crop 1	-	-	-	-
Crop 2	-	-	-	-
Crop 3	-	-	-	-
Crop 4	-	-	-	-
Crop 5	-	-	-	-
<b>Horticulture</b>	-	-	-	-
Crop 1 (specify)	-	-	-	-
Crop 2	-	-	-	-
Crop 3	-	-	-	-

<b>Hailstorm</b>				
Crop 1. Rice	Cover the nursery with net	Prevention of hails by hails suppression techniques, following forecasts of weather and protecting crops, Use heaters, wind machines, sprinkling water etc.	Prevention of hails by hails suppression techniques, following forecasts of weather and protecting crops, Use heaters, wind machines, sprinkling water etc.	Following forecasts of weather and protecting crops, spraying salt on harvested paddy or other crop to prevent the germination and sprouting of the harvested produce
Crop 2. Maize				
Crop 3. Mustard				
Crop 4. Lentil				
<b>Horticulture</b>				
Crop 1. Pine apple	Planting crop after the damage, select varieties which will mature before the beginning of the hazard	Prevention of hails by hails suppression techniques, following forecasts of weather and protecting crops, Use heaters, wind machines, sprinkling water etc.	Prevention of hails by hails suppression techniques, following forecasts of weather and protecting crops, Use heaters, wind machines, sprinkling water etc.	Following forecasts of weather and protecting crops, spraying salt on harvested paddy or other crop to prevent the germination and sprouting of the harvested produce, Covering plants with hot caps
Crop 2. Orange				
Crop 3. Mango				
<b>Cyclone</b>				
Crop 1. Rice	Use proper method of irrigation, use of shelter belts (like row of trees planted for wind protection), grow lodge resistance varieties,	use of shelter belts (like row of trees planted for wind protection)	use of shelter belts (like row of trees planted for wind protection)	use of shelter belts (like row of trees planted for wind protection)
Crop 2. Maize				
Crop 3. Mustard				
Crop 4. Lentil				
Crop 2. Orange	Use proper method of irrigation, use of shelter belts (like row of trees planted for wind protection), grow lodge resistance varieties,	use of shelter belts (like row of trees planted for wind protection)	use of shelter belts (like row of trees planted for wind protection)	use of shelter belts (like row of trees planted for wind protection)
Crop 3. Mango				

## 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	Quantification of requirement and availability, preservation of fodder	Efficient utilization of preserved and unconventional fodder and feeds	Evaluate the suitability of measures taken during draught and application during next event.

Drinking water	Awareness programme to conserve water resource like rain water harvesting and reduced wastage of water	Application of techniques to reduce water loss, reduce sweating.	Programme to aware people to realize the last havoc and feel the importance of water conservation.
Health and disease management	Awareness programme on draught preparedness.	Application of measures suggested by health professionals and veterinarians.	Programme to aware people to realize the last havoc and feel the importance of water conservation.
<b>Floods NA</b>			
<b>Cyclone</b>			
Feed and fodder availability	Weather forecast to the general people along with advice	-	Rehabilitation programme based on damage assessed.
Drinking water	Weather forecast to the general people along with advice	Drinking of sterilized and filtered water.	Dispose the dead animals properly away from water source.
Health and disease management	Keep first Aid medicines	Keep vigil on animals	Health camps
<b>Heat wave and cold wave</b>			
Shelter/environment management	Awareness programmes to cop up with the events	Vigilance on casualty and rectification of the faults.	Aware the people to cop up with next event.
Health and disease management	Awareness programmes to cop up with the events	Vigilance on casualty and rectification of the faults.	Aware the people to cop up with next event.

## 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	Stocking of feed after quantifying the requirement.	Efficient utilization of stocked feed.	Cultivation of draught resistant feed ingredients.	Preparation of low cost feed with locally available ingredients.
Drinking water	Awareness programme to conserve water resource like rain water harvesting etc.	Utilization of conserved water.	Let the people feel about the importance of water preservation.	Awareness programme on draught.
Health and disease management	Awareness programme on health and hygiene.	Vigilance by veterinarian.	Dispose the dead bodies properly.	Awareness programme on health and hygiene.
<b>Floods</b>				
Shortage of feed ingredients	To grow flood resistant variety of feed ingredients.	Efficient utilization of stocked feed.	Evaluate the suitability of	Preparation of low cost feed with locally available ingredients.

			measures taken during flood and application during next event	
Drinking water	Awareness programme on filtration techniques of water.	Proper utilization of sterilization and filtration of water.	Health camps.	Vaccination and health camps.
Health and disease management	Flood preparedness, awareness camps.	Health camps and proper disposal of dead bird.	Health camps and awareness programme to cop up with the last event.	Vaccination and health camps.
<b>Cyclone</b>				
Shortage of feed ingredients	Weather forecast along with advice.	-	Dispose the dead bird properly.	Health camps
Drinking water	Awareness programme on filtration of water.	Provide sterilized and filtered water.	Dispose the dead bird away from water source.	-
Health and disease management	Keep first Aid medicines ready.	Keep the bird inside secured shelter.	Health camps	Health camps.
<b>Heat wave and cold wave</b>				
Shelter/environment management	Awareness programme to cop up these events.	Vigil on casualty and correction of faults.	Aware the people about preparedness to meet event.	-
Health and disease management	Awareness programme to cop up these events.	Vigil on casualty and correction of faults.	Aware the people about preparedness to meet event.	Awareness programme on health and hygiene.

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

### 2.5.3. Fisheries/Aquaculture

	Suggested contingency measures		
	Before the event	During the event	After the event
<b>1.Drought</b>			
A. Capture			
Marine	NA	NA	NA
Inland			
(i) Shallow water depth due to insufficient rains/inflow	Reduce stocking density	De-silting, renovation etc.	Application of full package of practices
ii. Changes in water quality	Liming	Ploughing, proper dose of lime application	Application of full package of practices

iii. Any other	-	-	-
<b>B. Aquaculture</b>			
i. Shallow water in ponds due to insufficient rains/inflow	Reduce stocking density	De-silting, renovation etc.	Application of full package of practices
ii. Impact of salt load build up in ponds/change in water quality	Liming	Ploughing, proper dose of lime application	Application of full package of practices
iii. Any other	-	-	-
<b>2. Floods</b>			
<b>A. Capture</b>			
Marine	NA	NA	NA
Inland			
i. Average compensation paid due to loss of human life	Awareness programme	Rescue and relief	Health camp
ii. No.of boats/nets/damaged	Repairing	Proper handling of boats and nets etc.	Repairing and knitting
iii. No.of houses damaged	Awareness programme	Rescue	Rehabitation
iv. Loss of stock	Reduce stocking density	Harvesting fish and proper guarding by mess nets	Cleaning of aquatic weeds, application of lime, KMnO <sub>4</sub> and catching weed and predatory fishes
v. Changes in water quality	Proper maintenance of pond embankments	Proper guard by mess nets	Application of bleaching powder
vi. Health and diseases	Reduce stocking density	Proper guard by mess nets	Netting and sorting programme
<b>B. Aquaculture</b>			
(i) Inundation with flood water	Proper maintenance of pond embankments	Checking and repairing	Application of lime and KMnO <sub>4</sub>
ii. Water continuation and changes in water quality	Proper maintenance of pond embankments	Checking and repairing	Application of lime and KMnO <sub>4</sub>
iii. Health and diseases	Reduce stocking density	Proper guard by mess nets	Netting and sorting programme
iv. Loss of stock and inputs (feed, chemicals etc.)	Reduce stock and less application of inputs	Withdraw feed and chemicals	Assessment and fixing of stocking density and proper dose of inputs
v.. Infrastructure damage(pumps, aerators, huts etc.)	Keep these in secured place	Keep these in secured place	Checking and reinstallation
vi. Any other	-	-	-
<b>3. Cyclone/ Tsunami</b>			
<b>A. Capture</b>			
Marine	NA	NA	NA
i. Average compensation paid due to loss of fishermen lives			

ii. Avg. no. of boats/nets/damaged			
Inland			
B. Aquaculture			
i. Overflow/flooding of ponds	Reduce stocking density	Arrange outflow	Assessment of stocking density
ii. Changes in water quality(fresh water/brackish water ratio)	Maintain pond embankments	Checking and repairing	Application of lime and KMnO <sub>4</sub>
iii. Health and diseases	Reduce stocking density	Proper guard by mess nets	Application of bleaching powder
iv. Loss of stock and inputs(feed, chemicals etc.)	Reduce stock and less application of inputs	Withdraw feed and chemicals	Assessment and fixing of stocking density and proper dose of inputs
v. Infrastructure damage(pumps,aerators, shelters/huts etc.)	Keep these in secured place	Keep these in secured place	Checking and reinstallation
vi. Any other	-	-	-
4. Heat wave and cold wave			
A. Capture			
Marine	NA	NA	NA
Inland			
B. Aquaculture			
i. Changes in pond environment(water quality)	Influx of water from nearby channels during heat wave and reduce stocking density in cold	Harvesting of fish during both heat and cold wave	Harvesting of fish during both heat and cold wave and water quality maintenance
ii. Health and Diseases management	-	-	-
iii. Any other	-	-	-