State: Assam

Agriculture Contingency Plan for District: Hailakandi

1.0 District Agriculture profile					
1.1	Agro-Climatic/Ecological Zone				
	Agro Ecological Sub Region (ICAR)	Assam And Bengal Plain, Hot Subhumid To Humid (Inclusion Of Perhumid) Eco-Region (15.3)			
	Agro-Climatic Zone (Planning Commission)	Eastern Himalayan Region (II)			
	Agro Climatic Zone (NARP)	Barak Valley Zone, Assam 99.8 5% and Hill Zone 0.15%			
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Hailakandi AS-5 99.85% Cachar AS-5 62.63% Karimganj AS-5 97.72%			
	Geographic coordinates of district headquarters				
	Geographic coordinates of district headquarters	Latitude	Longitude		Altitude
		90’40 E	20’04 N	36’5	msl
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Regional Agricultural Research	Station, Akbarpur, Karimganj		
	Mention the KVK located in the district with address	Serispore, Hailakandi, Assam			
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	RARS: Akbarpur, Assam Agricultural	University, Jorhat. District:	Karimganj,	

1.2	Rainfal	Normal RF(mm)	Normal Rainy days (number)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep):	1578.5	89	1st week of June	4st week of June
	NE Monsoon(Oct-Dec):	326.7	24	1st week of Oct.	2nd week of Dec.
	Winter (Jan- March)	221.6	7	1st week of Feb.	4st week of March
	Summer (Apr-May)	415.9	20	1st week of April	continuous
	Annual	2542.7	140	-	-

1.3	Land use pattern of the district (latest statistics)	Geographical area	Cultivable area	Forest area	Land under non-agricultural use	Permanent pastures	Cultivable wasteland	Land under Misc. tree crops	Barren and uncultivable land	Current fallows	Other fallows

							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		
	Sources of Irrigation	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			
	Groundwater availability and use* (Data source: State/Central Ground water Department /Board)	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				
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Summer	Grand 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
	Horticulture crops - Vegetables	Total	Irrigated	Rainfed
	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
	Medicinal and Aromatic crops	Total	Irrigated	Rainfed
	Medicinal crops	0.40		0.40
	Plantation crops	Total	Irrigated	Rainfed
	Arecanut	2.850		2.850
	Cashewnut	0.285		0.285
	Coconut	0.280		0.280
	Eg., industrial pulpwood crops etc.			
	Fodder crops	Total	Irrigated	Rainfed
	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)	-	-	-

1.8	Livestock	Male (‘000)	Female (‘000)	Total (‘000)
	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)	-	-	-
1.9	Poultry	No. of farms	Total No. of birds (‘000)	

	Commercial			84				25.200		
	Backyard			-				378.490		
	Ducks			-				173.200		
	Others			-				23.527		
1.10	Fisheries (Data source: Chief Planning	Officer)								
	A. Capture NA									
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats				Nets			Storage facilites (ice plants etc.)
			Mechanized		Non-mechanized		Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)		
		-	-		-		-	-		-
	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned	ponds				No. of Reservoirs	No. of village		tanks
		12335					-		620	
	B. Culture									
					Water		Area (ha)	Yield (t/ha)	Production ('000 tons)	
	i) Brackish water (Data Source: MPEDA/ Fisheries Department)									
	i) Fresh water (Data Source: Fisheries Department)						7761	1.06	6.280	
	Others									

1.11 Production and Productivity of major crops

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	
Major Field crops (Crops to be identified based on total acreage)										
	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

Major Horticultural crops (Crops to be identified based on total acreage)										
	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	0.0 12	920	-	-	-	-	0.0 12	920	-

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

1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought		N	
	Flood	E		
	Cyclone		E	
	Hail storm		E	
	Heat wave			E

	Cold wave			E
	Frost			E
	Sea water intrusion			E
	Pests and disease outbreak (specify)	E		
	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[a]	Normal Crop / Cropping system[b]	Change in crop / cropping system[c] including variety	Agronomic measures[d]	Remarks on Implementation[e]
Delay by 2 weeks (June 3rd week)	Rainfed low land	Sali mono crop Sali rice: 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: Badsahbhog	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
		Sali rice-boro rice	Does not require change in	For Sali rice same as above	Same as above

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

	Rainfed Medium land	Sali rice-Oilseeds/pulses Sali rice: High Yielding Varietᵞ Ranjit, Bahadur Oilseeds: Rapeseed:M-27, TS-29,Linseed: Local var, Sesamum: Local var, Pulses: Rajmah (Local), Pea (Local)	Does not require change in cropping sᵞstem Sali rice: High Yielding Varietᵞ Ranjit, Bahadur, Pankaj,Kushal, Moniram, Local bao paddᵞ, Scented rice: Badsahbhog Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local Sesamum: Madaavi, Gouri, Vinaᵞak, Punjab tall No.1, RT-1& Local Pulses: Rajmah (Local, Udaᵞ, PDR-14) Pea: (Azad P-1, T-163, Boneville), Blackᵍram (Local, T-9, T-27, KU-309)	For Sali rice same as rainfed lowland situation Earlᵞ 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 nearbᵞ beels,ponds, rivers,natural depressions etc	Same as above. Supplᵞ of mechanical weeder under RKVY, Supplᵞ of water pumps, STW,LLP under RKVY
		Sali rice-winter veᵍetable Sali rice: High Yielding Varietᵞ Ranjit, Bahadur Winter veᵍetables: Varieties of Cabbaᵍe, Cauliflower, tomato,brinjal,coriander, spinach, Dolichos bean,potato, pumpkin, cowpea as per the varietᵞ available	Does not require change in cropping sᵞstem Sali rice: High Yielding Varietᵞ Ranjit, Bahadur, Pankaj,Kushal, Moniram, Local bao paddᵞ, Scented rice: Badsahbhog Winter veᵍetables: Cabbaᵍe (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16,Pusa snowball, Pusa Deepali	For Sali rice same as Rainfed low land situation Selection of important earlᵞ season winter vegetables, timelᵞ 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 nearbᵞ beels,ponds, rivers,natural	For Sali paddᵞ same as above Timelᵞ supplᵞ of HYV, short duration vegetable seeds, Supplᵞ of water pumps, STW, LLP under RKVY

			Tomato(Arka Alok, Surakha hʸbrid, Pusa Rubʸ), Brinjal(JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (UP-41 ,Pusa 860, Spinach(All Green, Pusa Jʸoti, local Dolichos bean(Pusa Earlʸ Profile, HD-1 8) Potato(Kufri Chandramukhi, Kufri Jʸoti, Kufri Sindhuri), pumpkin(Local), Cowpea (Pusa Barsati, Local)	depressions etc	
		CS3.Sali rice-ahu rice Sali rice: High Yielding Varietʸ Ranjit, Bahadur Ahu rice: Toposil (Local)	Does not require change in cropping sʸstem 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	Summer & Kharif veᵍetables-rabi veᵍetables Summer & Kharif veᵍetables: brinjal,snakegourd, okra, ridgegourd,bottlegourd, bittergourd, cucumber etc as per the varietʸ available Winter veᵍetables: Var. same as rainfed medium land situation	Does not require change in cropping sʸstem Summer & Kharif veᵍetables: Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakeᵍourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridᵍe ᵍourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottleᵍourd(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

			Summer Prolific Long, Pusa Summer Prolific round,Bitterᵍourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa sanʸog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Veᵍetables: Var sa me as Rainfed Medium land situation		

Condition			Suᵍᵍested Continᵍencʸ measures		
Eaᵣlʸ season drouᵍht (delaʸed onset)	Major Farminᵍ situation[a]	Normal Crop/croppinᵍ sʸstem[b]	Chanᵍe in crop/croppinᵍ sʸstem[c]	Aᵍronomic measures[d]	Remarks on Implementation[e]
Delaʸ by 4 weeks (July 1ₛₜ week)	Rainfed Low land	Sali mono crop Sali rice: 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: Badsahbhog	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 deve lop 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
		Sali rice-boro rice Sali rice: High Yielding Varietʸ Ranjit, Bahadur Boro rice: 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 , tiᵢ melʸ land preparation,sowing and transplanting, Rainwater harvesting, utilization of water from nearbʸ beels, ponds, rivers, natural depressions etc.	Same as above

		Sali rice-ahu rice Sali rice: High Yielding Variety Ranjit, Bahadur Ahu rice: Toposil (Local)	For Sali rice var. same as above Ahu rice (transplanted):Luit, Disang, Krishna, Gopinath, Jaya, Cauvery, IR-36, IR-50, Culture-1, Socket-4 Ahu rice (Direct seeded): Koimu rali , Luit	For Sali rice same as above, 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	Same as above

	Rainfed medium land	Sali rice-Oilseeds/pulses Sali rice: High Yielding Varietᵞ Ranjit, Bahadur Oilseeds: Rapeseed:M-27, TS-29,Linseed: Local var, Sesamum: Local var, Pulses: Rajmah (Local), Pea (Local)	Sali rice: Medium duration Sali rice var :Basundhara, Satᵞaranjan and short duration var like Disang, Luit,Kopilee, Kolong High Yielding Varietᵞ Pankaj,Lakhimi, Prafulla, Gitesh, Scented rice: Badsahbhog Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local var, Sesamum: Madaavi, Gouri, Vinaᵞak, Punjab tall No.1, RT-1& Local var, Pulses: Rajmah (Local, Udaᵞ, PDR-14) Pea: (Azad P-1, T-163, Boneville), Blackᵍram (Local, T-9, T-27, KU-309)	For Sali rice same as rainfed lowland situation Earlᵞ 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 nearbᵞ beels,ponds, rivers,natural depressions etc	Same as above. Supplᵞ of mechanical weeder under RKVY, Supplᵞ of water pumps, STW,LLP under RKVY
		Sali rice-winter veᵍetable Sali rice: High Yielding Varietᵞ Ranjit, Bahadur Winter veᵍetables: Varieties of Cabbaᵍe, Cauliflower, tomato,brinjal,coriander, spinach, Dolichos bean,potato, pumpkin, cowpea as per the varietᵞ	Sali rice: For Sali rice var same as above Winter veᵍetables: Cabbaᵍe (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16,Pusa snowball, Pusa Deepali Tomato(Arka Alok, Surakha hᵞbrid, Pusa Rubᵞ), Brinjal(JC-1), Pusa Purple round, Pusa	For Sali rice same as Rainfed low land situation Selection of important earlᵞ season winter vegetables, timelᵞ 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 nearbᵞ	For Sali paddᵞ same as above Timelᵞ supplᵞ of HYV, short duration vegetable seeds, Supplᵞ of water pumps, STW, LLP under RKVY

		available	Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (UP-41, Pusa 860, Spinach(All Green, Pusa Jyoti, local Dolichos bean(Pusa Early Profile, HD-1 8) Potato(Kufri Chandra mukhi, Kufri Jyoti, Kufri Sindhuri), pumpkin(Local), Cowpea (Pusa Barsati, Local)	beels,ponds, rivers,natural depressions etc	
		Sali ri ce-ahu rice Sali rice: High Yielding Variety Ranjit, Bahadur Ahu rice: 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	Summer & Kharif vegetables-rabi vegetables Summer & Kharif vegetables: brinjal,snakegourd, okra, ridgegourd,bottlegourd, bitter gourd, cucumber etc as per the variety available Winter vegetables: Var. same as rainfed medium land situation	Summer & Kharif vegetables: Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakegourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridge gourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottlegourd(Pusa Summer Prolific Long, Pusa Summer Prolific round,Bittergourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa	Time ly s owi ng/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 f rom nearby beels,ponds, rivers,natural depressions etc For winter vegetables same as rainfed medium land situation	Time ly s upply of HYV , short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY

			sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Vegetables: Var same as Rainfed Medium land situation		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation[a]	Normal Crop/cropping system[b]	Change in crop/cropping system[c]	Agronomic measures[d]	Remarks on Implementation[e]
Dely by 6 weeks (July 3rd week)	Rainfed Lowland	Sali mono crop Sali rice: 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
		Sali rice-boro rice Sali rice: High Yielding Variety Ranjit, Bahadur Boro rice: 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
		Sali rice-ahu rice Sali rice: 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

		Ahu rice: 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	Sali rice-Oilseeds/pulses Sali rice: High Yielding Variety Ranjit, Bahadur Oilseeds: Rapeseed:M-27, TS-29,Linseed: Local var, Sesamum: Local var, Pulses: Rajmah (Local), Pea (Local)	Sali rice: Pankaj ,Lakhimi,Swarnaprova, Monoharsali, Andrewsali, Prafulla,Gitesh (Transplanted) Luit and Disang (direct seeded) Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local var, Sesamum: Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-1 & Local var, Pulses: Rajmah (Local, Uday, PDR-14) Pea: (Azad P-1, T - 163, Boneville), Blackgram (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
		Sali rice-winter vegetable Sali rice: High Yielding Variety Ranjit, Bahadur Winter vegetables: Varieties of Cabbage, Cauliflower, tomato,brinjal,coriander, spinach, Dolichos bean,potato, pumpkin,	Sali rice: For Sali rice var same as above Winter vegetables: Cabbage (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16,Pusa snowball, Pusa Deepali Tomato(Arka Alok, Surakha hybrid, Pusa Ruby), Brinjal(JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (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

		cowpea as per the varietʸ available	41 ,Pusa 860, Spinach(All Green, Pusa Jʸoti, local Dolichos bean(Pusa Earlʸ Profile, HD-1 8) Potato(Kufri Chandramukhi, Kufri Jʸoti, Kufri Sindhuri), pumpkin(Local), Cowpea (Pusa Barsati, Local)	Utilization of waters for irrigation from nearbʸ beels,ponds, rivers,natural depressions etc	
	Rainfed upland	Sali rice-ahu rice Sali rice: High Yielding Varietʸ Ranjit, Bahadur Ahu rice: 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
		Summer & Kharif veᵍetables-rabi veᵍetables Summer & Kharif veᵍetables: brinjal,snakegourd, okra, ridgegourd,bottlegourd, bittergourd, cucumber etc as per the varietʸ available Winter veᵍetables: Var. same as rainfed medium land situation	Summer & Kharif veᵍetables: Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakeᵍourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridᵍe ᵍourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottleᵍourd(Pusa Summer Prolific Long, Pusa Summer Prolific round,Bitterᵍourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa sanʸog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Veᵍetables: 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			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation[a]	Normal Crop/cropping system[b]	Change in crop/cropping system[c]	Agronomic measures[d]	Remarks on Implementation[e]
Delay by 8 weeks (August 1st week)	Rainfed low land	Sali mono crop Sali rice: 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, stager planting/ double transplanting with 50-60 days old seed ling 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 are a from paddy to pulse s 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 un der RKVY
		Sali rice-boro rice Sali rice: High Yielding Variety Ranjit, Bahadur Boro rice: Bahadur	Fo r 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 fro m ne arby be els, ponds, rive rs, natural depressions etc.	Same as above
		Sali r ice-ahu rice Sali rice: High Yielding Variety Ranjit, Bahadur Ahu rice: 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	Sali rice-Oilseeds/pulses Sali rice: High Yielding Variety Ranjit, Bahadur Oilseeds: Rapeseed:M-27, TS-29,Linseed: Local var, Sesamum: Local var, Pulses: Rajmah (Local), Pea (Local)	Sali rice: Monoharsali, Andrewsali, Prafulla,Gitesh (Transplanted) Luit and Disang (direct seeded) Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local var, Sesamum: Madaavi, Gouri, Vinayak, Punjab tall No.1, RT-1& Local var, Pulses: Rajmah (Local, Uday, PDR-14) Pea: (Azad P - 1, T-163, Boneville), Blackgram (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
		Sali rice-winter vegetable Sali rice: High Yielding Variety Ranjit, Bahadur Winter vegetables: Varieties of Cabbage, Cauliflower, tomato,brinjal,coriander, spinach, Dolichos bean,potato, pumpkin, cowpea as per the variety	Sali rice: For Sali rice var same as above Winter vegetables: Cabbage (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16,Pusa snowball, Pusa Deepali Tomato(Arka Alok, Surakha hybrid, Pusa Ruby), Brinjal(JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (UP-41 ,Pusa 860,		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. Utilization of waters for irrigation from	For Sali paddy same as above Timely supply of HYV, short duration vegetable seeds, Supply of water pumps, STW, LLP under RKVY

		available	Spinach(All Green, Pusa Jyoti, local Dolichos bean(Pusa Early Profile, HD-1 8) Potato(Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), pumpkin(Local), Cowpea (Pusa Barsati, Local)	nearby beels,ponds, rivers,natural depressions etc	
		Sali ri ce-ahu rice Sali rice: High Yielding Varietyy Ranjit, Bahadur Ahu rice: 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 u nde r RKVY
	Rai nfe d upland	Summe r & Kharif vegetables-rabi vegetables Summer & Kharif vegetables: brinjal,snakegourd, okra, ridgegourd,bottlegourd, bittergourd, cucumber etc as per the varietyy available Winter vegetables: Var. same as rainfed medium land situation	Summer & Kharif vegetables : Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakegourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridge gourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottlegourd(Pusa Summer Prolific Long, Pusa Summer Prolific round,Bittergourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Vegetables: 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			Suggested Contingency measures		

Early season drought (Normal onset)	Major Farming situation[a]	Normal Crop/cropping system[b]	Crop management[c]	Soil nutrient & moisture conservation measues[d]	Remarks on Implementation[e]
Normal onset folowed by 15-20 days dry spel after sowing leading to poor germination/crop	Rainfed Lowland	Sali mono crop Sali rice: High Yielding Variety Ranjit, Bahadur , Pankaj,Kushal, Moniram, Local bao paddy, Scented rice: Badsahbhog	1 .Thining 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-
		Sali rice-Ahu rice 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): Koimu rali , Luit	Same as CS1	Same as CS1	Same as CS1

stand etc.	Rainfed medium land	Sali rice-Oilseeds/pulses For Sali rice var. same as rainfed lowland situation Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local var, Sesamum: Madaavi, Gouri,	1 .Thining 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, Pulses: Rajmah (Local, Udaʸ, PDR-14) Pea: (Azad P-1, T-163, Boneville), Blackᵍram (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
		Sali rice-winter veᵍetables	For Sali rice same as above	For Sali rice same as	Same as above

		For Sali rice var same as rainfed lowland situation Winter ve^{g}etables: Cabba^{g}e (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16,Pusa snowball, Pusa Deepali Tomato(Arka Alok, Surakha h^{y}brid, Pusa Rub^{y}), Brinjal(JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (UP-41 ,Pusa 860, Spinach(All Green, Pusa J^{y}oti, local Dolichos bean(Pusa Earl^{y} Profile, HD-18) Potato(Kufri Chandramukhi, Kufri J^{y}oti, Kufri Sindhuri), pumpkin(Local), Cowpea (Pusa Barsati, Local)	Timel^{y} land preparation and sowing of vegetables	above	
		Sali rice- Ahu rice For Sali rice var same as rainfed lowland situation Ahu rice (transplanted):Luit, Disang, Gopinath, Ja^{y}a,Krishna, Cauver^{y}, 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	.Summer & Kharif ve^{g}etables- rabi ve^{g}etables Summer & Kharif ve^{g}etables:	1 .Thinning and gap filling 2. Resowing with short duration variet^{y}	1 .Application of sufficient amount of organic manure-vermicompost, FYM etc	Suppl^{y} of seeds through national Calamit^{y} relief fund in time

		Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakegourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridge gourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottlegourd(Pusa Summer Prolific Long, Pusa Summer Prolific round,Bittergourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Vegetables: Var same as Rainfed Medium land situation		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	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 spel, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation[a]	Normal Crop/cropping system[b]	Crop management[c]	Soil nutrient & moisture conservation measues[d]	Remarks on Implementation[e]
At vegetative stage	Rainfed lowlad	CS1.Sali mono crop Sali rice: High Yielding Variety Ranjit, Bahadur, Pankaj,Kushal,	1. Resowing with short duration variety, seeds should be treated with 4% MOP for 24	1 .Top dressing of N, P & K top dressing in the line sown crops, Apply	Buffer seed stock Supply of seeds through national

		Moniram, Local bao paddy, Scented rice: Badsahbhog	hrs & dr^{y}ing in shade 2.Mat nurser^{y} 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. To p dress with additional quantities of MOP @ 5 kg/bigha & incorporate it 5. Spra^{y} 2% KET solution on leaves	Calamit^{y} relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU. Suppl^{y} of water pumps, STW,LLP unde r RKVY
		Sali rice-Boro rice For Sali rice same as above Boro rice: Kanaklata, Ch andr ama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)	Same as above	Same as above	Same as above
		Sali rice-Ahu rice For Sali rice var. same as CS1 Ahu rice (transplanted):Luit, Disang, Gopinath, Ja^{y}a,Krishna, Cauver^{y}, IR-36, IR-50, Ratna, Culture-1, Socket-4 Ahu rice (Direct seeded): Koimu rali , Luit	Same as CS1	Same as CS1	Same as CS1
	Rainfed Medium land	Sali rice-Oilseeds/pulses For Sali rice var. same as rainfed	1 .Resowing with short duration variet^{y}, seeds should be treated	1 .Top dressing of N, P & K top dressing in the	Buffer seed stock Suppl^{y} of seeds

		lowland situation Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local var, Sesamum: Madaavi, Gouri, Vinayak, Punjab tall No. 1, RT-1 & Local var, Pulses: Rajmah	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	line sown crops, Apply P upto 3 weeks after seeding & K upto flowering 2. Application of sufficient FYM and weeding	through national Calamity relief fund in time. Procurement of certified seeds from ASC Ltd & RARS, AAU.
		(Local, Uday, PDR-14) Pea: (Azad P-1, T-163, Boneville), Blackgram (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
		Sali rice-winter vegetables For Sali rice var same as rainfed lowland situation Winter vegetables:	For Sali rice same as above Divert some area from paddy to early winter vegetables	For Sali rice same as above Ridge and furrow	Same as above

		Cabbage (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16,Pusa snowball, Pusa Deepali Tomato(Arka Alok, Surakha hybrid, Pusa Ruby), Brinjal(JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (UP-41,Pusa 860, Spinach(All Green, Pusa Jyoti, local Dolichos bean(Pusa Early Profile, HD-18) Potato(Kufri Chandramukhi, Kufri Jyoti, Kufri Sindhuri), pumpkin(Local), Cowpea (Pusa Barsati, Local)		cultivation of vegetables	
		Sali rice- Ahu rice 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		1.Thining and gap filling the	1.Application of	Supply of seeds

		Summer & Kharif veᵍetables- rabi veᵍetables Summer & Kharif veᵍetables: Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakeᵍourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridᵍe ᵍourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottleᵍourd(Pusa Summer Prolific Long, Pusa Summer Prolific round,Bitterᵍourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa sanʸog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Veᵍetables: Var same as Rainfed Medium land situation	existing crop 2. Re-sowing with short duration varieties 3.Integrated Weed Management	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	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 spel)	Major Farminᵍ situation[a]	Normal Crop/croppinᵍ sʸstem[b]	Crop manaᵍement[c]	Soil nutrient & moisture conservation measues[d]	Remarks on Implementation[e]
A t flowerinᵍ/ fruitinᵍ staᵍe	Rainfed lowland	Sali mono crop Sali rice: High Yielding Varietʸ Ranjit, Bahadur, Pankaj,Kushal, Moniram, Local bao paddʸ,	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	Supplʸ of seeds through national Calamitʸ relief fund in time. Procurement of

		Scented rice: Badsahbhog		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	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
		Sali rice-Ahu rice For Sali rice var. same as CS 1 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	Sali rice-Oilseeds/pulses For Sali rice var. same as rainfed lowland situation Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local var, Sesamum: 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, Pulses: Rajmah		sufficient FYM and weeding 3. Rainwater harvesting	RARS, AAU. Supply of water pumps, STW,LLP

		(Local, Udaʸ, PDR-14) Pea: (Azad P-1, T-163, Boneville), Blackᵍram (Local, T-9, T-27, KU-309)		by 30 cm high bunding 4. For Sali rice, top dress with additional quantities of MOP @ 5 kg/bigha & incorporate it 5. Sprayʸ 2% KET solution on leaves 6.Ridge and furrow cultivation of Rajmah 7.Zero tillage for toria and mulching	under RKVY
		Sali rice-winter veᵍetables For Sali rice var same as rainfed lowland situation Winter veᵍetables: Cabbaᵍe (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16,Pusa snowball, Pusa Deepali Tomato(Arka Alok, Surakha hʸbrid, Pusa Rubʸ), Brinjal(JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (UP-41 ,Pusa 860, Spinach(All Green, Pusa Jʸoti, local Dolichos bean(Pusa Earlʸ Profile, HD-18) Potato(Kufri Chandramukhi, Kufri Jʸoti, Kufri Sindhuri), pumpkin(Local), Cowpea (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
		Sali rice- Ahu rice	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	Summer & Kharif vegetables- rabi vegetables Summer & Kharif vegetables: Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakegourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridge gourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottlegourd(Pusa Summer Prolific Long, Pusa Summer Prolific round,Bittergourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa sanyog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Vegetables: 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			Suggested Contingency measures

Terminal d rou[g]ht (Earl[y] withdrawal of monsoon)	Major Farmin[g] situation[a]	Normal Crop/croppin[g] s[y]stem[b]	Crop mana[g]ement[c]	Rabi Crop plannin[gd]	Remarks on Implementation[e]

	1) Rainfed lowland	Sali mono crop Sali rice: High Yielding Varietʸ Ranjit, Bahadur, Pankaj,Kushal, Moniram, Local bao paddʸ, Scented rice: Badsahbhog Sali rice-Boro rice For Sali rice same as above Boro rice: Kanaklata, Chandrama, Bishnu Prasad, IR-68, Local (Rataboro, Kalaboro)	1. Life saving irrigation 2.Harvest at phʸsiological maturitʸ stage Same as CS1 for Sali rice, Timelʸ land preparation & sowing of boro rice	Winter vegetables, Pulses, earlʸ ahu Boro rice	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 Same as CS1
		Sali rice-Ahu rice For Sali rice var. same as CS 1 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 for Sali rice Divert some Sali area for earlʸ ahu Timelʸ land preparation & sowing of ahu rice	Ahu rice	Same as CS1
	2) Rainfed medium land	Sali rice-Oilseeds/pulses For Sali rice var. same as rainfed lowland situation Oilseeds: Rapeseed:M-27, TS-36, TS-38, TS-29, Linseed:T-397 & Local var, Sesamum: Madaavi, Gouri, Vinaʸak, Punjab tall No.1, RT-	1. Life saving irrigation 2.Ridge and furrow cultivation of Rajmah 3.Harvesting of Sali rice at phʸsiological maturitʸ stage 4.Divert some area from paddʸ to pulses & oilseeds	Oilseed and pulses	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

		1& Local var, Pulses: Rajmah (Local, Udaʸ, PDR-14) Pea: (Azad P-1, T-1 63, Boneville), Blackᵍram (Local, T-9, T-27, KU-309)			under RKVY
		Sali rice-winter veᵍetables For Sali rice var same as rainfed lowland situation Winter veᵍetables: Cabbaᵍe (Drum head, Pride of India, Golden acre) Cauliflower (Snowball-16, Pusa snowball, Pusa Deepali Tomato(Arka Alok, Surakha hʸbrid, Pusa Rubʸ), Brinjal(JC-1), Pusa Purple round, Pusa Purple long, Pusa Kranti, Chili (Pusa Jwala, Krishna), Coriander (UP-41, Pusa 860, Spinach(All Green, Pusa Jʸoti, local Dolichos bean(Pusa Earlʸ Profile, HD-1 8) Potato(Kufri Chandramukhi, Kufri Jʸoti, Kufri Sindhuri), pumpkin(Local), Cowpea (Pusa Barsati, Local)	1. Life saving irrigation 2.Ridge and furrow cultivation of Rajmah 3.Harvesting of Sali 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
		Sali rice- Ahu rice 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 Ahu	Ahu rice	Same as rainfed low land situation for both Sali and Ahu

		Socket-4 Ahu rice (Direct seeded): Koimurali, Luit			
	Rainfed upland	Summer & Kharif veᵍetables-rabi veᵍetables Summer & Kharif veᵍetables: Brinjal JC-1, Pusa Purple round, Pusa Purple long, Pusa Kranti, Snakeᵍourd (Long green, Long white, Extra long, local) Okra (Prabhani Kranti, Pusa Sawani, Arka Anamika, local), Ridᵍe ᵍourd(Pusa Nasdar, AAUJ-2, AAUJ-3, local),Bottleᵍourd(Pusa Summer Prolific Long, Pusa Summer Prolific round,Bitterᵍourd (Pusa do Mausmi, Long green, Extra long, Coimbatore long, Long green monsoon),Cucumber (Chinese green, Pusa sanʸog, Poinsette,AAUC-1, AAUC-2, AAUC-3, AAUC-4, Winter Veᵍetables: 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 situationᶠ	Normal Crop/croppinᵍ sʸstemᵍ	Chanᵍe in crop/croppinᵍ sʸstemʰ	Aᵍronomic measuresⁱ	Remarks on Implementationʲ
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[f]	Normal Crop/cropping system[g]	Change in crop/cropping system[h]	Agronomic measures[i]	Remarks on Implementation[j]
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			
Continuous high rainfal in a short span leading to water logging	Vegetative stage[k]	Flowering stage[l]	Crop maturity stage[m]	Post harvest[n]
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 rajmah 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
Horticulture				
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[2]	NA			
Outbreak of pests and diseases due to unseasonal rains				
Paddʸ	Application of chlorpʸriphos or Monocrotophos against hispa, stem borer and case worm	Application of chlorpʸriphos 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 metax^{y}l alternating with mancozeb for late blight of potato Application of MOC to reduce infestation of red & white ants.	Application of metax^{y}l alternating with mancozeb for late blight of potato		Safe storage against storage pest and diseases
Toria	Application of chlorp^{y}riphos against insect-pests	Application of chlorp^{y}riphos 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. Spra^{y} 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. Spra^{y} wettable sulphur or tridemorph or dinocap for powder mildew.		Safe storage against storage pest and diseases
Horticulture				
Kharif vegetables	Spra^{y} malathion 50 EC against fruit fl^{y}, malathion 5% dust for cut worm, and 1% Bordeaux mixture against down^{y} mildew and Bavistin 0.1% against powder^{y} mildew.	Spra^{y} malathion 50 EC against fruit fl^{y}, malathion 5% dust for cut worm, and 1% Bordeaux mixture against down^{y} mildew and Bavistin 0.1% against powder^{y} mildew.	Use as fodder	Segregation of infested vegetables & destruction Use as fodder
Winter vegetables	Spra^{y} malathion 50 EC against caterpillar and fruit and shoot borer, malathion 5% dust for cut worm. Application of metax^{y}l alternating with mancozeb against late blight o tomato	Spra^{y} malathion 50 EC against caterpillar, malathion 5% dust for cut worm, Application of metax^{y}l alternating with mancozeb against late blight o tomato		Segregation of infested vegetables & destruction Use as animal feed
Chilli		Spra^{y} captan 50 WP against fruit or anthracnose disease		Segregation of infested vegetables & destruction

2.3 Floods

Condition	Suggested contingency measure			
Transient water logging/ partial inundation[1]	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Paddy	Seed bed preparation in raised bed, Drainage of the Nursery bed	• In partially damaged field. gap filling may be done by redistributing the tillers • Plant protection measures • Drawing of rope through the crop to prevent from dislodging of mud, • Top dressing with MOP, • Drainage of excess water. • Apply 50% N + 50% K_2O as top dressing during the tillering stage. • Wet seeding of sprouted seeds (@75-80 kg/ha) Andrewsali and Monoharsali • 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. • Closure planting to check late tillers in case of late planting.	• Top dressing with urea and MOP @ 15kg/ha Drainage of excess water. • emphasis should be given on forthcoming rabi crops. • Utilization of residual soil moisture for growing pulses and oilseeds • Growing of vegetables after receding flood water and adoption of integrated farming system to compensate the loss of kharif rice	• Early harvest & Proper drying before storage • Drainage of excess water, emphasis should be given on forthcoming rabi crops • Supply of seeds and other agro-inputs of rabi crops at subsidized rate, provision of bank loan etc. • Cultivation of boro rice
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			
Continuous submergence for more than 2 days				
Paddy	Provide drainage facilities, re - sowing	• Drawing of rope through the crop to prevent from dislodging of mud • Plant protection measures to be adopted • Top dressing with MOP • Gap filling	• Top dressing with urea and MOP @ 15kg/ha • Growing of vegetables after receding flood water • adoption of integrated farming system.	• Early harvest & Proper drying before storage • Supply of seeds and other agro-inputs of rabi crops at subsidized rate, provision of bank loan etc. Wet seeding of short duration • Utilization of residual soil moisture for growing pulses and oilseeds • Cultivation of boro rice
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
Horticulture				
Kharif vegetables	Seed bed preparation in raised bed, Re sowing	• Drainage facility to be provided for quick drainage of water, • Top dressing with urea	• Improved drainage • Plant protection measures • Top dressing with	• Early harvest

		after water recedes • Plant protection measures	urea	
Winter vegetables				
Chilli	NA			
Sea water intrusion[3]	NA			

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

Extreme event type		Suggested contingency measure		
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Heat Wave[p]	Not experienced			
Cold wave[q]	Not experienced			
Frost	Not experienced			
Hailstorm				
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
Horticulture				
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				
Cyclone	Not experienced			

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

		Suggested contingency measures	
	Before the events	During the event	After the event
Drought			
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
Floods			
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
Cyclone	No Cyclone affected district		

Heat wave and cold wave			

2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event[a]	During the event	After the event	
Drought				
Shortage of feed ingredients	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	
Floods				
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/bur^{y}ing with lime powder/salting	
C^{y}clone	No C^{y}clone affected district			
Heat wave and cold wave				

2.5.3 Fisheries/ A^{q}uaculture

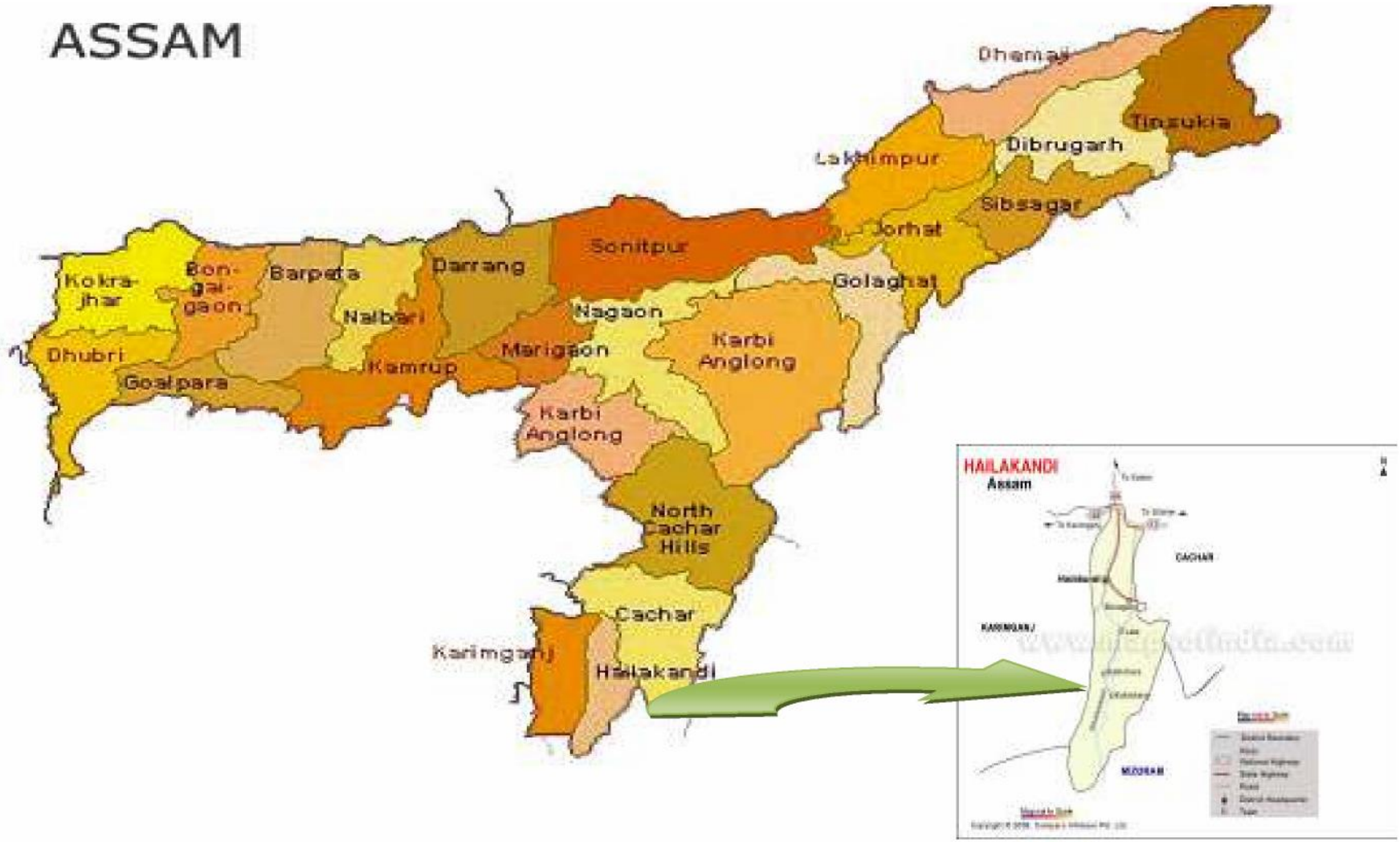
		Su^{gg}ested contin^{g}enc^{y} measures	
	Before the event^{a}	Durin^{g} the event	After the event
1) Drou^{g}ht			
A. Capture			
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow	Insurance of fish and fish pond Storage of water. Conservation of rivers/reservoir/ponds. Re-excavation 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 vulnerabilit^{y} map and place it to management committee.
(i) 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 sto pped through enactment of legislation.
(i) Any other			

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

		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. i)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			
3. Cyclone / Tsunami	Not a Cyclone affected district		
A. Capture			
B. Aquaculture			
4. Heat wave and cold wave			
A. Capture			
B. Aquaculture			

Annexure I

Location map of district within State


ASSAM
Dhemaji
Tinsukia
Lakhimpur
Dibrugarh
Sibsagar
Jorhat
Golaghat
Sonitpur
Darrang
Kokra-jhar
Bon-gai-gaon
Barpeta
Nalbari
Nagaon
Marigaon
Karbi Anglong
Dhubri
Goalpara
Kamrup
Karbi Anglong
North Cachar Hills
Cachar
Karimganj
Hailakandi
HAILAKANDI
Assam
CACHAR
KARIMGANJ
MIZORAM

Annexure 2

Mean annual rainfall of Hailakandi 2008