State: MANIPUR
Agriculture Contingency Plan for District: CHANDEL

1.0 District Agriculture profile				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	North-Eastern Hills (Purvachal), Warm Perhumid Eco-sub region (17.2)		
	Agro-Climatic Zone (Planning Commission)	Eastern Himalayan Region (II)		
	Agro Climatic Zone (NARP)	Sub-Tropical Zone (NEH-4)		
	List all the districts or part thereof falling under the NARP Zone	Imphal West, Imphal East, Chandel, Churachandpur, Thoubal, Bishnupur, Senapati, Ukhrul, Tamenglong		
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		23°56'N to 24°41'N	93°39' E to 94°E and 23°56'N to 24°41'E	600-1900 m above msl
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ICAR Research Complex for NEH Region, Manipur Centre-795004		
	Mention the KVK located in the district	KVK Chandel, ICAR Research Complex for NEH Region, Manipur Centre		

1.2	**Rainfall**	**Normal RF(mm)**	**Normal Rainy days (number)**	**Normal Onset (specify week and month)**	**Normal Cessation (specify week and month)**
	Premonsoon	830.2	55	1st week of April	
	SW monsoon (June-Sep):			1st week of June	4th week of September
	NE Monsoon(Oct-Dec):	200.8	15	1st week of October	Last week of December
	Winter (Jan- March)	122.4	9	-	-
	Pre-monsoon/ Summer (March – May)	-			
	Monsoon (South west)June- Sept.	-			
	Post monsoon (Oct – Dec)	-			
	Summer (Apr-May)	316.3	21	-	-
	Annual	1592.4	100		

1.3	**Land use pattern of the district (latest statistics)**	**Geographical area (‘000 ha)**	**Cultivable area (‘000 ha)**	**Cultivated area (‘000 ha)**	**Forest area (‘000 ha)**	**Land under non-agricultural use (‘000 ha)**	**Permanent Pastures (‘000 ha)**	**Cultivable wasteland (‘000 ha)**	**Land under Misc. tree crops and groves (‘000 ha)**	**Barren and uncultivable land (‘000 ha)**	**Current Fallows (‘000 ha)**	**Other fallows (‘000 ha)**	**Land put or non agricultural use**
	Area (‘000 ha)	331.3	62.4	26.7	232.8	4.5	7.0	7.3	3.4	6.7	0.3	-	NA

1. 4	**Major Soils (common names like red sandy loam deep soils (etc.,)***	**Area (‘000 ha)**	**Percent (%) of total**
	Red clayey soils	201.9	60.4
	Lateritic soils	3.0	9.1
	Alluvial soils	99.3	30.0

1.5	**Agricultural land use**	**Area (‘000 ha)**	**Cropping intensity %**
	Net sown area	13.2	106.2
	Area sown more than once	0.78	
	Gross cropped area	14.02	

1.6	**Irrigation**	**Area (‘000 ha)**		
	Net irrigated area	-		
	Gross irrigated area	-		
	Rainfed area	13.2		
	Sources of Irrigation	**Number**	**Area (‘000 ha)**	**% of total irrigated area**
	Canals**			
	Tanks **			
	Open wells**			
	Bore wells**			
	Lift irrigation schemes**			
	Micro-irrigation**			
	Other sources (please specify)**			
	Total Irrigated Area			
	Pump sets	48		
	No. of Tractors	21		
	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			

1.7 **Area under major field crops & horticulture**

1.7a	Major field crops cultivated	Area ('000 ha)							
		Kharif			*Rabi*			Summer	Grand total
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
	Paddy (Jhum)	-	7.0	7.0	-	-	-	-	7.0
	Paddy (Rainfed)	-	3.3	3.3	-	-	-	-	3.3
	Maize	-	2.4	2.4	-	-	-	-	2.4
	Mustard	-			-	2.2	2.2	-	2.2
	Groundnut	-	1.0	1.0	-	-	-	-	1.0
	Soybean	-	0.3	0.3	-	-	-	-	0.3
	Pea	-			-	0.50	0.5	-	0.5
	Rice bean	-	2.0	2.0	-	-	-	-	2.0
	Sesame	-	0.3	0.3	-	-	-	-	0.30
	Sugarcane	-	0.2	0.2	-	-	-	-	0.2

1.7b	**Horticulture crops - Fruits**	**Total**	**Irrigated**	**Rainfed ('000 ha)**
	Citrus	0.25		0.25
	Banana	8.20		8.20
	Passion fruit	4.00		4.00

1.7c	**Horticulture crops - Vegetables**	**Total area ('000 ha)**	**Irrigated area ('000 ha)**	**Rainfed area ('000 ha)**

	Cole crops	0.45			0.45
	Potato	1.63			1.63
	Chilli	3.60			3.60
	Turmeric	1.00			1.00
	Ginger	1.80			1.80
	Squash	0.20			0.20
	Hatkora	0.30			0.30
	Coriander	0.10			0.10
	Arium	0.50			0.50
1.7d	Medicinal and Aromatic crops	-	-		-
	Medicinal and Aromatic crops	-	-		-
1.7e	Plantation crops	-	-		-
	Coconut	0.57	-		0.57
	Cashew	0.20	-		0.20
Others (Specify)	Eg., industrial pulpwood crops etc.				
1.7f	**Fodder crops**	**Total area ('000 ha)**	**Irrigated area ('000 ha)**	**Rainfed area ('000 ha)**	**Re marks**
		-	-	-	Information not available
		-	-	-	
1.7g	Grazing land	-	-	-	Information not available
1.7h	Sericulture etc	0.26	-	0.26	

1.8	**Livestock (in number)**	**Male (‘000)**	**Female (‘000)**	**Total (‘000)**
	Indigenous cattle	10.7	10.9	23.0
	Improved / Crossbred cattle	0.65	0.6	1.25
	Buffaloes (local low yielding)	2.42	3.7	6.15
	Graded Buffaloes	NA	NA	-
	Goat	0.380	0.42	0.80
	Mithun	17.5	19.20	36.72
	Sheep	0.019	0.01	0.03
	Others (Dog, Pig, Yak, horse.etc.)	99.79	91.17	190.96

1.9	**Poultry**	**No. of farms**	**Total No. of birds (‘000)**
	Commercial	NA	30.000
	Backyard	NA	250.800

1.10 Fisheries (Data source: Chief Planning Officer of district)

A. Capture

i) Marine (Data Source: Fisheries Department)	**No. of fishermen**	**Boats**		**Nets**		**Storage facilities (Ice plants etc.)**
		Mechanized	**Non-mechanized**	**Mechanized (Trawl nets, Gill nets)**	**Non-mechanized (Shore Seines, Stake & trap nets)**	
	Not applicable					

ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds	No. of Reservoirs	No. of village tanks	No of ponds& tanks
	-	-	-	-

B. Culture

	Water Spread Area (ha)	**Yield (t/ha)**	**Production (‘000 tons)**
i) Brackish water (Data Source: MPEDA/ Fisheries Department)			
ii) Fresh water (Data Source: Fisheries Department)	-	-	-
Others			

1.11 Production and Productivity of major crops

1.11	Name of crop	**Kharif**		**Rabi**		**Summer**		**Total**		**Crop residue as fodder** (‘000 tons)
		Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	
	Major Field crops (Crops to be identified based on total acreage)									
	Paddy (Jhum)	6.23	0.89	-	-	-	-	6.23	0.89	-
	Paddy (Rainfed)	3.59	1.09	-	-	-	-	3.59	1.09	-
	Maize	4.57	1.84	-	-	-	-	4.57	1.84	-
	Mustard	2.17	-	2.17	0.96	-	-	2.17	0.96	-
	Groundnut	2.00	2.00	-	-	-	-	2.00	2	-
	Soybean	0.90	3.00	-	-	-	-	0.90	3	
	Pea	-	-	0.40	0.80	-	-	0.40	0.80	
	Rice beans	1.20	0.6	-	-	-	-	1.20	0.6	
	Sesame	0.11	0.38	-	-	-	-	0.11	0.38	
	Sugarcane	10.53	47.86	-	-	-	-	10.53	47.86	
	Major Horticultural crops (Crops to be identified based on total acreage)									
	Cole crops	--	-	4.50	10.00	-	-	4.50	10.00	
	Potato	-	-	13.00	7.98	-	-	13.00	7.98	

	Chilli	7.20	2.00	-	-	-	-	7.20	2.00	
	Turmeric	4.00	4.00	-	-	-	-	4.00	4.00	
	Ginger	7.00	4.00	-	-	-	-	7.00	4.00	
	Squash	1.20	6.00	-	-	-	-	1.20	6.00	
	Hathkora	1.50	5.00	-	-	-	-	1.50	5.00	
	Coriander	5.00	5.00	-	-	-	-	5.00	5.00	
	Arium	22.5	45.00	-	-	-	-	22.50	45.00	
	Citrus	1.00	4.00	-	-	-	-	1.00	4.00	
	Banana	123.00	15.00	-	-	-	-	123.00	15.00	
	Passion fruit	14.00	3.50	-	-	-	-	14.00	3.50	

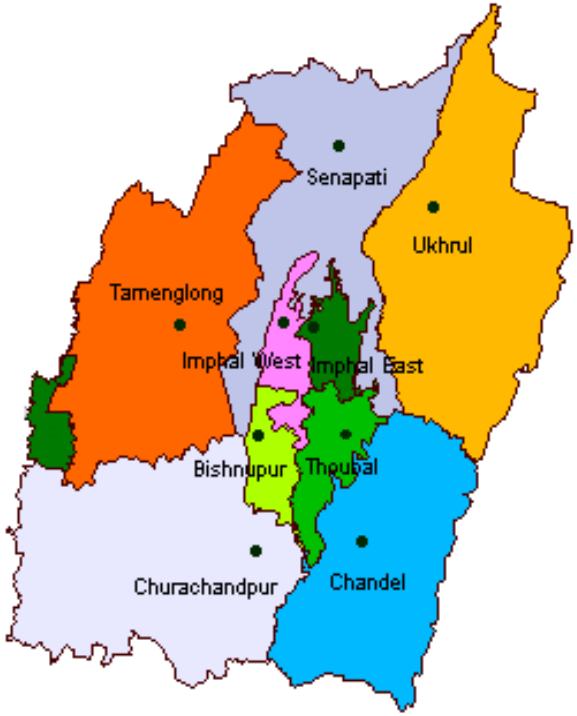
1.12	**Sowing window for 5 major field crops (start and end of normal sowing period)**	**Jhum paddy**	**TRC/WRC Paddy**	**Maize**	**Rapeseed/ mustard**	**Linseed**	**Cabbage**
	Kharif- Rainfed	1st week March - 1st week of May	1st week of June - 4th week of July	1st week March – 1st week of June	1st week of March- 1st week of May	1st week of March- 4th week of April	1st week March – 1st week of May
	Kharif-Irrigated	-	-	-	-	-	-
	Rabi- Rainfed	-	-	-	-	-	-
	Rabi-Irrigated	-	-	-	-	-	-

1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought		✓	
	Flood			✓
	Cyclone			✓
	Hail storm		✓	
	Heat wave			✓
	Cold wave			✓
	Frost			√
	Sea water intrusion			✓
	Pests and disease outbreak (specify)	Trunk borer in Citrus, Bark eating caterpillars in Parkia. Rodent in paddy. Blast in rice, Blight in potato,	✓	

6 out of 10 years = Regular

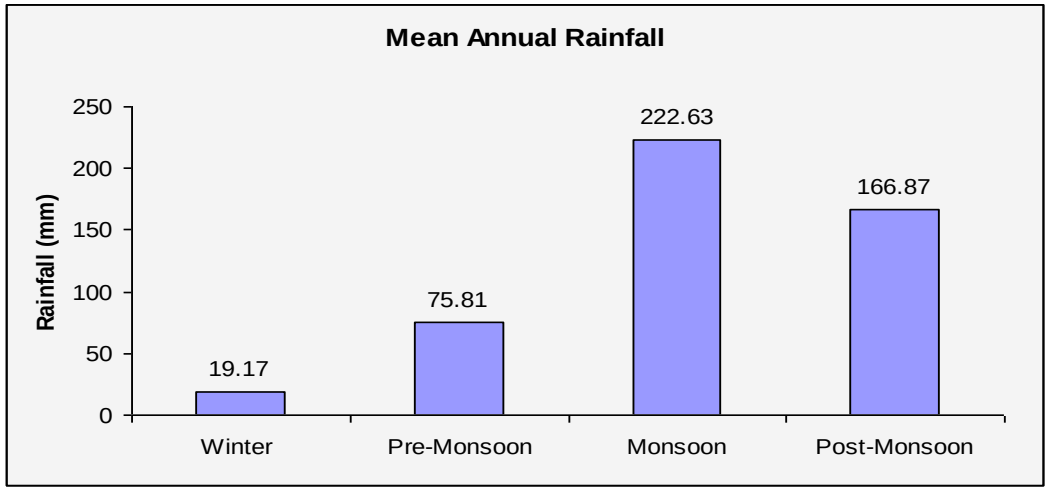
1.14	**Include Digital maps of the district for**	Location map of district within State as Annexure I	Enclosed: Yes
		Mean annual rainfall as Annexure 2	Enclosed: Yes
		Soil map as Annexure 3	Enclosed: No

Annexure I

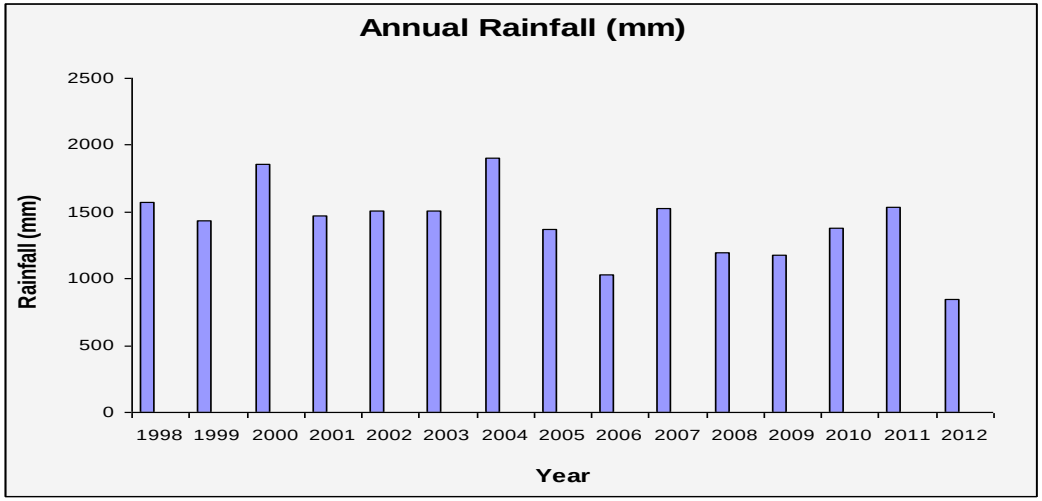

Senapati
Ukhrul
Tamenglong
Imphal West
Imphal East
Bishnupur
Thoubal
Churachandpur
Chandel

Annexure II

Mean Annual Rainfall (mm)



Annual Average rainfall for 15 years



2.0 Strategies for weather related contingencies

2.1 Drought – Pre- monsoon (4th week of March to 1st week of April)

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop / Cropping system**	**Change in crop / cropping system including variety**	**Agronomic measures**	**Remarks on Implementation**
Delay by 2 weeks (2nd to 3rd week of April)	Plain to gently sloppy valley (Deep fine silt soils) (AES-IV) < 800m msl	Maize	Pre-Kharif Maize- Vijay Composite, Pusa Composite 3 and HQPM-1	Sowing in ridge/furrow & mulching	Line Deptt. schemes/ RKVY
		Cucurbits	Ash Gourd (Local) ; Pumpkins (Local) and Water Melon (Sugar baby) etc.	Mulching; Line Sowing	TM, DRDA
		Cowpea	Var. AVCP-1 & Long Yard Bean	Seed treatment Adopt furrow sowing	TM
		Okra	Var. Arka Anamika, Parbhani Kranti	Seed treatment Adopt furrow sowing	TM
		Colocasia	Var. Muktakeshi & Local cultivars	Application of FYM & Adopt furrow sowing	TM
	Gently to moderately sloping side of the hills (Deep fine soil) (AES-III) 800-1000 m msl	Jhum paddy	Var. RCM-5, Bhalum-3 and 4	Short duration vars. Weeding with mechanized tools and implements	ATMA
		Maize	Pre-Kharif Maize- Vijay Composite, Pusa Composite 3 and HQPM-1	-	RKVY
		Ginger	Var. Nadia, China	Seed treatment, Sowing on ridges/furrows Mulching	TM
		Turmeric	Var. Megha	Sowing on ridge/ furrows Mulching	TM
		Maize	Pre-Kharif Maize- Vijay Composite HQPM-1	Sowing in ridge/furrow & mulching	Line dept. schemes/ RKVY

	Moderately Steep side slope of hills (Deep fine silty soil) (AES-II) 1000-1200m msl	Cucurbits	Ash Gourd (Local) ; Pumpkins (Local) ; and Water Melon (Sugar Baby) etc.	Mulching	Line Deptt. & Technology Mission
		Cowpea	Var. AVCP-1 & Long Yard Bean	Seed treatment, sowing in furrow	TM
		Okra	Var. Arka Anamika, Prabhani Kranti	Seed treatment & application of neem cake. Sowing in furrow	TM
		Colocasia	Var. Muktakeshi & Local Cultivars	Application of FYM & sowing in furrow	TM
	Strongly sloping side slope of hills (Deep fine soil) (AES-I) Above 1200m msl	Jhum paddy	Var. RCM-5 ,Bhalum-3 and 4	Use of mechanized tools and Implements	Line Deptt. & ATMA
		Ginger	Var. Nadia, China	Seed treatment, Sowing in ridge/furrow & mulching	Line Deptt. & TM
		Turmeric	Var. Megha Turmeric	Seed treatment, Sowing in ridge/furrow; Mulching	TM
		Tree bean	Local, inter cropping with pulses	Half moon terrace; Mulching	TM/RKVY

2.1.2 Rainfed situation – South west monsoon - normal (1st week of June)

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop / Cropping system**	**Change in crop / cropping system including variety**	**Agronomic measures**	**Remarks on Implementation**
Delay by 2 weeks June 3rd week	AES-IV Plain to gently sloppy valley (Deep fine silty soil) < 800m msl	Lowland Paddy	Var. RCM-9; RCM-10 and RCM-11 & IET-16313	No change	Line Deptts, ATMA, RKVY
		Brinjal	Var. RCMB-7 & Pusa Purple Long	Mulching	NHM
		Chilli	Var. Pusa Jwala		NHM
	AES-III	Groundnut	Var. ICGS-76, FeSeG-8, FeSeG-10, NRCG-CS-148		ATMA/ RKVY

	Gently to moderately sloping side of the hills (Deep fine soil) 800-1000m msl	Soybean	Var. JS-355, MAUS-71		ATMA/ RKVY
		Blackgram	Var. T-9, KU-8-613 & KU-8-518		ATMA/ RKVY
		Banana	Var. Grand Naine	Adopt pit system of planting, Apply FYM; Mulching & Irrigate through drip system	NHM
		Sugarcane	Var. Local	Seed treatment, Line sowing in furrow, Mulching	ATMA
	AES-II Moderately Steep side slope of hills (Deep fine silty soil) 1000-1200m msl	Maize	Pre-Kharif Maize- Vijay Composite HQPM-1	Short duration vars. Sowing in ridge and furrow/ Mulching	Line dept. schemes/ RKVY
	AES-I Strongly sloping side slope of hills (Deep fine soil) Above 1200m msl	Cucurbits	Ash Gourd (Local) ; Pumpkins (Local) ; and Water Melon (Sugar Baby) etc.	Mulching; Line sowing	TM
		Cowpea	Var. AVCP-1 & Long Yard Bean	Seed treatment & Application of neem cake. Sowing in furrow	
		Okra	Var. Arka Anamika, Prabhani Kranti		
		Colocasia	Var. Muktakeshi & Local Cultivars	Application of FYM & sowing in furrow	TM
		Jhum paddy	Var. RCM-5,Bhalum-3 and 4	Use of mechanized tools and Implements	RKVY/ ATMA
		Ginger	Var. Nadia, China	Seed treatment, Sowing in ridge/furrows Mulching	TM/ ATMA
		Turmeric	Var. Megha Turmeric		TM

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop / Cropping system**	**Change in crop / cropping system including variety**	**Agronomic measures**	**Remarks on Implementation**

Delay by 4 weeks July 1st week	AES-IV Plain to gently sloppy valley (Deep fine silt soils) < 800m msl	Lowland Paddy	RCM-9; RCM-10; RCM-11	-	Line Deptt/ ATMA
		Tomato	Sel-9A (Manikhamenasinba)	Mulching	TM
		Chilli	Pusa Jwala	Interculture	TM
		Maize	Pre-Kharif Maize- Vijay Composite, Pusa Composite 3 and HQPM-1	Interculture	Line Deptt./ ATMA
	AES-III Gently to moderately sloping side of the hills (Deep fine soil) 800-1000m msl	Groundnut	Var. ICGS-76 and JL-24	Line Sowing; Mulching	ATMA/ RKVY
		Soybean	Var. JS-355, MAUS-71	Mulching	ATMA/ RKVY
		Blackgram	Var. T-9, KU-8-613 & KU-8-518	Mulching	ATMA/ RKVY
		Banana; Citrus and Passion fruit	Var. Grand Naine, Lemon and Kaveri	De-suckering, Mulching; Application of FYM	TM/IWMP
	AES-II Moderately Steep side slope of hills (Deep fine silty soil) 1000-1200m msl	Upland Paddy	Var. RCM-5,Bhalum-3 and Bhalum-4	Adopt ICM method Use mechanized tools & implements	RKVY/ ATMA
	AES-I Strongly sloping side slope of hills (Deep fine soil) Above 1200m msl	Tomato	Var. Sel-9A (Manikhamenasinba)	Mulching	TM
Delay by 6 weeks July 3rd week	AES-IV Plain to gently sloppy valley (Deep fine silty soil) < 800m msl	Lowland Paddy	RCM-9; RCM-10; RCM-11	-	Line Deptt/ ATMA
		Tomato	Sel-9A (Manikhamenasinba)	Mulching	TM
		Chilli	Pusa Jwala	Interculture	TM
		Maize	-	Prefer short duration varieties	Line Deptt./ ATMA
	AES-III Gently to moderately sloping	Groundnut	Var. ICGS-76 and JL-24	Line Sowing; Prefer short duration vars. Use of Mulching	ATMA/ RKVY

	side of the hills (Deep fine soil) 800-1000m msl	Soybean	Var. JS-355, MAUS-71	Mulching	ATMA/ RKVY
		Blackgram	Var. T-9, KU-8-613 & KU-8-518	Mulching	ATMA/ RKVY
		Banana; Citrus and Passion fruit	Var. Grand Naine, Lemon and Kaveri	De-suckering, Mulching; Application of FYM	TM/IWMP
	AES-II Moderately Steep side slope of hills (Deep fine silty soil) 1000-1200m msl	Upland Paddy	Var. RCM-5,Bhalum-3 and Bhalum-4	Adopt ICM method Use mechanized tools & implements	RKVY/ ATMA
	AES-I Strongly sloping side slope of hills (Deep fine soil) Above 1200m msl	Tomato	Var. Sel-9A (Manikhamenasinba)	Mulching	TM
Delay by 8 weeks August 1st week	AES-IV Plain to gently sloppy valley (Deep fine silty soil) < 800m msl	Lowland Paddy	Direct seeding of paddy (RCM-5) Fallow- vegetable peas	-	Line Deptt/ ATMA
	AES-III Gently to moderately sloping side of the hills (Deep fine soil) 800-1000m msl	Soybean	Var. JS-335, Local	Mulching	
			Sweet potato		
	AES-II Moderately Steep side slope of hills (Deep fine silty soil) 1000-1200m msl	Upland Paddy	Fallow- early rabi crops like mustard, toria		RKVY/ ATMA

Pre monsoon- Normal

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.	AES-IV Plain to gently sloppy valley (Deep fine silty soil) < 800m msl	Pre kharif maize,	If there is poor germination (<30%) go for resowing Gap filling	Mulching with locally available bio mass Life saving irrigation Application of FYM	
		Turmeric	Mulching	Mulching	
	AES-III Gently to moderately sloping side of the hills (Deep fine soil) 800-1000m msl	Jhum paddy	If there is poor germination (<30%) go for re-sowing Weeding		
		Maize	If there is poor germination (<30%) go for re-sowing Gap filling Weeding	Mulching with locally available bio mass. Application of FYM	
		Ginger	Mulching	Mulching with paddy straw	
		Turmeric	Mulching	Mulching with paddy straw	
	AES-II Moderately Steep side slope of hills (Deep fine silty soil) 1000-1200 m msl	Maize	i. If there is poor germination (Less than 30%) resowing ii. Gap filling iii. Weeding	In situ moisture conservation, mulching with locally available bio mass	

	AES-I Strongly sloping side slope of hills (Deep fine soil) Above 1200 m msl	Ginger	Mulching	Mulching with paddy straw	
		Turmeric	Mulching		

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**
	AES-IV Plain to gently sloppy valley (Deep fine silt soils) < 800m msl	Pre kharif maize,	i. Weeding/ intercultural operations etc.	In situ moisture conservation, Mulching Foliar application with 2% Urea & 2% Potash	
		Turmeric	i. Weeding and earthing up	Mulching with paddy straw	
	AES-III Gently to moderately sloping side of the hills (Deep fine soil) 800-1000 m msl	Jhum paddy	i. Weeding	Foliar application with 2% Urea & 2% Potash	
	AES-II Moderately Steep side slope of hills (Deep fine silty soil) 1000-1200m msl	Maize	i. Weeding/ intercultural operations etc.	Mulching Foliar application with 2% Urea & 2% Potash	
		Ginger	Weeding and earthing up	Mulching	
		Turmeric	Weeding and earthing up		
		Maize	i. If there is poor germination (Less than 30%) go for resowing ii. Gap filling iii. Weeding	Mulching	

	AES-I Strongly sloping side slope of hills (Deep fine soil) Above 1200m msl	Ginger	Weeding; Mulching	Mulching	
		Turmeric	Weeding; Mulching	Mulching	

Condition			**Suggested Contingency measures**		
Mid season drought (Long dry spell consecutive 2 weeks rainless long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At flowering / fruiting stage	AES-II Plain land-moderately deep to deep fine/ fine loamy soils) 1000-1200 m msl	kharif maize,	Interculture	In situ moisture conservation, mulching Provide one supplement irrigation if possible	
		Turmeric*	-	-	
	AES-I Strongly sloping side slope of hills (Deep fine soil) Above 1200 m msl	Jhum paddy	Weeding after 30 DAS	-	
		Maize	Weeding/ intercultural operations etc.	In situ moisture conservation, mulching Provide one supplement irrigation	
		Ginger *		-	
		Turmeric*		-	

* Not Applicable

Condition			**Suggested Contingency measures**		
Terminal drought (Early withdrawal of monsoon)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Rabi Crop planning**	**Remarks on Implementation**

	AES-IV Plain to gently sloppy valley (Deep fine silty soil) < 800m msl	Kharif maize,	Mulching Life saving irrigation if possible	If grain filling is severely affected harvest for fodder Land preparation for sowing of linseed, toria, buckwheat	
	AES-III Gently to moderately sloping side of the hills (Deep fine soil) 800-1000 m msl	Turmeric	Mulching, Life saving irrigation	Harvest at physiological maturity, rhizome treatment & store in cool dry place (in pit system)	
		Jhum paddy	-	If grain filling is severely affected harvest for fodder	
		Maize	Intercultural operations	If grain filling is severely affected harvest for fodder Land preparation for sowing of linseed, toria, buckwheat	
		Ginger *	Mulching, life saving irrigation	Harvest at physiological maturity	
	AES-II Moderately Steep side slope of hills (Deep fine silt soil) 1000-1200 m msl	Turmeric*	Mulching, life saving irrigation	Harvest at physiological maturity	
	AES-I Mid hills-moderately deep to deep fine/ fine loamy soils Above 1200 m msl	Ginger	Weeding; Mulching	i. Mulching	
		Turmeric	Weeding; Mulching	i. Mulching	

2.1.2 Drought - Irrigated situation- Not applicable

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	NA				
Limited release of water in canals due to low rainfall					
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					
Insufficient flow of water in streams					

2.2 Unusual rains (untimely, unseasonal etc) (for both rainfed and irrigated situations)- Not applicable

2.3 Floods: Not Applicable

2.4 Extreme events

Extreme event type	Suggested contingency measure[r]			
	Seedling / nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Hailstorm	-	-	-	-
Tomato	-	-	-	Harvest and value addition

Pineapple	-	-	-	Harvest and value addition
Cucurbits	-	Remove the affected plants and top dressing with urea	-	-
Heat wave	Not applicable			
Cold wave	Not applicable			
Frost	Not applicable			

* Other extreme events are not applicable in this district

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
Drought/ Lean period (Oct-March)			
Feed and fodder availability	Encourage perennial fodder on bunds and waste land on community basis Establishing fodder banks, encouraging hedge row species for fodder crops Preparation of Hay	Utilizing fodder from perennial trees and Fodder bank reserves Transporting excess fodder from adjoining districts Use of non conventional fodders. Use of feed mixtures and feed blocks Culling unproductive livestock	Use of non conventional fodders. Use of feed mixtures and feed blocks Availing Insurance
Drinking water	Roof top water harvesting , Preserving water in the tank for drinking purpose	Judicious use of water, Using preserved water in the tanks for drinking purpose, recycling of household used water.	Maintenance/cleaning of community reservoirs/ village ponds
Health and disease management	Insurance, Veterinary preparedness with medicines and vaccines, organizing vaccination camps and mineral supplementation	Conducting mass animal Health Camps and treating the affected one, mineral supplementation.	Culling sick animals and mineral supplementation
Floods	Not applicable		
Feed and fodder availability			
Drinking water			
Health and disease management			
Cyclone	Not applicable		
Feed and fodder availability			
Drinking water			
Health and disease management			
Heat wave and cold wave	Not applicable		
Shelter/environment			

management			
Health and disease management			

[s] based on forewarning wherever available

2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event	**During the event**	**After the event**	
Drought	-	-	-	-
Shortage of feed ingredients	Procurement and storage of feed ingredients, Establishing feed reserve Bank	Utilizing from feed reserve banks, nutritional supplementation to poultry	Nutritional supplementation to poultry	
Drinking water	Arrangement for drinking water, Roof top water harvesting , Preserving water in the tank for drinking purpose	Judicious use of water, providing B-complex and Vit.C in water		
Health and disease management	Insurance and Emergency Veterinary preparedness with medicines and vaccination to birds	Sanitation and Hygiene	Culling affected birds, Mass vaccination	
Floods	Not applicable			
Cyclone	Not applicable			
Heat wave and cold wave	Not applicable			

[a] based on forewarning wherever available

2.5.3 **Fisheries/ Aquaculture** –Not applicable

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
1) Drought			
A. Capture			
Marine			

Inland			
(i) Shallow water depth due to insufficient rains/inflow			
(ii) Changes in water quality			
(iii) Any other			
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow			
(ii) Impact of salt load build up in ponds / change in water quality			
(iii) Any other			
2) Floods	Not Applicable		
3. Cyclone / Tsunami	Not Applicable		
4. Heat wave and cold wave	Not Applicable		

[a] based on forewarning wherever available

Sources: SLEP, 2009 & Statistics & Economics, 2009-10