State: Nagaland

Agriculture Contingency Plan for District: Phek

1.0 District Agriculture profile				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	Tropical to temperate		
	Agro-Climatic Zone (Planning Commission)	Eastern Himalayan Region		
	Agro Climatic Zone (NARP)	Sub – Tropical Hill Zone (98.10) & Mid Tropical Hill Zone (1.90) (The climate of this region is characterized by warm summer and mild winter with seasonal dry spells extending from November to April.)		
	List all the districts falling under the NARP Zone*(*>50% area falling in the zone)	Sub- tropical hill zone: Kohima, Mokokchung, Mon, Phek, Tuensang, Wokha, Zunheboto Mid-tropical Hill zone: Dimapur, Kohima, Mokokchung, Wokha		
	Geographic coordinates of district headquarters	**Latitude**	**Longitude**	**Altitude**
		N $25^0$37'37"-N $25^0$39'47"	E $94^0$35'18" – E $94^0$38'09"	1326.5 m (MSL)
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ICAR Research Compex for NEH, Nagaland Centre, Medziphema, Dimapur, Nagaland		
	Mention the KVK located in the district with address	District Phek Krishi Vigyan Kendra Phek, NRC on Mithun, Porba, PO. Pfutsero, Dist: Phek, Nagaland 797107		

1.2	**Rainfall**	**Normal RF(mm)**	**Normal Rainy days (number)**	**Normal Onset (specify week and month)**	**Normal Cessation (specify week and month)**
	SW monsoon (3^{rd} week May - Sep):	1022.00	113	3^{rd} week May	4^{th} week September
	Post Monsoon/ NE Monsoon (Oct-Dec):	482.00	26	2^{nd} week October	4^{th} week December
	Winter (Jan- March)	23.80	18	1^{st} week January	4^{th} week March
	Summer (Apr-May)	78.20	33	2^{nd} week April	2^{nd} week May
	Annual	1606.00	190		

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 and groves	Barren and uncultivable land	Current fallows	Other fallows
	Area ('000 ha)	202.6	38.15	88.606	26.994	NA	32.742	1.14	35.10	NA	NA

* Source DAO office, Phek 2016-17

1. 4	**Major Soils (common names like red sandy loam deep soils (etc.,)***	**Area ('000 ha)**	**Percent (%) of total**
	1. Black soil	36468.00	18.00
	2. Red soil	24312.00	12.00
	3. Alluvial soil	18234.00	9.00
	4. Sandy soils	6078.00	3.00
	5. Others	117508.00	58.00

* 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	54.26	**101.27**
	Area sown more than once	0.69	
	Gross cropped area	54.95	

1.6	**Irrigation**	Area ('000 ha)		
	Net irrigated area	4.61		
	Gross irrigated area	5.30		
	Rainfed area	57.72		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals (Community/pvt channel)	614	4.61	
	Tanks			
	Open wells			
	Bore wells			
	Lift irrigation schemes			
	Micro-irrigation			
	Other sources (please specify)			

	Total Irrigated Area			
	Pump sets			
	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 2015-16)

1.7	S.No.	Major field crops cultivated	Area ('000 ha)							
			Kharif			*Rabi*				
			Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Summer	Grand total
	1	Jhum Paddy	1.38	15.19	16.57	-	-	-	-	16.57
	2	Terrace Rice Cultivation		13.39	13.39	-	-	-	-	13.39
	3	Maize	3.224	34.458	37.682	-	1.738	1.738	-	39.42
	4	Redgram	-	1.859	1.859	-	1.339	1.339	-	3.19
	5	Soybean	-	2.809	2.809	-	3.840	3.840	-	6.65
	6	Rajma Kholar	-	0.470	0.470	-	-	-	-	0.47
	7	Beans/ricebean	-	0.320	0.320	-	-	-	-	0.32
	8	Pea	-	0.700	0.700	-	-	-	-	0.70
	9	Any other crops (Millets)	-	2.602	2.602	0.687	1.352	2.039	-	4.64

	S.No.	Horticulture crops - Fruits	Area ('000 ha)		
			Total	Irrigated	Rainfed
	1.	Apple	0.071		0.071
	2.	Pear	0.032		0.032
	3.	Plum	0.085		0.085

	4.	Peach	0.027		0.027
	5.	Orange	0.505		0.505
	6.	Pomelo	0.021		0.021
	7.	Papaya	0.118		0.118
	8.	Banana	0.608		0.608
	9.	Guava	0.048		0.048
	10.	Pineapple	0.494		0.494
	11.	Passion fruits	0.728		0.728
	12.	Kiwi	0.078		0.078
	Others (specify)	-			
		Horticulture crops - Vegetables	**Total**	**Irrigated**	**Rainfed**
	1	Kharif	2.599		2.599
	2	Rabi	1.060		1.060
	3	Potato	1.370		1.370
	Others (specify)	-			
		Medicinal and Aromatic crops	**Total**	**Irrigated**	**Rainfed**
	1	Citronella and Lemangrass	0.012		0.012
	2	Taxus baccata	0.050		0.050
	Others (specify)	**Spices**	**Total**	**Irrigated**	**Rainfed**
	1	Ginger	0.383		0.383
	2	Garlic	0.052		0.052
	3	Raja Chilly	0.1		0.100
	4	Cardamom	0.566		0.566
		Plantation crops	**Total**	**Irrigated**	**Rainfed**
	1	Tea	3.010		3.010

	2	Coffee	0.220		0.220
	Others (Specify)	Eg., industrial pulpwood crops etc.	NA		NA
		Fodder crops	**Total**	**Irrigated**	**Rainfed**
	Others (Specify)	-	NA		NA
		Total fodder crop area	NA		NA
		Grazing land	NA		NA
		Sericulture etc	NA		NA
		Eri seeds (DFLS)	NA		NA

1.8	**Livestock (Census 2012)**		**Male ('000)**	**Female ('000)**		**Total ('000)**	
	Non descriptive Cattle (local low yielding)		2.721	6.059		8.780	
	Improved cattle		-	-		-	
	Crossbred cattle		1.690	4.782		6.472	
	Non descriptive Buffaloes (local low yielding)		1.454	1.939		3.393	
	Descript Buffaloes		-	-		-	
	Goat		2.442	4.087		6.529	
	Sheep		0.001	0.002		0.003	
	Milch (or) Meat animal		-	-		5.732	
	Others (Camel, Pig, Yak etc.) : Pigs		-	-		45.315	
	Commercial dairy farms (Number)						
1.9	**Poultry**		**No. of farms**	**Total No. of birds ('000)**			
	Commercial		-	-			
	Backyard		-	296.496			
	Duck		-	9.159			
1.10	**Fisheries** (Data source: Chief Planning Officer)						
	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)	
		NA	NA	NA	NA	NA	NA
	ii) Inland (Data Source: Fisheries Department)						

	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)	200.60	1.90	0.381
	Others			

1.11 Production and Productivity of major crops (2015-16)

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)										
Crop 1	Rice (Jhum)	3.450	1916.667	-	-	-	-	3.450	1916.667	
Crop 2	TRC	36.280	2709.485	-	-	-	-	36.280	2709.485	
Crop 3	Maize	17.400	1972.789	-	-	-	-	17.400	1972.789	
Crop 4	Millets	2.350	1124.40	-	-	-	-	2.350	1124.00	
Crop5	Pea			0.760	1101.45			0.760	1101.45	
Crop6	Soyabean	2.610	1273.17					2.610	1273.17	
Crop7	Black gram	-	-	-	-	-	-	-	-	-
Crop8	Greengram	-	-	-	-	-	-	-	-	-
Crop9	Arhar	-	-	-	-	-	-	-	-	-
Major Horticultural crops (Crops to be identified based on total acreage)										
Crop 1	Potato	13.870	10274.07					13.870	10274.07	
Crop 2	Rabi vegetables	1.772	3356.06					1.772	3356.06	
Crop 3	Kharif vegetables	20.378	15760.25					20.378	15760.25	
Crop 4	Arecanut									

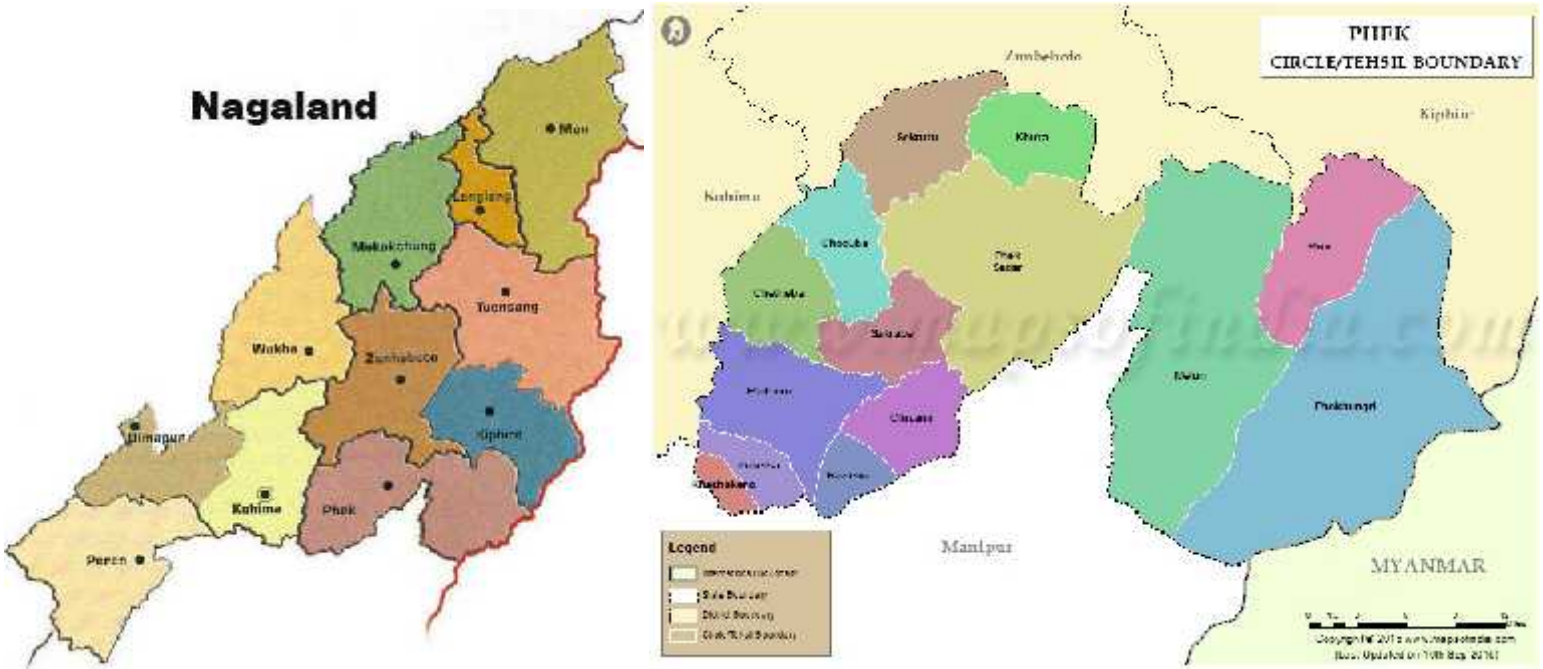
Crop 5	Coconut									
Others	Banana									

1.12	**Sowing window for 5 major field crops** (start and end of normal sowing period)	**Crop 1 :** Jhum paddy	**Crop 2:** TRC/WRC Paddy	**Crop 3:** Maize	**Crop 4:** Turmeric & Ginger	**Crop 5:** Pea
	Kharif- Rainfed	April-May.	May-July	April-Aug.	April – May & July	-
	Kharif-Irrigated	-	-	-	-	-
	Rabi- Rainfed	-	-	-	-	Oct-Nov
	Rabi-Irrigated	-	-	-	-	-

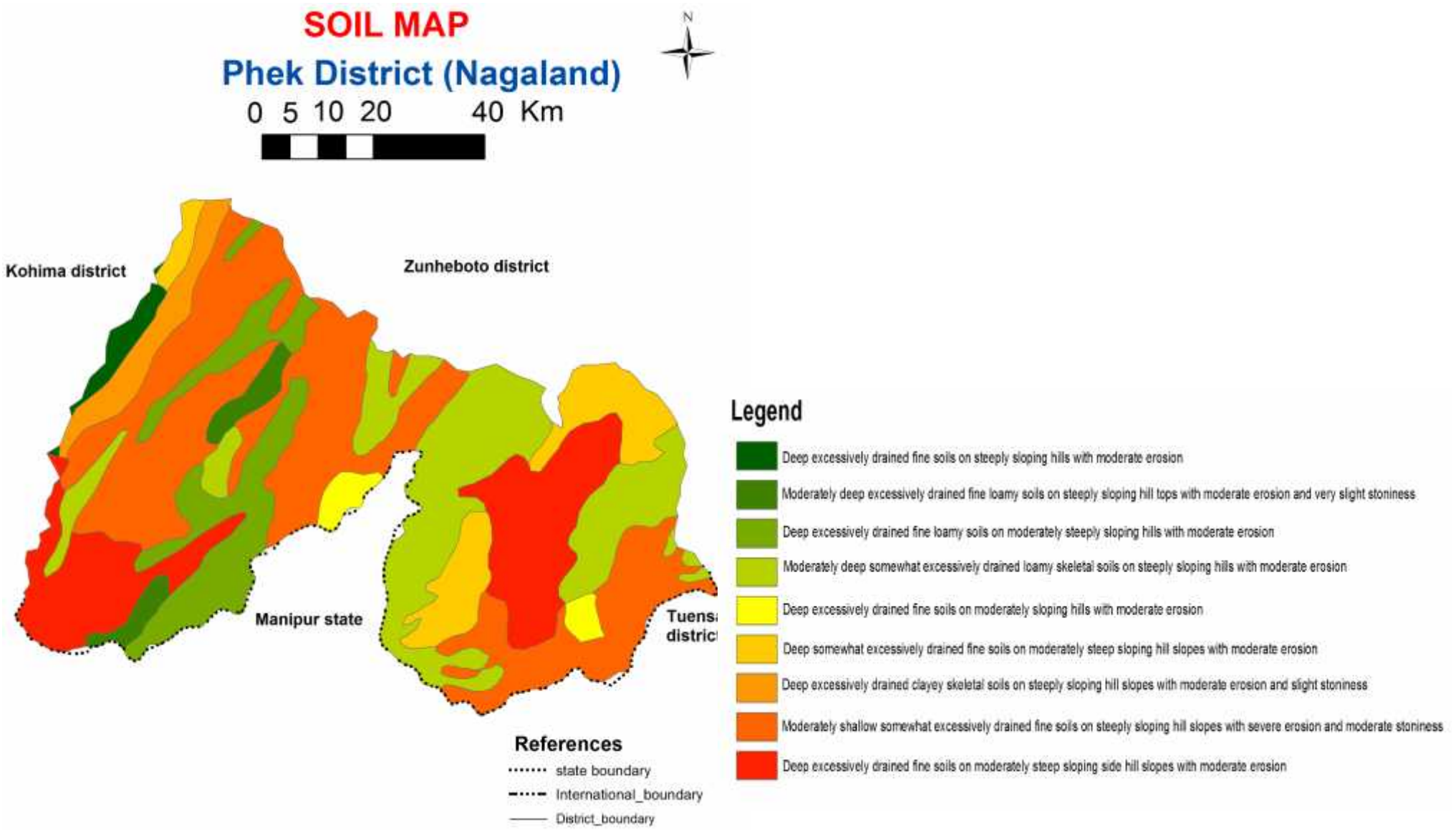
1.13	**What is the major contingency the district is prone to?** (Tick mark)		**Regular**	**Occasional**	**None**
	Drought		-	√	-
	Flood		-	-	√
	Cyclone		-	-	√
	Hail storm		-	√	-
	Heat wave		-	-	√
	Cold wave		√	-	-
	Frost		-	-	√
	Sea water intrusion		-	-	√
	Pests and disease outbreak (specify)	Rice-stem borer	√	-	-
		Rice blast disease	-	√	-
		Rhizome rot of ginger	√	-	-
		Tomato (bacterial blight)	√	-	-
	Others (Landslides)		-	√	-

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: No
		Soil map as Annexure 3	Enclosed: Yes

Annexure 1: Location map of Phek district



Annexure 3: Soil Map of Phek district



2.0 Strategies for weather related contingencies

2.1 Drought –
2.1.1 Rainfed Situation
2.1.1 .1 Pre- monsoon (2nd week of April to 2nd week of May).

Conditions			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)	Moderately sloping on side slopes of hills with deep, fine loamy soils	Pre-kharif maize (local land races)	No change	No change	Line dept. schemes/ RKVY
	Gently sloping , side slopes of hills with moderately shallow fine soils	Jhum-Maize (local land races)	No change	No change	
	Steeply sloping hills with deep, fine soils	*Jhum* paddy (local land races)	No change	No change	
		Maize (local land races)	No change	No change	
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	*Jhum* paddy (local land races)	No change	No change	
		Jhum-Maize (local land races)	No change	No change	
Delay by 4 weeks (1st week of May)	Moderately sloping on side slopes of hills with deep, fine loamy soils	Pre-kharif maize (local land races)	No change	No change	Line dept. schemes/ RKVY
	Gently sloping , side slopes of hills with moderately shallow fine soils	Jhum-Maize (local land races)	No change	No change	
	Steeply sloping hills with deep,	*Jhum* paddy (local land races)	No change	No change	

	fine soils	Maize (local land races)	No change	No change	
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	*Jhum* paddy (local land races)	No change	No change	
		Jhum-Maize (local land races)	No change	No change	
Delay by 6 weeks (3rd May)	NA				NA
Delay by 8weeks (1st June)	NA				NA

2.1.1 .2 South west monsoon - normal (3rd Week of May-Sept.)

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**
Delay by 2 weeks (June 1st week)	Moderately sloping on side slopes of hills with deep, fine loamy soils	*Kharif* maize (local land races)	No change	
		Terrace rice cultivation (local land races)	No change	
	Gently sloping , side slopes of hills with moderately shallow fine soils	*Kharif* maize (local land races)	No change	
		Terrace rice cultivation (local land races)	No change	ICM
	Steeply sloping, hills with deep fine soils	Kharif maize (local land races)	No change	
		Colocasia (local land races)	Summer vegetables	Mulching with local bio-mass (tree litter)
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	*Kharif* maize (local land races)	No change	
		Terrace rice cultivation (local land races)	No change	ICM

2.1.1 .3 South west monsoon - normal (3rd Week of May-Sept.)

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 (4th week June)	Moderately sloping on side slopes of hills with deep, fine loamy soils	*Kharif* maize (local land races)	Local land races of maize Intercrop with Legumes (Soybean) and oilseeds (sesame) and local cucumbers	Mulching with local bio mass.	-
		Terrace rice cultivation (local land races)	Medium duration variety RCM-9, MTU-1010	ICM	
	Gently sloping , side slopes of hills with moderately shallow fine soils	*Kharif* maize (local land races)	Local land races of maize Intercrop with Legumes (Soybean) and oilseeds (sesame) and local cucumbers	Mulching with local bio- mass. throughout the cropping period	
		Terrace rice cultivation (local land races)	Medium duration variety Abishak	ICM	
	Steeply sloping, hills with deep fine soils	Terrace rice cultivation (local land races)	Medium duration variety Abishak	ICM	
		Kharif maize (local land races)	Local land races of maize Intercrop with Legumes (Soybean) and oilseeds (sesame) and local cucumbers	Mulching with local bio mass.	
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	*Kharif* maize (local land races)	Local land races of maize Intercrop with Legumes (Soybean) and oilseeds (sesame) and local cucumbers	Mulching with local bio mass.	
		Terrace rice cultivation (local land races)	Medium duration variety Abishak	ICM	
Delay by 6 weeks (1st July)	NA	NA			
Delay by 8 weeks (4th week of July)	NA	NA			

2.1.1.4 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.	Moderately sloping on side slopes of hills with deep, fine loamy soils	Kharif maize	I. If there is poor germination (Less than 30%) resowing II. Gap filling III. life saving irrigation if possible **IV.** Weeding	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	-
		Ginger	I. If there is poor germination resowing of rhizomes II. intercultural operations.	In situ moisture conservation, mulching with locally available bio mass and life saving irrigation if possible	-
	Gently sloping , side slopes of hills with moderately shallow fine soils	Jhum paddy	I. If there is poor germination (Less than 30%) re-sowing II. Keep Weed free	In situ moisture conservation, mulching with locally available bio mass	-
	Steeply sloping, hills with deep fine soils	Terrace rice cultivation	No change	Transplanting of 30-35 Days old seedlings	-
		Maize	I. If there is poor germination (Less than 30%) re-sowing II. Gap filling III. Weeding	In situ moisture conservation, mulching with locally available bio mass	-
		Ginger		Mulching	
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	Jhum paddy	I. If there is poor germination (Less than 30%) re-sowing II. Weeding	-	-

2.1.1.5 Monsoon Normal

Condition			Suggested Contingency measures		
Mid season drought (Long dry spell consecutive 2 weeks rainless long dry)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
Vegetative stage	Moderately sloping on side slopes of hills with deep, fine loamy soils	Kharif maize	Weeding/ intercultural operations etc.	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	Line dept. schemes/ RKVY
		Ginger	intercultural operations,weeding.	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	
	Gently sloping , side slopes of hills with moderately shallow fine soils	Terrace rice cultivation paddy	Foliar spray with 2 % urea and MOP	-	
		Ginger	Weeding/ intercultural operations etc.	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	
	Steeply sloping, hills with deep fine soils fine soils	Jhum paddy	Weeding Foliar spray with 2 % urea and MOP after rain	-	
		Maize	Weeding/ intercultural operations etc. Foliar spray with 2 % urea and MOP	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	Jhum paddy	Weeding Foliar spray with 2 % urea and MOP	-	

		Maize	Weeding/ intercultural operations etc. Foliar spray with 2 % urea and MOP	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	

2.1.1.6 Monsoon Normal

Condition			**Suggested Contingency measures**		
Mid season drought (Long dry spell consecutive 2 weeks rainless long dry)	**Major Farming situate ion**	**Normal Crop /cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At flowering / fruiting stage	Moderately sloping on side slopes of hills with deep, fine loamy soils	Kharif, Maize,	Weeding/ intercultural operations etc. Life saving irrigation.	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	Line Dept. Scheme/RKVY
		Ginger	Life saving irrigation	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	
	Gently sloping , side slopes of hills with moderately shallow fine soils	Terrace rice cultivation paddy	Foliar spray with 2 % urea and MOP	-	
		Ginger	Weeding/ intercultural operations etc.	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	
	Steeply sloping, hills with deep fine soils fine soils	Jhum paddy	Weeding	-	
		Maize	Weeding/ intercultural operations etc.	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	Jhum paddy	Weeding	-	
		Maize	Weeding/ intercultural operations etc.	rain water harvesting as resource conservation technology, mulching with locally available bio mass, and earthing up	

2.1.1.7 Terminal drought

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	**Major Farming situation[a]**	**Normal Crop /cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
	Moderately sloping on side slopes of hills with deep, fine loamy soils	Kharif, Maize,	Mulching Life saving irrigation if possible If grain filling is severely affected harvest for fodder	Land preparation for early rabi sowing of linseed, toria/pea	-
		Ginger *	Mulching Harvest at physiological maturity	-	-
	Gently sloping , side slopes of hills with moderately shallow fine soils	Terrace rice cultivation paddy	If grain filling is severely affected harvest for fodder	Land preparation for early rabi sowing of linseed, toria/pea	-
		Ginger	Mulching Harvest at physiological maturity	-	-
	Steeply sloping, hills with deep fine soils fine soils	Jhum paddy	If grain filling is severely affected harvest for fodder	Land preparation for early rabi sowing of linseed, toria/pea	-
		Maize	Mulching and Life saving irrigation if possible Harvest at physiological maturity	-	-
	Moderately to gentle sloping hills slopes with deep loamy skeletal to fine loamy soils	Jhum paddy	If grain filling is severely affected harvest for fodder	Land preparation for early rabi sowing of linseed, toria/pea	-
		Maize	Mulching and Life saving irrigation if possible Harvest at physiological maturity	-	-

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

2.3 Floods: Not Applicable

2.4 Extreme events- Hailstorm

Extreme event type	Suggested contingency measure[r]			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Hailstorm				
Tomato	NA	NA	NA	Harvest and value addition
Pineapple	NA	NA	NA	Harvest and value addition
Cucurbits	NA	Remove the affected plants and top dress with urea	NA	NA

* Other extreme events are not applicable in this district

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	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. Chlorination of 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	Cold wave		
Shelter/environment management	Adoption of deep litter system for pig/poultry	Covering of open space with gunny bags, Warming of pen using heating bulb or any other source and Feeding of high energy feed	
Health and disease management	Deworming, hygien and cleaniness of the floor of the pen	Apply appropriate medicine	

[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	Supplementation of Vit. B-complex to be continued.	
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

	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	De-silting, repair of bunds of existing ponds, rain water harvesting, liming and adopt low stocking density, deepening of ponds by 1.5-2 meters, restrict use of Manures and fertilizers, Channelizing water to pond if possible, Maintain proper water quality	Integrated farming, air breathing fish to be practiced, avoid fertilization and manuring on supplementary basis, feeding should be minimum to avoid organic loading, short term aquaculture with medium and minor carps, Maintain proper water quality	Prepare pond for the next crop after early harvest, Maintain proper water quality
(ii) Impact of salt load build up in ponds / change in water quality	Rain water harvesting, deepening, de-silting of existing water bodies and removal of debris	Rain water harvesting, deepening, de-silting of existing water bodies and removal of debris	Control feeding to avoid waste accumulation and eutrophication
(iii) Any other			
2) Floods	Not Applicable	Not Applicable	Not Applicable
3. Cyclone / Tsunami	Not Applicable	Not Applicable	Not Applicable
4. Heat wave and cold wave	No change	No change	No change

[a] based on forewarning wherever available