State: **NAGALAND**

Agriculture Contingency Plan for District: ZUNHEBOTO

1.0 District Agriculture profile				
1.1	Agro-Climatic/Ecological Zone	Temperate to subtropical		
	Agro Ecological Sub Region (ICAR)	Warm to hot moist (humid to per humid eco sub region), Tropical to sub-tropical (D2 A9)		
	Agro-Climatic Zone (Planning Commission)	Eastern Himalayan Region		
	Agro Climatic Zone (NARP)	Upper Bramaphutra Valley zone, Sub tropical hill zone (2,3)		
	List all the districts or part thereof falling under the NARP Zone	Wokha, Mokokchung, Mon, Kohima, Tuensang, Phek		
	Geographic coordinates of district headquarters	**Latitude**	**Longitude**	**Altitude**
		26° 00' N	94° 31' E	1852 msl
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ICAR Research Complex for NEH Region, Umiam, Umroi Road, Meghalaya 793 103		
	Mention the KVK located in the district	KVK, Nagaland University, Headquarter : Lumami, Zunheboto		

1.2	**Rainfall**	**Normal RF(mm)**	**Normal Rainy days (number)**	**Normal Onset (specify week and month)**	**Normal Cessation (specify week and month)**
	SW monsoon (June-Sep):	1630	65	1st June	4th week of Sept.
	NE Monsoon(Oct-Dec):	-	2		
	Winter (Jan- March)	200	6	First and Second week of Jan	Last week of February and first week of March
	Summer (Apr-May)	450	9		
	Annual	2340	82		

1.3	**Land use pattern of the district** (latest statistics)	Geographical area (‘000 ha)	Cultivable 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)
	Area (‘000 ha)	155.3	12.11	**20.7**	8.03	--	4.53	7.58	-----	20.55	71.52

1. 4	**Major Soils (common names like red sandy loam deep soils (etc.,)***	**Area (‘000 ha)**	**Percent (%) of total**
	1 Red clayey soils		
	2 Lateritic soils		
	3 Alluvial colluvial soils (partly saline)		
	4 Alluvial-colluvial soils		
	5 Lateritic gravelly soils		
	6 Rock land and water bodies		
	7 Medium deep black soils	5.7	3.67
	8 Red gravelly loam soils		
	9 Red gravelly clay loam soils		
	Others (specify): Sandy soil	10.6	6.82

*** 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	22.35	111.72
	Area sown more than once	2.62	
	Gross cropped area	24.97	

1.6	**Irrigation**	**Area ('000 ha)**		
	Net irrigated area	2.98		
	Gross irrigated area	3.49 Source : Statistical Hand Book of Nagaland 2008		
	Rainfed area	23.29		
	Sources of Irrigation	Number	**Area ('000 ha)**	**% of total irrigated area**
	Canals			
	Tanks	71	0.5	16.77
	Open wells			
	Bore wells			
	Lift irrigation schemes			
	Micro-irrigation	109	0.5	16.77
	Other sources (please specify) Seasonal stream	71	1.5	50.33
	Rivers	2	0.48	16.10
	Total Irrigated Area		2.98	
	Pump sets	20		
	No. of Tractors	2		
	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	NIL		
	Critical	NIL		
	Semi- critical	NIL		
	Safe	6	100	
	Wastewater availability and use	NA		
	Ground water quality	Safe as ground water quality is good		
***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 2007-08)

1.7a	Major field crops cultivated	Area ('000 ha)							
		Kharif			*Rabi*			Summer	Grand total
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
1	Jhum paddy		8.9	8.9					8.9
2	TRC/WRC paddy		3.00	3.00					3.00
3	Maize		7.57	7.57		0.44	0.44		8.01
4	Small millet		2.05	2.05					2.05
Others (specify)									

1.7b	Horticulture crops - Fruits	Total	Irrigated	Rainfed ('000 ha)
1	Orange	0.24		0.24
2	Banana	0.12		0.12
3	Pineapple	0.25		0.25
Others	Passionfruit	0.05		0.05

1.7c	Horticulture crops - Vegetables	Total area ('000 ha)	Irrigated area ('000 ha)	Rainfed area ('000 ha)
1	Chilli	0.10		0.10
2	Ginger	0.23		0.23
3	Colocassia	0.20		0.20
4	Leafy vegetable	0.30		0.30
5				
Others (specify)				
1.7d	**Medicinal and Aromatic crops**	**Total area ('000 ha)**	**Irrigated area ('000 ha)**	**Rainfed area ('000 ha)**
1	Medicinal and Aromatic crops	0.05		0.05
2				
3				
4				
5				
Others (specify)				
1.7e	**Plantation crops**	**Total area ('000 ha)**	**Irrigated area ('000 ha)**	**Rainfed area ('000 ha)**
1	Coffee			
2	Cardamom	0.50		0.50

3				
4				
5				
Others (Specify)	Eg., industrial pulpwood crops etc.			
1.7f	**Fodder crops**	**Total area (‘000 ha)**	**Irrigated area (‘000 ha)**	**Rainfed area (‘000 ha)**
1				
2				
3				
4				
5				
Others (Specify)				
1.7g	**Grazing land**			
1.7h	**Sericulture etc**			
1.7i	**Others (specify)**			

1.8	**Livestock (in number)**	**Male (‘000)**	**Female (‘000)**	**Total (‘000)**
	Non descriptive Cattle (local low yielding)	13.72	22.29	36.01
	Crossbred cattle	3.21	8.02	11.23
	Non descriptive Buffaloes (local low yielding)	0.20	0.24	0.44
	Graded Buffaloes	-	-	-
	Goat	8.87	13.71	22.58
	Sheep	0.62	0.73	1.35
	Others (Camel, Pig, Yak etc.)			
	(i) Pig	47.71	40.31	88.02
	(ii) Mithun	3.34	3.64	6.98
	Commercial dairy farms (Number)			
1.9	**Poultry**	**No. of farms**	**Total No. of birds (‘000)**	
	Commercial	1	0.15	
	Backyard	-	264.73	

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)	
	ii) Inland (**Data Source: Fisheries Department**)	**No. Farmer owned ponds**		**No. of Reservoirs**		**No. of village 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)	137.0	0.99	0.136
	Others			

1.11 Production and Productivity of major crops (07-08; specify years)

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	Jhum paddy	14.28	1604					14.28	1604	
Crop 2	TRC/WRC paddy	4.99	1663					4.99	1663	
Crop 3	Maize	12.63	1618	1.01	2295			13.64	1702	
Crop 4	Small millet	1.45	707					1.45	707	

Others										
Major Horticultural crops (Crops to be identified based on total acreage)										
Crop 1	Orange	0.12	500					0.12	500	
Crop 2	Banana	0.38	3160					0.38	3160	
Crop 3	Pineapple	0.5	2000					0.5	2000	
Others	Passion fruit	0.025	500					0.025	500	

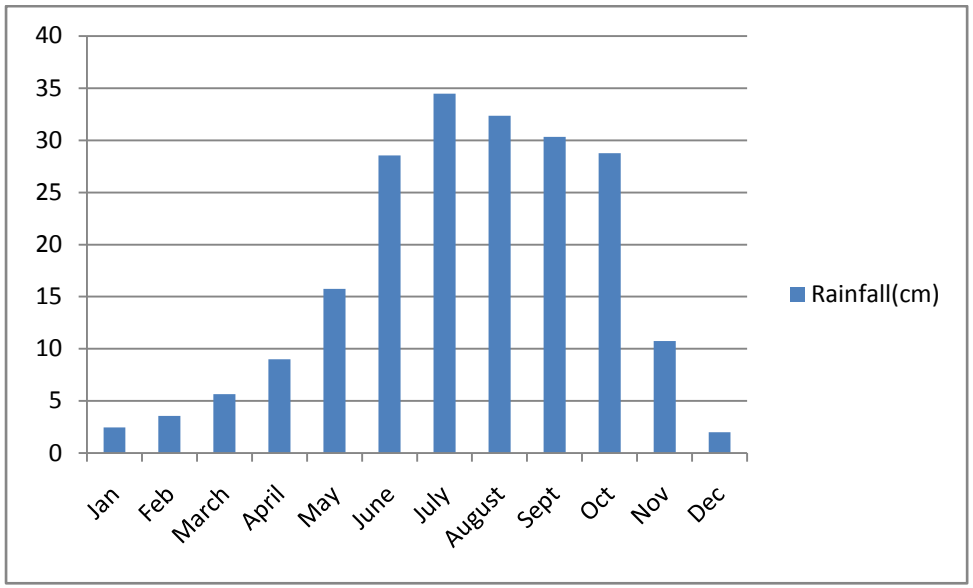
1.12	**Sowing window for 5 major field crops (start and end of normal sowing period)**	**Crop 1 : Jhum Paddy**	**Crop 2: TR/WRC Paddy**	**Crop 3: Maize**	**Crop 4: Soybean**	**Crop 5: Rapeseed/ Mustard**
	Kharif- Rainfed	April-May	May-Jul	April-Aug	May-Jul	
	Kharif-Irrigated					
	Rabi- Rainfed			Oct-Nov		Oct-Dec
	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)			✓
	Others (specify) Soil erosion		✓	

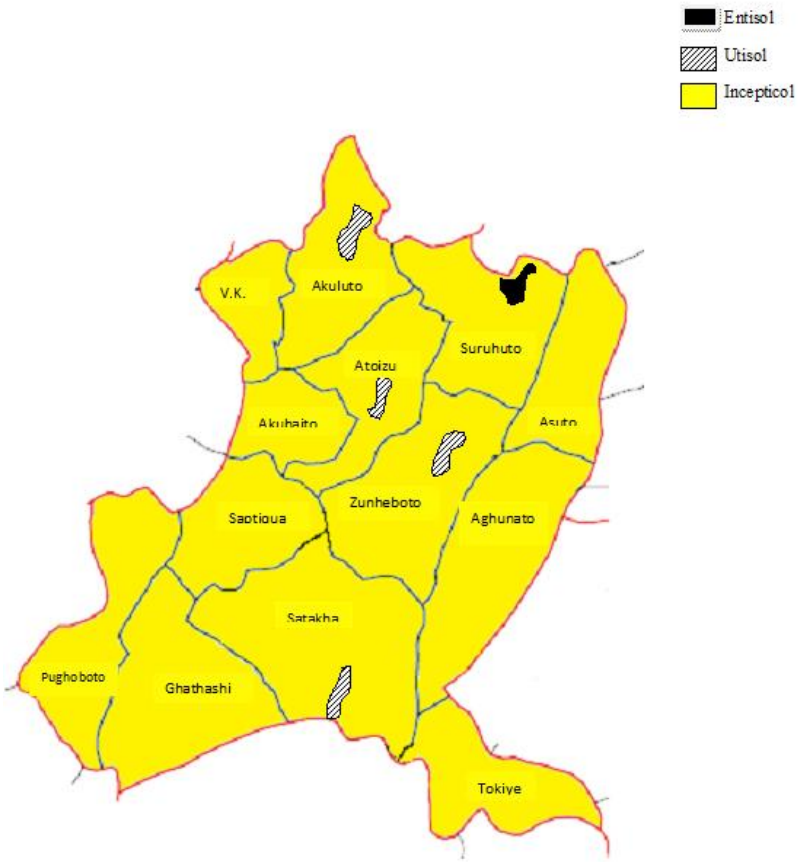
1.14	**Include Digital maps of the district for**	Location map of district within State as Annexure I	Enclosed: Yes / No **Y**
		Mean annual rainfall as Annexure 2	Enclosed: Yes / No **Y**
		Soil map as Annexure 3	Enclosed: Yes / No **Y**

Annexure – 1: LOCATION MAP OF ZUNHEBOTO DISTRICT IN NAGALAND

Annexure.2 Average rainfall in Cm in Zunheboto



Annexure – 3: SOIL MAP OF ZUNHEBOTO
Source: NBSSLUP, Regional Centre, JORHAT



2.0 Strategies for weather related contingencies

2.1 Drought – Pre- monsoon (Last week of March to Mid of April) Normal

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)**	**AES II**	**<u>Cropping System:1</u>** Maize Jhum Paddy Ginger Potato	Sowing of local and other short duration variety HQPM, Short duration var. SARS-1, 2 and local variety, Var.Nadia, Local var. Sowing of local and other short duration variety HQPM, Prefer short duration var.SARS-1, 2 and local variety	Sowing on ridges and furrows, Mulching with locally available materials, Nursery management, ICM/SRI, Sowing in ridge and furrow / Mulching, Sowing in ridges and furrows, Mulching with locally available materials,Moisture conservation by Mulching	1.Quality seeds from NSC 2. Procurement of seed from certified agencies 3. Seed support from ATMA, RKVY and NREGS 4.Line department scheme/ATMA/RKVY
	AES I	**<u>Cropping System:2</u>** Maize Beans	No change	Prefer short duration vars.,Prefer dwarf and bush type varieties	

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-II**	**Cropping System:1** Terrace Rice Cultivation Cabbage, King Chilli, Soybean	Prefer short duration paddy varieties- RCM-5, RCM-9,Soybean var.PS1042	Dapog method cultivation Earthing up at 30-45 days after transplanting in cabbage and mulching with locally available materials,Mulching,Weeding, thinning and gap filling in the existing crop and used as mulch Adopt SRI method of cultivation .	Seed support from RKVY and NREGS
	AES I	**Cropping System:2** Cabbage ,French bean	HYV Rareball Prefer Dwarf and bush type varieties	Dwarf and bush type varieties	Seed support from RKVY and NREGS

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 II**	**Cropping System:1** TRC,Cabbage Chilli,King Chilli Soybean	No change or growing of short duration pulses like greengram, blackgram, cabbage, broadbean, chilli, foxtail millets,transplantation of available chilli seedling. Short duration vars. Ranjit, RCM-5, 9 SRI, ICM, Local varieties Soybean var.PS1042		Seed support from RKVY and NREGS
	AES I	Cabbage	Var. Rareball		

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 measures[d]**	**Remarks on Implementation[e]**
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	**AES II**	**<u>Cropping System:1</u>** **Jhum paddy in slopes of districts** **Jhum paddy:** *var*. SARS 1,2,3,4,5, TEKE, Bhalum 2, 3, 4 **TRC paddy -Mustard** **TRC Paddy:** RCM-11,Ranjit, Bahadur, Pankaj, Sahasarang **Short duration paddy varieties-** RCM-5, RCM-9 **Mustard/Toria:** M-27, TS-46	**Paddy-** 1. Weeding, thinning and gap filling in the existing crop and the residue to be used as mulch 2. SRI with existing varieties **Maize-** 1.Weeding, thinning and gap filling in the existing crop and the residue to be used as mulch 2. Application of Tricho- cards @5-6 cards/ha at 10 days interval for 2-3 times **Mustard- A**pplication of Neem oil @ 5ml/lit of water to control aphids and saw fly (Short duration varieties to be taken up)	Application of organic manures, Putting bamboo barriers across the slope to reduce soil erosion as well as moisture, rain water harvesting in upper ridges and in-situ moisture conservation by mulching (grasses) Minimum/ Zero tillage**,** Mulching to conserve moisture	Training programmes on water conservation methods, Zero tillage and in-situ cultivation.
	AES I	**<u>Cropping System:2</u>** **TRC paddy – Mustard - Maize** **TRC Paddy:** RCM-11,Ranjit, Bahadur, Pankaj, Sahasarang **Short duration paddy varieties-** RCM-5, RCM-9 **Mustard/Toria:** M-27, TS-46 **Maize:** Local, HQPM-1, Vijaya composite, All Rounder etc.			

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	**Major Farming situation[a]**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measure[s]**	**Remarks on Implementation[e]**
At vegetative stage	**AES II**	**<u>Cropping System:1</u>** **Jhum paddy in slopes - TRC paddy - mustard/ Groundnut/ soybean** **TRC paddy – Mustard - Maize** **TRC Paddy:** RCM-11,Ranjit, Bahadur, Pankaj, Sahasarang **Short duration paddy varieties-** RCM-5, RCM-9 **Mustard/Toria:** M-27, TS-46 **Maize:** Local, HQPM-1, Vijaya, composite, All Rounder etc. **Soyabean**.JS-335,Bragg	Weeding, thinning and gap filling in the existing crop and the residue to be used as mulch to conserve soil moisture	Application of organic manures, rain water harvesting and in situ moisture conservation by mulching(grasses)	Supply of soybean, groundnut, Mustard, under FLD oilseeds and pulses.
	AES I	**<u>Cropping System:2</u>** **Maize / paddy** **Chilli, Brinjal, FrenchBeans** **Pineapple, Banana(Local Var.)**	In situ moisture conservation, mulching in crops other than paddy	Application of organic manures, rain water harvesting and insitu moisture conservation by mulching(grasses)	Supply of soybean, groundnut, Mustard, under FLD oilseeds and pulses.

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Crop management[c]**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation[e]**
At flowering/ fruiting stage	**AES II**	**<u>Cropping System:1</u>** **Jhum paddy in slopes of districts - TRC paddy - mustard Groundnut/ soybean** **TRC Paddy:** RCM-11,Ranjit, Bahadur, Pankaj, Sahasarang **Short duration paddy varieties-** RCM-5, RCM-9 **Mustard/Toria:** M-27, TS-46 **Maize:** Local, HQPM-1, Vijaya, composite, All Rounder etc. **Soyabean**.JS-335,Bragg	In situ moisture conservation, mulching in crops other than paddy,	Application of organic manures, rain water harvesting and in situ moisture conservation by mulching (grasses)	Supply of soybean, groundnut, Mustard, under FLD oilseeds and pulses.
	AES I	**<u>Cropping System:2</u>** **Maize /paddy,** **Chilli, FrenchBeans** **Pineapple, Banana(Local Var.)**	In situ moisture conservation, mulching in crops other than paddy	Application of organic manures, rain water harvesting and in situ moisture conservation by mulching (grasses)	Supply of soybean, groundnut, Mustard, under FLD oilseeds and pulses.

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Crop management[c]**	**Rabi Crop planning[d]**	**Remarks on Implementation[e]**
	AES II	**Cropping System:1** **Jhum paddy in slopes of districts - TRC paddy - mustard** **Groundnut/ soybean**	As such	The early sowing of Rabi crops like Mustard: M-27, TS-38 Maize-HQPM-1, Vijaya composite, Local	Supply of soybean, groundnut, maize Mustard, under FLD oilseeds and pulses
	AES I	**Cropping System:2** **Maize / paddy** **Chilli, FrenchBeans** **Pineapple, Banana(Local Var.)**	In situ moisture conservation, mulching in crops other than paddy ,life saving irrigation from Rain water harvesting structure		

2.1.2 Drought - Irrigated situation-- not applicable

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]**
Delayed release of water in canals due to low rainfall	**1) Farming Situation** Low land tube well Irrigated Canal red soils	**Cropping System:1** Paddy (sub merged condition)			
		Cropping System:2			
		Cropping System:3			
	2) Farming Situation	**Cropping System:1**			
		Cropping System:2			
		Cropping System:3			
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]**
Limited release of water in canals due to low rainfall	**1) Farming Situation**	**Cropping System:1**			
		Cropping System:2			
		Cropping System:3			

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	**1) Farming Situation**	**Cropping System:1**			
		Cropping System:2			
		Cropping System:3			

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]**
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	**1) Farming Situation**	**Cropping System:1**			
		Cropping System:2			
		Cropping System:3			
	2) Farming Situation	**Cropping System:1**			
		Cropping System:2			
		Cropping System:3			
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]**
Insufficient groundwater recharge due to low rainfall	**1) Farming Situation** Tube well red soil	**Cropping System:1** Paddy			
		Cropping System:2			
		Cropping System:3			
	2) Farming Situation	**Cropping System:1**			

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

Condition	**Suggested contingency measure**			
Continuous high rainfall in a short span leading to water logging	**Vegetative stage[k]**	**Flowering stage[l]**	**Crop maturity stage[m]**	**Post harvest[n]**
Horticulture				
Crop1 (specify)				
Crop2				

Crop3				
Crop4				
Crop5				
Heavy rainfall with high speed winds in a short span[2]				
Crop1				
Crop2				
Crop3				
Crop4				
Crop5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Crop4				
Crop5				
Outbreak of pests and diseases due to unseasonal rains				
Finger millet + pigeon pea				
Groundnut + pigeon pea				
Field bean				
Horse gram				
Crop5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Crop4				
Crop5				

2.3 Floods: Not encountered-

Condition	**Suggested contingency measure[o]**			
Transient water logging/ partial inundation[1]	**Seedling / nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Crop1 (specify)				
Crop2				

Crop3				
Crop4				
Crop5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Continuous submergence for more than 2 days[2]				
Crop1				
Crop2				
Crop3				
Crop4				
Crop5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Sea water intrusion[3]				
Crop1				
Crop2				
Crop3				
Crop4				
Crop5				

2.4 Extreme events: Heat wave / Cold wave/Frost/ Hailstorm /Cyclone: Not encountered

Extreme event type	**Suggested contingency measure[r]**			
	Seedling / nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat Wave[p]				
Crop1				
Crop2				
Crop3				
Crop4				
Crop 5				
Horticulture				
Crop1 (specify)				

Crop2				
Crop3				
Cold wave[q]				
Crop1				
Crop2				
Crop3				
Crop4				
Crop 5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Frost				
Crop1				
Crop2				
Crop3				
Crop4				
Crop 5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Hailstorm				
Crop1				
Crop2				
Crop3				
Crop4				
Crop 5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Cyclone				
Crop1				
Crop2				

Crop3				
Crop4				
Crop 5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event[s]	**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 Sufficient stock of mineral mixture should be kept. Preparation of hay.	Utilizing fodder from perennial trees and fodder bank reserves Transporting excess fodder from adjoining districts Use of feed mixtures and feed blocks Supplementation with mineral mixture Use of non-conventional fodder Culling unproductive livestock	Availing Insurance, Mineral supplementation, Use of feed mixtures and feed blocks
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 water.	Maintenance /cleaning of community reservoir/village ponds
Health and disease management	Animal insurance should be done, 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, 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[a]	**During the event**	**After the event**	
Drought				
Shortage of feed ingredients	Procurement and storage of feed ingredient. Establishing feed reserve bank.	Utilizing from feed reserve banks. Nutritional supplementation of poultry	Nutritional supplementation of poultry	
Drinking water	Arrangement for drinking water. Roof top water harvesting , Preserving water in the tank for drinking purpose	Judicious use of water. Providing vitamin B complex and Vitamin C in water		
Health and disease management	Emergency Veterinary preparedness with medicines and vaccination to birds	Campaign and Mass Vaccination	Culling affected birds Nutritional supplementation and compensation for forceful culling	
Floods	Not applicable			
Shortage of feed ingredients				

Drinking water				
Health and disease management				
Cyclone	Not applicable			
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Heat wave and cold wave	Not applicable			
Shelter/environment management				
Health and disease management				

[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	Desilting, repair of bunds of existing ponds, rain water harvesting, liming and adopt low stocking density	Integrated farming, Air breathing fishes. Avoid fertilization and manuring on supplementary basis, feeding should be minimum to avoid organic loading..	Prepare the pond for the next crop after early harvest.
(ii) Impact of salt load build up in ponds / change in water quality	Rain water harvesting,deepening /desilting of existing water bodies and removal of debris.	Feeding should be minimum to avoid organic loading	Control feeding to avoid waste accumulation.
(iii) Any other			

2) Floods			
A. Capture			
Marine			
Inland			
(i) Average compensation paid due to loss of human life			
(ii) No. of boats / nets/damaged			
(iii) No.of houses damaged			
(iv) Loss of stock			
(v) Changes in water quality			
(vi) Health and diseases			
B. Aquaculture			
(i) Inundation with flood water			
(ii) Water contamination and changes in water quality			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps, aerators, huts etc)			
(vi) Any other			
3. Cyclone / Tsunami			
A. Capture			
Marine			
(i) Average compensation paid due to loss of fishermen lives			
(ii) Avg. no. of boats / nets/damaged			
(iii) Avg. no. of houses damaged			
Inland			
B. Aquaculture			
(i) Overflow / flooding of ponds			
(ii) Changes in water quality (fresh water / brackish water ratio)			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps,			

aerators, shelters/huts etc)			
(vi) Any other			
4. Heat wave and cold wave			
A. Capture			
Marine			
Inland			
B. Aquaculture			
(i) Changes in pond environment (water quality)			
(ii) Health and Disease management			
(iii) Any other			