State: ANDHRA PRADESH

Agriculture Contingency Plan for District: Y.S.R. District (Kadapa)

1.0 District Agriculture profile					
1.1	**Agro-Climatic/Ecological Zone**				
	Agro Ecological Sub Region (ICAR)	Deccan plateau, hot arid eco sub región (7.1)			
	Agro-Climatic Region (Planning Commission)	Southern plateau and hill region (X)			
	Agro Climatic Zone (NARP)	Southern Zone (AP-3)			
	List all the districts or part thereof falling under the NARP Zone	Chittoor, Nellore, parts of Prakasam and Kadapa			
	Geographic coordinates of district	Latitude	Longitude	Altitude	
		13^0 43' & 15^0 14' N	77^0 55' & 79^0 29'	136 m	
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	RARS, Tirupathi-517502			
	Mention the KVK located in the district	DAATT Centre , Utukur, Kadapa (YSR district)-516001			
1.2	**Rainfall**	Normal RF(mm)	Normal Rainy days (no)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep):	394	26	1st week of June	2nd week of October
	NE Monsoon(Oct-Dec):	251	24	2nd week of October	Last week of December
	Winter (Jan- Feb)	7	1		
	Summer (Mar-May)	48	3		
	Annual	700		-	-

1.3	**Land use pattern of the district** (latest statistics)	Geographical Area (ha)	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)	1535.9	500.3	177.4	9.7	49.6	6.9	224.7	98.9	76.0

1. 4	**Major Soils (common names like shallow red soils etc.,)**	**Area (‘000 ha)**	**Percent (%) of total**
	1. Black soils	206	49
	2. Red soils	155	42
	3. Sand & Saline soils	22	9
1.5	**Agricultural land use**	Area (‘000 ha)	Cropping intensity %
	Net sown area	313.2	116.5 %
	Area sown more than once	51.8	
	Gross cropped area	365.0	

1.6	**Irrigation**	**Area (‘000 ha)**		
	Net irrigated area	124.3		
	Gross irrigated area	149.8		
	Rainfed area	188.9		
	Sources of Irrigation	Number	Area (‘000 ha)	Percentage of total irrigated area
	Canals	3	23.7	16.1
	Tanks	1874	15.0	10.2
	Open wells	14693		
	Bore wells	39302	108.1	73.3
	Lift irrigation schemes	---		
	Micro-irrigation	--		

	Other sources	---	0.6	0.4
	Total Irrigated Area		147.4	100.0
		--		
	Pump sets	88,905		
	No. of Tractors	23,666		
	Groundwater availability and use* (Data source: State/Central Ground water Department /Board)	No. of Mandals	(%) area	
	Over exploited	17	17	
	Critical	16	16	
	Semi- critical	29	29	
	Safe	13	13	
	Wastewater availability and use	Nil		
	Ground water quality	Suitable for Irrigation		
*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%				

Area under major field crops & horticulture etc. (2008-09) Actual *sown Area*

1.7		**Major Field Crops cultivated**	**Area ('000 ha)**					
			Kharif		*Rabi*		Summer	Total
			Irrigated	*Rainfed*	*Irrigated*	*Rainfed*		
	1	Groundnut		124.4	16.6	---	---	141.0
	2	Sunflower		5.7	---	87.8	---	93.5
	3	Bengalgram	---	---	--	72.0	--	72.0
	4	**Rice**	50.2	--	14.9	--	---	65.1
	5	Coriander		---	--	16.5	--	16.5
	6	Cotton		11.4	---	0.02	--	11.4
	7	Redgram		10.5	---	---	--	10.5
	8	Sesamum				6.5		6.5

		Horticulture crops - Fruits	**Total area**		
	1	Mango	19.02		
	2	Orange & Batavian	6.79		
	3	Banana	3.82		
	4	Lemon	3.13		
	5	Papaya	3.03		
		Horticultural crops - Vegetables	**Total area**		
	1	Chillies	8.42		
	2	Onion	2.60		
	3	Tomato	2.58		
		Medicinal and Aromatic crops	**Total area**		
	1	Coriander	8.08		
		Fodder crops	**Total area**	**Irrigated**	**Rainfed**
	1				
	2				
	3				
	4				
	5				
		Total fodder crop area	1250 ha	1250 ha	----
		Grazing land	---	---	-----
		Sericulture etc	240 ha	240 ha	----
		Others (Specify)	----	----	----

1.8	**Livestock**	**Male (number)**	**Female (number)**	**Total (number)**
	Non descriptive Cattle (local low yielding)	154.3	201.4	355.7
	Crossbred cattle	91.6	656.9	748.5
	Non descriptive Buffaloes (local low yielding)	21.9	117.8	139.7
	Graded Buffaloes			
	Goat			490.9
	Sheep			1116.6
	Others (Camel, Pig, Yak etc.)			11.93

	Commercial dairy farms (Number)			
1.9	**Poultry**	**No. of farms**	**Total No. of birds (number)**	
	Commercial		214150	
	Backyard		1418692	

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)	
		20016	nil				
	ii) Inland (Data Source: Fisheries Department)	**No. Farmer owned ponds**		**No. of Reservoirs**		**No. of village tanks**	
		17		-			
	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)	16		-			
	Others					0.5	

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

	2004,05,06, 07, 08)									
Major Field crops (Crops to be identified based on total acreage)										
1	Rice	175	3340	34.6	2560		---	209.6	2950	---
2	Groundnut	26.6	240	28.7	1750		---	55.3	995	---
3	Sunflower	3.6	1217	42.1	480		---	45.7	848.5	---
4	Bengalgram	--	---	54.01	750		---	54.01	750	---
Major Horticultural crops (Crops to be identified based on total acreage)										
Fruits										
1	Mango							157.4	8267	
2	Orange & Batavian							90.7	13300	
3	Banana							115.8	30000	
4	Lemon							45.5	14667	
5	Papaya							238.8	78667	
vegetables										
1	Chillies							2.8	3264	
2	Onion							44.3	17000	
3	Tomato							49.0	19000	
Spices and Plantation crops										
1	Coriander							9.7	800	

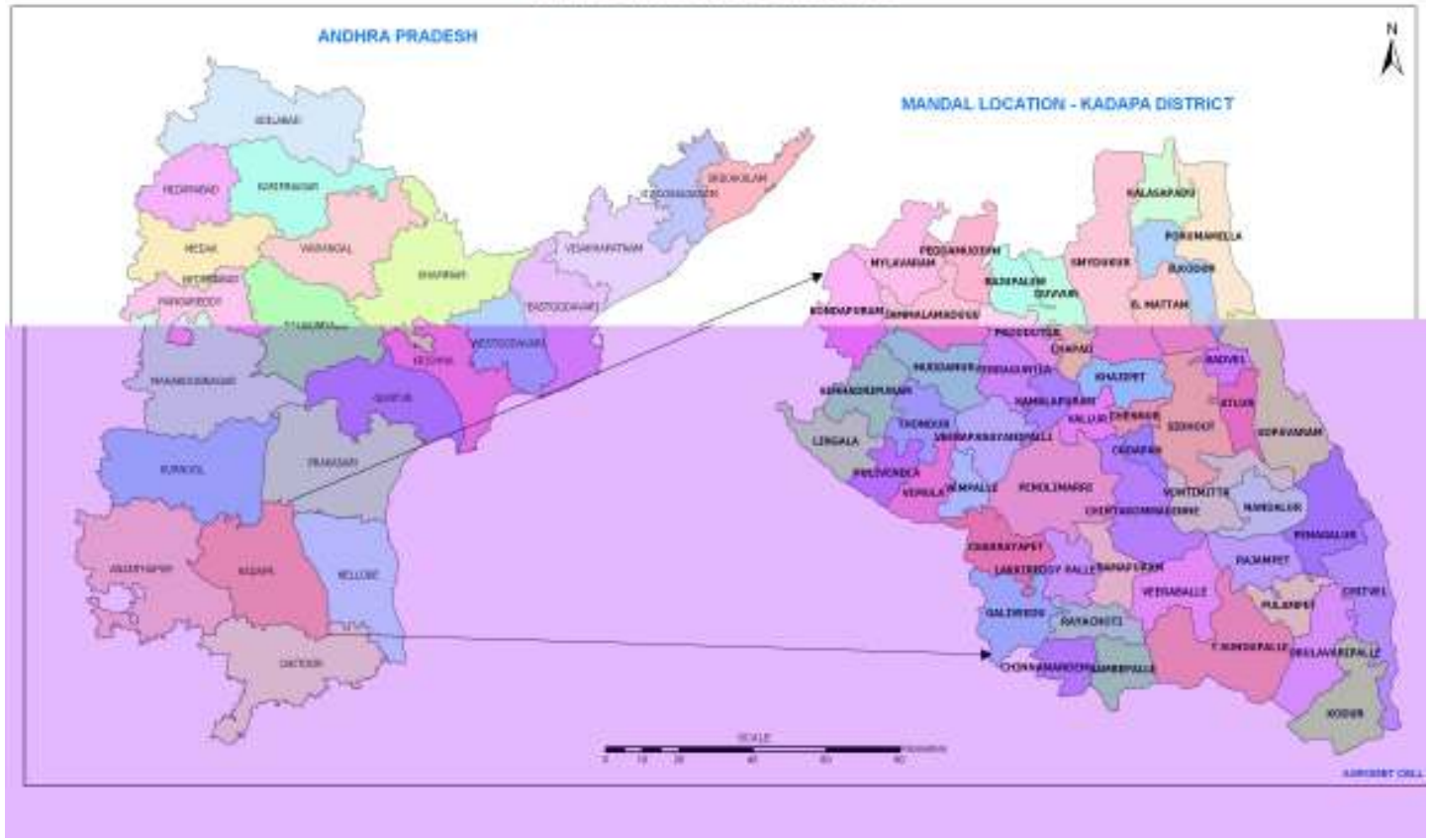
1.12	**Sowing window for 5 major field crops (start and end of normal sowing period)**	Groundnut	Paddy	Cotton	Bengal gram	Sun flower
	Kharif- Rainfed	1st June – 31st July		June -- July	Nov - Jan	
	Kharif-Irrigated		June - August		----	
	Rabi- Rainfed	---	---	---	----	
	Rabi-Irrigated	Nov - Dec	Nov - Jan			

1.13	**What is the major contingency the district is prone to? (Tick mark and**	Regular

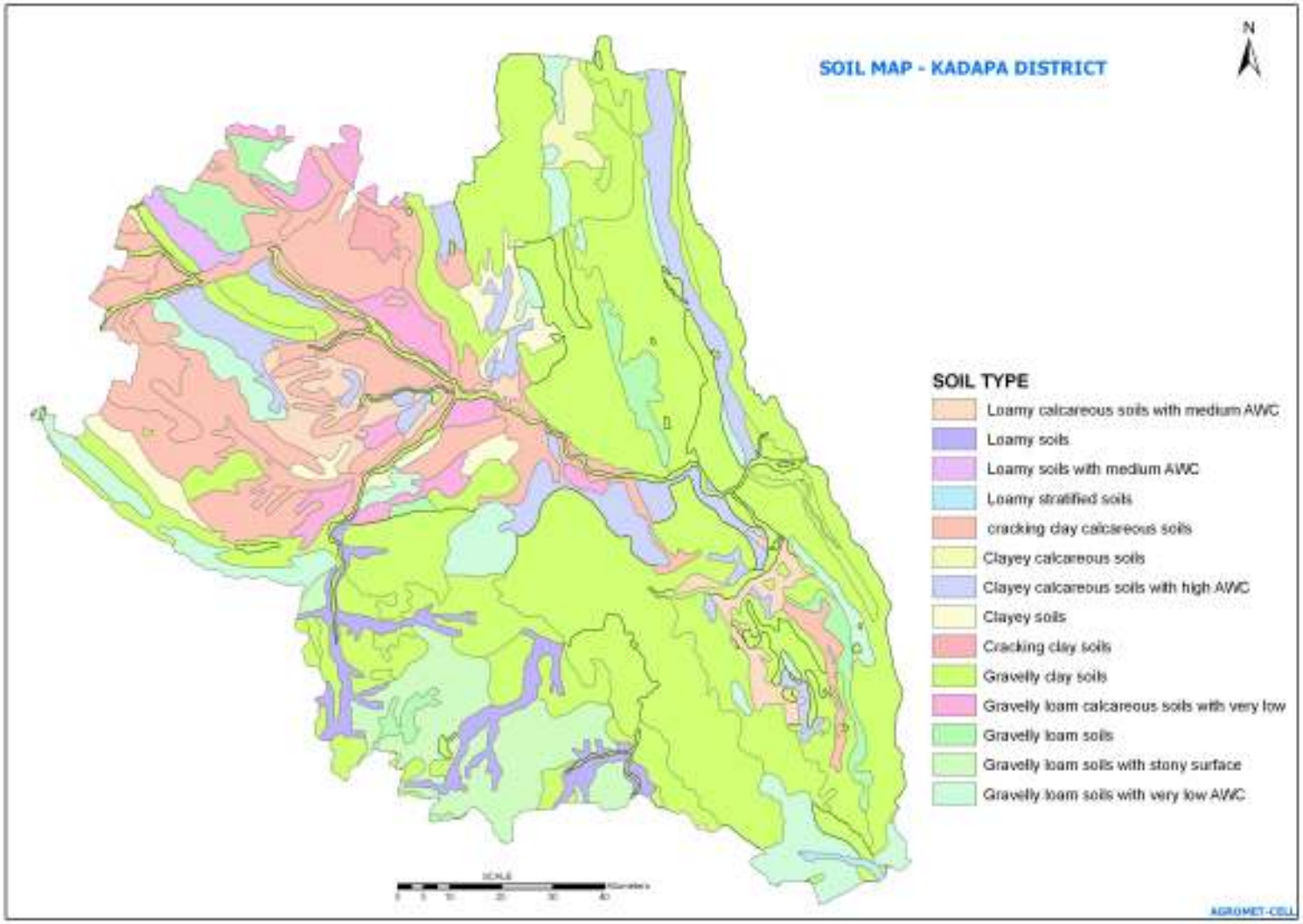
	mention years if known during the last 10 year period)	Regular	occasional	None
	Drought	✓		
	Flood			✓
	Cyclone			✓
	Hail storm			✓
	Heat wave			✓
	Cold wave			✓
	Frost			✓
	Sea water intrusion			✓
	Pests and diseases (specify)		PBND in Groundnut	✓
	Others			✓

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

KADAPA DISTRICT INDEX MAP




MANDAL WISE - NORMAL RAINFALL (mm)
KADAPA DISTRICT
N
KONDAPURAM
572
SIMHADRIPURAM
643.2
THONDUR
634.3
LINGALA
VEMPALLE
KALASAPADU
B. MATTAM
KHAJIPET
GOPAVARAM
VONTIMITTA
572.4
MANDALUR
RAJAMPET
CHITVEL
T SUNDUPALLE
777.5
KODUR
RAYACHOTI
LAKKIREDDY PALLE
658.5
SAMBEPALLE
SCALE
0 5 10 20 30 40



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**	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 2 weeks (June 3rd week)	Rainfed red soils (30 –cm depth)	Sole Groundnut	Groundnut (Narayani, K6, Greeshma)+ Redgram (LRG-41)(7:1 or 11:1)	• Border crop with Maize/ Jowar	Source of seed: ARS, Utukur& Ananthapur
		Ground nut i+ Redgram (7:1 or 11:1)	No change	-	
				-	
	Rainfed red soils (30-50 cm)	Sole Groundnut	Groundnut (Narayani, K6, Greeshma)+ Redgram (LRG-41)(7:1 or 11:1)	• Border crop with Maize/ Jowar	
		Cotton	No change	-	
	Rainfed Black soils(> 50 cm)	Sole Groundnut	Groundnut (Narayani, K6, Greeshma)+ Redgram (LRG-41)(7:1 or 11:1)	• Border crop with Maize/ Jowar	
		Cotton	No change		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 4 weeks (July 1st week)	Rainfed red soils (upto 30 cm)	Sole Groundnut	Ground nut (Narayani, K6, Greeshma)+ Redgram (LRG-41)(7:1 or 11:1)		Source of seed: ARS, Utukur& Ananthapur
		Groundnut + Redgram (7:1)	No change,		
		Groundnut+ Castor (7:1)	No change		
	2 Rainfed red soils (30-50 cm)	Sole Groundnut	Ground nut (Narayani, K6, Greeshma)+ Redgram (LRG-41)(7:1 or 11:1)		
		Cotton	No change		
		Redgram	No change		
	3. Rainfed Black soils(> 50 cm)	Sole Groundnut	Ground nut (Narayani, K6, Greeshma)+ Redgram (LRG-41)(7:1 or 11:1)		
		Cotton	No change		
		Sunflower			
		Redgram			

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 6 weeks	Rainfed red soils (upto 30 cm)	Sole Groundnut	Groundnut short duration varieties (Narayani, K6,	Create weed free situation	Source of seed: ARS, Utukur&

(July 3rd week)			Greeshma, Abhaya)+ Redgram (LRG-41)(7:1 or 11:1)		Ananthapur
		Groundnut + Redgram	No change		
	Rainfed red soils (30-50 cm)	Sole Groundnut	Groundnut short duration varieties(Narayani, K6, Greeshma, Abhaya)+ Redgram (LRG-41)(7:1 or 11:1)	Create weed free situation	
		Cotton	No change		
	Rainfed Black soils (> 50 cm)	Sole Groundnut	Groundnut short duration varieties (Narayani, K6, Greeshma, Abhaya)+ Redgram (LRG-41)(7:1 or 11:1)	Create weed free situation	
		Cotton	No change		
		Sunflower			

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 8 weeks (August 1st week)	Rainfed red soils (upto 30 cm)	Sole Groundnut	Sole Red gram(LRG 41) Field bean(TFB-5) Tomato (NP5005) Maize(30V 92) Sunflower (SB 275)	Protective irrigation Add groundnut shells @ 5T/ ha Short duration variety of ground nut i.e Greeshma, Narayani	Tank silt 25 t/ha
		Groundnut + Redgram	Sole Redgram(TRG-22) 60X20 cm	Sole Redgram	

	Rain fed red soils (30-50 cm)	Sole Groundnut	Sunflower (Sunbred-275)	As above	
		Cotton	Sunflower (Sunbred-275)		
			Tomato (NP 5005)		
	Rain fed Black soils (> 50 cm)	Sole Groundnut	Sorghum (CSV-5) / Sunflower (SB 275)	Apply FYM@ 10 t/ acre	
		Cotton	Sorghum (CSV-5) / Sunflower (SB 275)		
		Fallow - Sunflower (Sept –Oct)	No change		
		Fallow – Chickpea (Oct - Nov)	No change		

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	Rainfed red soils (upto 30 cm)	Sole Groundnut	Grounnut (Narayani, K6, Greeshma, Abhaya)+ Redgram (LRG-41)(7:1 or 11:1	Weed free condition to be maintained through inter cultivation.	
		Groundnut+ Redgram 7:1 Ratio	No change	**Weed free condition to be maintained through inter cultivation.**	
	Rainfed red soils (30-50 cm)	Sole Groundnut	Groundnut (Narayani, K6, Greeshma, Abhaya)+ Redgram (LRG-41)(7:1 or 11:1	Weed free condition to be maintained through inter cultivation.	
		Cotton	-	Soil mulch	
		Sunflower		Soil mulch	
	Rain fed Black soils (> 50 cm)	Sole Groundnut	Groundnut (Narayani, K6, Greeshma, Abhaya)+ Redgram (LRG-41)(7:1 or 11:1	Weed free condition to be maintained through inter cultivation.	
		Cotton	Gap filling	Soil mulch	
		Sunflower	-	Soil mulch	

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless period)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measues**	**Remarks on Implementation**
At vegetative stage	Rainfed red soils (upto 30 cm)	Sole Groundnut	Protect agaist thrips which transmit bud necrosis and peanut stem necrosis desease with chemical spraying or neem oil 0.3% spray.	Soil mulch , Weed free situation, protective irrigation if possible.	
		Groundnut+ Redgram 7:1 Ratio	-	-do-	
	Rainfed red soils (30-50 cm)	Sole Groundnut			
		Cotton	Protect against Jassids and other sucking pests with neem oil 0.3% or chemical spraying		
		Sunflower	-		
	Rain fed Black soils (> 50 cm)	Sole Groundnut			
		Cotton			
		Sun flower			

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At reproductive stage	Rainfed red soils (upto 30 cm)	Sole Groundnut	2% Urea spraying at 15 days interval	Protective irrigation if possible	Supplemental irrigation with harvested rain water
		Groundnut+ Redgram 7:1 Ratio	-do-	-do-	
	Rainfed red soils	Sole Groundnut			

	(30-50 cm)	Cotton			
		Sunflower			
	Rain fed Black soils (> 50 cm)	Sole Groundnut			
		Cotton			
		Sunflower			

Condition			**Suggested Contingency measures**		
Terminal drought	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Rabi Crop planning**	**Remarks on Implementation**
	Rainfed red soils (upto 30 cm)	Sole Groundnut	Supplemental irrigation	Horse gram	Supplemental irrigation with harvested rain water
		Groundnut+ Redgram 7:1 Ratio	-do-	Horse gram	
	Rainfed red soils (30-50 cm)	Sole Ground nut		Sunflower / Bengal gram	
		Cotton		-	
		Sunflower		Bengal gram/ Coriander	
	Rain fed Black soils (> 50 cm)	Sole Groundnut		Bengal gram/ Coriander	
		Cotton		-	
		Sunflower		Corainder	

2.1.2 Irrigated situation

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	K.C canal fed black solis	Rice (BPT 5204- 140 days)	Green manure crop as preceding crop (Daincha, Pillipesara) Rice short duration varieties (Swathi (125 days), Swarnamukhi (135 days), Sravani(120 days)		
	Bramham sagar fed clay loams	Rice(Parthiva 160 days) Rice (BPT 5204- 140 days)	Rice (Swathi (125 days), Swarnamukhi (135 days)		

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
			Sravani (120 days) JGL 1798, 384 (120 – 125 days), WGL 32100 (120 days)		
Limited release of water in canals			**Suggested Contingency measures**		
	Major Farming situation	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
	K.C canal fed black solis	Rice (BPT 5204- 140 days)	Sunflower (SB-275) Jowar (CSV-5) Green gram(ML -267)	Irrigation at critical stages	
	Bramham sagar fed clay loams	Rice(Parthiva 160 days) Rice (BPT 5204- 140 days)	Sunflower (SH-275) Jowar (CSV-5) Green gram(ML -267) Cotton (Bramha, Tulasi, Malika, RCH-2)	As above	

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Non release of water in canals	K.C canal fed black solis	Rice (BPT 5204- 140 days)	Field bean, (TFB--5) Greengram /Sorghum (fodder)		
	Bramham sagar fed clay loams	Rice (BPT 5204- 140 days) Rice(Parthiva 160 days)	Field bean,(TFB-5) Green gram (LGG-460) Chickpea, (JG-11) Sorghum (Local)		

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Lack of inflows into tanks	Black soils	Rice (BPT 5204, Parthiva ADT-37)	Greengram (LGG-460) Cowpea Field bean ,(TFB-5) Horsegram (Local)	Intercropping system	

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Insufficient groundwater recharge due to low rainfall	Red soils-Tube well irrigation	Rice	Groundnut	Micro Irrigation through sprinklers	
	Alluvial soils	Rice	Sunflower Groundnut	Micro irrigation with drip/ Sprinklers	
Any other condition (specify)	Problematic soils	Paddy	Salt tolerant Varieties NLR 145 (135 days), NLR 33641 (150 days)	Soil reclamation methods (gypsum application , FYM application, Green manure crop etc)	

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

Condition	**Suggested contingency measure**			
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity stage**	**Post harvest**
Groundnut	provide drainage facility	Induced Iron deficiency management – FeSO4-2 g/l	drainage facility	Shifting of produce to safer place
Paddy	Blast – Tricyclozole @ 0.6 g/l Leaf folder – Cartaphydrochloride @ 2g/l	Provide drainage facility Blast – Isoprothiolane @ 1.5 ml/l	Neck blast – Kasugamycin 2.5 ml/l Provide drainage facility	5% salt solution application
Chickpea	Provide drainage facility	Provide drainage facility	Provode drainage facility	Shifting of produce to safer place
Sunflower	Provide drainage facility	Provide drainage facility	Provode drainage facility	Shifting of produce to safer place
Cotton	Provide drainage facility Apply booster dose of N & K	Provide drainage facility Black arm – COC @ 30 g + Streptomycin @ 1g/10L	Provode drainage facility	Shifting of produce to safer place
Horticulture				
Mango	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Wind damaged branches should be pruned using disinfected secatures and	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3	• Drain the excess water as soon as possible • Harvest the mature produce in a clear sunny day’	• Store the fruits in well ventilated place temporarily before it can be marketed.

	cut ends must be smeared with Bordeaux paste	times.		• Market the fruits as soon as possible.
Orange & Batavian	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Foliar spray of micronutrient mixture is also to be taken up. • Sand casting around the tree trunks should be removed up to the collar region of the tree to prevent fungal infections. • If the tree age is above eight years a booster dose of 500 g of Urea and 750 g MOP per tree should be applied. • Wind damaged branches should be pruned using disinfected secatures and cut ends must be smeared with Bordeaux paste	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Foliar spray of micronutrient mixture is also to be taken up. • Sand casting around the tree trunks should be removed up to the collar region of the tree to prevent fungal infections. • If the tree age is above eight years a booster dose of 500 g of Urea and 750 g MOP per tree should be applied.	• Drain the excess water as soon as possible. • Harvest the mature fruits in a clear sunny day. .	• Store the fruits in well ventilated place temporarily before it can be marketed. • Market the fruits as soon as possible.
Banana	• Drain the excess water as soon as possible • Inter-cultivate the soil with	• Drain the excess water as soon as possible	• Drain the excess water as soon as possible	• Use ripening chambers for quick ripening

	gorru for aeration. • Spray 0.5 % KNO3 or Urea 2% solution 2-3 times. • Topdressing of booster dose of 80 g MOP + 100 g Urea per plant at two to three times intervals. • Gap filling may be taken up if the plants are two weeks old and sowing window is still available for the crop. • If the age of the plant is less than three months and submergence up to three feet better to replant the garden. • Wind damaged branches should be pruned using disinfected secatures and cut ends must be smeared with Bordeaux paste	• Spray 0.5 % KNO3 or Urea 2% solution 2-3 times. • Topdressing of booster dose of 80 g MOP + 100 g Urea per plant at two to three times intervals. • If the age the plant is more than three months and less than seven months allow one sword sucker for ratoon and take up fertilization at monthly intervals for four months. • Staking with bamboos to prevent further lodging.	• Harvest the marketable bunches in a clear sunny day. • Spray 0.5 % KNO3 or Urea 2% solution 2-3 times for quick development of immature bunches. • Staking with bamboos to prevent further lodging.	• Market the produce as soon as possible.
Lemon	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Foliar spray of micronutrient mixture is also to be taken up. • Sand casting around the tree trunks should be removed up to the collar region of the tree to	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Foliar spray of micronutrient mixture is also to be taken up.	• Drain the excess water as soon as possible. • Harvest the mature fruits in a clear sunny day. .	• Store the fruits in well ventilated place temporarily before it can be marketed. • Market the fruits as soon

	prevent fungal infections. • If the tree age is above eight years a booster dose of 500 g of Urea and 750 g MOP per tree should be applied. • Wind damaged branches should be pruned using disinfected secatures and cut ends must be smeared with Bordeaux paste	• Sand casting around the tree trunks should be removed up to the collar region of the tree to prevent fungal infections. • If the tree age is above eight years a booster dose of 500 g of Urea and 750 g MOP per tree should be applied.		as possible.
Papaya	• Drain out the excess water • out break of any sucking past should be controlled using systemic insecticides • Water logging near trunk should be prevented • Wind damaged branches should be pruned using disinfected secatures and cut ends must be smeared with Bordeaux paste	• Drain out the excess water • out break of any sucking pest should be controlled using systemic insecticides • Water logging near trunk should be prevented	• Drain out the excess water • Harvest the marketable fruits in a clear sunny day • out break of any sucking pests should be controlled by using systemic insecticides • Water logging near trunk should be prevented • Micronutrient deficiencies should be corrected by foliar sprays of Fe, Mg, Zn, Bo and Mn	• Store the fruits in well ventilated place temporarily before it can be marketed. • Market the fruits as soon as possible.
Horticulture crops vegetables				
Chillies	• Drain the excess water as soon as possible	• Drain the excess water as soon as	• Drain the excess water as soon as	• Dry the pods on concrete

	• Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible. • Gap filling may be taken up if the plants are two weeks old and sowing window is still available for the crop. • In case of severe damage (considered as complete economical loss), and the contingency period is between June to August, sowing of best alternative crop must be taken up.	possible • Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible.	possible • Harvest the matured fruits in a clear sunny day.	floor immediately after the appearance of sunlight (or). • Use poly house solar driers for quick drying • Grade the pods and market as soon as possible. • Do not store such produce for long periods.
Onion	• Drain the excess water as soon as possible • Spray Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible • Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 10 kg MOP + 30 kg Urea per acre as soon as possible.	• Drain the excess water as soon as possible • Harvest the mature produce in a clear sunny day	• Dry the harvested onions in thin layers under shade in well ventilated places • Store the produce in well ventilated place temporarily before it can be marketed. • Market the produce as soon as possible.

Tomato	• Drain the excess water as soon as possible • Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 12 kg MOP + 30 kg Urea per acre as soon as possible. • Gap filling may be taken up if the plants are two weeks old and sowing window is still available for the crop. • In case of severe damage (considered as complete economical loss), and the contingency period is between June to August, sowing of best alternative crop must be taken up.	• Drain the excess water as soon as possible • Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 10 kg MOP + 30 kg Urea per acre as soon as possible.	• Drain the excess water as soon as possible • Harvest the marketable fruits in a clear sunny day'	• Store the harvested fruits in well ventilated place temporarily before it can be marketed. • Market the fruits as soon as possible.
Spices and Plantation crops				
Coriander	• Drain the excess water as soon as possible • Spray Urea 2% or 1% KNO3 solution 2-3 times.	• Drain the excess water as soon as possible • Spray Urea 2% or 1% KNO3 solution 2-3 times.	• Drain the excess water as soon as possible • Harvest the marketable umbels as soon as possible.	• Dry the produce immediately • Market the produce immediately after drying.
Heavy rainfall with high speed winds in a short span	-NA-	-NA-	-NA-	-NA-
Outbreak of pests and diseases due to unseasonal rains				
Grounndut	Prophylactic measures for early leaf spot – Mancozeb @ 2.5 g/l	Stem rot – Carbendazim @ 1g + Mancozeb 2.5 g/l	Late leaf spot – Hexaconazole @ 2ml/l	Storage pest control measures

Paddy	Blast – Tricyclozole @ 0.6 g/l Leaf folder – Cartaphydrochloride @ 2g/l BPH – Thiomethoxam – 0.2 g/l	Blast – Isoprothiolane @ 1.5 ml/l Sheath rot – Propiconazole @ 1ml/l	Neck blast – Kasugamycin 2.5 ml/l Panicle mite – Profenophos @ 2ml/l False smut – COC 3g/l	Malathion spraying on walls and Gunny bags
Chickpea	Root rot - Hexaconazole @ 2ml/l	Root rot - Hexaconazole @ 2ml/l Colletotrichum blight – Saaf 3g/l	Root rot - Hexaconazole @ 2ml/l Colletotrichum blight – Saaf 3g/l	Harvest and shift to Market
Sunflower	Alternaria leaf spot- COC @ 3g/l	Alternaria leaf spot- COC @ 3g/l	Alternaria leaf spot- COC @ 3g/l	Harvest and shift to Market
Cotton	MgSO4 deficiency – MgSO4 @ 10g/l	Black arm- COC @ 30 g + Streptomycin @ 1g/10L	Black arm -COC @ 30 g + Streptomycin @ 1g/10L Dusky cotton bug – Profenophos @ 2ml/l	Harvest and shift to Market
Horticulture				
Papaya	Collar rot – COC @ 3g/l	Collar rot – COC @ 3g/l	Collar rot – COC @ 3g/l	Harvest and shift to Market
Banana	Sigatoka leaf spot – Propiconazole @ 1ml/l	Sigatoka leaf spot – Propiconazole @ 1ml/l	Sigatoka leaf spot – Propiconazole @ 1ml/l	Harvest and shift to Market
Turmeric	Rhizome rot – Ridomyl MZ - 2.0g/l Leaf spot – Chlorothalonil @ 2.0 g/l	Rhizome rot – Ridomyl MZ -2.0g/l Leaf spot – Chlorothalonil @ 2.0 g/l	Rhizome rot – Ridomyl MZ -2.0g/l Leaf spot – Chlorothalonil @ 2.0 g/l	Harvest and shift to Market
Sweet Orange	Root rot – Soil drenching with Carbendazim @ 1g/l	Drainage	Drainage	Harvest and shift to Market

2.3 Floods

Condition	**Suggested contingency measure**			
Transient water logging/ partial inundation	**Seedling / nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Groundnut	Resowing/	Drain out (Making of channels based on the slope) Spraying of KNO3 @ 20 g/l after 2 days of draining Application of Urea @ 25kg/ac & MOP @ 10 kg/ac	Drainout	Shift to safer place drainout
Paddy	Resowing/ Transplant	Drain out (Making of channels based on the slope) Spraying of KNO3 @ 20 g/l after 2 days of draining Application of Urea @ 25kg/ac & MOP @ 10 kg/ac	Drainout	5% salt solution spraying
Chickpea	Resowing	Drain out (Making of channels based on the slope) Spraying of KNO3 @ 20 g/l after 2 days of draining Application of Urea @ 25kg/ac & MOP @ 10 kg/ac	Drainout	
Sunflower				Shift to safer place drainout
Cotton		Spraying of KNO3 @ 20 g/l after 2 days of draining Application of Urea @ 25kg/ac, & MOP @ 10 kg/ac		Shift to safer place drainout
Horticulture crops – Fruits				
Mango	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea	• Drain the excess water as soon as possible. • Harvest the mature fruits as soon as possible. • Store the fruits in well ventilated place temporarily

			2% solution 2-3 times.	before it can be marketed. • Market the fruits as soon as possible.
Orange & Batavian	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Foliar spray of micronutrient mixture is also to be taken up. • Sand casting around the tree trunks should be removed up to the collar region of the tree to prevent fungal infections. • If the tree age is above eight years a booster dose of 500 g of Urea and 750 g MOP per tree should be applied.	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Foliar spray of micronutrient mixture is also to be taken up. • Sand casting around the tree trunks should be removed up to the collar region of the tree to prevent fungal infections. • If the tree age is above eight years a booster dose of 500 g of Urea and 750 g MOP per tree should be applied.	• Drain the excess water as soon as possible. • Harvest the mature fruits as soon as possible. • Store the fruits in well ventilated place temporarily before it can be marketed. • Market the fruits as soon as possible.
Banana	.	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Topdressing of booster dose of 80 g MOP + 100 g Urea per plant in two to	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible. • Harvest the mature bunches as soon as possible. • use ripening chambers for quick and uniform ripening • Store the harvested bunches

		three splits at monthly intervals. • If the age the plant is more than three months and less than seven months allow one sword sucker for ratoon and take up fertilization at monthly intervals for four months.	• Stake the plants with bamboos to prevent further lodging.	in well ventilated place temporarily before it can be marketed. • Market the fruits as soon as possible.
Lemon	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Plant protection measures may be taken for control of insect vectors and diseases.	• Drain the excess water as soon as possible. • Spray 1% KNO3 or Urea 2% solution 2-3 times. • Foliar spray of micronutrient mixture is also to be taken up. • Sand casting around the tree trunks should be removed up to the collar region of the tree to prevent fungal infections. • If the tree age is above eight years a booster dose of 500 g of Urea and 750 g MOP per tree should be applied.	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible. • Harvest the mature produce as soon as possible. • Store the produce in well ventilated place temporarily before it can be marketed. • Market the produce as soon as possible.
Papaya	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	• Drain the excess water as soon as possible. • Harvest the mature produce as soon as possible. • Store the produce in well ventilated place temporarily before it can be marketed. • Market the produce as soon as possible.
Horticulture crops vegetables				
Chillies	• Drain the excess water as soon as possible	• Drain the excess water as soon as possible • Spray Urea 2% solution 2-	• Drain the excess water as soon as	• Drain the excess water as soon as possible. • Dry the pods on concrete

		3 times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible. Gap filling may be taken up if the plants are two weeks old and sowing window is still available for the crop.	possible • Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible.	floor/ tarpaulins. • Spray any drying oil after the pods are free from surface moisture for quick drying. • Use poly house solar driers for quick drying • Remove the pest and disease infected pods. • Market the produce as soon as possible.
Onion	• Drain the excess water as soon as possible	• Drain the excess water as soon as possible • Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 10 kg MOP + 30 kg Urea per acre as soon as possible.	• Drain the excess water as soon as possible • Spray Urea 2% solution once.	• Drain the excess water as soon as possible. • Harvest the mature produce as soon as possible. • Store the produce in well ventilated place temporarily before it can be marketed. • Market the produce as soon as possible.
Tomato	-do-	-do-	-do-	-do-
Spices and Plantation crops				
Coriander		• Drain the excess water as soon as possible • Spray Urea 2% or 1% KNO3 solution 2-3 times.	• Drain the excess water as soon as possible • Spray Urea 2% or 1% KNO3 solution 2-3 times.	• Drain the excess water as soon as possible. • Harvest the marketable umbels as soon as possible. • Dry the produce immediately • Market the produce immediately after drying.

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**
Cyclone				
Paddy	Resowing/ delay of Transplant	Drainout	Drainout	Drainout

Sunflower	Resowing	No contengency	No contengency	Shift to Safer Place
Groundnut		Drainout	Drainout	
Castor		Drainout/ application of Carbendazim@1g/lit	Drainout / application of Carbendazim@1g/lit	
Horticulture				
Horticulture crops – Fruits				
Mango	If the damage is severe, go for resowing	• Trees fallen on ground may be lifted and earthed up • Manuring and plant protection measures have to be taken up. Broken and damaged branches may be pruned and applied with Bordeaux paste	• Tress fallen on ground may be lifted and earthed up • Manuring and plant protection measures have to be taken up. Broken and damaged branches may be pruned and applied with Bordeaux paste	• Drain the excess water as soon as possible. • Harvest the mature fruits as soon as possible. • Collect the fallen fruits and sell immediately or go for preparation of processed products. • If to store, store the produce in well ventilated place temporarily before it can be marketed. Broken and damaged branches may be pruned and applied with Bordeaux paste
Orange & Batavian	-do-	-do-	-do-	-do-
Banana		• Wind damaged plants should be pruned using disinfected secaetures and cut ends must be smeared with Bordeaux paste • Drain the excess water as soon as possible • The fallen tress may be cut leaving two suckers • Inter-cultivate the soil	• Wind damaged plants should be pruned using disinfected secaetures and cut ends must be smeared with Bordeaux paste • Drain the excess water as soon as possible • The fallen tress may be cut leaving two suckers • Topdressing of booster	• Wind damaged plants should be pruned using disinfected secaetures and cut ends must be smeared with Bordeaux paste • Drain the excess water as soon as possible. • Harvest the mature

		with gorru for aeration. • Spray 0.5 % KNO3 or Urea 2% solution 2-3 times. • Topdressing of booster dose of 80 g MOP + 100 g Urea per plant at two to three times intervals. • Gap filling may be taken up if the plants are two weeks old and sowing window is still available for the crop. • If the age of the plant is less than three months and submergence up to three feet better to replant the garden.	dose of 80 g MOP + 100 g Urea per plant at two to three times intervals • Mature bunches on the completely damaged plants be covered with Leaves and harvested with in 15-20days	bunches as soon as possible. use ripening chambers for quick and uniform ripening • Store the harvested bunches in well ventilated place temporarily before it can be marketed. • Market the produce as soon as possible. • 3-4 foliar application of KNO3on immature/developing bunches and leaves at weekly intervals. • Staking with bamboo for support .
Lemon	• Spray Carbendazim 1 g or COC 3g per litre to prevent spread of diseases • If the damage is severe, go for resowing.	• Tress fallen on ground may be lifted and earthed up • Manuring and plant protection measures have to be taken up. • Broken and damaged branches may be pruned and applied with Bordeaux paste	• Tress fallen on ground may be lifted and earthed up • Manuring and plant protection measures have to be taken up. • Broken and damaged branches may be pruned and applied with Bordeaux paste	• Drain the excess water as soon as possible. • Harvest the mature fruits as soon as possible. • Collect the fallen fruits and sell immediately or go for preparation of processed products. • If to store, store the produce in well ventilated place temporarily before it can be marketed. • Broken and damaged branches may be pruned and applied with Bordeaux paste
Papaya	• Drain the excess water as soon as	• Drain the excess water as	• Drain the excess water	• Drain the excess

	possible and drench the plants with any copper fungicide to prevent collar rot	soon as possible and drench the plants with any copper fungicide to prevent collar rot • Spray 1% KNO3 or Urea 2% solution 2-3 times.	as soon as possible • Spray 1% KNO3 or Urea 2% solution 2-3 times.	water as soon as possible. • Harvest the mature produce as soon as possible. • Store the produce in well ventilated place temporarily before it can be marketed. • Market the produce as soon as possible. • Collect the fallen fruits and sell immediately or go for preparation of processed products.
Horticulture crops vegetables				
Chillies	• Grow nursery on raised beds.	• Uprooted plants may be lifted and earthed up • Drain the excess water as soon as possible • Gap filling must be done immediately • If damage is more go for replanting Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible.	• Uprooted plants may be lifted and earthed up • Drain the excess water as soon as possible • Spray Urea 2% solution 2-3 times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible.	• Drain the excess water as soon as possible. • Dry the pods on concrete floor/ tarpaulins immediately • use poly house solar driers for quick drying • Remove the pest and disease infected pods. .
Onion	-do-	-do-	-do-	-do-
Tomato	• Grow nursery on raised beds. • If damage is more go for resowing	• Uprooted plants may be lifted and earthed up • Drain the excess water as soon as possible • Gap filling must be done immaditeatly • Spray Urea 2%	• Uprooted plants may be lifted and earthed up • Drain the excess water as soon as possible • Spray Urea 2% solution 2-3	• Drain the excess water as soon as possible. • Harvest the mature produce as soon as possible. • Store the produce in

		solution 2-3 times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible.	times. • Topdressing of booster dose of 15 kg MOP + 30 kg Urea per acre as soon as possible.	well ventilated place temporarily before it can be marketed. • Market the produce as soon as possible.
Spices and Plantation crops				
Coriander	.	• Drain the excess water as soon as possible • Spray Urea 2% or 1% KNO3 solution 2-3 times.	• Drain the excess water as soon as possible • Spray Urea 2% or 1% KNO3 solution 2-3 times.	• Drain the excess water as soon as possible. • Harvest the marketable umbels as soon as possible. • Dry the produce immediately • Market the produce immediately after drying.

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

General contingency measures:

Before the event	During the event	After the event

Feed and fodder availability		
1.Conserving fodder/crop residues/ forest grass by silage / hay making either by individual or on community basis 2. Preparing complete diets and storing in strategic locations 3. Organize procurement of dry fodders / feed ingredients from surplus areas 4. Establish fodder banks and feed banks 5. Livestock relief camps during floods/cyclones must be planned in the vicinity of relief camps for people 6. Capacity building and preparedness	1.Organise relief camps 2.Supply silage / hay to farmers with productive stock on subsidized rates 3.Segregate old, weak and unproductive stock and send for slaughter 4. Supply mineral mixture to avoid deficiencies 5. Dry fodder must be offered to the livestock in little quantities for number of times 6.Concentrate feed or complete feed must be offered to only productive and young stock only	1. Capacity building to stake holders on drought /cyclone/flood mitigation in livestock sector 2. Promote fodder cultivation. 3. Flushing the stock to recoup 4. Avoid soaked and mould infected feeds / fodders to livestock 5. Replenish the feed and fodder banks 6.Promote fodder preservation techniques like silage / hay making
Drinking water		
1.Construct drinking water tanks in herding places, village junctions and in relief camp locations 2.Plan for sufficient number of tanks for water transportation 3.Identify bore wells, which can sustain demand. 4.Procure sufficient quantities of water Sanitizers	1.Regular supply of clean drinking water to all tanks 2.Cleaning the tanks in regular intervals 3.Keep the livestock away from contaminated flood/cyclone/stagnated waters 3.Add water sanitizers	1.Hand over the maintenance of the structures to panchayats 2.Sensitize the farming community about importance of clean drinking water
Health and disease Management		

1.Procure and stock emergency medicines and vaccines for important endemic diseases of the area 2. All the stock must be immunized for endemic diseases of the area 3. Carry out deworming to all young stock 4. Keep stock of bleaching powder and lime 5.Carry out Butax spray for control of external parasites 6.Identify the Clinical staff and trained paravets and indent for their services as per schedules 7.Identify the volunteers who can serve in need of emergency	1.Keep close watch on the health of the stock 2.Sick animals must be isolated and treated Separately. 3. Carry out deworming and spraying to all animals entering into relief camps 4. Clean the animal houses regularly and apply disinfectants. 5.Safe and hygienic disposal of dead animal carcasses 6. Organize with community daily lifting of dung from relief camps	1.keep close surveillance on disease outbreak. 2.Undertake the vaccination depending on need 3.Keep the animal houses clean and spray disinfectants

2.5.1 Detailed contingent strategies for Livestock

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
Drought			
Feed and Fodder availability	Establishment of silvi-pastoral system in CPRs with ***Stylosanthus hamata*** and ***Cenchrus ciliaris*** as grass with ***Leucaena leucocephala*** as tree component (or suggest suitable similar system to your district) Top dressing of N in 2-3 split doses @ 20-25 kg N/ha in common property resources (CPRs) like temple lands, panchyat lands or private property resources (PPRs) like waste and degraded lands with the monsoon pattern for higher biomass production In chronically drought prone districts promote cultivation of short duration fodder crops of	Harvest and use biomass of dried up crops (Groundnut, Sorghum, Bajra, Maize, Rice, Horse gram) material as fodder. Harvest the tree fodder (Neem, Subabul, Acasia, Pipal etc) and unconventional feeds resources available and use as fodder for livestock (LS). Available feed and fodder should be cut from CPRs and stall fed in order to reduce the energy requirements of the animals UMMB, hay, concentrates and vitamin & mineral mixture should be transported to the needy areas	Concentrates supplementation should be provided to all the animals. The farmers may be advised to practice "flushing the stock" to recoup Short duration fodder crops should be sown in unsown and crop failed areas

	sorghum/bajra/maize(UP chari, MP chari, HC-136, HD-2, GAINT BAJRA, L-74, K-677, Ananad/African Tall, Kisan composite, Moti, Manjari, B1-7 Chopping of fodder should be made as mandatory in every village through supply and establishment of good quality chaff cutters. Avoid burning of maize stover Harvesting and collection of perennial vegetation particularly grasses which grow during monsoon Proper drying, bailing and densification of harvested grass from previous season Creation of permanent fodder, feed and fodder seed banks in all drought prone areas	from the reserves at the district level initially and latter stages from the near by districts. Educate the farmers about mixing groundnut haulms and paddy straw (1:3) before feeding the animals. All the hay should be enriched with 2% Urea molasses solution or 1% common salt solution and fed to LS Herd should be split and supplementation should be given only to the highly productive and breeding animals Provision of emergency grazing/feeding (Cow-calf camps or other special arrangements to protect high productive & breeding stock) Available kitchen waste should be mixed with dry fodder while feeding Arrangements should be made for mobilization of small ruminants across the districts where no drought exits with subsidized road/rail transportation and temporary shelter provision for the shepherds Unproductive livestock should to be culled during severe drought Create transportation and marketing facilities for the culled and unproductive animals Supply silage and or hay on subsidized rates to the farmers having high productive stock Subsidized loans should be provided to the livestock keepers	where no further routine crop sowing is not possible Supply of quality seeds of fodder varieties and motivating the farmers to cultivate at least 10% of their land holding for fodder production
Heat wave	As the district being chronically prone to heat waves the following permanent measures are suggested i) Plantation of trees like Neem, Pipal, Subabul around the shed ii) Spreading of husk/straw/coconut leaves over	Allow the animals preferably early in the morning or late in the evening for grazing during heat waves Feed green fodder/silage / concentrates during day time and roughages / hay during night time in case	Feed the animals as per routine schedule Allow the animals for grazing (normal

	the roof top of the shed iii) Water sprinklers / foggers in the animal shed **iv)** Application of white reflector paint on the roof to reduce thermal radiation effect	of heat waves Put on the foggers / sprinkerlers during heat weaves in case of high productive animals In severe cases, vitamin 'C' (5-10ml per litre) and electrolytes (Electral powder @ 20g per litre) should be added in water during severe heat waves.	timings)
Health and Disease management	Timely vaccination (as per enclosed vaccination schedule) against all endemic diseases Procurement of emergency medicines and medical kits Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district	Carryout deworming to all animals entering into relief camps Identification and quarantine of sick animals Constitution of Rapid Action Veterinary Force Performing ring vaccination (8 km radius) in case of any outbreak Restricting movement of livestock in case of any epidemic Rescue of sick and injured animals and their treatment	Conducting mass animal health camps Conducting fertility camps Mass deworming camps Farmers should be advised to breed their milch animals during July-September so that the peak milk production does not coincide with mid summer Keeping vigil on disease outbreak
Insurance	Encouraging insurance of livestock	Listing out the details of the dead animals	Submission for insurance claim and availing insurance benefit Purchase of new productive animals

Drinking water	Identification of water resources Rain water harvesting and create water bodies/watering points (when water is scarce use only as drinking water for animals) Construction of drinking water tanks in herding places/village junctions/relief camp locations	Restrict wallowing of animals in water bodies/resources	Bleach (0.1%) drinking water / water sources Provide clean drinking water

Vaccination programme for cattle and buffalo:

Disease	**Age and season at vaccination**
Anthrax	In endemic areas only, Feb to May
Haemorrhagic septicaemia (HS)	May to June
Black quarter (BQ)	May to June
Foot and mouth disease (FMD)	July/August and November/December

Vaccination schedule in small ruminants (Sheep & Goat)

Disease	**Season**
Foot and mouth disease (FMD)	Preferably in winter / autumn
Peste des Petits Ruminants (PPR)	Preferably in January
Black quarter (BQ)	May / June
Enterotoxaemia (ET)	May

Haemorrhagic septicaemia (HS)	March / June
Sheep pox (SP)	November

2.5.2 Poultry

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
Drought			
Shortage of feed ingredients	Storing of house hold grain like maize, broken rice, bajra etc, in to use as feed in case of severe drought	Supplementation only for productive birds with house hold grain Supplementation of shell grit (calcium) for laying birds Culling of weak birds	Supplementation to all survived birds
Drinking water		Use water sanitizers or offer cool drinking water	
Health and disease management	Culling of sick birds. Deworming and vaccination against RD and fowl pox	Mixing of Vit. A,D,E, K and B-complex including vit C in drinking water (5ml in one litre water)	Hygiene and sanitation of poultry house Disposal of dead birds by burning / burying with lime powder in pit
Heat wave			
Shelter/environment management	Provision of proper shelter with good ventilation	In severe cases, foggers/water sprinklers/wetting of hanged gunny bags should be arranged Don't allow for scavenging during mid day	Routine practices are followed
Health and disease	Deworming and vaccination	Supplementation of house hold grain	Routine practices are followed

management	against RD and fowl pox	Provide cool and clean drinking water with electrolytes and vit. C (5-10 ml per litre) In hot summer, add anti-stress probiotics in drinking water or feed (Reestobal etc., 10-20ml per litre)	

2.5.2 Fisheries/ Aquaculture : -Not applicable-