State: Rajasthan
Agriculture Contingency Plan for District: Chittorgarh

1.0 District Agriculture profile					
1.1	**Agro-Climatic/Ecological Zone**				
	Agro Ecological Sub Region (ICAR)	Central Highlands (Malwa), Gujarat Plain And Kathiawar Peninsula, Semi-Arid Eco-Region (5.2)			
	Agro-Climatic Zone (Planning Commission)	Central Plateau & Hills Region (VIII)			
	Agro Climatic Zone (NARP)	Sub Humid Southern Plain Zone (RJ-7)			
	List all the districts or part thereof falling under the NARP Zone	Bhilwara, Bundi, Chittorgarh and Udaipur			
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude	
		24 ^{0}52'N	74^{0} 38'E	392	
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Agricultural Research Station , Maharana Pratap university of Agriculture and technology RCA campus , Udaipur-313001			
	Mention the KVK located in the district	Krishi Vigyan Kendra, Rithola, Distt. Chittorgarh-312001			

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):	739.2	31.9	4th Week (25 SMW) of June	1st week (40 SMW) of Oct
	NE Monsoon(Oct-Dec):	26.0	1.8	-	-
	Winter (Jan- March)	8.3	1.0	-	-
	Summer (Apr-May)	20.0	1.3	-	-
	Annual	793.5	36.0	-	-

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)	1035.826	475.983	196.084	50.414	91.017	137.294	0.645	84.389	16.526	24.134

1. 4	**Major Soils (common names like red sandy loam deep soils (etc.,)***	Area ('000 ha)	Percent (%) of total
	Black Clay medium to deep soil	302.98	29.25
	Brown clay loam deep soil	216.49	20.9

	Red gravelly loam Shallow/hilly soil	429.56	41.47
	Red loamy medium soil	24.44	2.36
	Brown clay gravelly shallow to medium soil	33.14	3.2

* mention colour, depth and texture (heavy, light, sandy, loamy, clayey etc) and give vernacular name, if any, in brackets

1.5	**Agricultural land use**	Area (‘000 ha)	Cropping intensity %
	Net sown area	435.323	158.6
	Area sown more than once	255.342	
	Gross cropped area	690.665	

1.6	**Irrigation**	Area (‘000 ha)		
	Net irrigated area	253.996		
	Gross irrigated area	707.191		
	Rainfed area	440.775		
	Sources of Irrigation	Number	Area (‘000 ha)	Percentage of total irrigated area
	Canals	--	10.380	**4.09**
	Tanks	--	1.930	**0.76**
	Open wells	89422	141.257	**55.62**
	Bore wells	15575	97.671	**38.46**
	Other sources (please specify)	--	2.725	**1.07**
	Total Irrigated Area	--	253.963	
	No. of Tractors	11307		
	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	13	-	-
	Semi- critical	1	-	-
*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%				

1.7Area under major field crops & horticulture (as per latest figures) (2007-08)

1.7	Major field crops cultivated	Area ('000 ha)							
		Kharif			*Rabi*				
		Irrigated	**Rainfed**	**Total**	**Irrigated**	**Rainfed**	**Total**	**Summer**	**Grand total**
	Maize	-	-	187.640	-	-	-	-	187.640
	Groundnut	-	-	24.836	-	-	-	-	24.836
	Soybean	-	-	140.057	-	-	-	-	140.57
	Sorghum	-	-	9.429	-	-	-	-	9.429
	Urd	-	-	9.361	-	-	-	-	9.361
	Wheat	-	-	-	-	-	122.359	-	122.359
	Rapeseed & Mustard	-	-	-	-	-	81.927	-	81.927
	Gram	-	-	-	-	-	26.637	-	26.637

	Horticulture crops - Fruits	**Area ('000 ha)**		
		Total	**Irrigated**	**Rainfed**
	Aonla	0.54	-	-
	Guava	0.432	-	-
	Orange	0.214	-	-
	Papaya	0.213	-	-
	lime	0.207	-	-
	Horticulture crops - Vegetables	Total	Irrigated	**Rainfed**
	Onion	0.510	-	-
	Tomato	0.345	-	-
	Brinjal	0.335	-	-
	Okra	0.335	-	-
	Medicinal and Aromatic /Spices crops	Total	Irrigated	**Rainfed**
	Coriander	2.451	-	-
	Fenugreek	7.467	-	-
	Garlic	11.200	-	-
	Ajwain	14.222	-	-
	Isabgol	1.659	-	-
	Grazing land	91.017	-	-

1.8	**Livestock**	**Male ('000)**	**Female ('000)**	**Total ('000)**
	Non descriptive Cattle (local low yielding)	-	-	694.048
	Crossbred cattle	-	-	-
	Non descriptive Buffaloes (local low yielding)	-	-	408.618
	Graded Buffaloes	-	-	-
	Goat	-	-	637.965
	Sheep	-	-	104.751

	Others (Camel, Pig, Yak etc.)	-	-	15.897
	Commercial dairy farms (Number)			
1.9	**Poultry**	**No. of farms**	**Total No. of birds ('000)**	
	Commercial	-	155.828	
	Backyard	-		

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)
	ii) Inland (Data Source: Fisheries Department)	**No. Farmer owned ponds**	**No. of Reservoirs**		**No. of village tanks**	
		Nil	**30**		**423**	
	B. Culture					

	Water Spread Area (ha)	**Yield (t/ha)**	**Production ('000 tons)**
i) **Fresh water** (Data Source: Fisheries Department)	**18590**	**88.59**	**1647**

1.11 Production and Productivity of major crops (Average of last 5 years: 2004, 05, 06, 07, 08)

1.11	Name of crop	**Kharif**		**Rabi**		**Summer**		**Total**		**Crop residue as fodder** ('000 tons)
		Production ('mt)	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)										
	Maize	328.285	1976	-	-	-	-	328.285	1976	-
	Soybean	146.093	1054	-	-	-	-	146.093	1054	-
	Groundnut	41.617	1225	-	-	-	-	41.617	1225	-
	Sorghum	8.421	634	-	-	-	-	8.421	634	-
	Urd	4.331	306	-	-	-	-	4.331	306	-
	Wheat	-	-	327.012	3125	-	-	327.012	3125	-
	Rapeseed & Mustard	-	-	126.697	1618	-	-	126.697	1618	-
	Gram	-	-	25.776	856	-	-	25.776	856	-

1.12	**Sowing window for 5 major field crops** (start and end of normal sowing period)	Maize	Groundnut	Soybean	Wheat	Mustard	Gram
	Kharif- Rainfed	15th - 30th June	15th - 30th June	15th - 30th June			
	Kharif-Irrigated	10th June – 15th July	10th June – 15th July	10th June – 15th July			
	Rabi- Rainfed					15th Sept. - 15th Oct.	1st Oct – 15th Oct.
	Rabi-Irrigated				15th Oct – 30th Nov	15th Sept. – 15th Oct.	15th Oct –30th Oct

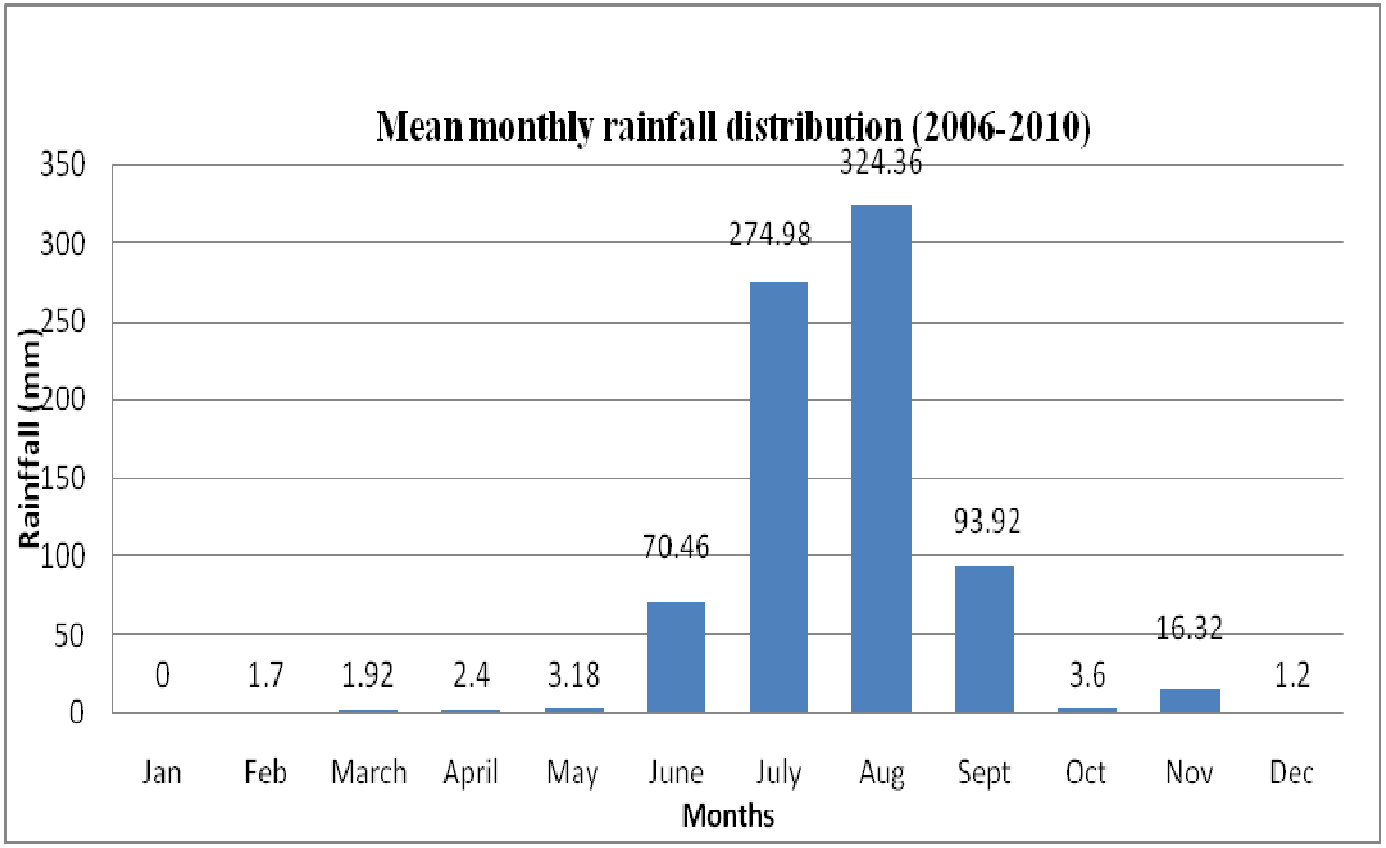
1.13	**What is the major contingency the district is prone to?** (Tick mark)	**Regular**	**Occasional**	**None**
	Drought	-	√	-
	Flood	-	-	√
	Cyclone	-	-	√
	Hail storm	-	-	√
	Heat wave	-	√	-
	Cold wave	-	√	-
	Frost	-	√	-
	Sea water intrusion	-	-	√
	Pests and disease outbreak (specify) Grass hopper in maize and sorghum	-	√	-

1.14	**Include Digital maps of the district for**	Location map of district within State as Annexure I	Enclosed: Yes
		Mean annual rainfall as Annexure 2	Enclosed: Yes
		Soil map as Annexure 3	Enclosed: Yes

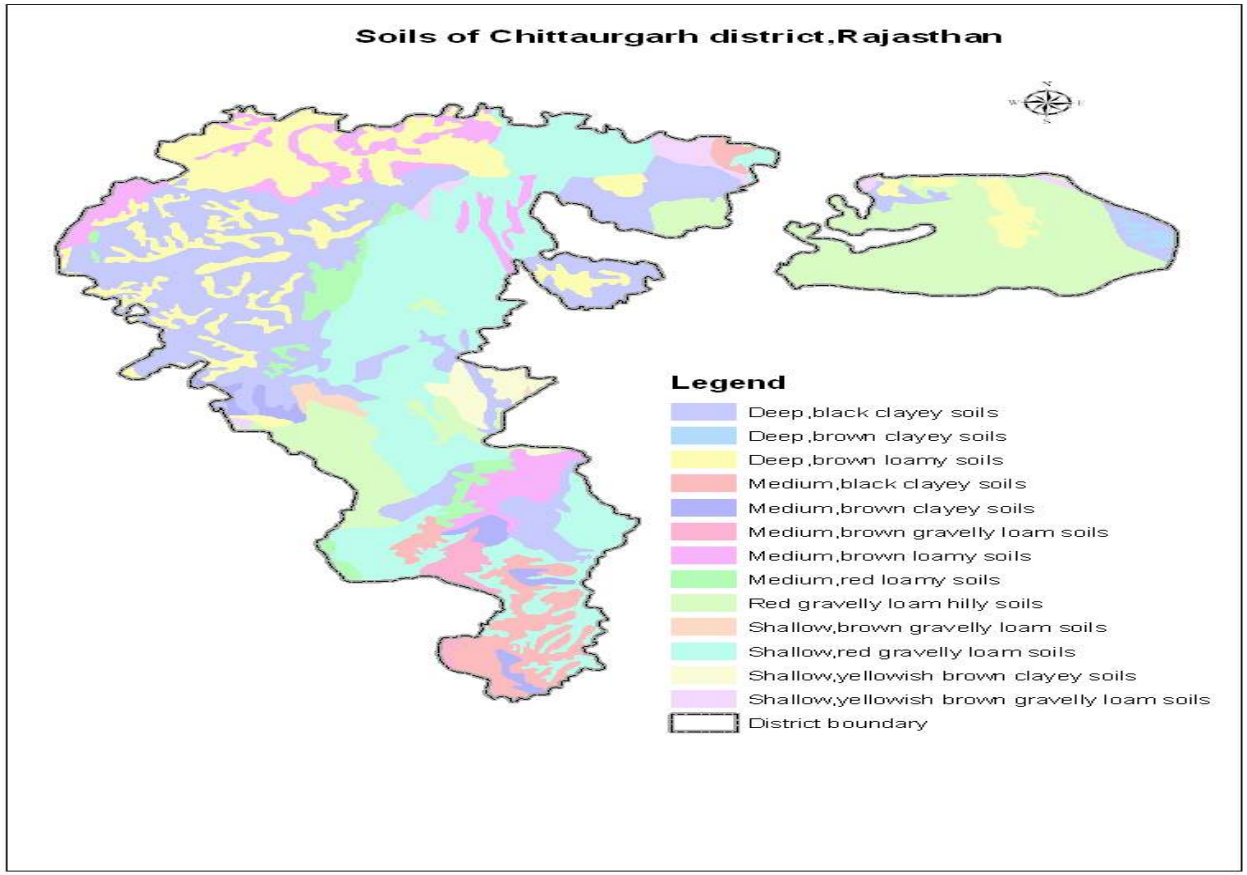
Annexure I
Location map of Chittorgarh district

Annexure 2

Mean monthly rainfall graph of Chittorgarh district



Annexure 3
Soil map



Source: NBSS&LUP, Regional Centre, Udaipur

2.0 Strategies for weather related contingencies
2.1 Drought
2.1.1 Rainfed situation

Condition			Suggested Contingency measures		
Early season drought (delayed onset) Delay by 2 weeks (Specify month)* (July 2nd wk)	Major Farming situation[a]	Normal Crop / Cropping system[b]	Change in crop / cropping system[c] including variety	Agronomic measures[d]	Remarks on Implementation[e]
	Brown clay loam deep soil	Maize: Mahi Dhaval, Navjot,Ganga – 11, Aravali Makka – 1,Him – 129, PEHM-1, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5	Maize: Aravali Makka-1, Him – 129, PEHM-1, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5, Mahi Kanchan	• Inter cropping of blackgram (2:2) or pigeonpea (1:1) • Dry sowing/ sowing by roto-till-drill • Seed priming of maize (0.1 % thiourea)for 6 hrs	• Seed Drills/rota till drill may be provided under RKVY • Supply of seed through RSSC/ NSC • Availability of seed drill for inter cropping through RKVY.
		Soybean: JS–335, MACS–13, PK – 472, MACS–58, PS – 16, JS – 71 – 05, Pratap Soya-1	Soybean: MACS–58, PS – 16, JS-335, JS – 71 – 05, Pratap Soya-1	-	
		Sorghum: CSH–6, CSH – 14, CSH – 9, Pratap jowar 1430, CSV-17, CSV-15, CSH-13, CSV- 13, SPV-346 and RJ 96	Sorghum: CSH – 6, CSH – 14, Pratap jowar 1430, CSV-17, CSV-15, CSH-13, CSV- 13, RJ - 96	• Increase seed rate by 25 % • Dry sowing/ sowing by roto-till-drill • Apply 20 kg of carbofuron or phorate (3g) granules in the seed row before sowing to check shoot fly infestation • Grow sorghum with green gram in 1:1 row ratio at 30 cm spacing	
		Groundnut: AK 12- 24, G.G. – 2, J –38, D.H.-86, TG-37-A, J.L. – 24, Pratap mungphali – 1, Pratap mungphali – 2	Groundnut: J.L. – 24, Pratap mungphali – 2, TG – 37 – A	Intercropping with sesamum at 6:2 row ratio.	
		Sesame: RT – 46, RT – 125, TC – 25	Sesame: RT – 46, RT – 125, TC – 25	Line sowing	
		Blackgram: Krishna, T– 9, PU-19, RBU-38	Blackgram: T– 9, PU-19, RBU-38	-	

	Black Clay medium to deep soil	**Maize:** Mahi Dhaval, Navjot,Ganga – 11, Aravali Makka – 1,Him – 129, PEHM-1, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5	**Maize:** Aravali Makka-1, Him – 129, PEHM-1, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5, Mahi Kanchan	• Inter cropping of blackgram (2:2) or pigeonpea (1:1) • Dry sowing/ sowing by roto-till-drill • Seed priming of maize (0.1 % thiourea)for 6 hrs	
		Soybean: JS–335, MACS–13, PK – 472, MACS–58, PS – 16, JS – 71 – 05, Pratap Soya-1	**Soybean:** MACS–58, PS – 16, JS-335, JS – 71 – 05, Pratap Soya-1	-	
		Sorghum: CSH–6, CSH – 14, CSH – 9, Pratap jowar 1430, CSV-17, CSV-15, CSH-13, CSV- 13, SPV- 346 and RJ 96	**Sorghum:** CSH – 6, CSH – 14, Pratap jowar 1430, CSV-17, CSV-15, CSH-13, CSV- 13, RJ - 96	• Increase seed rate by 25 % • Dry sowing/ sowing by roto-till-drill • Apply 20 kg of carbofuron or phorate (3g) granules in the seed row before sowing to check shoot fly infestation • Grow sorghum with green gram in 1:1 row ratio at 30 cm spacing	
		Groundnut: AK 12- 24, G.G. – 2, J –38, D.H.-86, TG-37-A, J.L. – 24, Pratap mungphali – 1, Pratap mungphali – 2	**Groundnut:** J.L. – 24, Pratap mungphali – 2, TG – 37 – A	Intercropping with sesamum at 6:2 row ratio.	
		Sesame: RT – 46, RT – 125, TC – 25	**Sesame:** RT – 46, RT – 125, TC – 25	Line sowing	
		Blackgram: Krishna, T– 9, PU-19, RBU-38	**Blackgram:** T– 9, PU-19, RBU-38	-	

	Red gravelly loam Shallow/hilly soil	**Maize:** Mahi Dhaval, Navjot,Ganga – 11, Aravali Makka – 1,Him – 129, PEHM-1, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5	**Maize:** Aravali Makka-1, Him – 129, PEHM-1, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5, Mahi Kanchan	• Inter cropping of blackgram (2:2) or pigeonpea (1:1) • Dry sowing/ sowing by roto-till-drill • Seed priming of maize (0.1 % thiourea)for 6 hrs	
		Soybean: JS–335, MACS–13, PK – 472, MACS–58, PS – 16, JS – 71 – 05, Pratap	**Soybean:** MACS–58, PS – 16, JS-335, JS – 71 – 05, Pratap Soya-1	-	

		Soya-1			
		Sorghum: CSH–6, CSH – 14, CSH – 9, Pratap jowar 1430, CSV-17, CSV-15, CSH-13, CSV- 13, SPV- 346 and RJ 96	**Sorghum:** CSH – 6, CSH – 14, Pratap jowar 1430, CSV-17, CSV-15, CSH-13, CSV- 13, RJ - 96	• Increase seed rate by 25 % • Dry sowing/ sowing by roto-till-drill • Apply 20 kg of carbofuron or phorate (3g) granules in the seed row before sowing to check shoot fly infestation • Grow sorghum with green gram in 1:1 row ratio at 30 cm spacing	
		Groundnut: AK 12- 24, G.G. – 2, J –38, D.H.-86, TG-37-A, J.L. – 24, Pratap mungphali – 1, Pratap mungphali – 2	**Groundnut:** J.L. – 24, Pratap mungphali – 2, TG – 37 – A	Intercropping with sesamum at 6:2 row ratio.	
		Clusterbean: RGC-936, RGC-986, RGC-1003	-	Normal sowing time	
		Sesame: RT – 46, RT – 125, TC – 25	**Sesame:** RT – 46, RT – 125, TC – 25	Line sowing	
		Blackgram: Krishna, T– 9, PU-19, RBU-38	**Blackgram:** T– 9, PU-19, RBU-38	-	

Condition			Suggested Contingency measures		
Early season drought (delayed onset) Delay by 4 weeks (Specify month) July 4th wk	Major Farming situation[a]	Normal Crop/cropping system[b]	Change in crop/cropping system[c]	Agronomic measures	Remarks on Implementation[e]
	Brown clay loam deep soil	Maize/sorghum for fodder or blackgram or sesamum	Maize (fodder): African Tall, Pratap Makka Chari-6 Sorghum Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Sesame: RT – 46, RT – 125, TC – 25 Blackgram: T– 9, PU-19, RBU-38	Increase in seed rate by 10 – 15 per cent in sesame and black gram	Link RSSC/NSSC,, SAU for good quality seed , RKVY for Seed Drills .and subsidies of Government for Rota-tll-drill
	Black Clay medium to deep soil	Maize/sorghum for fodder or blackgram or sesamum	Maize (fodder): African Tall, Pratap Makka Chari-6 Sorghum Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Sesame: RT – 46, RT – 125, TC – 25 Blackgram: T– 9, PU-19, RBU-38	Increase in seed rate by 10 – 15 per cent in sesame and black gram	
	Red gravelly loam	Maize/sorghum for	Maize (fodder): African Tall, Pratap Makka	Increase in seed rate	

	Shallow/hilly soil	fodder or blackgram, Cluster bean or sesamum	Chari-6 Sorghum Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Sesame: RT – 46, RT – 125, TC – 25 Clusterbean: RGC-936 Blackgram: T– 9, PU-19, RBU-38	by 10 – 15 per cent in sesame, Cluster bean and black gram	

Condition			Suggested Contingency measures		
Early season drought (delayed onset) Delay by 6 weeks (Specify month) Aug 2nd wk	Major Farming situation[a]	Normal Crop/cropping system[b]	Change in crop/cropping system[c]	Agronomic measures[d]	Remarks on Implementation[e]
	Brown clay loam deep soil	Maize/Sorghum (Fodder), or Fallow-mustard	Maize (fodder): African Tall, Pratap Makka Chari-6 Maize + Cowpea (fodder) Sorghum (fodder): Rajasthan Chari-1,Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Sorghum + cowpea (fodder) Fallow-Toria/Taramira/ Mustard/Gram	• One hoeing may be done for conserve soil moisture	Link RSSC/NSSC,, SAU for good quality seed , RKVY for Seed Drills and subsidies of Government for Rota-til-drill
	Black Clay medium to deep soil	Maize/Sorghum (Fodder), or Fallow-mustard	Maize (fodder): African Tall, Pratap Makka Chari-6 Maize + Cowpea (fodder) Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Sorghum + cowpea (fodder) Fallow-Toria/Taramira/ Mustard/Gram	• One hoeing may be done for conserve soil moisture	
	Red gravelly loam Shallow /hilly soil	Maize/Sorghum (Fodder), or Fallow-mustard	Maize (fodder): African Tall, Pratap Makka Chari-6 Maize + Cowpea (fodder) Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Sorghum + cowpea (fodder) Fallow-Toria/Taramira/ Mustard/Gram	• One hoeing may be done for conserve soil moisture	

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation[a]	Normal Crop/cropping system[b]	Change in crop/cropping system[c]	Agronomic measures[d]	Remarks on Implementation[e]
Delay by 8 weeks (Specify month) (Aug 4th wk)	Brown clay loam deep soil	Fallow – mustard/Taramira/ Lentil/gram	Fallow-Mustard (Bio-902 and Laxmi)/gram(Dahod Yellow and ICCV-10)	Conserve moisture by run of bakhar after every rain fall Sowing preferably by Rota till drill	Link RSSC/NSSC,, SAU for good quality seed , RKVY for Seed Drills .and subsidies of Government for Rota-tll-drill
	Black Clay medium to deep	Fallow –mustard/gram	Fallow-Mustard (Bio-902	Conserve moisture by run of bakhar after every rain fall	

	soil		and Laxmi)/gram(Dahod Yellow and ICCV-10)	Sowing preferably by Rota till drill	
	Red gravelly loam Shallow /hilly soil	Fallow –mustard/barley	Fallow-Mustard (Bio-902 and Laxmi)/barley (RD-2052, RD-2552, RD-2035)	Conserve moisture by run of bakhar after every rain fall Sowing preferably by Rota till drill	

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 measure[s]	Remarks on Implementation[e]
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Brown clay loam deep soil	Maize, Groundnut, Soybean, Sorghum, sesame, blackgram	• If germination is less than 50% then farmers should go for re-sowing except groundnut with early maturing varieties with 25% higher seed rate • If plant population is more than 75% go for gap filling. • In groundnut gap filling can be done by sesame and in maize by blackgram or sesame	• Hoeing by hand hoe to develop soil mulch for conservation of soil moisture. • Removal of Weeds in time. • Use green material for mulching	Availability of wheel hoe/power weeder for Inter-culture operation through RKVY.
	Black Clay medium to deep soil	Maize, Groundnut, Soybean, Sorghum, sesame	• If germination is less than 50% then farmers should go for re-sowing except groundnut with early maturing varieties with 25% higher seed rate • If plant population is more than 75% go for gap filling. • In maize gap filling can be done by sesame or blackgram • In groundnut gap filling can be done by sesame and in maize by blackgram or sesame	• Hoeing by hand hoe to develop soil mulch for conservation of soil moisture. • Removal of Weeds in time. • Use green materials for mulching	
	Red gravelly loam Shallow /hilly soil	Maize, Groundnut, Soybean, Sorghum, sesame, Cluster bean	• If germination is less than 50% then farmers should go for re-sowing with early maturing varieties with 25% higher seed rate • If plant population is more than 75% go for gap filling. • In maize and sorghum gap filling can be done by sesame or greengram	• Hoeing by hand hoe to develop soil mulch for conservation of soil moisture. • Removal of Weeds in time. • Use green material for mulching	

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[b]	Crop management[c]	Soil nutrient & moisture conservation measues[d]	Remarks on Implementation[e]
At vegetative stage	Brown clay loam deep soil	Maize, Groundnut, Soybean, Sorghum, sesame, blackgram	• Thinning of plants by 30 to 50% • Weeding	• Earthing at 30 to 35 days after sowing. • Life saving irrigation should be done from harvested rain water • mulching in crop rows. • Spray of kaolin at 5% • Spray of 1000 ppm thiourea • Ridging in maize	Availability of wheel hoe and power weeder for Inter-culture operations through RKVY.
	Black Clay medium to deep soil	Maize, Groundnut, Soybean, Sorghum, sesame	• Thinning of plants by 30 to 50% • Weeding	• Earthing at 30 to 35 days after sowing. • Life saving irrigation should be done from harvested rain water • mulching in crop rows • Spray of kaolin at 5% • Spray of 1000 ppm thiourea • Ridging in maize	
	Red gravelly loam Shallow /hilly soil	Maize, Groundnut, Soybean, Sorghum, sesame, Cluster bean	• Thinning of plants by 30 to 50% • Weeding •	• Earthing at 30 to 35 days after sowing. • Life saving irrigation should be done from harvested rain water • mulching in crop rows • Spray of kaolin at 5% • Spray of 1000 ppm thiourea • Ridging in maize	

Condition			Suggested Contingency measures		
Mid season drought (long dry spell) At flowering/ fruiting stage	Major Farming situation[a]	Normal Crop/cropping system[b]	Crop management[c]	Soil nutrient & moisture conservation measues[d]	Remarks on Implementation[e]
	Brown clay loam deep soil	Maize, Groundnut, Soybean, Sorghum, sesame, blackgram	• Removal of lower leaves for fodder in maize and sorghum. • Detasseling in maize • Harvest maize for baby corn if market is available • Harvesting of maize for green cobs and green fodder	• Spray of kaolin @ 5% • Spray of 1000 ppm of thiourea. Life saving irrigation should be done from harvested rain water except sesame • Mulching in crop rows • Apply stover of sesame, cotton as mulch	• Crop Insurance • Farm Pond construction under RKVY

	Black Clay medium to deep soil	Maize, Groundnut, Soybean, Sorghum, sesame	• Removal of lower leaves for fodder in maize and sorghum. • Detasseling in maize • Harvest maize for baby corn if market is available • Harvesting of maize for green fodder	• Spray of kaolin @ • Life saving irrigation should be done from harvested rain water except sesame • Mulching in crop rows • Spray of 1000 ppm of thiourea. • Apply stover of sesame, cotton as mulch	
	Red gravelly loam Shallow /hilly soil	Maize, Groundnut, Soybean, Sorghum, sesame, Cluster bean	• Removal of lower leaves for fodder in maize and sorghum. • Detasseling in maize • Harvest maize for baby corn if market is available • Harvesting of maize for green cobs and green fodder	• Spray of kaolin @ 5% • Spray of 1000 ppm of thiourea. • Life saving irrigation should be done harvested rain water except sesame • Mulching in crop rows • Apply stover of sesame, cotton as mulch	

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]
	Brown clay loam deep soil	Maize, Groundnut, Soybean, Sorghum, sesame, blackgram	• Harvest maize for green cobs • Life saving irrigation with harvested rain water. • Harvest groundnut for green pods	If late season rains are there, after failure of Kharif crops, Rabi crops i.e. Taramira/ Toria etc. can be sown	Link Crop Insurance and Construction of Farm Pond under NREGA and RKVY
	Black Clay medium to deep soil	Maize, Groundnut, Soybean, Sorghum, sesame	• Harvest maize for green cobs • Life saving irrigation with harvested rain water. • Harvest groundnut for green pods	If late season rains are there, after failure of Kharif crops, Rabi crops i.e. Taramira/ Toria etc. can be sown	
	Red gravelly loam Shallow /hilly soil	Maize, Groundnut, Soybean, Sorghum, sesame, Cluster bean	• Harvest maize for green cobs • Life saving irrigation with harvested rain water. • Harvest groundnut for green pods	If late season rains are there, after failure of Kharif crops, Rabi crops i.e. Taramira/ Toria etc. can be sown	

2.1.2 Drought - Irrigated situation

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	Mention source of irrigation, topography (upland/lowland) and soil colour & depth Eg; canal irrigated shallow red soils; tankfed medium deep black soils				
	Brown clay loam deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Short Duration Varieties Wheat- HI-1531, HI-1500, HI-8627, Raj-3777, Gram – Pratap Chana – 1, ICCV – 10, Dahod Yallow Mustard: Laxmi, Bio – 902	• Sowing of short duration varieties. • 25% increase in seed rate in wheat. • Irrigation by pressurized irrigation systems. • Irrigation at critical stages. • Thiourea spray reproductive stage.	If ponds is available sowing can be done by harvested water
	Black Clay medium to deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Short Duration Varieties Wheat- HI-1531, HI-1500, HI-8627, Raj-3777, Gram – Pratap Chana – 1, ICCV – 10, Dahod Yallow Mustard: Laxmi, Bio – 902	• Sowing of short duration varieties. • 25% increase in seed rate in wheat. • Irrigation by pressurized irrigation systems. • Irrigation at critical stages. • Thiourea spray at reproductive stage.	
	Red gravelly loam Shallow /hilly soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/barley mustard / gram	Short Duration Varieties Wheat- HI-1531, HI-1500, HI-8627, Raj-3777, Barley- RD-103, RD-2035, RD – 2052, RD - 2552 Gram – Pratap Chana – 1, ICCV – 10, Dahod Yallow Mustard: Laxmi, Bio – 902	• Sowing of short duration varieties. • 25% increase in seed rate in wheat. • Irrigation by pressurized irrigation systems. • Irrigation at critical stages. • Thiourea spray at reproductive stage.	

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	Brown clay loam deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame –	Replace wheat by mustard, lentil and gram Intercropping of gram+mustard (one row of	• Weed free environment • Use of weeds as mulch. • Irrigation by pressurized irrigation systems.	If pond is available sowing can be done by harvested water

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]
low rainfall		Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	mustard across the 4 m spacing)	• Irrigation at critical stages. • Thiourea spray at reproductive stage. • Spray of Kaolin @ 5%	
	Black Clay medium to deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Replace wheat by mustard, lentil and gram Intercropping of gram+mustard (one row of mustard across the 4 m spacing)	• Weed free environment • Use of weeds as mulch. • Irrigation by pressurized irrigation systems. • Irrigation at critical stages. • Thiourea spray at reproductive stage. • Spray of Kaolin @ 5%	
	Red gravelly loam Shallow /hilly soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/barley mustard / gram	Replace wheat by Barley, Mustard and Taramira, Mustard: Laxmi, Bio-902 Barley: RD-2052, RD-2035, RD-2552 Taramira: T-27, RTM-314	• 25% increase in seed rate in barley • Spray of 2% urea in barley • Irrigation by pressurized irrigation systems. • Irrigation at critical stages. • Thiourea spray at reproductive stage. • Spray of Kaolin @ 5%	

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	Brown clay loam deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Only Gram, Mustard, Taramira can be grown if conserved moisture is available due to late season rain fall	• Soil mulch by stirring • Weed free environment • Spray of Kaolin @ 5%	Create awareness and skill improvement from KVKS
	Black Clay medium to deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Only Gram, Mustard, Taramira can be grown if conserved moisture is available due to late season rain fall	• Soil mulch by stirring • Weed free environment • Spray of Kaolin @ 5%	
	Red gravelly loam Shallow /hilly soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/barley mustard / gram	Only Gram, Mustard, Taramira can be grown if conserved moisture is available due to late season rain fall	• Soil mulch by stirring • Weed free environment • Spray of Kaolin @ 5%	

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	Brown clay loam deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Only Gram, Mustard, Taramira can be grown if conserved moisture is available due to late season rain fall	• Soil mulch by stirring • Weed free environment • Spray of Kaolin @ 5%	Create awareness and skill improvement from KVKS
	Black Clay medium to deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Only Gram, Mustard, Taramira can be grown if conserved moisture is available due to late season rain fall	• Soil mulch by stirring • Weed free environment • Spray of Kaolin @ 5%	
	Red gravelly loam Shallow /hilly soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/barley mustard / gram	Only Gram, Mustard, Taramira can be grown if conserved moisture is available due to late season rain fall	• Soil mulch by stirring • Weed free environment • Spray of Kaolin @ 5%	

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	Brown clay loam deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Sowing of early maturing and drought tolerant varieties of different crops	• Thinning of excess plants in mustard • Weed free environment • In-situ mulching by weeds • Irrigation by MIS • Irrigation at critical stages • Spray of Kaolin @ 5%	Percolation tanks may be dugout through NREGA or NABARD
	Black Clay medium to deep soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram Maize/sorghum-wheat/mustard / gram	Sowing of early maturing and drought tolerant varieties of different crops	• Thinning of excess plants in mustard • Weed free environment • In-situ mulching by weeds • Irrigation by MIS • Irrigation at critical stages • Spray of Kaolin @ 5%	
	Red gravelly loam Shallow /hilly soil	Groundnut-wheat /mustard Soybean-wheat Kharif pulses/Sesame – Mustard/ wheat/ gram	Sowing of early maturing and drought tolerant varieties of different crops	• Thinning of excess plants in mustard • Weed free environment • In-situ mulching by weeds • Irrigation by MIS	

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]
		Maize/sorghum-wheat/barley mustard / gram		• Irrigation at critical stages • Spray of Kaolin @ 5%	

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[k]	**Flowering stage[l]**	**Crop maturity stage[m]**	**Post harvest[n]**
Maize	• Drain excess water by proper drainage • Earthling up of crop for anchorage • Intercultivation with hoe to improve the aeration and to control weeds • Apply 20kg N/ha at optimum moisture content	• Drain excess water by proper drainage • Earthingup of crop for anchorage • Intercultivation with hoe to improve soil aeration and to control weeds • Apply multi nutrient or hormonal spray to promote flowering	• Drain excess water by proper drainage as early as possible • Harvest green cobs from dislodged plants for immediate marketing(Maizesorghum) • Shift the produce into the shed	Harvest the cobs after they are dried up properly Dry the grains up to 10-12% moisture level before storage /bagging
Sorghum	Drain out excess water Take up plant protection measures	Drain out excess water Timely plant protection measures are to be taken up	Drain out excess water	Shifting of grain immediately after drying
Soybean	• Drain excess water by proper drainage • Intercultivation with hoe to improve the aeration and to control weeds • Apply 20kg N/ha at optimum moisture content	• Drain excess water by proper drainag • Intercultivation with hoe to improve soil aeration and to control weeds • Apply multi nutrient or hormonal spray • Planofix to promote flowering	• Drain excess water by proper drainage as early as possible • Harvest at physiological maturity on clear sunny day	Dry the produce up to 10-12% moisture level before storage /bagging
Cluster bean	-do-	-do-	-do-	Dry the produce up to 10-12% moisture level before storage /bagging
Black gram	-do-	-do-	-do-	Dry the produce up to 10-12% moisture level before storage /bagging
Sesame	-do-	-do-	-do-	Dry the produce up to 10-12% moisture level before storage /bagging

Groundnut	1. Drain out the excess water at the earliest 2. Take-up the gap filling at the earliest 4. Apply 10-15 kg N/ha after draining excess water 5. Take up plant protection measures against possible pests and disease incidence	1. Drain out the excess water at the earliest 2. Apply 4-5 kg N/acre after draining excess water 3. spray KNO_3 1 % or Urea 2%water soluble fertilizers like 19-19- or 19, 20-20-20, 21-21-21 at 1% to support nutrition 4. Take up plant protection measures against possible pests and disease incidence 5. Incorporate. Gypsum 200 kg/ acre at flowering.	1. drain out the excess water at the earliest 2. spray KNO_3 1 % or 2% Urea to support nutrition 4. Take up plant protection measures against possible pests and disease incidence	1. Drain the field immediately. 2. Harvest the produce after the event. 3. Dry the pods to safe moisture level to prevent storage pests.
Rabi crops	Drain the excess water as early as possible	Drain the excess water as early as possible	• Drain the excess water as early as possible • Allow the crop to dry completely before harvesting	Well dry the produce up to10- 12% moisture before storage
Horticulture				
Vegetables	Removal of excess water from field by formation of small channels	Removal of excess water from field by formation of small channels	Removal of excess water and harvest vegetables	
Heavy rainfall with high speed winds in a short span[2]				
Crops Maize	• Drain the excess water as early as possible Earthling up of crop for anchorage • Intercultivation with hoe to improve the aeration and to control weeds Apply 20kg N/ha at optimum moisture content	Drain the excess water as early as possible Apply 20kg N/ha at optimum moisture content	• Drain the excess water as early as possible • Allow the crop to dry completely before harvesting • Harvest green cobs for marketing	Well dry the produce up to10- 12% moisture before storage
Sorghum	Drain out excess water Take up plant protection measures	Drain out excess water Timely plant protection measures are to be taken up	Drain out excess water	Shifting of grain immediately after drying
Soybean	• Drain excess water by proper drainage • Intercultivation with hoe to improve the aeration and to control	• Drain excess water by proper drainag • Intercultivation with hoe to improve soil aeration and to control weeds • Apply multi nutrient or	• Drain excess water by proper drainage as early as possible • Harvest at physiological maturity on clear	Dry the produce up to 10-12% moisture level before storage /bagging

	weeds • Apply 20kg N/ha at optimum moisture content	hormonal spray • Planofix to promote flowering	sunny day	
Cluster bean,	-do-	-do-	-do-	-do-
Black gram,	-do-	-do-	-do-	-do-
Sesame,	-do-	-do-	-do-	-do-
Groundnut	Drain out the excess water at the earliest Take-up the gap filling at the earliest Apply 10-15 kg N/ha after draining excess water Take up plant protection measures against possible pests and disease incidence	Drain out the excess water at the earliest Apply 4-5 kg N/acre after draining excess water spray KNO_3 1 % or Urea 2%water soluble fertilizers like 19-19- or 19, 20-20-20, 21-21-21 at 1% to support nutrition Take up plant protection measures against possible pests and disease incidence Incorporate Gypsum 200 kg/ acre at flowering.	Drain out the excess water at the earliest Spray KNO_3 1 % or 2% Urea to support nutrition Take up plant protection measures against possible pests and disease incidence	Drain the field immediately. Harvest the produce after the event. Dry the pods to safe moisture level to prevent storage pests.
Horticulture				
Fruit crops	Drain excess water from the basin/field Apply N10-20kgN/ha to regain vigor Need based plant protection	Drain excess water with proper drainage Application of N-fertilizers (10-20KgN/ha) Need based plant protection Spray planofix to promote flowering	Fruit harvest at proper stage	Grading , shorting and produce placed in proper way to avoid rotten
vegetables	Removal excess water from field by formation of small channels	Removal excess water from field by formation of small channels	Removal excess water and harvest vegetables	

Outbreak of pests and diseases due to unseasonal rains				
Maize/	**Insect pest :-**Aphid, Jassids spray Dimethoate 30EC or Monocrotophos 36 SL 1ml / lit water	**Insect pest :-**Stem Borer Quinalphos @ 2 ml/lit .		
Sorghum	Early planting with(in one week) onset of monsoon to avoid shoot fly incidence for	Stem borer damage can be checked by application of insecticides like carbaryl3G,	Dusting og carbaryl50 WP,Carbaryl3D once or	Quick drying grain 10-12% moisture to

	kharif crop End of sept 1st week of October to escape the damage of shoot fly for rabi crop Spraying dithane M-45@2%, 2-3 times during early growth of plants to control rust disease	furodon3G@10-12kg/ha in the whorl at 30-35 days after germination	twice at ear emergence to control sorghum midge and ear head bug	avoid storage grain pests
Soybean	Yellow mosaic virus	Spray of methyl demeton/ monocrotophos any other systemic insecticide to control the vector of virus		Quick drying of grain 10-12% moisture to avoid storage grain pests

2.3 Floods Not Applicable

Condition	**Suggested contingency measure**			
Transient water logging/ partial inundation	**Seedling / nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
	NA			

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

Extreme event type	**Suggested contingency measure[r]**			
	Seedling / nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat wave				
Horticulture				
Vegetables**(Tomato/ Onion/Chilli /Brinjal)**	Protected cultivation in shade net house Spray of borex at 0.1% Arrangement of wind breaks	Light & frequent irrigation	Light & frequent irrigation	Timely picking of fruits
Fruit crops	Protect the seedlings by providing the shed/shade net house Arrangement of wind breaks	Bordeaux paste to exposed bark, Protect the branches of the tree from sunscorching Mulching around base of the trunk of the tree	Bordeaux paste to exposed bark Protect the branches of the tree from sunscorching Mulching around base of the trunk of the tree	Harvest the crop as early as possible or keep in cold storage
Cold wave				
Wheat	Light irrigation Smoking during the night Arrangement of wind breaks	Light irrigation Smoking during the night Arrangement of wind breaks	• Spray of H2SO4 @ 0.1%, • Burning of crop residues around the	Harvest the crop at physiological maturity
Mustard	-do-	-do-		-do-

Gram	-do-	-do-	field • Light irrigation	-do-

Horticulture				
Pea, tomato, brinjal	Protected cultivation in shade net house Spray of borex at 0.1% Arrangeement of wind breaks	Protected cultivation in shade net house Spray of borex at 0.1% Arrangeement of wind breaks	• Spray of H2SO4 @ 0.1%, • Burning of crop residues around the field • Light irrigation	Harvest the crop as early as possible or keep in cold storage
Frost	Protected cultivation in shade net house Spray of borex at 0.1% Arrangeement of wind breaks	Protected cultivation in shade net house Spray of borex at 0.1% Arrangeement of wind breaks		
Wheat	-do-	-do-	• Spray of H2SO4 @ 0.1%, • Burning of crop residues around the field • Light irrigation	
Mustard	-do-	-do-		
Gram	-do-	-do-		
Horticulture				
Pea, Tomato, Brinjal	Protected cultivation in shade net house Spray of borex at 0.1% Light irrigation	Light irrigation Smoking during the night	• Spray of H2SO4 @ 0.1%, • Burning of crop residues around the field • Light irrigaiton	

2.5 Contingent strategies for livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
Drought			
Feed and Fodder availability	As the district is occasionally prone to drought the under mentioned measures may be taken to enhance the availability of feed and fodder base at the village/ household level Sowing of horsegram/Lucerne etc., during NE monsoon Preservation green maize fodder as silage All the crop residues especially Bajra Karabi, Wheat/barley straw/ Chopped sewan/Dhaman/Bharut/ Dry leaves of Jharberi/ Groundnut bhusa should be stored properly in the	Harvest and use all the failed crop (Maize, Blackgram, Sorghum, Ground nut, Cluster bean, Wheat, Barley, Green gram, Soybean etc.,) material as fodder and feed the Livestock. Use judiciously the karabi, Preserved sewan /Dhaman /Bharut, Wheat straw, Lopped Khejari High productive animals should be Supplemented with tree fodder Available feed and fodder should be cut from CPRs and stall fed in order to reduce the energy requirements of the animals Provision of emergency grazing/feeding (Cow-calf	Flushing the stock to recoup Replenish the feed and fodder banks

	farm of hay at individual farmer level. Harvest the top fodder (Khejari, Neem, Subabul, Acasia, Pipol etc) and create fodder banks at village level Establishment of silvi-pastoral system in CPRs with ***Stylosanthus hamata*** and ***Cenchrus ciliaris*** as grass with ***Leucaena leucocephala*** as tree component Top dressing of N in 2-3 split doses @ 20-25 kg N/ha in CPRs with the monsoon pattern for higher biomass production Increase area under short duration fodder crops of 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 etc.,) on farmers fields with some input subsidy Avoid burning of wheat straw Harvesting and collection of perennial vegetation particularly grasses which grow during monsoon Proper drying, bailing and densification of harvested grass Capacity building and preparedness of the stakeholders and official staff for the extreme events	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 Subsidized loans should be provided to the livestock keepers for procurement of feed	
Heat & Cold wave	Arrangement for protection from **heat wave** i) Provision shed with bamboo/thatched material ii) Plantation around the shed iii) H_2O sprinklers / foggers in the shed **iv)** Application of white reflector paint on the roof **Cold wave :** Covering all the wire meshed walls / open area with gunny bags/ polyethylene sheets (with a mechanism for lifting during the day time and putting down during night time)	Allow the animals early in the morning or late in the evening for grazing during heat waves Allow for grazing between 10AM to 3PM during cold waves Feed green fodder/silage / concentrates during day time and roughages / hay during night time in case of heat waves Add 25-50 ml of edible oil in concentrates and fed to the animal during cold waves Put on the foggers / sprinkerlers during heat weaves and heaters during cold waves In severe cases, vitamin 'C' and electrolytes should be added in H_2O during severe heat waves. Apply / sprinkle lime powder in the animal shed during	Feed the animals as per routine schedule Allow the animals for grazing (normal timings)

		cold waves to neutralize ammonia accumulation	
Health and Disease management	Procure and stock emergency medicines and vaccines for important endemic diseases of the area All the stock must be immunized for endemic diseases of the area Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district Adequate refreshment training on draught management to be given to VAS, Jr.VAS, LI with regard to health & management measures. Procure and stock multivitamins & area specific mineral mixture	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 Organize with community, daily lifting of dung from relief camps	Keep close surveillance on disease outbreak. Undertake the vaccination depending on need Keep the animal houses clean and spray disinfectants Farmers should be advised to breed their milch animals during July-September so that the peak milk production does not coincide with mid summer
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 Desilting of ponds 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 Community drinking water trough can be arranged in shandies /community grazing areas	Restrict wallowing of animals in water bodies/resources Provide clean drinking water	Bleach (0.1%) drinking water / water sources Provide clean drinking water

2.5.2 Poultry

	Suggested contingency measures		
	Before the event[a]	**During the event**	**After the event**
Drought			
Shortage of feed ingredients	Storing of house hold grain like wheat, sorghum, bajra etc, Culling of weak birds	Supplementation only for productive birds with house hold grain Supplementation of shell grit (calcium) for laying birds	Supplementation to all
Drinking water	Rain water harvesting	Sanitation of drinking water	Give sufficient water as per the bird's requirement

Health and disease management	Culling of sick birds. Deworming and vaccination against RD and IBD	Mixing of Vit. A,D,E, K and B-complex including vit C in drinking water	Hygienic and sanitation of poultry house Disposal of dead birds by burning / burying with line 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 management	Deworming and vaccination against RD and IBD	Supplementation of house hold grain Provide cool and clean drinking water with electrolytes and vit. C In hot summer, add anti-stress probiotics in drinking water or feed	Routine practices are followed
Cold wave			
Shelter/environment management	Provision of proper shelter Arrangement for brooding Assure supply of continuous electricity	Close all openings with polythene sheets In severe cases, arrange heaters Don't allow for scavenging during early morning and late evening	Routine practices are followed
Health and disease management	Arrangement for protection from chilled air	Supplementation of grains Antibiotics in drinking water to protect birds from pneumonia	Routine practices are followed

2.5.3 : Fisheries/Aquaculture : Not Applicable