Contingency crop planning for district Sukma
State: CHHATTISGARH

1.0 District Agriculture profile				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	Eastern (Chotanagpur) plateau and eastern ghats sub humid eco-region (12.1)		
	Agro-Climatic Zone (Planning Commission)	Eastern plateau and hill region (VII)		
	Agro Climatic Zone (NARP)	Bastar plateau zone		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Bastar, Dantewada, Narayanpur, Kanker, Kondagaon, Sukma & Bijapur (7 districts)		
	Geographic coordinates of district headquarters	**Latitude**	**Longitude**	**Altitude**
		18.40 N	81.66 E	197
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	S.G. College of Agriculture & Research Station, IGKV, Jagdalpur (C.G.)		
	Mention the KVK located in the district with address	**Nil**		
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	S.G. College of Agriculture & Research Station, IGKV, Jagdalpur (C.G.)		

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):	1338.8	56	10-Jun	Sep-15
	NE Monsoon(Oct-Dec):	95.4	8	-	-
	Winter (Jan- March)	10.1	4	-	-
	Summer (Apr-May)	14.8	8	-	-
	Annual	1459.0	76	-	-

***Agricultural statistic Chhattisgarh 2013**

1.3	**Land use pattern of the district (latest statistics)**	**Geographical area**	**Cultivable area**	**Forest area**	**Land Under non-agriculture use**	**Permanent Pastures**	**Cultivable wasteland**	**Land under Misc.tree crops and groves**	**Barren and uncultivable**	**Current fallows**	**Other fallows**
	Area (000ha)	563.6	97.3	310.7	12.7	24.6	-	0	10.3	6.9	11.2

1. 4	**Major Soils (common names like red sandy loam deep soils (etc.,)***	**Area ('000 ha)**	**Percent (%) of total**
	1. Entisol (Bhata-gravely)	-	-
	2. Inceptisol (Matasi-Sandyloam)	-	-
	3. Alfisols (Dorsa-clayloam)	-	-
	4. Vertisols (Kanhar-clayey)	-	-
	5. Bharri	-	-
	Total	-	-
	Others (specify):	-	-

* mention colour, depth and texture (heavy, light, sandy, loamy, clayey etc) and give vernacular name, if any, in brackets (data source: Soil Resource Maps of NBSS & LUP)

1.5	**Agricultural land use**	Area ('000 ha)	Cropping intensity %
	Net sown area	96.3	**101**
	Area sown more than once	1.0	
	Gross cropped area	97.3	

1.6	**Irrigation**	Area ('000 ha)		
	Net irrigated area	1.3		
	Gross irrigated area	1.285		
	Rainfed area	75.720		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area

	Canals	10	0.798	-
	Tanks	8	0.004	-
	Open wells	45	0.011	-
	Bore wells	-	-	-
	Lift irrigation schemes	-	-	-
	Micro-irrigation	-	-	-
	Other sources (please specify)	-	0.197	-
	Total Irrigated Area	-	1.285	-
	Pump sets	-	-	-
	No. of Tractors	-	-	-
	Groundwater availability and use* (Data source: State/Central Ground water Department /Board)	No. of blocks/ Tehsils	(%) area	Quality of water (specify the problem such as high levels of arsenic, fluoride, saline etc)
	Over exploited	Nil	-	-
	Critical	Nil	-	-
	Semi- critical	Nil	-	-
	Safe	15	100	-
	Wastewater availability and use	Nil	-	-
	Ground water quality	**Potable and suitable for irrigation as well**		
*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%,				

Source: Agriculture statistic 2013, Govt. of Chhattisgarh
Source: Agricultural Statistics, 2013, Commissioner of land records, Govt. of Chhattisgarh

1.7 Area under major field crops & horticulture (as per latest figures) (2013)

1.7	**S.No.**	**Major field crops cultivated**	**Area ('000 ha)**							
			Kharif			***Rabi***				
			Irrigated	**Rainfed**	**Total**	**Irrigated**	**Rainfed**	**Total**	**Summer**	**Grand total**
	1	Rice	-	-	-	-	-	-	-	73.085
	2	Wheat	-	-	-	-	-	-	-	0.000
	3	Jowar	-	-	-	-	-	-	-	0.951
	4	Maize	-	-	-	-	-	-	-	2.606
	5	Millets	-	-	-	-	-	-	-	12.363

	6.	**Total Cereals**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**90.384**
	7.	Pigeonpea	-	-	-	-	-	-	-	0.383
	8.	Gram	-	-	-	-	-	-	-	0.001
	9.	GreenGram	-	-	-	-	-	-	-	0.984
	10.	BlackGram	-	-	-	-	-	-	-	0.494
	11.	HorseGram	-	-	-	-	-	-	-	1.093
	12.	Pea	-	-	-	-	-	-	-	0.000
	13.	Lentil	-	-	-	-	-	-	-	0.000
	14.	Lathyrus	-	-	-	-	-	-	-	0.000
	15.	**Total Pulses**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.265**
	16	**All Crops**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**93.649**

Source: Agricultural Statistics, 2013, Commissioner of land records, Govt. of Chhattisgarh

	S.No.	**Horticulture crops - Fruits**	**Area (' 000 ha)**		
			Total	**Irrigated**	**Rainfed**
	1	Mango	0.120	-	-
	2	Banana	0.097	-	-
	3	Papaya	0.000	-	-
	4	Gauva	0.004	-	-
	5	Lemon	0.000	-	-
	6	Water melon	0.000	-	-
	7	Musk melon	0.000	-	-
	8	Ber	0.000	-	-
	9	Aonla	-	-	-
	10	Others	-	-	-
	Total	All fruits	0.006	-	-
		Horticulture crops - Vegetables	**Total**	**Irrigated**	**Rainfed**
	1	Cauliflower	0.004	-	-
	2	Cabbage	0.000	-	-
	3	Brinjal	0.149	-	-
	4	Tomato	0.235	-	-
	5	Bhindi	0.034	-	-
	6	Potato	0.000	-	-
	7	Green Pea	0.000	-	-
	8	Leafy Vegetables	-	-	-

	9.	Onion	0.000	-	-
	10	Cucumber	-	-	-
	11	Bottel guard	-	-	-
	12	Others	0.809	-	-
	13	Spices	0.000	-	-
	14.	All vegetables	1.546	-	-

Source: Directorate of Horticulture, 2010, Govt. of Chhattisgarh

1.8	**Livestock**	**Male ('000)**	**Female ('000)**	**Total ('000)**
	All kinds of cattle	**-**	**-**	**311.160**
	Non descriptive Cattle (local low yielding)	-	-	-
	Improved cattle	-	-	-
	Crossbred cattle	-	-	-
	Non descriptive Buffaloes (local low yielding)	-	-	-
	Descript Buffaloes	-	-	-
	Goat	-	-	64.583
	Sheep	-	-	5.250
	Pig	-	-	-
	Commercial dairy farms (Number)	-	-	-

1.9	**Poultry**	**No. of farms**	**Total No. of birds ('000)**
	Commercial		145.327
	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**	
	B. Culture						

		Water Spread Area (ha)	Yield (t/ha)	Production ('000 tons)
	i) **Brackish water** (Data Source: MPEDA/ Fisheries Department)	Nil	Nil	Nil
	ii) **Fresh water** (Data Source: Fisheries Department)			
	Others			

Source: Agricultural Statistics, 2013, Commissioner of land records, Govt. of Chhattisgarh
Directorate of Fisheries, Govt. of Chhattisgarh
Directorate of veterinary science, 2013, Govt. of Chhattisgarh

1.11 Production and Productivity of major crops (Year 2012-13; specify years)

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 m t)	Productivity (kg/ha)	Production ('000 m t)	Productivity (kg/ha)	Production ('000 m t)	Productivity (kg/ha)	Production ('000 m t)	Productivity (Kg/ha)	
Major Field crops (Crops to be identified based on total acreage)										
Crop 1	Rice	156.158	2136					156.158	2136	
Crop 2	Black Gram	0.221	447					0.221	447	
Crop 3	Maize	4.990	1914					4.990	1914	
Crop 4	Pigeonpea	0.281	733					0.281	733	
Crop 5	Seasamum									
Crop 6	Wheat							0.000		
Crop 7	Lathyrus							0.000		
Crop 8	Linseed									
Crop 9	Gram							0.000		
Crop 10	Greengram					0.480	487	0.480	487	
	All crops							**170.064**		
Major Horticultural crops (Crops to be identified based on total acreage) – Fruits & Vegetables										
Crop 1	Papaya							0.000		
Crop 2	Banana							0.060		

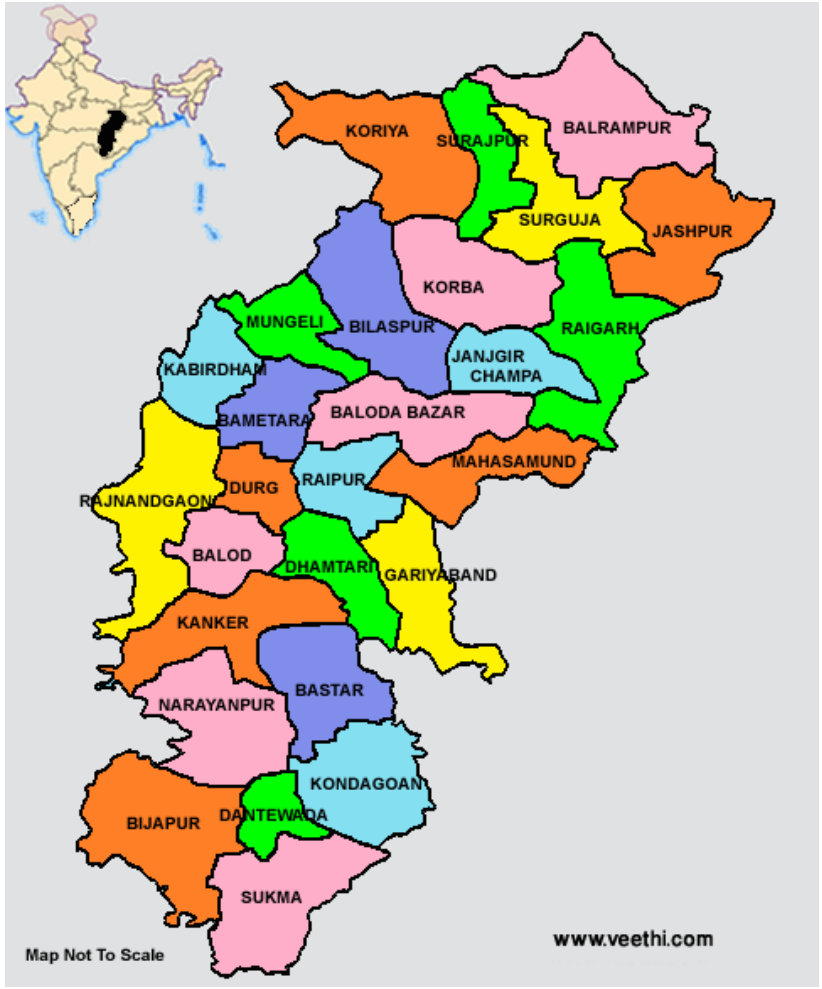
1.12	**Sowing window for 5 major field crops** (start and end of normal sowing period)	Crop 1: Rice	Crop 2:upland crops i.e. maize, sesamum, Urid, mung	Crop 3: Wheat	Crop 4: Pulses	Crop 5: oilseed
	Kharif- Rainfed	June 1nd wk to July 1st wk	June 2nd wk to July 3rd wk		June 3nd wk to July 4th wk	Sept 1st wk to Sept 3rd wk
	Kharif-Irrigated	June 2nd wk to July 2nd wk				
	Rabi- Rainfed			4th wk Oct. to 2nd wk Nov.	2nd wk Oct. to 2nd wk Nov.	2nd wk Oct. to 2nd wk Nov.
	Rabi-Irrigated			1st wk Nov. to 2nd wk Dec.	1st wk Nov. to 4th wk Nov.	1st wk Nov. to 2nd wk Dec.

1.13	**What is the major contingency the district is prone to?** (Tick mark)	**Regular**	**Occasional**	**None**
	Drought			
	Flood		✓	
	Cyclone			
	Hail storm		✓	
	Heat wave			
	Cold wave		✓	
	Frost			
	Sea water intrusion			
	Pests and disease outbreak (specify)		✓	
	Rice		Stem borer, bacterial leaf blight	

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

Annexure I

Location map of Sukma district in Chhattisgarh state



2.0 Strategies for weather related contingencies
2.1 Drought
2.1.1 Rainfed situation

Early season drought (delayed onset)	Major Farming Situationa	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 2 weeks 4th week of June	Slopy Upland (Marhan) Upland Bunded (Tikra)	Rice fallow – (Local variety , Broad casting)	Rice fallow Early duration varieties Aditya(90days), Vanprabha(90 days), Poornima (105 days), Danteshwari (105 days).	• Do hand weeding at 20-25 days after sowing. • To avoid biasi operation following herbicide will be used • Fenoxaprep-p-ethyl 9 EC @ 60 ml. a.i/ ha (625 ml formulation) at 15-20 days +ethoxisulphuron 15 g/ha. a.i (100 ml/ha formulation) or Chlorimura+Metsulfuron 20% @ 4 gms ai/ ha.(20 gram formulation) • For broad leaves and narrow leaves both weed Bispyribac sodium 10% @ 20-25 a.i/ha. (200-250 gm formulation) or pinoxsulam 24% 22.5 gram a.i/ha.(93gram/ha.formulation) • 60:40:30 N: P: K full dose of P & K and ½ dose of N should be applied basal remaining N should be top dressed at tillering and PI stage.	• Percolation tank should be excavated on the upper corner for recharge/life saving irrigation. • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation
	Midland (mal)	Rice fallow – (Local variety , Transplanting without planting geometry)	Poornima(105 days), Annada,(105 days), Danteshwari(105days), Samleshwari (110days), MTU 1001(120 days), MTU 1010(110 days), Karma Mahsuri(125 days) , IGKVR1(Rajeshwari,125days)	• Line Transplanting. • Herbicide like Fenoxaprop-p-Ethyl 9 EC @ 60 ml. ai/ ha. • Chlorimura+Metsulfuran20%@ 4 gms. ai/ ha. Almix @ 8 g and whipsuper 250 ml dissolved in 10 ltrs of water for 1 acre./Butachlor 1.5 kg ai/ha PE. Weeding by upland weeder. • 60:40:30 N: P: K full dose of P & K and ½ dose of N should be applied basal remaining N should be top dressed at tillering and PI stage.	• Percolation tank should be excavated on the upper corner for recharge/ life saving irrigation. • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation
	Lowland (Gabhar)	Rice	Bamleshwari (135days), Swarna(145-150 days), Jaldoobi(140-145 days), Indira Sugandhit Dhan1 (130	• Do hand weeding at 20-25 days after sowing. • To avoid biasi operation following herbicide will be used	• Farm pond for waterstorage/irrigation.

			days), Pusa Basmati (130 days),IGKVR2(Durgeshwari130days),IGKVR1244 Maheshwari)	• Fenoxaprep-p-ethyl 9 EC @ 60 ml. a.i/ ha (625 ml formulation) at 15-20 days +ethoxisulphuron 15 g/ha. a.i (100 ml/ha formulation) or Chlorimura+Metsulfuron 20% @ 4 gms ai/ ha.(20 gram formulation) • For broad leaves and narrow leaves both weed Bispyribac sodium 10% @ 20-25 a.i/ha. (200-250 gm formulation) or pinoxsulam 24% 22.5 gram a.i/ha.(93gram/ha.formulation) • 80:60:40 N: P: K full dose of P & K and ½ dose of N should be applied basal remaining N should be top dressed at tillering and PI	• Trenches should be dug out on the lower side of field for in situ moisture conservation
	Upland & Midland	Maize (Local)	Maize improved variety like : JM-216 (80-85 ays), Chandan safed makka -2 (75 days), Chandan makka -3 (95 days), Navjot (90 days).	• Line sowing, recommended dose of fertilizers & weed management. • □ Manual earthing up at 25-30 DAS • Do hand weeding at 20-25 days after sowing. • To avoid biasi operation following herbicide will be used • Fenoxaprep-p-ethyl 9 EC @ 60 ml. a.i/ ha (625 ml formulation) at 15-20 days +ethoxisulphuron 15 g/ha. a.i (100 ml/ha formulation) or Chlorimura+Metsulfuron 20% @ 4 gms ai/ ha.(20 gram formulation) • For broad leaves and narrow leaves both weed Bispyribac sodium 10% @ 20-25 a.i/ha. (200-250 gm formulation) or pinoxsulam 24% 22.5 gram a.i/ha.(93gram/ha.formulation) • 80:50:30 N: P: K kg/ha.50% N basal and 50% N astop dressing at knee high & silking stage	• One life saving Irrigation
		Maize + Pigeonpea (4:2)	Maize JM-216 (80-85 days), Chandan maize-1(105 days), Chandan safed maize-2 (75 days), Arhar-Rajeelochan and Asha Composite NAC-6004 (125 days)	• One hand weeding at 25-30 DAS • One earthing in maize • Pendimethalin 1 kg ai /ha Sowing across the slope 2 intercultural operations at 20 & 40 DAS • Opening of furrow between rows of pigeon pea	
Early season drought(delayed onset)					
Delay by 4 weeks (Specify month)	Midland (mal)	Rice	Rice-Lehi system Line sowing method Poornima(105 days), Annada,(105 days),	• Do hand weeding at 20-25 days after sowing. • To avoid biasi operation following herbicide will be used • Fenoxaprep-p-ethyl 9 EC @ 60 ml. a.i/ ha (625 ml	• Percolation tank should be excavated on the upper corner for recharge/ life

2nd week of June			Danteshwari(105days), MTU 1001(120 days), MTU 1010(110 days), Karma Mahsuri(125 days),Samleshwari 112days),IGKVR1,	formulation) at 15-20 days +ethoxisulphuron 15 g/ha. a.i (100 ml/ha formulation) or Chlorimura+Metsulfuron 20% @ 4 gms ai/ ha.(20 gram formulation) • For broad leaves and narrow leaves both weed Bispyribac sodium 10% @ 20-25 a.i/ha. (200-250 gm formulation) or pinoxsulam 24% 22.5 gram a.i/ha.(93gram/ha.formulation) • 60:40:30 N: P: K full dose of P & K and ½ dose of N should be applied basal remaining N should be top dressed at tillering and PI stage. • Weeding by implement(Hand Hoe)	saving irrigation. • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation.
	Lowland	Rice	Rice - Lehi system Line sowing method Bamlesh-wari (140 days) Swarna(145 days), Jaldoobi(140 days), Indira Sugandhit Dhan-1(130 days), Pusa Basmati (130 days),IGKVR2 (130days),IGKVR1244(130days)	• Do hand weeding at 20-25 days after sowing. • To avoid biasi operation following herbicide will be used • Fenoxaprep-p-ethyl 9 EC @ 60 ml. a.i/ ha (625 ml formulation) at 15-20 days +ethoxisulphuron 15 g/ha. a.i (100 ml/ha formulation) or Chlorimura+Metsulfuron 20% @ 4 gms ai/ ha.(20 gram formulation) • For broad leaves and narrow leaves both weed Bispyribac sodium 10% @ 20-25 a.i/ha. (200-250 gm formulation) or pinoxsulam 24% 22.5 gram a.i/ha.(93gram/ha.formulation) • 80:60:40 N: P: K full dose of P & K and ½ dose of N should be applied basal remaining N should be top dressed at tillering and PI stage. • Weeding by implement Ambika Paddy Weeder & Cono Weeder)	• Farm pond for waterstorage/irrigation. • Trenches should be dug out on the • lower side of field for in situ moisture conservation
	Upland (Maran)	Finger millet –(Local variety)	Finger millet improved varieties like : GPU 28 (120 days) PES-400 (90-92days) GPU-66, Indira ragi 1 (130 days)	• Line sowing with recommended dose of fertilizers. • One hand weeding at 25- 30 DAS • Sowing across the slope • Opening of furrow at 10-15 m interval Intercultural operations at 12 DAS and 21 DAS for thinning and removal of weeds	
		Sesame	Sesame - Early variety RT-54, TKG- 55, TKG-21 Local (c)	• One hand weeding at 25-30 DAS • Sowing across the Slope	
Early season drought (delayed onset)					
Delay by 6 weeks	Lowland	Rice	Blackgram	• Sowing across the slope with good drainage • Improved variety, Line sowing with recommended	

(Specify month) 4th week of July				fertilizers & Weed management.	
	Upland	Little millet Local Variety Broad casting with out fertilizers	Little millet – improved variety like : OLM-37(80-82 days) OLM-203(110-150 days) JK-8(60-70 days) Birsa undhali-1(70-75 days) TNAU-63(90-95 days) RPMB-1(95-100 days)	• Spraying of Isoproturon @ 0.5kgai /ha Pre emergence • Hand weeding 30 DAS Thinning at 15 days after germination • 40:20:10 N: P: K Kg/ha. • For line sowing one part seed & 20 part sand/FYM mixes with properly. • Two inter-cultural operations at 15-20 DAS • Summer ploughing • Use of FYM 1tonne/ha after every three years	
Early season drought(delayed onset)					
Delay by 8 weeks (Specify month) 2nd week of August	Upland and midland	Niger	Niger -Improved variety IGP-76(105-110 days) JNS-1 (90-100 days) JNS-6 (90-100 days)	• Summer ploughing • 20:20:10 N:P:K kg/ha • One hand weeding at 15-20 DAS • Pendimethelin/Alachlor@1.5kg ai/ha mix with 500 lit water Intercultural operations at 12 DAS and 21 DAS for thinning	
		Horsegram Local varieties used	Horsegram:Indira kulthi 1(80 days), AK-21(80-90 days) HPK-4 (76days), VLGH-1(80 days), Birsa Kulthi(81days), A.K.-21 (83 days), Bastar Kali(95 days)	• Sowing across the slope • Two inter culture operations at 20 and 40 DAS • Life saving irrigation • Summer ploughing • 20:40:20 NPK kg/ha full dose at the time of sowing • 15-20 DAS , 1-2 hand weeding • Thiram @ 3 gm/kg seed,PSB culture @ 5 g/kg seed. • Rhizobium culture 5g/kg seed • Line sowing of horse gram should be followed.	

Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/ crop stand etc.	Upland	Rice	• Foliar Spray of Urea 2-3 % solution in place of top dressing during moisture stress condition. • Life saving irrigation should be given so that crops can be saved. • Gundhi BugControl (Malathion+ DDVP@ 45ml + 5 ml) • Green leaf hopper (At PI stage BPMC @ 1ml/litre of water)	• In the standing crops hand weeding should be done so that moisture remaining within soil may be conserved to the maximum extent possible • Small percolation pits for storing 1 cum of water at the corner of the field.	
	Midland	Rice	• Under Broadcasting situation biasi should be done at 30-35 DAS followed by saghan chalai	• Percolation tank should be excavated on the upper corner for recharge/ life saving. • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation.	
	Lowland	Rice	• Life saving irrigation • should be given so that crops can be saved. • Weedicide like Fenoxaprep P. Ethyl 9 EC should be used @ 60 ml. active ingredient/ ha. • Chlorimura+Metsulfuran 20 percent should be used @ 4 gms. Active ingredient/ ha. And application should be done in 500-600 litres of water.) • If farmers want to do biasi operation, narrow sized plough should be used for biasi operation. • Ploughing should be done at wider spacing.		

			• Chalai operation should be done immediately after biasi operation and plants should be uniformly distributed and fertilizers should be applied.		
	Upland	Maize	• One life saving irrigation. • Early duration maize crop varieties (up to 110 days) should be sown. • For this, Pusa early variety is appropriate. • Herbicide: Attrazine 50% 2.5kg/ha or Pendimethalin 30 EC 2.5lit/ha or oxyflurophin 23.5 EC 425 ml/ha in 750 liter of water. • 50% N basal and 50% N as top dressing at knee high & silking stage	• Earthing up by manual 25-30 DAS • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation.	
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)					
At vegetative stage	Upland	Rice	• Foliar spray of Urea 2-3 % solution in place of top dressing during moisture stress condition. • Life saving irrigation should be given so that crops can be saved. • Green leaf hopper (At PI stage BPMC @ 1 ml/litre of water) □ • Under Broadcasting situation biasi should be done at 30-35 DAS followed by saghan chalai as per availability of sufficient Moisture. In the standing crops the hand weeding/Mulching should be done so that moisture	• In the standing crops the hand weeding/Mulching should be • done so that moisture remaining within soil may be conserved to the maximum extent possible. • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation. • In the standing crops the hand weeding/Mulching should be done so that moisture remaining within soil may be conserved to the maximum extent possible. • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation	

			remaining within soil may be conserved to the maximum extent possible. • Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation.		
	Upland	Kodo millet Indira kodo1, JK 155, JK 48 and JK 439	• Improved variety with recommended dose of fertilizer • Two intercultural operations at 15-20 DAS	• Contour bunding on full length of field for interception of runoff • Hand weeding should be one	
	Upland	Little Millet JK 8, BG1, OLM 36	• Improved variety with recommended dose of fertilizer • Thinning at 15 days after germination • Life saving irrigation should be given so that • crops can be saved.	Trenches should be dug out on the upper side and lower side of field for in situ moisture conservation. Hand weeding should be done.	
		Finger Millet - PR 202, GPU 48 and GPU 67	• Improved variety with recommended dose of fertilizer • Intercultural perations at 12 DAS and 21 DAS for thinning and removal of weeds • □ Remaining 50% N in two splits at branching & PI stage	• Remaining 50% N in two plits at branching & PI stage • Sowing across the slope • One hand weeding at 25-30 DAS	
Terminal drought (Early withdrawal of monsoon)					
		Rice	Niger (Devmali & Utakmandal) • Improved Variety With ecommended fertilizer • □ Intercultural operations at 12 DAS and 21 DAS for thinning • One hand weeding @15-20	• Sowing across the slope. • Summer ploughing • Pendimethilin/Alachlore @1.5kg ai/ha mix with 500 lit water	

			DAS		
		Rice	Horsegram (Indira kulti 1) • Improved Variety With recommended fertilizer • 1-2 hand weeding. • Iife saving irrigation should be given so that crops can be saved	• 20:40:20 NPK kg/ha full dose at the time of sowing 15-20 DAS. • Sowing across the slope. • Two inter culture operations at 20 and 40 DAS • 0.5 ml Calyxin (0.05 %) spray to control powdery mildew.	
		Rice	• Horsegram • Improved variety with recommended fertilizer • Two Intercultural operations at 12 DAS and 21 DAS for thinning • 1-2 hand weeding life saving irrigation	• 20:40:30 NPK Kg /ha. • Summer ploughing One hand weeding 15-20@ DAS. • Sowing across the slope.	

Continuous high rainfall in a short span leading to water logging					
	Crop	**Vegetative**	**Flowering**	**Crop maturity**	**Post harvest**
Continuous high rainfall in a short span leading to water logging	Rice	• Drainage of excess water, management of blast (tricyclozol 6 g/10 l of water) • Do not apply urea as top dressing	• Drainage of excess water, management of blast (tricyclozol 6 g/10 l of water) and stem borer (Chlorpyriphos @ 1.5 ml/l of water)	Drainage of excess water,	• Cover the harvested produce in farm yard.
Continuous high rainfall in a short span leading to water logging	Maize	• Drainage of excess water • Disease & pest management	• Drainage of excess water • Pest & disease management	• Drainage of excess water • Protection against pest & diseases	• Drainage • Shifting of produce to gowdon or safer place protecting from stored grain pest & disease
Continuous high rainfall in a short span leading to water logging	Blackgram	• Drainage of excess water • Disease & pest management	• Drainage of excess water • Pest & disease management	• Drainage of excess water • Protection against pest & diseases	• Drainage • Shifting of produce to gowdon or safer place protecting from stored grain pest & disease
Continuous high	Niger	• Drainage of	• Drainage of excess water	• Drainage of excess water	• Drainage

rainfall in a short span leading to water logging		excess water • Disease & pest management	• Pest & disease management	• Protection against pest & diseases	• Shifting of produce to gowdon or after place protecting from stored grain pest & disease
	Horsegram	• Drainage of excess water • Disease & pest management	• Drainage of excess water • Pest & disease management	• Drainage of excess water • Protection against pest & Diseases	• Drainage • Shifting of produce to gowdon or after place protecting from stored grain pest & disease