

State: CHHATTISGARH

Agriculture Contingency Plan for District: Balod

1.0 District Agriculture profile				
1.1	Agro-Climatic/Ecological Zone			
	Agro Ecological Sub Region (ICAR)	11.0 Chhattisgarh/Mahanadi Basin Agro-eco region (J3(Cd/Cm)5		
	Agro-Climatic Zone (Planning Commission)	Zone-7 Eastern plateau and hills region		
	Agro Climatic Zone (NARP)	Chhattisgarh plain zone		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Raipur, Bilaspur, Korba, Raigarh, Janjgir-champa, Kabirdham, Rajnandgaon, Durg, Balod, Baloda Bazar, Bemetara, Dhamtari, Mahasamund, Korba (15 districts)		
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		20.73 N	81.20E	323 m
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ZARS, Raipur		
	Mention the KVK located in the district with address	Krishi Vigyan Kendra, Anjora, Durg (C.G.)		
Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	Department of Agrometeorology, College of Agriculture, IGKV, Raipur (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)	923.0	48	2 nd week of June	4 th week of September
	NE Monsoon(Oct-Dec)	66.4	4	Post monsoon (October-December)	-
	Winter (Jan- March)	18.2	4	Winter rains	-
	Summer (Apr-May)	20.4	3	-	-
	Annual	1027.9	59	-	-

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)	352.7	255.8	24.9	31.8	19.	-	0.1	5.0	3.3	4.2

***Agricultural statistic Chhattisgarh 2013**

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

* 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)

Source: Agricultural Statistics, 2010, Directorate of Agriculture, Govt. of Chhattisgarh

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	176.8	143
	Area sown more than once	79.0	
	Gross cropped area	255.8	

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	89.7		
	Gross irrigated area	104.2		
	Rainfed area	151.5		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals	32	67.499	

Tanks	183	4.808	
Open wells	462	0.931	
Bore wells	11505	28.711	
Lift irrigation schemes		-	
Micro-irrigation			
Other sources (please specify)		0.646	
Total Irrigated Area		102.595	
Pump sets	12544		
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: Directorate of Agriculture, 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			Summer	Grand total
			Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
1	Rice	96.0	81.2	177.2	-	-	-	-	177.2	
2	Wheat	-	-	-	2.1	1.5	3.6	-	3.6	
3	Jowar	-	0.01	0.01	-	0.002	0.002	-	0.01	
4	Maize	-	0.1	0.1	-	-	-	-	0.1	
5	Millets	-	1.3	1.3	-	-	-	-	1.3	
6.	Total Cereals	-	-	178.6	-	-	3.6	-	182.2	
7.	Pigeonpea	-	0.6	-	-	-	-	-	0.6	
8.	Gram	-	-	-	-	-	7.9	-	7.9	
9.	GreenGram	-	0.2	-	-	-	-	-	0.2	
10.	BlackGram	-	2.4	-	-	-	-	-	2.4	
11.	HorseGram	-	0.4	-	-	-	-	-	0.4	
12.	Pea	-	0.5	-	-	-	-	-	0.5	
13.	Lentil	-	0.8	-	-	-	-	-	0.8	
14.	Lathyrus	-	50.6	-	-	-	-	-	50.6	
15.	Total Pulses	-	55.4	-	-	-	-	-	63.3	
16.	Rapeseed-mustard	-	-	-	-	1.118	1.118	-	1.118	
17.	Linseed	-	-	-	-	4.276	4.276	-	4.276	
18.	Groundnut	-	0	-	-	-	-	-	0	
19.	Seasamum	-	0.3	-	-	-	-	-	0.3	
20.	Soybean	-	0.1	-	-	-	-	-	0.1	
21.	Sunflower	-	0.02	-	-	-	-	-	0.02	
22.	Safflower	-	0.1	-	-	-	-	-	0.1	
23.	Total Oilseeds	-	0.5	-	-	-	-	-	0.5	
24.	Vegetables	-	-	-	-	-	-	-	-	
25.	Sugarcane	-	-	-	-	-	-	-	0.3	
26	All Crops	-	-	-	-	-	-	-	-	

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

S.No.	Horticulture crops - Fruits	Area (' 000 ha)		
		Total	Irrigated	Rainfed
1	Mango	0.1	-	-
2	Banana	0.01	-	-
3	Papaya	0.01	-	-
4	Gauva	0.01	-	-
5	Lemon	-	-	-
6	Water melon	0	-	-
7	Musk melon	-	-	-
8	Ber	-	-	-
9	Aonla	-	-	-
10	Others	-	-	-
Total	All fruits	0.1	-	-
	Horticulture crops - Vegetables	Total	Irrigated	Rainfed
1	Cauliflower	0.2	-	-
2	Cabbage	0.1	-	-
3	Brinjol	0.5	-	-
4	Tomato	0.5	-	-
5	Bhindi	0.5	-	-
6	Potato	0	-	-
7	Green Pea	0	-	-
8	Leafy Vegetables	-	-	-
9.	Onion	0.01	-	-
10	Cucumber	-	-	-
11	Bottel guard	-	-	-
12	Others	1.6	-	-
13	Spices	0.3	-	-
14.	All vegetables	3.4	-	-
	Medicinal and Aromatic crops	-	-	-
	Plantation crops	-	-	-

Source: Directorate of Horticulture, 2013, Govt. of Chhattisgarh

1.11 Production and Productivity of major crops (2012-13)

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	357.5	2018	-	-	-	-	357.5	2018	-
Crop 2	Black Gram	0.6	264	-	-	-	-	0.6	264	-
Crop 3	Maize	0.2	1298	-	-	-	-	0.2	1298	-
Crop 4	Pigeonpea	0.3	532	-	-	-	-	0.3	532	-
Crop 5	Rapeseed Mustard	0.5		0.5	411	-	-	0.5	411	-
Crop 6	Wheat	-	-	3.3	916	-	-	3.3	916	-
Crop 7	Lathyrus	-	-	21.0	415	-	-	21.0	415	-
Crop 8	Soybean	0.1	1123	-	-	-	-	0.1		-
Crop 9	Gram	-	-	9.6	1217	-	-	9.6	1217	-
Crop 10	Greengram	0.1	230	-	-	-	-	0.1	230	-
Crop 11	Linseed	1.7	399	-	-	-	-	1.7	399	-
Major Horticultural crops (Crops to be identified based on total acreage) – Fruits & Vegetables										
Crop 1	Papaya	0	-	-	-	-	-	0	-	-
Crop 2	Banana	0.2	17222	-	-	-	-	0.2	17222	-

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, Urd, mung	Crop 3: Wheat	Crop 4: Pulses	Crop 5: oilseed
	Kharif- Rainfed	June 2 nd week to July 1 st week	June 2 nd week to July 3 rd week	-	-	-
	Kharif-Irrigated	June 2 nd week to July 2 nd week	-	-	-	-
	Rabi- Rainfed	-	-	4 th week October. to 2 nd week November	2 nd week October to 2 nd week November	2 nd week October to 2 nd week November
	Rabi-Irrigated	-	-	1 st week November to 2 nd week December	1 st week November to 4 th week November	1 st week November to 2 nd week December

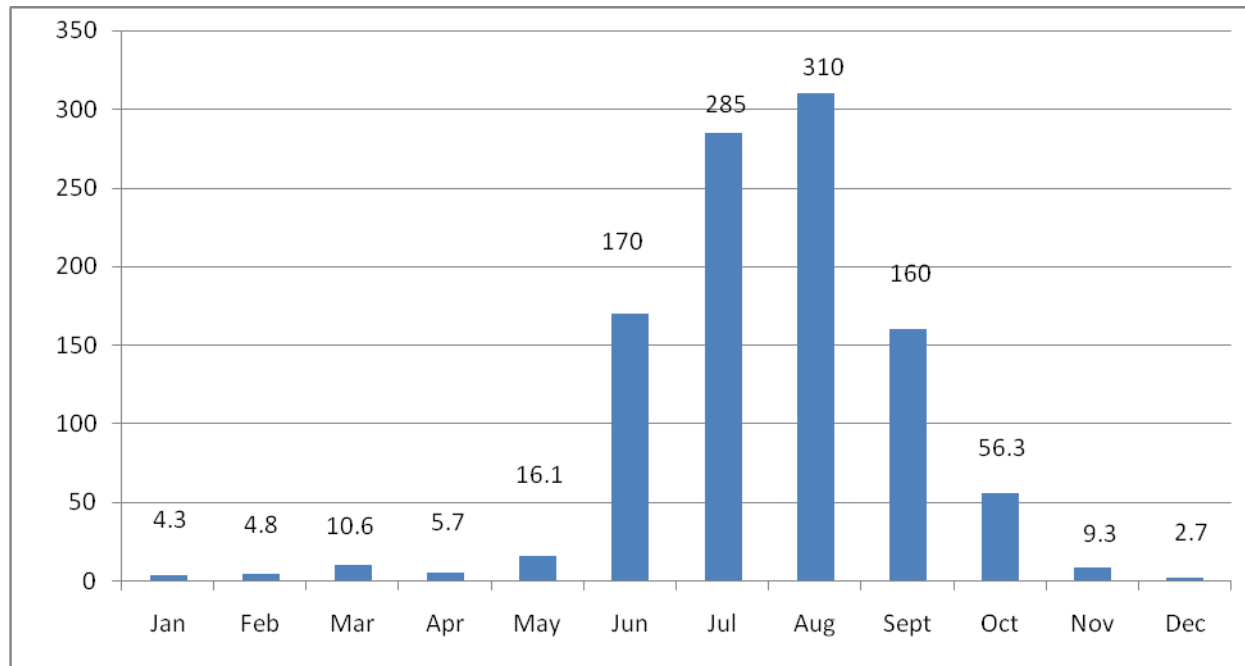
1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought	✓		
	Flood		✓	
	Cyclone			✓
	Hail storm		✓	
	Heat wave		✓	
	Cold wave		✓	
	Frost			✓
	Sea water intrusion			✓
	Pests and disease outbreak (specify)		✓	
	Rice		Stem borer, bacterial leaf blight	

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: Yes
		Soil map as Annexure 3	Enclosed: Yes

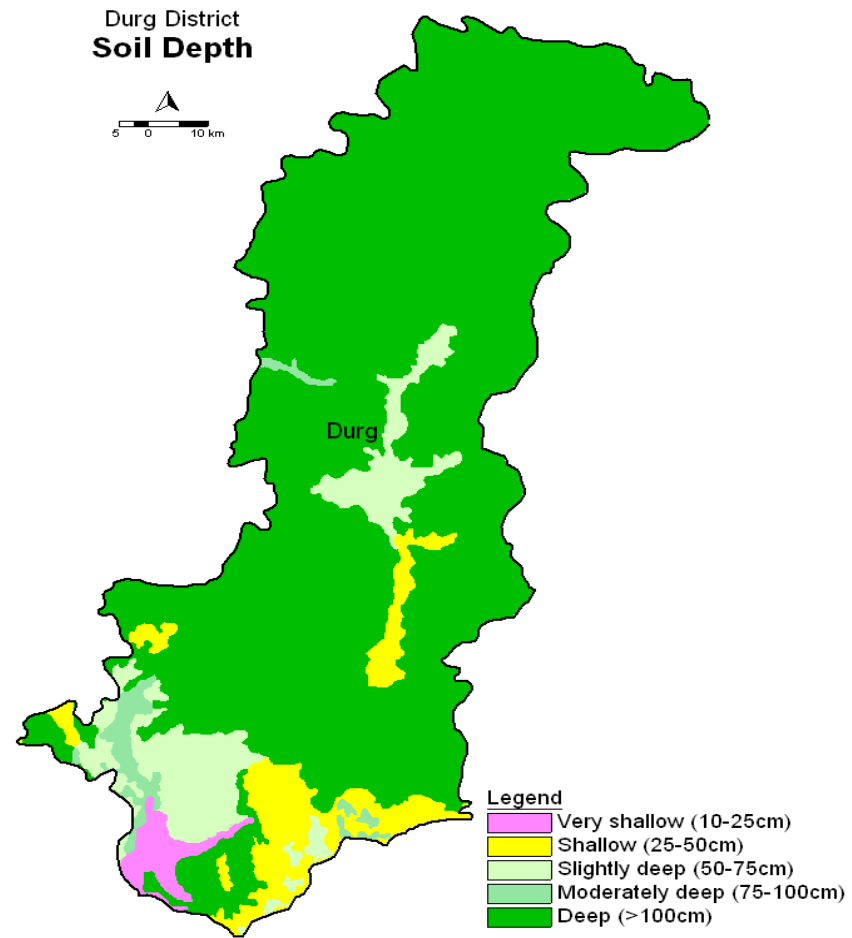
Annexure I
Location map of Balod district in Chhattisgarh state



Annexure 2
Average month-wise rainfall(mm) in Balod district



Soil map



(Balod district carved out from Durg district)
Source: NBSS&LUP

2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures			
				Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation
		Kharif	Rabi	Kharif	Rabi		
Early season drought: Delay by 2 weeks (July 1 st wk)	Unbunded upland Bharri	Mung	-	Mungbean (Pusa Vishal,HUM 1,	-	As recommended	-
		Urd	-	HUM-16, BM 4, HUM 12) /	-	As recommended	-
		Pigeonpea	-	Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	-		-
		Groundnut	-	No change	-	As recommended	-
	Bunded upland Bharri	Rice- Purnima, Danteshwari, Samleshwari, Annada Maize- Hishell, P 3785, Bio 9681, 900M, Seedtech 2324, Pro 4640, DMH 117, Pro Agro-4212 PEM 1 , VH - 9,17HQPM-1 NMH-731NK-	-	No change	-	As recommended	

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures			
				Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation
		Kharif	Rabi	Kharif	Rabi		
		30, NMH-803KMH-3426					
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	-	No change	-	1. Direct dry seeding in line technique suggested for better crop yield and double cropping 2. Line sowing to avoid mortality of germinating seed in case drought follows after scanty rainfall events 3. Promote application of post emergence herbicide for timely weed management and avoiding biasi operation	-
	Shallow Lowland Alfisols (Dorsa-clayloam or Vertisols (Kanhar-clayey)	Rice- Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	-	No change	-		
		Rice	Lathyrus/ linseed/gram/ mung (relay)	No change	-		
		Rice	Lentil	No change	-		
		Rice	Gram	No change	-		
		Rice	Linseed	No change	-		
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Fallow	No change	-		
		Rice	Lathyrus/ linseed/gram/ mung (relay)	No change	-		
		Rice	Wheat	No change	-		
		Rice	Mung	No change	-		
	Unbunded upland	Mung	-	Mungbean (Pusa	-	25 % higher seed rate	-

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures			
				Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation
		Kharif	Rabi	Kharif	Rabi		
Early season drought: Delay by 4 weeks (July 3 rd wk)	Bharri	Urd	-	Vishal,HUM 1, HUM-16, BM 4, HUM 12) /	-	-do-	-
		Pigeonpea	-	Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	-	-	-
		Groundnut	-	Erect variety GG-5/G-20	-	-do-	-
		Bunded upland Bharri	Rice - Danteshwari, Samleshwari, Purnima, Annda Maize- Hishell, P 3785, Bio 9681, 900M, Seedtech 2324, Pro 4640, DMH 117, Pro Agro-4212 PEM 1 , VH - 9,17HQPM-1 NMH-731NK-30, NMH-803KMH-3426	-	Rice- Tulsi, Indira barani dhan-1, Annda	-	-
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani	-	Rice- MTU1010, Samleshwari, Danteshwari, Indira barani dhan-	-	•Direct dry seeding in line technique suggested for better crop yield and	•Linkage with RKVY for supply of

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures			
				Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation
		Kharif	Rabi	Kharif	Rabi		
		Dhan 1, Chandrahasni, Samleshwari		1		double cropping •Line sowing to avoid mortality of germinating seed in case drought follows after scanty rainfall events •Promote application of post emergence herbicide for timely weed management and avoiding biasi operation	tractor and animal drawn seed drill for line sowing •Linkage with MNREGA for WC measures: Digging of shallow dug wells and renovation of existing WHSs
Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice- Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	-	Rice- Chandrahasni IR64, Mahamaya, Bamleshwari, karma masuri	-			
	Rice	Lathyrus/ linseed/gram/ mung (relay)	Rice- Chandrahasni IR64, Mahamaya, Bamleshwari, karma masuri	Coriander (leaf), toria, Lathyrus/ linseed/ mung (relay)			
	Rice	Lentil	-	Lentil			
	Rice	Gram	-	Gram			
	Rice	Linseed	-	Linseed			
Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Fallow	Rice- Mahamaya, swarna sub1, Jaldubi	Fallow			
	-	Lathyrus/ linseed/gram/ mung (relay)	-	Coriander (leaf), toria, Lathyrus/ linseed/ mung (relay)			
	-	Wheat	-	Wheat			
	-	Mung	-	Mung			
Early season drought: Delay by 6 weeks (Aug.	Unbunded upland Bharri	Mung	-	Hoursegram/ Niger	-	25 % higher seed rate	-
		Urd	-	Hoursegram/ Niger	-	-do-	-

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures			
				Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation
		Kharif	Rabi	Kharif	Rabi		
1 st wk)		Pigeonpea	-	Horse gram/ Niger	-	-	-
		Groundnut	-	Urd(TU94-2, pant-U31, KU96-3, TAU2)	-	-do-	-
	Bundeded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda Maize- Hishell, P 3785, Bio 9681, 900M, Seedtech 2324, Pro 4640, DMH 117, Pro Agro-4212 PEM 1 , VH - 9,17HQPM-1 NMH-731NK-30, NMH-803KMH-3426	-	Rice- Purnima, Tulsi, Indira barani dhan-1, Aditya	-	Sowing of sprouted seed (<i>lai-chaupa</i>)adopting lehi method of rice cultivation	-
		-	-	Groundnut	-	-do-	-
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	-	Rice- Indira barani dhan-1, Samleshwari, Danteshwari, MTU1010, purnima	-	<ul style="list-style-type: none"> •Direct dry seeding in line technique suggested for better crop yield and double cropping •Promote direct seeding or rice and discourage transplanting 	<ul style="list-style-type: none"> •Linkage with RKVY for supply of tractor and animal drawn seed drill for line sowing
	Shallow Lowland Alfisols (Dorsa-clay loam)	Rice- Mahamaya, s swarna,	-	Rice- IR64, Chandrahasni Bambleshwari,	-	<ul style="list-style-type: none"> •Sowing of sprouted seed (<i>lai-chaupa</i>) adopting 	<ul style="list-style-type: none"> •Linkage with MNREGA for

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures				
				Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation	
		Kharif	Rabi	Kharif	Rabi			
or Vertisols (Kanhar-clayey)	Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona			karma masuri				lehi method of rice cultivation • Line sowing to avoid mortality of germinating seed in case drought follows after scanty rainfall events • Promote application of post emergence herbicide for timely weed management and avoiding <i>biasi</i> operation • Increase 25percent seed rate of rabi crops. • Seed rate of wheat may be increased from one- and half to two times • Sowing of rabi crops adopting zero tillage technique
		Rice	Lathyrus/ linseed/gram/ mung (relay)	Rice- IR64, Chandrahasni Bamleshwari, karma masuri	Coriander (leaf), toria, linseed/ mung (relay)			
		Rice	Lentil	-	Lentil			
		Rice	Gram	-	Gram			
		Rice	Linseed	-	Linseed			
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Fallow	Fallow	Rice- Mahamaya, swarna sub1, Jaldubi, masuri	Fallow		
			-	Lathyrus/ linseed/gram/ mung (relay)	-	Coriander (leaf), toria, Lathyrus/ linseed/ mung (relay)		
			-	Wheat	-	Wheat		
			-	Mung	-	Mung		
Early season drought: Delay by 8 weeks (Aug. 3 rd wk)	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1)	-	-	Horse gram/ Niger	Sowing in line or broadcasting in September	-	
			-	-	Horse gram/ Niger	Sowing in line or broadcasting in September	-	
			-	-	-	-	-	

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures			
				Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation
		Kharif	Rabi	Kharif	Rabi		
		Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)					
		Groundnut	-	Mung	-	25 % higher seed rate	-
	Bunded upland Bharri	Rice Danteshwari, Samleshwari, Purnima, Annda Maize- Hishell, P 3785, Bio 9681, 900M, Seedtech 2324, Pro 4640, DMH 117, Pro Agro-4212 PEM 1 , VH - 9,17HQPM-1 NMH-731NK-30, NMH-803KMH-3426	-	Mung(pusa vishal, pragya, Hum1, pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)	-	Mixed or intercropping of pigeonpea and mung (4:2) or sesamum and mung (4:2)	-
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandahasni,	-	Rice- Indira barani dhan-1, Samleshwari, Danteshwari, purnima	-	<ul style="list-style-type: none"> Promote direct Line seeding of rice and discourage transplanting Sowing of sprouted seed (<i>lai-chaupa</i>) adopting lehi 	<ul style="list-style-type: none"> Linkage with RKVY for supply of tractor and animal drawn

Condition	Major Farming situation	Normal Crop / Cropping system		Suggested Contingency measures		Remarks on Implementation	
				Change in crop / cropping system including variety			Agronomic measures
		Kharif	Rabi	Kharif	Rabi		
		Samleshwari					
Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice- Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	-	Rice- IR64, Chandrahasni Bamleshwari, karma masuri	-		method of rice cultivation • Promote application of post emergence herbicide for timely weed management and avoiding biasi operation • Increase 25percent seed rate of rabi crops. • Seed rate of wheat increased from one-and half to two times • Sowing of rabi crops adopting zero tillage technique	seed drill for line sowing • Linkage with MNREGA for WC measures: Digging of shallow dug wells and renovation of existing WHSs • Utilize harvested rain water of WHS in crop production by adopting drip system or sprinklers that may be converged from micro irrigation scheme of Agriculture Department
	Rice	Lathyrus/ linseed/gram/ mung (relay)	Rice- IR64, Chandrahasni Bamleshwari, karma masuri	-			
	Rice	Lentil	-	Lentil			
	Rice	Gram	-	Gram			
	Rice	Linseed	-	Linseed			
Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Fallow	Rice- Mahamaya, swarna sub1, Jaldubi, masuri	Fallow			
	-	Lathyrus/ linseed/gram/ mung (relay)	-	-			
	-	Wheat	-	Wheat			
	-	Mung	-	Mung/ Fieldpea /Coriander (leaf)/ toria			

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Unbanded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	<ul style="list-style-type: none"> ▪ Gap filling ▪ Resowing in line when very poor population ▪ Increase the seed rate 	<ul style="list-style-type: none"> • Inter tilling for soil mulch • Mulching with paddy straw or use plastic mulch or other locally available material • Compartmental bunding, Ridge and Furrows, Tied ridges to conserve rainwater during kharif for regular sowing of rabi crops 	<ul style="list-style-type: none"> • Linkage with RKVY / NFSM / state seed corporation for timely supply of seed of suitable varieties of upland crops and rice
		Mung /Urd and rabi Hoursegram/ Niger			
	Banded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda			
		Mung(pusa vishal, Hum1)			
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	<ul style="list-style-type: none"> • Gap filling or • Resowing of dry seed 		
	Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice-Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	<ul style="list-style-type: none"> • Gap filling • Sowing of sprouted seed (<i>lai-chaupa</i>)adopting lehi method of rice cultivation • Sowing of relatively early varieties like IR64, Chandrahasni Bamleshwari, karma masuri 		
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
		Rice- lentil/gram/linseed			
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	<ul style="list-style-type: none"> • Gap filling • Sowing of sprouted seed (<i>lai-chaupa</i>)adopting lehi method of rice cultivation • Sowing of relatively early varieties like 		
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
Rice-wheat/ mung					

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures			
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation	
			Mahamaya, swarna sub1, Jaldubi, masuri			
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period): At vegetative stage	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	Weeding and protection against sucking pests	<ul style="list-style-type: none"> • Inter tilling for soil mulch • Mulching with paddy straw or use plastic mulch or other locally available material 	<ul style="list-style-type: none"> • Linkage with Agriculture Department /RKVY for supply of interculture implements for interculture in upland crops 	
		Groundnut	Avoid top dressing of urea			
	Bunded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda	Weeding and protection against insect and pests			
		Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	<ul style="list-style-type: none"> • Weeding and protection against insect and pests • Avoid top dressing of urea • Supplemental irrigation from water harvesting structures using micro irrigation i.e. drip and sprinklers 	<ul style="list-style-type: none"> • Compartmental bunding, Ridge and Furrows, Tied ridges to conserve rainwater during kharif for regular sowing of rabi crops • Sowing of rabi crops adopting zero tillage technique 	<ul style="list-style-type: none"> • Linkage with micro irrigation scheme of Agriculture Department for supply of drip system and sprinklers
		Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona			
			Rice- Lathyrus/ linseed/gram/mung (relay- Pragya, Paury Mung)			
			Rice-lentil/ gram/ linseed			
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244				
		Rice- Lathyrus/ linseed/gram/ mung (relay)				
		Rice- wheat/ mung				
Mid season drought (long dry spell, consecutive 2 weeks rainless	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1)	Weeding and protection against insect and pests	Mulching Inter tilling	<ul style="list-style-type: none"> • Linkage with Agriculture Department 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
(>2.5 mm period): At flowering/ fruiting stage		Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)			/RKVY for supply of interculture implements for interculture in upland crops
		Groundnut			
	Bundeded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda			
		Mung(Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12)			
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	<ul style="list-style-type: none"> • Weeding and protection against insect and pests • Supplemental irrigation from water harvesting structures using micro irrigation i.e. drip and sprinklers 	<ul style="list-style-type: none"> • Compartmental bunding, Ridge and Furrows, Tied ridges to conserve rainwater during kharif for regular sowing of rabi crops • Increase 25percent seed rate of rabi crops. • Seed rate of wheat increased from one-and half to two times • Sowing of rabi crops adopting zero tillage technique 	<ul style="list-style-type: none"> • Linkage with micro irrigation scheme of Agriculture Department for supply of drip system and sprinklers
	Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona			
		Rice- Lathyrus/ linseed/gram/ fieldpea			
		mung (relay)			
		Rice-lentil/ gram/ linseed/ safflower			
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244			
	Rice- Lathyrus/ linseed/gram/ mung (relay)				
	Rice- wheat/ mung				
Terminal drought (Early withdrawal of monsoon)	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1)	<ul style="list-style-type: none"> • Harvest mature plants • Thin out plant population 	Mulching Inter tilling	<ul style="list-style-type: none"> • Linkage with Agriculture Department /RKVY for supply of interculture implements for interculture in upland crops
		Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)			
	Groundnut				
	Bundeded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda	Life saving irrigation if available		
	Rice and rabi Hoursegram/ Niger				

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
		Mung (pusa vishal, Hum1)	Harvest mature plants Thin out plant population		
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	<ul style="list-style-type: none"> • Weeding and protection against insect and pests • Supplemental irrigation from water harvesting structures using micro irrigation i.e. drip and sprinklers 	<ul style="list-style-type: none"> • Compartmental bunding, Ridge and Furrows, Tied ridges to conserve rainwater during kharif for regular sowing of rabi crops • Seed rate of wheat increased from one-and half to two times • Sowing of rabi crops adopting zero tillage technique 	<ul style="list-style-type: none"> • Linkage with micro irrigation scheme of Agriculture Department for supply of drip system and sprinklers
	Shallow Lowland Alfisols (Dorsa-clay loam) to Vertisols (Kanhar-clayey)	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona			
		Rice- Lathyrus/ linseed/gram/ fieldpea mung (relay)			
		Rice-lentil/ gram/ linseed			
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244			
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
		Rice- wheat/ mung			

2.1.2

Drought - Irrigated situation

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	No change	-	<ul style="list-style-type: none"> • Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for construction of shallow tube wells and WHS including farm ponds for conjunctive use of water in canal command • Compartmental bunding, Ridge and Furrows, Tied ridges to conserve rainwater during kharif for regular sowing of rabi crops
		Groundnut	No change	-	
	Bunded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda	Mung(pusa vishal, Hum1)	-	
		Rice and rabi Hoursegram		-	
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari		<ul style="list-style-type: none"> • Direct seeding of rice preferably in line • In case of failure of crop or poor crop stand then Sowing of sprouted seed (<i>lai-chaupa</i>)adopting lehi method of rice cultivation • If seedlings raised for transplanting then it should be done with rainwater or from other sources of water • Weed control by herbicide and avoid biasi operation 	
	Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona			
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
		Rice- lentil/gram/linseed/ fieldpea			
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244			
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
Rice-wheat/ mung					
Limited release of water in canals due to low rainfall	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1)	No change	-	<ul style="list-style-type: none"> • Linkage with RKVY / NFSM / IWMP/ micro

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
		Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)			irrigation schemes for construction of shallow tube wells and WHS including farm ponds for conjunctive use of water in canal command • Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for supply of micro irrigation systems
		Groundnut	No change	-	
	Bundeded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda	Mung(pusa vishal, Hum1)	-	
		Rice and rabi Horsegram		-	
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	Rice- Indira barani dhan-1, Samleshwari, Danteshwari, purnima	<ul style="list-style-type: none"> • Direct seeding of rice preferably dry seeding in line • In case of failure of crop or poor crop stand then Sowing of sprouted seed (<i>lai-chaupa</i>)adopting lehi method of rice cultivation 	
	Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	Rice- IR64, Chandrahasni Bambleshwari, karma masuri	<ul style="list-style-type: none"> • Avoid transplanting of rice • Weed control by herbicide and avoid biasi operation 	
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
		Rice- lentil/gram/linseed/ fieldpea			
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari		
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
Rice-wheat/ mung					
Non release of water in canals under delayed onset of monsoon in catchment	Unbundeded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1)	No change	-	
		Mung /Urd and rabi Horsegram	No change	-	
		Groundnut	No change	-	
	Bundeded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda	Mung(pusa vishal, Hum1)	-	
		Rice and rabi Horsegram		-	
	Midland	Rice- MTU1010, IR64, IR 36,	Rice- Indira barani dhan-	<ul style="list-style-type: none"> • Direct seeding of rice 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures			
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation	
	Inceptisol (Matasi-Sandy loam)	Indira Barani Dhan 1, Chandrahasni, Samleshwari	1, Samleshwari, Danteshwari, purnima	<ul style="list-style-type: none"> preferably dry seeding in line Avoid transplanting of rice Weed control by herbicide and avoid biasi operation Supplemental irrigation from WHS using drip and sprinklers Adopt zero tillage technique for sowing of rabi crops 	<ul style="list-style-type: none"> Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for supply of micro irrigation systems 	
	Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari			
		Rice- Lathyrus/ linseed/gram/ mung (relay)				
		Rice- lentil/gram/linseed/ fieldpea				
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari			
		Rice- Lathyrus/ linseed/gram/ mung (relay-Pragya)				
Rice-wheat/ mung						
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	No change	-	<ul style="list-style-type: none"> Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for construction of shallow tube wells and WHS including farm ponds for conjunctive use of water in canal command Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for supply of micro irrigation systems 	
		Mung /Urd and rabi Hoursegram	No change	-		
	Bunded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda	Mung (pusa vishal, Hum1)	-		
		Rice and rabi Hoursegram		-		
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	Rice- Indira barani dhan-1, Samleshwari, Danteshwari, purnima	<ul style="list-style-type: none"> Direct seeding of rice preferably dry seeding in line Avoid transplanting of rice Weed control by herbicide and avoid 		
	Shallow Lowland Alfisols (Dorsa-clay loam) or	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari			

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	Vertisols (Kanhhar-clayey)	Rice- Lathyrus/ linseed/gram/ mung (relay)		biasi operation • Supplemental irrigation from WHS using drip and sprinklers • Adopt zero tillage technique for sowing of rabi crops	
	Bahra lowland Vertisols (Kanhhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari		
		Rice- Lathyrus/ linseed/gram/ mung (relay)			
Insufficient groundwater recharge due to low rainfall	Unbunded upland Bharri	Mung (Relay- Pragya, Paury mung)	No change	-	• Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for construction of shallow tube wells and WHS including farm ponds for conjunctive use of water in canal command • Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for supply of micro irrigation systems
		Mung /Urd and rabi Hoursegram	No change	-	
		Groundnut	No change	-	
	Bunded upland Bharri	Rice- Danteshwari, Samleshwari, Purnima, Annda	Pigeonpea(ICPL87, Rajivlochan. Maruti)	-	
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	-	• Direct seeding of rice preferably dry seeding in line • Avoid transplanting • Weed control by herbicide and avoid biasi operation • Supplemental irrigation from WHS using drip and sprinklers	
	Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhhar-clayey)	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona			
		Rice- Lathyrus/ linseed/gram/ mung (relay-Pragya, Paury Mung)			
		Rice- lentil/gram/linseed/ fieldpea			
	Bahra lowland Vertisols (Kanhhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244			
		Rice- Lathyrus (Relay)/ linseed/gram/ mung (relay- Pragya, PauryMung)			
Rice-wheat/ mung/ potato					

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

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging or heavy rainfall coupled with high speed winds in a short span*				
Urd/ mung	Drain out excess water	Earthing up in maize	Picking of matured pods, Harvesting and drying of cobs	To cover produce with plastic sheet or shift produces to farm shed
Groundnut/ pigeon pea	Drain out excess water	Earthing in groundnut Drain out excess water	Drain out excess water, Harvesting and drying of plants	To cover produce with plastic sheet or shift produces to farm shed
Rice	Drain excess water	Drain excess water	Drain excess water Harvest the crop and put on bunds	To cover produce with plastic sheet or shift produces to farm shed
Rabi oilseed and pulses	Drain excess water	Drain excess water	Drain excess water Harvest the crop and put on bunds	To cover produce with plastic sheet or shift produces to farm shed
Wheat	Surface drainage	Surface drainage	Surface drainage	To cover produce with plastic sheet or shift produces to farm shed To supply tarpaulin to farmers through RKVY/NFSM
Horticulture				
Tomato/ brinjal	Surface drainage, earthing and fertilizer application after water drain out	Surface drainage, earthing and fertilizer application after water drain out	Surface drainage, picking up matured fruits	-
Garlic/ Onion	Surface drainage	Surface drainage	Surface drainage	To cover produce with plastic sheet or shift produces to farm shed To supply tarpaulin to farmers through RKVY/NFSM
Outbreak of pests and diseases due to unseasonal rains				
Urd/ mung	Spraying of contact insecticide for control of caterpillar/ color rot	Spraying of contact insecticide for control of pest	-	-
Groundnut/ pigeon pea	Spraying of contact insecticide for control of caterpillar/ color rot	Spraying of contact insecticide for control of pest	-	-
Rice	Spraying of insecticide for control of stem borer	Spraying of insecticide for control of pest like gundhibug	-	-
Rabi oilseed and pulses	Spraying of insecticide for control of aphid	Spraying of insecticide for control of insect	-	-

Wheat	Spraying of insecticide for control of stem borer		-	-
Horticulture				
Tomato/ brinjal	Spraying of contact insecticide for control of caterpillar Stacking for protecting fungal diseases	Spraying of contact insecticide for control of caterpillar/ fruit borer Stacking for protecting fungal diseases	Harvest the fruit	-
Mango	-	Spray 0.2% wettable sulphur for protection against PM	Harvest at pre maturity stage	Unripe fruit may be used for pickles.
Citrus	Control citrus canker by Copper Oxy chloride 0.5 % & streptocycline 100 ppm	Control citrus canker by Copper Oxy chloride 0.5 % & streptocycline 100 ppm	Control citrus canker by Copper Oxy chloride 0.5 % & streptocycline 100 ppm, collect mature fruits	-

2.3 Floods

Condition	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation¹				
Urd/ mung	Surface drainage	Surface drainage	Surface drainage	-
Groundnut/ pigeon pea	Surface drainage	Surface drainage	Surface drainage	-
Rice	Surface drainage	After draining apply urea	Drain excess water	-
Rabi oilseed and pulses	Surface drainage	Surface drainage	Surface drainage	-
Wheat	Surface drainage	Surface drainage	Surface drainage	-
Horticulture				
Tomato/ brinjal	Surface drainage	Surface drainage	Surface drainage	-
Garlic/ Onion	Surface drainage	Surface drainage	Surface drainage	-
Mango	Surface drainage	Surface drainage	Surface drainage	-
Citrus	Surface drainage	Surface drainage	Surface drainage	-
Continuous submergence for more than 2 days²				
Urd/ mung	Surface drainage	Surface drainage	Surface drainage	-
Groundnut/ pigeon pea	Surface drainage	Surface drainage	Surface drainage	-
Rice	Surface drainage	After draining apply urea	Drain excess water	-
Rabi oilseed and pulses	Surface drainage	Surface drainage	Surface drainage	-

Wheat	Surface drainage	Surface drainage	Surface drainage	-
Horticulture				
Tomato/ brinjal	Surface drainage	Surface drainage and staking of plants	Surface drainage and staking of plants	-
Garlic/ Onion	Surface drainage	Surface drainage	Surface drainage	-
Mango	Surface drainage	Surface drainage	Surface drainage	-
Citrus	Surface drainage	Surface drainage	Surface drainage	-

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