Agriculture Contingency Plan for District: Baloda bazar State: CHHATTISGARH

l	Agro-Climatic/Ecological Zone						
	Agro Ecological Sub Region (ICAR)	11.0 Chhattisgarh/Mahanadi Basi	11.0 Chhattisgarh/Mahanadi Basin Agro-eco region (J3(Cd/Cm)5				
	Agro-Climatic Zone (Planning Commission)	Zone-7 Eastern plateau and hills					
	Agro Climatic Zone (NARP)	Chhattisgarh plain zone Raipur, Baloda bazaar, Gariyabandh, Bilaspur, Korba, Raigarh, Janjgir-champa, Kabirdham, Rajnandgaon, Durg, balod, bemetara, Dhamtari, Mahasamund, Korba (15 districts) Latitude Longitude Altitude					
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Zone-7 Eastern plateau and hills Chhattisgarh plain zone Raipur, Baloda bazaar, Gariyabandh, Bilaspur, Korba, Raigarh, Janjgir-champa, Kabirdhar Durg, balod, bemetara, Dhamtari, Mahasamund, Korba (15 districts) Latitude Longitude Altitu 21.66N 82.16 E Zonal Agricultural Research Station, Raipur 492006 (C.G.) Krishi Vigyan Kendra, DK Farm Bhatapara, Distt. – Baloda bazar (C.G.)					
	Geographic coordinates of district	Latitude	Longitude	Altitude			
	headquarters	21.66N	82.16 E	253 m			
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Zonal Agricultural Research Station, Raipur 492006 (C.G.)					
	Mention the KVK located in the district with address	Krishi Vigyan Kendra, DK Farm	Krishi Vigyan Kendra, DK Farm Bhatapara, Distt. – Baloda bazar (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, Raipu	ur (C.G.)			

1.2	Rainfall	Normal RF(mm)	Normal Rainy days	Normal Onset	Normal Cessation
			(number)	(specify week and	(specify week and
				month)	month)
	SW monsoon (June-Sep):	1035.0	48	17 June	30 September
				25 th SMW, June	39 th SMW, September
	NE Monsoon(Oct-Dec):	73.9	4	Post monsoon	-
				(October-December)	
	Winter (Jan- March)	42.3	4	Winter rains	-
	Summer (Apr-May)	45.9	3	-	-
	Annual	1197.1	59	-	-

1.3	Land use	Geographical	Cultivable	Forest	Land under	Permanent	Cultivable	Land	Barren and	Current	Other
	pattern of the	area	area	area	non-	pastures	wasteland	under	uncultivable	fallows	fallows
	district (latest statistics)				agricultural use			Misc.	land		
								tree			
								crops			
								and			
								groves			
	Area ('000 ha)	467.7	280.9	25.1	31.3	32.5	-	0.1	5.7	6.5	12.5

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

1.4	Major Soils (common names like red sandy	Area ('000 ha)	Percent (%) of total
	loam deep soils (etc.,)*		
	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	232.9	120
	Area sown more than once	48.0	
	Gross cropped area	280.9	

1.6	Irrigation	Area ('000 ha)				
	Net irrigated area	109.9				
	Gross irrigated area	116.0				
	Rainfed area	164.9				
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area		
	Canals	25	127.740	78.8		

Tanks	3838	2.097	2.5		
Open wells	9453	1.081	1.0		
Bore wells	-	-	13.9		
Lift irrigation schemes	-	-	-		
Micro-irrigation	-	-	-		
Other sources (please specify)	-	3.862	3.8		
Total Irrigated Area	-	116.002	100		
Pump sets	21250		-		
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 pro 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				

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	Total Area ('000 ha)	
	1	Rice	222.1	
	2	Wheat	4.3	
	3	Jowar	0.1	
	4	Maize	0.1	
	5	Millets	0.4	
	6.	Total Cereals	227.0	
	7.	Pigeonpea	0.7	
	8.	Gram	2.6	

9.	GreenGram	3.5
10.	BlackGram	1.9
11.	HorseGram	0.1
12.	Pea	1.9
13.	Lentil	0.9
14.	Lathyrus	35.2
15.	Total Pulses	44.5
16.	Rapeseed-mustard	0.5
17.	Linseed	0.1
18.	Groundnut	0.5
19.	Seasamum	0.8
20.	Soybean	0.3
21.	Sunflower	0.1
22.	Safflower	-
23.	Total Oilseeds	2.3
24.	Vegetables	-
25.	Sugarcane	0.1

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

S.No.	Horticulture crops - Fruits	Total Area (* 000 ha)
1	Mango	0.1
2	Banana	0.01
3	Papaya	0.02
4	Gauva	0.2
5	Lemon	0.001
6	Water melon	0.3
7	Musk melon	0.1
Total	All fruits	0.6
	Horticulture crops - Vegetables	
1	Cauliflower	0.3
2	Cabbage	0.2
3	Brinjal	0.9
4	Tomato	1.1
5	Bhindi	0.6
6	Potato	0.2
7	Green Pea	0.2
8	Leafy Vegetables	-
9.	Onion	0.2

10	Cucumber	-
11	Bottel guard	-
12	Others	5.4
13	Spices	-
14.	All vegetables	5.6

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

1.8	Livestock	Male ('000)	Female ('000)	Total ('000)
	All kinds of cattle	-	-	522.853
	Non descriptive Cattle (local low yielding)	-	-	-
	Improved cattle	-	-	-
	Crossbred cattle	-	-	-
	Non descriptive Buffaloes (local low yielding)	-	-	-
	Descript Buffaloes	-	-	-
	Goat	-	-	-
	Sheep	-	-	-
	Pig	-	-	
	Commercial dairy farms (Number)	-	-	-
1.9	Poultry	No. of farms	Total No. o	f birds ('000)
	Commercial	-	1:	12.2
	Backyard	-		-

A. Capture										
i) Marine (Data Source:	No. of	l	Boats Nets				Storage			
Fisheries Department)	tment) fishermen	Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)			facilities (Ice plants etc.)		
	-	-	-	-		-		-		
ii) Inland (Data Source: Fisheries Department)	No. Farmer	owned ponds	No. of 1	Reservoirs		No. o	of village ta	anks		
	2	364	177		7228					
B. Culture										
				Water Spread Are	ea (ha)	Yield (t/ha)	Produc	ction ('000 tons		
i) Brackish water (Data S	ource: MPEDA	/ Fisheries Depart	tment)	Nil		Nil	Nil			
ii) Fresh water (Data Sour	rce: Fisheries D	epartment)	11552.0		3.803 35.848					

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

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

1.11	Name of crop]	Kharif	R	abi	Sur	nmer	To	otal	Crop
		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)	residue as fodder ('000
										tons)
Major Fie	eld crops (Crops t	to be identifie	d based on total acr	reage)						
Crop 1	Rice	-	-	-	-	-	-	382.0	1720	-
Crop 2	Black Gram	0.8	430	-	-	-	-	0.8	430	-
Crop 3	Maize	0.2	1610	-	-	-	-	0.2	1610	-
Crop 4	Pigeonpea	0.6	720	-	-	-	-	0.6	720	-
Crop 5	Seasamum	-	-	-	-	-	-	-	-	-
Crop 6	Wheat	-	-	-	-	-	-	-	-	-
Crop 7	Lathyrus	-	-	17.320	490	-	-	17.320	490	-
Crop 8	Linseed	-	-	-	-	-	-			-
Crop 9	Gram	-	-	3.487	1330	-	-	3.487	1330	-
Crop 10	Greengram	-	-	-	-	-	-	-	-	
	All crops	-	=	-	-	-	-	410.202	-	-
Major Ho	rticultural crops	(Crops to be i	dentified based on t	total acreage)	– Fruits & Veg	etables				
Crop 1	Papaya	-	-	-	-	-	-	0.077	-	-
Crop 2	Banana	-	-	-	-	-	-	0.161	-	-

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

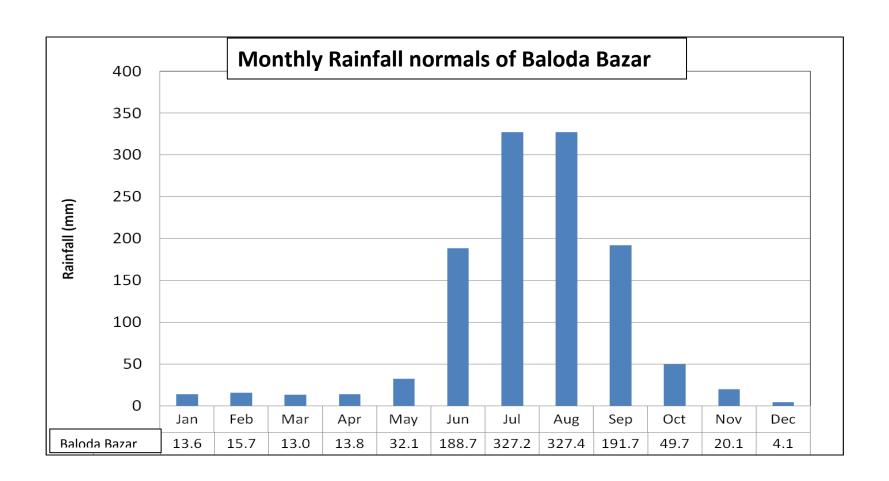
1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought	✓		
	Flood		✓	
	Cyclone			
	Hail storm		✓	
	Heat wave		✓	
	Cold wave		✓	
	Frost			
	Sea water intrusion			
	Pests and disease outbreak (specify)		√	

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		

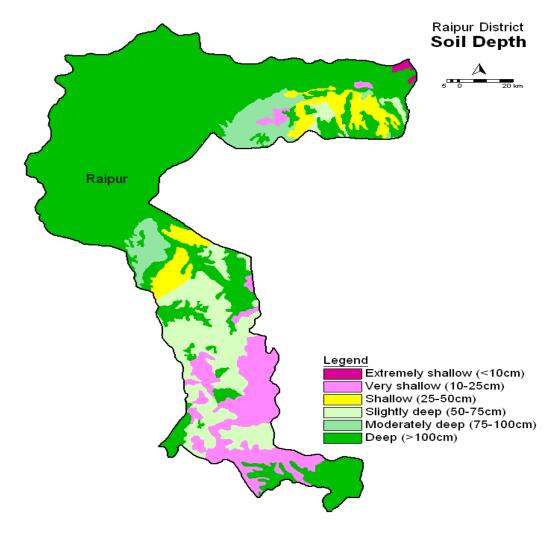
Annexure I
Location map of Baloda Bazar district in Chhattisgarh state



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



Soil Map



Baloda Bazar is carved out from Raipur District

2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Condition	Major Farming	Normal Crop /	Cropping	Suggested Contingency measures				
	situation	system		Change in crop system includi		Agronomic measures	Remarks on Implementation	
		Kharif	Rabi	Kharif	Rabi		•	
	TT 1 1 1 1 1			37. 1		N 1		
Early season	Unbunded upland	Mung	-	Mungbean	-	Normal	-	
drought:	Bharri	Urd	-	(Pusa	-	Normal	-	
Delay by 2 weeks (July		Pigeonpea	-	Vishal,HUM 1, HUM-16,	-		-	
1 st wk)				BM 4, HUM				
1 WK)				12) /				
				Urdbean (TU				
				94-2, TAU-2,				
				KU 96-3,				
				Indira Urd 1)				
				Pigeonpea				
				(ICPL87,				
				JKM189,				
				UPAS 120,				
				BDN 2,				
				Rajivlochan)				
		Mung	Hoursegram/	No change	-	Normal	-	
			Niger					
		Urd	Hoursegram/ Niger	No change	-	Normal	-	
		Groundnut	-	No change	-	Normal	-	
		Sesamum	=	No change	-	Normal	=	
		Maize	-	No change	-	Normal	-	
	Bundeded upland	Rice- Purnima,	-	No change	-	Normal	-	
	Bharri	Danteshwari,						
		Samleshwari,						
		Annada						

Condition	Major Farming	Normal Crop /	Cropping	Suggested Contingency measures					
	situation	system	-	Change in cro		Agronomic measures	Remarks on		
				system includi			Implementation		
		Kharif	Rabi	Kharif	Rabi				
		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	Hoursegram	No change	-	Normal	-		
		Rice	Niger	No change	-	Normal	-		
	Midland Inceptisol (Matasi-Sandy	Rice- MTU1010,		No change	-	1. Direct dry seeding in line technique suggested for	Linkage with RKVY for supply		
	loam)	IR64, IR 36,				better crop yield and	of tractor and		
	,	Indira Barani				double cropping	animal drawn		
		Dhan 1,				2. Line sowing to avoid	seed drill for line		
		Chandrahasni,				mortality of germinating	sowing		
		Samleshwari				seed in case drought			
			-	No change	-	follows after scanty			
	Shallow Lowland	Rice-		No change	-	rainfall events			
	Alfisols	Mahamaya, s				3. Promote application of			
	(Dorsa-clayloam or	swarna,				post emergence			
	Vertisols	Sampda, IGKV				herbicide for timely			
	(Kanhar-clayey)	R1, IGKV R2, Bamleshwari,				weed management and avoiding biasi operation			
		Indira Sona				avoiding blast operation			
		Rice	Lathyrus/	No change	-				
			linseed/gram/	110 change					
			mung (relay)						
		Rice	Lentil	No change	-				
		Rice	Gram	No change	-				
		Rice	Linseed	No change	-				

Condition	Major Farming	Normal Crop /	Cropping	Suggested Contingency measures					
	situation	system		Change in cro		Agronomic measures	Remarks on		
				system includi	ng variety		Implementation		
		Kharif	Rabi	Kharif	Rabi				
		Rice	Safflower	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	-				
Early season	Unbunded upland	Mung	=	Mungbean	-	25 % higher seed rate	-		
drought:	Bharri	Urd	-	(Pusa	-	-do-	-		
Delay by 4 weeks (July 3 rd wk)		Pigeonpea		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)					
		Mung	Hoursegram/ Niger	-	-	-do-	-		
		Urd	Hoursegram/ Niger	-	-	-do-	-		
		Groundnut	-	Erect variety GG-5/G-20	-	-do-	-		
·		Sesamum	-	=	-	-do-	-		

Condition	Major Farming	Normal Crop /	Cropping	Suggested Contingency measures					
	situation	system		Change in crop		Agronomic measures	Remarks on		
				system includin			Implementation		
		Kharif	Rabi	Kharif	Rabi				
	Bundeded 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- 30, NMH- 803KMH-3426	-	Rice- Tulsi, Indira barani dhan-1, Annda	_		-		
		Rice	Hoursegram	Groundnut	-	-	=		
		Rice	Niger	Sesamum/ soybean(Indira soy9, JS93-05, JS335, JS80- 21)	-	-	-		
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	-	Rice- MTU1010, Samleshwari, Danteshwari, Indira barani dhan-1	-	Direct dry seeding in line technique suggested for better crop yield and double cropping Line sowing to avoid mortality of germinating seed in case drought	• Linkage with RKVY for supply of tractor and animal drawn seed drill for line sowing		
Alfiso (Dorsa or Vertis	Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	Rice- Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari,	-	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni,	-	follows after scanty rainfall events • Promote application of post emergence herbicide for timely weed	• Linkage with MNREGA for WC measures: Digging of shallow dug		

Condition	Major Farming	Normal Crop /	Cropping	Suggested Contingency measures					
	situation	system		Change in crop	/ cropping	Agronomic measures	Remarks on		
				system including variety			Implementation		
		Kharif	Rabi	Kharif	Rabi				
		Indira Sona		Samleshwari		management and avoiding	wells and		
		Rice	Lathyrus/	Rice-	Coriander	biasi operation	renovation of		
			linseed/gram/	Chandrahasni	(leaf), toria,		existing WHSs		
			mung (relay)	IR64,	Lathyrus/				
				Mahamaya,	linseed/				
				Bambleshwari, karma masuri	mung (relay)				
		Rice	Lentil	-	Lentil				
		Rice	Gram	-	Gram				
		Rice	Linseed	-	Linseed				
		Rice	Safflower	-	Coriander				
					(leaf), toria				
	Bahra lowland	Rice- Swarna,	Fallow	Rice-	Fallow				
	Vertisols	Swarna sub1,		Mahamaya,					
	(Kanhar-clayey)	Jaldubi,		swarna,					
		Bamleshwari,		Sampda,					
		MTU 1001,		IGKV R1,					
		IGKV R 1244		IGKV R2,					
				IGKV R 1244,					
			T .1 /	Bamleshwari	G : 1	_			
		-	Lathyrus/ linseed/gram/	-	Coriander				
			mung (relay)		(leaf), toria, Lathyrus/				
			mung (relay)		linseed/				
					mung (relay)				
		-	Wheat	_	Wheat	-			
		-	Mung	_	Mung	┪			
Early season	Unbunded upland	Mung	-	Hoursegram/	-	25 % higher seed rate	_		
drought:	Bharri			Niger					
Delay by 6		Urd	-	Hoursegram/	-	-do-	-		
weeks (Aug.				Niger					
1 st wk)		Mung	Hoursegram/	Mungbean	-	-do-	-		
			Niger	(Pusa					
		Urd	Hoursegram/	Vishal,HUM	-	-do-	-		

Condition	Major Farming	Normal Crop /	Cropping	Suggested Contingency measures					
	situation	system		Change in crop	/ cropping	Agronomic measures	Remarks on		
				system includir			Implementation		
		Kharif	Rabi	Kharif	Rabi				
			Niger	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)					
		Groundnut	-	Urd (TU94-2,	_	-do-	_		
				Pant-U31, KU					
				96-3, TAU2)					
		Sesamum	-	Mungbean	-	-do-	-		
				(Pusa					
				Vishal,HUM					
				1, HUM-16,					
				BM 4, HUM					
	Bundeded upland	Rice Purnima,		12) Rice-	_	Sowing of sprouted seed	-		
	Bharri	Danteshwari,	-	Purnima,	-	(<i>lai-chaupa</i>)adopting lehi	-		
	Diam	Samleshwari,		Tulsi, Indira		method of rice cultivation			
		Annada		barani dhan-1,		method of free editivation			
		Maize- Hishell,		Aditya, Anjali					
		P 3785, Bio		3 / 3					
		9681, 900M,							
		Seedtech 2324,							
		Pro 4640,							
		DMH 117, Pro							
		Agro- 4212							

Condition	Major Farming	Normal Crop /	Cropping	Suggested Contingency measures					
	situation	system		Change in crop		Agronomic measures	Remarks on		
				system includir		<u>_</u>	Implementation		
		Kharif	Rabi	Kharif	Rabi				
		DELCA VIII							
		PEM 1, VH -							
		9,17HQPM-1							
		NMH-731NK-							
		30, NMH- 803KMH-3426							
		Rice	Hoursegram	Pigeonpea	-	Mixed or intercropping of	-		
				_		pigeonpea and mung (4:2)			
		Rice	Niger	Sesamum	-	Mixed or intercropping of sesamum and mung (4:2)	-		
				Groundnut		-do-			
	Midland Inceptisol	Rice-	-	Rice-	-	• Direct dry seeding in line	 Linkage with 		
	(Matasi-Sandy	MTU1010,		Purnima,		technique suggested for	RKVY for		
	loam)	IR64, IR 36,		Danteshwari,		better crop yield and	supply of		
		Indira Barani		Samleshwari,		double cropping	tractor and		
		Dhan 1,		Annada		 Promote direct seeding or 	animal drawn		
		Chandrahasni,				rice and discourage	seed drill for		
	~	Samleshwari				transplanting	line sowing		
	Shallow Lowland	Rice-	-	Rice-	-	• Sowing of sprouted seed	• Linkage with		
	Alfisols	Mahamaya, s		MTU1010,		(lai-chaupa)adopting lehi	MNREGA for		
	(Dorsa-clay loam)	swarna,		IR64, IR 36, Indira Barani		method of rice cultivation	WC measures:		
	or Vertisols	Sampda, IGKV R1, IGKV R2,		Dhan 1,		•Line sowing to avoid	Digging of		
	(Kanhar-clayey)	Bamleshwari,		Chandrahasni,		mortality of germinating	shallow dug wells and		
	(Kaimar-ClayCy)	Indira Sona		Samleshwari		seed in case drought	renovation of		
		Rice	Lathyrus/	Rice- IR64,	Coriander	follows after scanty rainfall events	existing WHSs		
		Tuec	linseed/gram/	Chandrahasni	(leaf), toria,	Promote application of	• Utilize		
			mung (relay)	Bambleshwari,	linseed/	post emergence herbicide	harvested rain		
			3 (1 13)	karma masuri	mung (relay)	for timely weed	water of WHS		
		Rice	Lentil	-	Lentil	management and avoiding	in crop		
		Rice	Gram	-	Gram	biasi operation	production by		
		Rice	Linseed	-	Linseed	• Increase 25percent seed	adopting drip		
		Rice	Safflower	-	Coriander	rate of rabi crops.	system or		
					(leaf), toria	• Seed rate of wheat may be	sprinklers that		
	Bahra lowland	Rice- Swarna,	Fallow	Rice-	Fallow		may be		

Condition	Major Farming	Normal Crop /	Cropping		Suggeste	ed Contingency measures	
	situation	system		Change in crop		Agronomic measures	Remarks on
				system includir			Implementation
		Kharif	Rabi	Kharif	Rabi		_
	Vertisols (Kanhar-clayey)	Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Lathyrus/ linseed/gram/ mung (relay)	Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari	Coriander (leaf), toria, Lathyrus/ linseed/ mung (relay)	increased from one-and half to two times • Sowing of rabi crops adopting zero tillage technique	converged from micro irrigation scheme of Agriculture Department
		-	Wheat	_	Wheat		
		-	Mung	-	Mung		
Early season drought: Delay by 8	Unbunded upland Bharri	Mung	-	Mungbean (Pusa Vishal,HUM	Hoursegram/ Niger	Sowing in line or broadcasting in September	-
weeks (Aug. 3 rd wk)		Urd	-	1, HUM-16, BM 4, HUM 12)/	Hoursegram/ Niger	Sowing in line or broadcasting in September	-
		Pigeonpea	-	Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	-	-	-
		Mung	Hoursegram/ Niger	Mung	-	25 % higher seed rate	-
		Urd	Hoursegram/ Niger	Mung	-	25 % higher seed rate	-

Condition	Major Farming	Normal Crop /	Cropping		Suggest	ted Contingency measures	
	situation	system		Change in crop		Agronomic measures	Remarks on
				system includii			Implementation
		Kharif	Rabi	Kharif	Rabi		
				3.6			
		Groundnut	-	Mung	-	25 % higher seed rate	-
		Sesamum	_	Mung	_	25 % higher seed rate	_
		Sesamum	-	Mung	-	25 % nigher seed rate	-
	Bundeded upland	Rice- Purnima,	_	Mung(pusa	_	Mixed or intercropping of	_
	Bharri	Danteshwari,		vishal,		pigeonpea and mung (4:2)	
	Ziiiiii	Samleshwari,		Hum1,)		or sesamum and mung (4:2)	
		Annada		,,,			
		Rice	Hoursegram	-	Hoursegram	Sowing in line or	-
						broadcasting in September	
		Rice	Niger	-	Niger/mung	Sowing in line or	-
						broadcasting in September	
	Midland Inceptisol	Rice-	-	Rice-	-	• Promote direct Line	 Linkage with
	(Matasi-Sandy	MTU1010,		Purnima,		seeding of rice and	RKVY for
	loam)	IR64, IR 36,		Danteshwari,		discourage transplanting	supply of
		Indira Barani		Samleshwari,		• Sowing of sprouted seed	tractor and
		Dhan 1,		Annada		(lai-chaupa)adopting lehi	animal drawn
		Chandrahasni,				method of rice cultivation	seed drill for
	Shallow Lowland	Samleshwari		Rice-		Promote application of	line sowing
	Alfisols	Rice- Mahamaya, s	-	MTU1010,	-	post emergence herbicide	 Linkage with MNREGA for
	(Dorsa-clay loam)	swarna,		IR64, IR 36,		for timely weed	WC measures:
	or	Sampda, IGKV		Indira Barani		management and avoiding biasi operation	Digging of
	Vertisols	R1, IGKV R2,		Dhan 1,		• Increase 25percent seed	shallow dug
	(Kanhar-clayey)	Bamleshwari,		Chandrahasni,		rate of rabi crops.	wells and
	(Indira Sona		Samleshwari		• Seed rate of wheat	renovation of
		Rice	Lathyrus/	Rice- IR64,	-	increased from one-and	existing WHSs
			linseed/gram/	Chandrahasni		half to two times	• Utilize
			mung (relay)	Bambleshwari,		• Sowing of rabi crops	harvested rain
				karma masuri		adopting zero tillage	water of WHS
		Rice	Lentil		Lentil	technique	in crop
		Rice	Gram		Gram	1	

Condition	Major Farming	Normal Crop /	Cropping		Suggestee	d Contingency measures	
	situation	system		Change in crop / cropping system including variety		Agronomic measures	Remarks on Implementation
		Kharif	Rabi	Kharif	Rabi		_
		Rice Rice	Linseed Safflower		Linseed Fieldpea/		production by adopting drip
					Coriander (leaf)/ toria		system or sprinklers that
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Fallow	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari	Fallow		may be converged from micro irrigation scheme of Agriculture Department
			Lathyrus/ linseed/gram/ mung (relay)				
			Wheat Mung		Wheat Mung/ Fieldpea /Coriander		
					(leaf)/ toria		

Normal onset of monsoon, mid season-vegetative stage and terminal drought

Condition	Major Farming	Normal Crop /	Suggested Contingency measures		
	situation	Cropping	Crop management	Soil nutrient & moisture	Remarks on
		system		conservation measures	Implementation
Normal onset	Unbunded upland	Mungbean (Pusa Vishal, HUM 1,	 Gap filling 	Inter tilling for soil	 Linkage with
followed by 15-20	Bharri	HUM-16, BM 4, HUM 12) /	 Resowing in line 	mulch	RKVY / NFSM /
days dry spell		Urdbean (TU 94-2, TAU-2, KU 96-	when very poor	Mulching with paddy	state seed
after sowing		3, Indira Urd 1)	population	straw or use plastic	corporation for
leading to poor		Pigeonpea (ICPL87, JKM189,		mulch or other locally	timely supply of
germination/crop		UPAS 120, BDN 2, Rajivlochan)		available material	seed of suitable
stand etc.		Mung /Urd and rabi Hoursegram/		Compartmental	varieties of upland
		Niger		bunding, Ridge and	crops and rice
		Groundnut /Sesamum		Furrows, Tied ridges	
	Bundeded upland	Rice Purnima, Danteshwari,			

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	es
	situation	Cropping	Crop management	Soil nutrient & moisture	Remarks on
	Bharri	system Samleshwari, Annada		to conserve rainwater	Implementation
	Bimili	Rice and rabi Hoursegram/		during kharif for	
		Niger		regular sowing of rabi	
		Mung(pusa vishal, Hum1)		crops	
	Midland	Rice- MTU1010, IR64, IR 36,	•Gap filling or		
	Inceptisol (Matasi-Sandy	Indira Barani Dhan 1, Chandrahasni, Samleshwari	• Resowing of dry seed		
	loam)	Chandranashi, Samieshwan			
	Shallow Lowland	Rice-Mahamaya, s	Gap filling		
	Alfisols (Dorsa-clay loam)	swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	• Sowing of sprouted		
	or	Rice- Lathyrus/ linseed/gram/	seed (<i>lai-</i> <i>chaupa</i>)adopting lehi		
	Vertisols	mung (relay)	method of rice		
	(Kanhar-clayey)	Rice-lentil/gram/linseed/ safflower/	cultivation		
		fieldpea	• Sowing of relatively early varieties like		
			IR64, Chandrahasni		
			Bambleshwari, karma		
			masuri		
	Bahra lowland Vertisols	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001,	•Gap filling		
	(Kanhar-clayey)	IGKV R 1244	• Sowing of sprouted seed (<i>lai</i> -		
	(IIIIIIII Olayoy)	Rice- Lathyrus/ linseed/gram/	chaupa)adopting lehi		
		mung (relay)	method of rice		
		Rice-wheat/ mung	cultivation		
			• Sowing of relatively early varieties like		
			Mahamaya, swarna		
			sub1, Jaldubi, masuri		
Mid season drought	Unbunded upland Bharri	Mungbean (Pusa Vishal, HUM 1,	Weeding and protection	Inter tilling for soil	• Linkage with
(long dry spell, consecutive 2	DHAITI	HUM-16, BM 4, HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-	against sucking pests	mulchMulching with paddy	Agriculture Department
weeks rainless		3, Indira Urd 1)		straw or use plastic	/RKVY for supply
(>2.5 mm) period):		Pigeonpea (ICPL87, JKM189,		mulch or other locally	of interculture
At vegetative stage		UPAS 120, BDN 2, Rajivlochan) Mung /Urd and rabi Hoursegram/	Weeding and protection	available material	implements for interculture in
		wrung / Ord and raof Hoursegram/	weeding and protection		interculture in

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	es
	situation	Cropping	Crop management	Soil nutrient & moisture	Remarks on
		system		conservation measures	Implementation
		Niger	against sucking pests		upland crops
		Groundnut /Sesamum	Avoid top dressing of		
	Bundeded upland	Rice- Purnima, Danteshwari,	urea		
	Bharri	Samleshwari, Annada			
		Rice and rabi Hoursegram/			
		Niger			
		Mung(pusa vishal, Hum1)	Weeding and protection against insect and pests		
	Midland	Rice- MTU1010, IR64, IR 36,	Weeding and	• Compartmental bunding,	 Linkage with
	Inceptisol	Indira Barani Dhan 1,	protection against	Ridge and Furrows,	micro irrigation
	(Matasi-Sandy loam)	Chandrahasni, Samleshwari	insect and pests • Avoid top dressing of	Tied ridges to conserve rainwater during kharif	scheme of Agriculture
	Shallow Lowland	Rice-Mahamaya, s	urea	for regular sowing of	Department for
	Alfisols	swarna, Sampda, IGKV R1, IGKV	 Supplemental irrigation 	rabi crops	supply of drip
	(Dorsa-clay loam)	R2, Bamleshwari, Indira Sona	from water harvesting	 Sowing of rabi crops 	system and
	or	Rice- Lathyrus/ linseed/gram/	structures using micro	adopting zero tillage	sprinklers
	Vertisols	fieldpea	irrigation i.e. drip and	technique	
	(Kanhar-clayey)	mung (relay) Rice-lentil/ gram/ linseed/ safflower	sprinklers		
	Bahra lowland	Rice- Swarna, Swarna sub1,	-		
	Vertisols	Jaldubi, Bamleshwari, MTU 1001,			
	(Kanhar-clayey)	IGKV R 1244			
	(Rumar clayey)	Rice- Lathyrus/ linseed/gram/			
		mung (relay)			
		Rice- wheat/ mung			
Mid season	Unbunded upland	Mungbean (Pusa Vishal, HUM 1,	Weeding and protection	Mulching	• Linkage with
drought (long dry	Bharri	HUM-16, BM 4, HUM 12) /	against insect and pests	Inter tilling	Agriculture
spell, consecutive		Urdbean (TU 94-2, TAU-2, KU 96-			Department
2 weeks rainless		3, Indira Urd 1)			/RKVY for supply
(>2.5 mm)		Pigeonpea (ICPL87, JKM189,			of interculture
period): At		UPAS 120, BDN 2, Rajivlochan)	_		implements for
flowering/ fruiting		Mung /Urd and rabi Hoursegram/			interculture in
stage		Niger Groundnut /Sesamum	-		upland crops
			_		
	Bundeded upland	Rice- Purnima, Danteshwari,			
	Bharri	Samleshwari, Annada			

Condition	Major Farming	Normal Crop /	Sugg	ested Contingency measure	s
	situation	Cropping	Crop management	Soil nutrient & moisture	Remarks on
		system		conservation measures	Implementation
		Rice and rabi Hoursegram/			
		Niger			
		Mung (Pusa vishal, Hum-1)			
	Midland	Rice- MTU1010, IR-64, IR-36,	• Weeding and protection	 Compartmental bunding, 	 Linkage with
	Inceptisol	Indira Barani Dhan 1,	against insect and pests	Ridge and Furrows,	micro irrigation
	(Matasi-Sandy	Chandrahasni, Samleshwari	Supplemental	Tied ridges to conserve	scheme of
	loam)		irrigation from water	rainwater during kharif	Agriculture
	Shallow Lowland	Rice-Mahamaya, s	harvesting structures	for regular sowing of	Department for
	Alfisols	swarna, Sampda, IGKV R1, IGKV	using micro irrigation	rabi crops	supply of drip
	(Dorsa-clay loam)	R2, Bamleshwari, Indira Sona	i.e. drip and sprinklers	 Increase 25percent seed 	system and
	or	Rice- Lathyrus/ linseed/gram/		rate of <i>rabi</i> crops.	sprinklers
	Vertisols	fieldpea		 Seed rate of wheat 	
	(Kanhar-clayey)	mung (relay)		increased from one-and	
		Rice-lentil/ gram/ linseed/ safflower		half to two times	
	Bahra lowland	Rice- Swarna, Swarna sub1,		•Sowing of <i>rabi</i> crops	
	Vertisols	Jaldubi, Bamleshwari, MTU 1001,		adopting zero tillage	
	(Kanhar-clayey)	IGKV R 1244		technique	
		Rice- Lathyrus/ linseed/gram/			
		mung (relay)			
		Rice- wheat/ mung			
Terminal drought	Unbunded upland	Mungbean (Pusa Vishal, HUM 1,	Harvest mature plants	Mulching	Linkage with
(Early withdrawal	Bharri	HUM-16, BM 4, HUM 12) /	Thin out plant	Inter tilling	Agriculture
of monsoon)		Urdbean (TU 94-2, TAU-2, KU 96-	population		Department
		3, Indira Urd 1)			/RKVY for supply
		Pigeonpea (ICPL87, JKM189,			of interculture
		UPAS 120, BDN 2, Rajivlochan)	4		implements for
		Mung /Urd and rabi Hoursegram/			interculture in
		Niger Groundnut /Sesamum	-		upland crops
	Bundeded upland	Rice- Purnima, Danteshwari,	Life saving irrigation if		
	Bharri	Samleshwari, Annada	available		
		Rice and rabi Hoursegram/			
		Niger	**		
		Mung (pusa vishal, Hum1)	Harvest mature plants		
			Thin out plant		
			population		

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	es
	situation	Cropping	Crop management	Soil nutrient & moisture	Remarks on
		system		conservation measures	Implementation
	Midland	Rice- MTU1010, IR64, IR 36,	 Weeding and protection 	 Compartmental bunding, 	 Linkage with
	Inceptisol	Indira Barani Dhan 1,	against insect and pests	Ridge and Furrows,	micro irrigation
	(Matasi-Sandy	Chandrahasni, Samleshwari	Supplemental	Tied ridges to conserve	scheme of
	loam)		irrigation from water	rainwater during kharif	Agriculture
	Shallow Lowland	Rice-Mahamaya, s	harvesting structures	for regular sowing of	Department for
	Alfisols	swarna, Sampda, IGKV R1, IGKV	using micro irrigation	rabi crops	supply of drip
	(Dorsa-clay loam)	R2, Bamleshwari, Indira Sona	i.e. drip and sprinklers	• Seed rate of wheat	system and
	to	Rice- Lathyrus/ linseed/gram/		increased from one-and	sprinklers
	Vertisols	fieldpea		half to two times	
	(Kanhar-clayey)	mung (relay)		•Sowing of rabi crops	
		Rice-lentil/ gram/ linseed/ safflower		adopting zero tillage	
	Bahra lowland	Rice- Swarna, Swarna sub1,		technique	
	Vertisols	Jaldubi, Bamleshwari, MTU 1001,			
	(Kanhar-clayey)	IGKV R 1244			
		Rice- Lathyrus/ linseed/gram/			
		mung (relay)			
		Rice- wheat/ mung			

2.1.2 Drought - Irrigated situation

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	s
	situation	Cropping system	Change in	Agronomic measures	Remarks on
			crop/cropping system		Implementation
Delayed release of	Unbunded upland	Mungbean (Pusa Vishal, HUM 1,	No change	-	 Linkage with
water in canals due	Bharri	HUM-16, BM 4, HUM 12) /			RKVY / NFSM /
to low rainfall		Urdbean (TU 94-2, TAU-2, KU 96-			IWMP/ micro
		3, Indira Urd 1)			irrigation schemes
		Pigeonpea (ICPL87, JKM189,			for construction of
		UPAS 120, BDN 2, Rajivlochan)			shallow tube wells
		Mung /Urd and rabi Hoursegram/	No change	-	and WHS
		Niger			including farm
		Groundnut /Sesamum	No change	-	ponds for
	Bundeded upland	Rice- Purnima, Danteshwari,	Mung(pusa vishal,		conjunctive use of
	Bharri	Samleshwari, Annada	pragya, Hum1,	-	water in canal

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	s
	situation	Cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
		Rice and rabi Hoursegram/ Niger	pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)	-	command • Compartmental bunding, Ridge
	Midland Inceptisol (Matasi-Sandy loam) Shallow Lowland Alfisols (Dorsa-clay loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona	-	 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 	and Furrows, Tied ridges to conserve rainwater during kharif for regular sowing of rabi crops
	or Vertisols (Kanhar-clayey)	Rice- Lathyrus/ linseed/gram/mung (relay) Rice- lentil/gram/linseed/ safflower/fieldpea Rice- Swarna, Swarna sub1,		method of rice cultivation If seedlings raised for transplanting then it should be done with	
	Vertisols (Kanhar-clayey)	Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/ mung (relay) Rice-wheat/ mung		 snould be done with rainwater or from other sources of water Weed control by herbicide and avoid biasi operation 	
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) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)	No change	-	• Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for construction of shallow tube wells
		Mung /Urd and rabi Hoursegram/ Niger Groundnut /Sesamum	No change No change	-	and WHS including farm ponds for
	Bundeded upland Bharri	Rice- Purnima, Danteshwari, Samleshwari, Annada Rice and rabi Hoursegram/ Niger	Mung(pusa vishal, pragya, Hum1, pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)	-	conjunctive use of water in canal command • Linkage with RKVY / NFSM /
	Midland Inceptisol	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1,	Rice- Indira barani dhan- 1, Samleshwari,	Direct seeding of rice	IWMP/ micro irrigation schemes

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	s
	situation	Cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	(Matasi-Sandy loam)	Chandrahasni, Samleshwari	Danteshwari, purnima	preferably dry seeding in line	for supply of micro irrigation
	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	• In case of failure of crop or poor crop stand then Sowing of sprouted seed (<i>lai</i> -	systems
	Vertisols (Kanhar-clayey)	Rice- Lathyrus/ linseed/gram/mung (relay) Rice- lentil/gram/linseed/ safflower/fieldpea		chaupa)adopting lehi method of rice cultivationAvoid transplanting of	
	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	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari	riceWeed control by herbicide and avoid biasi operation	
Non release of water in canals under delayed onset of monsoon in catchment	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	-	• Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for construction of shallow tube wells
		Mung /Urd and rabi Hoursegram/ Niger	No change	-	and WHS including farm
	Bundeded upland Bharri	Groundnut /Sesamum Rice- Purnima, Danteshwari, Samleshwari, Annada Rice and rabi Hoursegram/ Niger	No change Mung(pusa vishal, pragya, Hum1, pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)	-	ponds for conjunctive use of water in canal command • Linkage with RKVY / NFSM /
	Midland Inceptisol (Matasi-Sandy loam) Shallow Lowland Alfisols	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV	Rice- Purnima, Danteshwari, Samleshwari, Annada Rice- MTU1010, IR64, IR 36, Indira Barani	 Direct seeding of rice preferably dry seeding in line Avoid transplanting of rice 	IWMP/ micro irrigation schemes for supply of micro irrigation systems

Condition	Major Farming	Normal Crop /	Suggested Contingency measures			
	situation	Cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation	
	(Dorsa-clay loam) or	R2, Bamleshwari, Indira Sona	Dhan 1, Chandrahasni, Samleshwari	Weed control by herbicide and avoid		
	Vertisols (Kanhar-clayey)	Rice- Lathyrus/ linseed/gram/mung (relay) Rice- lentil/gram/linseed/ safflower/fieldpea		biasi operationSupplemental irrigation from WHS using drip and		
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari	 sprinklers Adopt zero tillage technique for sowing of rabi crops 		
		mung (relay) Rice-wheat/ mung	1244, Daillesilwaii	of rabi crops		
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	-	• Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for construction of shallow tube wells	
		Mung /Urd and rabi Hoursegram/ Niger	No change	-	and WHS including farm	
	Bundeded upland Bharri	Rice- Purnima, Danteshwari, Samleshwari, Annada Rice and rabi Hoursegram/ Niger	Mung(pusa vishal, pragya, Hum1, pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)	-	ponds for conjunctive use of water in canal command • Linkage with	
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	Rice- Purnima, Danteshwari, Samleshwari, Annada	 Direct seeding of rice preferably dry seeding in line Avoid transplanting of 	RKVY / NFSM / IWMP/ micro irrigation schemes for supply of	
	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	rice • Weed control by herbicide and avoid biasi operation	micro irrigation systems	
	Vertisols (Kanhar-clayey)	Rice- Lathyrus/ linseed/gram/ mung (relay)	-	Supplemental		

Condition	Major Farming	Normal Crop /	Suggested Contingency measures		
	situation	Cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/ mung (relay – Pragya, Pairy Mung)	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244, Bamleshwari	 irrigation from WHS using drip and sprinklers Adopt zero tillage technique for sowing of <i>rabi</i> crops 	
Insufficient groundwater recharge 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	-	• Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for construction of shallow tube wells
		Mung /Urd and rabi Hoursegram/ Niger	No change	-	and WHS including farm
		Groundnut /Sesamum	No change	-	ponds for
	Bundeded upland Bharri	Rice- Purnima, Danteshwari, Samleshwari, Annada Rice and rabi Hoursegram/ Niger	Pigeonpea(ICPL87, Rajivlochan. Maruti)	-	conjunctive use of water in canal command • Linkage with
	Midland Inceptisol (Matasi-Sandy loam) Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey) Bahra lowland Vertisols (Kanhar-clayey)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona Rice- Lathyrus/ linseed/gram/ mung (relay) Rice- lentil/gram/linseed/ safflower/ fieldpea Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/ mung (relay- Pragya, Pairymung) Rice-wheat/ mung/ potato		 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 	• Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for supply of micro irrigation systems

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 rai	nfall in a short span lead	ing to water logging or heav	y rainfall coupled with high speed w		
Urd/ mung/ maize	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/ sesamum/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	-	
Coriander	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	
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 ar	nd diseases due to unseas	onal rains			
Urd/ mung/ maize	Spraying of contact insecticide for control of caterpillar/ color rot	Spraying of contact insecticide for control of pest	-	-	
Groundnut/ sesamum/pigeon pea	Spraying of contact insecticide for control of caterpillar/ color rot	Spraying of contact insecticide for control of pest	-	-	

Rice	Spraying of insecticide	Spraying of insecticide	-	-
	for control of stem	for control of pest like		
	borer	gundhibug		
Rabi oilseed and	Spraying of insecticide	Spraying of insecticide	-	-
pulses	for control of aphid	for control of insect		
Wheat	Spraying of insecticide	-	-	-
	for control of stem			
	borer			
Horticulture				
Tomato/ brinjal	Spraying of contact	Spraying of contact	Harvest the fruit	-
	insecticide for control	insecticide for control of		
	of caterpillar	caterpillar/ fruit borer		
	Stacking for protecting	Stacking for protecting		
	fungal diseases	fungal diseases		
Coriander	Harvest the leaves	Harvest the leaves	-	-
Garlic/ Onion	-	-	-	-
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	Control citrus canker by	Control citrus canker by Copper	-
	Copper Oxy chloride	Copper Oxy chloride 0.5	Oxy chloride 0.5 % &	
	0.5 % & streptocycline	% & streptocycline 100	streptocycline 100 ppm,	
	100 ppm	ppm	collect mature fruits	

2.3 Floods

Condition	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation ¹				
Urd/ mung/ maize	Surface drainage	Surface drainage	Surface drainage	-
Groundnut/ sesame/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	-
Coriander	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 days ²				
Urd/ mung/ maize	Surface drainage	Surface drainage	Surface drainage	-
Groundnut/ sesame/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	-
Coriander	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	-

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