State: CHHATTISGARH

Agriculture Contingency Plan for District: Dhamtari

Agro-Climatic/Ecological Zone								
	Agro Ecological Sub Region (ICAR)	Chhattisgarh/Mahanadi Basin A	gro-eco region (11.0) (J3(Cd/Cm)5	5				
	Agro-Climatic Zone (Planning Commission)	Zone-7 Eastern plateau and hills	Zone-7 Eastern plateau and hills					
	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, Raigarl Mahasamund, Kanker (11 distric	n, Janjgir-champa, Kabirdham, Raj ts)	nandgaon, Durg, Dhamtari,				
	Geographic coordinates of district	Latitude	Longitude	Altitude				
	headquarters	21°15' N	81°41' E	289 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	Dr. S.S. Chandrawanshi, Programme Coordinator, KVK, Dhamtari 07722-219130 94255-16368, E_mail ID: kvkdhamtari@yahoo.com						
	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.)						

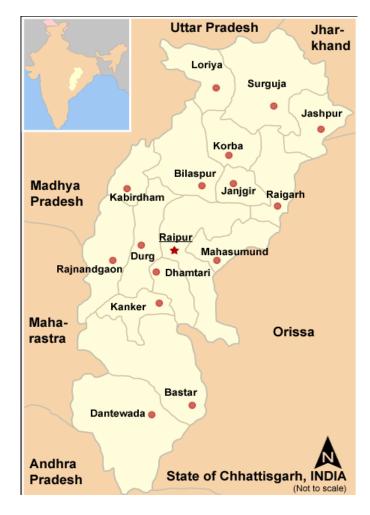
1.2	Rainfall	Normal RF(mm)	Normal Rainy days (number)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep):	1035.0	48	3 rd week of June	4 th week of September
	NE Monsoon(Oct-Dec):	73.9	4	Post monsoon	-
				(October-December)	
	Winter (Jan- March)	42.3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

1.3	District	Total Geographic Area (000' ha.)	Sole Cropped Area (000' ha.)	Double Cropped Area (000' ha.)	Total Irrigated Area (000' ha.)	Irrigated percentage with total cropped area	Total Cropped Area (000' ha.)
	Dhamtari	408.2	135.4	83.1	155.9	71%	218.4

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

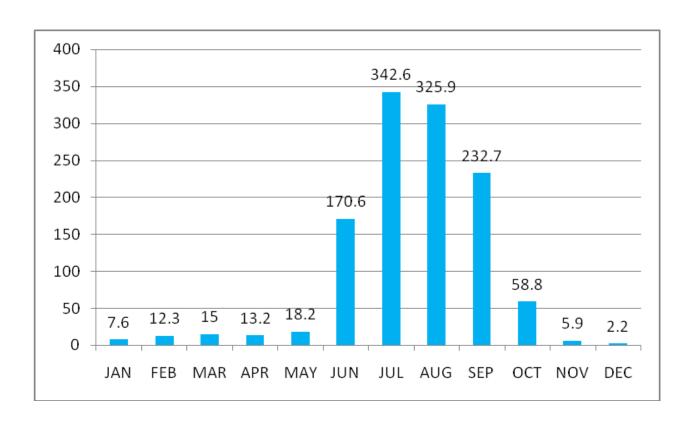
Annexure I

Location map of district within State



Annexure II

Mean annual rainfall (mm)



2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Condition	Major Farming situation ^a	Normal Crop / Cro	pping	Suggested Contingency measures				
		system ^b		Change in crop / cropping system ^c including variety		Agronomic measures ^d	Remarks on Implementation ^e	
		Kharif	Rabi	Kharif	Rabi			
Early season drought: Delay by 2 weeks (July 1st 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) Pigeonpea (ICPL87, JKM189, UPAS		No change No change		Normal Normal		
		120, BDN 2, Rajivlochan)	Horsegram/ Niger	No change		Normal		
		Black gram	Horsegram/ Niger	No change		Normal		
		Groundnut		No change		Normal		
		Sesame		No change		Normal		
		Maize- Hishell, P 3785, Bio 9681, 900M, Seedtech 2324, Pro 4640, DMH 117, Pro Agro- 4212 PEM 1 , VH -9,17HQPM-		No change		Normal		

Condition	Major Farming	Normal Crop / Cro	pping	Suggested Contingency measures				
	situation ^a	system ^b	0	Change in crop including variet	/ cropping system ^c	Agronomic measures ^d	Remarks on	
		Kharif	Rabi	Kharif Rabi		_	Implementation ^e	
		Kilat ii Kabi Kilat ii Kabi	Kabi					
		1 NMH-731NK- 30, NMH- 803KMH-3426						
	Bundeded upland Bharri	Rice- Purnima, Danteshwari, Samleshwari, Annada		No change		Normal		
		Rice	Horsegram	No change		Normal		
		Rice	Niger	No change		Normal		
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari		No change		Direct dry seeding in line technique suggested for better crop yield and double cropping	Linkage with RKVY for supply of tractor and animal drawn seed drill for line	
				No change		2. Line sowing to avoid	sowing	
	Shallow Lowland Alfisols (Dorsa- clayloam or	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona		No change		mortality of germinating seed in case drought follows after scanty rainfall events		
	Vertisols (Kanhar- clayey)	Rice	Lathyrus/ linseed/gram/ mung (relay)	No change		3. Promote application of post emergence herbicide for timely		
		Rice	Lentil	No change		weed management and		
		Rice	Gram	No change		avoiding biasi operation		
		Rice	Linseed	No change				
		Rice	Safflower	No change		_		
	Bahra lowland Vertisols (Kanhar- clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Fallow	No change				
I		Rice	Lathyrus/	No change				

Condition	Major Farming situation ^a	Normal Crop / Cropping system ^b			Suggested	Contingency measures	
				Change in crop / cropping system ^c		Agronomic measures ^d	Remarks on
				including variety			Implementation ^e
		Kharif	Rabi	Kharif	Rabi		
			linseed/gram/				
		7.	mung (relay)			_	
		Rice	Wheat	No change			
	** 1 1 1	Rice	Mung	No change		250/111	
Early season	Unbunded	Mungbean (Pusa				25 % higher seed rate	
drought:	upland	Vishal, HUM 1,				-do-	
Delay by 4 weeks (July	Bharri	HUM-16, BM 4, HUM 12) /					
3 rd wk)		Urdbean (TU 94-2,					
3 WK)		TAU-2, KU 96-3,					
		Indira Urd 1)					
		Pigeonpea					
		(ICPL87,					
		JKM189, UPAS					
		· ·					
		120, BDN 2,					
		Rajivlochan)					
		Mung	Hoursegram/ Niger			-do-	
		Urid	Hoursegram/ Niger			-do-	
		Groundnut		Erect variety GG- 5/G-20		-do-	
		Sesamum				-do-	
	Bundeded	Rice - Purnima,		Rice- Tulsi, Indira			
	upland	Danteshwari,		barani dhan-1,			
	Bharri	Samleshwari,		Annda, Anjali			
		Annada					
		Maize- Hishell, P					
		3785, Bio 9681,					
		900M, Seedtech					
		2324, Pro 4640,					
		DMH 117, Pro					
		Agro- 4212 PEM 1		1			

Condition	Major Farming	Normal Crop / Cropping		Suggested Contingency measures				
	situation ^a	system ^b		Change in crop / cro	opping system ^c	Agronomic measures ^d	Remarks on	
		-		including variety			Implementation ^e	
		Kharif	Rabi	Kharif	Rabi		_	
	Midland Inceptisol (Matasi-Sandy loam) Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar- clayey) Bahra lowland Vertisols (Kanhar-	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona Rice Rice Rice Rice Rice Rice Rice Rice Rice	Hoursegram Niger Lathyrus/ linseed/gram/ mung (relay) Lentil Gram Linseed Safflower Fallow		Coriander (leaf), toria, Lathyrus/ linseed/ mung (relay) Lentil Gram Linseed Coriander (leaf), toria Fallow	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 follows after scanty rainfall events Promote application of post emergence herbicide for timely weed management and avoiding biasi operation	• Linkage with RKVY for supply of 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	

Condition	Major Farming	Normal Crop / Cropping			Suggested	Contingency measures	
	situation ^a	system ^b		Change in crop / cr		Agronomic measures ^d	Remarks on
				including variety		<u>_</u>	Implementation ^e
		Kharif	Rabi	Kharif	Rabi		
			Lathyrus/ linseed/gram/ mung (relay)		Coriander (leaf), toria, Lathyrus/ linseed/ mung (relay)		
			Wheat		Wheat		
			Mung		Mung		
Early season drought:	Unbunded upland	Mungbean (Pusa Vishal,HUM 1,		Hoursegram/ Niger		25 % higher seed rate	
Delay by 6 weeks (Aug. 1 st wk)	Bharri	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)		Hoursegram/ Niger		-do-	
		Mung	Hoursegram/ Niger	Mung/ urid		-do-	
		Urid	Hoursegram/ Niger	Mung		-do-	
		Groundnut		Urid(PTU4, TU94- 2, pant-U31, KU96-3, TAU2)		-do-	
		Sesamum		Mung		-do-	
	Bundeded upland Bharri	Rice- Purnima, Danteshwari, Samleshwari, Annada Maize- Hishell, P 3785, Bio 9681,		Rice- Purnima, Tulsi, Indira barani dhan-1, Aditya, Anjali		Sowing of sprouted seed (lai-chaupa)adopting lehi method of rice cultivation	

Condition	Major Farming	Normal Crop / Cro	pping	Suggested Contingency measures				
	situation ^a	system ^b		Change in crop / cr	opping system ^c	Agronomic measures ^d	Remarks on	
				including variety			Implementation ^e	
		Kharif	Rabi	Kharif	Rabi			
		00016 0 1 1						
		900M, Seedtech						
		2324, Pro 4640,						
		DMH 117, Pro						
		Agro- 4212 PEM 1						
		, VH -9,17HQPM-						
		1 NMH-731NK-						
		30, NMH-						
		803KMH-3426 Rice	TT	Diagram		Mined on interconnection of		
		Rice	Hoursegram	Pigeonpea		Mixed or intercropping of pigeonpea and mung (4:2)		
		Rice	Niger	Sesamum		Mixed or intercropping of		
		Rice	Nigei	Sesamum		sesamum and mung (4:2)		
				Groundnut		-do-		
	Midland	Rice- MTU1010,		Rice- Indira barani		• Direct dry seeding in line	• Linkage with	
	Inceptisol	IR64, IR 36, Indira		dhan-1,		technique suggested for	RKVY for	
	(Matasi-Sandy	Barani Dhan 1,		Samleshwari,		better crop yield and	supply of	
	loam)	Chandrahasni,		Danteshwari,		double cropping	tractor and	
	,	Samleshwari		Purnima		• Promote direct seeding or	animal drawn	
	Shallow	Rice-Mahamaya, s		Rice- MTU1010,		rice and discourage	seed drill for	
	Lowland	swarna, Sampda,		IR64, IR 36, Indira		transplanting	line sowing	
	Alfisols	IGKV R1, IGKV		Barani Dhan 1,		• Sowing of sprouted seed	 Linkage with 	
	(Dorsa-clay	R2, Bamleshwari,		Chandrahasni,		(lai-chaupa)adopting	MNREGA for	
	loam) or	Indira Sona		Samleshwari		lehi method of rice	WC measures:	
	Vertisols	Rice	Lathyrus/	Rice- IR64,	Coriander	cultivation	Digging of	
	(Kanhar-		linseed/gram/	Chandrahasni	(leaf), toria,	•Line sowing to avoid	shallow dug	
	clayey)		mung (relay)	Bambleshwari,	linseed/	mortality of germinating	wells and	
		Rice	Lentil	karma masuri	mung (relay) Lentil	seed in case drought	renovation of	
		Rice	Gram		Gram	follows after scanty	existing WHSs • Utilize	
		Rice	Linseed		Linseed	rainfall events	harvested rain	
		Rice	Safflower		Coriander	• Promote application of	water of WHS	
		RICE	Samower		(leaf), toria	post emergence herbicide for timely	in crop	
	Bahra lowland	Rice- Swarna,	Fallow	Rice- Mahamaya,	Fallow	weed management and	production by	
	Vertisols	Swarna sub1,	1 uno w	Sampda, IGKV R1,	1 anow	weed management and	adopting drip	

Condition	Major Farming	Normal Crop / Cropping		Suggested Contingency measures					
	situation ^a	system ^b		Change in crop / croincluding variety	opping system ^c	Agronomic measures ^d	Remarks on Implementation ^e		
		Kharif	Rabi	Kharif	Rabi		•		
	(Kanhar- clayey)	Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244		IGKV R2, IGKV R 1244		avoiding biasi operation • Increase 25percent seed rate of rabi crops.	system or sprinklers that may be converged from		
		K 1244	Lathyrus/ linseed/gram/ mung (relay)		Coriander (leaf), toria, Lathyrus/ linseed/ mung (relay)	 Seed rate of wheat may be increased from one-and half to two times Sowing of rabi crops adopting zero tillage technique 	micro irrigation scheme of Agriculture Department		
			Wheat		Wheat	_			
7 1	** 1 1 1	1	Mung		Mung				
Early season drought: Delay by 8	Unbunded upland Bharri	Mungbean (Pusa Vishal,HUM 1, HUM-16, BM 4,			Hoursegram/ Niger	Sowing in line or broadcasting in September			
weeks (Aug. 3 rd wk)		HUM 12) / Urdbean (TU 94-2, TAU-2, KU 96-3, Indira Urd 1) Pigeonpea (ICPL87, JKM189, UPAS 120, BDN 2, Rajivlochan)			Hoursegram/ Niger	Sowing in line or broadcasting in September			
		Mung	Hoursegram/ Niger	Mung		25 % higher seed rate			
		Urid	Hoursegram/ Niger	Mung		25 % higher seed rate			
		Groundnut	_	Mung		25 % higher seed rate			
		Sesamum		Mung		25 % higher seed rate			
	Bundeded upland	Rice- Purnima, Danteshwari,		Mung(pusa vishal, pragya, Hum1,		Mixed or intercropping of pigeonpea and mung (4:2)			

Condition	Major Farming	Normal Crop / Cro	pping		Suggested (Contingency measures	
	situation ^a	system ^b		Change in crop / cr	opping system ^c	Agronomic measures ^d	Remarks on
				including variety			Implementation ^e
		Kharif	Rabi	Kharif	Rabi		
	Bharri	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-		pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)		or sesamum and mung (4:2)	
		30, NMH- 803KMH-3426 Rice	Hoursegram		Hoursegram	Sowing in line or	
						broadcasting in September	
		Rice	Niger		Niger/mung	Sowing in line or broadcasting in September	
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari		Rice- Indira barani dhan-1, Samleshwari, Danteshwari, purnima		 Promote direct Line seeding of rice and discourage transplanting Sowing of sprouted seed (lai-chaupa)adopting 	• Linkage with RKVY for supply of tractor and animal drawn
	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		lehi method of rice cultivation • Promote application of post emergence herbicide for timely	seed drill for line sowing • Linkage with MNREGA for WC measures:
	Vertisols (Kanhar- clayey)	Rice	Lathyrus/ linseed/gram/ mung (relay)	Rice- IR64, Chandrahasni Bambleshwari, karma masuri		weed management and avoiding biasi operation •Increase 25percent seed rate of <i>rabi</i> crops.	Digging of shallow dug wells and renovation of
		Rice	Lentil		Lentil	• Seed rate of wheat	existing WHSs
		Rice	Gram		Gram	increased from one-and	• Utilize
		Rice	Linseed		Linseed	half to two times	harvested rain
		Rice	Safflower		Fieldpea/ Coriander	• Sowing of <i>rabi</i> crops	water of WHS in crop

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

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

Condition	Major Farming	Normal Crop /	Sugg	sested Contingency measure	s
	situation ^a	Cropping	Crop management	Soil nutrient & moisture	Remarks on
		system ^b		conservation measues ^a	Implementation ^e
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 /Urid 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	s
	situation ^a	Cropping system ^b	Crop management	Soil nutrient & moisture conservation measues ^d	Remarks on Implementation ^e
	Bharri	Samleshwari, Annada Rice and rabi Hoursegram/ Niger Mung(pusa vishal, Hum1)		to conserve rainwater during kharif for regular sowing of rabi crops	
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	• Gap filling or • Resowing of dry seed		
	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/ safflower/ fieldpea	• Gap filling • Sowing of sprouted seed (lai-chaupa)adopting lehi method of rice cultivation • Sowing of relatively early varieties like IR64, Chandrahasni Bambleshwari, karma masuri		
	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	 Gap filling Sowing of sprouted seed (lai-chaupa) adopting lehi method of rice cultivation Sowing of relatively early varieties like 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) Mung /Urid and rabi Hoursegram/	Weeding and protection against sucking pests Weeding and protection	 Inter tilling for soil mulch Mulching with paddy straw or use plastic mulch or other locally available material 	• Linkage with Agriculture Department /RKVY for supply of interculture implements for interculture in

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	es
	situation ^a	Cropping	Crop management	Soil nutrient & moisture	Remarks on
		system ^b		conservation measues ^d	Implementation ^e
		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	Chandrahasni, Samleshwari	insect and pests	Tied ridges to conserve	scheme of
	loam)	D: MI	• Avoid top dressing of	rainwater during kharif	Agriculture
	Shallow Lowland Alfisols	Rice-Mahamaya, s swarna, Sampda, IGKV R1, IGKV	urea	for regular sowing of rabi crops	Department for
	(Dorsa-clay loam)	R2, Bamleshwari, Indira Sona	• Supplemental irrigation	• Sowing of rabi crops	supply of drip system and
	or	Rice- Lathyrus/ linseed/gram/	from water harvesting structures using micro	adopting zero tillage	sprinklers
	Vertisols	fieldpea	irrigation i.e. drip and	technique	Sprinklers
	(Kanhar-clayey)	mung (relay)	sprinklers	teeninque	
		Rice-lentil/ gram/ linseed/ safflower	sprinklers		
	Bahra lowland	Rice- Swarna, Swarna sub1,			
	Vertisols	Jaldubi, Bamleshwari, MTU 1001,			
	(Kanhar-clayey)	IGKV R 1244			
		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 (>2.5 mm)		3, Indira Urd 1) Pigeonpea (ICPL87, JKM189,			/RKVY for supply of interculture
(>2.5 mm) period): At		UPAS 120, BDN 2, Rajivlochan)			implements for
flowering/ fruiting		Mung /Urid and rabi Hoursegram/	-		interculture in
stage		Niger			upland crops
-		Groundnut /Sesamum	1		apiana crops
	Bundeded upland	Rice- Purnima, Danteshwari,	-		
	Bharri	Samleshwari, Annada			
	1		ı		1

Condition	Major Farming	Normal Crop /	Suggested Contingency measures		
	situation ^a	Cropping	Crop management	Soil nutrient & moisture	Remarks on
		system ^b		conservation measues ^d	Implementation ^e
		Rice and rabi Hoursegram/			
		Niger			
	3.00	Mung (pusa vishal, , Hum1)			
	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 loam)	Chandrahasni, Samleshwari	Supplemental irrigation from water	Tied ridges to conserve rainwater during kharif	scheme of 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 rabi crops.	sprinklers
	Vertisols	fieldpea		• Seed rate of wheat	
	(Kanhar-clayey)	mung (relay)		increased from one-and	
	D 1 1 1 1	Rice-lentil/ gram/ linseed/ safflower		half to two times	
	Bahra lowland Vertisols	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001,		• Sowing of rabi crops	
	(Kanhar-clayey)	IGKV R 1244		adopting zero tillage	
	(Kaimar-Clayey)	Rice- Lathyrus/ linseed/gram/		technique	
		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)			implements for
		Mung /Urid and rabi Hoursegram/			interculture in
		Niger			upland crops
		Groundnut /Sesamum			
	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 ^a	Cropping system ^b	Crop management	Soil nutrient & moisture conservation measues ^d	Remarks on Implementation ^e
	Midland Inceptisol (Matasi-Sandy Ioam) Shallow Lowland Alfisols (Dorsa-clay Ioam) to Vertisols (Kanhar-clayey) Bahra Iowland 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/ fieldpea mung (relay) Rice-lentil/ gram/ linseed/ safflower Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244	Weeding and protection against insect and pests Supplemental irrigation from water harvesting structures using micro irrigation i.e. drip and sprinklers	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	• Linkage with micro irrigation scheme of Agriculture Department for supply of drip system and sprinklers
	(Ramai CityCy)	Rice- Lathyrus/ linseed/gram/ mung (relay)			
		Rice- wheat/ mung			

2.1.2 Drought - Irrigated situation

Condition	Major Farming	Normal Crop /	Suggested Contingency measures		
	situation ^a	Cropping	Change in	Agronomic measuresi	Remarks on
		system ^b	crop/cropping system ^h		Implementation ^e
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 /Urid 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 /	Suggested Contingency measures			
	situation ^a	Cropping system ^b	Change in crop/cropping system ^h	Agronomic measuresi	Remarks on Implementation ^e	
		Rice and rabi Hoursegram/ Niger	pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)		command • Compartmental bunding, Ridge	
	Midland Inceptisol (Matasi-Sandy loam) Shallow Lowland	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari Rice-Mahamaya, s		 Direct seeding of rice preferably in line In case of failure of crop or poor crop stand then Sowing of 	and Furrows, Tied ridges to conserve rainwater during kharif for regular sowing of rabi	
	Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey)	swarna, Sampda, IGKV R1, IGKV R2, Bamleshwari, Indira Sona Rice- Lathyrus/ linseed/gram/mung (relay-Pragya) Rice- lentil/gram/linseed/ safflower/fieldpea		sprouted seed (<i>lai-chaupa</i>)adopting lehi method of rice cultivation If seedlings raised for transplanting then it	crops	
	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		should 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 /Urid 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	

Major Farming	Normal Crop /	Suggested Contingency measures			
	Cropping system ^b	Change in crop/cropping system ^h	Agronomic measuresi	Remarks on Implementation ^e	
(Matasi-Sandy loam)	,	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	crop or poor crop stand then Sowing of	systems	
(Kanhar-clayey)	mung (relay-Pragya) Rice- lentil/gram/linseed/ safflower/ fieldpea		chaupa)adopting lehi method of rice cultivationAvoid transplanting of		
Bahra lowland Vertisols (Kanhar-clayey)	Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/mung (relay)	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244	rice Weed control by herbicide and avoid biasi operation		
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 and WHS including farm ponds for conjunctive use of water in canal command • Linkage with RKVY / NFSM /	
	Mung /Urid and rabi Hoursegram/ Niger	No change			
Bundeded upland Bharri	Rice- Purnima, Danteshwari, Samleshwari, Annada Rice and rabi Hoursegram/ Niger	Mung(pusa vishal, pragya, Hum1, pairimung) Pigeonpea(ICPL87, Rajivlochan. Maruti)			
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- Indira barani dhan- 1, Samleshwari, Danteshwari, purnima 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	
	situation ^a (Matasi-Sandy loam) Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey) Bahra lowland Vertisols (Kanhar-clayey) Unbunded upland Bharri Bundeded upland Bharri Midland Inceptisol (Matasi-Sandy loam)	Situationa Cropping systemb (Matasi-Sandy loam) Shallow Lowland Alfisols (Dorsa-clay loam) or Vertisols (Kanhar-clayey) Bahra lowland Vertisols (Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/mung (relay) Rice-wheat/mung 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) Mung /Urid and rabi Hoursegram/ Niger Groundnut /Sesamum Bundeded upland Rice- Purnima, Danteshwari, Samleshwari, Annada Rice and rabi Hoursegram/ Niger Midland Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	situation* Cropping system* (Matasi-Sandy loam) Shallow Lowland Alfisols ((Dorsa-clay loam) or Vertisols ((Kanhar-clayey) Bahra lowland Vertisols ((Kanhar-clayey) Indicate the Holman Bharri Unbunded upland Bharri Bundeded upland Bundeded upland Bharri Bundeded upland Bundeded upland Bharri Bundeded upland Bunded Bunded Bunded Bundeded upland Bharri Bundeded upland Bundeded upland Bundeded upland Bundeded upland Bundeded upland Bharri Bundeded upland Bundededed Upland Bundededed Upland Bundeded Upland Bundeded Upland Bundeded Upland Bundeded	Situation Cropping system Change in crop/cropping system Agronomic measures	

Condition	Major Farming	Normal Crop /	Suggested Contingency measures		
	situation ^a	Cropping system ^b	Change in crop/cropping system ^h	Agronomic measuresi	Remarks on Implementation ^e
	(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- Pragya) Rice- lentil/gram/linseed/ safflower/fieldpea		 biasi operation Supplemental irrigation from WHS using drip and 	
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Mahamaya, Indira sona, Bamleshwari, MTU 1001	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R	sprinklers • Adopt zero tillage technique for sowing	
		Rice- Lathyrus/ linseed/gram/ mung (relay) Rice-wheat/ mung	1244	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 /Urid 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,		ponds for conjunctive use of water in canal command
	Midland Inceptisol (Matasi-Sandy loam)	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	Rajivlochan. Maruti) Rice- Indira barani dhan- 1, Samleshwari, Danteshwari, purnima	 Direct seeding of rice preferably dry seeding in line Avoid transplanting of 	• Linkage with RKVY / NFSM / IWMP/ micro irrigation schemes for supply of
	Shallow Lowland Alfisols (Dorsa-clay loam) or	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244	Rice- MTU1010, IR64, IR 36, Indira Barani Dhan 1, Chandrahasni, Samleshwari	riceWeed control by herbicide and avoid biasi operation	micro irrigation systems
	Vertisols (Kanhar-clayey)	Rice- Lathyrus/ linseed/gram/ mung (relay-Pragya)		Supplemental	

Condition	Major Farming	Normal Crop /	Sugg	gested Contingency measure	es
	situation ^a	Cropping system ^b	Change in crop/cropping system ^h	Agronomic measuresi	Remarks on Implementation ^e
	Bahra lowland Vertisols (Kanhar-clayey)	Rice- Swarna, Swarna sub1, Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/ mung (relay)	Rice- Mahamaya, swarna, Sampda, IGKV R1, IGKV R2, IGKV R 1244	irrigation from WHS using drip and sprinklers • Adopt zero tillage technique for sowing of rabi crops	
Insufficient groundwater recharge due to low rainfall	undwater narge due to low ifall Bharri HUM-16, BM 4, HUM 1 Urdbean (TU 94-2, TAU 3, Indira Urd 1) Pigeonpea (ICPL87, JKN	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 /Urid 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 Pigeonpea(ICPL87, Rajivlochan. Maruti)		ponds for 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	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,		 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 	RKVY / NFSM / IWMP/ micro irrigation schemes for supply of micro irrigation systems
	Vertisols (Kanhar-clayey)	Jaldubi, Bamleshwari, MTU 1001, IGKV R 1244 Rice- Lathyrus/ linseed/gram/mung (relay) Rice-wheat/ mung/ potato			

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

Condition		S	Suggested contingency measure		
	Vegetative stage ^k	Flowering stage ^l	Crop maturity stage ^m	Post harvest ⁿ	
Continuous high rain	nfall in a short span lead	ing to water logging or heav	yy rainfall coupled with high speed winds in a short span*		
Urid/ 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			
Urid/ 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 for control of stem	Spraying of insecticide for control of pest like		
Rabi oilseed and pulses	Spraying of insecticide for control of aphid	gundhibug 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	
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 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 ^o				
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest	
Transient water logging/ partial inundation ¹					
Urid/ mung/ maize	Surface drainage	Surface drainage	Surface drainage		
Groundnut/ sesamum/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 day	s ²				
Urid/ mung/ maize	Surface drainage	Surface drainage	Surface drainage		
Groundnut/ sesamum/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