

State: Jharkhand

Agriculture Contingency Plan for District: Deoghar

1.0 District Agriculture profile			
1.1	Agro-Climatic/Ecological Zone		
	Agro Ecological Sub Region (ICAR)	Eastern plateau (chotanagpur) And Eastern Ghats, Hot Sub humid Eco-Region (12.3)	
	Agro-Climatic Zone (Planning Commission)	Eastern Plateau And Hills Region (VII)	
	Agro Climatic Zone (NARP)	Central And North Eastern Plateau Zone (BI-4)	
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Bokaro, Chatra, Deogarh, Dhanbagh, Giridh, Godda, Hazaribagh, Jamtara, Khunthi	
	Geographic coordinates of district headquarters	Latitude	Longitude
		24.53 ⁰ N	86.7 ⁰ E
		Altitude	254 m
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Zonal Research Station (ZRS), Dumka, Birsa Agricultural University, Ranchi	
	Mention the KVK located in the district with address	Krishi Vigyan Kendra, Deoghar, Krishi Vigyan Kendra, Sujani, PO. Ghorlash, Distt. Deoghar-814152, State- Jharkhand	
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	Zonal Research Station, Dumka	

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)	1265		3 rd week of June	3 rd week of September
	NE Monsoon(Oct-Dec)	132			
	Winter (Jan- Feb)	24		-	-
	Summer (Mar-May)	84		-	-

	Annual	1505		-	-
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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)	247.9	108.3	20.3	-	-	-		29.5	38.7	53.0

1.4	Major Soils	Area ('000 ha)	Percent (%) of total
	Red Lateritic soils	525	18.3
	Loam soils	137	4.8
	Fine Loam soils	110	3.8
	Fine Mixed Loam soils	200	7.0

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	108.3	120%
	Area sown more than once	-	
	Gross cropped area	-	

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	16.185		
	Gross irrigated area	-		
	Rainfed area	-		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals	3	3.2	
	Tanks	249	6.1	
	Open wells	2712	4.2	

	Bore wells			
	Lift irrigation schemes			
	Micro-irrigation			
	Other sources (Check Dam)	136	2.844	
	Total Irrigated Area			
	Pump sets			
	No. of Tractors			
	Groundwater availability and use* (Data source: State/Central Ground water Department /Board)	No. of blocks/ Tehsils	(%) area	Quality of water (specify the problem such as high levels of arsenic, fluoride, saline etc)
	Over exploited			
	Critical			
	Semi- critical			
	Safe			
	Wastewater availability and use			
	Ground water quality			
*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%				

1.7 Area under major field crops & horticulture

1.7	Major field crops cultivated	Area ('000 ha)							
		<i>Kharif</i>			<i>Rabi</i>			Summer	Grand total
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
	Rice			98.6					98.6
	Maize			11.9		0.3			12.2
	Pigeonpea			1.9					1.9
	Blackgram			0.4					0.4
	Greengram			0.1					0.1
	Groundnut			0.2					0.2
	Wheat						3.8		3.8
	Chick pea						1.1		1.1
	Pea						0.5		0.5
	Lentil						0.5		0.5
	Mustard						1.1		1.1

	Horticulture crops - Fruits	Area ('000 ha)		
		Total	Irrigated	Rainfed
	Horticulture crops - Vegetables			
	Cauliflower	1.7		
	Cabbage	1.3		
	Tomato	1.0		
	Brinjal	0.5		
	Chilli	0.1		
	Ladies finger	0.4		
	Bottle gourd	0.4		
	Bitter gourd	0.5		
	Cucumber	0.9		
	Ridge gourd	0.3		
	Sponge gourd	0.5		
	French bean	0.1		
	Medicinal and Aromatic crops			

	Plantation crops			
	Fodder crops			
	Total fodder crop area			
	Grazing land			
	Sericulture etc			

1.8	Livestock	Male ('000)	Female ('000)	Total ('000)		
	Non descriptive Cattle (local low yielding)			396.35		
	Improved cattle					
	Crossbred cattle					
	Non descriptive Buffaloes (local low yielding)					
	Descript Buffaloes			53.9		
	Goat			200.2		
	Sheep			36.7		
	Others (Camel, Pig, Yak etc.)			28.7		
	Duckery					
	Commercial dairy farms (Number)					
1.9	Poultry	No. of farms	Total No. of birds ('000)			
	Commercial					
	Backyard		322.6			
1.10	Fisheries (Data source: Chief Planning Officer)					
	A. Capture					
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats		Nets	Storage facilities (Ice plants etc.)
			Mechanized	Non-mechanized		

	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds	No. of Reservoirs	No. of village tanks
B. Culture				
		Water Spread Area (ha)	Yield (t/ha)	Production ('000 tons)
	i) Brackish water (Data Source: MPEDA/ Fisheries Department)			
	ii) Fresh water (Data Source: Fisheries Department)			

1.11 Production and Productivity of major crops

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	
Major Field crops (Crops identified based on total acreage)										
	Rice	260.5	2649					260.5	2649	
	Maize	17.6	1477	0.641	1654			17.6	1565	
	Pigeonpea	1.9	1000					1.9	1000	
	Blackgram	0.2	600					0.2	600	
	Greengram	0.1	580					0.1	580	
	Wheat			6.5	1700			6.5	1700	
	Chick pea			0.9	940			0.9	940	
	Pea			0.3	630			0.3	630	

	Lentil			0.4	780			0.4	780	
	Mustard							0.4	242.7	
Major Horticultural crops (Crops identified based on total acreage)										
	Cauliflower	34.7	0.2					34.7	0.2	
	Cabbage	30.7	0.3					30.7	0.3	
	Tomato	22.8	0.2					22.8	0.2	
	Brinjal	16.4	0.3					16.4	0.3	
	Chilli	0.4	0.1					0.4	0.1	
	Ladies finger	6.2	0.1					6.2	0.1	
	Bottle gourd	78.0	0.2					78.0	0.2	
	Bitter gourd	98.7	0.2					98.7	0.2	
	Cucumber	19.8	0.2					19.8	0.2	
	Ridge gourd	41.1	0.1					41.1	0.1	
	Sponge gourd	6.3	0.2					6.3	0.2	
	French bean	11.4	0.1					11.4	0.1	

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Rice	Blackgram	Pigeonpea	Maize	Wheat
	Kharif- Rainfed	4 th week of June to 4 th week of July	3 rd week of June to 4 th week of June	3 rd week of June to 2 nd week of July	3 rd week of June to 4 th week of July	

	Kharif-Irrigated	2 nd week of June to 3 rd week of June				
	Rabi-Rainfed					3 rd week of October to 4 th week of October
	Rabi-Irrigated					3 rd week of November to 4 th week of December

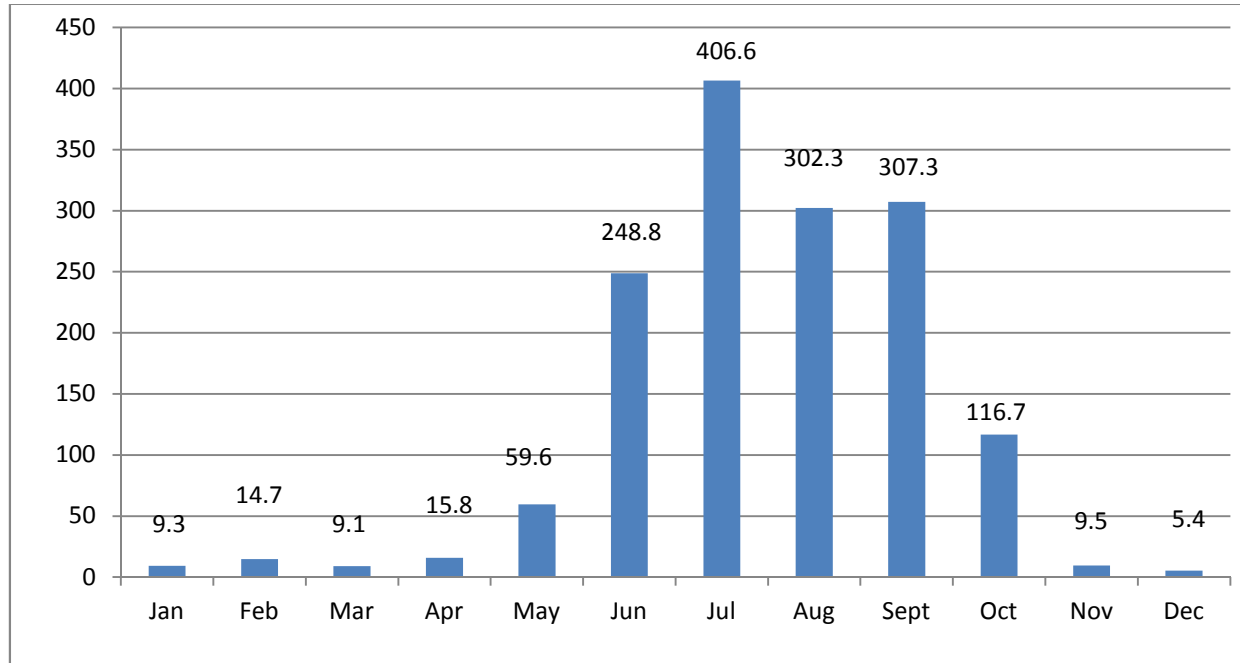
1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought	✓		
	Flood			✓
	Cyclone			✓
	Hail storm			✓
	Heat wave		✓	
	Cold wave		✓	
	Frost		✓	
	Sea water intrusion			✓
	Pests and disease outbreak		✓	

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 II	Enclosed: Yes
		Soil map as Annexure III	Enclosed: Yes

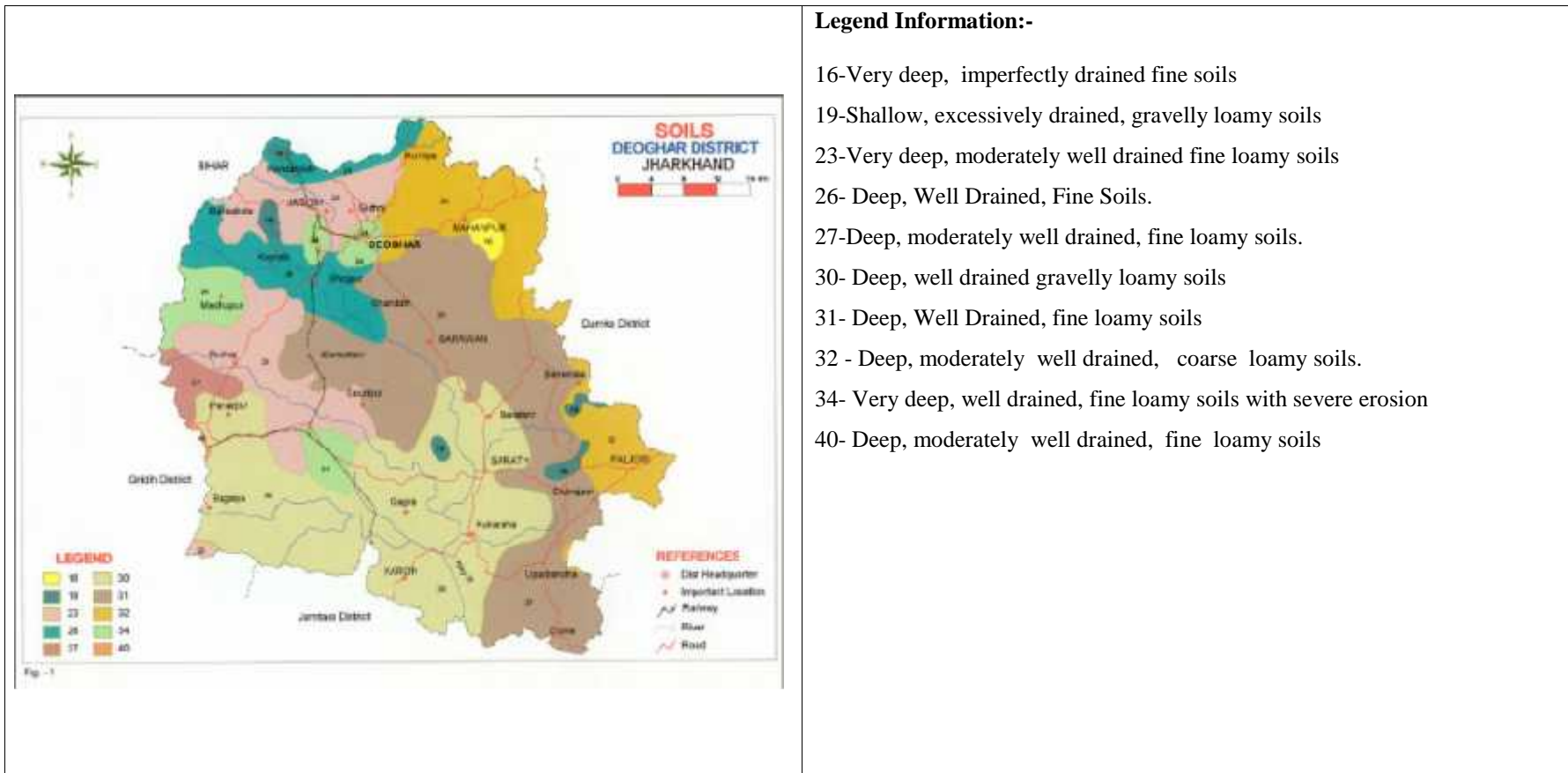
Annexure I



Annexure II



Annexure III



Legend Information:-

- 16-Very deep, imperfectly drained fine soils
- 19-Shallow, excessively drained, gravelly loamy soils
- 23-Very deep, moderately well drained fine loamy soils
- 26- Deep, Well Drained, Fine Soils.
- 27-Deep, moderately well drained, fine loamy soils.
- 30- Deep, well drained gravelly loamy soils
- 31- Deep, Well Drained, fine loamy soils
- 32 - Deep, moderately well drained, coarse loamy soils.
- 34- Very deep, well drained, fine loamy soils with severe erosion
- 40- Deep, moderately well drained, fine loamy soils

Source: SAMETI, Jharkhand

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
Early season drought (delayed onset)					
Delay by 2 weeks 1 st week of July	Red Sandy lateritic soils Upland	Direct sown rice Pigeonpea , Maize, Groundnut , Cucurbits, Ladiesfinger, Maize + Ladiesfinger, Pigeonpea +Blackgram/ Greengram	Direct sown rice, Pigeonpea, Maize, Groundnut, Maize+ Ladiesfinger, Pigeonpea + Blackgram, Blackgram + Greengram , Cucurbits/Ladiesfinger/Cowpea / Dolichosbean		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 4 weeks 3 rd week of July	Red Sandy lateritic soils	Direct sown rice Pigeonpea , Maize, Groundnut , Cucurbits, Ladiesfinger, Maize + Ladiesfinger, Pigeonpea +Blackgram/ Greengram	Direct sown rice (Vandana, Birsa Vikas dhan-109), Pigeonpea (Birsa Arhar-1, ICPH2671), Maize (Kanchan, Birsa Makai-1), Groundnut (Birsa mungfali-2), Maize+ Ladiesfinger, Pigeonpea + Blackgram, Blackgram (T-9/Pant U-19/Birsa urd-1) + Greengram (Pusa Vishal)	Alternate row irrigation Use micro irrigation system Irrigation at only critical stage of crop	Supply of seed through NFSM

			Cucurbits/Ladiesfinger/Cow pea / Dolichosbean		
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Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 6 weeks 1 st week of August	Sandy lateritic acidic soils	Direct sown rice, Pigeonpea , Maize, Maize+ Ladiesfinger, Pigeonpea + Blackgram , Blackgram + Greengram, Groundnut / Cucurbits/ Ladiesfinger/Cow pea /Dolichosbean	Pigeonpea + Horsegram, Pigeonpea + Sesame, French Bean, Dolichosbean, Pigeonpea + Maize, Pigeonpea (UPAS-120) Horse gram (Birsra Kulthi-1) Sesame (Kanke Safed, Krishna) French bean (Swarna Priya, Arka Komal) Dolichos bean (Swarna utkrista)	1. Ridge Furrow method should be followed for proper germination 2. Conservation of soil moisture. 3. Mechanical weeding 4. Staking for Dolichos bean.	Supply of seed through NFSM

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 8 weeks 3 rd week of August	Red Sandy lateritic soils	Pigeonpea + Horsegram, Pigeonpea + Sesame Frenchbean, Dolichosbean, Pigeonpea + Maize	Pigeonpea + Horsegram, Pigeonpea + Sesame	1. Ridge Furrow method should be followed for proper germination 2. Conservation of soil moisture. 3. Mechanical weeding. 4. Micro irrigation system.	Supply of seed through NFSM

Condition	Major Farming situation ^a	Normal Crop / Cropping system ^b	Suggested Contingency measures		
			Change in crop / cropping system ^c including variety	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delay by 2 weeks 1 st week of July	Sandy loam soils MID LAND	Rice	Rice - IR-64, IR-36, Lalat, Naveen, Sahbhagi, Arize-6444, Birsamati	Rice cultivation through SRI method or plastic drum seeder. Proper bunding for water retention. Use of cono weeder for weeding.	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 4 weeks 3 rd week of July	Sandy loam soils	Rice	Rice – IR-36, IR-64, Lalat, Naveen, Birsamati, Arise 6444, Sahbhagi	1. Transplanting through SRI method. 2. Proper bunding for water retention. 3. Use of cono weeder for weeding.	

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delay by 6 weeks 1 st week of August	Sandy soils	Rice	Rice – IR-36, IR-64, Lalat, Naveen, Birsamati, Arise 6444, Sahbhagi	1. Transplanting through SRI method. 2. Proper bunding for water retention. 3. Use of cono weeder for weeding.	

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 8 weeks 3 rd week of August	Sandy loam soils	Rice, Maize, Pigeonpea Blackgram Greengram, Finger millet, Brinjal Frenchbean, Tomato, Rice bean, Sweet Potato, Radish, Cauliflower, Chilies	Direct sown rice, Pigeonpea, Maize, Horsegram – Birsa Kulthi-1 Brinjal – Swarna Pratibha, Swarna Abhilamb, Swarna Ajay, Swarna Sobha, Swarna Nilima. French Bean – Swarna Priya, Arka Komal, Swarna Lata) Tomato – Arka Abha, Swarna Sampada, Swarna Vijay. Rice Bean – RBL-1. Sweet Potato – Kalmegh. Radish – Japanese White. Cauliflower – Early Kunwari, Hajipur extra early. Chilies – Pusa Jwala, Capsicum Bharat, Indra.	Proper bunding of Rice fields. Sowing of pulses along the slope.	Seed cum fertilizer drill supplied by RKVY scheme.
Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation^a	Normal Crop / Cropping system^b	Change in crop / cropping system^c including variety	Agronomic measures^d	Remarks on Implementation^e
Delay by 2 weeks 1 st week of July	LOW LAND Sandy clay loam solis	Rice	Rice (Rajshree, Arise-6444, MTU-7029)	1. . Direct sowing of rice with drum seeder 2. Proper bunding for water retention.	

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delay by 4 weeks 3 rd week of July	Sandy clay loam solis	Rice	Rice (Arise-6444, Rajshree)	1. Direct sowing of rice with drum seeder 2. Proper bunding for water retention.	1. Supply of SRI marker and cono weeder through RKVY.

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delay by 6 weeks 1 st week of August	Sandy clay loam solis	Rice	Rice (Arise-6444, Rajshree)	1. Direct sowing of rice with drum seeder 2. Proper bunding for water retention.	Supply of SRI marker, cono weeder and drum kit through RKVY

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delay by 8 weeks 3 rd week of August	Sandy clay loam solis	Rice	Rice (Anjali, Birsa Dhan-201, Birsa Dhan-202, Vandana, Sahbhagi).	1. Direct sowing of rice with drum seeder. 3. Proper bunding for water retention. 4. Life saving irrigation.	Supply of seed & drum seeder through NFSM & RKVY.

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
Early season drought (Normal onset)					

Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Upland Sandy lateritic red soils	Direct sown rice (Gora), Pigeonpea , Maize Pigeonpea + Maize Maize + Ladiesfinger Pigeonpea +Blackgram / Greengram Groundnut/ Cucurbits/ Ladiesfinger	1. Thinning and gap filling in the existing crop. 2. Inter culturing to check evaporation. 3. Life saving irrigation	1. Intercultivation 2. Conservation furrow 3. Thinning 4. Spray of anti transpirant.	1. Supply of inter cultural implements through RKVY. 2. Seeds supplied through NFSM
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Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)			Crop management ^c	Soil nutrient & moisture conservation measues ^d	Remarks on Implementation ^e
At vegetative stage	Sandy lateritic red soils	Direct sown rice Pigeonpea , Maize Pigeonpea + Maize Maize + Ladiesfinger Pigeonpea +Blackgram / Greengram Groundnut/ Cucurbits/ Ladiesfinger	Thinning Postponement of top dressing Life saving irrigation Earthing up in Groundnut.	Conservation furrow Spray of anti transparentss	1. Supply of inter cultural implements through RKVY. 2. Farm ponds through NREGA.

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
Mid season drought (long dry spell)			Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e

At flowering/ fruiting stage	Sandy soils	Direct sown rice (Gora), Pigeonpea , Maize Pigeonpea + Maize Maize + Ladiesfinger Pigeonpea +Blackgram / Greengram Groundnut/ Cucurbits/ Ladiesfinger	Life saving irrigation, In-situ mulching Postponement of top dressing.	Spray of anti transparent	Farm ponds through NREGA.
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Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
	Sandy loam soils	Direct sown rice (Gora), Pigeonpea , Maize Pigeonpea + Maize Maize + Ladiesfinger Pigeonpea +Blackgram / Greengram Groundnut/ Cucurbits/ Ladiesfinger	Life saving irrigation, Pigeonpea harvested for vegetable purpose, Harvest at physiological maturity stage	Cow pea, French Bean, Irrigated vegetables- Potato, Cole crops, Root crops etc. if irrigation source is available.	1. Farm pond through NREGA. 2. Supply of threshing implements through RKVY. 3. Groundnut digger and plucker through RKVY.

Condition			Suggested Contingency measures		
Early season drought (Normal onset)	Major Farming situation	Normal Crop/cropping system	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.	Sandy loam soils Midland	Rice	1. Re sowing or re-transplanting through plastic drum seeder. 2. Life saving irrigation 3. Replacement of crop with short duration leguminous crop like Greengram, Blackgram, Horsegram, Sesame & Niger.	1. Weeding 2. Postponement of top dressing 3. Proper bunding 4. Strip cropping of re sown crops 5. Spray of anti transpirants.	Supply of SRI marker and cono weeder from RKVY scheme.
Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At vegetative stage	Sandy loam soils	Rice (Lalat, IR-64, IR-36, Arize-6444)	1. Re sowing through plastic drum seeder. 2. Life saving irrigation may be given if possible. 3. Replacement of crop with short duration legume crops like Greengram, Blackgram, Horse gram, Sesame & Niger. Greengram (Pusa Vishal) Blackgram (Pant U-19, Birsa Urd-1) Horse gram (Birsa Kulthi-1) Sesame (Kanke Safed, TC-25) Niger (Birsa Niger-1,2)	1. Weeding 2. Postponement of top dressing 3. Proper bunding 4. Spray of anti transparent.	Supply of SRI marker and cono weeder through RKVY scheme.

Condition			Suggested Contingency measures		
Mid season drought (long dry	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation	Remarks on Implementation

spell)				measures	
At flowering/ fruiting stage	Sandy loam soils	Rice (Lalat, IR-64, IR-36, Arise-6444)	1. Life saving irrigation if available. 2. Sowing of early Rabi crops like Mustard/Linseed/ Lentil/Pea. 3. Postponment of top dressing. Mustard (Shivani) Linseed (T-397, Sweta) Lentil (PL-406, 639) Pea (Swarna Rekha)	Spray of anti transparent.	

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
		Rice – Naveen, IR-36, IR-64, Lalat, Birsamati.	1. Harvest at physiological maturity stage. 2. Life saving irrigation.	Chick pea – (Pant G-114, Radhey, BG-256, KPG-59). Pea – (Swarna Rekha/Arkel) Linseed – Sweta/T-397) Lentil – (PL-406, PL-639). Mustard – (Shivani)	

Condition			Suggested Contingency measures		
Early season drought (Normal onset)	Major Farming situation	Normal Crop/cropping system	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.	Lowland Sandy clay loam soils	Rice	<ol style="list-style-type: none"> 1. Life saving irrigation may be applied if any water resource is available. 2. Gap filling should be done. 3. Re sowing or re transplanting through plastic drum seeder or SRI method respectively if heavy damage is occurs. 	<ol style="list-style-type: none"> 1. Weeding 2. Proper bunding for water retention. 	SRI marker & cono weeder and drum seeder through RKVY.
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Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At vegetative stage	Sandy clay loam soils	Rice (MTU-7029, Sita, BPT-5204, Arise-6444)	<ol style="list-style-type: none"> 1. Life saving irrigation. 2. Re sowing through drum seeder or SRI methods respectively. 	<ol style="list-style-type: none"> 1. Weeding 2. Postponement of top dressing. 3. Proper bunding of field. 	Supply of SRI marker & cono weeder, plastic drum seeder through RKVY.

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At flowering/ fruiting stage	Sandy clay loam soils	Rice (MTU-7029, Sita, BPT-5204, Arise-6444)	<ol style="list-style-type: none"> 1. Life saving irrigation. 2. Sowing of early Rabi crops. 	<ol style="list-style-type: none"> 1. Spraying of anti transparent. 2. Postponement of top dressing. 	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)	Sandy clay loam soils	Rice (MTU-7029, Sita, BPT-5204, Arise-6444)	1. Life saving irrigation. 2. Harvesting at physiological maturity stage.	Chick pea (Pant G-114) Linseed (T-397) Wheat (C-306, K-8962, DL-788-2) Barley (Ratna)	1. Farm pond through NREGA. 2. Threshing implements through RKVY. 3. Seed supply of Rabi crops through NFSM

2.1.2 Drought - Irrigated situation

Condition	Major Farming situation ^f	Normal Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Limited release of water in canals due to low rainfall					

Condition	Major Farming situation ^f	Normal Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Non release of water in canals under delayed onset of monsoon in catchment					
Lack of inflows into tanks due					

to insufficient /delayed onset of monsoon					
Insufficient groundwater recharge due to low rainfall					

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

Condition	Suggested contingency measure			
	Vegetative stage ^k	Flowering stage ^l	Crop maturity stage ^m	Post harvest ⁿ
Continuous high rainfall in a short span leading to water logging				
Pigeonpea	Ridge making	Provide drainage		
Blackgram	Ridge making	Provide drainage		
Rice	Bund making	Provide drainage	Provide drainage	
Horticulture				
Cucurbits	Staking	Provide drainage	Provide drainage	
Vegetables	Sowing on ridge			

Outbreak of pests and diseases due to unseasonal rains				
Pulses	Leaf hoper/caterpillar Control- Monocrotophos @ 1 ml/lit			
Maize	Stem borer Control- Phorate 10G@ 20 kg/ha	Sheath blight Control- Hexaconazole 1.0 lit in 500 lit water/ha		

Rice		Blast diseases Control- Tricyclazole (0.05 %)	False Smut Control- Propiconazole 0.1 % or Copper oxy chloride - 50 (2 kg/ha)	
Bhendi		YVM Control- Carbofuran 3G @ 3 gm/m ²		
French bean	Rust disease Control- Mancozeb 2.5 kg/ ha			

2.3 Floods

Condition	Suggested contingency measure ^o			
Transient water logging/ partial inundation ¹	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Continuous submergence for more than 2 days ²		Not Applicable		
Sea water intrusion ³				

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

Extreme event type	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Hailstorm	Not applicable			
Heat Wave				
Wheat	Life saving irrigation	Life saving irrigation	Life saving irrigation (Terminal heat)	
Cold wave				
Wheat	Irrigation	Light irrigation	Irrigation, fertilizer	

	Balanced fertilizer application Foliar spray of nutrients	Mulching with crop residue \ weeds Fertilizer application	application	
Vegetables	Raising of seedling in Poly house, re sowing if damaged	Light irrigation Mulching with crop residue \ weeds Disease and pest control, care for chilling injury or replanting	Quick harvesting	Grading, quick disposal for marketing
Pigeonpea		Light irrigation Mulching with crop residue \ weeds		
Frost				
Wheat		Light irrigation Mulching with crop residue \ weeds		
Pigeonpea	Exposure of crop to smoke by burning waste material during night time	Exposure of crop to smoke by burning waste material during night time Light sprinkler irrigation	Exposure of crop to smoke by burning waste material during night time Light sprinkler irrigation	Exposure of crop to smoke by burning waste material during night time
Tomato & Potato		Earth up, Irrigation Intercultivation, Mulching with weeds		Harvest in dry weather
Horticultural crops (fruit crops)	Light frequent irrigation may be practiced wherever irrigation facilities are available, mulching, thatching and creating smoke screens and lighting of fire is also practiced where irrigation facilities are not available			
Cyclone	Not applicable			

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event ^s	During the event	After the event
Drought			
Feed and fodder availability	Preservation of surplus fodder, encourage fodder cultivation and tree plantation and also encourage supply of molasses to cattle feed plants.	Arrangement of feeds and fodder from adjoining areas, exploitation of non conventional feed resources, use of urea treated straw and feed blocks.	Promotion of fodder seed production, cultivation and storage, establishment of fodder block making machines in fodder surplus areas.
Drinking water	Repairs of tube wells, clear off the sludge in the canals and local water catchments and clean the water tanks, large ponds and lakes	Harnessing water through the existing reservoirs and exploitation of groundwater.	To strengthen reservoirs by promoting recharging of water and rain water harvesting during rainy season.
Health and disease management	Mass vaccination and deworming	Provide shades to animals and water as much as possible. Treatment of diseased animals and proper disposal of carcasses.	Treatment of diseased animals and provide vitamin and mineral supplement to regain strength and vigour.

^s based on forewarning wherever available

2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event ^a	During the event	After the event	
Drought				
Shortage of feed ingredients	Storage of feed	Provide non conventional feed, supplement anti oxidant and anti stress		
Drinking water	Storage of water in tanks	Add vit-C and other anti stress ingredients with water		
Health and disease	Regular vaccination	Vaccination and treatment of	Disposal of dead birds	

management		diseased one		
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^a based on forewarning wherever available

2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event ^a	During the event	After the event
1. Drought			
Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow	Plough the pond and apply lime @ 250kg/ha	Reduce the stocking density from 25000 fry (1 inches size) to 10000-15000/ha	Remove the fishes of bigger size(0.5 kg)
(ii) Impact of salt load build up in ponds / change in water quality		Apply lime @ 50 kg on every 15-30 days. Aerate the water as per need	Apply lime as per need @ 50 kg/ha
2. Heat wave and cold wave			
Aquaculture			
(i) Changes in pond environment (water quality)	Reduce application of organic manure and supplementary feeds	Reduce/stop application of feed	Harvest the bigger fishes, reduce/stop application of supplementary feed. Apply lime @ 50 kg/ha and potassium permanganate in perforated plastic ball 5-10g in each ball
(ii) Health and Disease management	Apply lime	Apply lime/salt as per need	Apply lime/salt as per need.

^a based on forewarning wherever available