

## State: Jharkhand

### Agriculture Contingency Plan for District: Giridih

1.0 District Agriculture profile				
1.1	<b>Agro-Climatic/Ecological Zone</b>			
	Agro Ecological Sub Region (ICAR)	Eastern plateau (chhotanagpur) And Eastern Ghats, Hot Subhumid Eco-Region (12.3)		
	Agro-Climatic Zone (Planning Commission)	Eastern Plateau and Hills Region (VII) & Middle Gangetic Plain Region (IV)		
	Agro Climatic Zone (NARP)	Central and North Eastern Plateau Zone (BI-4) & South Bihar Alluvial Plain Zone (BI-3)		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Deoghar, Dhanbad, Koderma, Bokaro, Chatra, Deoghar, Dhanbad, Dumka, Giridih, Godda, Hazaribagh, Jamtara, Khunti		
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		23 <sup>0</sup> 5'N to 24 <sup>0</sup> 7'N	86 <sup>0</sup> 18'E to 86 <sup>0</sup> 19'E	968 feet
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Zonal Research Station, Dumka, Jharkhand.		
Mention the KVK located in the district with address	Krishi vigyan Kendra, Bengabad, Giridih - 815312			
Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone				

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)	962		2 <sup>nd</sup> week of June	2 <sup>nd</sup> week of September
	NE Monsoon(Oct-Dec)	76			
	Winter (Jan- Feb)	33			
	Summer (Mar-May)	57			
	Annual	1128			

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

	<b>Area ('000 ha)</b>	493.2	144.4	202.7	23.8	14.6	42.2	10.7			
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Source : DAO, Giridih

<b>1.4</b>	<b>Major Soils (common names like red sandy loam deep soils (etc.,))*</b>	<b>Area ('000 ha)</b>	<b>Percent (%) of total</b>
	1. Coarse loamy soils		
	2. Fine loamy soils		

<b>1.5</b>	<b>Agricultural land use</b>	<b>Area ('000 ha)</b>	<b>Cropping intensity %</b>
	Net sown area	138.4	109
	Area sown more than once	12.4	
	Gross cropped area	150.8	

<b>1.6</b>	<b>Irrigation</b>	<b>Area ('000 ha)</b>		
	Net irrigated area	12.4		
	Gross irrigated area	14.8		
	Rainfed area	478.4 (97%)		
	<b>Sources of Irrigation</b>	<b>Number</b>	<b>Area ('000 ha)</b>	<b>Percentage of total irrigated area</b>
	Canals			
	Tanks/Pond		1.4	4.0
	Open wells		15.2	42.4
	Bore wells			
	Lift irrigation schemes			
	Micro-irrigation		8.7	24.3
	Other sources (River)		10.5	29.2
	Total Irrigated Area			
	Pump sets	1602		
	No. of Tractors	20		
	<b>Groundwater availability and use* (Data source: State/Central Ground water Department /Board)</b>	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		68.3						68.3
	Maize		16.0		189				16.0
	Wheat				3.6				3.6
	Pigeonpea		3.6						3.6
	Sarson				1.8				1.8
	Horsegram		0.8						0.8
	Chickpea				0.7				0.7

	Horticulture crops - Fruits	Area ('000 ha)		
		Total	Irrigated	Rainfed
	Mango	0.26		
	Banana	0.19		
	Lemon	0.16		
	Guava	0.02		
	Coconut	0.025		
	Horticulture crops - Vegetables	Total	Irrigated	Rainfed
	Potato	2.5	2.5	
	Lady finger	2.2	2.2	

	<b>Tomato</b>	1.7	1.7	
	<b>Brinjal</b>	1.7	1.7	
	<b>Cauliflower</b>	1.1	1.1	
	<b>Medicinal and Aromatic crops</b>			
	<b>Plantation crops</b>			
	<b>Fodder crops</b>			
	<b>Total fodder crop area</b>			
	<b>Grazing land</b>			
	<b>Sericulture etc</b>			

<b>1.8</b>	<b>Livestock</b>	<b>Male ('000)</b>	<b>Female ('000)</b>	<b>Total ('000)</b>			
	Non descriptive Cattle (local low yielding)	83.6	882.7	966.3			
	Improved cattle			42.06			
	Crossbred cattle			0.002			
	Non descriptive Buffaloes (local low yielding)			161.9			
	Descript Buffaloes			4.36			
	Goat			598.24			
	Sheep			27.95			
	Others (Camel, Pig, Yak etc.)			61.16			
	Commercial dairy farms (Number)						
<b>1.9</b>	<b>Poultry</b>	<b>No. of farms</b>	<b>Total No. of birds ('000)</b>				
	Commercial						
	Backyard	63	408.9				
<b>1.10</b>	<b>Fisheries (Data source: Chief Planning Officer)</b>						
	<b>A. Capture</b>						
	<b>i) Marine (Data Source: Fisheries Department)</b>	<b>No. of fishermen</b>	<b>Boats</b>		<b>Nets</b>		<b>Storage facilities (Ice plants etc.)</b>
			Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)	

	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds		No. of Reservoirs		No. of village tanks			
	<b>B. Culture</b>								
		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)								
	Others								

### 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)	
<b>Major Field crops (Crops identified based on total acreage)</b>										
	Paddy	141.3	2066					141.3	2066	
	Maize	20.8	1300	0.1	1040			20.9	1170	
	Wheat			4.9	1347			4.9	1347	
	Pigeonpea	2.6	172					2.6	172	
	Mustard	0.6	360					0.6	360	
<b>Major Horticultural crops (Crops identified based on total acreage)</b>										
	Potato			24.7	9695			24.7	9695	
	Lady finger							31.5	14000	
	Tomato							35.6	20000	
	Brinjal							34.4	20000	
	Cauliflower							18.3	16000	
	Mango							3.2	12000	
	Banana							3.8	20000	
	Lemon							1.6	10000	

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Rice	Maize	Wheat	Pigeonpea	Mustard
	Kharif- Rainfed	2 <sup>nd</sup> week of July- 2 <sup>nd</sup> week of August	2 <sup>nd</sup> week of June- 4 <sup>th</sup> week of June		2 <sup>nd</sup> week of June - 2 <sup>nd</sup> week of July	2 <sup>nd</sup> week of October- 4 <sup>th</sup> week of October
	Kharif-Irrigated					
	Rabi- Rainfed		November-December			
	Rabi-Irrigated			2 <sup>nd</sup> week of November- 2 <sup>nd</sup> week of December		

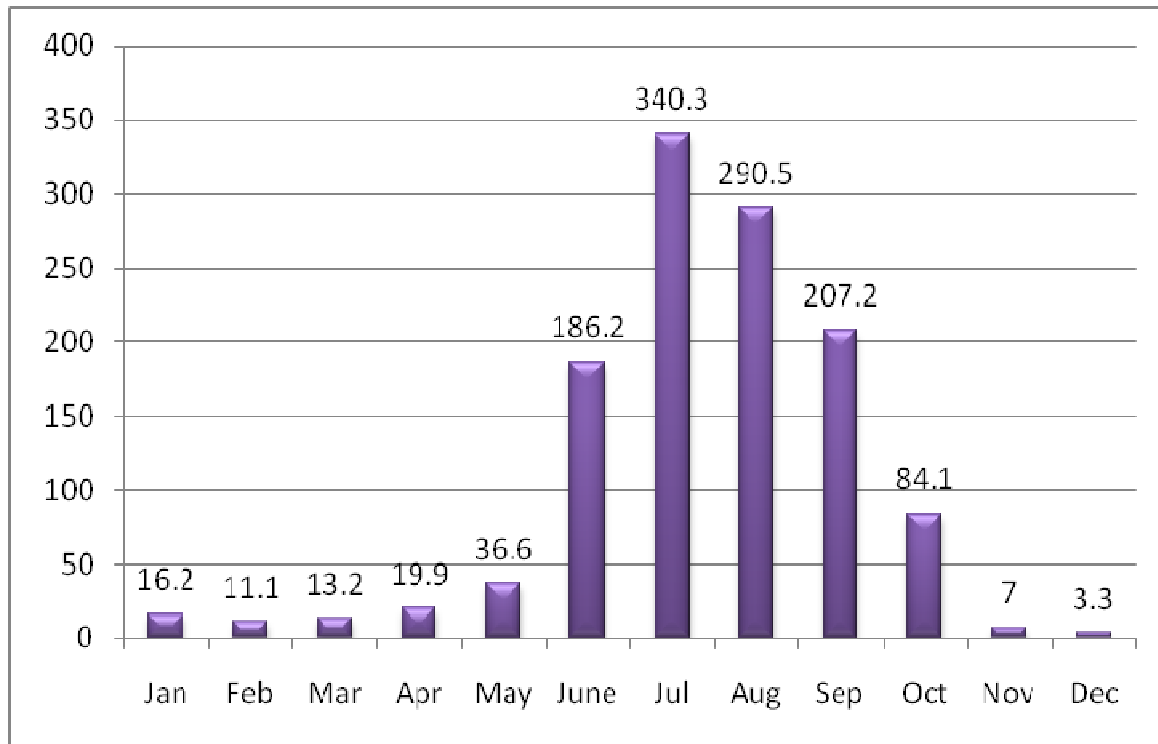
1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought	✓		
	Flood			✓
	Cyclone			✓
	Hail storm			✓
	Heat wave		✓	
	Cold wave		✓	
	Frost		✓	
	Sea water intrusion			✓
	Pests and disease outbreak		✓	

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 2	Enclosed: Yes
		Soil map as Annexure 3	Enclosed: Yes

Annexure I

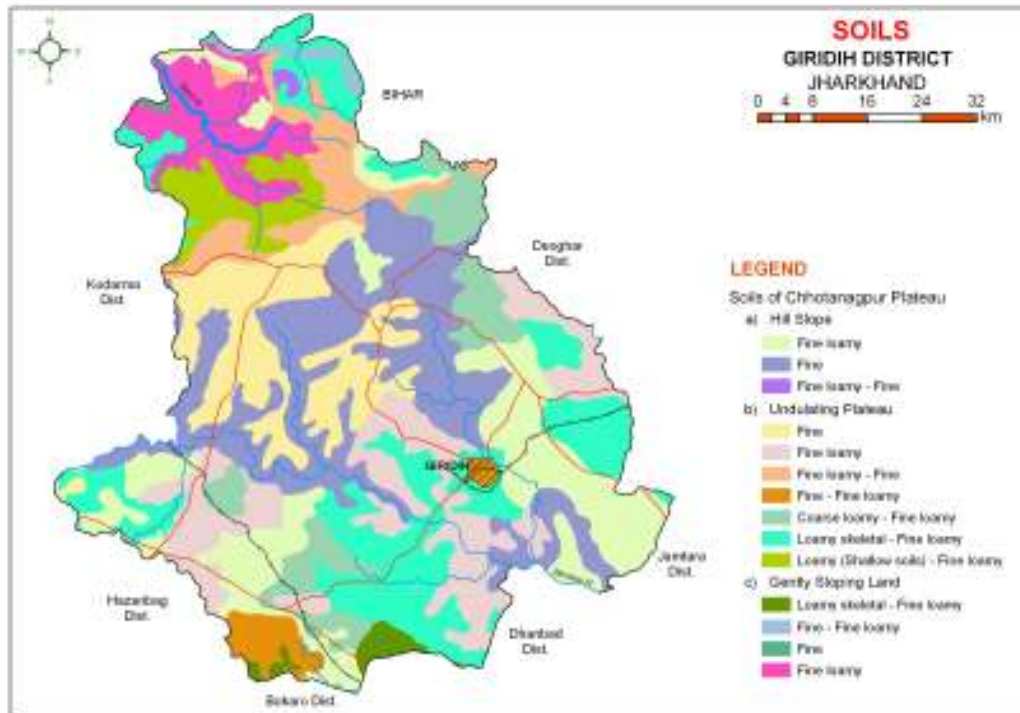


**Annexure II**





Annexure III



Source: NBSS& LUP, Kolkata

## 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 <sup>st</sup> week July	Shallow red upland soil	Maize (Suan) Pigeonpea Blackgram Finger millet	Pigeonpea + Maize Pigeonpea + Groundnut Pigeonpea (Upas 120, Bahar, Birsa Arhar-1) Finger Millet (Birsa Marua 2) Blackgram (Pant U 19, Birsa Urd 1) Cowpea MaizeBirsa Makka 1, Birsa Vikas Makka 2) Groundnut -Birsa Mungfali 2, Birsa bold-1)	Narrow spacing in Pigeonpea var. Upas 120, Birsa Arhar (60x 20 cm) Intercropping of Pigeonpea with Maize, Groundnut	

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 4 weeks 3 <sup>rd</sup> week July	Shallow red upland soil	Maize (Suan) Pigeonpea Blackgram Finger millet	Pigeonpea + Maize Pigeonpea + Groundnut Pigeonpea (Upas 120, Bahar, Birsa Arhar 1) Finger millet (Birsa Marua 2) Blackgram (Pant U 19, Birsa Urd 1) Maize-Birsa Makka 1, Birsa Vikas Makka 2) Groundnut-Birsa Mungfali 2, Birsa bold-1	Narrow spacing in Pigeonpea var. like Upas 120, Birsa Arhar (60x 20 cm) Intercropping of Pigeonpea with Maize, Groundnut. Intercultivation	Supply of seed drill under RKVY, Supply of seed through NFSM

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 6 weeks 1 <sup>st</sup> week August	Shallow red upland soil	Maize (Suan) Pigeonpea Blackgram Finger millet	Niger (Birsa Niger 1, Bira Niger-2) Horsegram (Birsa Kulthi 1, Pratap)	Spacing of Niger ( 30x 15 cm) and Horsegram (30x10 cm), Intercultivation	Supply of seed drill under RKVY, Supply of seed through NFSM

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 8 weeks 3 <sup>rd</sup> week of August	Shallow red upland soils	Maize (Suan) Pigeonpea Blackgram Horsegram Niger	Niger (Birsa Niger 1, Bira Niger 2) Horsegram (Birsa Kulthi 1, Pratap)	Spacing of Niger ( 30x 15 cm) and Horsegram (30x10 cm), Intercultivation	Supply of seed drill under RKVY, Supply of seed through NFSM

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 <sup>st</sup> week of July	Midland situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64)	Normal spacing, Practice SRI Technique (25x25 cm) Single seedling per hill	

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	Midland situation	Transplanted paddy (IR 36, Sita,	Transplanted paddy (Lalat, Navin,	Normal spacing,	Supply of seed drill

3 <sup>rd</sup> week July	Sandy Clay Loam soils	Swarna local)	IR 64, PA 6444)	Practice SRI Technique (25x25 cm) Single seedling per hill	under RKVY,  Supply of seed through NFSM
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<b>Condition</b>		<b>Suggested Contingency measures</b>			
<b>Early season drought (delayed onset)</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Change in crop/cropping system</b>	<b>Agronomic measures</b>	<b>Remarks on Implementation</b>
Delay by 6 weeks 1 <sup>st</sup> week August	Midland situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64, PA 6444)	SRI Technique (25x25 cm, Single seedling per hill Spacing should be decreased in normal sowing Direct seeding through drum seeder	Supply of seed drill under RKVY,  Supply of seed through NFSM

<b>Condition</b>		<b>Suggested Contingency measures</b>			
<b>Early season drought (delayed onset)</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Change in crop/cropping system</b>	<b>Agronomic measures</b>	<b>Remarks on Implementation</b>
Delay by 8 weeks 3 <sup>rd</sup> week August	Midland situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64)	SRI Technique (25x25 cm, single seedling per hill) Spacing should be decreased in normal sowing. Direct seeding through drum seeder. Fertilizer dose should be increased by 25-50 %.	Supply of seed drill under RKVY,  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 including variety	Agronomic measures	Remarks on Implementation
Delay by 2 weeks 1 <sup>st</sup> week of July	Low land situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna)	Transplanted paddy (MTU 7029, BPT 5204, Raj shree)	Normal spacing	

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 4 weeks  3 <sup>rd</sup> week July	Low land situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (MTU 7029, BPT 5204, Raj shree)	Normal spacing	Supply of seed drill under RKVY,  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 6 weeks 1 <sup>st</sup> Week August	Low land situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (MTU 7029, BPT 5204, Raj shree)	Spacing should be decreased. Direct seeding through drum seeder	Supply of seed drill under RKVY,  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	Low land situation	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (MTU 7029, BPT 5204, Raj shree)	Spacing should be decreased.	Supply of seed drill under RKVY,

3 <sup>rd</sup> Week August	Sandy Clay Loam soils			Direct seeding through drum seeder. Fertilizer dose should be increased by 25-50 %.	Supply of seed through NFSM
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Condition	Major Farming situation	Normal Crop/cropping system	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
<b>Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.</b>	Shallow red upland soil	Maize (Suan) Pigeonpea Blackgram Finger millet	Pigeonpea + Maize Pigeonpea + Groundnut Gap filling and thinning of existing crop. Re sowing Pigeonpea (Upas 120, Bahar, Birsa Arhar 1) Finger Millet (Birsa Marua 2) Blackgram (Pant U 19, Birsa Urd 1) Cowpea Maize-Birsa Makka 1, Birsa Vikas Makka 2) Groundnut-Birsa Mungfali 2, Birsa bold-1	Intercultivation Furrow and Ridge method of sowing In sloppy side, 1x1x1m ditch should be made	Supply of intercultivation equipment through RKVY

Condition	Major Farming situation	Normal Crop/cropping system	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
<b>At vegetative stage</b>	Shallow red upland soil	Maize (Suan) Pigeonpea Blackgram Finger millet	Life saving irrigation, Thinning of crop, Postponement of top dressing of fertilizer	Intercultivation Furrow and ridge method of sowing In sloppy side, 1x1x1m ditch should be made	Supply of intercultivation equipment through RKVY

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell)					
At flowering/ fruiting stage	Shallow red upland soil	Maize (Suan) Pigeonpea Blackgram Finger millet	Life saving irrigation, Thinning of crop, Postponement of top dressing of fertilizer	Inter culturing (Soil Mulching)	Supply of inter culturing equipment through RKVY

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)					
	Shallow red upland soil	Maize (Suan) Pigeonpea Blackgram Finger millet	Life saving irrigation Pigeonpea should be harvested for table purpose. Harvest at physiological maturity stage	Chickpea (kak 2, ICCB 2, HK94134) Mustard (Pusa jaykisan, Shivani, varuna) during 15 <sup>th</sup> to 30 <sup>th</sup> September. Torla (PT 303, Panchali, bhavani) during 15 <sup>th</sup> to 30 <sup>th</sup> September. Sowing of seedlings of Tomato, Cauliflower and cabbage	Farm Pond through MNREGA Programme

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after	Mid land situation Sandy Clay Loam	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64)	In sloppy side, 1x1x1m ditch should be made, Weeding should be done	Cono weeder should be given through RKVY

sowing leading to poor germination/crop stand etc.	soils				
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<b>Condition</b>			<b>Suggested Contingency measures</b>		
<b>Mid season drought (long dry spell, consecutive 2 weeks rainless (&gt;2.5 mm) period)</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Crop management</b>	<b>Soil nutrient &amp; moisture conservation measures</b>	<b>Remarks on Implementation</b>
At vegetative stage	Mid land situation Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64)	In sloppy side, 1x1x1 m ditch should be made Weeding should be done	Cono weeder should be given through RKVY

<b>Condition</b>			<b>Suggested Contingency measures</b>		
<b>Mid season drought (long dry spell)</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Crop management</b>	<b>Soil nutrient &amp; moisture conservation measures</b>	<b>Remarks on Implementation</b>
At flowering/ fruiting stage	Mid land situation Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64)	Life saving irrigation, In sloppy side, 1x1x1 m ditch should be made, Weeding should be done	Cono weeder should be given through RKVY



<b>Condition</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Suggested Contingency measures</b>		
			<b>Crop management</b>	<b>Rabi Crop planning</b>	<b>Remarks on Implementation</b>
<b>Terminal drought</b> (Early withdrawal of monsoon)					
	Mid land situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64)	For vegetable, Sowing of ready seedling. Chickpea (Kak 2, ICCB 2, HK 94-134 Lentil (L 4147, PL 406) Pea (PDR 23, Swarnrekha) Frenchbean (Swarn Priya, Arka Komal) Wheat (C 306, K 8962, HDR 77)	

<b>Condition</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Suggested Contingency measures</b>		
			<b>Crop management</b>	<b>Soil nutrient &amp; moisture conservation measures</b>	<b>Remarks on Implementation</b>
Early season drought <b>(Normal onset)</b>					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination /crop stand etc.	Low land situation  Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna)	Transplanted paddy (MTU 7029, BPT 5204, Raj shree)	Life saving irrigation, In sloppy side, 1x1x1m ditch should be made, Weeding should be done	Cono weeder should be given through RKVY,  Seed Through NFSM

<b>Condition</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Suggested Contingency measures</b>		
			<b>Crop management</b>	<b>Soil nutrient &amp; moisture conservation measures</b>	<b>Remarks on Implementation</b>
<b>Mid season drought</b> (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)					

At vegetative stage	Low land situation Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna)	Transplanted paddy (MTU 7029, BPT 5204, Raj shree)	Life saving irrigation, In sloppy side, 1x1x1m ditch should be made, Weeding should be done	Cono weeder should be given through RKVY,
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<b>Condition</b>			<b>Suggested Contingency measures</b>		
<b>Mid season drought (long dry spell)</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Crop management</b>	<b>Soil nutrient &amp; moisture conservation measures</b>	<b>Remarks on Implementation</b>
At flowering/ fruiting stage	Low land situation Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna)	Transplanted paddy (MTU 7029, BPT 5204, Raj shree)	Life saving irrigation, In sloppy side, 1x1x1m ditch should be made, Weeding should be done	Cono weeder should be given through RKVY,

<b>Condition</b>			<b>Suggested Contingency measures</b>		
<b>Terminal drought (Early withdrawal of monsoon)</b>	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Crop management</b>	<b>Rabi Crop planning</b>	<b>Remarks on Implementation</b>
	Low land situation Sandy Clay Loam soils	Transplanted paddy (IR 36, Sita, Swarna local)	Transplanted paddy (Lalat, Navin, IR 64)	For vegetable, Sowing with already prepared seedlings Plan for rabi season : Chickpea (Kak 2, ICCB 2, HK 94-134) Lentil (L 4147, PL 406) Pea (PDR 23, Swarnrekha) Frenchbean (Swarn Priya, Arka Komal) Wheat (C 306, K 8962, HDR 77) Linseed (T 397 and Shekhar)	

### 2.1.2 Drought - Irrigated situation

Condition	Suggested Contingency measures			
	Major Farming situation <sup>f</sup>	Normal Crop/cropping system <sup>g</sup>	Change in crop/cropping system <sup>h</sup>	Remarks on Implementation <sup>i</sup>
Delayed release of water in canals due to low rainfall		Not applicable		
Limited release of water in canals due to low rainfall				
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	Flowering stage	Crop maturity stage	Post harvest
<b>Continuous high rainfall in a short span leading to water logging</b>				
Pigeonpea	Ridge making	Provide drainage		
Rice	Bund making	Provide drainage	Provide drainage	
<b>Horticulture</b>				
Vegetables	Sowing on ridge			
<b>Outbreak of pests and diseases due to unseasonal rains</b>				

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		Yellow mosaic virus Control- Carbofuran 3G @ 3 gm/m <sup>2</sup>		
French bean	Rust disease Control- Mancozeb 2.5 kg/ ha			

### 2.3 Floods

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

### 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	
Cold wave				
Wheat	Light irrigation, Balanced fertilizer application Foliar spray of nutrients	Light irrigation Mulching with crop residue \ weeds Fertilizer application	Light irrigation, fertilizer 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		
<b>Frost</b>				
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 to 15cm ht. 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			
<b>Cyclone</b>	Not applicable			

## 2.5 Contingent strategies for Livestock, Poultry & Fisheries

### 2.5.1 Livestock

	Suggested contingency measures		
	Before the event <sup>s</sup>	During the event	After the event
<b>Drought</b>			

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 de worming	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.

<sup>s</sup> based on forewarning wherever available

### 2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event <sup>a</sup>	During the event	After the event	
<b>Drought</b>				
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 management	Regular vaccination	Vaccination and treatment of diseased one	Disposal of dead birds	

<sup>a</sup> based on forewarning wherever available

### 2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event <sup>a</sup>	During the event	After the event
<b>1. Drought</b>			
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
<b>2. Heat wave and cold wave</b>			
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.

<sup>a</sup> based on forewarning wherever available