State: JHARKHAND

Agriculture Contingency Plan for District: Simdega

1.0 District Agriculture profile				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	Moderately To Gently Sloping ChattisgarhMahanadi Basin, Hot Moist/Dry Subhumid Transitional ESR With Deep Loamy To Clayey Red And Yellow Soils (11.0)		
	Agro-Climatic Zone (Planning Commission)	Eastern Plateau And Hills Region (VII)		
	Agro Climatic Zone (NARP)	Western Plateau Zone (BI-5)		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Chatra, Garhwa, Gumla, Hazaribagh, Khunti, Latehar, Loharganda, Palamu, W. singhbhum, Ranchi, Simdehga		
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		22°20”N to 22° 50” N	84°00”E to85°05” E	481m msl
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ZRS, Chiyaki Palamu		
	Mention the KVK located in the district with address	KVK, Simdega, Vill- Pabura, PO- Bano, Simdega.		
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	B AU Kanke Ranchi.		

1.2	Rainfall	Normal RF(mm)	Number of Rainy days	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep)	1397		3rd week of June	4th week of September
	NE Monsoon(Oct-Dec)	87			4th week of December
	Winter (Jan- Feb)	63			-
	Summer (Mar-May)	66		-	-
	Annual	1613		-	-

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)	371.6	81.6	55.9	20.5	0.1	18.6	6.4	30.7	114.4	43.1

1. 4	Major Soils	Area ('000 ha)	Percent (%) of total
	1. Inceptisols	30.8	37.8
	2. Entisols	27.0	34.2
	3. Alfisols	21.1	27.0

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	81.6	109%
	Area sown more than once	5.3	
	Gross cropped area	86.9	

1.6	**Irrigation**	**Area ('000 ha)**		
	Net irrigated area			
	Gross irrigated area	25.9		
	Rainfed area	126.8		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals			
	Tanks			
	Open wells			
	Bore wells			
	Lift irrigation schemes			
	Micro-irrigation			
	Other sources (please specify)			
	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 (2010-2011)

1.7	Major field crops cultivated	Area ('000 ha)							
		Kharif			*Rabi*				
		Irrigated	**Rainfed**	**Total**	**Irrigated**	**Rainfed**	**Total**	**Summer**	**Grand total**
	Rice		56.9	56.9					56.9
	Maize		6.3	6.3	1.0		1.0		7.3
	Wheat			--	3.2		3.2		3.2
	Finger millet		1.4	1.4	-	--	--		1.4

	Horticulture crops - Fruits	**Area ('000 ha)**		
		Total	**Irrigated**	**Rainfed**
	Mango	0.1		0.1
	Guava	0.1		0.1
	Lemon	0.3		0.3
	Banana	0.3		0.3
	Horticulture crops - Vegetables			
	Medicinal and Aromatic crops			
	Plantation crops			

	Fodder crops			
	Total fodder crop area			
	Grazing land	4.902		
	Sericulture etc			

1.8	**Livestock**	**Male ('000)**	**Female ('000)**	**Total ('000)**
	Non descriptive Cattle (local low yielding)			384294
	Improved cattle			
	Crossbred cattle			
	Non descriptive Buffaloes (local low yielding)			69681
	Descript Buffaloes			
	Goat			294766
	Sheep			12435
	Others (Camel, Pig, Yak etc.)			
	Commercial dairy farms (Number)			
1.9	**Poultry**	**No. of farms**	**Total No. of birds ('000)**	
	Commercial		526988	
	Backyard			

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	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)	

ii) Inland (Data Source:	**No. Farmer owned ponds (private)**	**No. of govt. ponds**	**Total**	**No. of village tanks**

	Fisheries Department)	585	85	670	
	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	148.6	265					148.6	265	
	Blackgram	31.3	156					31.3	156	
	Pigeonpea	10.2	17					10.2	17	
	Maize	11.6	18	4.787	46			11.6	64	
	Ground nut	5.7	12					5.7	12	
Major Rabi crops (oil seeds & pulses)										
	Mustard			8.3	14			8.3	14	
	Chickpea			10.5	25			10.5	25	
	Wheat			6.9	26			6.9	26	
	Pea			1.7	6			1.7	6	
	Linseed			1.2	8			1.2	8	

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

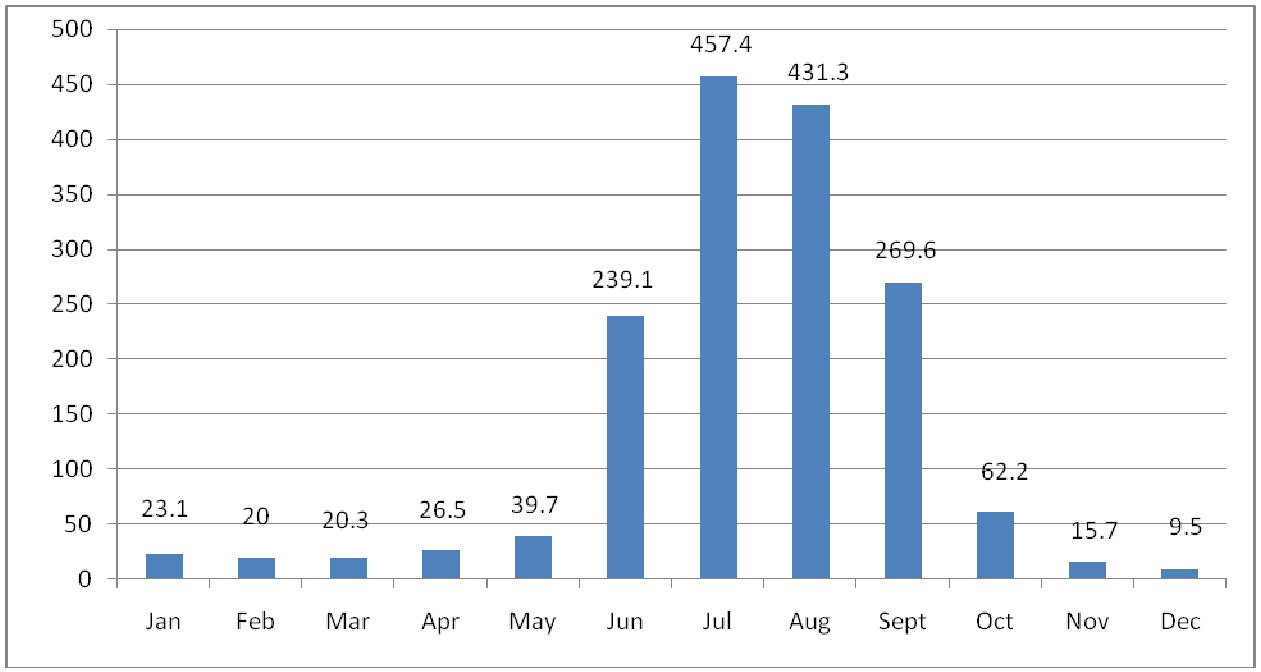
1.13	**What is the major contingency the district is prone to?** (Tick mark)	**Regular**	**Occasional**	**None**
	Drought		√	
	Flood			√
	Cyclone			√
	Hail storm			√
	Heat wave		√	
	Cold wave		√	
	Frost		√	
	Sea water intrusion			√
	Pests and disease outbreak	√		

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

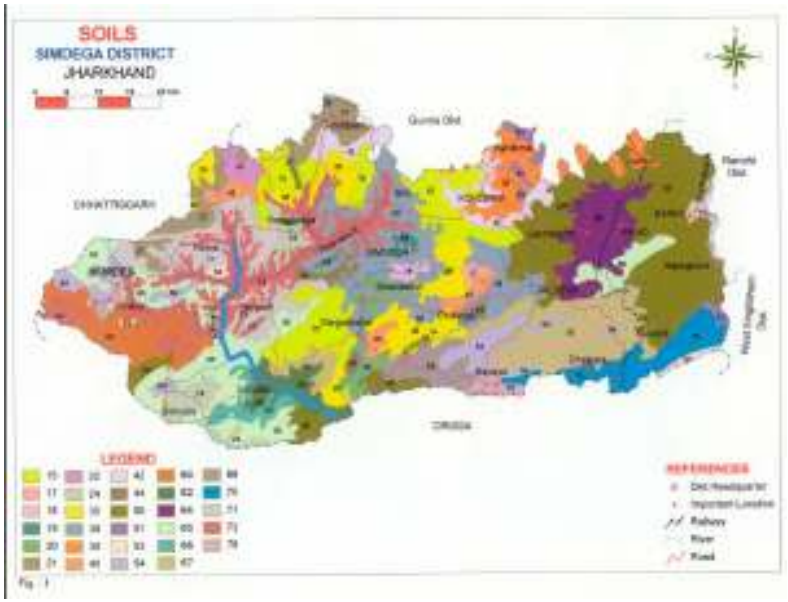

Bihar
Bihar
Bihar
SAHIBGAN
GODDA
PAKUR
KODERMA
GIRIDIH
PLALAMAU
CHATRA
DEOGHAR
DUMKA
GARHWA
LATEHAR
HAZARIBAGH
JAMTARA
BOKARO
DHANBAD
West Bengal
LOHARDAGA
Ghattisgarh
RANCHI
GUMLA
SARAIKELA
West Bengal
SIMDEGA
W.SINGHBHUM
E.SINGHBHUM
Orissa
Orissa

Annexure II



Mean annual Rainfall (mm)

Annexure III



Legend Information:-

15- Shallow excessively drained gravelly loamy soils-

17- Shallow well drained loamy soils-

18- Shallow well drained loamy soils -

19-Shallow, excessively drained, gravelly loamy soils-

20-Shallow, excessively drained, loamy soils-

21- Deep excessively drained coarse loamy soils-

22-Deep moderately well drained fine soils

24- Deep imperfectly drained fine soils

35- shallow, well drained, gravelly loamy soils

38-Very deep well drained, fine loamy soils

39-Deep moderately well drained fine soils.

40- Deep, moderately well drained, fine loamy soils

42- Deep moderately drained, fine soils

44- Very deep poorly drained fine soils

50- Shallow, well drained, loamy soils

18- Shallow well drained loamy soils

53- Deep, moderately well drained, fine loamy soils

54- Shallow moderately well drained loamy soils

60- Deep moderately well drained fine loamy soils

	62-Very deep poorly drained fine soils 64- Shallow well drained loamy soils 65- Shallow well drained loamy soils 66- Deep well drained gravelly loamy soils 67-Very deep well drained coarse loamy soils 69- Deep well drained fine loamy soils 70-Very deep well drained fine loamy soils 71 & 73 -Very deep poorly drained fine soils 76- 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			**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 1st week of July	**UPLAND** Red lateritic undulated soils	Pigeonpea	No change	Follow closer spacing (75X 30 cm) in Pigeonpea Earthing up Direct seeding	

Condition			**Suggested Contingency measures**		
Early season	**Major Farming**	**Normal Crop/cropping**	**Change in crop/cropping**	**Agronomic measures**	**Remarks on**

drought (delayed onset)	situation	system	system		Implementation
Delay by 4 weeks 3rd week of July	Red lateritic undulated soils	Pigeonpea	Pigeonpea +Blackgram Pigeonpea + Maize	Closer spacing (75 cmx30cm) Closer spacing Earthing up, Interculture operation	Supply of seeds through NFSM
		Rice	Rice + Ladies finger (2:2)	Direct seeding	

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 1st week of August	Red lateritic undulated soils	Pigeonpea	Pigeonpea +Blackgram Pigeonpea + Maize	Closer spacing Inter culture operation Earthing up	Supply of seeds through NFSM

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Change in crop/cropping system[c]**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 8 weeks 3rd week of August	Red lateritic undulated solis	Maize, Niger, Horsegram	**Niger** –Birsa Niger 1, horse gram- Birsa Kulthi 1, Mung-K851, Pusa Bishal **Sweet potato** _ Pusa safed,kalmegh **Maize**-Birsa Bikash -1, **Fingermillet**-A-404	Use of vermicompost	Supply of seeds through NFSM

Condition			Suggested Contingency measures		
Early season	**Major Farming**	**Normal Crop / Cropping**	**Change in crop / cropping**	**Agronomic measures[d]**	**Remarks on**

drought (delayed onset)	situation[a]	system[b]	system[c] including variety		Implementation[e]
Delay by 2 weeks 1st week of July	**MID LAND** Red lateritic sandy soils	Rice	Rice	Transplanting and direct seeding	
	Sandy soils	Rice	Rice	Transplanting and direct seeding	

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Change in crop/cropping system[c]**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 4 weeks 3rd week of July	Red lateritic sandy soils	Rice	Director seeding of midland rice variety lalat , IR-64 Naveen .	-	Supply of seeds through NFSM
	Sandy soils	Rice	Short duration maize variety, Birsa vikas 1&2	Direct seeding of rice	
			Finger millet variety (A-404)		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Change in crop/cropping system[c]**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 6 weeks 1st week of August	Red lateritic sandy soils	Rice	Direct seeded rice (lalat IR-64, Naveen)	-	Supply of seeds through NFSM
	Sandy soils	Rice	Finger millet (A-404) short duration		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Change in crop/cropping system[c]**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 8 weeks 3rd week of	Red lateritic sandy soils	Rice	**Horse gram**- Birsa Kulthi -1, **Green gram** (Pusa vishal) +		Supply of seeds through NFSM

August			**Pigeonpea** (UPAS-120)		
	Sandy soils	Rice	**Niger** (Birsa niger 1&2)+**Horse gram** (Birsa kulthi) (4:2)		
		Niger	Tomato – swarna lalima,swarna sampada.		

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 1st week of July	LOW LAND Sandy loam soils	Rice	Rice - MTU-7029, Rajshri, MTU-1010, Hybrid variety KRH-2, PA - 6444	-	
	Black sandy loam soils	Rice	Rice- MTU-7029, MTU-1010 KRH-2, PBH-71		

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Change in crop/cropping system[c]**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 4 weeks 3rd week of July	Sandy loam soils	Rice	Rice - MTU-7029, MTU-1010,KRH-2 PHB-71		Supply of seeds through NFSM
	Black sandy loam soils	Rice	Rice - MTU-1010,KRH-2 PHB-71		

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Change in crop/cropping system[c]**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 6 weeks 1st week of August	Sandy loam soils	Rice	Rice - MTU-7029, MTU-1010,KRH-2 PHB-71		Supply of seeds through NFSM
	Black sandy loam soils	Rice	Rice - MTU-1010,KRH-2 PHB-71		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Change in crop/cropping system[c]**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 8 weeks 3rd week of August	Sandy loam soils	Rice	Rice - MTU-7029, MTU-1010,KRH-2 PHB-71		Supply of seeds through NFSM
	Black sandy loam soils	Rice	Rice - MTU-1010,KRH-2 PHB-71		

Condition			Suggested Contingency measures		
Early season drought **(Normal onset)**	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Crop management[c]**	**Soil nutrient & moisture conservation measues[d]**	**Remarks on Implementation[e]**
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	UP LAND Red lateritic undulated soils	Pigeonpea	Gap filling and re-sowing in case of severe mortality	Mulching	
		Blackgram			
		Maize			

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	Red lateritic undulated soils	Pigeonpea	Gap filling		
		Blackgram			
		Maize			

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**	**Remarks on Implementation[e]**

				measues[d]	
At flowering/ fruiting stage	Red lateritic undulated soils	Pigeonpea			
		Blackgram			
		Maize			
		Upland Rice			

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]**
	Red lateritic undulated soils	Pigeonpea		Early vegetables- Tomato, Brinjal, Pumpkin, cowpea	
		Blackgram			
		Maize			
		Upland Rice			

Condition			**Suggested Contingency measures**		
Early season drought **(Normal onset)**	**Major Farming situation[a]**	**Normal Crop/cropping system[b]**	**Crop management[c]**	**Soil nutrient & moisture conservation measures[d]**	**Remarks on Implementation[e]**
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	**MID LAND** Red lateritic undulated upland soils	Rice		Organic manuring, Strengthening of farm bunding	

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	Red lateritic sandy soils	Rice	-	Organic manuring, Strengthening of farm bunding	

Condition			**Suggested Contingency measures**		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At flowering/ fruiting stage	Red lateritic sandy soils	Rice	Life saving irrigation	Strengthening of farm bunds	

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]
	Red lateritic sandy soils	Rice	Life saving irrigation	Early vegetables- Tomato, Brinjal, Pumpkin Cowpea Mustard and lentil	

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.	LOW LAND Sandy loam soils	Rice	Nursery raising and transplanting	Organic manuring, Strengthening of farm bunding	

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	Life saving irrigation	Organic manuring, Strengthening of farm bunding	

Condition			**Suggested Contingency measures**		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At flowering/ fruiting stage	Sandy loam soils	Rice	Life saving irrigation	Strengthening of farm bund	

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**
	Sandy loam soils	Rice	Life saving irrigation	Early vegetables- Tomato, Brinjal, Pumpkin Cowpea Mustard and lentil	

2.1.2 Drought - Irrigated situation

Condition			Suggested Contingency measures		
	Major Farming situation[f]	**Normal Crop/cropping system[g]**	**Change in crop/cropping system[h]**	**Agronomic measures[i]**	**Remarks on Implementation[j]**
Limited release of water in canals due to low rainfall	Not Applicable				
Non release of water in canals under delayed onset of monsoon in catchment	Not Applicable				
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Not Applicable				
Insufficient groundwater recharge due to low rainfall	Not Applicable				

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

Condition	**Suggested contingency measure**			
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity stage**	**Post harvest**
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- Hexaconazole1.0 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 Balanced fertilizer application Foliar spray of nutrients	Light irrigation Mulching with crop residue \ weeds Fertilizer application	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		
Frost				
Wheat		Light irrigation Mulching with crop residue \ weeds		
Pigeonpea	Exposure of crop to smoke	Exposure of crop to smoke	Exposure of crop to smoke	Exposure of crop to smoke

	by burning waste material during night time	by burning waste material during night time Light sprinkler irrigation	by burning waste material during night time Light sprinkler irrigation	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			
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	Conservation and storage of available feed and fodder, ensiling of green fodder, hay making, livestock insurance, drought tolerant perennial fodder cultivation, conservation non conventional crop residue like Pigeonpea, mung, masoor, gram,bhusa, tree leaves	Restrict grazing to reduce energy consumption, balanced feeding using conventional and non conventional feed and fodder, Procurement of low cost feed and fodder from adjoining state like orrisa and chhatisgarh.	Claim Insurance Culling unproductive livestock , balanced feeding in weak and debilitated livestock
Drinking water	Preserving water in the ponds, ditches, and	Restricted grazing in sunny day to avoid dehydration. To prevent for moving during day	

	Other reservoir for drinking purpose, de silting of dead ponds	time.	
Health and disease management	Vaccination and deworming camps Veterinary preparedness with medicines and vaccines	Regular health checkup of livestock, Mineral mixture and electrolyte supplementation,	
Floods			
Cyclone			
Heat wave and cold wave			
Shelter/environment management	Insurance, heat tolerant breeds, Dark cool sheds, thatching of roof and ceiling, thatching of windows and doors	Ad lib drinking water, electrolyte, mineral mix feeding, early and late hour grazing	Insurance claiming, in case of losses
Health and disease management	Anti stress medicine procurement, electrolyte and fluid stocking,	Use of need based medicine and feed additive	Insurance claiming, in case of losses

[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	Insurance & Integration , drought tolerant variety Establishing feed reserve Bank, procure non conventional feed ingredient	Use feed reserve banks , conventional and non conventional feed ingredients	Availing insurance Strengthening feed Reserve Banks	Health camps and vaccination camps, promotion of improved backyard poultry birds having heat and drought tolerant capacity
Drinking water	Economize water use, enhance water use efficiency			

Health and disease management	Emergency Veterinary preparedness with medicines vaccination to birds	Campaigne and Mass Vaccination	Culling affected birds	Emergency Veterinary preparedness with medicines vaccination to birds
Floods				
Cyclone				
Heat wave and cold wave				
Shelter/environment management	Insurance, heat tolerant breeds, Dark cool sheds, thatching of roof and ceiling, thatching of windows and doors	Ad lib drinking water, electrolyte, mineral mix feeding, early and late hour grazing	Insurance claiming, in case of losses	Insurance, heat tolerant breeds, Dark cool sheds, thatching of roof and ceiling, thatching of windows and doors
Health and disease management	Anti stress medicine procurement, electrolyte and fluid stocking,	Use of need based medicine and feed additive	Insurance claiming, in case of losses	Anti stress medicine procurement, electrolyte and fluid stocking,

[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		**Not Applicable**	
2) Floods			
3. Cyclone / Tsunami			
4. Heat wave and cold wave			