State: ODISHA

Agricultural Contingency Plan District: GANJAM

1.0 District contingency Profile				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	Eastern Ghats Hot Moist Sub Humid Eco Sub region (12.2)		
	Agro-Climatic region (Planning Commission)	East coast plains and hill region (XI)		
	Agro climatic Zone (NARP)	East and south eastern coastal plain zone (OR-4)		
	List all the Districts falling under the NARP zone	Phulabani, Rayagada, Gajapati and parts of Ganjam and small patches of Koraput		
	Geographical coordinates of district	**Latitude**	**Longitude**	**Altitude**
		$19^0$23'3.88" N	$85^0$03'22.50"E	7 m
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS	Central Pulse Research Station, Ratanpur, Berhampur, Ganjam Regional Research and Technology Transfer Station, G.Udayagiri, Phulbani		
	Mention the KVK located in the district	KVK, Ganjam, Bhanjanagar At-Benakunda P.O.-Dihapadhal Bhanjanagar Dist-Ganjam (Odisha)		

1.2	**Rainfall**	**Average rainfall (mm)**	**Normal Onset**	**Normal Cessation**
	SW monsoon (June-Sep)	996.3	June 2nd week	September 4th week
	NE Monsoon (Oct-Dec)	47.4	October 3rd week	December 1st week
	Winter (Jan-Feb)	15.4		
	Summer (Mar-May)	102.8		

1.3	Land use pattern of the district (Latest Statistics)	Geographic 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)	821	315	21	20	11	22	20	26	6

Source: Orissa Agriculture Statistics, 2008-09, Directorate of Agriculture and Food Production, Orissa, Bhubaneswar

1.4	Major Soils	Area ('000ha)	Percent (%) of total
	Coastal Alluvial command and	164	22.5
	Rainfed Laterite soils	134	18.4
	Black soils	43	5.9
	Coastal Alluvial Saline soils	26	3.6
	Red soils	359	49.4
	Others (specify):		

Source: Annual Report KVK, Ganjam, 2008-09

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	380	181%
	Area sown more than once	306	
	Gross cropped area	686	

Source: Orissa Agriculture Statistics, 2008-09: Directorate of Agriculture and Food Production, Orissa, Bhubaneswar

1.6	IRRIGATION	Area ('000ha)		
	Net irrigated area	242.4		
	Gross irrigated area	297.5		
	Rain-fed area	164.0		
	Sources of Irrigation	**Number**	**Area ('000ha)**	**%Area**
	Canals	252	256.8	69.6
	Tanks	258	2.2	0.6
	Open wells	1538	0.2	0.1
	Bore wells	357	5.3	1.4
	Lift irrigation	357	43.8	11.9
	Other sources	5357	60.5	16.4

	Total	**8119**	**368.8**	**99.9**
	Pump sets			
	Micro-irrigation			
	Groundwater availability and use	**No. of Blocks**	**% area**	**Quality of water**
	Over expired			
	Critical			
	Semi-critical			
	Safe			
	Waste water availability and use			

Source: Orissa Agriculture Statistics, 2008-09, Directorate of Agriculture and Food Production, Orissa, Bhubaneswar

1.7 Area under Major Field Crops and Horticulture (as per latest figures)

S.No	**Major field crops cultivated**	**Area ('000 ha)**							
		Kharif			***Rabi***				
		Irrigated	**Rainfed**	**Total**	**Irrigated**	**Rainfed**	**Total**	**Summer**	**Grand total**
	Rice	196.9	78.8	275.8	0.1	-	-	-	275.9
	Groundnut	-	8.3	8.3	14.5	-	14.5		22.8
	Sesamum	2.1	-	18.7	0.1	9.8	10.9	-	29.6
	Greengram	2.2	1.6	3.9	0.1	118.1	118.2	-	122.1
	Blackgram	2.2	17.5	19.7	0.1	28.9	28.9	-	48.7
	Ragi	15.6	26.3	41.8	1.9	-	1.9	-	43.7
	Arhar	-	13.5	13.5	-	-	-	-	13.5
	Kulthi	-	-	-	-	10.5	10.5	-	10.5

Source: Orissa Agriculture Statistics, 2008-09, Directorate of Agriculture and Food Production, Orissa, Bhubaneswar

	Horticultural crops – fruits	**Total Area ('000 ha)**
	Mango	9.2
	Guava	0.2
	Cashew	1.6
	Papaya	0.1
	Pineapple	0.04
	Banana	1.9

	Citrus	2.7
	Horticultural crops – Vegetables	**Total Area**
	Potato	0.1
	Onion	0.8
	Sweet potato	8.7
	Other vegetables	37.2
	Chilli	4.3
	Medicinal and Aromatic crops	**Total Area**
	Safed Musli, Patala	
	Garuds, Neem	
	Karanj, Brahmi etc.	
	Plantation crops	**Total Area**
	Coconut	7.54
	Fodder crops	**Total Area**
	Bajra, Guar	0.01
	Berseem	0.03
	Co-3,Co-4, Guinea, para grass	0.01072
	Total Fodder Crop area	0.05
	Grazing Land	18.29

Source: Orissa Agriculture Statistics, 2008-09, Directorate of Agriculture and Food Production, Orissa, Bhubaneswar

1.8	**Livestock**	**Male ('000)**	**Female ('000)**	**Total ('000)**
	Cattle			837.2
	Buffaloes total			965.6
	Commercial dairy farms			-
	Goat			216.1
	Sheep			142.6
	Others (pig)			9.9
1.9	**Poultry**			**615.03**
	Commercial			401.3
	Backyard			213.8

Source: District Statistical Handbook Ganjam, 2007

1.10	Inland Fisheries	Area ('000 ha)	Yield (t/ha)	Production ('000 tonnes)
	Brackish water	4.1	0.5	1.9
	Fresh water	17.3	1.4	24.1
	Others (marine)	60 km coast line		6.8

Source: Annual Report-2008-09; DFO-cum-CEO, FFDA, Ganjam, Berhampur

1.11	production and productivity of major crops	Kharif		Rabi		Total	
		Production ('000t)	Productivity (kg/ha)	Production ('000t)	Productivity (kg/ha)	Production ('000t)	Productivity (kg/ha)
	Paddy	708.0	2567	0.3	2374	708.3	2567
	Maize	11.9	1348	0.6	1561	12.6	1357
	Greengram	1.7	447	59.7	505	61.4	503
	Blackgram	8.9	453	14.7	508	23.7	486
	Sugarcane					226.0	76625
Others	Groundnut	11.8	1425	28.8	1980	40.6	1779
Others	Ragi	40.6	970	2.1	1126	42.7	977

Source: Orissa Agriculture Statistics, 2008-09, Directorate of Agriculture and Food Production, Orissa, Bhubaneswar

	Horticultural crops	Kharif		Rabi		Total	
	Brinjal	85.8	17589	16.7	2911	102.5	20500
	Tomato			63	18000	63	18000
	Cauliflower			75	25000	75	25000
	Cowpea			2.7	4500	2.7	4500
Others							

Source: Orissa Agriculture Statistics, 2008-09, Directorate of Agriculture and Food Production, Orissa, Bhubaneswar

1.12	Sowing window for 5 major crops	Paddy	Groundnut	Blackgram	Greengram	Sugarcane
	Kharif – Rainfed	June-July	June-July	June-July	June-July	June-July
	Kharif – irrigated	July –Aug	June-July	June-July	June-July	
	Rabi – Rainfed			September-October	September-October	
	Rabi- irrigated	December-January	January-February	January-February	January-February	December-January

1.13	**What is the major contingency the district is prone to? (Tick mark)**	**Regular**	**Occasional**	**None**
	Drought	√		
	Flood	√		
	Cyclone	√		
	Hall storm			
	Heat wave	√		
	Cold wave			
	Frost			
	Sea water inundation	√		
	Pest and disease (specify) Rice blast	√		

1.14	**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: No**
		Soil map as Annexure 3	**Enclosed: Yes**

2.0 Strategise for weather Related contingencies

2.1 Drought

2.11 Rainfed situation

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 implementations**
Delay by 2 weeks **July 1st Week**	**Upland** 1. Rainfed alluvial with loamy sand to sandy clay loam soils.	Paddy	Suitable HYV drought tolerant short duration variety: Heera, Sneha, Pathara	1. Closer spacing with high seed rate. 2. Hoeing, weeding 20 DAS. 3. Summer ploughing. Organic mulching in vegetable. 4. Ridge & furrow in groundnut. 5. Inter-culture & thinning to maintain plant population.	1. Supply of seeds through ATMA, OSSC, NFSM and NSC.
		Greengram	Sujata, PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Sesamum	Uma, Nirmala and Prachi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*,Brinjal(*Utkal tarini),* Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	2. Rainfed red and lateritic sandy loam to clay loam soils.	Paddy	Suitable HYV drought tolerant short duration variety: Heera, Sneha, Pathara	1. Complete hoeing, weeding followed by ridging to the base of the crop at 20 DAS for in-situ moisture conservation in vegetable and groundnut crop. 2. Conservation of furrow. 3. In-situ rain water conservation. 4. Organic mulching in vegetable.	1. Supply of seeds through ATMA, OSSC, NFSM and NSC.
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		

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 implementations**
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	3. Rainfed lateritic loamy sand to sandy loam soils.	Paddy	Suitable HYV drought tolerant short duration variety: Heera, Sneha, Pathara	1. Ridge and furrow method in groundnut. 2. Conservation of furrow. 3. In-situ rain water conservation. 4. Closer row and plant spacing.	1. Supply of seeds through ATMA, OSSC, NFSM and NSC.
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* , Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	4. Coastal saline alluvium with sandy loam to clayey soils.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Top dressing of 25% N after receiving of the rain. 2. Remove the pest and disease infected plant from main field. 3. spray 2% KCl_2 + B 0.1% to Blackgram	1. Supply of seeds through ATMA, OSSC, NFSM and NSC.
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	5. Coastal saline alluvium mixed black, red and black	Greengram	Sujata,PDM-11,PDM-54, Durga	1. Top dressing of 25% N after receiving of the rain.	1. Supply of seeds through ATMA,

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 implementations**
	soils.	Blackgram	Pant U-19 &30, Ujala,Sarala	2. Remove the pest and disease infected plant from main field. 3. Spray 2% KCl_2 + B 0.1% to Blackgram. 4. Organic matter addition and in-situ rain water conservation.	OSSC, NFSM and NSC.
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*,Brinjal (*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli		
	Medium land/Low land 1. Rainfed alluvial with loamy sand to sandy clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini*. (Medium low land variety *Ranidhan, Mahsuri, Pratikshya)*	2. Raise community nursery near water source. 3. In-situ rain water conservation. 4. Weed control in pulses and oilseed to check transpiration loss. 5. Ridging in groundnut to conserve moisture in furrow. 6. Close the drainage hole and check the seepage loss. 7. Strengthen of field bund height in paddy.	Supply of seeds through ATMA, OSSC, ISOPOM, NFSM and NSC
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*		
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini*. (Medium low land variety *Ranidhan, Mahsuri, Pratikshya)*	1. Raise community nursery near water source. 2. In-situ rain water conservation. 3. Planting 25 days old seedling of rice. 4. Close the drainage hole and check the seepage loss. 5. Strengthen of field bund height in paddy.	

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 implementations**
	3. Rainfed lateritic loamy sand to sandy loam soil.	paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land variety *Ranidhan, Mahsuri, Pratikshya)*	1. Raise community nursery near water source. 2. Close the drainage hole and check the seepage loss. 3. Strengthen of field bund height in paddy.	Supply of seeds through ATMA, OSSC, ISOPOM, NFSM and NSC
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	1. Raise community nursery near water source. 2. In-situ rain water conservation. 3. Apply full P, K & 20% N of recommended dose along with the well decomposed organic matter. 4. Close the drainage hole and check the seepage loss. 5. Strengthen of field bund height in paddy.	Supply of seeds through ATMA, OSSC, ISOPOM, NFSM and NSC ATMA
	5. Coastal saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	1. Raise community nursery near water source. 2. Apply full P, K & 20% N of recommended dose along with the well decomposed organic matter	Supply of seeds through ATMA, OSSC, ISOPOM, NFSM and NSC
Delay by 4 weeks **July 3rd week**	**Upland** 1. Rainfed alluvial with loamy sand to sandy clay		Varietal substitutions of drought tolerant varieties of the sole crops i.e.	1. Provide irrigation to the nursery beds. 2. Organic mulching should be	1. Intercultural farm implements under RKVY.

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 implementations**
	loam soil.	Paddy	Hira, JHU, Sneha, Bandana,	applied in inter row spacing to avoid weed growth and moisture loss. 3. Complete hoeing weeding followed by ridging to the base of the root crop at 20 DAS for in-situ moisture conservation in vegetables and groundnut.	2. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).
		Groundnut	Smruti,Devi, TAG-2		
		Greengram	PDM-11, PDM-54, Sujata, Durga		
		Sesamum	Uma, Prachi		
		Kharif vegetables			
		Chilli	*Utkal ava, Pusa Jwala*		
		Brinjal	Utkal tarini,Utkal Tarini		
		Cow pea	Utkal Manika		
		Okra	Utkal Gourav		
		Radish	Pusa chetki, Japanese white		
			1.Intercropping of arhar + groundnut (2 : 5) Arhar (var. UPAS 120) Groundnut(Smruti, Devi) 2. Arhar + Sesamum (2:4). Sesamum (var. Prachi) Maize + Cow pea (2:2)		

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 implementations**
			Maize (var. Navjot)		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Suitable HYV drought tolerant short duration variety: Heera, Sneha, Pathara	1. Mulching, hoeing & interculuture in vegetable crops. 2. Complete hoeing, weeding followed by ridging to the base of the crop at 20 DAS for in-situ moisture conservation in vegetable and groundnut crop. 3. Apply life saving irrigation to maintain nursery seedling.	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).
		Greengram	Sujata, PDM-11, PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30, Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Suitable HYV drought tolerant short duration variety: Heera, Sneha, Pathara	1. Ridge and furrow system of planting geometry in groundnut. 2. In-situ rain water conservation. 3. Full P & K and 20% N at basal along with FYM at seed row.	1.Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation. .
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		

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 implementations**
		Vegetables	Radish (*Pusa chetki ,Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*U.ava)*		
	4. Coastal saline alluvium with sandy loam to clayey soil.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Organic matter addition. 2. In-situ rain water conservation	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),* Chilli (*Utkal ava, Pusa Jwala)*		
	5. Coastal saline alluvium mixed black, red and black soil.	Greengram	Sujata,PDM-11,PDM-54, Durga	1. Organic matter addition. 2. In-situ rain water conservation	
		Blackgram	Pant U-19 &30, Ujala,Sarala		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*U.ava)*		
	Medium land/Low land 1. Rainfed alluvial with loamy sand to sandy clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (medium low land var. *Ranidhan, Mahsuri, Pratikshya*)	1. Provide irrigation to nursery bed. 2. Strengthening of field bond height to store rain water and conserve moisture. 3. Hoeing, weeding and	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM,

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 implementations**
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*	intercultural operations in Groundnut and Greengram. 4. Spray 2% KCl and 0.1%B in Blackgram.	NHM and state seed corporation (OSSC).
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (medium low land var. *Ranidhan, Mahsuri, Pratikshya*)	1. Provide irrigation to nursery bed. 2. Raise community nursery at reliable water source to save the further delay of transplanter rice. 3. Hoeing, weeding and intercultural operations in Greengram and Blackgram	
		Greengram	Dhauli, Kamdev, Durga		
		Blackgram	Sarala, Prasad, Ujala		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (for medium low land var.*Mahsuri, pratikshya, Ranidhan*)	1. Provide irrigation to nursery bed. 2. Raise community nursery at reliable water source to save the further delay of transplanter rice. 3. Transplant 3 to 4 seedlings/ hill with closer spacing. 4. Close the drainage hole and check the seepage loss. 5. Strengthen of field bund height in paddy.	

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 implementations**
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	1. Strengthening of field bond height. 2. Raise community nursery. 3. Transplant 3 to 4 seedlings/ hill with closer spacing. 4. Provide life saving irrigation at critical stage. 5. Close the drainage hole and check the seepage loss.	1.I ntercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).
	5. Coastal Saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	1. Basal organic matter addition. 2. Raise community nursery. 3. Addition of recommended dose of FYM during land preparation and growing dhanicha as pre-kharif crop before rice. 4. Provide life saving irrigation at critical stage 5. Close the drainage hole and check the seepage loss. 6. Strengthen of field bund height in paddy.	

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 (Specify month) August 1st week	**Upland** Rainfed alluvial with loamy sand to sandy clay loam soil	Paddy	Suitable drought tolerant short duration variety of the non-paddy crops may be grown.	1. Complete hoeing and weeding of non-paddy crop for moisture conservation. 2. Post emergence Spray of quizolfop @ 0.05kg ai/ha in 500lts of water to control weeds in groundnut. 3. Remove the pest and disease infected plants from the field. 4. Spray 1% urea in vegetable. 5. Spray 2% KCl and 0.1% B in Blackgram. 6. Spray 2% urea in pre flowering stage of greengram.	
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Ujala, PU-30, PU-19, Sarala,		
		Sesamum	Uma, Nirmala and Prachi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Suitable drought tolerant short duration variety of the non-paddy crops may be grown.	1. Complete hoeing and weeding of non-paddy crop for moisture conservation. 2. Post emergence Spray of quizolfop @ 0.05kg ai/ha in 500lts of water to control weeds in groundnut. 3. Remove the pest and disease infected plants from the field. 4. Spray 1% urea in vegetable. 5. Spray 2% KCl and 0.1% B in Blackgram. 6. Spray 2% urea in pre flowering stage of Greengram	Tractor powertiller and rotavator under RKVY.
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav* , Brinjal (*Utkal tarini),* Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		

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**
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Suitable drought tolerant short duration variety of the non-paddy crops may be grown.	1. Complete hoeing and weeding of non-paddy crop for moisture conservation. 2. Post emergence Spray of quizolfop @ 0.05kg ai/ha in 500lts of water to control weeds in groundnut. 3. Remove the pest and disease infected plants from the field. 4. Spray 1% urea in vegetable.	
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	4. Coastal saline alluvium with sandy loam to clayey soil.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Complete hoeing and weeding. 2. Grow some short duration vegetables. 3. Spray 1% Urea in vegetable crop. 4. Remove pest and disease infected plants from the main field.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal (*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala*		
	5. Coastal saline alluvium mixed black, red and black soil.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Remove the pest and disease infected plant from main field. 2. spray 2% KCl_2 + B 0.2% to Blackgram 3. Addition of organic matter and paper mill sludge as per soil test report during land preparation.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*		

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**
	Medium land/Low land 1. Rainfed alluvial with loamy sand to sandy clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var. *Mahsuri, Ranidhan, pratikshya*)	1. Close the drainage hole and check the seepage loss in medium land rice regularly. 2. Spraying of tricyclazole against blast in rice. 3. Withhold N fertilizer (top dressing) application up to receipt of rainfall. 4. Transplanting 3 to 4 seedlings per hill with closer spacing. 5. Post emergence spray of quizolfop @ 0.05kg ai/ha in 500lt of water to control weeds in groundnut. 6. Follow need based plant protection measures against stem borer.	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*		
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.*Mahsuri, pratikshya, Ranidhan*)	1. Close the drainage hole and check the seepage loss in medium land rice regularly. 2. Spraying of tricyclazole against blast in rice. 3. Withhold N fertilizer (top dressing) application up to receipt of rainfall. 4. Transplanting 3 to 4 seedlings per hill with closer spacing. 5. Follow need based plant protection measures against stem borer. 6. Weeding interculture in greengram & Blackgram for moisture conservation	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).
		Greengram	Dhauli, Kamdev, Durga		
		Blackgram	Sarala, Prasad, Ujala		
	3. Rainfed lateritic loamy sand to sandy loam soil.	paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.*Mahsuri, pratikshya, Ranidhan*)	1. Withhold N fertilizer application upto receive of rainfall. 2. Transplanting of 3 to 4 seedlings/ hill at closer spacing. 3. Close the drainage hole and check the seepage loss.	

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**
				4. Raising the bund height. 5. Use of cono weeder for weed control.	
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	1. Close the drainage hole and check the seepage loss. 2. Strengthen of field bund height in paddy. 3. Transplanting of 3 to 4 seedlings/ hill at closer spacing.	
	5. Coastal Saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	-do-	

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 (Specify month) August 3rd week	**Upland** 1. Rainfed alluvial with loamy sand to sandy clay loam soil	Paddy,	Suitable drought tolerant short duration variety of the non-paddy crops may be grown.	1. Provide life saving irrigation. 2. Remove the pest and disease infected plants from the field. 3. Spraying of tricyclazole against blast in rice.	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Sesamum	Uma, Nirmala and Prachi		

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**
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav),* Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*	4. Complete weeding and hoeing of non-paddy crop to provide dust mulch.	
	2. Rainfed red and lateritic sandy loam to clay loam soils.	Paddy	Suitable drought tolerant short duration variety of the non-paddy crops may be grown.	1. Complete hoeing, weeding followed by ridging to the base of the root crop at 20 DAS for in-situ moisture conservation in vegetable and groundnut crop. 2. Apply life saving irrigation to maintain nursery seedling.	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*, Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*		
	3. Rainfed lateritic loamy sand to sandy loam soils.	Paddy	Short duration drought tolerant variety of non-paddy crops may be grown.	1. Complete hoeing and weeding of non-paddy crop for moisture conservation. 2. Post emergence spray of quizolfop @ 0.05kg ai/ha in 500lts of water to control weeds in groundnut. 3. Remove the pest and disease infected plants from the field. 4. Spray 1% urea in vegetable.	
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		

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**
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	4. Coastal saline alluvium with sandy loam to clayey soils.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Complete hoeing and weeding of non paddy crop to provide dust mulch. 2. Foliar application of 2% urea at flowering stage of Blackgram. 3. Provide life saving irrigation at critical stage.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala*		
	5. Coastal saline alluvium mixed black, red and black soils.	Greengram	Sujata,PDM-11,PDM-54, Durga	1. Remove pest and disease infected plant. 2. Provide life saving irrigation at critical stage 3. Organic mulching in vegetables.	
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava,pusa jwala)*		
	Medium land/Low land 1. Rainfed alluvial with loamy sand to	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.*Pratikshya, ranidhan, Mahasuri*)	1. Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. 2. Spraying of tricyclazole against blast in rice. 3. Withhold N fertilizer (top dressing)	1. Intercultural farm implements under RKVY. 2. Seeds through NFSM, ISOPOM, NHM and

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**
	sandy clay loam soil.	Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*	application up to receipt of rainfall. 4. Transplanting of 3 to 4 seedlings per hill at closer spacing. 5. Strengthen field bund to check seepage loss.	state seed corporation (OSSC).
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat, *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.*Pratikshya, ranidhan, Mahasuri*)	1. Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. 2. Withhold N fertilizer application till receipt of rainfall. 3. Transplant of 3 to 4 seedlings per hill at closer spacing. Follow need based plant protection measures against steam borer and blast. 4. Use tractor, power tiller, rotavator for speedy land preparation. 5. Apply full P, K and 20 % N at the time of transplanting. 6. Apply life saving irrigation as and when necessary. 7. Spraying of tricyclazole against blast in rice.	21.
		Greengram	Dhauli, Kamdev, Durga		
		Blackgram	Sarala, Prasad, Ujala		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat, *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.*Pratikshya, ranidhan, Mahasuri*)	1. Apply life saving irrigation. 2. Transplanting 3 to 4 seedlings per hill at closer spacing. 3. Withhold N fertilizer (Top dressing) till receiving of rainfall. 4. Close the drainage hole and check the seepage loss. 5. Strengthen of field bund height in paddy.	
	4. Coastal saline alluvium with sandy	Paddy	Luna suvarna, Lunisree	1.Close the drainage hole and check the seepage loss in direct sown medium land rice regularly	

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**
	loam to clayey soil.			2. Apply life saving irrigation. 3. Transplanting 3 to 4 seedlings per hill at closer spacing. 4. Withhold N fertilizer (Top dressing) till receiving of rainfall.	
	5. Coastal Saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	1. Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. 2. Transplanting 3 to 4 seedlings per hill at closer spacing. 3. Withhold N fertilizer (Top dressing) till receiving of rainfall.	

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.	**Upland** 1. Rainfed alluvial with loamy sand to sandy clay loam soil	Sole crop	Varietal substitution suitable drought tolerant short duration variety of sole crop.	1. Thinning and gap filling of the existing crop if mortality is less than 50%. 2. Resow the crop if the mortality is more than 50%. 3. Complete hoeing weeding and earthing up at 20 DAS for moisture conservation for groundnut and vegetable crops. 4. Organic mulching in vegetables for moisture conservation.	• Farm pond under NREGS, IWMP, dieselpump sets and KB pumps in tankfed areas under RKVY and NFSM. • Small nursery development under NHM.
		Paddy	Var. Sneha, pathara, heera		
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Sesamum	Uma, Nirmala and Prachi		

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**
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration variety of sole crop. Var. Sneha, pathara, heera	1. Thinning and gap filling of the existing crop if mortality is less than 50%. 2. Resow the crop if the mortality is more than 50%. 3. Complete hoeing weeding and earthling up at 20 DAS for moisture conservation for groundnut and vegetable crops. 4. Organic mulching in vegetables for moisture conservation.	
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration variety of sole crop. Var. Sneha, pathara, heera	1. Thinning and gap filling of the existing crop if mortality is less than 50%. 2. Resow the crop if the mortality is more than 50%. 3. Complete hoeing weeding and earthling up at 20 DAS for moisture conservation for	
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		

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**
		Horsegram	Urmi	groundnut and vegetable crops. 4. Organic mulching in vegetables for moisture conservation.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava),*		
	4. Coastal saline alluvium with sandy loam to clayey soil.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Application of paper mill sludge (PMS) @ 5 q/ha, potash and boron and FYM during final land preparation for obtaining higher yield. 2. Addition of organic matter. 3. In-situ rain water conservation.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal (*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	5. Coastal saline alluvium mixed black, red and black soil.	Greengram	Sujata, PDM-11, PDM-54, Durga	1. Addition of organic matter 2. In-situ rain water conservation. 3. Crop residue mulching for moisture conservation in vegetables. 4. Life saving irrigation as and when necessary.	
		Blackgram	Pant U-19 &30, Ujala, Sarala		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav* ,Brinjal (*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*U.ava)*		

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**
	Medium land/Low land 1. Rainfed alluvial with loamy sand to sandy clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – *Lalat, Surendra, Swarna sub-1, Konark, Manaswini.* (medium low land var.*Pratikshya, Mahsuri, Ranidhan*)	1. If rice population is less than 50% gap filling may be done. 2. In-situ rain water conservation. 3. Life saving irrigation as and when necessary. 4. Weeding and hoeing in Blackgram and Greengram 5. Close the drainage hole and check the seepage loss. 6. Strengthen of field bund height in paddy.	1. Supply of seed drills and intercultural implements through RKVY. 2. Good quality seeds through NFSM and OSSC.
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*		
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – *Lalat Surendra, Swarna sub-1, Konark, Manaswini* (medium low land var. *Pratikshya, Mahsuri, Ranidhan*)	1. If rice population is more than 50 % carry out weeding and adjust the plant population by redistribution of hills (Khelua), 2. Plugging of drainage hole for checking seepage loss.	
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Medium duration paddy (125 days) Variety – *Lalat Surendra, Swarna sub-1, Konark, Manaswini* (medium low land var. *Pratikshya, Mahsuri, Ranidhan*)	1. If rice population is more than 50 % carryout weeding and adjust the plant population by redistribution of hills (Khelua). 2. Plugging of drainage hole for checking seepage loss and to provide life saving irrigation as and when necessary.	
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	-do-	

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**
	5. Coastal saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	1. If rice population is less than 50% gap filling may be done and if more than 50 % carryout weeding and adjust the plant population by redistribution of hills (Khelua). 2. Fresh seedlings may be transplanted. 3. Before transplanting addition recommended dose of organic matter and growing dhanicha as pre-kharif crop may be taken.Close the drainage hole and check the seepage loss.	

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	**Upland** Rainfed alluvial with loamy sand to sandy clay loam soil	Sole crop	Varietal substitution suitable drought tolerant short duration variety	1. Inter-cultivation (Soil mulching). 2. Conservation furrow. 3. Organic mulching with previous crop residues in case of vegetable crops. 3. Follow ridge and furrow method of planting for groundnut and vegetable crops. 4. Weed control in pulses and	
		Paddy	*Sneha, pathara, heera*		
		Greengram	Sujata,PDM-11,PDM-54,		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Sesamum	Uma, Nirmala and Prachi		

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**
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*	oilseeds.	
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration variety *Sneha, pathara, heera*	1. Gap filling of using seedling of same age. 2. Complete hoeing weeding and earthling up at 20 DAS for moisture conservation for groundnut and vegetable crops. 3. Provide life saving irrigation.	
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration variety *Sneha, pathara, heera*	1. Complete hoeing weeding and earthling up at 20 DAS for moisture conservation for groundnut and vegetable crops. 2. Provide life saving irrigation	
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		

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 critical stage. 3. Gap filling of using seedling of same age. 4. Organic mulching for moisture conservation	
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	4. Coastal saline alluvium with sandy loam to clayey soil.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Weed out the field. 2. Organic mulching for moisture conservation. 3. Hoeing, earthing up for weed control.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	5. Coastal saline alluvium mixed black, red and black soil.	Greengram	Sujata,PDM-11,PDM-54, Durga	1. Weed out the field. 2. Crop residue mulching in vegetable for moisture conservation. 3. Hoeing, earthing up for weed control.	
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*U.ava)*		

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**
	Medium land/Low land 1. Rainfed alluvial with loamy sand to sandy clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.Pratikshya, Mahasuri, ranidhan)	1. Strengthen the field bund height & check the seepage loss. 2. Hoeing, earthing up for weed control. 3. Withhold N application 4. Follow plant protection measures.	• Supply of seed drills and intercultural implements through RKVY. • Good quality seeds through NFSM and OSSC.
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*		
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.Pratikshya, Mahasuri, ranidhan)	-do-	
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	-do-	-do-	
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	1. Strengthen the field bund height & check the seepage loss. 2. Hoeing, earthing up for weed control. 3. Withhold N application 4. Follow plant protection measure	

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**
	5. Coastal saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	1. Strengthen the field bund height & check the seepage loss. 2. Hoeing, earthing up for weed control. 3. Withhold N application 4. Follow plant protection measures	

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Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measues**	**Remarks on Implementation**
At flowering/ fruiting stage	**Upland** 1. Rainfed alluvial with loamy sand to sandy clay loam soil	Sole crop Paddy	Varietal substitution suitable drought tolerant short duration paddy variety *sneha, pathara, heera.*	1. Spray 2% KCl + 0.1% boron to non paddy crops to overcome drought. 2. Foliar application of 2% urea at pre-flowering and flowering stage to pulses and oilseeds is helpful. 3. Provide irrigation at critical stages at flowering and grain filling stage. 4. Harvesting of rain water and recycling for irrigation.	
		Greengram	*Sujata,PDM-11,PDM-54, Durga*		
		Groundnut	*Var. Devi, Smruti, TAG-24*		
		Sesamum	*Uma, Nirmala and Prachi*		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measues**	**Remarks on Implementation**
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration paddy variety *sneha, pathara, heera*	1. Spray 2% KCl + 0.1% boron to non paddy crops to overcome drought. 2. Foliar application of 2% urea at pre-flowering and flowering stage to pulses and oilseeds is helpful. 3. Provide irrigation at critical stages at flowering and grain filling stage. 4. Harvesting of rain water and recycling for irrigation.	
		Greengram	*Sujata,PDM-11,PDM-54, Durga*		
		Groundnut	*Var. Devi, Smruti, TAG-24*		
		Blackgram	*Pant U-19 &30,Ujala,Sarala*		
		Horsegram	*Urmi*		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration paddy variety *sneha, pathara, heera.*	1. Spray 2% KCl + 0.1% boron to non paddy crops to overcome drought. 2. Foliar application of 2% urea at pre-flowering and flowering stage to pulses and oilseeds is helpful. 3. Provide irrigation at critical stages at flowering and grain filling stage. 4. Harvesting of rain water and recycling for irrigation.	
		Groundnut	*Var. Devi, Smruti, TAG-24*		
		Blackgram	*Pant U-19 &30,Ujala,Sarala*		
		Horsegram	*Urmi*		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gour*(*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)av)* ,Brinjal(*Utkal*		

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measues**	**Remarks on Implementation**
			*tarini),*Cowpea		
	4. Coastal saline alluvium with sandy loam to clayey soil.	Blackgram	*Pant U-19 &30,Ujala,Sarala*	1. Weed out the field. 2. Crop residue mulching in vegetable for moisture conservation. 3. Hoeing, weeding & earthing up in vegetables. 4. Provide irrigation at critical stage.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	5. Coastal saline alluvium mixed black, red and black soil.	Greengram	*Sujata,PDM-11,PDM-54, Durga*	1. Weed out the field. 2. Crop residue mulching in vegetable for moisture conservation. 3. Hoeing, weeding & earthing up in vegetables. 4. Provide irrigation at critical stage.	
		Blackgram	*Pant U-19 &30,Ujala,Sarala*		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal av a)*		

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**
	Medium land/Low land 1. Rainfed alluvial	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.	1. Advised to spray Tricyclazone (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period.	1. Supply of seed drills and intercultural implements through RKVY. 2. Good quality seeds

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**
	with loamy sand to sandy clay loam soil.		Pratikshya, Mahasuri, ranidhan)	2. Raising the field bund height & check the seepage loss and conserve rain water. 3. Life saving irrigation at critical stage. 4. Weed control in oilseed & pulses. 5. Follow plant protection measures	through NFSM and OSSC.
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*		
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.Pratikshya, Mahasuri, ranidhan)	1. Advised to spray Tricyclazone (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period. 2. To control stem borer and Gandhi bug, spray trizofop @ 0.2%. 3. Provide life saving irrigation.	
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (Medium low land var.Pratikshya, Mahasuri, ranidhan)	1. Advised to spray Tricyclazone (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period. 2. Weed out the field 3. Follow plant protection measures 4. Provide protective irrigation through harvested rain water 5. Raising the field bund height & check the seepage loss and conserve rain water.	

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**
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	1. Provide life saving irrigation and plugging of drainage holes. 2. Organic matter addition and green manuring of dhanicha before planting of rice. 3. Raising the field bund height & check the seepage loss and conserve rain water.	
	5. Coastal saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	-do-	

Condition			Suggested contingency measures		
Mid season drought (long dry spell)	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on implementation**
At reproductive stage	**Upland** 1. Rainfed alluvial with loamy sand to sandy clay loam soil	Paddy	Varietal substitution suitable drought tolerant short duration paddy variety sneha, pathara, heera.	1. Use the water collected in WHS 2. Spray urea 2% to paddy 3. Providing mulching for soil moisture conservation in vegetables. 4. Life saving irrigation at critical stages and harvesting at physiological maturity stage.	
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Sesamum	Uma, Nirmala and Prachi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*		

Condition			Suggested contingency measures		
Mid season drought (long dry spell)	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on implementation**
			,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration paddy variety sneha, pathara, heera.	1. Use the water collected in WHS 2. Spray urea 2% to paddy 3. Providing mulching for soil moisture conservation in vegetables. 4. Life saving irrigation at critical stages and harvesting at physiological maturity stage.	
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*,		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration paddy variety sneha, pathara, heera.	1. Use the water collected in WHS 2. Spray urea 2% to paddy 3. Providing mulching for soil moisture conservation in vegetables. 4. Life saving irrigation at critical stages and harvesting at physiological maturity stage.	
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa*		

Condition			Suggested contingency measures		
Mid season drought (long dry spell)	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on implementation**
			Jwala)		
	4. Coastal saline alluvium with sandy loam to clayey soil.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Use the water collected in WHS for irrigation. 2. Providing mulching for soil moisture conservation in vegetables. 4. Life saving irrigation at critical stages and harvesting at physiological maturity stage.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	5. Coastal saline alluvium mixed black, red and black soil.	Greengram	Sujata,PDM-11,PDM-54, Durga	1. Use the water collected in WHS for irrigation. 2. Providing mulching for soil moisture conservation in vegetables. 3. Life saving irrigation at critical stages and harvesting at physiological maturity stage.	
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*		

Condition			Suggested contingency measures		
Mid season drought (long dry spell)	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on implementation**
	Medium land/Low land 1. Rainfed alluvial with loamy sand to sandy clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (medium low land paddy var. Pratikshya, ranidhan, mahsuri)	1. Advised to spray Tricyclazone (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period. 2. Raising the field bund height & check the seepage loss. 3. Life saving irrigation at critical stage. 4. Weed control in oilseed & pulses. 5. Follow plant protection measures	1. Supply of seed drills and intercultural implements through RKVY. 2. Good quality seeds through NFSM and OSSC.
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*		
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.* (medium low landpaddy var. Pratikshya, ranidhan, mahsuri)	1. Advised to spray Tricyclazone (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period. 2. Weed out the field 3. Follow plant protection measures 4. Provide life saving irrigation at critical stage 5. Withhold N application	
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.*	1. Advised to spray Tricyclazone (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period. Weed out the field 2. Follow plant protection measures 3. Provide life saving irrigation at critical stage. 4. Withhold N application.	

Condition			Suggested contingency measures		
Mid season drought (long dry spell)	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on implementation**
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	1. Provide life saving irrigation and plugging of drainage holes. 2. Organic matter addition and green manuring of dhanicha before planting of rice. 3. Close the drainage hole and check the seepage loss. 4. Strengthen of field bund height in paddy.	
	5. Coastal saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	1. Provide life saving irrigation and plugging of drainage holes. 2. Organic matter addition and green manuring of dhanicha before planting of rice. 3. Close the drainage hole and check the seepage loss. 4. Strengthen of field bund height in paddy.	

Condition			Suggested contingency measures		
Terminal drought	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Rabi crop planning**	**Remarks on implementation**
Early withdraw of monsoo	**Upland** 1. Rainfed alluvial with loamy sand to sandy clay loam soil		Varietal substitution suitable drought tolerant short duration paddy variety	1. Utilization of residual moisture of early sowing of pre-rabi crop like cow pea(*Utkal manika),* greengram (*durga)*, Blackgram(*Ujala)*, Brinjal(*Utkal tarini)* and leafy vegetables to be sown for conserve soil moisture.	
		Paddy,	*Sneha, Pathara, Heera*		
		Greengram	*Sujata,PDM-11,PDM-54, Durga*		
		Groundnut	*Devi, Smruti, TAG-24*		

Condition			Suggested contingency measures		
Terminal drought	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Rabi crop planning**	**Remarks on implementation**
		Sesamum	*Uma, Nirmala and Prachi*	2. Provide life saving irrigation. 3. Harvest crops at physiological maturity stage. 4. Mulching of vegetable for moisture conservation.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration paddy variety *Sneha, Pathara, Heera*	1. Utilization of residual moisture of early sowing of pre-rabi crop like cow pea(*Utkal manika),* greengram (*durga)*, Blackgram(*Ujala)*, Brinjal(utkal tarini*)* and leafy vegetables to be sown for conserve soil moisture 2. Provide life saving irrigation at critical stage. 3. Irrigate the crop from harvest rain water. 4. Harvest crops at physiological maturity stage. 5. Mulching of vegetable for moisture conservation.	
		Greengram	Sujata,PDM-11,PDM-54, Durga		
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		
		Horsegram	Urmi		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	3. Rainfed lateritic loamy sand to sandy loam soil.	Paddy	Varietal substitution suitable drought tolerant short duration paddy variety *Sneha, Pathara, Heera*	1. Utilization of residual moisture of early sowing of pre-rabi crop like cow pea(*Utkal manika),* greengram (*durga)*, Blackgram(*Ujala)*, Brinjal(*Utkal tarini)* and leafy vegetables to be sown for conserve soil moisture and provide life saving irrigation. 2. Provide life saving irrigation at	
		Groundnut	Var. Devi, Smruti, TAG-24		
		Blackgram	Pant U-19 &30,Ujala,Sarala		

Condition			Suggested contingency measures		
Terminal drought	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Rabi crop planning**	**Remarks on implementation**
		Horsegram	Urmi	critical stage. 3. Irrigate the crop from harvest rain water. 4. Harvest crops at physiological maturity stage. 5. Mulching of vegetable for moisture conservation	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala*		
	4. Coastal saline alluvium with sandy loam to clayey soil.	Blackgram	Pant U-19 &30,Ujala,Sarala	1. Utilization of residual moisture of early sowing of pre-rabi crop like cow pea (*Utkal manika),* Blackgram (*Ujala)*, Brinjal(*Utkal tarini)* and leafy vegetables to be sown for conserve soil moisture 2. Provide life saving irrigation. 3. Weed control in pulses and vegetables. 4. Mulching of vegetable for moisture conservation.	
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava, Pusa Jwala)*		
	5. Coastal saline alluvium mixed black, red and black soil.	Greengram	Sujata,PDM-11,PDM-54, Durga	1. Utilization of residual moisture of early sowing of pre-rabi crop like cow pea (*Utkal manika),* Blackgram (*Ujala)*, Brinjal(*Utkal tarini)* and leafy vegetables to be sown for conserve soil moisture. 2. Provide life saving irrigation. 3. Weed control in pulses and vegetables. 4. Mulching of vegetable for moisture conservation.	
		Blackgram	Pant U-19 &30,Ujala, Sarala		
		Vegetables	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)*, Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*		

Condition			Suggested contingency measures		
Terminal drought	**Major farming situation**	**Crop/cropping system**	**Crop management**	**Rabi crop planning**	**Remarks on implementation**
	Medium land/Low land 1. Rainfed alluvial with loamy sand to sandy clay loam soil.	Paddy	Medium duration Paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.*	1. Provide life saving irrigation from harvested rain water at reproductive stage and conserve soil moisture, harvest the crop at physiological maturity. 2. Raising field bund height and checking seepage loss in paddy. 3. Weeding and ridging in groundnut.	
		Greengram	*TARM-1, Sujata, Durga, PDM-11, PDM-54*		
		Groundnut	Devi, Smruti, TAG-24		
	2. Rainfed red and lateritic sandy loam to clay loam soil.	paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.*	1. Provide life saving irrigation from harvested rain water at reproductive stage and conserve soil moisture, harvest the crop at physiological maturity. 2. Raising field bund height and checking seepage loss in paddy.	
	3. Rainfed lateritic loamy sand to sandy loam soil.	paddy	Medium duration paddy (125 days) Variety – Lalat *Surendra, Swarna sub-1, Konark, Manaswini.*	-do-	
	4. Coastal saline alluvium with sandy loam to clayey soil.	Paddy	Luna suvarna, Lunisree	-do-	
	5. Coastal saline alluvium mixed black, red and black soil.	Paddy	Luna suvarna, Lunisree	-do-	

2.1.2 Drought - Irrigated Situation

Condition			Suggested contingency measures		
	Major farming situation	**Normal Crop/cropping system**	**Change in Crop / Cropping management system**	**Agronomic measures**	**Remarks on implementation**
Delayed / limited release of water in canals due to low rainfall	Upland Alluvial soil low rainfall high irrigation	Paddy	Short duration paddy like Pathara, JHU, Bandana	1. Irrigate the kharif rice with ground water during dry spell only. If dry spell comes before release of canal water reduction of conveyance losses while irrigating the light texture soil. 2. Organic mulching for moisture conservation in vegetable. 3. Weeding and ridging in groundnut.	NFSM
		Groundnut	Smruti, Devi, TAG-24		
		Horsegram	Urmi		
		Sesamum	Prachi, Uma		
		Vegetable	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*		
	Black soil moderate rainfall high irrigation	Paddy	Short duration paddy like Pathara, JHU, Bandana	-do-	NFSM, Horticulture Mission
		Ragi	Chilika, Suvra		
		Blackgram	PU-30, Prasad, Ujala		
		Greengram	Durga, PDM-11, PDM-54		
	Coastal irrigated alluvium sandy loam to clay loam soils	Paddy	Short duration paddy like Pathara, JHU, Bandana	-do-	NFSM
		Greengram	Durga, PDM-11, PDM-54		
		Vegetable	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*, Potato (Kufri		

			chandramukhi)		
		Groundnut	Smruti, Devi, TAG-24		

Condition			Suggested contingency measures		
	Major farming situation	**Normal Crop/cropping system**	**Change in Crop / Cropping management system**	**Agronomic measures**	**Remarks on implementation**
Delayed / limited release of water in canals due to low rainfall	**Medium/Low land** Alluvial soil low rainfall high irrigation	Paddy	Medium duration paddy like Surendra, Konark, Manaswini, Lalat	1. Reduction of conveyance losses while irrigating the life texture soil. 2. Increase the bund height to conserve the rain water. 3. Provide life saving irrigation from harvested rain water at reproductive stage and conserve soil moisture, harvest the crop at physiological maturity. 4. Checking the seepage and drainage of rain water in paddy.	NFSM
		Groundnut	Smruti, Devi, TAG-24		
	Black soil moderate rainfall high irrigation	Paddy	Medium duration paddy like Surendra, Konark, Manaswini, Lalat	-do-	NFSM, Horticulture Mission
	Coastal irrigated alluvium sandy loam to clay loam	Paddy	Medium duration paddy like Surendra, Konark, Manaswini, Lalat	-do-	NFSM

Condition			Suggested contingency measures		
	Major farming situation	**Crop/cropping system**	**Change in Crop/cropping management**	**Agronomic measures**	**Remarks on implementation**
Non release of water in canals under delayed onset of monsoon in catchment	**Upland** Alluvial soil low rainfall high irrigation	Paddy	Short duration paddy like pathara, JHU, Bandana	1. Reduction of conveyance losses while irrigating light texture soil. 2. Crop residue mulching in vegetables to conserve moisture. 3. Weeding and ridging in groundnut and vegetables. 4. Weed control in oilseed and pulses.	
		Groundnut	Smruti, Devi, TAG-24		
		Horsegram	Urmi		
		Sesamum	Prachi, Uma		
		Vegetable	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*		
	Black soil moderate rainfall high irrigation	Paddy	Short duration paddy like Pathara, JHU, Bandana	1. Reduction of conveyance losses while irrigating light texture soil. 2. weed control in pulses. 3. Life saving irrigation at critical stages.	
		Ragi	Chilika, Suvra		
		Blackgram	PU-30, Prasad, Ujala		
		Greengram	Durga, PDM-11, PDM-54		
	Coastal irrigated alluvium sandy loam to clay loam	Paddy Greengram	Short duration paddy like Pathara, JHU, Bandana Durga, PDM-11, PDM-54	1. Reduction of conveyance losses while irrigating light texture soil. 2. Crop residue mulching in vegetables to conserve moisture. 3. Weeding and ridging in groundnut and vegetables. 4. Weed control in oilseed and pulses.	
		Vegetable	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*, Potato (Kufri chandramukhi)		
		Groundnut	Smruti, Devi, TAG-24		

Condition			Suggested contingency measures		
	Major farming situation	**Crop/cropping system**	**Change in Crop/cropping management**	**Agronomic measures**	**Remarks on implementation**
	Medium/Lowland Alluvial soil low rainfall high irrigation	Paddy-	Surendra, Konark, manaswini	1. Reduction of conveyance losses while irrigating light texture soil. 2. Increase the bund height to conserve rain water in paddy. 3. Checking the seepage and drainage of rain water in paddy. 4. Life saving irrigation at critical stage. 5. Checking the seepage and drainage of rain water in paddy.	
		Groundnut	Smruti, Devi, TAG-24		
	Black soil moderate rainfall high irrigation	Paddy-	Surendra, Konark, manaswini	1. Reduction of conveyance losses while irrigating light texture soil. 2. Raising the bund height in paddy to conserve rain water. 3. Weeding and ridging in groundnut. 4. Life saving irrigation at critical stage. 5. Checking the seepage and drainage of rain water in paddy.	
		Groundnut	Smruti, Devi, TAG-24		
	Coastal irrigated alluvium sandy loam to clay loam	Paddy-	Surendra, Konark, manaswini	1. Reduction of conveyance losses	

Condition			Suggested contingency measures		
	Major farming situation	**Crop/cropping system**	**Change in Crop/cropping management**	**Agronomic measures**	**Remarks on implementation**
		Groundnut	Smruti, Devi, TAG-24	while irrigating light texture soil. 2. Increase the bund height to conserve rain water in paddy. 3. Checking the seepage and drainage of rain water in paddy.	

Condition			Suggested contingency measures		
	Major farming situation	**Crop/cropping system**	**Change in Crop/cropping system**	**Agronomic measures**	**Remarks on implementation**
Insufficient/delayed onset of monsoon	**Upland** Alluvial soil low rainfall high irrigation	Paddy	JHU, Pathara, Sneha Go for second crop with low water requiring short duration varieties of oilseeds and pulse.	1. Harvesting of kharif rice at physiological maturity will realize 80-85% of normal yield. 2. Life saving irrigation at critical stage. 3. Rain water harvesting and recycling for irrigation. 4. Organic mulching in vegetables. 5. Life saving irrigation at critical stage.	
		Groundnut	Smruti, Devi, TAG-1		
		Horsegram	Urmi		
		Sesamum	Prachi, Uma		
		Vegetable	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*		

Condition			Suggested contingency measures		
	Major farming situation	**Crop/cropping system**	**Change in Crop/cropping system**	**Agronomic measures**	**Remarks on implementation**
	Black soil moderate rainfall high irrigation	Paddy	JHU, Pathara, Sneha Short duration drought tolerant varieties of paddy	1. Life saving irrigation at critical stage. 2. Rain water harvesting and recycling for irrigation. 3. Harvesting of kharif rice at physiological maturity will realize 80-85% of normal yield. 4. Weed management.	
		Ragi	Suvra, chilika		
		Blackgram	PU-30, Prasad, Ujala		
		Greengram	Durga, PDM-11, PDM-54		
	Coastal irrigated alluvium sandy loam to clay loam	Paddy	Short duration drought tolerant paddy varieties JHU, Pathara, Sneha	1. Harvesting of kharif rice at physiological maturity will realize 80-85% of normal yield. 2. Life saving irrigation at critical stage. 3. Rain water harvesting and recycling in irrigation. 4. Weeding and ridging in groundnut.	
		Greengram	Durga, PDM-11, PDM-54		
		Vegetable	Radish (*Pusa chetki, Japanese white)*, okra (*Utkal gourav)* ,Brinjal(*Utkal tarini),*Cowpea (*Utkal manik*a), Chilli (*Utkal ava)*, Potato		
		Groundnut	(Kufri chandramukhi) Smruti, Devi, TAG-24		
	Medium/Lowland Alluvial soil low rainfall high irrigation	Paddy	Surendra, Konark, manaswini	1. Harvesting of kharif rice at physiological maturity will realize	

Condition			Suggested contingency measures		
	Major farming situation	**Crop/cropping system**	**Change in Crop/cropping system**	**Agronomic measures**	**Remarks on implementation**
		Groundnut	Smruti, Devi, TAG-24	80-85% of normal yield. 2. Weeding and ridging in groundnut. 3. Life saving irrigation at critical stage. 4. Raising the bund height in paddy to conserve rain water. 5. Checking the drainage and seepage loss of water in paddy.	
	Black soil moderate rainfall high irrigation	Paddy-	Surendra, Konark, manaswini	1. Harvesting of kharif rice at physiological maturity will realize 80-85% of normal yield. 2. Weeding and ridging in groundnut. 3. Life saving irrigation at critical stage. 4. Raising the bund height in paddy to conserve rain water. 5. Checking the drainage and seepage loss of water in paddy.	
		Groundnut	Smruti, Devi, TAG-24		
	Coastal irrigated alluvium sandy loam	Paddy-	Surendra, Konark, manaswini	1. Harvesting of kharif rice at	

Condition			Suggested contingency measures		
	Major farming situation	**Crop/cropping system**	**Change in Crop/cropping system**	**Agronomic measures**	**Remarks on implementation**
	to clay loam	Groundnut	Smruti, Devi, TAG-24	physiological maturity will realize 80-85% of normal yield. 2. Weeding and ridging in groundnut. 3. Life saving irrigation at critical stage. 4. Raising the bund height in paddy to conserve rain water. 5. Checking the drainage and seepage loss of water in paddy.	

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

Condition		Suggested contingency measures		
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity stage**	**Post harvest**
Paddy	Drainage system should be developed.If blast disease develops,spray Beem/hinosan/tricyclazole@.2%, Apply Dithane – M-45 @.3% against brownspot,sheathrot and sheath blight diseases.	Drainage system should be developed. Spray imidacloprid 5ml in 15 litres of water against BPH attack.	Drainage system should be developed. Place poison bait of crushed snail bait against gundhibug.	Drying

Condition		Suggested contingency measures		
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity stage**	**Post harvest**
Groundnut	Drainage system should be developed	Drainage system should be developed. Spray Redomil MZ @ 2% against sclerotial wilt.	Drainage system should be developed.	Drying
Blackgram	Drainage system should be developed.A protective spray of mancozeb @ 3% against cercospora blight diseases.	Drainage system should be developed. Spray rogor @ 2% against aphids.	Drainage system should be developed	Drying
Horticulture				
Tomato	Provide drainage.spraying of streptocycline1gm+Blitox-50 20gmin 10 litres of water.	Provide drainage	Drain out excess water, harvest at physiological maturity	Shift the produce to half covered threshing floor and other safer places for post harvest operations and cover the crops to protect from moisture absorption
Brinjal	Provide drainage spraying of streptocycline1gm+Blitox-50 20gmin 10 litres of water.	-do-	-do-	-do-
Co pea	Provide drainage	-do-	-do-	-do-
Lady's finger	Provide drainagespray trizophos @.2% to manage whitefly attack causing YMV.	-do-	-do-	-do-
Chilli	Provide drainage. Spray rogor@.2% against sucking pest.	-do-	-do-	-do-
Tomato	Provide drainage spraying of streptocycline1gm+Blitox-50 20gmin 10 litres of water.	-do-	-do-	-do-
Brinjal	Provide drainage spraying of streptocycline1gm+Blitox-50 20gmin 10 litres of water.	-do-	-do-	-do-
Cow pea	Provide drainage. Spray rogor @	-do-	-do-	-do-

Condition		Suggested contingency measures		
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity stage**	**Post harvest**
	2% against sucking pest.			
Lady's finger	Provide drainage.spray trizophos @ 2% to manage whitefly attack causing YMV.	-do-	-do-	-do-
Outbreak of pests and diseases due to unseasonal rains				
Paddy	Swamping caterpillar - apply chloropyrophos @ 2% Case worm – apply triazophos@ 2% BLB. Apply plantomycin @.2%spray fuji-on/beem/hinosan @.2%against blast.	BPH – apply imidachloropid@5ml in 15litres of water		
Greengram/Blackgram	Mancozeb 0.3% against leaf spot diseases.	Spraying of Rogor 0.2% against aphids.		
cotton	For sucking pest apply thiomethoxam@.05%.spray neem formulation @2.5lit/ha when the cotten aphid population is lowand spray dimethoate @1lit/ha or imidacloprid @ 200ml/ha if population is high.	Application of pheromone trap and trichocard to manage boll worms. Application of NPV against helicoverpa and spodoptera is also fruitful.		
oilseed	Apply traizophos@.2% for leaf minor			
Horticulture				
Vegetables Turmeric Ginger	Drench the soil with streptocycline1gm +blitox 20gm in 10litres of wateragainst rhizome rot.			

2.3 Floods

Condition		Suggested contingency measures		
Transient water logging partial inundation	**Seedling/nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
paddy	1. Provide drainage. 2. Select *swarna sob-1, sarasa, CR1014, mahsuri. Do not go for beushaning in partially damage plot.. W*eed out rice the field.	1.Provide drainage 2. Transplant 3 to 4 seedling/hill.	1. Apply chemicals to manage blast, BLB, BPH and swarming caterpillar. 2.Provide drainage	1. Provide drainage 2.Don't harvest immediately if water not upto grain
Groundnut	Well drainage Manage termite by application of 0.2% chloropyrophos and wilting by Saff .2%.	1. Provide drainage 2. Manage termite	1. Provide drainage 2. Step measures not to sprout in the field through drainage	
Horticulture				
Mango	Drainage system should be developed	Drainage system should be developed	Drainage system should be developed	Keeping fruits in a well ventilated dryer place.
cashewnut	-do-	-do-	-do-	-do-
citrus	-do-	-do-	-do-	-do-
coconut	-do-	-do-	-do-	-do-
vegetables	Raised bed nursery	1. Manage wilting by spraying of streptocycline1gm+blitox-50 20 gm in 10 litres of water 2. Drain the water having efficient drainage, lining of canals to check seepage.	1. Spraying of planofix before flowering. 2. Irrigation during flowering stage.	1. Drain the field immediately
Continuous submergence for more than 2 days				
paddy	Well drainage	Well drainage	Well drainage	Drainage
Groundnut	Well drainage.	Well drainage manage sclerotial wilt by spraying of saff/redomil@.2%	Well drainage	Drainage

Condition		Suggested contingency measures		
Transient water logging partial inundation	**Seedling/nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Blackgram	Well drainage.	Well drainage	Well drainage	Drainage
Greengram	-do-	-do-	-do-	-do-
sesamum	-do-	-do-	-do-	-do-
Horticulture				
Mango	Drainage system should be developed	Drainage system should be developed	Drainage system should be developed	Keeping fruits in a well ventilated drier place
Cashew	-do-	-do-	-do-	-do-
Coconut	-do-	-do-	-do-	-do-
Sea water inundation				
Paddy	1. Drainage system should be developed. 2. Irrigate with fresh water	1. Drainage system should be developed. 2. Irrigate with fresh water	1. Drainage system should be developed. 2. Irrigate with fresh water	1. Drainage system should be developed
Blackgram	-do-	-do-	-do-	-do-

2.4 Extreme events: Heat wave / cold wave / frost / hailstone / cyclone

Extreme event type	Suggested contingency measures			
	Seedling nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat wave				
Paddy	Frequent irrigation	Frequent irrigation	Frequent irrigation	NA
groundnut	Light Irrigation at 10 days interval	Light Irrigation at 10 days interval	Light Irrigation at 10 days interval	NA
Horticulture				
Mango	Sprinkling water	Drip/sprinkler irrigation with soil mulching	Drip/sprinkler irrigation with soil mulching	Drip/sprinkler irrigation with soil mulching
litchi	-do-	-do-	-do-	-do-
Cold wave				
Crop1	NA	NA	NA	NA
Horticulture				
Crop1	NA	NA	NA	NA
Frost				

Extreme event type	Suggested contingency measures			
	Seedling nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat wave				
Crop1	NA	NA	NA	NA
Horticulture				
Crop1	NA	NA	NA	NA
Hailstorm				
Crop1	NA	NA	NA	NA
Horticulture				
Crop1	NA	NA	NA	NA
Cyclone				
Paddy	In case of rain associated with cyclone provide drainage.	In case of lodging drag with a rope to have uniformity.	In case of lodging drag with a rope to have uniformity.	Provide support to avoid lodging/drag with a rope to have uniformity.
Blackgram	-	Provide drainage if associated with rain	Provide drainage if associated with rain	Provide drainage if associated with rain
Groundnut	-	-do-	-do-	-do-
Greengram	-	-do-	-do-	-do-
Sesamum	-	Provide drainage if associated with rain. Spraying of 2% urea.	Clean the field from damaged plants, leaves. Earthing up to the root zone. In case of heavy damage uproot the crop.	Provide support, harvest at physiological maturity stage.
Horticulture				
Mango	Provide drainage	Provide drainage Earthing up the base	Provide drainage Earthing up the base	Provide drainage Earthing up the base
Cashew	-do-	-do-	-do-	-do-
Banana	-do-	-do-	-do-	-do-
Citrus	-do-	-do-	-do-	-do-
Coconut	-do-	-do-	-do-	-do-

2.5 Contingent Strategies for Livestock, poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
Drought			
Feed and fodder availability	As the district is frequently prone to drought the following practices may be implemented to prevent fodder shortage problem Sowing of cereals (fodder varieties of Sorghum/Bajra) and leguminous crops (Lucerne, Berseem, Horse gram, Cowpea) during rabi under dry land system for fodder production. Collection of groundnut haulms and groundnut cake for use as feed supplement during drought Motivating the sugarcane farmers to convert green sugarcane tops in to silage by the end of February Encourage fodder production with Bajra – stylo-Bajra on rotation basis and also to cultivate short-term fodder crops like sunhemp Formation of village Disaster Management Committee Capacity building and preparedness of the stakeholders and official staff for the drought/floods	Harvest and use biomass of dried up crops (Paddy, Green gram, Black gram, cow pea, Horse gram, Groundnut, Sugarcane, Ragi, etc.,) material as fodder Use of locally available cheap feed resources like GN haulms as supplement for feeding of livestock during drought Harvest all the top fodder available (Subabul, Glyricidia, Pipol, Prosopis etc) and feed the LS during drought Concentrate ingredients such as Grains, brans, chunnies & oilseed cakes, low grade grains etc. unfit for human consumption should be procured from Govt. Godowns for feeding as supplement for high productive animals during drought Promotion of Horse gram as contingent crop and harvesting it at vegetative stage as fodder Continuous supplementation of minerals to prevent infertility. Encourage mixing available kitchen waste with dry fodder while feeding to the milch animals	Encourage progressive farmers to grow multi cut fodder crops of sorghum/bajra/maize(UP chari, MP chari, HC-136, HD-2, GAINT BAJRA, L-74, K-677, Ananad/African Tall, Kisan composite, Moti, Manjari, B1-7 on their own lands with input subsidy Supply of quality stem cuttings of Hybrid napier (CO1), paragrass, guinea grass, combo grass well before monsoon Flushing the stock to recoup Replenish the feed and fodder banks

Drinking water	Adopt various water conservation methods at village level to improve the ground water level for adequate water supply. Identification of water resources Desilting of ponds Rain water harvesting and create water bodies/watering points (when water is scarce use only as drinking water for animals) Construction of drinking water tanks in herding places/village junctions/relief camp locations Community drinking water trough can be arranged in shandies /community grazing areas	Adequate supply of drinking water. Restrict wallowing of animals in water bodies/resources Add alum in stagnated water bodies	Watershed management practices shall be promoted to conserve the rainwater. Bleach (0.1%) drinking water / water sources Provide clean drinking water
Health and disease management	Procure and stock emergency medicines and vaccines for important endemic diseases of the area All the stock must be immunized for endemic diseases of the area Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district Adequate refreshment training on draught management to be given to VAS, Jr.VAS, LI with regard to health & management measures Procure and stock multivitamins & area specific mineral mixture	Carryout deworming to all animals entering into relief camps Identification and quarantine of sick animals Constitution of Rapid Action Veterinary Force Performing ring vaccination (8 km radius) in case of any outbreak Restricting movement of livestock in case of any epidemic Tick control measures be undertaken to prevent tick borne diseases in animals Rescue of sick and injured animals and their treatment Organize with community, daily lifting of dung from relief camps	Keep close surveillance on disease outbreak. Undertake the vaccination depending on need Keep the animal houses clean and spray disinfectants Farmers should be advised to breed their milch animals during July-September so that the peak milk production does not coincide with mid summer
Floods			
Feed and	In case of early forewarning (EFW), harvest all	Transportation of animals to elevated areas	Repair of animal shed

fodder availability	the crops (Paddy, Green gram, Black gram, cow pea, Horse gram, Groundnut, Sugarcane, Ragi, etc.) that can be useful as feed/fodder in future (store properly) Protect the dried Dongri grass, sorghum stover etc., from inundation of flood water Keeping sufficient of dry fodder to transport to the flood affected villages Don't allow the animals for grazing if severe floods are forewarned Keep stock of bleaching powder and lime Carry out Butax spray for control of external parasites Procure and stock emergency medicines and vaccines for important endemic diseases of the area All the stock must be immunized for endemic diseases of the area Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district Adequate refreshment training on draught management to be given to VAS, Jr.VAS, LI with regard to health & management measures Identify the Clinical staff and trained paravets and indent for their services as per schedules Identify the volunteers who can serve in need of emergency Arrangement for transportation of animals from low lying area to safer places and also for rescue animal health workers to get involve in rescue operations	Proper hygiene and sanitation of the animal shed In severe storms, un-tether or let loose the animals Use of unconventional and locally available cheap feed ingredients for feeding of livestock. Avoid soaked and mould infected feeds / fodders to livestock Carryout deworming to all animals entering into relief camps Identification and quarantine of sick animals Constitution of Rapid Action Veterinary Force Performing ring vaccination (8 km radius) in case of any outbreak Restricting movement of livestock in case of any epidemic Emergency outlet establishment for required medicines or feed in each village Spraying of fly repellants in animal sheds	Bring back the animals to the shed Cleaning and disinfection of the shed Bleach (0.1%) drinking water / water sources Encouraging farmers to cultivate short-term fodder crops like sunhemp. Deworming with broad spectrum dewormers Proper disposable of the dead animals / carcasses by burning / deep burying (4-8 feet) with lime powder (1kg for small ruminants and 5kg for large ruminants) in pit Drying the harvested crop material and proper storage for use as fodder. Keep close surveillance on disease outbreak.

Cyclone	Harvest all the possible wetted grain (Paddy, Green gram, Black gram, cow pea, Horse gram, Groundnut, Sugarcane, Ragi, etc) and use as animal feed. Stock of anti-diarrheal drugs and electrolytes should be made available for emergency transport Don't allow the animals for grazing in case of early forewarning (EFW) of cyclone Incase of EFW of severe cyclone, shift the animals to safer places.	Treatment of the sick, injured and affected animals through arrangement of mobile emergency veterinary hospitals / rescue animal health workers. Diarrhea out break may happen. Health camps should be organized In severe cases un-tether **or** let loose the animals Arrange transportation of highly productive animals to safer place Spraying of fly repellants in animal sheds	Repair of animal shed Deworm the animals through mass camps Vaccinate against possible disease out breaks like HS, BQ, FMD and PPR Proper dispose of the dead animals / carcasses by burning / deep burying (4-8 feet) with lime powder (1kg for small ruminants and 5kg for large ruminants) in pit Bleach / chlorinate (0.1%) drinking water or water resources Collect drowned crop material, dry it and store for future use Sowing of short duration fodder crops in unsown and water logged areas when crops are damaged and no chance to replant Application of urea (20-25kg/ha) in the inundated areas and CPR's to enhance the bio mass production.
Heat wave and cold wave			
Heat wave	i) Plantation around the shed ii) H_2O sprinklers / foggers in the shed **iii)** Application of white reflector paint on the roof **iv)** Thatched sheds should be provided as a shelter to animal to minimize heat stress	Allow the animals early in the morning or late in the evening for grazing during heat waves Feed green fodder/silage / concentrates during day time and roughages / hay during night time in case of heat waves Put on the foggers / sprinklers /fans during heat weaves in case of high yielders (Jersey/HF crosses) In severe cases, vitamin 'C' and electrolytes	Feed the animals as per routine schedule Allow the animals for grazing (normal timings)

		should be added in H_2O during heat waves.	
Cold wave	NA		
Insurance	Encouraging insurance of livestock	Listing out the details of the dead animals	Submission for insurance claim and availing insurance benefit Purchase of new productive animals

2.5.2 Poultry

	Suggested contingency measures			**Convergence/linkages with ongoing programs, if any**
	Before the event	**During the event**	**After the event**	
Drought				
Shortage of feed ingredients	Storing of house hold grain like maize, broken rice etc, in to use as feed in case of severe drought	Supplementation only for productive birds with house hold grain Supplementation of shell grit (calcium) for laying birds Culling of weak birds	Supplementation to all survived birds	
Drinking water		Use water sanitizers or offer cool hygienic drinking water		
Health and disease management	Culling of sick birds. Deworming and vaccination	Mixing of Vit. A,D,E, K and B-complex including vit C in drinking water (5ml in one litre	Hygienic and sanitation of poultry house Disposal of dead birds by	

	against RD and IBD	water)	burning / burying with lime powder in pit	
Floods				
Shortage of feed ingredients	In case of early forewarning of floods, shift the birds to safer place Storing of house hold grain like maize, broken rice, bajra etc,	Use stored feed as supplement Don't allow for scavenging Culling of weak birds	Routine practices are followed Deworming and vaccination against RD	
Drinking water		Use water sanitizers or offer cool hygienic drinking water		
Health and disease management	In case of EFW, add antibiotic powder (Terramycin/Ampicilline/ Ampiclox etc., 10g in one litre) in drinking water to prevent any disease outbreak	Prevent water logging surrounding the sheds through proper drainage facility Assure supply of electricity by generator or solar energy or biogas Sprinkle lime powder to prevent ammonia accumulation due to dampness	Sanitation of poultry house Treatment of affected birds Disposal of dead birds by burning / burying with line powder in pit Disposal of poultry manure to prevent protozoal problem Supplementation of coccidiostats in feed Vaccination against RD	
Cyclone				
Shortage of feed ingredients	In case of EFW, shift the birds to safer place Storing of house hold grain like maize, broken rice, bajra etc,	Use stored feed as supplement Don't allow for scavenging Protect from thunder storms	Routine practices are followed	

	Culling of weak birds			
Drinking water		Use water sanitizers or offer cool drinking water		
Health and disease management	In case of EFW, add antibiotic powder in drinking water to prevent any disease outbreak	Sanitation of poultry house Treatment of affected birds Prevent water logging surrounding the sheds Assure supply of electricity Sprinkle lime powder (5-10g per square feet) to prevent ammonia accumulation due to dampness	Disposal of dead birds by burning / deep burying with lime powder in pit Disposal of poultry manure to prevent protozoal problem Supplementation of coccidiostats in feed Vaccination against Ranikhet Disease (0.5ml S/c)	
Heat wave				
Shelter/environment management	***Heat wave:*** Provision of proper shelter with good ventilation	In severe cases, foggers/water sprinklers/wetting of hanged gunny bags should be arranged Don't allow for scavenging during mid day	Routine practices are followed	
Health and disease management	Deworming and vaccination against RD and fowl pox	Supplementation of house hold grain Provide cool and clean drinking water with electrolytes and vit. C In hot summer, add anti-stress probiotics in drinking water or feed	Routine practices are followed	

2.5.3 Fisheries/aquaculture:

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
1) Drought			
A. Capture			
Marine	-	-	-
Inland			
(i) Shallow water depth due to insufficient rains/ inflow	1. Restricted release of water from reservoir. 2. Supplementary water harvest structures like pond and tanks has to be developed. 3. Renovation and maintenance of existing water harvest structures.	1. Application of rice bran + groundnut oil cake + vitamins or 80kg urea + 40kg SSP/ha/yr. Raw cow dung @ 5tons/ha + micronutrients to enhance the production of phytoplankton and zoo plankton.	1. Using CIFAX @ 1lt/ha or lime and turmeric powder 10:1 ratio applied @ 200kg/ha during the month of November and January to control ulcerative disease syndrome (UDS) and epicortical ulcerative syndrome.
(ii) Changes in water quality	1. Prepare to release water into the habitat.	1. Mixing of water from the water harvest structure like ponds and tanks into the fish habitat.	1. Monitoring the water quality and health of aquatic organisms.
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/ inflow	1. Building deep ditches in culture ponds for shelter of the fish to overcome high temperature	1. Recharge the ponds with bore well water or water from other sources. 2. Partial harvesting of the stock to reduce stocking density. 3. Artificial shelter by putting aquatic floating weeds in 1/3rd area.	-
(ii) Impact of salt load build up in ponds/ change	1. Application of organic manure in culture	1. Recharge the ponds with bore well water or	1. Application of organic manure in

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
in water quality	system	water from other sources	culture system
(iii) Any other	-	-	-

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
2) Floods			
A. Capture			
Marine	-	-	-
Inland			
(i)Average compensation paid due to loss of human life	1. Construction of humane shelter. 2. Storage of sand filled bags for emergency use. 3. Repair and maintenance of bundhs. 4. Preparedness for relief 5. Insurance coverage provision for life and property	1. Timely broadcast and telecast and other types of announcement warning about the danger level with respect to water level. 2. Evacuation of people to flood shelter areas. 3. Relief operation.	1. Relief operation will continue. 2. Care of health of affected people 3. Settlement of insurance. 4. Financial support to other people.
(ii) No. of boats / nets	1. The boats have to be secured safely to river/ reservoir banks.	1. Checking of the safety of the boats / nets.	1. Maintenance of the boats and nets.

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
damaged	2. Non operation of fixed bag nets in streams and rivers. 3. Insurance coverage for nets and boats.	2. An inventory logbook with name of crewmembers should be maintained. 3. Number of crew and load should be much below the marked tonnage.	2. Assessment and settlement of insurance.
(iii) No. of houses damaged	1. Insurance coverage for houses.	-	1. Settlement of insurance.
(iv) Loss of stock	-	-	1. Assessment of stock (fish population) and replenishment if stock is depleted. 2. Habitat restoration for the stock remaining.
(v) Changes in water quality	-	-	1. Application of lime in tanks. 2. Application of fertilizer.
(v) Health and diseases	-	-	1. Observation of the health status of fish and accordingly control measure should be taken. 2. Control on transport of brooders and seeds
B. Aquaculture			
(i) Inundation with flood water	1. Strengthening and increase in dyke height. 2. The should be constructed with inlet and out let facility.	1. Net enclosure should be provided over the dyke to prevent the escape of fish from pond.	1. Repairing and strengthening of dyke if required.

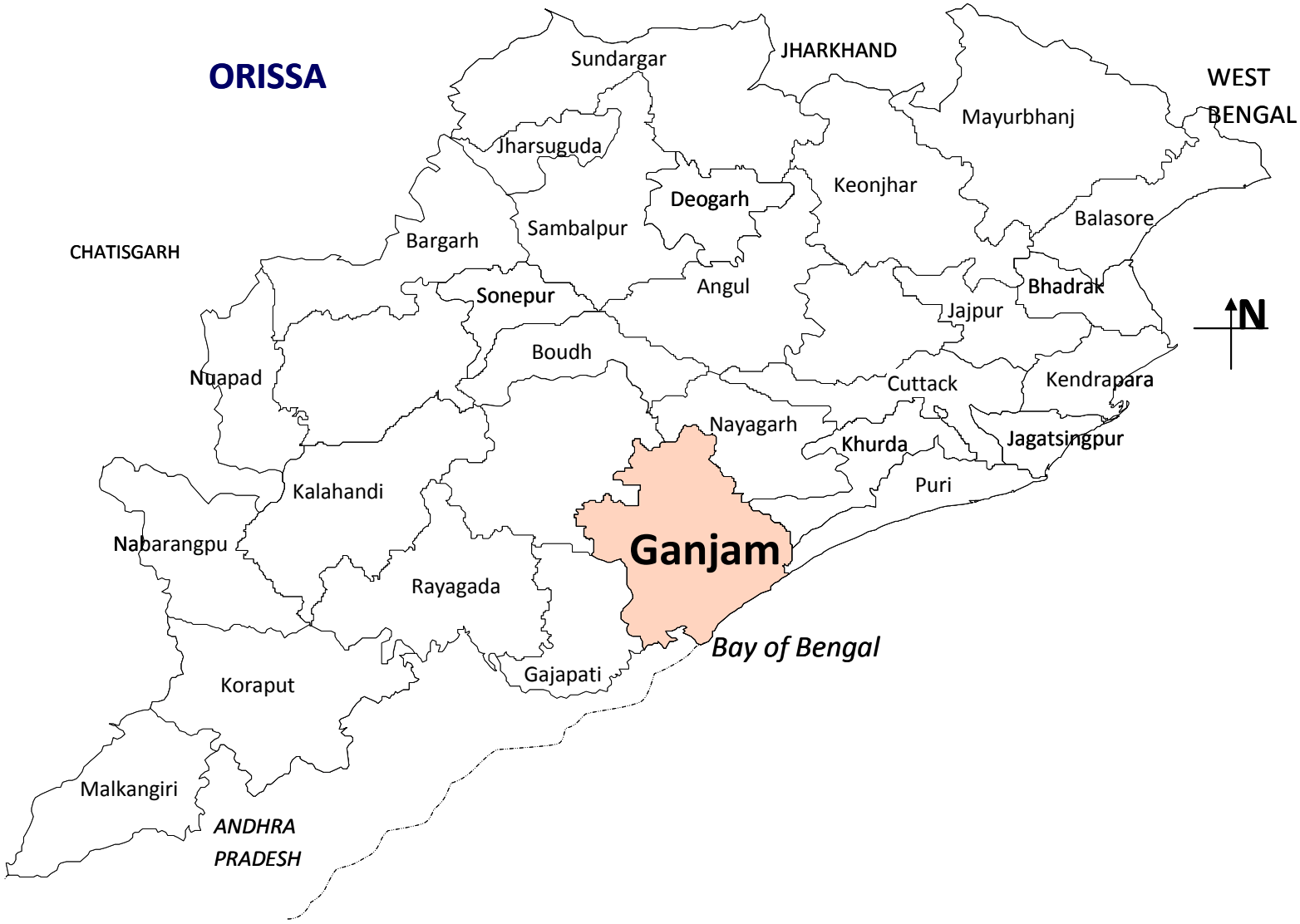
	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
(ii) Water contamination and changes in water quality	1. Application of lime.	-	1. Application of lime and geolite. 2. Application of Alum. 3. Application of KmnO4
(iii) Health and diseases	1. Application of lime	-	1. Application of lime and KmnO4. 2. Assessment of the health status of fish and accordingly control measure should be taken. 3. Control on transport of brooders and seeds.
(iv) Loss of stock and inputs (feed, chemicals ets)	1. Strengthening and increase in dyke height. 2. Before flood the stock should be harvested and sold in flood prone areas. 3. Transport of feed and chemicals to safer place. 4. Purchase of feeds and chemicals on weekly or fortnightly basis. 5. Insurance coverage for stock.	1. Net enclosure should be provided over the dyke to prevent the escape of fish from pond. 2. Water should be diverted from the main stream. 3. Sand bags can be used for protection of dykes. 4. Storing of feed and chemicals to safer place.	1. Stock assessment and restocking with advanced fingerlings or yearling if required. 2. Repairing of dykes. 3. Assessment of quality of feed and fertilizer. 4. Assessment and settlement of insurance.
(v) Infrastructure damage (pumps, aerators, huts etc.)	1. Construction of flood shelter for pumps, aerators etc.	-	1. Repairing of pumps, aerators if required. 2. Repairing of damaged hut.
(vi) Any other	-	-	-

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
3. Cyclone/ Tsunami			
A. Capture			
Marine			
(i)Average compensation paid due to loss of fishermen lives	1. Repeated broadcast and telecast of warning. 2. Sea venture should be avoided 3. Insurance coverage for lives of fishermen.	1. Provision of relief. 2. Evacuation of people to safer areas.	1. Assessment and settlement of insurance.
(ii) No. of boats / nets damaged	1. The boats has to be secured safely to river/ reservoir banks. 2. Insurance coverage for nets and boats.	1. Checking of the safety of the boats / nets. 2. An inventory logbook with name of crewmembers should be maintained.	1. Maintenance of the boats and nets. 2. Assessment and settlement of insurance.
(iii) No. of houses damaged	1. Insurance coverage for houses.	-	1. Settlement of insurance.
Inland			
B. Aquaculture			
(i) Over flow/ flooding of ponds	1. Strengthening and increase in dyke height. 2. They should be constructed with inlet and out let facility.	1. Net enclosure should be provided over the dyke to prevent the escape of fish from pond.	1. Repairing and strengthening of dyke if required.
(ii) Changes in water quality (fresh water / brackish water ratio)			

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
(iii) Health and diseases	-	-	1. Application of lime and KmnO4. 2. Assessment of the health status of fish and accordingly control measure should be taken. 3. Control on transport of brooders and seeds.
(iv) Loss of stock and inputs (feed, chemicals ets)	1. Strengthening and increase in dyke height. 2. Transport of feed and chemicals to safer place. 3. Insurance coverage for stock.	1.Net enclosure should be provided over the dyke to prevent the escape of fish from pond. 2. Storing of feed and chemicals to safer place.	1. Stock assessment and restocking with advanced fingerlings or yearling if required. 2. Repairing of dykes. 3. Assessment of quality of feed and chemicals. 4. Assessment and settlement of insurance.
(v) Infrastructure damage (pumps, aerators, shelters/ huts etc.)	-	-	1. Repairing of pumps, aerators if required. 2. Repairing of damaged hut.
(vi) Any other	-	-	-
4. Heat Wave and Cold Wave			
A. Capture			
Marine	-	1. During hot waves night fishing should be done. 2. During hot waves preservation by cold	-

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
		chain should be increased.	
Inland	-	1. During hot waves night fishing should be done. 2. Preservation by cold chain should be increased during hot waves.	-
B. Aquaculture			
(i) Change in pond environment	1. During hot waves adequate water depth should be maintained.	1. During hot waves mixing of water with fresh water should be done. 2. The culture system should be provided with aeration to avoid oxygen depletion due to high temperature during hot waves. 3. Partial harvesting can be done to avoid loss of crop.	-
(ii) Health and disease management	1. Application of lime and turmeric.	1. Feeding should be stopped. 2. If cold waves persists EUS outbreak takes place	1. Application of CIFAX to control EUS disease in fish.

Annexure –I DIGITAL MAP OF THE DISTRICT GANJAM INSIDE THE STATE ODISHA



ANNEXURE – III –SOIL MAP OF GANJAM DISTRICT