

State: ODISHA

Agriculture Contingency Plan for District: SUNDARGARH

1.0 District Agriculture profile					
1.1	Agro-Climatic/Ecological Zone				
	Agro Ecological Sub Region (ICAR)		Gujarat Hills, Dandakaranya and Eastern Ghats hot moist sub-humid eco-sub region (12.1)		
	Agro-Climatic Zone (Planning Commission)		Eastern plateau & hills (VII)		
	Agro Climatic Zone (NARP)		North Western Plateau & Hills (OR-1)		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)		Sundargarh, Deogarh, Jharsuguda,Sambalpur		
	Geographic coordinates of district headquarters		Latitude	Longitude	Altitude
			22 ⁰ 07' 00. 00" N	84 ⁰ 01' 00.00" E	256 m
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS		RRTTSS, Kirei, At/P.O: Kirei Dist: Sundargarh, PIN: 770073 (Odisha)		
	Mention the KVK located in the district with address		Krishi Vigyan Kendra, Sundargarh -770073 (Odisha)		
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone		AMFU, RRTTSS, Kirei		
1.2	Rainfall	Normal RF(mm)	Normal Rainy days (number)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep):	1229.2	55.1	June 2 nd week	September 2 nd week
	NE Monsoon(Oct-Dec):	80.6	4.8	Oct-2 nd week	Nov-2 nd week
	Winter (Jan- March)	56.0	4.7	-	-
	Summer (Apr-May)	56.6	4.4	-	-
	Annual	1422.4	68.4	-	-

1.3	Land use pattern of the district	Geographical area	Cultivable area	Forest area	Land under non-agricultural use	Permanent pastures	Cultivable wasteland	Land under Misc. tree crops and groves	Barren and uncultivable land	Current fallows	Other fallows
	Area ('000 ha)	971	292	496	29	26	16	25	66	21	0

Source: Orissa Agriculture Statistics 2008-09

1.4	Major Soils (common names like red sandy loam deep soils (etc.,)*)	Area ('000 ha)	Percent (%) of total
	Red soil	82.8	26.5
	Sandy loam	53.34	17.0
	Black soil	10.3	3.3
	Sandy soil	26.3	8.4
	Others(Brown Forest & Laterite soil)	140.3	44.8
1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	292	129
	Area sown more than once	86	
	Gross cropped area	378	

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	69.6		
	Gross irrigated area	95.7		
	Rainfed area	243.4		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals		42.4	44.3
	Tanks		5.2	5.5
	Open wells		13.1	13.6
	Bore wells		10.2	10.7
	Lift irrigation schemes		18.9	19.7
	Micro-irrigation			
	Other sources (WHS)		5.9	6.2
	Total Irrigated Area		95.7	
	Pump sets			
	No. of Tractors			
	Groundwater availability and use* (Data source: State/Central Ground water Department /Board)	No. of blocks/ Tehsils	(%) area	Quality of water (specify the problem such as high levels of arsenic, fluoride, saline etc)
	Over exploited			
	Critical			
	Semi- critical			
	Safe			
Wastewater availability and use				
Ground water quality				
*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%				

1.7 Area under major field crops & horticulture (as per latest figures) (Specify year 2009-10)

1.7	Major field crops cultivated	<i>Kharif</i>			<i>Rabi</i>			Grand total
		Irrigated	Rainfed	Total ('000ha)	Irrigated	Rainfed	Total ('000ha)	
	Blackgram	0.97	15.90	16.87	0.12		0.12	
	Paddy	54.04	159.00	13.05	1.81		1.81	
	Maize	0.87	6.69	7.55	0.12		0.12	
	Greengram	0.57	6.27	6.85	0.27	0.25	0.53	
	Redgram		5.32	5.32				
	Groundnut	0.63	4.62	5.25	0.49		0.49	
	Sesame				0.21	0.40	0.62	
	Wheat				2.64		2.64	
	Horticulture crops - Fruits	Total ('000ha)						
	Mango	6.82						
	Citrus	1.55						
	Cashew	2.55						
	Banana	1.59						
	Litchi	0.89						
	Guava	0.79						

Coconut	0.85
Horticulture crops - Vegetables	Total ('000ha)
Sweet potato	3.37
Chilly	3.35
Onion	1.48
Potato	0.58
Medicinal and Aromatic crops	Total ('000ha)
Anala	0.009
Plantation crops	Total ('000ha)
Cashew	2.55
Fodder crops	0.336
Total fodder crop area	
Grazing land	26.0
Sericulture etc	-
Others (specify)	-

1.8	Livestock	Male ('000)	Female ('000)	Total ('000)	
	Non descriptive Cattle (local low yielding)	482.80	188.61	671.41	
	Improved cattle	10.39	11.73	22.12	
	Crossbred cattle				
	Non descriptive Buffaloes (local low yielding)	35.32	14.82	50.14	
	Descript Buffaloes				
	Goat	335.26	223.51	558.77	
	Sheep	21.96	14.64	36.60	
	Pig	35.85	23.90	59.75	
Commercial dairy farms (Number)					
1.9	Poultry	No. of farms	Total No. of birds ('000)		
	Commercial	141	1303		
	Backyard	23	60		
1.10	Fisheries (Data source: Chief Planning Officer)				
	A. Capture				
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats		Storage facilities (Ice plants etc.)
			Mechanized	Non-mechanized	
	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds		No. of Reservoirs	No. of village tanks
		1704		5	1210
	B. Culture				
			Water Spread Area (ha)	Yield (t/ha)	Production ('000 tons)
	i) Brackish water (Data Source: MPEDA/ Fisheries Department)				
ii) Fresh water (Data Source: Fisheries Department)				7811.4	
Others (River)				0.81	
				6329.68	
				802.88	

1.11 Production and Productivity of major crops (Average of last 5 years: 2004, 05, 06, 07, 08; specify years)

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)							
Major Field crops										
	Rice	298.09	1373	190.29	1572	2.47	1764	300.56	1376	
	Maize	9.07	1246	0.16	1251			9.23	1246	
	Greengram	2.77	417	0.19	330			2.96	410	
	Blackgram	6.83	408	0.08	335			6.91	407	
	Redgram	4.33	835					4.33	835	
	Cowpea	3.53	696	1.64	830			5.17	734	
	Horsegram			7.21	412			7.21	412	
	Sesamum	7.93	406	0.18	268			8.11	401	
	Mustard			1.92	315			1.92	315	
Major Horticultural crops										
	Chilly	1.16	802	1.69	889			2.85	851	
	Onion			12.13	8196			12.13	8196	
	Potato			4.76	8216			4.76	8216	
	Sweet potato	18.72	8174	9.01	8343			27.73	8228.2	

Sowing window for 5 major field crops	Paddy	Maize	Blackgram	Horsegram	Groundnut
Khariif- Rainfed	Jun-25-july25	June30-july15	Aug15-30	Aug-15-sep30	June30-july20
Khariif-Irrigated	June15-july15	June15-july15	Aug15-30	--	June30-july20
Rabi- Rainfed	--	--	--	-	--
Rabi-Irrigated	Dec15-jan15	Dec15-jan15	Nov15-dec30	-	Nov15-dec30

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

1.14	Include Digital maps of the district for		
		Location map of district within State as Annexure I	Enclosed: Yes
		Mean annual rainfall as Annexure 2	Enclosed: Yes
		Soil map as Annexure 3	Enclosed: Yes

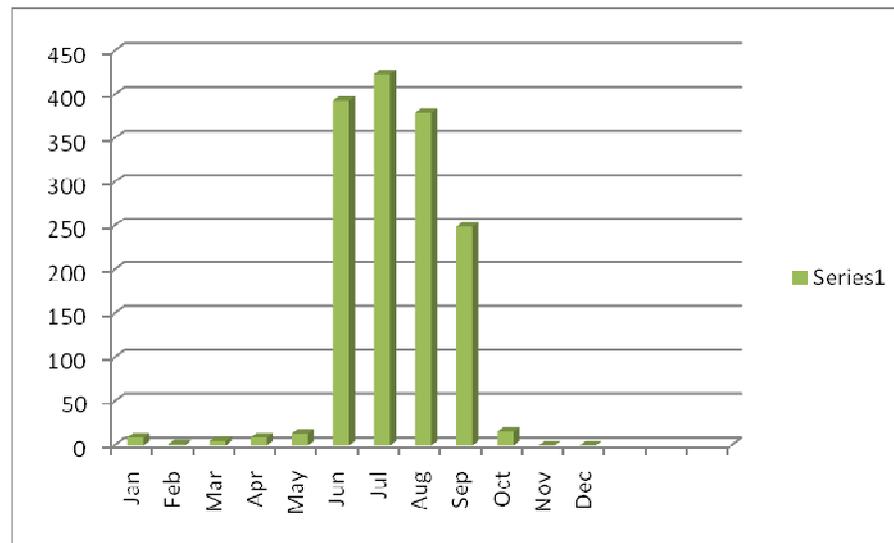
Annexure-I



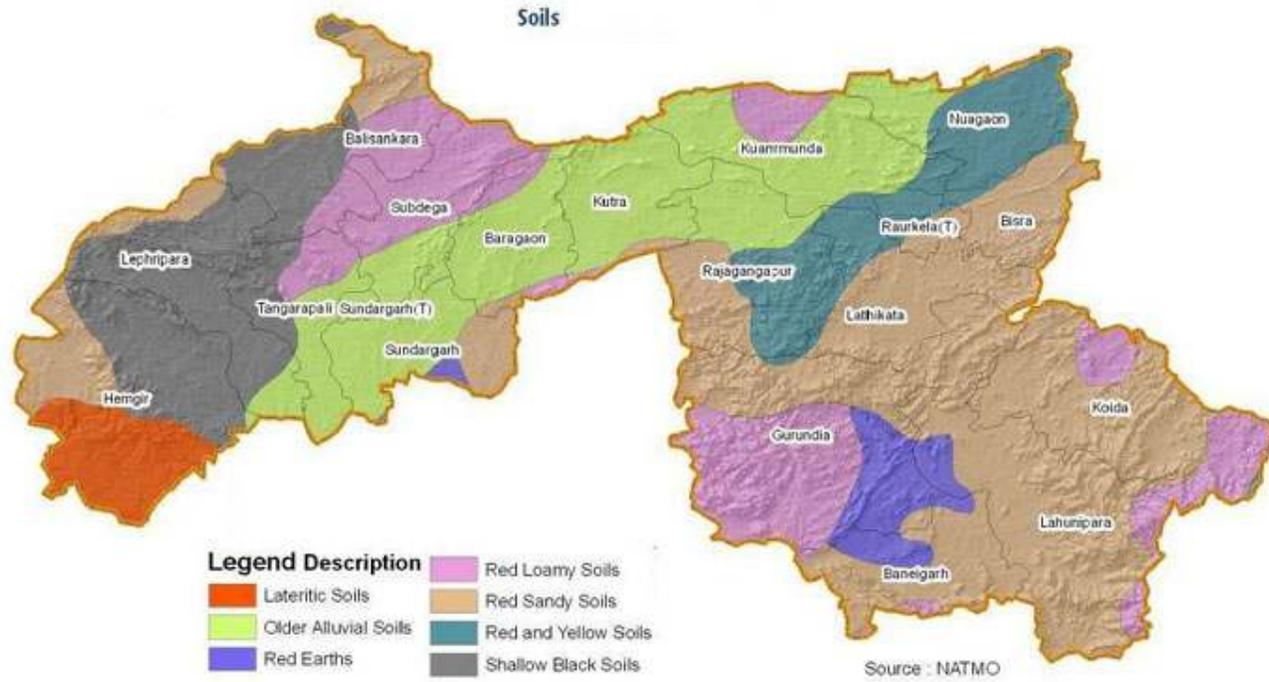
Annexure-II

Mean Annual Rainfall of Sundargarh district

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Actual	Normal	% of Dev.
8.6	1.6	4.8	8.5	12.9	392.6	423.6	379.5	249.0	15.1	0	0	1496.2	1422.4	5.2



Soils Map Annexure-III



2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 2 weeks July 1 ST week	Low rainfall lateritic soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum – (Prachi,Uma,Local) ➤ Arhar -(Upas-120,ICPL 87) ➤ Horse gram (Local) ➤ Groundnut (Smruti, JL-24,TMV-2) ➤ Mustard (M-27,PT-303, VARUNA) ➤ Rice (Hira, Khandagiri,Pathara, Bandana) ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato (Utkal Kumari, Utkal Raja) • Brinjal (Blue star,Local) • Cow pea(Utkal Manika) • Lady's finger(Utkal 	NO CHANGE NO CHANGE NO CHANGE NO CHANGE NO CHANGE NO CHANGE NO CHANGE NO CHANGE NO CHANGE	<ul style="list-style-type: none"> • Closer row and plant spacing, • In-situ rain water conservation, summer ploughing, interculture, tillage practices, weed control and unbunded uplands converted to banded uplands • Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, • Conservation furrow, • Inter-cultivation and thinning to maintain plant population per unit area of the crop 	<ul style="list-style-type: none"> • Linkage with RKVY. • Linkage with ATMA, OSSC and NFSM • Apiculture, Mushroom production and vermicomposting through ATMA, NHM and KVKs • Pisciculture and farming system in farm ponds through NREGS • Goatery and poultry rearing through Vety. Dept. for livelihood support

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures			
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation	
Early season drought (delayed onset)		Gourav) • Chilli (Bamara local, Kuchinda local,Rashmi)	NO CHANGE			
		Sole crops under rainfed medium lands : Rice (Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra)	NO CHANGE	<ul style="list-style-type: none"> • Apply full P, K and 20% N of recommended dose along with well decomposed organic matter and PMS (1t/ha) for early seedling vigor, • In-situ rain water conservation. • Take weed control measures in nursery & main field 	<ul style="list-style-type: none"> • Linkage with RKVY. • Linkage with ATMA, OSSC and NFSM 	
		Sole crops under rainfed medium low lands : Rice (Pooja, Moti, Vijeta, Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri)	NO CHANGE	<ul style="list-style-type: none"> • Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, • In-situ rain water conservation. 	<ul style="list-style-type: none"> • Seed drill under RKVY. • Supply of seeds through ATMA, OSSC and NFSM 	
		Rice-Mustard	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra			
			Medium late (140-145 d) Swarna, Pratikshya,Rani dhan, Sidhanta, Mahsuri, Pooja			
			Mustard var. M-27, PT-303, YSP-9, Vinaya, Varuna			

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)		Fallow-greengram/ blackgram/ water melon	Greengram variety : (Dhuli, Jyoti, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Red star, Andaman, Suntrupty, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49, Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)	5,000 fingerlings/ha waterbody	Feed and disease management (Fishery Dept.)

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 2 weeks July 1 ST week	Medium rainfall red & black soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum – (Prachi, Uma, Local) ➤ Arhar (Upas-120, ICPL 87) ➤ Horse gram (Local) ➤ Groundnut (Smruti, JL-24, TMV-2) ➤ Mustard (M- 	NO CHANGE NO CHANGE NO CHANGE NO CHANGE NO CHANGE	<ul style="list-style-type: none"> • Closer row and plant spacing, • In-situ rain water conservation, summer ploughing, interculture, tillage practices, weed control and unbunded uplands converted to bunded uplands • Apply full P, K and 20% N of recommended dose along with well decomposed 	<ul style="list-style-type: none"> • Linkage with RKVY. • Linkage with ATMA, OSSC and NFSM • Apiculture, Mushroom production and vermicomposting through ATMA, NHM and KVKs • Pisciculture and

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)		27,PT-303, VARUNA ➤ Rice (Hira, Khandagiri, Pathara, Bandana) ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato (Utkal Kumari, Utkal Raja) • Brinjal (Blue star, Local) • Cow pea (Utkal Manika) • Lady's finger (Utkal Gourav) • Chilli (Bamara local, Kuchinda local, U. Ava) 	NO CHANGE	organic matter for early seedling vigor, • Conservation furrow, • Inter-cultivation and thinning to maintain plant population per unit area of the crop	farming system in farm ponds through NREGS • Goatery and poultry rearing through Vety. Dept. for livelihood support
		Sole crops under rainfed medium lands : Rice (Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra)	NO CHANGE		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures			
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation	
Early season drought (delayed onset)				in nursery & main field		
		Sole crops under rainfed medium low lands : Rice (Pooja, Moti, Vijeta, Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri)	NO CHANGE	<ul style="list-style-type: none"> Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, In-situ rain water conservation. 	<ul style="list-style-type: none"> Seed drill under RKVY. Supply of seeds through ATMA, OSSC and NFSM 	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, , Jogesh and Surendra			
			Medium late (140-145 d) Swarna, Pratikshya,Rani dhan, Sidhanta, Mahsuri, Pooja			
			Onion variety: Nasik Red, N-53, Bhima super, AFDR/ AFLR.			
		Fallow-greengram/blackgram/ water melon	Greengram variety : (Dhauri, Jyoti, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Red star, Andaman, Suntrupty, Black magic)			
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49, Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)			
Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)	5,000 fingerlings/ha waterbody	Feed and disease management (Fishery Dept.)			

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot (HQPM-1)		
		Sole crops under rainfed medium lands : Rice	Konark, Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	<ul style="list-style-type: none"> Apply full P, K and 20% N of recommended dose along with well decomposed organic matter and PMS (1t/ha) for early seedling vigor, In-situ rain water conservation. Take weed control measures in nursery & main field 	<p>Linkage with RKVY.</p> <p>Linkage with ATMA, OSSC and NFSM</p>
		Sole crops under rainfed medium low lands : Rice	Pooja, Moti, Vijeta, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, In-situ rain water conservation. 	<p>Linkage with RKVY.</p> <p>Linkage with ATMA, OSSC and NFSM</p>
		Rice-mustard	Rice variety:		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
			Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta, Mahsuri, Pooja		
			Mustard var. M-27, PT-303, YSP-9, Vinaya, Varuna		
		Fallow-greengram/ blackgram/ water melon	Greengram variety : (Dhauri, Jyoti, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Red star, Andaman, Suntrupty, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49, Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)	5,000 fingerlings/ha waterbody	Feed and disease management (Fishery Dept.)

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 2 weeks	Medium rainfall black & brown forest soil	Sole crops under unbunded rainfed uplands ➤ Sesamum – (Prachi, Uma, Local	NO CHANGE	<ul style="list-style-type: none"> • Closer row and plant spacing, • In-situ rain water conservation, summer ploughing, interculture, tillage 	<ul style="list-style-type: none"> • Linkage with RKVY. • Linkage with ATMA, OSSC and

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot (HQPM-1)		
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Apply full P, K and 20% N of recommended dose along with well decomposed organic matter and PMS (1t/ha) for early seedling vigor, • In-situ rain water conservation. • Take weed control measures in nursery & main field 	<p>Linkage with RKVY.</p> <p>Linkage with ATMA, OSSC and NFSM</p>
		Sole crops under rainfed medium low lands : Rice	Pooja, Moti, Vijeta, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> • Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, • In-situ rain water conservation. 	<p>Linkage with RKVY.</p> <p>Linkage with ATMA, OSSC and NFSM</p>
		Rice-Sesamum	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta, Mahsuri, Pooja		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			Sesamum var. Usha, Vinayak, Uma, Nirmala and Prachi		
		Fallow-Greengram/ Blackgram/ Water melon	Greengram variety : (Dhuli, Jyoti, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Red star, Andaman, Suntrupti, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49, Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)	5,000 fingerlings/ha waterbody	Feed and disease management (Fishery Dept.)

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
<p>Delay by 2 weeks</p> <p>July 1ST week</p>	High rainfall black & brown forest soil	<p>Sole crops under unbunded rainfed uplands</p> <ul style="list-style-type: none"> ➤ Sesamum – (Prachi,Uma,Local) ➤ Arhar (Upas-120,ICPL 87) ➤ Horse gram (Local) ➤ Groundnut (Smruti, JL-24,TMV-2) ➤ Mustard (M-27,PT-303, VARUNA) ➤ Rice (Hira, Khandagiri,Pathar a, Bandana) ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato (Utkal Kumari, Utkal Raja) • Brinjal (Blue star,Local) • Cow pea(Utkal Manika) • Lady's finger(Utkal Gourav) 	<p>NO CHANGE</p>	<ul style="list-style-type: none"> • Closer row and plant spacing, • In-situ rain water conservation, summer ploughing, interculture, tillage practices, weed control and unbunded uplands converted to banded uplands • Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, • Conservation furrow, • Inter-cultivation and thinning to maintain plant population per unit area of the crop 	<p>Linkage with RKVY.</p> <p>Linkage with ATMA</p> <p>Apiculture, Mushroom production and vermicomposting through ATMA, NHM and KVKs</p> <p>Pisciculture and farming system in farm ponds through NREGS</p> <p>Goatery and poultry rearing through Vety. Dept. for livelihood support</p>

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
		<ul style="list-style-type: none"> Chilli (Bamara local, Kuchinda local, U. Ava) 	NO CHANGE Intercropping of arhar + groundnut (2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot (HQPM-1)		
		Sole crops under rainfed medium lands : Rice	Konark, Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> Apply full P, K and 20% N of recommended dose along with well decomposed organic matter and PMS (1t/ha) for early seedling vigor, In-situ rain water conservation. Take weed control measures in nursery & main field 	Linkage with RKVY. Linkage with ATMA, OSSC and NFSM
		Sole crops under Rainfed medium low lands : Rice	Pooja, Moti, Vijeta, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, In-situ rain water conservation. 	Linkage with RKVY. Linkage with ATMA, OSSC and NFSM
		Rice-Horse gram	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta, Mahsuri, Pooja		
			Horse gram var. Urmi, Improved local		
		Fallow-Geengram/ Blackgram/ Water melon	Greengram var. Dhauli, Jyoti, Kamdev, Durga Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Red star, Andaman, Suntrupty, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49, Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
	Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)	5,000 fingerlings/ha waterbody	Feed and disease management (Fishery Dept.)	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks July 3 rd week	Low rainfall lateritic soil	Sole crops under unbunded rainfed uplands ➤ Sesamum ➤ Arhar	Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi ICPL 87, UPAS 120, TUR N-2	<ul style="list-style-type: none"> When the plant population is less than 50% gap filling should be done and if more than 50% mortality, resow the crop with short duration high 	Link up with RKVY. Linkage with 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 including variety	Agronomic measures	Remarks on Implementation
		<ul style="list-style-type: none"> ➤ Horse gram ➤ Groundnut ➤ Mustard ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Urmi, Local improved</p> <p>TG-6,JL-24, Smruti, Devi, TMV-2, TAG-24</p> <p>M-27, PT-303, YSP-9, Vinaya, Varuna</p> <p>Replaced by Oilseed and Pulses</p> <p>Utkal Urbasi, Utkal Kumari, Utkal Raja</p> <p>U. Madhuri, Blue star, U.Anushree, U.Tarini</p> <p>Utkal Manika</p> <p>Utkal Gourav</p> <p>Bamara local, Kuchinda local, U. Ava, U. Rashmi</p> <p><i>Intercropping</i> of arhar + groundnut (2 : 5)</p> <p>Arhar var. ICPL 87, UPAS 120, TUR N-2</p> <p>Arhar + Sesamum (2:4), Arhar+Rice (2:5)</p> <p>Maize + Cow pea (2:2)</p> <p>Maize var. Navjot (HQPM-1)</p>	<p>yielding low water requiring crops like Greengram, Blackgram, Horsegram, Niger, Cow pea, Fodder maize, Sesame and Castor after receiving the rainfall.</p> <ul style="list-style-type: none"> • Cultivate vegetables like okra, brinjal, chilli, radish, cow pea tomato. • 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 	(OSSC).
		Sole crops under rainfed medium lands : Rice	Sneha, Kalinga-3, Anjali, Jogesh, Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura, Sahabhagi Dhan	<ul style="list-style-type: none"> • If rice population is less than 50% resow the sprouted seeds in line 	Linkage with RKVY for Pre-germinated seed

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				<p>through pre-germinated seed drill or fresh seedlings.</p> <ul style="list-style-type: none"> • Select short to medium duration varieties (90-130d) • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice through transplanter saving of 50% seed requirement or through SRI method (@5kg seeds/ha). • Do not top dress nitrogen in nursery • Apply life saving irrigation to maintain nursery seedlings. 	<p>drills & Paddy transplanter, marker and cono weeder</p> <p>Link up with NFSM.</p>
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • If rice population is more than 50% carryout weeding and maintain the plant population by <i>Khelua</i> operation (removing and distributing the hills) • Raise community nursery of both short duration rice varieties at reliable water source to save further delay 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				of transplanted rice. • Do not top dress nitrogen in nursery	
		Rice-Groundnut	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Groundnut var. TG-6, JL-24, Smruti, Devi, TMV-2, TAG-24		
		Fallow-greengram/ blackgram/ water melon	Greengram variety : (Dhali, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49 Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks July 3 rd week	Medium rainfall red & black soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi Dhauri, Jyoti, Sujata, Durga, PDM-11& 54 Prasad, Pant U-19 &30,Ujala,Sarala Replaced by Oilseed and Pulses Utkal Urbasi, Utkal Kumari, Utkal Raja U.Madhuri, Bluestar, U.Anushree,U. Tarini Utkal Manika Utkal Gourav Bamara local, Kuchinda local, U. Ava, U. Rashmi Intercropping of arhar + groundnut	<ul style="list-style-type: none"> • When the plant population is less than 50% gap filling should be done and if more than 50% mortality, resow the crop with short duration high yielding low water requiring crops like green gram, black gram, horsegram (Urmi), Niger (Deomali) cow pea, Fodder maize, sesame and castor after receiving the rainfall. • Cultivate vegetables like okra, brinjal, chilli, radish, cow pea tomato. • 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 	Linkage with RKVY. Linkage with NFSM, ISOPOM, NHM and state seed corporation (OSSC).

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			(2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & U. Manika		
		Sole crops under rainfed medium lands : Rice	Sneha, Kalinga-3, Anjali, Jogesh, Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura, Sahabhagi Dhan	<ul style="list-style-type: none"> • If rice population is less than 50% resow the sprouted seeds in line through pre-germinated seed drill or fresh seedlings. • Select short to medium duration varieties (90-130d) • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice through transplanter saving of 50% seed requirement or through SRI method (@5kg seeds/ha). • Do not top dress nitrogen in nursery • Apply life saving irrigation to maintain nursery seedlings. 	Pre-germinated seed drill under RKVY. High yielding rice varieties under NFSM. Paddy transplanter, marker and cono weeder under RKVY
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • If rice population is more than 50% carryout weeding and maintain the plant population by 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				<i>Khelua</i> operation (removing and distributing the hills) <ul style="list-style-type: none"> • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice. • Do not top dress nitrogen in nursery 	
		Rice-Mustard	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Mustard variety: M-27, PT-303, Vinaya, Varuna		
		Fallow-greengram/ blackgram/ water melon	Greengram variety : (Dhauri, Kamdev, Durga) Blackgram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49 Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
<p>Early season drought (delayed onset)</p> <p>Delay by 4 weeks</p> <p>July 3rd week</p>	High rainfall lateritic Soil	<p>Sole crops under unbunded rainfed uplands</p> <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Arhar ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi</p> <p>Dhauri, Jyoti, Sujata, Durga, PDM-11& 54</p> <p>ICPL 87, UPAS 120, TURN-2</p> <p>TG-6, JL-24, Smruti,Devi, TMV-2,TAG-24</p> <p>Replaced by Oilseed and Pulses</p> <p>Utkal Urbasi, Utkal Kumari, Utkal Raja</p> <p>U. Madhuri, Blue star, U. Anushree, U. Tarini</p> <p>Utkal Manika</p> <p>Utkal Gourav</p> <p>Bamara local, Kuchinda local, U. Ava, U. Rashmi</p>	<ul style="list-style-type: none"> • When the plant population is less than 50% gap filling should be done and if more than 50% mortality, resow the crop with short duration high yielding low water requiring crops like green gram, black gram, horsegram (Urmi), Niger (Deomali) cow pea, Fodder maize, sesame and castor after receiving the rainfall. • Cultivate vegetables like okra, brinjal, chilli, radish, cow pea tomato. • 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 	<p>Linkage with RKVY.</p> <p>Linkage with NFSM, ISOPOM, NHM and state seed corporation (OSSC).</p>

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			<i>Intercropping of arhar + groundnut (2 : 5)</i> Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & U. Manika		
		Sole crops under rainfed medium lands : Rice	Sneha, Kalinga-3, Anjali, Jogesh, Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura, Sahabhagi Dhan	<ul style="list-style-type: none"> • If rice population is less than 50% resow the sprouted seeds in line through pre-germinated seed drill or fresh seedlings. • Select short to medium duration varieties (90-130d) • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice through transplanter saving of 50% seed requirement or through SRI method (@5kg seeds/ha). • Do not top dress nitrogen in nursery • Apply life saving irrigation to maintain nursery seedlings. 	Pre-germinated seed drill under RKVY. High yielding rice varieties under NFSM. Paddy transplanter, marker and cono weeder under RKVY
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh	<ul style="list-style-type: none"> • If rice population is more than 50% carryout weeding and 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			and Surendra	maintain the plant population by <i>Khelua</i> operation (removing and distributing the hills) <ul style="list-style-type: none"> • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice. • Do not top dress nitrogen in nursery 	
		Rice-Sesamum	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d): Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Sesamum var. Usha, Vinayak, Uma, Nirmala and Prachi		
		Fallow-Greengram/ Blackgram/ Water melon	Greengram variety : (Dhauri, Kamdev, Durga) Blackgram: (Sarala, Prasad, Ujala) Water melon: Sugarbaby, Andaman, Black magic		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49 Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in	Indian major carps (Rohu, Mirgal,		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
		farm ponds	Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks July 3rd week	Medium rainfall black & brown forest soil	Sole crops under unbunded rainfed uplands ➤ Sesamum ➤ Arhar ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables • Tomato • Brinjal • Cow pea • Lady's finger • Chilli	Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi ICPL 87, UPAS 120, TUR N-2, Laxmi Prasad, Pant U-19 &30,Ujala,Sarala TG-6, JL-24, Smruti,Devi, TMV- 2,TAG-24 Rice should be replaced by oil seed & pulses. Utkal Urbasi, Utkal Kumari, Utkal Raja U. Madhuri, Blue star, U. Anushree, U. Tarini Utkal Manika Utkal Gourav	<ul style="list-style-type: none"> • When the plant population is less than 50% gap filling should be done and if more than 50% mortality, resow the crop with short duration high yielding low water requiring crops like green gram, black gram, horsegram (Urmi), Niger (Deomali) cow pea, Fodder maize, sesame and castor after receiving the rainfall. • Cultivate vegetables like okra, brinjal, chilli, radish, cow pea tomato. • 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 	Intercultural farm implements under RKVY. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			<p>Bamara local, Kuchinda local, U. Ava, U. Rashmi</p> <p><i>Intercropping of arhar + groundnut (2:5)</i></p> <p>Arhar var. ICPL 87, UPAS 120, TUR N-2</p> <p>Arhar + Sesamum (2:4), Arhar+Rice (2:5)</p> <p>Maize + Cow pea (2:2)</p> <p>Maize var. Navjot & Cow pea Var; Utkal Manika</p>		
		Sole crops under rainfed medium lands : Rice	Sneha, Kalinga-3, Anjali, Jogesh, Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura, Sahabhagi Dhan	<ul style="list-style-type: none"> • If rice population is less than 50% resow the sprouted seeds in line through pre-germinated seed drill or fresh seedlings. • Select short to medium duration varieties (90-130d) • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice through transplanter saving of 50% seed requirement or through SRI method (@5kg seeds/ha). • Do not top dress nitrogen in nursery • Apply life saving irrigation to maintain nursery seedlings. 	<p>Link up with RKVY. Linkage with NFSM.</p> <p>Linkage with RKVY</p>
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and	<ul style="list-style-type: none"> • If rice population is more than 50% carryout weeding and maintain the plant population 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			Surendra	by <i>Khelua</i> operation (removing and distributing the hills) <ul style="list-style-type: none"> • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice. • Do not top dress nitrogen in nursery 	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/ Blackgram/ Water melon	Greengram variety : (Dhauri, Kamdev, Durga) Blackgram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49 Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks July 3rd week	High rainfall black & brown forest soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Arhar ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Kulthi ➤ Mustard ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops i.e ICPL 87, UPAS 120, TUR N-2, Laxmi Dhauli, Jyoti, Sujata, Durga, PDM- 11& 54 Prasad, Pant U-19 &30,Ujala,Sarala TG-6, JL-24, Smruti,Devi, TMV- 2,TAG-24 Urmi, Improved local M-27, PT-303, YSB-9, Vinaya, Varuna Rice should be replaced by oil seed & pulses. Utkal Urbasi, Utkal Kumari, Utkal Raja U. Madhuri, Blue star, U. Anushree, U. Tarini Utkal Manika Utkal Gourav Bamara local, Kuchinda local, U. Ava, U. Rashmi	<ul style="list-style-type: none"> • When the plant population is less than 50% gap filling should be done and if more than 50% mortality, resow the crop with short duration high yielding low water requiring crops like green gram, black gram, horsegram (Urmi), Niger (Deomali) cow pea, Fodder maize, sesame and castor after receiving the rainfall. • Cultivate vegetables like okra, brinjal, chilli, radish, cow pea tomato. • 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 	Intercultural farm implements under RKVY. Seeds through NFSM, ISOPOM, NHM and state seed corporation (OSSC).

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			<p><i>Intercropping</i> of arhar + groundnut (2 :5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika</p>		
		Sole crops under rainfed medium lands : Rice	Sneha, Kalinga-3, Anjali, Jogesh, Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura, Sahabhagi Dhan	<ul style="list-style-type: none"> • If rice population is less than 50% resow the sprouted seeds in line through pre-germinated seed drill or fresh seedlings. • Select short to medium duration varieties (90-130d) • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice through transplanter saving of 50% seed requirement or through SRI method (@5kg seeds/ha). • Do not top dress nitrogen in nursery • Apply life saving irrigation to maintain nursery seedlings. 	Pre-germinated seed drill under RKVY. High yielding rice varieties under NFSM. Paddy transplanter, marker and cono weeder under RKVY
		Sole crops under rainfed	Lalat, Bhoi, Manaswini, Naveen,	<ul style="list-style-type: none"> • If rice population is more than 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)		medium low lands : Rice	Vijeta, MTU 1010, Konark, Jogesh and Surendra	50% carryout weeding and maintain the plant population by <i>Khelua</i> operation (removing and distributing the hills) <ul style="list-style-type: none"> • Raise community nursery of both short duration rice varieties at reliable water source to save further delay of transplanted rice. • Do not top dress nitrogen in nursery 	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety Nasik Red, N-53, Bhima Super		
		Fallow-Greengram/ Blackgram/ Groundnut	Greengram variety : (Dhauli, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) G.nut var. TG-6, JL-24, Smruti, Devi, TMV-2, TAG-24		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49 Mango : (Amrapali, Baiganpalli) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
<p>Early season drought (delayed onset)</p> <p>Delay by 6 weeks</p> <p>August 1st week</p>	<p>Low rainfall lateritic soil</p>	<p>Sole crops under unbunded rainfed uplands</p> <ul style="list-style-type: none"> ➤ Sesamum ➤ Arhar ➤ Kulthi ➤ Groundnut ➤ Mustard ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Varietal substitutions of drought tolerant varieties of the sole crops i.e</p> <p>Usha, Vinayak, Uma, Nirmala and Prachi</p> <p>ICPL 87, UPAS 120, TUR N-2</p> <p>Urmi, Local improved</p> <p>TG-6,JL-24, Smruti, Devi, TMV-2, TAG-24</p> <p>M-27, PT-303, YSP-9, Vinaya, Varuna</p> <p>Rice should be replaced by oil seed & pulses.</p> <p>Utkal Urbasi, Utkal Kumari, Utkal Raja</p> <p>U. Madhuri, Blue star, U. Anushree, U. Tarini</p> <p>Utkal Manika</p> <p>Utkal Gourav</p> <p>Bamara local, Kuchinda local, U. Ava, U. Rashmi</p> <p>Intercropping of arhar + groundnut (2 : 5)</p> <p>Arhar var. ICPL 87, UPAS 120, TUR N-2</p>	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% urea at pre-flowering and flowering stage of green gram. • Spray 1% urea in vegetables crops. • Top dressing of 25 % urea and potash after receipt of the rain for upland rice.. • Remove the pest and disease infected plants from the main field. 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & U. Manika		
		Sole crops under rainfed medium lands : Rice	Konark, Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer (top dressing) application up to receipt of rainfall. • Transplanting of 45 days old seedlings at closer spacing. 	
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer application of receipt of rainfall. • Transplant seedlings up to 45 days old. • Follow need based plant protection measures against stem borer and blast. • Use tractor, power tiller, rotavator for speedy land preparation. • Follow close planting of 4-5 seedlings per hill. • Apply full P, K and 50 % N at the time of transplanting. 	Tractor, power tiller, rotavator under RKVY

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				<ul style="list-style-type: none"> Apply life saving irrigation as and when necessary 	
		Rice-onion	Rice variety: Medium duration (120d) Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh, Kharavel and Surendra		
			Medium late (140-145 d), Pooja, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/Water melon	Greengram variety: Dhauli, Kamdev, Durga, Samrat, PDM-54 Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
<p>Early season drought (delayed onset)</p> <p>Delay by 6 weeks</p> <p>August 1st week</p>	<p>Medium rainfall red & black soil</p>	<p>Sole crops under unbunded rainfed uplands</p> <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi</p> <p>Dhulai, Jyoti, Sujata, Durga, PDM-11 & 54</p> <p>Prasad, Pant U-19 & 30, Ujala, Sarala</p> <p>Rice should be replaced by oil seed & pulses.</p> <p>Utkal Urbasi, Utkal Kumari, Utkal Raja</p> <p>U. Madhuri, Bluestar, U. Anushree, U. Tarini</p> <p>Utkal Manika</p> <p>Utkal Gourav</p> <p>Bamara local, Kuchinda local, U. Ava, U. Rashmi</p> <p><i>Intercropping of arhar + groundnut (2 : 5)</i></p> <p>Arhar var. ICPL 87, UPAS 120, TUR</p>	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% urea at pre-flowering and flowering stage of green gram. • Spray 1% urea in vegetables crops. • Top dressing of 25 % urea and potash after receipt of the rain for upland rice.. • Remove the pest and disease infected plants from the main field. 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika		
		Sole crops under rainfed medium lands : Rice	Konark, Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer (top dressing) application up to receipt of rainfall. • Transplanting of 45 days old seedlings at closer spacing. 	
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer application of receipt of rainfall. • Transplant seedlings up to 45 days old. • Follow need based plant protection measures against steam borer and blast. • Use tractor, power tiller, rotavator for speedy land preparation. • Follow close planting of 4-5 seedlings per hill. 	Tractor, power tiller, rotavator under RKVY

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				<ul style="list-style-type: none"> • Apply full P, K and 50 % N -at the time of transplanting. • Apply life saving irrigation as and when necessary 	
		Rice-onion	Rice variety: Medium duration (120d) Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh, Kharavel and Surendra		
			Medium late (140-145 d), Pooja, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/ Water melon	Greengram variety: Dhauli, Kamdev, Durga, Samrat, PDM-54 Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 6 weeks August 1 st week	High rainfall lateritic Soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Arhar ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi Dhauri, Jyoti, Sujata, Durga, PDM-11& 54 ICPL 87, UPAS 120, TUR N-2 TG-6, JL-24, Smruti,Devi, TMV-2,TAG-24 Rice should be replaced by oil seed & pulses. Utkal Urbasi, Utkal Kumari, Utkal Raja U. Madhuri, Blue star, U. Anushree, U. Tarini Utkal Manika Utkal Gourav Bamara local, Kuchinda local, U. Ava, U. Rashmi <i>Intercropping of arhar + groundnut (2 :5)</i> Arhar var. ICPL 87, UPAS 120,	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% urea at pre-flowering and flowering stage of green gram. • Spray 1% urea in vegetables crops. • Top dressing of 25 % urea and potash after receipt of the rain for upland rice.. • Remove the pest and disease infected plants from the main field. 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika		
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer (top dressing) application up to receipt of rainfall. • Transplanting of 45 days old seedlings at closer spacing. 	
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer application of receipt of rainfall. • Transplant seedlings up to 45 days old. • Follow need based plant protection measures against stem borer and blast. • Use tractor, power tiller, rotavator for speedy land preparation. • Follow close planting of 4-5 seedlings per hill. • Apply full P, K and 50 % N at the 	Tractor, power tiller, rotavator under RKVY

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
				time of transplanting. • Apply life saving irrigation as and when necessary	
		Rice-onion	Rice variety: Medium duration (120d) Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh, Kharavel and Surendra		
			Medium late (140-145 d), Pooja, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/ Blackgram/ Water melon	Greengram variety: Dhauli, Kamdev, Durga, Samrat, PDM-54 Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
<p>Delay by 6 weeks</p> <p>August 1st week</p>	<p>Medium rainfall black & brown forest soil</p>	<p>Sole crops under unbunded rainfed uplands</p> <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Arhar ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi</p> <p>Dhali, Jyoti, Sujata, Durga, PDM-11 & 54</p> <p>ICPL 87, UPAS 120, TUR N-2</p> <p>TG-6, JL-24, Smruti,Devi, TMV-2,TAG-24</p> <p>Rice should be replaced by oil seed & pulses</p> <p>Utkal Urbasi, Utkal Kumari, Utkal Raja</p> <p>U. Madhuri, Blue star, U. Anushree, U. Tarini</p> <p>Utkal Manika</p> <p>Utkal Gourav</p> <p>Bamara local, Kuchinda local, U. Ava, U. Rashmi</p> <p><i>Intercropping of arhar + groundnut (2 :5)</i></p>	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% urea at pre-flowering and flowering stage of green gram. • Spray 1% urea in vegetables crops. • Top dressing of 25 % urea and potash after receipt of the rain for upland rice.. Remove the pest and disease infected plants from the main field. 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)			Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika		
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer (top dressing) application up to receipt of rainfall. • Transplanting of 45 days old seedling at closer spacing. 	
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer application of receipt of rainfall. • Transplant seedlings up to 45 days old. • Follow need based plant protection measures against steam borer and blast. • Use tractor, power tiller, rotavator for speedy land preparation. • Follow close planting of 4-5 seedlings per hill. • Apply full P, K and 50 % N at the time of transplanting. 	Tractor, power tiller, rotavator under RKVY

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				<ul style="list-style-type: none"> Apply life saving irrigation as and when necessary 	
		Rice-onion	Rice variety: Medium duration (120d) Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh, Kharavel and Surendra		
			Medium late (140-145 d), Pooja, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/Water melon	Greengram variety: Dhauri, Kamdev, Durga, Samrat, PDM-54 Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)	High rainfall black & brown forest soil	Sole crops under unbunded rainfed uplands	Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi	<ul style="list-style-type: none"> • Close the drainage hole and check the seepage loss in direct sown medium land rice regularly. • Closer row and plant spacing, • Apply full P, K and 20% N of recommended dose along with well decomposed organic matter for early seedling vigor, 	
		<ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Arhar ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Dhauli, Jyoti, Sujata, Durga, PDM-11 & 54 ICPL 87, UPAS 120, TUR N-2 TG-6, JL-24, Smruti, Devi, TMV-2, TAG-24 Rice should be replaced by oil seed & pulses. Utkal Urbasi, Utkal Kumari, Utkal Raja U. Madhuri, Blue star, U. Anushree, U. Tarini Utkal Manika Utkal Gourav Bamara local, Kuchinda local, U. Ava, U. Rashmi <i>Intercropping of arhar + groundnut (2 :5)</i> Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4), Arhar+Rice (2:5) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika		
		Sole crops under rainfed medium lands : Rice	(Hira, Khandagiri, Pathara, Bandana)	<ul style="list-style-type: none"> • Close the drainage hole and check the 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				seepage loss in direct sown medium land rice regularly. • Withhold N fertilizer (top dressing) application up to receipt of rainfall.	
		Sole crops under rainfed medium low lands : Rice	Lalat, Bhoi, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	-Do-	Tractor, power tiller, rotavator under RKVY
		Rice-onion	Rice variety: Medium duration (120d) Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh, Kharavel and Surendra		
			Medium late (140-145 d), Pooja, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/Water melon	Greengram variety: Dhauli, Kamdev, Durga, Samrat, PDM-54 Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)	Low rainfall lateritic soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Rice Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi Dhauli, Jyoti, Sujata, Durga, PDM-11& 54 Prasad, T-9 Rice should be replaced by oil seed & pulses. Utkal Urbasi, Utkal Kumari, Utkal Raja U. Madhuri, Blue star, U. Anushree, U.Tarini Utkal Manika Utkal Gourav Bamara local, Kuchinda local, U. Ava, U. Rashmi	<ul style="list-style-type: none"> • Provide life saving irrigation • Remove the pest and disease infected plants from the field. • Harvesting of vegetables at physiological maturity stage. 	
		Sole crops under rainfed medium lands : Rice	Rice should be replaced by oil seed & pulses.	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				<ul style="list-style-type: none"> Foliar application of 2% urea at pre-flowering and flowering stage of green gram. 	
		Sole crops under rainfed medium low lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	Short duration variety should be transplanted.	Linkage with RKVY for Tractor, power tiller, rotavator
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/ Water melon	Greengram variety : Dhauri, Kamdev, Durga Black gram: Sarala, Prasad, Ujala Water melon: Sugarbaby, Andaman, Black magic		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli, Himsagar, Dasher, Sindhu Custard apple : Local improved		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset) Delay by 8 weeks August 3 rd week	Medium rainfall red & black soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Rice <p>Kharif vegetables</p> <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Usha, Vinayak, Uma, Nirmala and Prachi Dhauri, Jyoti, Sujata, Durga, PDM-11 & 54 Prasad, T-9 Rice should be replaced by oil seed & pulses. Utkal Urbasi, Utkal Kumari, Utkal Raja U.Madhuri, Blue star, U.Anushree, U.Tarini Utkal Manika Utkal Gourav Bamara local, Kuchinda local, U. Ava, U. Rashmi	<ul style="list-style-type: none"> • Provide life saving irrigation • Remove the pest and disease infected plants from the field. • Harvesting of vegetables at physiological maturity stage. 	
		Sole crops under rainfed medium lands : Rice	Rice should be replaced by oil seed & pulses.	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)				urea at pre-flowering and flowering stage of green gram.	
		Sole crops under rainfed medium low lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	Short duration variety should be transplanted.	Tractor, power tiller, rotavator under RKVY
		Fallow-Greengram/Blackgram/ Water melon	Greengram variety : Dhauli, Kamdev, Durga Black gram: Sarala, Prasad, Ujala Water melon: Sugarbaby, Andaman, Black magic		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli, Himsagar, Dasher, Sindhu Custard apple : Local improved		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 8 weeks August 3rd week	High rainfall lateritic Soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Arhar ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	NO CHANGE(Same as above)	<ul style="list-style-type: none"> • Provide life saving irrigation • Remove the pest and disease infected plants from the field. • Harvesting of vegetables at physiological maturity stage. 	
		Sole crops under rainfed medium lands : Rice	Rice should be replaced by oil seed & pulses.	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% urea at pre-flowering and flowering stage of green gram. 	
		Sole crops under rainfed medium low lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	Short duration variety should be transplanted.	Tractor, power tiller, rotavator under RKVY
		Fallow-	Greengram variety : Dhauli,		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)		Greengram/Blackgram/ Water melon	Kamdev, Durga Black gram: Sarala, Prasad, Ujala Water melon: Sugarbaby, Andaman, Black magic		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : Amrapali, Baiganpalli, Himsagar, Dasherri, Sindhu Custard apple : Local improved		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 8 weeks August 3 rd week	Medium rainfall black & brown forest soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Arhar ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger 	NO CHANGE(Same as above)	<ul style="list-style-type: none"> • Provide life saving irrigation • Remove the pest and disease infected plants from the field. • Harvesting of vegetables at physiological maturity stage. 	

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures			
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation	
Early season drought (delayed onset)		• Chilli				
		Sole crops under rainfed medium lands : Rice	Rice should be replaced by oil seed & pulses.	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% urea at pre-flowering and flowering stage of green gram. 		
		Sole crops under rainfed medium low lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	Short duration variety should be transplanted.	Tractor, power tiller, rotavator under RKVY	
		Onion	Onion variety: Nasik Red, N-53, Bhima Super.			
		Fallow-Greengram/Blackgram/Water melon	Greengram variety : Dhauli, Kamdev, Durga Black gram: Sarala, Prasad, Ujala Water melon: Sugarbaby, Andaman, Black magic			
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49 Mango : Amrapali, Baiganpalli, Himsagar, Dasher, Sindhu Custard apple : Local improved			
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)			

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset) Delay by 8 weeks August 3 rd week	High rainfall black & brown forest soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Arhar ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Kulthi ➤ Mustard ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	NO CHANGE(Same as above)	<ul style="list-style-type: none"> • Provide life saving irrigation • Remove the pest and disease infected plants from the field. • Harvesting of vegetables at physiological maturity stage. 	
		Sole crops under rainfed medium lands : Rice	Rice should be replaced by oil seed & pulses.	<ul style="list-style-type: none"> • Complete hoeing and weeding of non-paddy crops to provide dust mulch. • Post emergence spray of Quizalofop 5%EC @ 0.05 kg ai / ha in 500lt of water to control weeds in groundnut. • Spraying of 2% KCl + 0.1 ppm Boron to black gram. • Foliar application of 2% urea at pre-flowering and flowering stage of green gram. 	
		Sole crops under rainfed medium low lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	Short duration variety should be transplanted.	Tractor, power tiller, rotavator under RKVY

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)		Onion	Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/Water melon	Greengram variety : Dhauli, Kamdev, Durga Black gram: Sarala, Prasad, Ujala Water melon: Sugarbaby, Andaman, Black magic		
		Plantation crop for rolling topography	Guava Mango, Custard apple: No change		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Low rainfall lateritic soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice 	Varietal substitutions of drought tolerant varieties of the sole crops Thinning and gap filling of the existing crop if mortality is less than 50%. Resow the crop if the mortality is more than 50%. Cultivate vegetables like cow pea and tomato.	<ul style="list-style-type: none"> • Complete hoeing weeding and earthing up at 20 DAS for moisture conservation for groundnut and vegetable crops Application of paper mill sludge (PMS) @ 5 q/ha, potash and boron and FYM during final land 	<ul style="list-style-type: none"> • Linkage with NREGS(farmponds) , IWMP, Diesel pump sets and KB pumps in tankfed areas under RKVY and NFSM. • Small nursery development under NHM.

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)		<ul style="list-style-type: none"> ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Utkal Kumari, Utkal Raja Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava, Utkal rashmi</p> <p>Intercropping of arhar + groundnut (2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika Yam : (Orissa Elite, Pusa Hemlata) Grow sweet potato var. Gouri, Shankar in ridges and allow the furrow to conserve rainwater</p>	preparation for obtaining higher yield of sweet potato.	
		Sole crops under rainfed medium lands : Rice	<ul style="list-style-type: none"> •Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra • If rice population is less than 50% resow the crop. •Select early maturing varieties (90d). •Sprouted seeds may be direct seeded 		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)			<p>in lines or fresh seedlings may be raised for transplanting</p> <ul style="list-style-type: none"> •If rice population is more than 50 % carryout weeding and adjust the plant population by redistribution of hills (Khelua) , 		OSSC.
		Sole crops under rainfed medium low lands : Rice	<ul style="list-style-type: none"> •Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri •If rice population is less than 50% gap filling may be dawn. 	<ul style="list-style-type: none"> •If rice population is more than 50 % carryout weeding and adjust the plant population by redistribution of hills (Khelua) 	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri		
			Onion variety : Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/ Water melon	<p>Greengram variety : (Dhauri, Kamdev, Durga)</p> <p>Black gram: Sarala, Prasad, Ujala</p> <p>Water melon: (Sugarbaby, Andaman, Black magic)</p>		
Plantation crop for rolling topography	<p>Guava: A. Safeda, Lucknow-49</p> <p>Mango : (Amrapali, Sindhu)</p> <p>Custard apple (Local improved)</p>				

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Medium rainfall red & black soil	<p>Sole crops under unbunded rainfed uplands</p> <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice <p>➤ Kharif vegetables</p> <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Varietal substitutions of drought tolerant varieties of the sole crops</p> <p>Thinning and gap filling of the existing crop if mortality is less than 50%.</p> <p>Resow the crop if the mortality is more than 50%.</p> <p>Utkal Kumari, Utkal Raja Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava, Utkal rashmi</p> <p>Intercropping of arhar +groundnut (2:5)</p>	<ul style="list-style-type: none"> • Complete hoeing weeding and earthing up at 20 DAS for moisture conservation for groundnut and vegetable crops • Grow sweet potato var. Gouri, Shankar in ridges and allow the furrow to conserve rainwater, application of paper mill sludge (PMS) @ 5 q/ha, potash and boron and FYM during final land preparation for obtaining higher yield of sweet potato. 	<ul style="list-style-type: none"> • Farm pond under NREGS, IWMP, Diesel pump sets and KB pumps in tankfed areas under RKVY and NFSM. • Small nursery development under NHM.

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)			Arhar var. ICPL 87, UPAS-120, TURN-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika Yam : (Orissa Elite, Pusa Hemlata) <ul style="list-style-type: none"> • Thinning and gap filling of the existing crop if mortality is less than 50%. • Resow the crop if the mortality is more than 50%. • Cultivate vegetables like cow pea and tomato. 		
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	<ul style="list-style-type: none"> • If rice population is less than 50% resow the crop. • Select early maturing varieties (90d). • Sprouted seeds may be direct seeded in lines or fresh seedlings may be raised for transplanting • If rice population is more than 50 % carryout weeding and adjust the plant population by redistribution of hills (Khelua) , plugging of drainage hole for checking seepage loss and to 	<ul style="list-style-type: none"> • Supply of seed drills and intercultural implements through RKVY. • Good quality seeds through NFSM and OSSC.

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)				provide life saving irrigation as and when necessary.	
		Sole crops under rainfed medium low lands : Rice	Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> •If rice population is less than 50% gap filling may be dawn. •Fresh seedlings may be transplanted •If rice population is more than 50 % carryout weeding and adjust the plant population by redistribution of hills (Khelua) 	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri		
			Onion var. Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/ Water melon	Greengram variety : (Dhauri, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : (Amrapali, Sindhu) Custard apple (Local		

Condition			Suggested Contingency measures		
Early season drought (Normal onset)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measues	Remarks on Implementation
			improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Early season drought (Normal onset)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measues	Remarks on Implementation
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	High rainfall lateritic Soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops Thinning and gap filling of the existing crop if mortality is less than 50%. Resow the crop if the mortality is more than 50%. Utkal Kumari, Utkal Raja Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav	<ul style="list-style-type: none"> • Thinning and gap filling of the existing crop if mortality is less than 50%. • Resow the crop if the mortality is more than 50%. • Cultivate vegetables like cow pea and tomato. • Complete hoeing weeding and earthling up at 20 DAS for moisture conservation for groundnut and vegetable crops • Grow sweet potato var. Gouri, Shankar in ridges and allow the furrow to conserve rainwater, application of paper mill sludge (PMS) @ 5 q/ha, potash and boron and FYM during final land preparation for obtaining higher yield of sweet potato. 	<ul style="list-style-type: none"> • Farm pond under NREGS, IWMP, Diesel pump sets and KB pumps in tankfed areas under RKVY and NFSM. • Small nursery development under NHM.

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)			<p>Kuchinda local, Utkal ava, Utkal rashmi</p> <p>Intercropping of arhar + groundnut (2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika Yam : (Orissa Elite, Pusa Hemlata)</p>		
		Sole crops under rainfed medium lands : Rice	<ul style="list-style-type: none"> •Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra • If rice population is less than 50% resow the crop. •Select early maturing varieties (90d). 	<ul style="list-style-type: none"> •Sprouted seeds may be direct seeded in lines or fresh seedlings may be raised for transplanting •If rice population is more than 50 % carryout weeding and adjust the plant population by redistribution of hills (Khelua), plugging of drainage hole for checking seepage loss and to provide life saving irrigation as and when necessary. 	<ul style="list-style-type: none"> • Supply of seed drills and intercultural implements through RKVY. • Good quality seeds through NFSM and OSSC.
		Sole crops under rainfed medium low lands : Rice	Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> •If rice population is less than 50% gap filling may be dawn. •Fresh seedlings may be transplanted •If rice population is more than 50 % carryout weeding and 	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)				adjust the plant population by redistribution of hills (Khelua)	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety : Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/ Water melon	Greengram variety : (Dhali, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : (Amrapali, Sindhu) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

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	Low rainfall lateritic soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Varietal substitutions of drought tolerant varieties of the sole crops</p> <p>Thinning and gap filling of the existing crop if mortality is less than 50%.</p> <p>Resow the crop if the mortality is more than 50%.</p>	<ul style="list-style-type: none"> • Inter-cultivation (Dust mulching) • Conservation furrow • Organic mulching with previous crop residues • Scooping • Follow ridge and furrow method of planting for groundnut and vegetable crops. • Follow strip cropping in rolling topography for moisture conservation 	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	<ul style="list-style-type: none"> • Weed out the field • Go for gap filling using seedling of same age. • Strengthen the field bunds and close the holes • Provide life saving irrigation 	
		Sole crops under rainfed medium low lands : Rice	Swarna, Pratikshya, Ranidhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> • Seedling of 45 days old can be transplanted or gap filling. • Do not practice beushaning • Weed out the field • Follow plant protection measures • Provide protective irrigation through harvested rain water 	

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
				<ul style="list-style-type: none"> • Withhold N application • Apply Pottasic fertilizer • Strengthen field bunds. 	
		Cropping system 1: Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Cropping system 2: Fallow-greengram/ blackgram/ water melon	Greengram variety: (Dhauri, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugar baby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : (Amrapali, Sindhu) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

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 measues	Remarks on Implementation
At vegetative stage	Medium rainfall red & black soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice <ul style="list-style-type: none"> ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops Thinning and gap filling of the existing crop if mortality is less than 50%. Resow the crop if the mortality is more than 50%. Utkal Kumari, Utkal Raja Blue star, Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava Intercropping of arhar + groundnut (2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika Yam : (Orissa Elite, Pusa Hemlata)	<ul style="list-style-type: none"> • Inter-cultivation (Dust mulching) • Conservation furrow • Organic mulching with previous crop residues • Scooping • Follow ridge and furrow method of planting for groundnut and vegetable crops. • Follow strip cropping in rolling topography for moisture conservation 	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	<ul style="list-style-type: none"> • Weed out the field • Go for gap filling using seedling of same age. • Strengthen the field bunds and close the holes 	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)				<ul style="list-style-type: none"> • Provide life saving irrigation 	
		Sole crops under rainfed medium low lands : Rice	Swarna, Pratikshya, Ranidhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> • Seedling of 45 days old can be transplanted or gap filling. • Do not practice beushaning • Weed out the field • Follow plant protection measures • Provide protective irrigation through harvested rain water • Withhold N application • Apply Pottasic fertilizer • Strengthen field bunds. 	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
Fallow-greengram/ blackgram/ water melon	Greengram variety : (Dhaulti, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala)				

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
			Water melon: (Sugar baby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : (Amrapali, Sindhu) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

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	High rainfall black & brown forest soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger 	Varietal substitutions of drought tolerant varieties of the sole crops Thinning and gap filling of the existing crop if mortality is less than 50%. Resow the crop if the mortality is more than 50%.	<ul style="list-style-type: none"> • Inter-cultivation (Dust mulching) • Conservation furrow • Organic mulching with previous crop residues • Scooping • Follow ridge and furrow method of planting for groundnut and vegetable crops. • Follow strip cropping in rolling topography for 	

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
		<ul style="list-style-type: none"> • Chili 		moisture conservation	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	<ul style="list-style-type: none"> • Weed out the field • Go for gap filling using seedling of same age. • Strengthen the field bunds and close the holes • Provide life saving irrigation 	
		Sole crops under rainfed medium low lands : Rice	Swarna, Pratikshya, Ranidhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> • Seedling of 45 days old can be transplanted or gap filling. • Do not practice beushaning • Weed out the field • Follow plant protection measures • Provide protective irrigation through harvested rain water • Withhold N application • Apply Pottasic fertilizer • Strengthen field bunds. 	
		Cropping system 1: Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		

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
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Cropping system 2: Fallow-greengram/ blackgram/ water melon	Greengram var. Dhauli, Kamdev, Durga Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugar baby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : (Amrapali, Sindhu) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At flowering/ fruiting stage	Low rainfall lateritic soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Uma, Nirmala and Prachi Sujata, Durga, PDM-11& 54 Pant U-19 &30,Ujala,Sarala Smruti,Devi, TMV-2,TAG-24 Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura	<ul style="list-style-type: none"> • Spray 2% KCl + 0.1 ppm boron to non paddy crops to overcome drought. • Foliar application of 0.1% DAP +0.5% MOP at pre-flowering and flowering stage to pulses and oilseeds is helpful. • Remove and destroy pest and 	

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
		<ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Utkal Kumari, Utkal Raja Blue star, Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava Intercropping of arhar + groundnut (2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika Yam : (Orissa Elite, Pusa Hemlata)	disease affected plants <ul style="list-style-type: none"> • Provide irrigation at critical stages at flowering and grain filling stage. • Crops like cow pea, green gram, black gram, maize and vegetables may be harvested. • Under situation of complete failure of Kharif crop, dismantle it and sow pre-rabi crops minor pulses like horse gram (var. Urmi), Niger (Deomali) • Need based plant protection measures to be taken. 	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	<ul style="list-style-type: none"> • Advised to spray Tricyclazole (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period. • To control stem borer and Gandhi bug, spray methyl demeton/dimethioate • Provide life saving irrigation. 	
		Sole crops under rainfed medium low lands : Rice	Pooja, Moti, Vijeta, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> • For late transplanted rice 2 spraying at 10 days interval with Validamycin 	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell)				(Sheathmar/ Rhizocin) 0.3% to control sheath blight. • Provide life saving irrigation and plugging of drainage holes.	
		Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/ Water melon	Greengram variety : (Dhali, Kamdev, Durga) Black gram: Sarala, Prasad, Ujala Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Jack fruit: Improved local Mango : Amrapali, Sindhu Custard apple: Local improved		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At flowering/ fruiting stage	Medium rainfall red & black soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice <ul style="list-style-type: none"> ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Uma, Nirmala and Prachi Sujata, Durga, PDM-11& 54 Pant U-19 &30,Ujala,Sarala Smruti,Devi, TMV-2,TAG-24 Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura Utkal Kumari, Utkal Raja Blue star, Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava Intercropping of arhar + groundnut (2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot & Cow pea Var; Utkal Manika Yam : (Orissa Elite, Pusa Hemlata)	<ul style="list-style-type: none"> • Spray 2% KCl + 0.1 ppm boron to non paddy crops to overcome drought. • Foliar application of 0.1% DAP+0.5% MOP at pre-flowering and flowering stage to pulses and oilseeds is helpful. • Remove and destroy pest and disease affected plants • Provide irrigation at critical stages at flowering and grain filling stage. • Crops like cow pea, green gram, black gram, maize and vegetables may be harvested. • Under situation of complete failure of Kharif crop, dismantle it and sow pre-rabi crops minor pulses like horse gram (var. Urmi), Niger (Deomali) • Need based plant protection measures to be taken. 	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	<ul style="list-style-type: none"> • Advised to spray Tricyclazole (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast 	

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
				and brown spot diseases in rice during this period. <ul style="list-style-type: none"> To control stem borer and Gandhi bug, spray methyl demeton/dimethioate Provide life saving irrigation. 	
		Sole crops under rainfed medium low lands : Rice	Pooja, Moti, Vijeta, Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> For late transplanted rice 2 spraying at 10 days interval with Validamycin (Sheathmar/ Rhizocin) 0.3% to control sheath blight. Provide life saving irrigation and plugging of drainage holes. 	
		Cropping system 1: Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		
	Medium late (140-145 d) Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri				
	Onion variety : Nasik Red, N-53, Bhima Super.				
		Cropping system 2: Fallow- greengram/blackgram/ water melon	Greengram variety : (Dhali, Kamdev, Durga) Black gram: Sarala, Prasad, Ujala Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Jack fruit: Improved local		

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
			Mango : Amrapali, Sindhu Custard apple: Local improved		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

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	High rainfall lateritic Soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Uma, Nirmala and Prachi Sujata, Durga, PDM-11& 54 Pant U-19 &30,Ujala,Sarala Smruti,Devi, TMV-2,TAG-24 Hira, JHU, Pathara, Bandana, Khandagiri, Arnapura Utkal Kumari, Utkal Raja Blue star, Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava Intercropping of arhar +	<ul style="list-style-type: none"> • Spray 2% KCl + 0.1 ppm boron to non paddy crops to overcome drought. • Foliar application of 0.1% DAP+0.5% MOP at pre-flowering and flowering stage to pulses and oilseeds is helpful. • Remove and destroy pest and disease affected plants • Provide irrigation at critical stages at flowering and grain filling stage. • Crops like cow pea, green gram, black gram, maize and vegetables may be harvested. • Under situation of complete 	

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
			groundnut (2 : 5) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot & U.Manika Yam : (Orissa Elite, Pusa Hemlata)	failure of Kharif crop, dismantle it and sow pre-rabi crops minor pulses like horse gram (var. Urmi), Niger (Deomali) • Need based plant protection measures to be taken.	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	<ul style="list-style-type: none"> • Advised to spray Tricyclazole (Beam/Team) 0.06-0.1% at 10-12 days interval to control blast and brown spot diseases in rice during this period. • To control stem borer and Gandhi bug, spray methyl demeton/dimethioate • Provide life saving irrigation. 	
		Sole crops under rainfed medium low lands : Rice	Pooja, Moti, Vijeta, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri	<ul style="list-style-type: none"> • For late transplanted rice 2 spraying at 10 days interval with Validamycin (Sheathmar/ Rhizocin) 0.3% to control sheath blight. • Provide life saving irrigation and plugging of drainage holes. 	
		Cropping system 1: Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell)			Medium late (140-145 d) Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety: Nasik Red, N-53, Bhima Super.		
		Cropping system 2: Fallow- greengram/blackgram/ water melon	Greengram variety : (Dhauri, Kamdev, Durga) Black gram: Sarala, Prasad, Ujala Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Jack fruit: Improved local Mango : Amrapali, Sindhu Custard apple: Local improved		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)	Low rainfall lateritic soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Uma, Nirmala and Prachi Sujata, Durga, PDM-11& 54	Utilization of residual moisture for early sowing of pre-rabi crops like Cow pea (SEB – 2, Utkal Manik), horse gram (Urmi), green gram (Durga),	

		<ul style="list-style-type: none"> ➤ Black gram ➤ Groundnut ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Pant U-19 &30,Ujala,Sarala</p> <p>Smruti,Devi, TMV-2,TAG-24</p> <p>Hira, JHU, Pathara, Bandana, Khandagiri,</p> <p>Utkal Kumari, Utkal Raja Blue star, Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava Intercropping of arhar + groundnut (2 : 6) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot (HQPM-1) Yam : (Orissa Elite, Pusa Hemlata)</p>	<p>black gram (Ujala, Prasad), Niger (Deomali,ONS-15) tomato Utkal Raja, Utkal Kumari, Utkal Urbasi. Cabbage (Pride of India, Early express, Golden Acre, Konark, Sujata, Vijay, Cauliflower (Snow ball, Improved Japanese, Himani), Okra (Utkal Gourav, Arka Anamika), and leafy vegetables to be sown to conserve soil moisture. And provide life saving irrigation as and when necessary</p>	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra	Provide life saving irrigation from harvested rain water at reproductive stage and conserve soil moisture Harvest the crop at physiological maturity stage.	
		Sole crops under rainfed medium low lands : Rice	Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri	Provide life saving irrigation, and monitoring of pest surveillance, <i>paira</i> cropping of blackgram and greengram	
		Cropping system 1: Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra		

			Medium late (140-145 d) Pooja, Moti, Vijeta, Swarna, Pratikshya,Rani dhan, Sidhanta and Mahsuri		
			Onion variety : Nasik Red, N-53, Bhima Super.		
		Cropping system 2: Fallow- greengram/blackgram/ water melon	Greengram variety : (Dhuli, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow 49 Mango : (Amrapali, Sindhu) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)	Medium rainfall red & black soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Uma, Nirmala and Prachi Sujata, Durga, PDM-11& 54 Pant U-19 &30,Ujala,Sarala Smruti,Devi, TMV-2,TAG-24	Utilization of residual moisture for early sowing of pre-rabi crops like Cow pea (SEB – 2, Utkal Manik), horse gram (Urmi), green gram (Durga), black gram (Ujala, Prasad), Niger (Deomali,ONS-15) tomato Utkal Raja, Utkal Kumari, Utkal Urbasi. Cabbage (Pride	

		<ul style="list-style-type: none"> ➤ Rice ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Hira, JHU, Pathara, Bandana, Khandagiri, Arnapurna</p> <p>Utkal Kumari, Utkal Raja Blue star, Utkal Anushree, Utkal Tarini Utkal Manika Utkal Gourav Kuchinda local, Utkal ava Intercropping of arhar + groundnut (2 : 6) Arhar var. ICPL 87, UPAS 120, TUR N-2 Arhar + Sesamum (2:4) Maize + Cow pea (2:2) Maize var. Navjot (HQPM-1) Yam : (Orissa Elite, Pusa Hemlata)</p>	<p>of India, Early express, Golden Acre, Konark, Sujata, Vijay, Cauliflower (Snow ball, Improved Japanese, Himani), Okra (Utkal Gourav, Arka Anamika), and leafy vegetables to be sown to conserve soil moisture. And provide life saving irrigation as and when necessary</p>	
		Sole crops under rainfed medium lands : Rice	Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra	Provide life saving irrigation from harvested rain water at reproductive stage and conserve soil moisture Harvest the crop at physiological maturity stage.	
		Sole crops under rainfed medium low lands : Rice	Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri	Provide life saving irrigation, and monitoring of pest surveillance, <i>paira</i> cropping of blackgram and greengram	
		Cropping system 1: Rice-onion	Rice variety: Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra Medium late (140-145 d)		

			Pooja, Moti, Vijeta, Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri		
			Onion variety : Nasik Red, N-53, Bhima Super.		
		Cropping system 2: Fallow- greengram/blackgram/ water melon	Greengram variety : (Dhauhi, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : (Amrapali, Sindhu) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)	High rainfall lateritic Soil	Sole crops under unbunded rainfed uplands <ul style="list-style-type: none"> ➤ Sesamum ➤ Green gram ➤ Black gram ➤ Groundnut ➤ Rice 	Varietal substitutions of drought tolerant varieties of the sole crops i.e Uma, Nirmala and Prachi Sujata, Durga, PDM-11& 54 Pant U-19 &30,Ujala,Sarala Smruti,Devi, TMV-2,TAG-24 Hira, JHU, Pathara, Bandana,	Utilization of residual moisture for early sowing of pre-rabi crops like Cow pea (SEB – 2, Utkal Manik), horse gram (Urmi), green gram (Durga), black gram (Ujala, Prasad), Niger (Deomali,ONS-15) tomato Utkal Raja, Utkal Kumari, Utkal Urbasi. Cabbage (Pride of India, Early express,	

		<ul style="list-style-type: none"> ➤ Kharif vegetables <ul style="list-style-type: none"> • Tomato • Brinjal • Cow pea • Lady's finger • Chilli 	<p>Khandagiri, Arnapura</p> <p>Utkal Kumari, Utkal Raja</p> <p>Blue star, Utkal Anushree, Utkal Tarini</p> <p>Utkal Manika</p> <p>Utkal Gourav</p> <p>Kuchinda local, Utkal ava</p> <p>Intercropping of arhar + groundnut (2 : 6)</p> <p>Arhar var. ICPL 87, UPAS 120, TUR N-2</p> <p>Arhar + Sesamum (2:4)</p> <p>Maize + Cow pea (2:2)</p> <p>Maize var. Navjot (HQPM-1)</p> <p>Yam : (Orissa Elite, Pusa Hemlata)</p>	<p>Golden Acre, Konark, Sujata, Vijay, Cauliflower (Snow ball, Improved Japanese, Himani), Okra (Utkal Gourav, Arka Anamika), and leafy vegetables to be sown to conserve soil moisture. And provide life saving irrigation as and when necessary</p>	
		Sole crops under rainfed medium lands : Rice	<p>Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Jogesh and Surendra</p>	<p>Provide life saving irrigation from harvested rain water at reproductive stage and conserve soil moisture</p> <p>Harvest the crop at physiological maturity stage.</p>	
		Sole crops under rainfed medium low lands : Rice	<p>Swarna, Pratikshya, Rani dhan, Sidhanta and Mahsuri</p>	<p>Provide life saving irrigation, and monitoring of pest surveillance, <i>paira</i> cropping of blackgram and greengram</p>	
		Cropping system 1: Rice-onion	<p>Rice variety:</p> <p>Medium duration (120d) Konark, Lalat, Manaswini, Naveen, Vijeta, MTU 1010, Konark, Jogesh and Surendra</p>		
			<p>Medium late (140-145 d)</p> <p>Pooja, Moti, Vijeta, Swarna,</p>		

			Pratikshya,Rani dhan, Sidhanta and Mahsuri		
			Onion variety : Nasik Red, N-53, Bhima Super.		
		Fallow-Greengram/Blackgram/Water melon	Greengram variety : (Dhaulti, Kamdev, Durga) Black gram: (Sarala, Prasad, Ujala) Water melon: (Sugarbaby, Andaman, Black magic)		
		Plantation crop for rolling topography	Guava: A. Safeda, Lucknow49 Mango : (Amrapali, Sindhu) Custard apple (Local improved)		
		Composite pisciculture in farm ponds	Indian major carps (Rohu, Mirgal, Catla plus exotic carps (Silver/grasscarp)		

2.1.2 Drought - Irrigated situation: Not experienced

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Low rainfall lateritic soil				Assured irrigation through tanks
	Medium rainfall red & black soil				
	High rainfall lateritic Soil				
	Medium rainfall black & brown forest soil				
	High rainfall black & brown forest soil				

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Limited release of water in canals due to low rainfall	Low rainfall lateritic soil	Cropping system 1:			
	Medium rainfall red & black soil				
	High rainfall lateritic Soil				
	Medium rainfall black & brown forest soil				
	High rainfall black & brown forest soil				

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment	Low rainfall lateritic soil	Cropping system 1:			
	Medium rainfall red & black soil				
	High rainfall lateritic Soil				
	Medium rainfall black & brown forest soil				
	High rainfall black & brown forest soil				

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Lack of inflows into tanks due to insufficient	Low rainfall lateritic soil	Cropping system 1:			
	Medium rainfall red & black soil				

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
/delayed onset of monsoon	High rainfall lateritic Soil				
	Medium rainfall black & brown forest soil				
	High rainfall black & brown forest soil				

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	Low rainfall lateritic soil	-	-	-	-
	Medium rainfall red & black soil	-	-	-	-
	High rainfall lateritic Soil	-	-	-	-
	Medium rainfall black & brown forest soil	-	-	-	-
	High rainfall black & brown forest soil	-	-	-	-

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

Condition	Suggested contingency measure			
Continuous high rainfall in a short span leading to water logging	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Sesamum	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management.	Drainage, Protection against pest & diseases.	Drainage, Shifting of produce to godown or safer place, protecting from stored grain pest & diseases
Green gram	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease (powderymildew with 0.2% sulphur) management.	Drainage, Protection against pest (pod borer with 0.2% triazophos)	Drainage, Shifting of produce to godown or safer place, protecting from stored grain pest & diseases
Black gram	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management.	Drainage, Protection against pest & diseases.	Drainage, Shifting of produce to godown or safer place, protecting from stored grain pest & diseases
Groundnut	Excess water drainage, Termite & Tikka disease management , need based based intercultural operation	Drainage of excess water, Pest & disease management(Manage leaf miner in Groundnut by spraying Monocrotophos or Triazophos 40 EC @ 1 litre/ha at fortnightly intervals)	Drainage of excess water, Pest & disease management(Manage leaf miner in Groundnut by spraying Monocrotophos or Triazophos 40 EC @ 1 litre/ha at fortnightly intervals)	Drainage, Shifting of produce to godown or safer place, protecting from stored grain pest & diseases,
Rice	Drainage of excess water, management of Blast(0.2% Edifenphos), leaf blight(0.01% Streptocycline) & Stem borer(0.2% Trizaphos)	Drainage of excess water, management of Blast(0.2% Edifenphos), leaf blight(0.01% Streptocycline) & stem borer(0.2% Trizaphos)	Drainage excess water, Protection against pest like , Green leaf hopper & BPH (Imidacloprid 0.025%)& diseases like Blast, preventing crop from lodging, harvesting in physiological maturity stage.	Covering of harvested bundles by tarpaulin, Shifting of produce to godown or safer place, protecting from stray cattle
Horticulture				
Tomato	Drainage of Excess water, gap filling,	Drainage of excess water, Pest & disease management,	Drainage, Protection against pest & diseases,	Drainage, Shifting of produce to safer place,

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging	disease & pest management	staking of plant	harvesting	grading & packing
Brinjal	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management,	Drainage, Protection against pest & diseases, preventing crop lodging, harvesting fruit	Drainage, Shifting of produce to godown or safer place, grading ,packing,& marketing
Cow pea	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management,	Drain out excess water, harvest at green stage of veg. purpose	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
Lady's finger	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management,	Drain out excess water, harvest at tender stage	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
Chilli	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management,	Drain out excess water, harvest at green stage/ maturity stage	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
Heavy rainfall with high speed winds in a short span²				
Paddy	Drainage of excess water, management of Blast(0.2% Edifenphos), leaf blight(0.01% Streptocycline) & Stem borer(0.2% Trizaphos)	Drainage of excess water, management of Blast(0.2% Edifenphos), leaf blight(0.01% Streptocycline) & stem borer(0.2% Trizaphos)	Drainage of excess water, Protection against pests like , Green leaf hopper & BPH (Imidacloprid 0.025%)& diseases like, Blast, preventing crop from lodging, harvesting in physiological maturity	Drainage, Shifting of produce to godown or safer place, protecting from stored grain pest & diseases

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging			stage.	
Greengram	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease (powderymildew with 0.2% sulphur) management.	Drainage, Protection against pest (pod borer with 0.2% triazaphos)	-do-
Groundnut	Excess water drainage, disease & pest management, weeding, earthing-up	Drainage of excess water, Pest & disease management (Manage leaf miner in Groundnut by spraying Monocrotophos or Triazophos 40 EC @ 1 litre/ha at fortnightly intervals)	Drainage of excess water, Pest & disease management (Manage leaf miner in Groundnut by spraying Monocrotophos or Triazophos 40 EC @ 1 litre/ha at fortnightly intervals)	Drainage, Shifting of produce to godown or safer place, protecting from grain pest & diseases
Sesame	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management,	Drainage, Protection against pest & diseases, preventing crop lodging, harvesting	-do-
Blackgram	-do-	-do-	Drainage, Protection against pest & diseases, harvesting	-do-
Horticulture				
Tomato	Drainage of Excess water, gap filling, disease & pest management	Drainage of excess water, Pest & disease management, staking of plant	Drainage, Protection against pest & diseases, harvesting	Drainage, Shifting of produce to safer place, grading & packing
Brinjal	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management,	Drainage, Protection against pest & diseases, preventing crop lodging, harvesting fruit	Drainage, Shifting of produce to godown or safer place, grading ,packing,& marketing

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging				
Ginger	Excess water drainage, disease & pest management, earthing-up, making channel, weeding, re-mulching	Drainage of excess water, rhizome rot disease management(0.2% Ridomyl-MZ), weeding, re-mulching	Drainage of water immediately, pesticides drenching & spraying for rot management	Drainage, Shifting of produce to godown or safer place, cleaning, seed treating & drying
Mango	Excess water drainage, disease & pest management	Drainage of excess water, Pest & disease management,	Drainage, Protection against pest & diseases, harvesting of fruits	Drainage, Shifting of produce to godown or safer place, grading, packing & marketing
Banana	-do-	Drainage of excess water, Pest & disease management, cutting of trashes	Drainage, Protection against pest & diseases, preventing crop lodging	Drainage, Shifting of produce to godown or safer place
Outbreak of pests and diseases due to unseasonal rains				
Paddy	Management of Blast(0.2% Edifenphos), leaf blight(0.01% Streptocycline) & stem borer(0.2% Trizaphos) Swarming caterpillar - Spray the crop with chloropyriphos or triaphos/ DDVP (Nuvan) @ 2 ml /litre of water or dusting with chloropyriphos dust @ 25 kg/ha and prevent migration from one field to another	Management of Blast(0.2% Edifenphos), leaf blight(0.01% Streptocycline) & stem borer(0.2% Trizaphos)	Management of Green leaf hopper & BPH using Imidacloprid 0.025%	Shifting of produce to godown or safer place, protecting from stored grain pest & diseases .Angoumois grain moth, Rice weevil(Fumigation with EDB,celphos tab@3g/q)

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging				
Greengram	Management of Aphid (Dimethoate 0.2%) & leaf eating catripillar (Endosulphan 0.2%)	Management of Aphid (Dimethoate 0.2%) & leaf eating catripillar (Endosulphan 0.2%) Powdery mildew with 0.2% sulphur management.	Protection against pod borer with 0.2% triazophos	Pulse beetle (fumigation with EDB, celphos tab@3g/q)
Groundnut	Hairy caterpillar (Endosulphan 0.2%, Tikka disease (mancozeb 0.3%)weeding, intercultural operation	Tikka disease (mancozeb 0.3%) Manage leaf miner in Groundnut by spraying Monocrotophos or Triazophos 40 EC @ 1 litre/ha at fortnightly intervals	Manage leaf miner in Groundnut by spraying Monocrotophos or Triazophos 40 EC @ 1 litre/ha at fortnightly intervals	Drying of the product ,management of rice moth & red flour beetle(celphos tab@3g/q)
Sesame	Leaf Webber (Fenvelerate 0.1%)	Leaf Webber (Fenvelerate 0.1%)	Capsule borer (Carbaryl @ 2 kg /ha)	Capsule borer(celphos tab@3g/q)
Blackgram	Management of Aphid (Dimethoate 0.2%) & leaf eating catripillar (Endosulphan 0.2%)	Management of Aphid (Dimethoate 0.2%) & leaf eating catripillar (Endosulphan 0.2%)	Protection against pod borer with 0.2% triazophos	Pulse beetle (fumigation with EDB, celphos tab@3g/q)
Horticulture				
Tomato	Wilting (drenching with carbondazim 0.1% + Plantomycian 0.1%) Surpaintain leaf minor (Endosulphan 0.2 %)	Wilting (drenching with carbondazim 0.1% + Plantomycian 0.1%) Surpaintain leaf minor (Endosulphan 0.2 %)	Fruit borer (triazophos 0.2 %) Fruit rot (mancozeb 0.2%)	Shifting of produce to safer place, grading & packing Value addition
Brinjal	Shoot & fruit borer (IPM) Epilachna beetle (carbaryl 1kg/acre Wilting (drenching with carbondazim 0.1% + Plantomycian 0.1%)	Shoot & fruit borer (IPM) Epilachna beetle (carbaryl 1kg/acre Wilting (drenching with carbondazim 0.1% + Plantomycian 0.1%)	Shoot & fruit borer (IPM) Epilachna beetle (carbaryl 1kg/acre Phomopsis blight /fruit rot (saff 0.2%)	--

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging				
Ginger	Leaf spot , Rhizome rot disease management	Rhizome rot disease management (0.2% Ridomyl-MZ)	Leaf spot , Rhizome rot disease management	Storage in storage chamber or in underground soil , treatment with malathion to prevent scale in sect .
Mango	Mealy bug (Dimethoate 0.2%)	Powdery mildew, (sulphor 0.5%) , mango hopper (endosulphan 0.2%)	Stone weevil, fruit fly (Malathion 0.2%),	Shifting of produce to godown or safer place, grading, packing & marketing
Banana	Fusarium wilt (sixer 0.2% + plantomicion 0.1%), root stock weevi(Phorate 5g/plant)	Fusarium wilt , (sixer 0.2% + plantomicion 0.1%), root stock weevil(Phorate 5g/plant)	Protection against pest & diseases, preventing crop lodging, Anthracnose (0.1% carbendism)	Shifting of produce to godown or safer place

2.3 Floods: Not experienced / encountered

Condition	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation				
Continuous submergence for more than 2 days				
Sea water intrusion				

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

Extreme event type	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Heat Wave				
Paddy	Mulching, irrigating frequently, spraying pesticide to prevent from damping off	Increase Irrigation frequency, intercultural operation	Provide deficit irrigation, quick harvesting to prevent moisture loss	Shifting of produce to shade and safe place
Greengram	Frequent irrigation	-do-	-do-	-do-
Groundnut	-do-	-do-	-do-	-do-
Horticulture				
Mango	Growing in poly house, Pesticide application, watering twice daily	Disease & pest control, pitcher irrigation, continuous irrigation by drip method	Protective irrigation, disease & pest management, quick harvesting	store in cool dry place, grading, packing ,quick disposal for marketing
Guava	Growing in poly house, Pesticide application, watering twice daily	-do-	-do-	-do-
Cold wave				
Paddy	mulching, irrigating frequently	intercultural operation,	Quick harvesting to prevent loss due to frost	Shifting of produce to shade and safe place and in close store room
Groundnut	Continuous irrigation, weeding	-do-	-do-	-do-
Greengram	-do-	-do-	-do-	-do-
Blackgram	-do-	-do-	-do-	-do-
Horticulture				
Tomato	Raising of seedling in Poly house, resowing if damaged	Disease and pest control, care for chilling injury or replanting	Quick harvesting Pre harvest nutrition supply	Grading, quick disposal for marketing
Potato	-do-	Early blight & late blight (mancozeb 0.4%)	Quick harvesting, disease management(late blight – Captafol 0.25%)	Store in cold storage or quick disposal for marketing

Extreme event type	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Chilli	-do-	Twigblight (0.15% carbendism) Thrips (Ethion 0.1%)	Quick harvesting ,post harvest nutrition supply.	Store in cold storage or quick disposal for marketing
Paddy	Mulching, irrigating frequently, spraying pesticide to prevent from damping off	Increase Irrigation frequency, intercultural operation	Provide deficit irrigation, quick harvesting to prevent moisture loss	Shifting of produce to shade and safe place

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	<ul style="list-style-type: none"> • Livestock insurance • On boundaries of agricultural field trees or shrubs like Sesbania, Subabul, Neem etc should be planted. • Explore the possibilities of availability of unconventional / alternative feed resources during draught. • Upgradation of desi cow through artificial insemination and upgradation of local goad brids (Ganjm, Black Bengal through cross breeding with improved bucks) 	<ul style="list-style-type: none"> • Conducting animal health camps and treating the affected animals • Regular dewarming with vaccination of cows with need based treatments against ailments. • Regular de-warming for vaccination for goats against PPR, FMD with intensive care and treatment for ailments. • Low cost housing with stake arrangement • Preventive measures against early kid mortality by external/ artificial feeding arrangement. 	<ul style="list-style-type: none"> • Availing insurance • Culling of unproductive livestock
Feed and fodder availability	<ul style="list-style-type: none"> • It is essential to establish fodder bank near forest areas. • Provision is also necessary to store surplus crop residues in fodder banks, which can be made available during draught. • Excess fodder in flush season can be preserved as hay / silage. • Encourage perennial fodder production on river beds and tank bed on community 	<ul style="list-style-type: none"> • Utilizing fodder from perennial trees and fodder bank reserves. • Transporting excess fodder from adjoining districts. • Utilizing the existing crops which fail to grow adequately due to failure of monsoon for feeding of animals. • Use of unconventional livestock feed such as sugar cane top, sugar cane 	<ul style="list-style-type: none"> • Supplementary feeding of remaining livestock and the replacement stock. • Addition of calcium, mineral mixture and multi-vitamin supplement @ 40 g/cow/day with home prepared feed (rice and wheat bran: groundnut oilcake at 9:1 ratio mixed with kitchen waste) + 40 kg green fodder/cow/day • Stall feeding with home prepared feed

	Suggested contingency measures		
	Before the event	During the event	After the event
	<p>basis.</p> <ul style="list-style-type: none"> Village gochar (grazing) lands should be developed for fodder production. 	<p>bagasse, banana plant Crop residues such as cassiadora water hyacinth and other like tree pods and seeds etc. Improving poor quality roughages by ammonia treatment, urea treatment, urea molasses mineral block etc and feeding them.</p>	<p>(mixture of maize + Mahua cake + rice/wheat bran @ 6:1:3 ratio in kitchen waste) + mineral and multi-vitamin supplement (25 g/goat/day) @ 300 g/goat/day. Sufficient browsing for at least four hours per day</p>
Drinking water	<ul style="list-style-type: none"> Preserving water in community tanks and ponds etc for drinking purpose by excavation and sanitization of these resources. In addition, wells (bore wells or dug wells) may be constructed ahead of possible event of draught. 	<ul style="list-style-type: none"> Water sources of Temples, Churches, Gurdwaras, Jain temples and Maszids are generally ideal sources during draught. 	<ul style="list-style-type: none"> Pure drinking water and vaccines to be given
Health and disease management	<ul style="list-style-type: none"> Organizing training programme of persons connected with A.H. on feeding and management of animals during draught. Veterinary preparedness with vaccine and medicines. 	<ul style="list-style-type: none"> Supplementation of mineral and vitamin mixtures Campaign and mass vaccination 	<ul style="list-style-type: none"> Proper disposal of dead animals
Floods			
Feed and fodder availability	<ul style="list-style-type: none"> Procured feeds and fodders to be used for fed all animals. 	<ul style="list-style-type: none"> Straws and stoves that got soaked during floods need not be thrown away out right. They can be fed to animals as long as rotting or fungal growth has not set in. Partial drying choffing and sprinkling concentrate mixture can improve intake and utility. Priorities animals as suckling animals, suckling animals along with their nursing mothers, producing and working animals, sick and old animals, adult open and non-producing animals as the feed and water may be in short supply. 	
Drinking water		Pure drinking water and vaccines to be given	<ul style="list-style-type: none"> Sanitization of water resources. Pure drinking water and vaccines to be given

	Suggested contingency measures		
	Before the event	During the event	After the event
Health and disease management	<ul style="list-style-type: none"> • Training to the farmers about care of their animals when catastrophe strikes, so that they are prepared for the situation. Preparation and distribution of leaflets or booklets in simple local language for care of livestock in disaster. • Keeping track of weather forecast and prior information through radio and TV Etc. • Prior construction of animal shelters in disaster prone areas. • Temporary relief camps on spots can be set up at short notice to provide shelter to animals on roads, railway line embankments, other earthen embankments, upland etc. • Variation of livestock before onset of rainy season • Temporary camps may be started to herd or flocks animals of 25-50 animals in each group. Inside the camp the animals can be just left free within the paddock/ barricades created with wooden pole. • If no trees or sheds are available shelter the animals under a tent / tarpaulins held aloft by supporting poles or temporary sheds with coconut leaf roof. • Keep the emergency service kit (first Aid Requisites) ready always containing Cotton wool, Bandages, Surgical gauze, old cotton sheets, Rubber tubing (for tourniquet), Surgical scissors – Curved and made of stainless steel, Forceps, Splints or Split bamboos (for fractures), Clinical thermometers – two or three, Disinfectants – potassium permanganate, Acriflvin, Dettol, Savlon, Tannic acid powder (for 	<ul style="list-style-type: none"> • Supplementation of mineral and vitamin mixtures • Campaign and mass vaccination 	<ul style="list-style-type: none"> • Proper disposal of dead animals

	Suggested contingency measures		
	Before the event	During the event	After the event
	poisons) and Jelly (for burns) Antibiotic eye drops, Epsom salts, copper sulphate, Treacle, oil of turpentine (for bloat), Obstetric ropes, chains and hooks, Tincture of iodine, tincture of Benzoin Co.(for wounds), Cotton rope, halters (for restraint), Trocar and canola (for bloat), Pocket Knife (for cutting, strangulating ropes etc.)		
Cyclone			
Feed and fodder availability	<ul style="list-style-type: none"> • Procured feeds and fodders to be used for fed all animals. 	<ul style="list-style-type: none"> • Procured feeds and fodders should be fed to all animals on the order of priority of animals. • Priorities animals as suckling animals, suckling animals along with their nursing mothers, producing and working animals, sick and old animals, adult open and non-producing animals as the feed and water may be in short supply. 	<ul style="list-style-type: none"> • Provision of supplementary feeding (concentrate / Roughage) with vitamin & minerals.
Drinking water	<ul style="list-style-type: none"> • Provision of clean drinking water. 	<ul style="list-style-type: none"> • Drinking water be made available to the animals in any kind of clean container available with the farmer. 	<ul style="list-style-type: none"> • Provision of clean drinking water.
Health and disease management	<ul style="list-style-type: none"> • Training to the farmers about care of their animals when catastrophe strikes, so that they are prepared for the situation. Preparation and distribution of leaflets or booklets in simple local language for care of livestock in disaster. • Keeping track of weather forecast and prior information through radio and TV Etc. • Prior construction of animal shelters in disaster prone areas. • Temporary relief camps on spots can be set up at short notice to provide shelter to animals on roads, railway line embankments, other earthen embankments, 	<ul style="list-style-type: none"> • There should be one veterinarian with 3 to 4 village to work with the help of local volunteers. • The team should be well equipped with contingent items like bandages, tourniquet ropes, controlling rope, splints, slings, poles and ropes to lift animals. Drugs including painkillers, antiseptics, antibiotics, anti-venom and anti-shock drugs etc. should be adequately available with them. • Keep the animals loose in paddock (sheltered or unsheltered) rather keeping them tethered. • Releasing animals from the unnatural 	<ul style="list-style-type: none"> • Prompt and appropriate attention to injuries by providing necessary medicines to the livestock owners. • Vaccination campaign against common endemic diseases of the areas (like H.S. B.Q, Anthrax etc.) must be taken up urgently. Necessary steps should be taken for the control of non-specific digestive and respiratory infections in consultation of local veterinary personals. • Improving shed hygiene especially in the farmers household through cleaning and disinfection

	Suggested contingency measures		
	Before the event	During the event	After the event
	<p>low hillocks, upland etc.</p> <ul style="list-style-type: none"> • Variation of livestock before onset of rainy season • Temporary camps may be started to herd or flocks animals of 25-50 animals in each group. Inside the camp the animals can be just left free within the paddock/ barricades created with wooden pole. • If no trees or sheds are available shelter the animals under a tent / tarpaulins held aloft by supporting poles or temporary sheds with coconut leaf roof. • Keep the emergency service kit (first Aid Requisites) ready always containing Cotton wool, Bandages, Surgical gauze, old cotton sheets, Rubber tubing (for tourniquet), Surgical scissors – Curved and made of stainless steel, Forceps, Splints or Split bamboos (for fractures), Clinical thermometers – two or three, Disinfectants – potassium permanganate, Acriflvin, Dettol, Savlon, Tannic acid powder (for poisons) and Jelly (for burns) Antibiotic eye drops, Epsom salts, copper sulphate, Treacle, oil of turpentine (for bloat), Obstetric ropes, chains and hooks, Tincture of iodine, tincture of Benzoin Co.(for wounds), Cotton rope, halters (for restraint), Trocar and canola (for bloat), Pocket Knife (for cutting, strangulating ropes etc.) 	<p>and harmful position or situation, stopping bleeding, binding broken limbs, administering painkillers, anti-poison and anti-shock drugs, sedating difficult animals and even performing euthanasia on hopelessly injured and suffering animals with the consent of their owners.</p>	
Heat wave and cold wave			
Shelter/environment management		<ul style="list-style-type: none"> • Green cover (trees plantation, landscaping) • Proper sheltering / housing white 	

	Suggested contingency measures		
	Before the event	During the event	After the event
		painting outside the roof and black painting inside the roof. <ul style="list-style-type: none"> • Washing / wallowing / sprinkling/ splashing / showering • Provision of cool drinking water (in earthen pitchers) • Cooling devices : fans, wet curtains or panels, air cooler if possible 	
Health and disease management		<ul style="list-style-type: none"> • Feeding Green fodder/ silage/ hay • Provision for night feeding • Grazing only if green pastures/ grass lands available • Graze early in the morning and late in the afternoon 	<ul style="list-style-type: none"> • Protection of dry / milch cows/ buffaloes/ breeding bulls and teasers against thermal stress • Heat detection with young teasers • Close observation of all open cows • Study of cervical mucous • Heat detection and AI during cooler parts of the day. • Insemination at optimal time with good quality semen.

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	Breed (OUAT synthetic, Banaraja, Gramapriya/ Kalinga Brown, Giriraja) Ensure procurement of feed ingredients sufficient ahead	Feed supplementation will be made to the farms. Free range system (Self feeding in the back yard) depending on local	Attempt will be made for available of feed ingredient or compound feed to the farmers. Regular vaccination starting from day old chick. Immediately	

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event	During the event	After the event	
		household waste	isolating the birds affected by infectious diseases from the flock. Protecting birds from dog, wild cat, jackal, fox etc.	
Drinking water	Check water source for ensuring sufficient portable water during draught	Attempt will be made to provide sanitized drinking water	Availability of water will be ensured by digging of bore well	
Health and disease management	Procurement of vaccines and medicines and anti-stress agent. Feeding antibiotics Procurement of litter materials	Continue feeding of anti-stress agent.		
Floods				
Shortage of feed ingredients	Ensure procurement of feed ingredients / compound feed sufficient ahead as feed supply to the farm will hamper due to submergence of the connecting roads.	Supply the compound feed to the poultry farm under submerged area	Supply will continued till the situation is under control	
Drinking water	Protect the water sources from submergence	Attempt will be made to provide sanitized drinking water	Water sources will sanitized with bleaching powder or any water sanitizer	
Health and disease management	Procurement of vaccines and medicines. Feeding antibiotics Procurement of litter materials	Continue feeding antibiotics Prevent entrance of flood water to the shed Replace wet litter Proper disposal of dead birds if any	Disinfection of the farm premises. Feeding antibiotics And de-worming. Replace wet litter Disinfection of sheds. Proper disposal of dead birds if any	
Cyclone				
Shortage of feed ingredients	Procurement of feed	Supply the compound feed to the poultry farm under cyclone affected area	Supply will continued till the situation is under control	

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event	During the event	After the event	
Drinking water	-	Attempt will be made to provide sanitized drinking water	Water sources will be sanitized with bleaching powder or any water sanitizer	
Health and disease management	Procurement of medicine and vaccine	Vaccination of birds against different diseases Provision should be made for availability of sanitized water	Water sources will be sanitized with bleaching powder or any water sanitizer	
Heat wave				
Shelter/environment management	Pruning of big trees in the farm. Putting curtains on open sides of the shed. Procurement of electrical accessories Providing shed to poultry houses. Providing proper ventilation.	Attempt will be made for cooling of poultry shed by adapting different cooling methods Thickness of litter should be reduced Ventilation to the house should be increased by providing ceiling fans and exhaust fan	Provision should be made to ensure proper ventilation to the house	
Health and disease management	Procurement of Anti-stress drugs	Supplementation of anti-stress drug	Vaccination of birds against RD	
Cold wave				
Shelter/environment management	Procurement of curtains to cover open sides of the shed. Heating arrangement kept ready	Close the open sides of the shed by curtain in such a way that ventilation should not be hampered. Provide heat if necessary depending on the temperature and age of the birds	Remove the curtains. Discontinue heating.	
Health and disease	Procurement of Anti-stress drugs	Feeding of anti-stress drugs	Vaccination against IBD and RD	Procurement of Anti-

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event	During the event	After the event	
management	and vaccine	in drinking water Vaccination with fowl pox		stress drugs and vaccine

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. 4. Species : (Indian Major Carps (IMC), i.e., Rohu, Mrigal and Catla + Exotic carps (Silger carp and Grass carp @ 5000 fingerlings/ha	Application of rice bran + Groundnut oil cake + vitamins or 80 kg, urea + 40 kg SSP/ha/year: Raw cow dung @ 5 t/ha + micronutrient to enhance the production of phyto plankton and zoo plankton.	Using Cifax @ 1 lit/ha or lime and turmeric powder ! 10:1 ratio applied @ 200 kg/ha during the month of November and January to control Ulcerative disease syndrome (UDS) and Epicortical ulcerative syndrome (EUS)
(ii) Changes in water quality	1. Prepare to release water into the habitat. 2. Leveling of farm bonds , testing of water body 3. Development high stocking density	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.
(iii) Any other			
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	-

	Suggested contingency measures		
	Before the event	During the event	After the event
		reduce stocking density. 3. Artificial shelter by putting aquatic floating weeds in 1/3 rd area.	
(ii) Impact of salt load build up in ponds / change in water quality	1. Application of organic manure in culture system	1. Recharge the ponds with bore well water or water from other sources	1. Application of organic manure in culture system
(iii) Any other	-	-	-
2) Floods			
A. Capture			
Marine			
Inland			
(i) No. of boats / nets/damaged	1. The boats have to be secured safely to river/ reservoir banks. 2. Non operation of fixed bag nets in streams and rivers. 3. 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. 3. Number of crew and load should be much below the marked tonnage.	1. Maintenance of the boats and nets. 2. Assessment and settlement of insurance.
(ii) No. of houses damaged	1. Insurance coverage for houses.	-	1. Settlement of insurance.
(iii) Loss of stock	-	-	1. Assessment of stock (fish population) and replenishment if stock is depleted. 2. Habitat restoration for the stock remaining.
(iv) 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. This 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) Water contamination and changes in	1. Application of lime.	-	1. Application of lime and geolite.

	Suggested contingency measures		
	Before the event	During the event	After the event
water quality			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 etc)	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	-	-	-
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) Avg. 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) Avg. no. of houses damaged	1. Insurance coverage for houses.	-	1. Settlement of insurance.

	Suggested contingency measures		
	Before the event	During the event	After the event
Inland			
B. Aquaculture			
(i) Overflow / flooding of ponds	1. Strengthening and increase in dyke height. 2. This 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)			
(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 etc)	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	-		-
Inland	-	1. During hot waves night fishing should be done. 2. Preservation by cold chain should be increased during hot waves.	-
B. Aquaculture			
(i) Changes in pond environment (water	1. During hot waves adequate water	1. During hot waves mixing of water	-

	Suggested contingency measures		
	Before the event	During the event	After the event
quality)	depth should be maintained.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 1. Feeding should be stopped. 2. If cold waves persists EUS outbreak takes place 	1. Application of CIFAX to contro EUS disease in fish.