

Contingency Plan

State: Bihar

Agriculture Contingency Plan for District: Saran

1.0 District Agriculture profile				
1.1	Agro-Climatic/Ecological Zone			
	Agro Ecological Sub Region (ICAR)	Sub-Humid ecosystem		
	Agro-Climatic Zone (Planning Commission)	Mid Gangetic plane		
	Agro Climatic Zone (NARP)	Zone – 1		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Zone – 1 (Saran, Siwan, Goplaganj, Muzaffarpur, E. Champaran, W.. Champaran, Sitamarhi, Sheohar, Vaishali, Darbhanga , Madhubani, Samastipur		
	Geographic coordinates of district headquarters			
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		25°36' and 26°13' North	84°24' and 85°15' East	36m
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	RRS Madhopur		
	Mention the KVK located in the district with address	KVK Manjhi, Saran		
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	Rajendra Agricultural University, Pusa, Samastipur		

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):	969	NA	24th meteo. week (11-17 June)	41.5 meteo. week (8-14 October)
	NE Monsoon(Oct-Dec):	114	NA	24th meteo. week (11-17 June)	41.5 meteo. week (8-14 October)
	Winter (Jan- March)	34	NA	-	-
	Summer (Apr-May)	23	NA	-	-
	Annual	1140	NA	-	-

1.3	Land use pattern of the district (latest statistics)	Geographical area	Cultivable area	Forest area	Land under non-agricultural use	Permanent pastures	Cultivable wasteland	Land under Misc. tree crops and groves	Barren and Uncultivable land	Land under seasonal water	Land under permanent water	Current fallows	Other fallows
	Area ('000 ha)	270.24474	199.300	0	25.9168	0.4724	1.7848	8.270	17.6016	0.2992	3.7892	5.1114	7.6996

1.4	Major Soils (common names like red sandy loam deep soils (etc.,))*	Area ('000 ha)	Percent (%) of total
	Alluvial Saline soils	67.538	33.88
	Alluvial soils	36.630	18.37
	Heavy clay soils with sodicity	65.571	32.95
	Light sandy soils	29.561	14.80
	Total Cultivable land	199.3	

* mention colour, depth and texture (heavy, light, sandy, loamy, clayey etc) and give vernacular name, if any, in brackets (data source: Soil Resource Maps of NBSS & LUP)

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	199.3	174.76 %
	Area sown more than once	74.49	
	Gross cropped area	348.297	

1.6	Irrigation	Area ('000 ha)

	Net irrigated area	101.611		
	Gross irrigated area	145.075		
	Rainfed area	246.686		
	Area sown more than once	43.464		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals	NA	22.320	21.96
	Tanks	NA	0	0
	Open wells	NA	0	0
	Bore wells	NA	72.135	70.99
	Lift irrigation schemes	NA	0	0
	Micro-irrigation	NA	7.156	7.05
	Other sources (please specify)	NA	101.611	100
	Total Irrigated Area	NA	NA	NA
	Pump sets	NA	NA	NA
	No. of Tractors	NA	NA	NA
	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	NA	NA	NA
	Critical	NA	NA	NA
	Semi- critical	NA	NA	NA
	Safe	NA	NA	NA
	Wastewater availability and use	NA	NA	NA
	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 2017-2018) eg., 2008-09)

1. 7	S.No	Major field crops cultivated	Area ('000 ha)							Summer	Grand total
			Kharif			Rabi					
			Irrigated	Rainfed	Total	Irrigated	Rainfed	Total			
	1	Wheat	0	0	0	50611	57438	108049	NA	108049	
	2	Maize	0	31500	31500	35139	0	35139	NA	66639	
	3	Pulses	0	11578	11578	0	7216	7216	NA	18794	
	4	Oilseed	0	415	415	5000	2216	7216	NA	7631	

	5	Potato	0	0	0	8000	4500	12500	NA	12500
	6	Paddy	1853	70000	71853	0	0	0	NA	71853
	7	Sugarcane	0	0	0	11958	0	11958	NA	11958
		Total	1853	113493	115346	110708	71370	182078	NA	297424

	S.No.	Horticulture crops - Fruits	Area ('000 ha)		
			Total	Irrigated	Rainfed
	1		4135	NA	4135
		Horticulture crops - Vegetables	Total	Irrigated	Rainfed
	1		19645	12645	7000
		Medicinal and Aromatic crops	Total	Irrigated	Rainfed
	1		1000	1000	0
		Plantation crops	Total	Irrigated	Rainfed
	1		NA	NA	NA
	Others (Specify)	Eg., industrial pulpwood crops etc.			
		Fodder crops	Total	Irrigated	Rainfed
	1		NA	NA	NA
		Total fodder crop area	NA	NA	NA
		Grazing land	NA	NA	NA
		Sericulture etc	NA	NA	NA
		Others (specify)	NA	NA	NA

1.8	Livestock	Male ('000)	Female ('000)	Total ('000)			
	Non descriptive Cattle (local low yielding)	NA	NA	208806			
	Improved cattle	NA	NA	NA			
	Crossbred cattle	NA	NA	23994			
	Non descriptive Buffaloes (local low yielding)	NA	NA	401625			
	Descript Buffaloes	NA	NA	NA			
	Goat	NA	NA	196187			
	Sheep	NA	NA	104849			
	Others (Camel, Pig, Yak etc.)	NA	NA	NA			
	Commercial dairy farms (Number)			NA			
1.9	Poultry	No. of farms	Total No. of birds ('000)				
	Commercial	NA	218686				
	Backyard	NA	38823				
1.10	Fisheries (Data source: Chief Planning Officer)						
	A. Capture						
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats		Nets		Storage facilities (Ice plants etc.)
			Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)	
		NA	NA	NA	NA	NA	NA
	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds		No. of Reservoirs	No. of village tanks		
		NA		NA	NA		
	B. Culture						
				Water Spread Area (ha)	Yield (t/ha)	Production ('000 tons)	
	i) Brackish water (Data Source: MPEDA/ Fisheries Department)			0	0	0	
	ii) Fresh water (Data Source: Fisheries Department)			1400		1.5	
	Others						

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 residues
		Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production	Productivity (kg/ha)	Production	Productivity (kg/ha)	

						('000 t)		('000 t)		fodder ('000 tons)
Major Field crops (Crops to be identified based on total acreage)										
Crop 1	Wheat	0	0	217	2010	0	0	217	2010	0
Crop 2	Paddy	125	1730	0	0	0	0	125	1730	0
Crop 3	Maize	58	1830	0	0	0	0	58	1830	0
Crop 4	Pulses	12	980	7	980	0	0	19	980	0
Crop 5	Oilseeds	0.3	716	5.4	716	0	0	5.7	820	0
Others										
Major Horticultural crops (Crops to be identified based on total acreage)										
Crop 1	Vegetables	0	0	0	0	0	0	285	14500	0
Crop 2	Orchards	0	0	0	0	0	0	7.72	934	0
Crop 3	Potato	0	0	0	0	0	0	3571	28700	0

1.1 2	Sowing window for 5 major field crops (start and end of normal sowing period)	Wheat	Paddy	Maize	Red Gram	Rapeseed and Mustard
	Kharif-Rainfed	-	21 st May to 30 th June	21 st May to 30 th June	21 st May to 30 th June	-
	Kharif-Irrigated	-	June to July	-	-	-
	Rabi-Rainfed	21 st October to November	-	15 th October to November	-	-

	Rabi-Irrigated	November to December	-	November to December	-	21 st September to October
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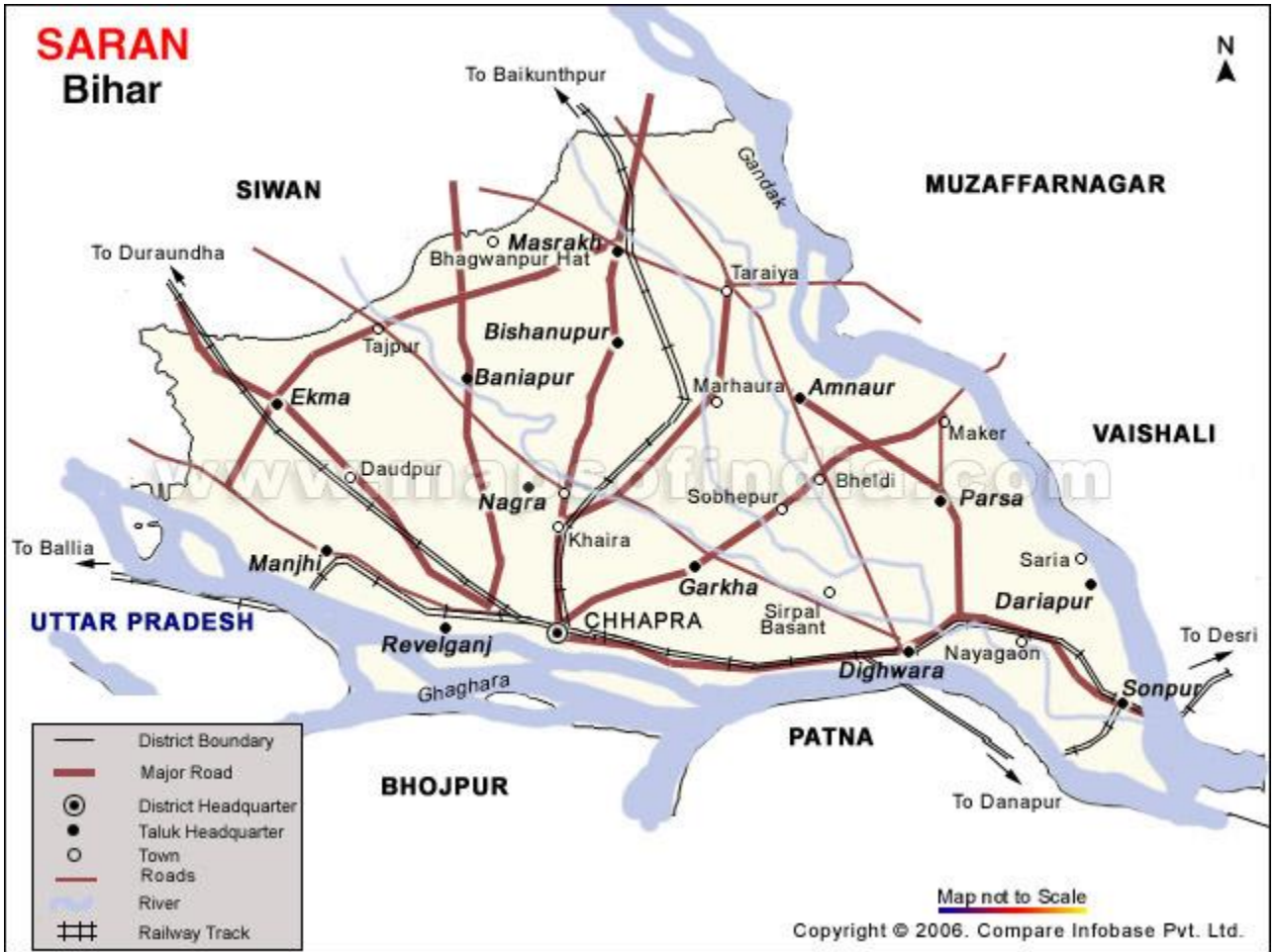
1.1 3	What is the major contingency the district is prone to? (Tick mark)	Regula r	Occasion al	Non e
	Drought	Y		
	Flood	Y		
	Cyclone			
	Hail storm			
	Heat wave	Y		
	Cold wave		Y	
	Frost		Y	
	Sea water intrusion			
	Pests and disease outbreak (specify)		Y	
	Others (specify)			

1.1 4	Include Digital maps of the district for		Enclose d: Yes / No
		Location map of district within State as Annexure I	
		Mean annual rainfall as Annexure 2	
		Soil map as Annexure 3	

Location Map of the District

BIHAR 2001

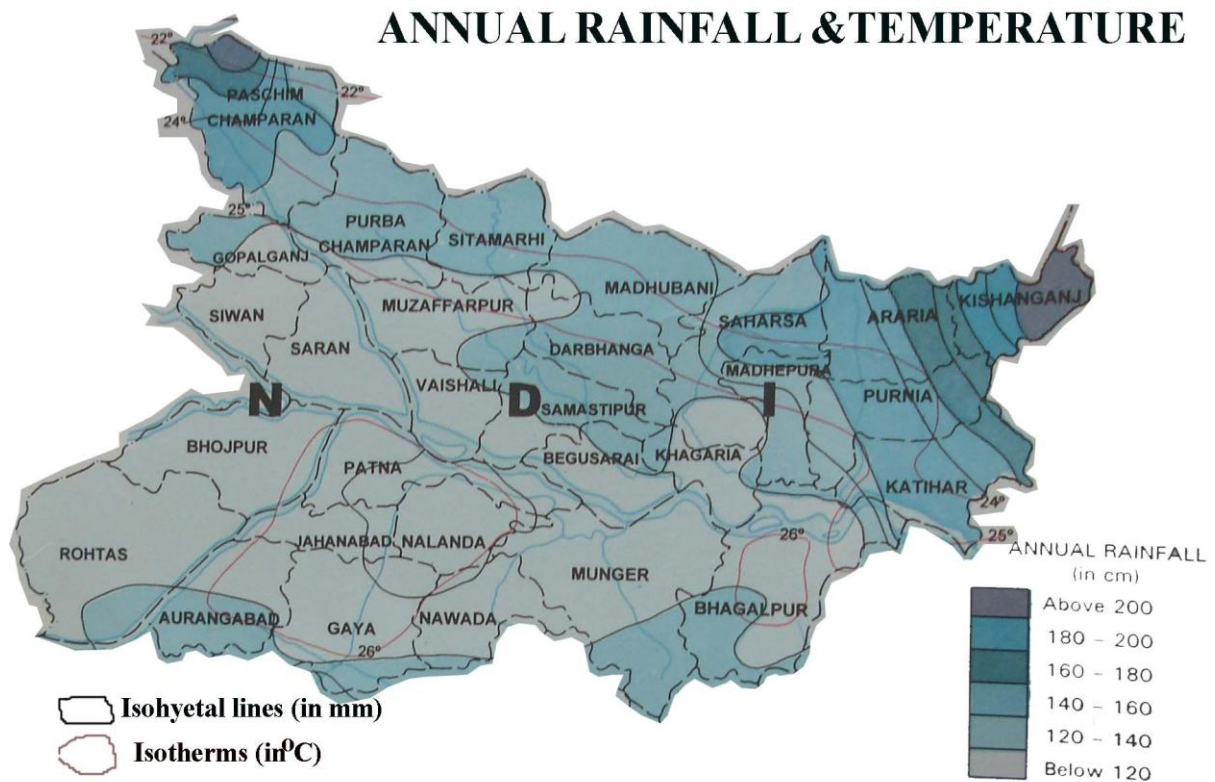




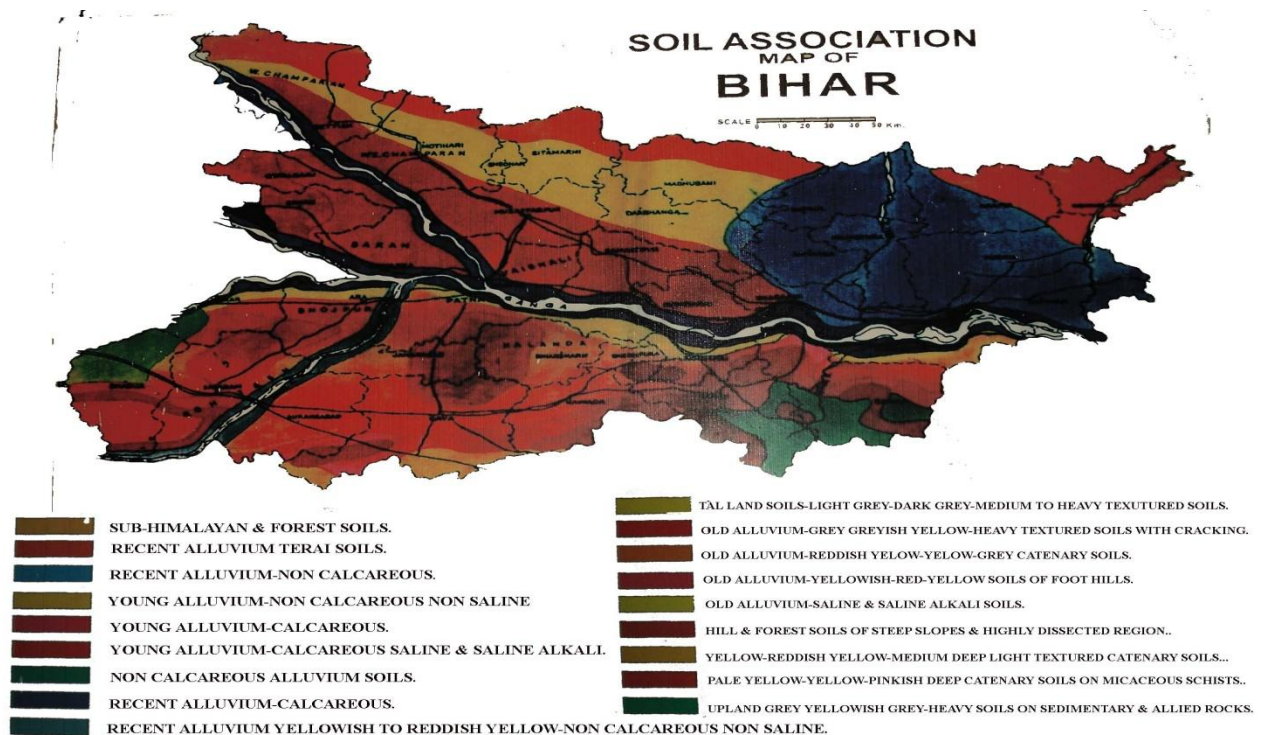
BIHAR STATE INDEX MAP SARAN DISTRICT



Annual rainfall and temperature



Soil Association Map



2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Condi on			Suggested Contingency measures		
			Change in crop / cropping system ^s including variety	Agronomic measures	Remarks on Implementat ion
Early season drough t (delaye d onset)	Major Farmin g situatio n ^a	Normal Crop / Cropping system			
Delay by 2 weeks (Specif y month) * 1 st week of July (REFE R TO THE MATRI X TABLE)	1) Farmin g situatio n: Upland	Paddy- Wheat Paddy- Wheat- Green gram Maize- wheat- Green Gram Maize- wheat- Green Gram Red Gram	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat- Green Gram Maize-wheat- Green Gram Red Gram Moong - Pusa Bashaki, SML668, PDM-44, T-44 Paddy- Prabhat, hanlaxmi, Richharia, Turanta Saroj Pigeonpea – Bahar, Pusa-9 Narendra Arhar-I Toria -66-197-3 Wheat- K8804, K9107,DL784- 3,HP1731,HP1761,NW1012,HUW 468 PBW 443.HD2733.PBW343,RW 346,RW3413,HD2824	<ul style="list-style-type: none"> • Normal package of Practices • Direct seeding of rice can be done • Life saving irrigation • Use of potash as initial dose • Use of organic and bio-fertilizer to increase WHC of the soil • Sowing by Zero tillage/FIR B Planter to save moisture • SRI can be done 	Seeds from RAU, Pusa, NSC, TDC, BRBN etc.
	2) Farmin g situatio n: Midium land	Paddy- Wheat Paddy- Wheat- Green gram	Paddy-Wheat Paddy-Wheat-Green gram Medium duration paddy Paddy - Rajendra Bhagawati, Rajendra Suwasni Rajshree, Prabhat , Wheat- K8804, K9107,DL784- 3,HP1731,HP1761,NW1012,HUW 468 PBW 443.HD2733.PBW343,RW 346,RW3413,HD2824	<ul style="list-style-type: none"> • Normal package of Practices • Direct seeding of rice can be done • Life saving irrigation • Use of potash as initial dose • Use of organic and bio- 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc..

				fertilizer to increase WHC of the soil <ul style="list-style-type: none"> • Sowing by Zero tillage/FIR B Planter to save moisture 	
	3 Low land	Paddy – Wheat Paddy-Wheat-Moong	Paddy – Wheat Paddy-Wheat-Moong Paddy- Rajshree, Santosh , Sita Rajendra Suwasni, Rajendra Sweta Wheat- K8804, K9107,DL784-3,HP1731,HP1761,NW1012,HUW 468 PBW 443.HD2733.PBW343,RW 346,RW3413,HD2824	Normal package of Practices Direct seeding of rice can be done Life saving irrigation Direct seeding can be done in the month of April along with Dhaincha and then brown manured by use of 2,4-D Direct seeding can be done in the month of April along with Maize, Jowar, Moong, Urd, Til for conservation of moisture	Seeds from RAU, Pusa, NSC, TDC , BRBN etc..
Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation^a	Normal Crop/cropping system^b	Change in crop/cropping system^c	Agronomic measures^d	Remarks on Implementation^e
Delay by 4 weeks (Specify month)	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-	Short duration Paddy-Wheat Paddy-Prabhat, Dhanlaxmi, Richharia, Rajendra Bhagwati, Saroj	<ul style="list-style-type: none"> ▪ Normal seedling of rice can be used with adequate NPK ▪ Old age 30-35 d 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

3 rd week of July		wheat- Green Gram Maize- wheat- Green Gram Red Gram	Wheat- DL784-3 HD2643(Ganga),HP1633,HP1744(R ajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765 Moong - Pusa Bashaki, SML668, PDM- 44, T-44 Pigeonpea–Bahar, Pusa-9 Narendra Arhar-I	seedlings of early rice variety may also be used ▪ 20 days Dapog seedling can be used in rice ▪ Direct seeding of rice ▪ SRI ▪ Zero tillage sown paddy and wheat to make up the time,	
	2) Farmin g situatio n: Medium Land	Paddy- Wheat Paddy- Wheat- Green gram	Paddy-Wheat Paddy-Wheat-Green gram Mid duration Paddy up to 125- 130 days Paddy - Rajendra Bhagawati, Rajendra Suwasni Rajshree, Prabhat, Wheat- DL784-3 HD2643(Ganga),HP1633,HP1744(R ajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765	<ul style="list-style-type: none"> • Full basal dose of NPK • Life saving irrigation • Applicatio n of Potash Applicatio n of organic manure and vermicom post initially for paddy and other crops • 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.
	3 Low land	Paddy – Wheat Paddy- Wheat- Moong	No change in crop 130-140 days long duration variety should be selected Paddy- Rajshree, Santosh , Sita Rajendra Suwasni, Rajendra Sweta Wheat- DL784-3 HD2643(Ganga),HP1633,HP1744(R ajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765	<ul style="list-style-type: none"> • Enhanced dose of nitrogen with full basal dose of NPK at transplant ing • Old age rice seedling of 40-45 days may be used with three 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

				seedling per hill with close spacing <ul style="list-style-type: none"> • Application of potash, Inter culturing operation • Mulching, • Application of Organic manure and vermicom post initially 	
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Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 6 weeks (Specify month) 5 th week of July	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	Early Paddy-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat Red Gram Sesame-Potato-wheat Paddy- Prabhat, Dhanlaxmi, Richharia, Turanta Saroj Urd/ Kulthi-Wheat Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19 Kulthi- DB-7, BR-5, BR-10, Coimbatore-1 HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285 ,RAJ3765	<ul style="list-style-type: none"> • Direct seedling paddy • Dapog seedling can be used • Application of Potassic fertilizer at adjuvant vegetative stage • Zero tillage for paddy & wheat to make up the time • Protective spray of pesticides with adjuvant against 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

				<p>BLB & BLAST & Helminthosporium leaf spot.</p> <ul style="list-style-type: none"> • Transplanting of old age seedling of 30-35 days • SRI, • Machine transplanting, • Zero tillage sown paddy and wheat to make up the time, 	
2)	Farmin g situatio n: Medium land	Paddy- Wheat Paddy- Wheat- Green gram	<p>Paddy (Short duration)-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat</p> <p>Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19</p> <p>Kulthi- DB-7, BR-5, BR-10, Coimbatore-1 HD2643(Ganga),HP1633,HP1744(R ajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285 ,RAJ3765</p>	<ul style="list-style-type: none"> • Enhanced basal dose of NPK to boost the early vegetative growth • Application of Potasic fertilizer with adjuvant • Direct seedling of paddy • Use of 20 days old dapog seedling for rice • Protective spray of pesticides with adjuvant against BLB & BLAST & Helminthosporium leaf spot • Application of organic manure and vermicompost initially for paddy and 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

				other crops •	
3 Low land	Paddy – Wheat Paddy- Wheat- Moong	Paddy (Short Duration)-Wheat Paddy-Rai-Moong Paddy -Vegetable Paddy- Potato-Moong Sesamum-Potato-moong Urd-Wheat Paddy- Rajshree, Santosh , Sita Rajendra Suwasni, Rajendra Sweta Wheat - HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285 ,RAJ3765 Oilseed- 66-197-3, Rajendra Sarson-I (For early sowing Rajendra Anukul, Rajendra Picheti, Rajendra Suphalam for late sowing	<ul style="list-style-type: none"> • Dapog Nursery raised 20 days old seedling should be used for paddy • Zero tillage for paddy and wheat to make up the time • Direct seeding paddy • Application of Potassic fertilizer at vegetative stage • Protective spray of pesticides • Enhanced basal dose of NPK Application of organic manure and vermicom post initially for paddy and other crops 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc	

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delay by 8 weeks (Specify)	1) Farming situation: Upland	Paddy- Wheat Paddy- Wheat- Green gram	Late sown paddy-Late sown wheat Sept. Pigeonpea-Moong Moong/Urd-Late wheat Sesamum-Rai-moong Toriam-Wheat-Moong	<ul style="list-style-type: none"> • Zero tillage for wheat to make up the time • Spray of potassic fertilizer with adjuvant in paddy at vegetative stage 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

<p>month) 3rd week of August</p>		<p>Maize- wheat- Green Gram Maize- wheat- Green Gram Red Gram</p>	<p>Paddy- Prabhat, Dhanlaxmi, Richharia, Turanta, Saroj</p> <p>Wheat - HD2643(Ganga),HP1633,H P1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036, HD2285,RAJ3765</p> <p>Moong – Samrat, Pusa Vishal, SML 668, PDM-44, T-44</p> <p>Sept. Pigeonpea –Pusa-9 Sharad Arhar-I</p> <p>Urd - T-9, Navin, Pant Urd-30 , Pant, Urd- 19</p> <p>Mustard- Rajendra Anukul, Rajendra Picheti, Rajendra Suphalam for late sowing</p>	<ul style="list-style-type: none"> • Life saving irrigation to paddy nursery raised • Use of 20 days old Dapog seedling in paddy • Direct seeding of rice • Enhanced basal dose of NPK in rice to boost early vegetative growth • Protective spray of pesticides with adjuvant against pest & disease • Application of organic manure and vermicompost initially for paddy and other crops 	
	<p>2) Medium land</p>	<p>Paddy- Wheat Paddy- Wheat- Green gram</p>	<p>Sesame –Rabi maize Sesame-Late Wheat September Pigeonpea- Moong</p> <p>Sesame – Krishna, Pragati Rabi Maize- Saktiman- 1,2,3,4, Laxmi, Deoki, Rajendra Hybrid- 1,2</p> <p>Early paddy-Prabhat, Dhanlaxmi, Richharia, Turanta</p> <p>Late Wheat – HD2643(Ganga),HP1633,HP 1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036, HD2285,RAJ3765</p> <p>Moong – Samrat, Pusa Vishal, SML 668, PDM-44, T-44</p> <p>Sept.Pigeonpea–Pusa-9, Sharad</p>	<ul style="list-style-type: none"> • Zero for wheat to make up the time • Spray of potassic fertilizer with adjuvant in paddy at vegetative stage • Life saving irrigation to paddy nursery raised • Use of 20 days old Dapog seedling in paddy • Direct seeding of rice • Enhanced basal dose of NPK in rice to boost early vegetative growth • Protective spray of pesticides with adjuvant against pest & disease • Application of organic manure and vermicompost initially for paddy and other crops 	<p>Seeds from RAU, Pusa, NSC, TDC , BRBN etc</p>

			Narendra		
	3) Low land	Paddy-Potato	<p>Arhar-I</p> <p>Sesame –Rabi maize Sesame-Late Wheat September Pigeonpea- Moong</p> <p>Sesame – Krishna, Pragati Rabi Maize- Saktiman- 1,2,3,4, Laxmi, Deoki, Rajendra Hybrid- 1,2 Early paddy-Prabhat, Dhanlaxmi, Richharia, Turanta Late Wheat – HD2643(Ganga),HP1633,HP 1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036, HD2285,RAJ3765 Moong – Samrat, Pusa Vishal, SML 668, PDM-44, T-44 Sept.Pigeonpea–Pusa-9, Sharad Narendra Arhar-I</p>	<ul style="list-style-type: none"> • Zero for wheat to make up the time • Spray of potassic fertilizer with adjuvant in paddy at vegetative stage • Life saving irrigation to paddy nursery raised • Use of 20 days old Dapog seedling in paddy • Direct seeding of rice • Enhanced basal dose of NPK in rice to boost early vegetative growth • Protective spray of pesticides with adjuvant against pest & disease • Application of organic manure and vermicompost initially for paddy and other crops 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc
		Paddy-wheat-green gram	<p>Sept. Pigeonpea-Moong</p> <p>Sesame-Rabi maize</p> <p>Pigeonpea – Bahar, Pusa-9 Narendra</p> <p>Arhar-I</p> <p>Rabi Maize - Saktiman- 1,2,3,4, Laxmi, Deoki, Rajendra Hybrid – 1,2 Moong – Samrat, Pusa Vishal, SML 668, Sesame – Krishna, Pragati</p>	<ul style="list-style-type: none"> • Normal practices for sesame, Pigeonpea 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

***Matrix for specifying condition of early season drought due to delayed onset of monsoon (2, 4, 6 & 8 weeks) compared to normal onset (2.1.1)**

Normal onset (Month and week)	Month and week for specifying condition of early season drought due to delayed onset of monsoon			
	Delay in onset of monsoon by			
	2 wks	4 wks	6 wks	8 wks
June 1 st wk	June 3 rd wk	July 1 st wk	July 3 rd wk	Aug 1 st wk
June 2 nd wk	June 4 th wk	July 2 nd wk	July 4 th wk	Aug 2 nd wk
June 3 rd wk	July 1 st wk	July 3 rd wk	Aug 1 st wk	Aug 3 rd wk
June 4 th wk	July 2 nd wk	July 4 th wk	Aug 2 nd wk	Aug 4 th wk
July 1 st wk	July 3 rd wk	Aug 1 st wk	Aug 3 rd wk	Sep 1 st wk
July 2 nd wk	July 4 th wk	Aug 2 nd wk	Aug 4 th wk	Sep 2 nd wk

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	<ul style="list-style-type: none"> Life saving irrigation Gap filling of existing crop Thinning 	<ul style="list-style-type: none"> Application of potash Inter culturing Mulching through mechanical weeding for moisture conservation Conservation tillage Interculturing Protective spray of pesticides with adjuvant against Pesticides and disease 	Seeds from RAU, Pusa, NSC, TDC, BRBN etc
	2) Farming situation: Medium land	Paddy-Wheat Paddy-Wheat-Green gram	<ul style="list-style-type: none"> Life saving irrigation Gap filling 	<ul style="list-style-type: none"> Application of potash Inter culturing Mulching through weeds for moisture conservation Conservation tillage Interculturing Protective spray 	Seeds from RAU, Pusa, NSC, TDC, BRBN etc

				of pesticides with adjuvant against Pesticides and disease	
	3 Low Land	Paddy – Wheat Paddy-Wheat-Moong	<ul style="list-style-type: none"> • Pre sowing irrigation • higher seed rate • Life saving irrigation • Gap filling through Dapog nursery 	<ul style="list-style-type: none"> • Application of potash must at final land preparation • Inter culturing • Mulching through weeds for moisture conservation • Conservation tillage • Interculturing • Spray potassic fertilizer with adjuvant at vegetative stage • Protective spray of pesticides with adjuvant against Pesticides and disease 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At vegetative stage	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	<ul style="list-style-type: none"> • Gap filling of existing crop • Postponement of top dressing • Protective spray of pesticides with adjuvant against BLB, BLAST & Helminthosporia leaf spot 	<ul style="list-style-type: none"> • Inter culturing • Mulching through weeds, • Conservation tillage • Life saving irrigation • Spray of potassic fertilizer with adjuvant • Spray (1%) Urea on the crops 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc
	2) Farming situation: Medium land	Paddy-Wheat Paddy-Wheat-Green gram	<ul style="list-style-type: none"> • Gap filling of existing crop • Postponement of top dressing 	<ul style="list-style-type: none"> • Inter culturing • Mulching through weeds, • Conservation 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

		Cropping system 1:	<ul style="list-style-type: none"> Protective spray of pesticides with adjuvant against BLB, BLAST & Helminthospori cy leaf spot 	<ul style="list-style-type: none"> tillage Life saving irrigation Spray of potassic fertilizer with adjuvant Spray (1%) Urea on the crops 	
	Low Land	Paddy – Wheat Paddy-Wheat-Moong	<ul style="list-style-type: none"> Gap filling of existing crop Postponement of top dressing Protective spray of pesticides with adjuvant against BLB, BLAST & Helminthospori cy leaf spot 	<ul style="list-style-type: none"> Inter culturing Mulching through weeds, Conservation tillage Life saving irrigation Spray of potassic fertilizer with adjuvant Spray (1%) Urea on the crops 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc
Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major Farming situation^a	Normal Crop/cropping system^b	Crop management^c	Soil nutrient & moisture conservation measues^d	Remarks on Implementation^e
At flowering/ fruiting stage	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	<ul style="list-style-type: none"> IPM practices Spray of pesticides with spreader 	<ul style="list-style-type: none"> Interculturin g Mulching through weeds Conservation tillage Life saving irrigation Spray of potassic fertilizer with adjuvant 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc
	22) Farming situation: Medium land	Paddy-Wheat Paddy-Wheat-Green gram Cropping system 1:	<ul style="list-style-type: none"> IPM practices Clipping of maize leaves Spray of pesticides with spreader 	<ul style="list-style-type: none"> Interculturin g Mulching through weeds Conservation tillage Life saving irrigation Spray of potash and nitrogen fertilizer with 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

				adjuvant	
	3 Low Land	Paddy – Wheat Paddy-Wheat-Moong	<ul style="list-style-type: none"> If paddy crop withers & gets damaged Urd/Sesame-Wheat should be followed IPM practices Clipping of maize leaves Spray of pesticides with spreader 	<ul style="list-style-type: none"> Inter culturing, mulching through weeds Life saving irrigation Conservation tillage Spray of potassic fertilizer with adjuvant 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	IPM practices Spray of pesticides with spreader Spray of potassic fertilizer with adjuvant Life saving irrigation Mulching Thinning Clipping of leaves in maize	<ul style="list-style-type: none"> Open the furrow during evening and left furrow open overnight and plank in the next morning before sunrise for growing of early rabi crops like wheat, Rabi Maize/Pulses /Oilseeds/ Vegetables Stored water to be used at critical stage of growth To clean irrigation channel for preventing loss of moisture through seepage 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc
	2) Farming situation: Medium land	Paddy-Wheat Paddy-Wheat-Green gram Cropping system 1:	<ul style="list-style-type: none"> IPM practices Clipping of maize leaves Spray of pesticides with spreader	<ul style="list-style-type: none"> Open the furrow during evening and left furrow open overnight and plank in the next morning before sunrise for growing of early rabi crops like wheat, Rabi Maize/Pulses /Oilseeds/ Vegetables Stored water to be used at critical stage of growth To clean irrigation 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

				channel for preventing loss of moisture through seepage	
	3Low Land	Paddy – Wheat Paddy-Wheat-Moong	<ul style="list-style-type: none"> If paddy crop withers & gets damaged Urd/Sesame-Wheat should be followed IPM practices Clipping of maize leaves Spray of pesticides with spreader	<ul style="list-style-type: none"> Open the furrow during evening and left furrow open overnight and plank in the next morning before sunrise for growing of early rabi crops like wheat, Rabi Maize/Pulses /Oilseeds/ Vegetables Stored water to be used at critical stage of growth To clean irrigation channel for preventing loss of moisture through seepage 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

2.1.2 Drought - Irrigated situation

Condition	Major Farming situation ^f	Normal Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Delayed release of water in canals due to low rainfall	Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	Early Paddy-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat Red Gram Sesame-Potato-wheat Paddy- Prabhat, Dhanlaxmi, Richharia, Turanta Saroj Urd/ Kulthi-Wheat Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19 Kulthi- DB-7, BR-5, BR-10, Coimbatore-1 HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765	<ul style="list-style-type: none"> Direct seedling paddy Dapog seedling can be used Application of Potasic fertilizer at adjuvant vegetative stage Zero tillage for paddy & wheat to makeup the time Protective spray of pesticides with adjuvant against BLB & BLAST& Helminthosporium leaf spot. Transplanting 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
				<p>of old age seedling of 30-35 days</p> <ul style="list-style-type: none"> • SRI, • Machine transplanting, • Zero tillage sown paddy and wheat to make up the time, 	
	Medium Land	Paddy-Wheat Paddy-Wheat-Green gram	Paddy (Short duration)-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19 Kulthi- DB-7, BR-5, BR-10, Coimbatore-1 HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765	<ul style="list-style-type: none"> • Enhanced basal dose of NPK to boost the early vegetative growth • Application of Potassic fertilizer with adjuvant • Direct seedling of paddy • Use of 20 days old dapog seedling for rice • Protective spray of pesticides with adjuvant against BLB & BLAST & Helminthosporium leaf spot • Application of organic manure and vermicompost initially for paddy and other crops 	Seeds from RAU, Pusa, NSC, TDC, BRBN etc.
	Low Land	Paddy – Wheat Paddy-Wheat-Moong	Paddy (Short Duration)-Wheat Paddy-Rai-Moong Paddy -Vegetable Paddy- Potato-Moong Sesamum-Potato-moong Urd-Wheat	<ul style="list-style-type: none"> • Dapog Nursery raised 20 days old seedling should be 	Seeds from RAU, Pusa, NSC, TDC, BRBN etc

Condition	Major Farming situation ^f	Normal Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
			<p>Paddy- Rajshree, Santosh , Sita Rajendra Suwasni, Rajendra Sweta</p> <p>Wheat - HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765</p> <p>Oilseed- 66-197-3, Rajendra Sarson-I (For early sowing Rajendra Anukul, Rajendra Picheti, Rajendra Suphalam for late sowing</p>	<p>used for paddy</p> <ul style="list-style-type: none"> • Zero tillage for paddy and wheat to make up the time • Direct seeding paddy • Application of Potassic fertilizer at vegetative stage • Protective spray of pesticides • Enhanced basal dose of NPK <p>Application of organic manure and vermicompost initially for paddy and other crops</p>	

Condition	Major Farming situation ^f	Normal Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Limited release of water in canals due to low rainfall	Upland	<p>Paddy- Wheat Paddy- Wheat- Green gram</p> <p>Maize- wheat- Green Gram Maize- wheat- Green Gram Red Gram</p>	<p>Early Paddy-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat Red Gram Sesame-Potato-wheat</p> <p>Paddy- Prabhat, Dhanlaxmi, Richharia, Turanta Saroj Urd/ Kulthi-Wheat Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19</p> <p>Kulthi- DB-7, BR-5, BR-10,</p>	<ul style="list-style-type: none"> • Direct seedling paddy • Dapog seedling can be used • Application of Potassic fertilizer at adjuvant vegetative stage • Zero tillage for paddy & 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
			Coimbatore-1 HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765	wheat to make up the time <ul style="list-style-type: none"> • Protective spray of pesticides with adjuvant against BLB & BLAST & Helminthosporium leaf spot. • Transplanting of old age seedling of 30-35 days • SRI, • Machine transplanting, • Zero tillage sown paddy and wheat to make up the time, 	
	Medium Land	Paddy-Wheat Paddy-Wheat-Green gram	Paddy (Short duration)-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19 Kulthi- DB-7, BR-5, BR-10, Coimbatore-1 HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765	<ul style="list-style-type: none"> • Enhanced basal dose of NPK to boost the early vegetative growth • Application of Potassic fertilizer with adjuvant • Direct seedling of paddy • Use of 20 days old dapog seedling for rice • Protective 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
				spray of pesticides with adjuvant against BLB & BLAST & Helminthosporium leaf spot . Application of organic manure and vermicompost initially for paddy and other crops •	
	Low Land	Paddy – Wheat Paddy- Wheat- Moong	Paddy (Short Duration)-Wheat Paddy-Rai-Moong Paddy -Vegetable Paddy- Potato-Moong Sesamum-Potato-moong Urd-Wheat Paddy- Rajshree, Santosh , Sita Rajendra Suwasni, Rajendra Sweta Wheat - HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285, RAJ3765 Oilseed- 66-197-3, Rajendra Sarson-I (For early sowing Rajendra Anukul, Rajendra Picheti, Rajendra Suphalam for late sowing	<ul style="list-style-type: none"> • Dapog Nursery raised 20 days old seedling should be used for paddy • Zero tillage for paddy and wheat to make up the time • Direct seeding paddy • Application of Potassic fertilizer at vegetative stage • Protective spray of pesticides • Enhanced basal dose of NPK Application of organic manure and vermicompost initially for 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
				paddy and other crops	

Condition	Suggested Contingency measures				
	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Non release of water in canals under delayed onset of monsoon in catchment	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	Early Paddy-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat Red Gram Sesame-Potato-wheat Paddy- Prabhat, Dhanlaxmi, Richharia, Turanta Saroj Urd/ Kulthi-Wheat Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19 Kulthi- DB-7, BR-5, BR-10, Coimbatore-1 HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,H D2285,RAJ3765	<ul style="list-style-type: none"> Direct seedling paddy Dapog seedling can be used Application of Potasic fertilizer at adjuvant vegetative stage Zero tillage for paddy & wheat to makeup the time Protective spray of pesticides with adjuvant against BLB & BLAST & Helminthosporium leaf spot. Transplanting of old age seedling of 30-35 days SRI, Machine transplanting, Zero tillage sown paddy and wheat to make up the time, 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.
	2) Farming situation: Medium land	Paddy-Wheat Paddy-Wheat-Green gram	Paddy (Short duration)-Wheat Sesamum-Wheat Kulthi-Wheat Urd-Wheat Urd- T-9, Navin, Pant Urd-30 , Pant Urd-19 Kulthi- DB-7, BR-5, BR-10, Coimbatore-1 HD2643(Ganga),HP1633,HP1	<ul style="list-style-type: none"> Enhanced basal dose of NPK to boost the early vegetative growth Application of Potasic fertilizer with adjuvant Direct seedling of paddy 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

			744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285,RAJ3765	<ul style="list-style-type: none"> • Use of 20 days old dapog seedling for rice • Protective spray of pesticides with adjuvant against BLB & BLAST & Helminthosporium leaf spot • Application of organic manure and vermicompost initially for paddy and other crops 	
	3 Low land	Paddy – Wheat Paddy- Wheat- Moong	<p>Paddy (Short Duration)-Wheat Paddy-Rai-Moong Paddy -Vegetable Paddy- Potato-Moong Sesamum-Potato-moong Urd-Wheat</p> <p>Paddy- Rajshree, Santosh , Sita Rajendra Suwasni, Rajendra Sweta</p> <p>Wheat - HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285,RAJ3765 Oilseed- 66-197-3, Rajendra Sarson-I (For early sowing Rajendra Anukul, Rajendra Picheti, Rajendra Suphalam for late sowing</p>	<ul style="list-style-type: none"> • Dapog Nursery raised 20 days old seedling should be used for paddy • Zero tillage for paddy and wheat to make up the time • Direct seeding paddy • Application of Potassic fertilizer at vegetative stage • Protective spray of pesticides • Enhanced basal dose of NPK Application of organic manure and vermicompost initially for paddy and other crops 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	1) Farming situation: Upland	Paddy- Wheat Paddy- Wheat- Green gram	Late sown paddy-Late sown wheat Sept. Pigeonpea-Moong Moong/Urd-Late wheat Sesamum-Rai-moong Torina-Wheat-Moong	<ul style="list-style-type: none"> • Zero tillage for wheat to make up the time • Spray of potassic fertilizer with adjuvant in paddy at 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

		<p>Maize-wheat- Green Gram Maize-wheat- Green Gram Red Gram</p>	<p>Paddy- Prabhat, Dhanlaxmi, Richharia, Turanta, Saroj</p> <p>Wheat - HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036, HD2285,RAJ3765</p> <p>Moong – Samrat, Pusa Vishal, SML 668, PDM-44, T-44</p> <p>Sept. Pigeonpea –Pusa-9 Sharad Arhar-I</p> <p>Urd - T-9, Navin, Pant Urd-30 , Pant, Urd-19</p> <p>Mustard- Rajendra Anukul, Rajendra Picheti, Rajendra Suphalam for late sowing</p>	<p>vegetative stage</p> <ul style="list-style-type: none"> • Life saving irrigation to paddy nursery raised • Use of 20 days old Dapog seedling in paddy • Direct seeding of rice • Enhanced basal dose of NPK in rice to boost early vegetative growth • Protective spray of pesticides with adjuvant against pest & disease • Application of organic manure and vermicompost initially for paddy and other crops 	
	2) Medium land	<p>Paddy-Wheat Paddy-Wheat- Green gram</p>	<p>Sesame –Rabi maize Sesame-Late Wheat September Pigeonpea-Moong</p> <p>Sesame – Krishna, Pragati Rabi Maize- Saktiman-1,2,3,4, Laxmi, Deoki, Rajendra Hybrid-1,2</p> <p>Early paddy-Prabhat, Dhanlaxmi, Richharia, Turanta</p> <p>Late Wheat – HD2643(Ganga),HP1633,HP1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,HD2285,RAJ3765</p> <p>Moong – Samrat, Pusa Vishal, SML 668, PDM-44, T-44</p> <p>Sept.Pigeonpea–Pusa-9, Sharad Narendra Arhar-I</p>	<ul style="list-style-type: none"> • Zero for wheat to make up the time • Spray of potassic fertilizer with adjuvant in paddy at vegetative stage • Life saving irrigation to paddy nursery raised • Use of 20 days old Dapog seedling in paddy • Direct seeding of rice • Enhanced basal dose of NPK in rice to boost early vegetative growth • Protective spray of pesticides with adjuvant against pest & disease • Application of organic manure and vermicompost initially for paddy 	<p>Seeds from RAU, Pusa, NSC, TDC , BRBN etc</p>

				and other crops	
	3) Low land	Paddy-Potato	<p>Sesame –Rabi maize Sesame-Late Wheat September Pigeonpea-Moong</p> <p>Sesame – Krishna, Pragati Rabi Maize- Saktiman-1,2,3,4, Laxmi, Deoki, Rajendra Hybrid- 1,2 Early paddy-Prabhat, Dhanlaxmi, Richharia, Turanta Late Wheat – HD2643(Ganga),HP1633,HP1 744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036,H D2285,RAJ3765 Moong – Samrat, Pusa Vishal, SML 668, PDM-44, T-44 Sept.Pigeonpea–Pusa-9, Sharad Narendra Arhar-</p>	<ul style="list-style-type: none"> • Zero for wheat to make up the time • Spray of potassic fertilizer with adjuvant in paddy at vegetative stage • Life saving irrigation to paddy nursery raised • Use of 20 days old Dapog seedling in paddy • Direct seeding of rice • Enhanced basal dose of NPK in rice to boost early vegetative growth • Protective spray of pesticides with adjuvant against pest & disease • Application of organic manure and vermicompost initially for paddy and other crops 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc
		Paddy-wheat-green gram	<p>Sept. Pigeonpea-Moong Sesame-Rabi maize Pigeonpea – Bahar, Pusa-9 Narendra Arhar-I Rabi Maize - Saktiman-1,2,3,4, Laxmi, Deoki, Rajendra Hybrid – 1,2 Moong – Samrat, Pusa Vishal, SML 668, Sesame – Krishna, Pragati</p>	<ul style="list-style-type: none"> • Normal practices for sesame, Pigeonpea 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc

Insufficient groundwater recharge due to low rainfall	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
	1) Farming situation: Upland	Paddy-Wheat Paddy-Wheat-Green gram Maize-wheat-Green Gram Maize-wheat-Green Gram Red Gram	Short duration Paddy-Wheat Paddy-Prabhat, Dhanlaxmi, Richharia, Rajendra Bhagwati, Saroj Wheat- DL784-3 HD2643(Ganga),HP1633,H P1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036, HD2285,RAJ3765 Moong - Pusa Bashaki, SML668, PDM-44, T-44 Pigeonpea-Bahar, Pusa-9 Narendra Arhar-I	<ul style="list-style-type: none"> ▪ Normal seedling of rice can be used with adequate NPK ▪ Old age 30-35 d seedlings of early rice variety may also be used ▪ 20 days Dapog seedling can be used in rice ▪ Direct seeding of rice ▪ SRI ▪ Zero tillage sown paddy and wheat to make up the time, 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.
	2) Farming situation: Medium Land	Paddy-Wheat Paddy-Wheat-Green gram	Paddy-Wheat Paddy-Wheat-Green gram Mid duration Paddy up to 125-130 days Paddy - Rajendra Bhagawati, Rajendra Suwasni Rajshree, Prabhat, Wheat- DL784-3 HD2643(Ganga),HP1633,H P1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036, HD2285,RAJ3765	<ul style="list-style-type: none"> • Full basal dose of NPK • Life saving irrigation • Application of Potash • Application of organic manure and vermicompost initially for paddy and other crops • 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.
	3 Low land	Paddy – Wheat Paddy-Wheat-Moong	No change in crop 130-140 days long duration variety should be selected Paddy- Rajshree, Santosh , Sita Rajendra Suwasni,	<ul style="list-style-type: none"> • Enhanced dose of nitrogen with full basal dose of NPK at transplanting • Old age rice seedling of 40-45 	Seeds from RAU, Pusa, NSC, TDC , BRBN etc.

			Rajendra Sweta Wheat- DL784-3 HD2643(Ganga),HP1633,H P1744(Rajeshwari), NW1014, HW2045.DBW14, NW2036, HUW234,PBW373,NW2036, HD2285,RAJ3765	days may be used with three seedling per hill with close spacing <ul style="list-style-type: none"> • Application of potash, Inter culturing operation • Mulching, • Application of Organic manure and vermicompost initially 	
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2.2 Unusual rains (untimely, unseasonal etc) (for both rainfed and irrigated situations)

Condition	Suggested contingency measure			
	Vegetative stage ^k	Flowering stage ^l	Crop maturity stage ^m	Post harvest ⁿ
Continuous high rainfall in a short span leading to water logging				
Paddy	<ul style="list-style-type: none"> • Drainage management • Retransplanting through Dapog nursery if needed • Gap filling • Resowing through drum seeder 	<ul style="list-style-type: none"> • Drainage management • Subsequently crop if totally damaged i.e. Toria 	<ul style="list-style-type: none"> • Drainage management • Subsequent crop if totally damaged • Harvest at physiological maturity 	Storage at safer place
Maize	<ul style="list-style-type: none"> • Drainage management • Gap filling • Resowing, if completely damaged 	<ul style="list-style-type: none"> • Drainage management • Alternative maize or other rabi crop if totally damaged 	<ul style="list-style-type: none"> • Drainage management • Subsequent if totally damaged • Harvest at physiological maturity 	Storage at safer place
Pigeonpea	<ul style="list-style-type: none"> • Drainage management • September sowing if Khrif Arhar is completely damaged • Gap filling if needed 	<ul style="list-style-type: none"> • Drainage management • Alternative maize or other rabi crop if totally damaged 	<ul style="list-style-type: none"> • Drainage management • Subsequent if totally damaged • Harvest at physiological maturity 	Storage at safer place
Vegetable	<ul style="list-style-type: none"> • Resowing , if required • Replanting 	<ul style="list-style-type: none"> • Drainage management 	<ul style="list-style-type: none"> • Drainage management 	Storage at safer place
Horticulture				
Mango	<ul style="list-style-type: none"> • Drainage management • Replanting if completely damaged • Gap filling 	<ul style="list-style-type: none"> • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management • Harvesting at proper maturity 	

Litchi	<ul style="list-style-type: none"> • Drainage management • Replanting, if completely damaged 	<ul style="list-style-type: none"> • Drainage management 	<ul style="list-style-type: none"> • Drainage management • Spray and pasting of trunk • Drenching with copper fungicide 	
Banana	<ul style="list-style-type: none"> • Drainage management • Replanting, if completely damaged 	<ul style="list-style-type: none"> • Drainage management 	<ul style="list-style-type: none"> • Drainage management • Spray and pasting of trunk 	
Papaya	<ul style="list-style-type: none"> • Drainage management • Replanting, if completely damaged 	<ul style="list-style-type: none"> • Drainage management 	<ul style="list-style-type: none"> • Drainage management • Spray and pasting of trunk 	<ul style="list-style-type: none"> • Safe storage and transportation
Heavy rainfall with high speed winds in a short span²				
Paddy	<ul style="list-style-type: none"> • Drainage management • Replanting if completely damaged • Gap filling if needed 	<ul style="list-style-type: none"> • Drainage management • Subsequent crop if totally damaged i.e. Toria 	<ul style="list-style-type: none"> • Drainage management • Subsequent crop if totally damaged 	Storage at safer place
Maize	<ul style="list-style-type: none"> • Resowing If completely damaged • Gap filling if needed • Drainage management 	<ul style="list-style-type: none"> • Drainage management • Alternative maize or other crop if totally damaged 	<ul style="list-style-type: none"> • Drainage management • Subsequent crop if totally damaged 	Storage at safer place
Pegeonpea	<ul style="list-style-type: none"> • Resowing If completely damaged • Gap filling if needed • Drainage management 	<ul style="list-style-type: none"> • Drainage management • Alternative crop if totally damaged 	<ul style="list-style-type: none"> • Drainage management • Alternative crop if totally damaged 	Storage at safer place
vegetable	<ul style="list-style-type: none"> ▪ Drainage management ▪ Gap filling 	<ul style="list-style-type: none"> • Drainage management 	<ul style="list-style-type: none"> • Drainage management • Drenching with copper fungicide 	
Horticulture				
Mango	<ul style="list-style-type: none"> • Drainage management • Replanting if substantially damaged 	<ul style="list-style-type: none"> • Drainage management • Drenching with copper fungicides 	<ul style="list-style-type: none"> • Drainage management • Harvest at proper time 	
Litchi	<ul style="list-style-type: none"> ▪ Drainage management ▪ Gap filling 	<ul style="list-style-type: none"> • Drainage management 	<ul style="list-style-type: none"> • Drainage management • Drenching with copper fungicide 	
Banana	<ul style="list-style-type: none"> • Drainage management • Replanting if substantially damaged 	<ul style="list-style-type: none"> • Drainage management • Staking 	<ul style="list-style-type: none"> • Drainage management • Harvest at proper time 	

Guava	<ul style="list-style-type: none"> • Drainage management • Replanting if substantially damaged 	<ul style="list-style-type: none"> • Drainage management • Drenching with copper fungicides 	<ul style="list-style-type: none"> • Drainage management • Harvest at proper time 	
Outbreak of pests and diseases due to unseasonal rains				
Paddy	<ul style="list-style-type: none"> • Seedling treatment with Carbendazin + Emidachloroprid • Spray of pesticides with adjuvant 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	Storage at safer place
Maize	<ul style="list-style-type: none"> • Application of granular insecticides viz. Thimet 10 g/Carbofuran 3g in whorl of maize 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	Storage at safer place
Pigeonpea	<ul style="list-style-type: none"> • Use of pesticides 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	Storage at safer place
Vegetable	<ul style="list-style-type: none"> • Drainage management • Spraying of insecticide & fungicide 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	Safe storage & transportation
Horticulture				
Mango	<ul style="list-style-type: none"> • Spray of pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	
Litchi	<ul style="list-style-type: none"> • Spray of pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	
Banana	<ul style="list-style-type: none"> • Spray of pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	
Guava	<ul style="list-style-type: none"> • Spray of pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	<ul style="list-style-type: none"> • Spray of specific pesticides with adjuvant • Drainage management 	

2.3 Floods

Condition	Suggested contingency measure ^o			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation ¹	Seedling/ Nursery stage	Vegetative stage	Reproductive stage	At harvest
Water logging/Partial inundation	Seedling/ Nursery stage	Vegetative stage	Reproductive stage	At harvest
Crop 1 Paddy For such situation var. like Swarna-Sub-1 & local var. of Desaria Barogar etc. should be taken	<ul style="list-style-type: none"> • Drainage management • Re transplanting through Dapog nursery if completely damaged • Gap filling 	<ul style="list-style-type: none"> • Drainage management • Alternative crops if totally damaged • Gap filling • 40-45 days old seedlings may be used • Kharuhan (double transplanting) 	<ul style="list-style-type: none"> • Drainage management • Harvest at physiological maturity • Lentil as paira crop can be taken 	Storage at safer place
Crop 2 Maize	<ul style="list-style-type: none"> • Drainage management • Re sowing if substantially damaged • Gap filling, if needed 	<ul style="list-style-type: none"> • Drainage management • Alternative crops if totally damaged like maize or subsequent crop i.e. Toria 	<ul style="list-style-type: none"> • Drainage management • Harvest at physiological maturity 	Storage at safer place
3. Pigeon pea	<ul style="list-style-type: none"> • Drainage management • Re sowing if substantially damaged • Gap filling if needed 	<ul style="list-style-type: none"> • Drainage management • Any rabi crop can be taken, if completely damaged 	<ul style="list-style-type: none"> • Drainage management • Harvest at physiological maturity 	Storage at safer place
Horticulture				
Mango	<ul style="list-style-type: none"> • Replanting if substantially damaged • Gap filling • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	Judicious harvesting
Litchi	<ul style="list-style-type: none"> • Gap filling • Replanting if substantially damaged • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	Judicious harvest
Banana	<ul style="list-style-type: none"> • Replanting if substantially damaged • Gap filling • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	Judicious harvesting
Guava	<ul style="list-style-type: none"> • Replanting if substantially damaged • Gap filling 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	<ul style="list-style-type: none"> • Drenching with copper fungicides • Drainage management 	Judicious harvesting

	<ul style="list-style-type: none"> • Drainage management 			
Continuous submergence for more than 2 days²				
Crop1 : Rice (for such situation Swarna Sub-1 should be grown)	<ul style="list-style-type: none"> • Gap filling, if needed • Re-sowing if damaged after receding of flood 	<ul style="list-style-type: none"> • Replanting through Kharuhan (double transplanting) by 3-4 seedlings per hill • Short duration rice variety 	<ul style="list-style-type: none"> • Toria/Late wheat if completely damaged 	Storage at safer place
Crop2 : Maize	<ul style="list-style-type: none"> • Re-sowing if damaged after receding of flood 	<ul style="list-style-type: none"> • Resowing or gap filling as the case may be 	<ul style="list-style-type: none"> • Toria/Late wheat if completely damaged 	Storage at safer place
Horticulture				
Crop1 Mango	<ul style="list-style-type: none"> • Drainage management 			
Crop2 Guava	<ul style="list-style-type: none"> • Drainage management 			
Crop3 Banana	<ul style="list-style-type: none"> • Drainage management 			
Sea water intrusion³ (NA)				
Crop1				
Crop2				
Crop3				
Crop4				
Crop5				

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

Extreme event type	Suggested contingency measure ^r			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Heat Wave^p				
Paddy	Life saving irrigation	Life saving irrigation Spray of potassic fertilizer with adjuvant	Life saving irrigation Spray of potassic fertilizer with adjuvant	
Maize	Life saving irrigation	Life saving irrigation	Life saving irrigation	
Arhar	Life saving irrigation	Life saving irrigation	Life saving irrigation	
Wheat			Life saving irrigation (Terminal heat)	
Horticulture				
Mango	Life saving irrigation	Life saving irrigation	Life saving irrigation	
Litchi	Life saving irrigation	Life saving irrigation	Life saving irrigation	
Papaya	Life saving irrigation	Life saving irrigation	Life saving irrigation	
Cold wave^q				

Wheat		Irrigation, interculturing, mulching by weeds		
Maize		Irrigation, interculturing, mulching by weeds		
Mustard		Irrigation, interculturing, mulching by weeds		
Potato		Irrigation, interculturing, mulching by weeds		
Pulses		Irrigation, interculturing, mulching by weeds		
Horticulture				
Crop 1 bhindi		Irrigation, interculturing, mulching by weeds		
Crop 2 Brinjal		Irrigation, interculturing, mulching by weeds		
Crop 3 chili		Irrigation, interculturing, mulching by weeds		
Crop 4 tomato		Irrigation, interculturing, mulching by weeds		
Crop 5 lauki		Irrigation, interculturing, mulching by weeds		
Frost				
Crop 1 wheat		Irrigation, interculturing, mulching by weeds		

Crop 2 Gram		Irrigation interculturing, mulching by weeds		
Crop 3 Red gram		Irrigation interculturing, mulching by weeds		
Crop 4 Lentil		Irrigation interculturing, mulching by weeds		
Horticulture				
Crop 1 Bhindi	Treat the seeds in 0.2% soln of Dithane M-45	Irrigation, interculturing, mulching by weeds		
Crop 2 Brinjal		Irrigation interculturing, mulching by weeds		
Crop 3 Chilli		Irrigation interculturing, mulching by weeds		
Crop 4 Tomato & Potato	Treat the seeds in 0.2% soln of Dithane M-45	Earth up to 15cm ht. Irrigation interculturing, mulching by weeds	Spray Dithane M-45/ Mancozeb @ 2.5 gm/lit of water in 3 rd week of December at 10 days interval 3 times	Harvest in dry weather

Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event ^s	During the event	After the event
Drought			
Feed and fodder availability			
Drinking water			
Health and disease management			
Floods			
Feed and fodder availability	<ol style="list-style-type: none"> 1. Cultivation of fodder tree 2. Storage of Improved Quality Fodder 3. Conservation & Storage of <ul style="list-style-type: none"> • Feed & Fodder 	<ol style="list-style-type: none"> 1. Feeding of Complete Feed Block 2. Feeding of Urea-Molasses-Mineral-Block & Fodder 3. Feeding of stored Hay/Silage/Improved Quality Fodder 4. Feeding of Tree leaves 	Production of forage crops <ol style="list-style-type: none"> 1. Balanced feeding of Animal supported with little higher concentrate mixture

	<ul style="list-style-type: none"> • Hay & Silage: — Preserve the fodder in the form of hay from Berseem & other grasses as well as silage from <ul style="list-style-type: none"> (a) Maize- harvesting at well developed cob. (b) Jowar - at flowering stage. (c) Oat (d) Hybrid Napier – 40-45 day old. (e) Water hycianth mixing with Paddy straw in ratio of 4:1 with 70 kg molasses /ton of clean water hycianth. (f) Potato leaves mixing with wheat straw in ratio of 7:1 and should be supplemented with 3% molasses. <p>Hay: –</p> <ul style="list-style-type: none"> • Berseem/ Lucerne and other grasses. • Bales of hay and other dry fodder should be stored in dry places at a height of last flood level and covered with asbestos sheet or polythene sheet. <p>4. Development & storage of: –</p> <ul style="list-style-type: none"> (a) Complete Feed Block (CFB) (b) Urea-Molasses-Mineral-Block (U.M.M.B) 	<p>some of which are as follows:</p> <ol style="list-style-type: none"> 1. Bamboo leaves 2. Neem 3. Bargad 4. Peepal 5. Seesam 6. Subabul <p>Use of unconventional feed stuff:</p> <hr/> <ul style="list-style-type: none"> (i) Aquatic Plants – water hycianth (i) Lotus (ii) Aquatic weeds 	<p>2. Cultivation of fodder Rabi maize if water stagnated upto Nov/ December</p> <ol style="list-style-type: none"> 3. Jowar/Cowpea 4. Maize in September
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	5. Development of Fodder Bank		
Drinking water			
Health and disease management	<p>Veterinary Preparedness with Medicines, Vaccines and provision for mobile ambulatory van.</p> <ul style="list-style-type: none"> • Vaccination <p>During flood stress becomes an incriminating factor for the precipitation of diseases in livestock and poultry.</p> <p>So, necessary vaccination of livestock and poultry should be done against economically important contagious disease.</p> <p>This will be helpful not only to check epidemic in animals, but also to reduce the probability of zoonoses in human beings.</p> <p>Care should be taken for mass vaccination of livestock and poultry with a view to covering 80% of livestock population in order to achieve herd immunity.</p> <p>Mass vaccination should be conducted by a team of Department staff with proper maintenance of detailed Inoculation Register.</p> <p>Pro-active steps should be taken to receive and stock the required doses of vaccines against different diseases for their use in face of Flood.</p>	<p>Animal safety, Health camp and Treatment</p> <p>Important Suggestions for animal and Poultry safety</p> <p>During flood, all efforts should be made to rescue most of the livestock and poultry as carefully as possible.</p> <p>The people should be made conscious through announcement with the help of mikes or other means of communication, so that they may escape with their livestock and poultry to safe area.</p> <p>The fisherman or the people who knows swimming should be deputed for the rescue of drowning and floating animals and birds.</p> <p>During flood do not leave halter or headstalls on animals.</p> <p>Do not tie animals together when releasing.</p> <p>Report the location, identification and disposition of livestock and poultry to authorities handling the disaster.</p> <p>Health camp and treatment</p> <p>Water borne diseases are one of the most common phenomena during the flood</p> <p>Diarrhoeal diseases outbreaks can</p> <p>Report the location, identification and disposition of livestock and poultry to authorities handling the disaster.</p> <p>Health camp and treatment</p> <p>Water borne diseases are one of</p>	<p>Sanitation, deworming, treatment, health camps Culling of Sick animals and disposal of carcass</p> <p>Maintenance of Sanitation:</p> <p>Adequate attention is to be paid to disinfect the premises of temporary sheds with the help of bleaching powder, phenol, carbolic acid etc. In no case the carcass/cadaver should come in contact with healthy animals rehabilitated in sheds. Arrangements should be made accordingly.</p> <p>De-worming after the flood:</p> <p>Immediately after flood, the animals like cattle, buffalo. Sheep, goat, pig, dog and poultry need to be de-wormed with suitable broad spectrum anthelmintics. This will enable the animals to regain proper health.</p> <p>In water logged area, sucks can be introduced as biological control measures against snails to protect livestock from parasitic disease.</p> <p>Treatment of sick animals: The Disposal of Carcass: the</p>

		<p>the most common phenomena during the flood</p> <p>Diarrhoeal diseases outbreaks can occur after drinking contaminated water.</p> <p>Diseases that can occur during flood should be given special attention and accordingly medicines should be available in the health camp for the following mentioned diseases.</p> <p>Salmonella spp. Escherichia coli Giardiasis Amoebiasis Rotavirus Leptospirosis Scabies Black leg Malignant Edema Foot rot Anthrax Botulism Tetanus Red water Black disease Entertoxemia Liver fluke Amphistomiasis Brooders pnemonia</p> <p>Treatment of Non infectious amangement should be made for the treatment of drowning and traumatic injuries, aspiration pneumonia, lameness and other surgical cases in the health camp.</p> <p>Disinfection of livestock premises and Poultry shed infection of livestock premises and the temporary sheds should be done with the help of bleaching powder, phenol, carbolic acid etc</p>	<p>disposal of dead animals and birds are to be done by Animal Husbandry Department.</p> <p>Accordingly, necessary arrangement should be made for prompt and easy disposal of carcasses during the Flood and Post-Flood period.</p> <p>Carcasses of animals affected by the disease are the chief source of soil infection. They harbour the germs in large numbers and liberate them from both artificial and natural body openings into the surrounding soil.</p> <p>Methods of Carcass disposal to be adopted</p> <p>Burial Burning Composting Vulturing</p> <p>s. Health Camp after the flood:</p> <p>Protection of livestock from out breaking and communicable diseases be made. Health camps are to be organised in Flood affected areas to restore the normal breeding capability of breedable population as well as to restore the normal health of livestock and poultry.</p>
Cyclone			
Feed and fodder availability			
Drinking water			
Health and disease management			
Heat wave and cold wave			
Shelter/environment			

management			
Health and disease management			

2.5.2 Poultry

	Suggested contingency measures			Convergence/ linkage with ongoing programs, if any
	Before the event	During the event	After the event	
Drought				
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Floods				
Shortage of feed ingredients				
Drinking water				
Health and disease management	<p>Vaccines to be used for different animals and Poultry</p> <p>Cattle and Buffalo Hemorrhagic Septicemia Vaccine Black Quarter Vaccine FMD Vaccine Anthrax Vaccine as per endemicity.</p> <p>Sheep and Goat Hemorrhagic Septicemia Vaccine PPR Vaccine FMD Vaccine</p>			

	<p>Goat pox Vaccine Enterotoxemia Vaccine Anthrax Vaccine as per endemicity</p> <p style="text-align: center;">Pigs</p> <p>Hemorrhagic Septicemia Vaccine PPR Vaccine FMD Vaccine Goat pox Vaccine Enterotoxemia Vaccine Anthrax Vaccine as per endemicity.</p> <p style="text-align: center;">Dogs</p> <p>Rabies Vaccine</p> <p style="text-align: center;">Poultry</p> <p>Mareks disease vaccine RDV (F₁ & R₂B), FPV, IBRV & IBDV (Annexure-1)</p> <ul style="list-style-type: none"> • Medicines <p>All Districts should be earmarked for flood.</p> <p>An inventory of required medicines to treat the affected livestock in case of eventualities should be made.</p> <p>The Govt. should take steps to procure sufficient quantity of essential life saving medicines.</p> <p>List of life saving Medicines</p> <p>Corticosteroids Nikethamide Antibloat Adrenaline Antihistaminic Antidotes for common poisoning Antisnake venom Broad spectrum antibiotics Anti-inflammatory Antipyretic and Analgesics Fluids and Electrolytes</p> <ul style="list-style-type: none"> • Mobile Veterinary Clinics <p>Mobile Veterinary Clinics should be kept ready at</p>			
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	<p>Veterinary Hospital or Veterinary Camps so that immediate treatment of injured and affected animals may be done.</p> <p>For this MVC must have adequate drugs like antibiotic, analgesic, dewormer, ointment, antsnake venom and emergency health care facilities along with trained personnel.</p> <p>A good no. of mobile clinic teams should be planned consisting dedicated and experienced technical workers with allotment of area of operation.</p> <p>The teams should be kept in readiness having required stock of medicines and equipment to work in any adverse situation.</p> <p>A telephone directory should be maintained at the District level by collecting the telephone nos. of Vets, Para-Vets, NGOs / youth clubs / societies, volunteers etc. to collect feedback and plan the activities during the emergency.</p> <p>An emergency kit for poultry should be made ready well in advance. The Poultry kit should have Cage, mask, mash, pellet feed trough, waterers, detergents, poultry vaccines, Veterinary drugs, workers protection uniform</p>			
Cyclone				
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Heat wave and cold				

wave				
Shelter/environment management				
Health and disease management				

2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event ^a	During the event	After the event
1) Drought			
A. Capture			
Marine			
Inland			
(i) Shallow water depth due to insufficient rains/inflow			
(ii) Changes in water quality			
(iii) Any other			
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow	(i) Thinning of population (ii) Arrangement of water supply from external resource	(i) Partial harvesting (ii) Addition of water (iii) Stocking of air breathing fishes	(i) Maintenance of remaining stock till favorable condition achieved (ii) If not feasible, total harvesting or transfer of fishes may be done. (iii) Preparation of the pond for next crop.
(ii) Impact of salt load build up in ponds / change in water quality	(i) Regular monitoring of water quality parameter. (ii) Arrangement of aeration (iii) Addition of water from external resource	(i) Arrangement of aeration. (ii) Addition of water (iii) Monitoring of water quality (iv) Reduction of manuring according to water level.	
(i) Inundation with flood water	(i) Elevation/ Renovation of pond dyke. (ii) Sale of Table/marketable size fishes (iii) construction of earthen nursery ponds in upland areas	Collection of naturally bred seeds (Spawn /fry /fingerling) from flooded water Stocking in nursery ponds for rearing	-Retain the water in pond immediately after flood through repairing of damaged dyke etc. -Netting of pond -Removal of unwanted, predatory/weed fishes -Sell of large size fishes
(ii) Water contamination and changes in water	Arrangement of regular water quality monitoring		

quality			
(iii) Health and diseases	(a) Use lime/ potassium permanganate (b) Arrangement of CIFAX and medicines & chemical stock		-Sampling of fishes and water for disease analysis - Liming, use of drugs/ medicine if required in consultancy of fisheries experts
(iv) Loss of stock and inputs (feed, chemicals etc)	Raising the height of dyke by fencing with net and bamboo poles to prevent loss of stock	Arrangement of advance size fingerling/ yearlings for stocking	Stocking of large size fingerlings carp Fertilization of pond and regular feeding of fish Harvesting and sale of fish
(v) Infrastructure damage (pumps, aerators, huts etc)	Repairing/ arrangement of alternate safe place to keep pumps aerators etc.	A regular water on the flood and infrastructure facilities.	Re establishment of the infra structural facility.