State: UTTAR PRADESH

Agriculture Contingency Plan for District: JAUNPUR

1.0 District Agriculture profile				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	Northern Plain (And Central Highlands) Including Aravallis, Hot Semi-Arid Eco-Region (4.3) & Northern Plain, Hot Subhumib (Dry) Eco-Region(9.2)		
	Agro-Climatic Zone (Planning Commission)	MIDDLE GANGETIC PLAIN REGION (IV)		
	Agro Climatic Zone (NARP)	EASTERN PLAIN ZONE (UP-9)		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Allahabad , Ambedkar Nagar, Azamgarh, Ballia, Barabanki, Basti, Chandauli, Deoria, Faizabad, Ghazipur, Gonda, Gorakhpur, Jaunpur, Mau, Mirzapur, Pratapgarh, Rae Bareli, Sant Kabir Nagar, Sant Ravidas Nagar, Sultanpur, Varanasi		
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		25°44'N	82°41'E	79.80m
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Institute of Agricultural Sciences , Banaras Hindu University, Varanasi		
	Mention the KVK located in the district with address	Krishi Vignan Kendra, Buxa, Jaunpur		
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	Disaster Management (DM Office), Jaunpur		

1.2	**Rainfall**	**Normal RF(mm)**	**Normal Rainy days (number)**	**Normal Onset**	**Normal Cessation**
	SW monsoon (June-Sep)	985.1	31	3rd week of June	1st week of October
	NE Monsoon(Oct-Dec)	57.6	08	-	-
	Winter (Jan- March)	41.0	05	-	-
	Summer (Apr-May)	14.2	02	-	-
	Annual	1097.9	46	-	-

1.3	**Land use pattern of the district** (latest statistics)	Geographical area	Cultivable area	Forest area	Land under non-agricultural use	Permanent Pastures	Cultivable wasteland	Land under Misc. tree crops and groves	Barren and uncultivable land	Current fallows	Other fallows
	Area (‘000 ha)	399.710	279.051	0.063	45.502	1.339	7.953	4.836	6.938	33.521	20.504

1. 4	**Major Soils**	**Area (‘000 ha)**	**Percent (%) of total geographical area**
	Loam, Sandy loam, Alluvial soils	135.846	34.21
	Salty loam /clay loams	164.497	41.4
	Sandy soil, Loamy sand	96.652	24.34

1.5	**Agricultural land use**	Area (‘000 ha)	Cropping intensity %
	Net sown area	279.051	166.39 %
	Area sown more than once	185.273	
	Gross cropped area	464.324	

1.6	**Irrigation**	**Area (‘000 ha)**		
	Net irrigated area	244.648		
	Gross irrigated area	381.985		
	Rainfed area	34.403		
	Sources of Irrigation	Number	Area (‘000 ha)	Percentage of total irrigated area
	Canals		65.893	
	Tanks		0.019	
	Open wells		0.0	
	Bore wells		Govt. 5.928 + Pvt. 172.808 = 178.736	
	Lift irrigation schemes			
	Micro-irrigation			
	Other sources		0.026	
	Total Irrigated Area		244.764	
	Pump sets			
	No. of Tractors			
	Groundwater availability and use* (Data source:	No. of blocks – 21	(%) area	Quality of water

	State/Central Ground water Department /Board)			
	Over exploited			No problem of arsenic & fluoride. However, low amount of salinity is reported. In majority of the area the problems of Calcium & Iron are reported
	Critical			
	Semi- critical			
	Safe	Safe		
	Wastewater availability and use	1624 MCM/YR		
	Ground water quality	Mild salinity		

***** Over exploited: ground water utilization > 100%, critical: 90-100%; semi-critical: 70 - 90%, safe: < 70%.

1.7 Area under major field crops & horticulture

1.7	**Major field crops cultivated**	**Area ('000 ha)**							
		Kharif			***Rabi***			**Summer**	
		Irrigated	**Rainfed**	**Total**	**Irrigated**	**Rainfed**	**Total**		**Grand total**
	Rice	140.561	1.813	142.374	-	-	-	-	142.374
	Maize	0.045	45.071	45.116				0.322	45.116
	Pigeonpea		10.238	10.238	-	-	-	-	10.238
	Pearl millet		5.709	5.709	-	-	-	-	5.709
	Blackgram		5.018	5.018	-	-	5.917	0.986	6.004
	Wheat	-	-	-	206.574		206.574	-	206.574
	Pea	-	-	-	5.557	0.180	5.737	-	5.737
	Chickpea	-	-	-	0.102	5.160	5.162	-	5.162

S. No	Horticultural Crops - Fruits	Total (000 ha)	Irrigated (000 ha)	Rainfed (000 ha)
	Horticulture crops - Vegetables			
	Potato	9.985	9.985	0.0
	Onion	0.972	0.972	-
	Other Vegetables	12.556	12.221	0.335
	Medicinal and Aromatic crops	**Total (000 ha)**	**Irrigated (000 ha)**	**Rainfed (000 ha)**
	Plantation crops	**Total**	**Irrigated**	**Rainfed**
	Fodder crops	**Total**	**Irrigated**	**Rainfed**
	Total fodders	3.860	3.855	0.005
	Grazing land	**-**	**-**	**-**
	Sericulture etc	**-**	**-**	**-**

1.8	Livestock	Male ('000)	Female ('000)	Male + Female (<3 Yrs) ('000)	Total ('000)
	Non descriptive Cattle (local low yielding)	120.154	152.595	163.014	435.763
	Improved cattle	-	-	-	-
	Crossbred cattle	3.490	19.600	20.969	44.049
	Non descriptive Buffaloes (local low yielding)	6.131	209.920	185.070	401.121
	Descript Buffaloes	-	-	-	-
	Goat	-	-	-	212.592
	Sheep	-	-	-	46.841
	Others (Pig)	-	-	-	36.665
	Commercial dairy farms (Number)	-	-		0.325

1.9	**Poultry**	**No. of farms**	**Total No. of birds ('000)**
	Commercial	-	368.674
	Backyard	-	10.839

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.)**
ii) Inland (Data Source: Fisheries Department)	**No. Farmer owned ponds**	**No. of Reservoirs**		**No. of village tanks**		
		43 (Govt.)+1870(Private)				
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)		383.68(Govt.)+1632.00(Private)			148.000(Govt.)+ 4043.500(Private) 2698.00 Angulika	

1.11 Production and Productivity of major crops

1.11	Name of crop	*Kharif*		*Rabi*		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	
Major Field crops										
	Rice	252.249	1826	-	-	-	-	252.249	1826	
	Maize	68.671	1576	-	-	0.429	1396	69.100	1574	
	Pigeonpea	9.530	949	-	-	-	-	9.530	949	
	Pea	-	-	7.945	1304	-	-	7.945	1304	
	Pearl millet	5.507	1076			-	-	5.507	1076	
	Wheat	-	-	482.319	2432	-	-	482.319	2432	
	Chickpea	-	-	5.458	928	-	-	5.458	928	
	Blackgram	3.034	612	-	-	0.541	594	3.575	609	

1.12	Sowing window for 5 major field crops	Rice	Maize	Pigeonpea	Pearl millet	Wheat	Pea	Chickpea
	Kharif- Rainfed	4th week of June to 1st week of July	4th week of June to 1st week of July	4th week of June to 4th week of July	2nd week of July to 2nd week of August	-	-	-
	Kharif-Irrigated	June (nursery)	-		-	-	-	-
	Rabi- Rainfed	-	-	-	-	2nd week of October to 4th week of October	2nd week of Oct-4th week of October	2nd week of October to 4th week of October

	Rabi-Irrigated					2nd week of November to 4th week of October	2nd week of October to 2nd week of November	
	Summer irrigated	-	2nd week of March to 2nd week of April	-		-	-	-

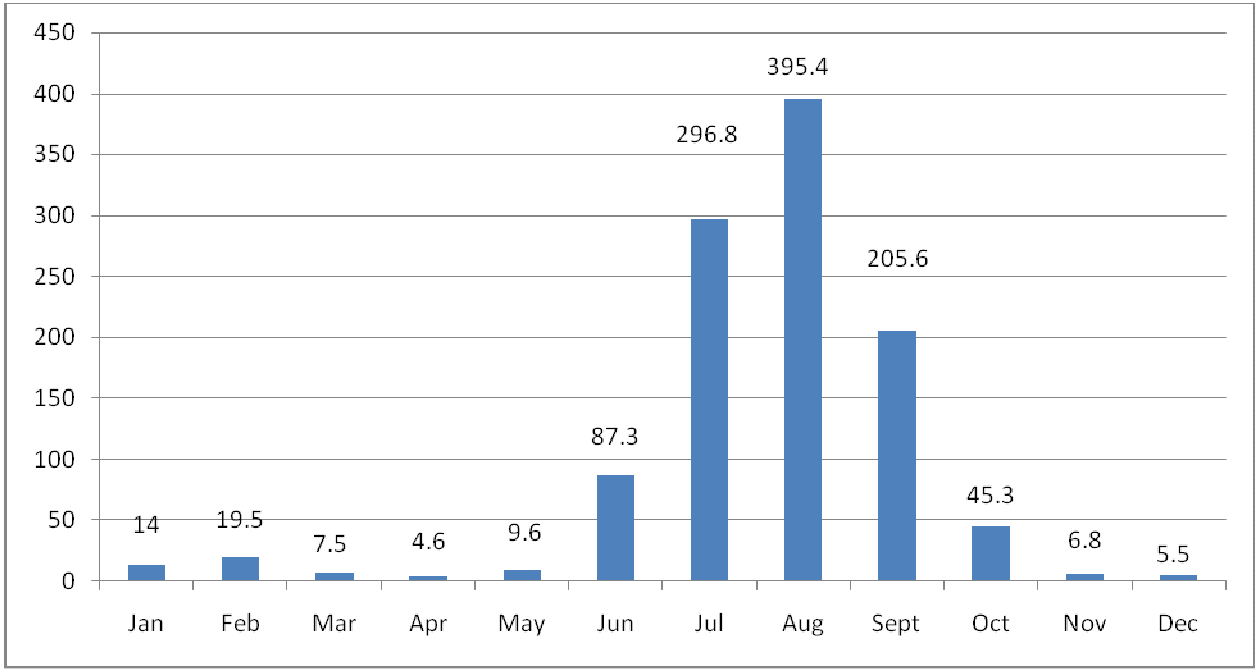
1.13	What is the major contingency the district is prone to?	Regular	Occasional	None
	Drought	√		
	Flood		√	
	Cyclone			√
	Hail storm		√	
	Heat wave		√	
	Cold wave		√	
	Frost		√	
	Sea water intrusion			√
	Pests and disease outbreak	√		

1.14	Include Digital maps of the district for	Location map of district within State as Annexure 1	Enclosed: Yes
		Mean annual rainfall as Annexure II	Enclosed: Yes
		Soil map as Annexure III	Enclosed: Yes

ANNEXURE I


Shamli
Muzaffarnagar
Bijnor
Moradabad
Rampur
Baghpat
Meerut
Jyotiba Phule Nagar
Ghaziabad
Gautam Budh Nagar
Bulandshahr
Bareilly
Pilibhit
Budaun
Lakhimpur
Shrawasti
Aligarh
Mathura
Hathras
Etah
Sitapur
Balrampur
Siddharth Nagar
Agra
Mainpuri
Hardoi
Gonda
Firozabad
Farrukhabad
Kannauj
Etawah
Basti
Auraiya
Kanpur Rural
Unnao
Faizabad
Kanpur Urban
Sultanpur
Deoria
Jalaun
Fatehpur
Pratapgarh
Azamgarh
Mau
Ballia
Jhansi
Hamirpur
Banda
Mahoba
Varanasi
Ghazipur
Chitrakoot
Allahabad
Mirzapur
Lalitpur
Sant Ravidas Nagar
Sonbhadra

Annexure -2: Mean Monthly Rainfall(mm)



Annexure-III

Alluvial plain (0-1% slope)

1. Deep, loamy soils and slightly eroded
2. Deep, fine soils moderately saline and sodic associated with loamy soils, slightly eroded
3. Deep, fine soils and slightly eroded associated with loamy soils slightly saline and moderately sodic
4. Deep, silty soils with moderately salinity and sodicity associated with loamy soils with moderate salinity and sodicity and water logging
5. Deep, silty soils and slightly eroded associated with loamy soils slightly saline and slightly sodic
6. Deep, loamy soils and slightly eroded associated with loamy soils with moderate salinity and sodicity and moderate water logging.
7. Deep, silty soils with moderate salinity/sodicity associated with loamy soils slightly eroded

Recent Alluvial Plain (1-3% slope)

8. Deep, loomy soils, slightly eroded associated with silty soils and slightly eroded

Active Flood Plain (1-3% slope)

9. Deep, sandy soils with moderate flooding associated with stratified loamy soils and slight flooding
10. Deep, stratified loamy soils, with severe flooding associated with loamy soils with moderate flooding

2.0 Strategies for weather related Contingencies

2.1 Drought

2.1.1 Rainfed situation

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop / Cropping system**	**Change in crop / cropping system including variety**	**Agronomic measures**	**Remarks on Implementation**
Delay by 2 weeks 1st week of July	Deep alluvial soils Upland situation	**Sequence cropping** Rice- Chickpea Rice- Mustard Maize- Chickpea Blackgram- Barley Sesame- Chickpea	During ***Kharif*** Rice /Maize/ Blackgram/Sesame **Rice** : NDR 97, NDR 118, Govind & Vandana, Varani Deepu, Shushk Samrat, Ashwini, HUR 3022 **Sesame:** Type 4, T-12, T-13, Shekhar ,GT1, TC 25 , TC 289 **Maize –** Malviya hybrid Makka-2, Naveen, Jaunpuri **Blackgram -** Type 9, Pant U 19, Pant U 35, Narendra Urd 1 & Azad Urd-3 **Barely-** K 125, K 141, K 226, K 560 **Chickpea –** T-6, BG 256, Avarodhi **Mustard –**Varuna, Ashirvad, Vardan	Sowing with seed cum ferti drills across the slope and resowing if no proper germination. Thinning of population, conservation furrow, intercultivation Surface water management	Breeder seed may be obtained from the University (NDUAT) Seed drills under RKVY Supply of seeds through NFSM
		Inter cropping Pigeonpea+ Pearl millet Pigeonpea+Sorghum Pigeonpea+Sesame Maize +Black gram	Pigeonpea + Sesame Pigeonpea + Rice Maize +Blackgram **Pigeonpea**: Bahar, Narendra Arahar-1, Malviya Vakas(MA-6), Malviya Chamtkar (MA-13) **Rice :**NDR 97, NDR 118,	Sowing of Pigeonpea + sesame on ridges and pigeonpea + rice on ridges and furrow, where as Maize + black gram on flat beds. Wider spacing of Pigeonpea i. e. 90cm and normal spacing of black	

			Govind & Vandana, Varani Deep, Shushk Samrat, Ashwini , HUR 3022 **Sesame –**Type 4, T-12, T-13, Shekhar ,GT1, TC 25, TC 289 **Maize –** Malviya hybrid Makka-2, Naveen & Jaunpuri **Blackgram –** Type 9, Pant U 19, Pant U 35, Narendra Urd 1 & Azad Urd-3	gram i. e. 30 cm and 45 cm for maize & sesame.	

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 4 weeks 3rd week of July	Deep alluvial soils Upland situation	**Sequence cropping:** Rice- Chickpea Rice- Mustard Maize- Chickpea Pearl millet- Chickpea Blackgram- Barley Sesame- Chickpea Sorghum - Chickpea	During ***Kharif*** Rice/ Maize/ Pearl millet/ Sesame/ Blackgram/ Sorghum Rice: NDR-97, NDR-118, Govind, Vandana, Varani, Shushk Samrat Maize: Jaunpuri, Naveen Pearl millet : WCC 75, Raj 171, Pusa 23 Sesame: Type 4, T-12, T-13, Shekhar ,GT1, TC 25 &TC 289 Blackgram : Type 9, Pant U 19, Pant U 35, Narendra Urd 1 & Azad Urd-3 Sorghum : Varsha, CSV-13 & 15 and Hybrids such as CSH-9,14 &16	Sowing with seed cum ferti drills across the slope and re sowing if no proper germination. Transplanting of rice seedlings through community nursery. Weed management through dryland weeder & also through weedicides, Thinning of population, conservation furrow, intercultivation. Surface water management	Breeder seed may be obtained from the University (NDUAT) Seed drills under RKVY Supply of seeds through NFSM
		Inter cropping: Pigeonpea-+ Pearl millet Pigeonpea+ Sorghum Pigeonpea-+ Sesame	Intercropping of Pigeonpea + Sesame Pigeonpea + Rice Maize +Blackgram	Sowing of Pigeonpea + Sesame on ridges and Pigeonpea + Rice on ridges and furrow, where as Maize + Blackgram on flat beds.	

		Maize +Blackgram	Pigeonpea: Bahar, Narendra Arahar-1, Malviya Vakas(MA6), Malviya Chamtkar (MA13)	Wider spacing of Pigeonpea i. e. 90 cm and normal spacing of black gram i. e. 30 cm and 45 cm for maize & sesame.	

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 6 weeks 1st week of August	Deep alluvial soils Upland situation	**Sequence cropping:** Rice- Chickpea Rice- Mustard Maize- Chickpea Pearl millet- Chickpea Sorghum - Chickpea Blackgram- Barley Sesame- Chickpea	Replace rice, maize, sorghum (grain purpose) black gram, and sesame with pearl millet during *Kharif* season. Pearl millet **:**WCC 75, Raj 171, Pusa 23	Sowing with seed cum ferti drills across the slope and resowing if no proper germination. Weed management through dryland weeder & also through weedicides, Thinning of population, conservation furrow, interculture. Surface water management	Breeder seed may be obtained from the University (NDUAT) Seed drills under RKVY Supply of seeds through NFSM
		Inter cropping: Pigeonpea-+ Pearl millet	Intercropping of Pigeonpea + Pearl millet Pigeonpea : Bahar, Narendra Arahar-1, Malviya Vakas (MA6), Malviya Chamtkar (MA13)	Sowing of Pigeonpea + Pearl millet on ridges on wider spacing of Pigeon pea i. e. 90cm	

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 8 weeks 3rd week of August	Deep alluvial soils Upland situation	**Sequence cropping:** Rice- Chickpea Rice- Mustard Maize- Chickpea Pearl millet- Chickpea Sorghum - Chickpea Blackgram- Barley Sesame- Chickpea	Replace Rice, Maize, Sorghum (grain purpose) Blackgram, and Sesame with Pearl millet during *Kharif* season. Grow sorghum and pearl millet as fodder crops also. Prepare field for sowing of Toria (Type-9, Bhavani) during first week of September. Pearl millet:WCC 75, Raj 171, Pusa 23	Sowing with seed cum ferti drills across the slope and re sowing if no proper germination. Weed management through dryland weeder & also through weedicides. Thinning of population, conservation furrow, interculture. Surface water management, Field should be prepared with the onset of delayed monsoon for sowing of toria crop.	Breeder seed may be obtained from the University (NDUAT) Seed drills under RKVY Supply of seeds through NFSM
		Inter cropping: Pigeonpea + Pearl millet	Intercropping of Pigeonpea + Pearl millet Pigeonpea: Bahar, Narendra Arahar-1, Malviya Vakas(MA6), Malviya Chamtkar (MA13)	Sowing of Pigeonpea + Pearl millet on ridges and wider spacing of Pigeonpea i. e. 90cm	

Condition			**Suggested Contingency measures**		
Early season drought **(Normal onset)**	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Deep alluvial soils Upland situation	**Sequence cropping:** Rice- Chickpea Rice- Mustard Maize- Chickpea Pearl millet- Chickpea Sorghum - Chickpea Blackgram- Barley Sesame- Chickpea	Use of drought tolerant rice variety for resowing Use of dust mulch/ straw mulch (4 t/ha) Intercultivation	Use of additional N @ 10 kg/ha , Conservation furrow, Spray of 2% urea as foliar application	
		Inter cropping: Pigeonpea+Pearl millet Pigeonpea+Sorghum Pigeonpea+Sesame Maize +Blackgram.	Earthting up in main crops, Thinning to maintain proper distance between the plants	Conservation tillage, Spray of 2% urea as foliar application	

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	Deep alluvial soils Upland situation	**Sequence cropping:** Rice- Chickpea Rice- Mustard Maize- Chickpea Pearl millet- Chickpea Sorghum - Chickpea Blackgram- Barley Sesame- Chickpea	Life saving irrigation(5 cm) if possible Dust/ straw mulch (4 t/ha) Thinning Intercultivation with dryland weeder	Use of additional N @ 10 kg/ha, Spray of 2% urea as foliar application, Conservation furrow	
		Inter cropping : Pigeonpea+Pearl millet	Earthing up in intercrops, Thinning to maintain proper distance between the plants	Conservation tillage, Spray of 2% urea as foliar application	

		Pigeonpea+Sorghum Pigeonpea+ Sesame Maize +Blackgram			

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	Deep alluvial soils Uplands situation	**Sequence cropping:** Rice- Chickpea Rice- Mustard Maize- Chickpea Pearl millet- Chickpea Sorghum - Chickpea Blackgram- Barley Sesame- Chickpea	Life saving irrigation (5 cm) if possible, Dust/ straw mulch, Defoliate the older leaves to convert the nutrients to younger leaves	Spraying of 2% urea as foliar application. 1% KCl Spray	
		Inter cropping system Pigeonpea+Pearl millet Pigeonpea+Sorghum Pigeonpea+Sesame Maize +Blackgram	Earthing up in main crop, harvesting of intercrop (pearl millet and sorghum) for fodder purposes. Harvesting of Blackgram and Sesame at physiological maturity.	Spraying of 2% urea as foliar application. 1% KCl Spray	

Condition			**Suggested Contingency measures**		
Terminal drought (Early withdrawal of monsoon)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Rabi Crop planning**	**Remarks on Implementation**
	Deep alluvial soils Upland situation	**Sequence cropping:** Rice- Chickpea Rice- Mustard Maize- Chickpea Pearl millet- Chickpea Sorghum - Chickpea Blackgram- Barley Sesame- Chickpea	Life saving irrigation (5 cm) if possible, Dust/ straw mulch, Defoliate the older leaves to convert the nutrients to younger leaves	Sowing of Toria in the month of September (Type 9 & Bhavani)	

			Harvesting at physiological maturity.		
		Inter cropping: Pigeonpea+pearl millet Pigeonpea+Sorghum Pigenpea+Sesame Maize +Blackgram	Harvesting of intercrop at physiological maturity, Earthing up in main crop, Life saving irrigation to main crop in furrows.		

2.1.2 Drought - Irrigated situation

Condition			**Suggested Contingency measures**		
	Major Farming situation	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delayed release of water in canals due to low rainfall	Medium to deep alluvial soils - tube well irrigated	**Sequence Cropping:** Rice – Wheat Rice - Pea Rice – Chickpea Rice – Lentil Rice – Mustard Maize – Wheat Maize – Potato Maize – Mustard Maize – Chickpea Maize – Pea Maize – Lentil	Rice/ Maize Short duration rice varieties - NDR 97, Ratna, Narendra 118, Narendra 97, Pant Dhan IR 50, HUR 105, Induri Sambha HUR 2-1, HUR-3022 to be grown under aerobic condition. Sowing of Maize on ridges. Maize: Hybrids- Ganga 2, Ganga 11, Shaktiman 2, Shakti 1(QPM) Composite – Naveen, Kanchan, Sweta, Prabhat, gaurav, Pragati Desi – Jaunpuri	Community nursery Direct seeding in small beds. Use of micro-irrigation systems *viz.* sprinkler & sub-surface irrigation. Use of dust/straw mulches (4 t/ha)	Breeder seed will be supplied by BHU and NDAUT, Faizabad. Seed drills under RKVY and supply of seeds through NFSM
Limited release of water in canals due to low rainfall	Medium to deep alluvial soils	**Sequence Cropping** Rice – Wheat Rice - Pea Rice – Chickpea Rice – Lentil Rice – Mustard Maize – Wheat Maize – Potato Maize – Mustard Maize – Chickpea Maize – Pea	Rice/ Maize Grow short duration aerobic rice such as NDR 97, NDR 118 Govind, Vandana, Varanideep, Shusk Samrat, HUR 105 Desi , Composite varieties of maize should be grown.	Community nursery, Direct seeding in small beds. Use of micro-irrigation systems *viz.* sprinkler & sub-surface irrigation.	

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop/cropping system**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
		Maize – Lentil			
Non release of water in canals under delayed onset of monsoon in catchment	Medium to deep alluvial soils	**Sequence Cropping** Rice – Wheat Rice - Pea Rice – Chickpea Rice – Lentil Rice – Mustard Maize – Wheat Maize – Potato Maize – Mustard Maize – Chickpea Maize – Pea Maize – Lentil	Shift to only aerobic rice. or Rice may be replaced by pulses (Green gram, black gram), Oil seeds (sesame), vegetables (Cowpea, Bhendi, Brinjal, Chillies)	Direct seeding in small beds. Use of micro-irrigation systems *viz.* sprinkler & sub-surface irrigation. Use of dust/straw mulches (4 t/ha)	
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Medium to deep alluvial soils	**Sequence Cropping** Rice – Wheat Rice - Pea Rice – Chickpea Rice – Lentil Rice – Mustard Maize – Wheat Maize – Potato Maize – Mustard Maize – Chickpea Maize – Pea Maize – Lentil	Grow fodder crops such as Sorghum and Pearl millet Grow Pearl millet for grain purpose.	Conservation tillage. Additional N (10 kg/ha) Sowing of Pearl millet on ridges (45 cm apart)	
Insufficient groundwater recharge due to low rainfall	Medium to deep alluvial soils	**Sequence Cropping** Rice – Wheat Rice - Pea Rice – Chickpea Rice – Lentil Rice – Mustard Maize – Wheat	Shift to pulses (green gram, black gram), Oilseeds (Sesame)	Direct seeding in small beds. Use of micro-irrigation systems *viz.* sprinkler & sub-surface irrigation.	

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
		Maize – Potato Maize – Mustard Maize – Chickpea Maize – Pea Maize – Lentil			

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**
Rice	Provide drainage	Proper bunding, drain out excess water	Harvesting at physiological maturity	Shift to safer place
Maize	Provide drainage, Sowing on ridges as a common practice	Drain out excess water, Sowing on ridges as a common practice	Harvesting of cobs at physiological maturity	Shift to safer place
Pigeonpea	Provide drainage, Sowing on ridges as a common practice	Drain out excess water, Sowing on ridges as a common practice	Harvesting at physiological maturity	Shift to safer place
Pea	Provide drainage	Drain out excess water	Harvesting at green pod stage for vegetable purpose	Shift to safer place
Pearl millet	Provide drainage, Sowing on ridges as a common practice	Drain out excess water, Sowing on ridges as a common practice	Harvesting at physiological maturity	Shift to safer place
Wheat	Provide drainage	Drain out excess water	Harvesting at physiological maturity	Shift to safer place
Heavy rainfall with high speed Winds in short span				
Rice	Drain out excess water	Drain out excess water and speed	Drain out excess water and	Keep the grains at safer

		of wind may be protected with vegetable barriers	protect with vegetable barriers from wind	place
Maize	Drain out excess water and earthing up	Drain out excess water and earthing up	Drain out excess water, Harvesting of cobs at physiological maturity	Keep the grains at safer place
Pigeonpea	Drain out excess water, Sowing on ridges as a common practice	Drain out excess water, Sowing on ridges as a common practice	Drain out excess water, harvest at physiological maturity	Keep the grains at safer place
Pea	Drain out excess water	Drain out excess water	Harvesting at green pod stage for vegetable purpose	Keep the grains at safer place
Pearl millet	Drain out excess water, sowing on ridges and furrow	Drain out excess water, earthing up, Harvest for fodder purpose	Drain out excess water, Harvesting at physiological maturity	Keep the grains at safer place
Wheat	Drain out excess water	Drain out excess water, protect with vegetable barriers	Drain out excess water and protect with vegetable barriers from wind	Keep the grains at safer place
Outbreak of pests and diseases due to unseasonal rains				
Rice	Need based plant protection (integrated pest and disease management)	Need based plant protection (integrated pest and disease management	Need based plant protection (integrated pest and disease management	Safe storage against stored grain pest and diseases
Maize	-do	-do	-do	-do
Pigeonpea	-do	-do	-do	-do
Pea	-do	-do	-do	-do
Pearl millet	-do	-do	-do	-do
Wheat	-do-	-do	-do	-do

2.3 Floods

Condition	**Suggested contingency measure**			
Transient water logging/ partial inundation	**Seedling / nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Rice	Re sowing with short duration varities	Provide drainage	Prevent premature seed germination	Harvesting at physiological maturity Shift to safer place

Continuous submergence for more than 2 days				
Rice	Varieties having submergence tolerance should be grown *viz.* Swarana sub-1, IR-64 sub-1 Community nursery	Re transplanting after cessation of flood from community nursery.	Prevent premature seed germination	Harvesting at physiological maturity
Sea water intrusion	Not Applicable			

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

Extreme event type	**Suggested contingency measure**			
	Seedling / nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat Wave				
Rice	-	-	Provide Light irrigation to reduce temperature	Harvesting at physiological maturity
Pigeonpea	-	-	Provide Light irrigation	Harvesting at physiological maturity
Wheat	Provide irrigation	Provide Light irrigation	Provide Light irrigation	
Lentil	Pre irrigation before sowing	Provide Light irrigation	Provide Light irrigation to reduce temperature	
Pea	Pre irrigation before sowing	Provide Light irrigation	Provide Light irrigation	
Horticulture				
Potato	Provide Light irrigation	Provide Light irrigation	Provide Light irrigation	
Vegetable pea	Provide Light irrigation	Provide Light irrigation	Provide Light irrigation	
Cauliflower	Provide Light irrigation	Provide Light irrigation	Provide Light irrigation	
Tomato	Provide Light irrigation	Provide Light irrigation	Provide Light irrigation	
Chilli	Provide Light irrigation	Provide Light irrigation	Provide Light irrigation	
Cold wave				

Wheat	-	Provide irrigation to provide relief from cold wave		-
Lentil	-	Provide irrigation to provide relief from cold wave		-
Pigeonpea	-	Provide irrigation to provide relief from cold wave		-
Horticulture				
Mango	-	-	Smoking by burning waste material to increase temperature	-
Frost				
Wheat	-	-	Provide Light irrigation	
Pulse crops	-	-	Provide light irrigation	
Horticulture				
Mango	-	Provide light irrigation	Smoking in orchards to increase temperature by burning waste material	
Hailstorm	Not Applicable			
Cyclone	Not Applicable			

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the events	**During the event**	**After the event**
Drought			
Feed and fodder availability	Insurance, Encourage perennial fodder on bunds and waste land on community basis Establishing fodder banks, encouraging fodder crops in irrigated area Silage – using excess fodder for silage	Utilizing fodder from perennial trees and Fodder bank reserves. Utilizing fodder stored in silage. Transporting excess fodder from adjoining districts Use of feed mixtures. Allow the cattle's for grazing at barren lands.	Availing Insurance

Drinking water	Preserving water in the tank for drinking purpose Excavation of Bore wells	Using preserved water in the tanks for drinking. Wherever ground water resources are available priority for drinking purpose.	
Health and disease management	Veterinary preparedness with medicines and vaccines	Conducting mass animal Health Camps and treating the affected once in Campaign	
Floods			
Feed and fodder availability	Grow the fodder crops at safer places (non-flood prone area)	Utilizing fodder from perennial trees and Fodder bank reserves. Utilizing fodder stored in silage. Transporting excess fodder from adjoining districts Use of feed mixtures. Shift the live stocks at safer place.	Availing insurance
Drinking water		Shift the live stocks at safer place where drinking water is available.	
Health and disease management	Veterinary preparedness with medicines and vaccines	Conducting mass animal Health Camps and treating the affected once in Campaign	
Cyclone	Not Applicable		
Heat wave and cold wave	Not Applicable		

2.5.2 Poultry

	Suggested contingency measures			**Convergence/linkages with ongoing programs, if any**
	Before the event	**During the event**	**After the event**	**-**
Drought	Insurance & Integration, Establishing feed reserve Bank	Utilizing from feed reserve banks	Availing insurance Strengthening feed Reserve Banks	**-**
Shortage of feed ingredients	-	-	-	**-**
Drinking water	-	-	-	**-**
Health and disease management	Emergency Veterinary preparedness with medicines, vaccination to birds	Campaign and Mass Vaccination	Culling affected birds	**-**
Heat wave and cold wave	-	-	-	**-**