State: Uttar Pradesh
Agriculture Contingency Plan for District: Aligarh

1.0 District Agriculture profile				
1.1	Agro-Climatic/ Ecological Zone			
	Agro-Ecological Sub Region(ICAR)	Western plain zone		
	Agro-Climatic Zone (Planning Commission)	Upper Gangetic Plain Region		
	Agro-Climatic Zone (NARP)	UP-3 South-western Semi-arid Zone		
	List all the districts falling the NARP Zone* (^ 50% area falling in the zone)	Firozabad, Aligarh, Hathras, Mathura, Mainpuri, Etah		
	Geographical coordinates of district headquarters	Latitude	Latitude	Latitude (mt.)
		27.55N	78.10E	-
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS	-		
	Mention the KVK located in the district with address	Krishi Vigyan Kendra , Aligarh		
	Name and address of the nearest Agromet Field Unit(AMFU,IMD)for agro advisories in the Zone	CSAUAT, KANPUR		

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)	579.5	49	3rd week of June	4th week of September
	Post monsoon (Oct-Dec)	25.3	10		
	Winter (Jan-March)	42.3	-	-	-
	Pre monsoon (Apr-May)	15.7	-	-	-
	Annual	662.8	49		

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 in (000 ha)	371.3	321.3	2.6	40.6	1.7	6.5	0.3	5.0	5.4	5.0

1.4	Major Soils	Area(‘000 hac)	Percent(%) of total
	Deep, loamy soils	128.5	40%
	Deep, silty soils	73.8	23%
	Deep, fine soils	61.0	19%

1.5	Agricultural land use	Area(‘000 ha.)	Cropping intensity (%)
	Net sown area	304.0	169 %
	Area sown more than once	240.7	
	Gross cropped area	544.7	

1.6	Irrigation	Area(‘000 ha)		
	Net irrigation area	302.1		
	Gross irrigated area	455.7		
	Rainfed area	1.9		
	Sources of irrigation(Gross Irr. Area)	Number	Area(’000 ha)	Percentage of total irrigated area
	Canals		53.0	11.6
	Tanks		0.04	
	Open wells		0	
	Bore wells(Tube wells)		402.6	88.3
	Lift irrigation schemes		NA	
	Micro-irrigation		NA	
	Other sources		0.1	0.1
	Total Irrigated Area		455.7	
	No. of Pump sets (2011-12)		42363	
	No. of Tractors		18245	
	Groundwater availability and use* (Data source: State/ Central Ground water Department/ Board)	No of blocks- Tehsils-	(%)area	Quality of water
	Over exploited	0		
	Critical	1		
	Semi-critical	3		
	Safe	0		
	Waste water availability and use			
	Ground water quality			
*over-exploited groundwater utilization> 100%; critical: 90-100%; semicritical:70-90%; safe:<70%				

1.7 Area under major field crops & (As per latest figures 2011-12)

1.7	Major field crops cultivated	Area('000 ha)							
		Kharif			Rabi			Summer	Total
		Irrigated	Rain fed	Total	Irrigated	Rain fed	Total		
	Wheat	-	-	-	220.707	0	220.707	-	220.707
	Pearl millet	4.372	86.329	90.701	-	-	-	-	90.701
	Rice	86.131	0	86.131	-	-	-	-	86.131
	Rapeseed Mustard	-	-	-	17.892	0.001	17.893	-	17.893
	Maize	17.277	0.182	17.459	-	-	-	-	17.459
	Sorghum	NA							

NA- Not available

	Horticulture crops - Fruits	Area ('000 ha)		
		Total	Irrigated	Rainfed
	Mango	0.083	0.083	-
	Guava	0.356	0.356	-
	Horticulture crops - Vegetables			
	Potato	17.856	17.856	-
	Onion	0.078	0.078	-
	Pea	0.909	0.909	-
	Medicinal and Aromatic crops			
	Mentha	0.324	0.324	-

1.7	Major Fodder crops cultivated	Area(ha)	Total
	Kharif	19325	19325
	Rabi	8085	8085
	Summer	2021	2021
	Total	32431	32431

1.8 Production and productivity of major crops (Average of last 5 years)

1.8	Major field crops cultivated	Area(‘000 ha)								
		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)	
	Rice	131.571	2028	-	-	-	-	131.571	2028	NA
	Wheat	-	-	761.460	3422	-	-	761.460	3422	NA
	Pearl millet	171.913	1943	-	-	-	-	171.913	1943	NA
	Maize	48.327	2080	-	-	-	-	48.327	2080	NA
	Rapeseed Mustard	-	-	26.684	1376	-	-	26.684	1376	NA
	Potato	-	-	493.000	23722	-	-	493.000	23722	NA

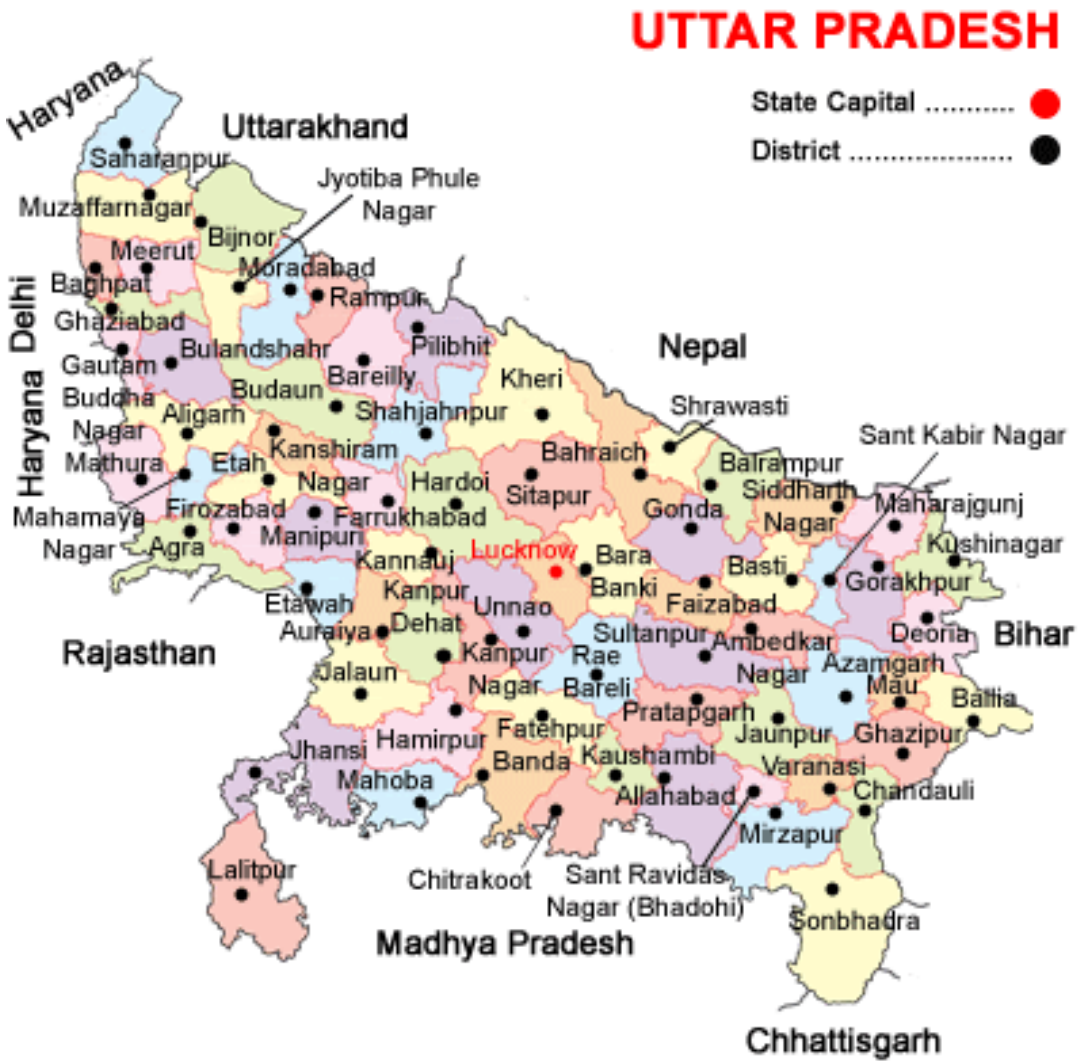
NA-Notavailable8h

1.9	Livestock(year 2007)	Male(000)	Female(000)	Total (000)
	Non descriptive Cattle (local low yielding)	52.610	67.216	119.826
	Improved cattle	0.029	0.102	0.131
	Crossbred Cattle	9.968	23.528	33.496
	Non descriptive Buffaloes (local low yielding)	57.235	244.079	301.314
	Descript Buffaloes	102.595	437.483	540.078
	Goat	60.214	111.982	172.196
	Sheep			11.841
	Other (Camel,Pig, Yak etc)			25.711

1.10	**Normal sowing window for 5 major field crops**	**Pearl millet**	**Maize**	**Rice**	**Pigeon Pea**	**Sorgum**	**Wheat**	**Pea**	**Mustard**
	Kharif –Rainfed	2nd week of July to last week of July	3rd week of June to First week of July	-	First week of July to Last week of July	2nd week of July to last week of July	-	-	-
	Kharif - Irrigated	-	-	3rd week of June to Last week of July	-		-	-	-
	Rabi –Rain fed	-	-	-	-		Last week of Oct to 2nd week of Nov	First week of Oct to last week of Oct	First week of Sep to 2nd week of Oct
	Rabi - Irrigated	-	-	-	-		2nd week of Nov to last week of Dec	-	-

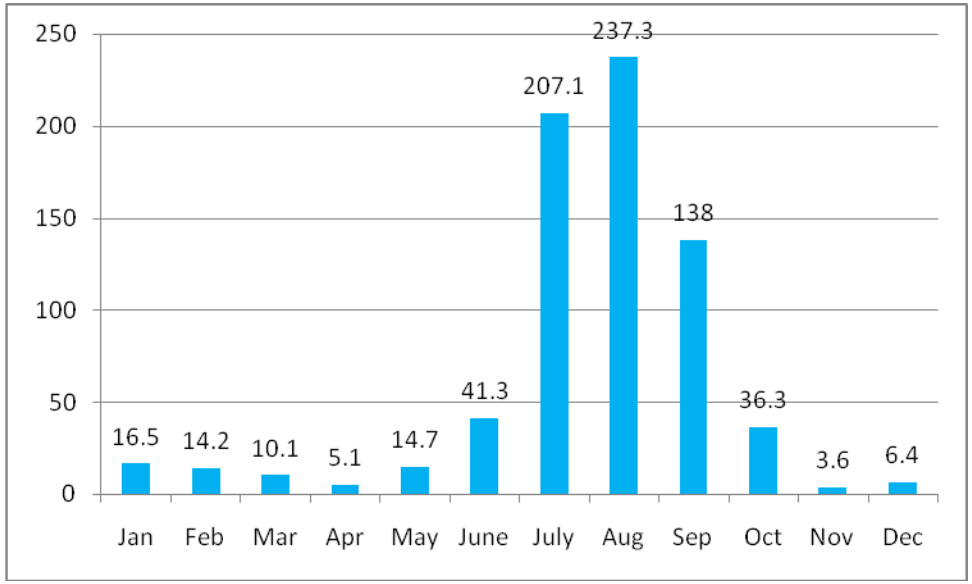
1.11	**What is the major contingency the district is prone to?**	**Regular**	**Occasional**	**None**
	Drought	-	✓	
	Flood	-	✓	
	Cyclone	-	-	√
	Hail storm	-	-	√
	Heat wave	-	✓	
	Cold wave	-	✓	
	Frost	-	✓	
	Sea water intrusion	-	-	√
	Sheath Blight, Stemborrer , Pyrilla loos smut, Heliothis, Rust etc white grub.	-	✓	

Annexure I
Location map of Aligarh district

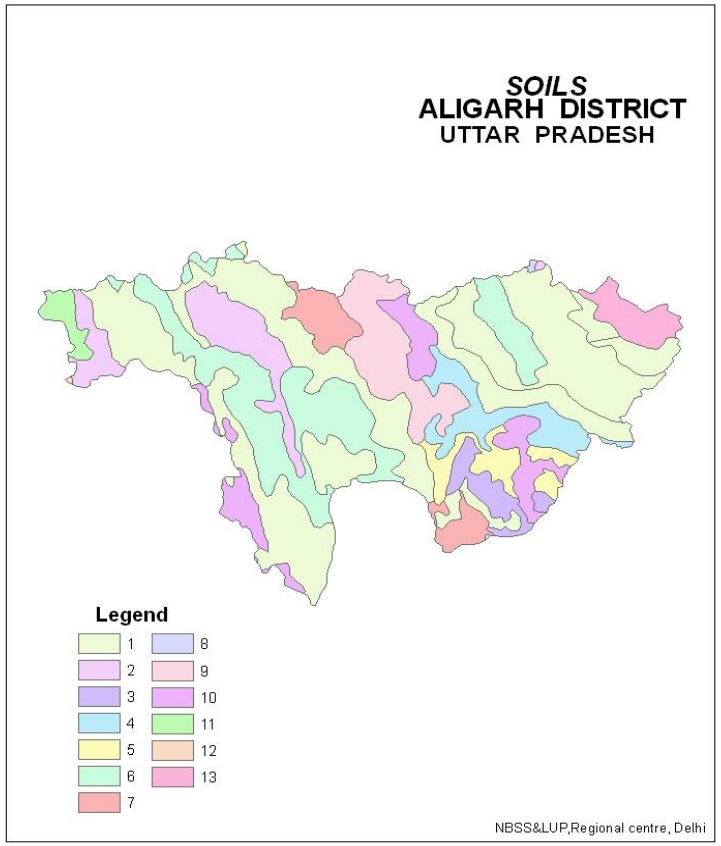


Annexure 2

Average Month-wise rainfall (mm) in Aligarh District



1.14 Soil Map



SOILS OF ALIGARH DISTRICT (U.P.)

Alluvial plain (0-1% slope)

1. Deep, loamy soils and slightly eroded
2. Deep, loamy soils and slightly eroded associated with silty soils
3. Deep, fine soils moderately saline and sodic associated with loamy soils, slightly eroded
4. Deep, fine soils and slightly eroded associated with loamy soils slightly saline and moderately sodic
5. Deep, silty soils with moderately salinity and sodicity associated with loamy soils with moderate salinity and sodicity and water logging
6. Deep, silty soils and slightly eroded associated with loamy soils slightly saline and slightly sodi
7. Deep, loamy soils, moderate salinity and sodicity associated with loamy soils with moderate salinity and strong sodicity
8. Deep, loamy soils and slightly eroded associated with loamy soils with moderate salinity and sodicity and moderate water logging.
9. Deep, loamy soils, slight salinity and moderately sodicity associated with silty soils slightly eroded
10. Deep, silty soils and slightly eroded associated with fine soils

Recent Alluvial Plain (1-3% slope)

11. Deep, loamy soils, slight salinity and sodicity associated with loamy soils are slightly eroded
12. Deep, silty soils and slight flooding associated with loamy soils and slight flooding

Active Flood Plain (1-3% slope)

Deep, sandy soils with moderate flooding associated with stratified loamy soils and slight flooding

Source: NBSSLUP, Regional Centre, NewDelhi

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**	**Change in crop including variety**	**Agronomic measures**	**Remarks on Implementation**
Delay by 2 weeks July 1st week	**Deep loamy soils**	Pearl millet	No change Adopt medium duration varieties **Composite-** ICMB-155, WCC-75,ICTP-8203 and Raj-171 **Hybride-** Pusa-23 & 322 and ICMH-451	Prefer sowing with ferti-cum-seed drill Thinning, Inter culture/	Prefer disease free certified seed from a reliable source
		Maize	No change Adopt medium duration varieties **Composite-** Naveen, Azad uttam, Pragati,Gaurav and KH-510 **Hybride-** Pusa -5 ,Prakash and JH-3459	Prefer sowing with ferti-cum-seed drill and ridge and furrow system Thinning, Inter- culture/ Mulching with locally available material	

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop**	**Change in crop including variety**	**Agronomic measures**	**Remarks on Implementation**
Delay by 4 weeks **(**July 3rd week)	**Deep loamy soils**	Pearl millet	No change Adopt medium duration varieties **Composite-** ICMB-155, WCC-75, ICTP-8203 and Raj-171 **Hybrid-** Pusa-23 & 322 and ICMH-451	Prefer sowing with ferti-cum-seed drill Thinning, Inter culture	Prefer disease free certified seed from a reliable source

		Maize	No change Adopt medium duration varieties **Composite -** Naveen, Azad uttam, Pragati, Gaurav and KH-510 **Hybrid-** Pusa -5, Prakash and JH-3459	Prefer sowing with ferti-cum-seed drill and ridge and furrow system Thinning, Inter- culture Mulching with locally available material	
		Sorghum	Sorghum: **Composite-** Varsha, CSV-13 & CSV-15, **Hybrid-** CSH-9, 16, and CSH-14	Adopt thinning Inter-culture	

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop**	**Change in crop including variety**	**Agronomic measures**	**Remarks on Implementation**
Delay by 6 weeks (Aug. 1st week)	**Deep loamy soils**	Pearl millet	No change Prefer early maturing varieties **Composite-** ICTP-8203 and Raj-171 **Hybrid-** Pusa-23 & 322	Prefer sowing with ferti-cum-seed drill Thinning, Inter culture	Prefer disease free certified seed from a reliable source
		Maize	Replace by mungbean with varieties like Samrat, Meha	Prefer sowing with ferti-cum-seed drill and ridge and furrow system Thinning, Inter- culture Mulching with locally available material	
		Sorghum	Sorghum: **Composite-** CSV-13 , CSV-15 and Vijeta **Hybrid-** CSH- 16, and CSH-14	Adopt thinning Inter-culture	

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop**	**Change in crop**	**Agronomic measures**	**Remarks on Implementation**
Delay by 8 weeks (Aug. 3rd week)	**Deep loamy soils**	Pearl millet	No change **Composite-** ICTP-8203 and Raj-171 **Hybrid-** Pusa-23 & 322	Use extra early varieties Adopt thinning Inter-culture /Mulching	Prefer disease free certified seed from a reliable source
		Maize	Prefer sowing of varieties/hybrids for fodder or keep the land fallow	Intercultural practices	
		Sorghum	Prefer sowing of varieties/hybrids for fodder or keep the land fallow	Intercultural practices	

Condition			**Suggested Contingency measures**		
Early season drought **(Normal onset)**	**Major Farming situation**	**Normal Crop**	**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 loamy soils	Pearl millet **Composite-** ICMB-155, WCC-75,ICTP-8203 and Raj-171 **Hybrid-** Pusa-23 & 322 and ICMH-451	No change	Thinning and gap filling in the existing crop. Inter-culture	Provision of improved implements
		Maize **Composite-** Naveen, Azad uttam, Pragati,Gaurav and KH-510 **Hybrid-** Ganga-11, Sartaj , HQPM-5 and Prakash, JH-	No change	Thinning and gap filling in the existing crop. Inter- culture/ Mulching	

		3459			
		Sorghum Varsha, CSV-13, CSV-15,SPB-1388 and Vijeta **Hybrid-** CSH-9, 16,14,18,13 and CSH-23	No change	Thinning in the existing crop. Inter- culture	

Condition			**Suggested Contingency measures**		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	**Major Farming situation**	**Normal Crop**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At vegetative stage	Deep loamy soils	Pearl millet **Composite-** ICMB-155, WCC-75,ICTP-8203 and Raj-171 **Hybrid-** Pusa-23 & 322 and ICMH-451	No change In case of severe drought, harvest every third row for green fodder	Inter- culture/ Mulching Give protective irrigation, if available	
		Maize **Composite-** Naveen, Azad uttam, Pragati,Gaurav and KH-510 **Hybrid-** Ganga-11, Sartaj , HQPM-5 and Prakash, JH-3459	-	Inter-culture Mulching with locally available material Give protective irrigation at knee high stage, if available	
		Sorghum Varsha, CSV-13, CSV-15,SPB-1388 and Vijeta **Hybrid-** CSH-9, 16,14,18,13 and CSH-23	-	Give protective irrigation, if available Inter-culture	

Condition			**Suggested Contingency measures**		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At flowering/ fruiting stage	Deep loamy soils	Pearl millet **Composite-** ICMB-155, WCC-75,ICTP-8203 and Raj-171 **Hybrids-** Pusa-23 & 322 and ICMH-451	In case of severe drought, harvest every third row for green fodder	Spray 2% solution each of Urea and MOP Mulching	
		Maize **Composite-** Naveen, Azad uttam, Pragati,Gaurav and KH-510 **Hybrids-** Ganga-11, Sartaj , HQPM-5 and Prakash, JH-3459	In case of severe drought, harvest for green fodde	Control weeds	
		Sorghum Varsha, CSV-13, CSV-15,SPB-1388 and Vijeta **Hybrids-** CSH-9, 16,14,18,13 and CSH-23	In case of severe drought, harvest every third row for green fodder	Spray 2% solution each of Urea and MOP Mulching	

Condition			**Suggested Contingency measures**		
Terminal drought (Early withdrawal of monsoon)	**Major Farming situation**	**Normal Crop**	**Crop management**	**Rabi Crop planning**	**Remarks on Implementation**
	Deep loamy soils	Pearl millet **Composite-** ICMB-155, WCC-75,ICTP-8203 and Raj-171	Harvest at physiological maturity In case of severe drought, harvest for fodder	-	

		Hybrid- Pusa-23 & 322 and ICMH-451			
		Maize **Composite-** Naveen, Azad uttam, Pragati,Gaurav and KH-510 **Hybrid-** Ganga-11, Sartaj , HQPM-5 and Prakash, JH-3459	Harvest at physiological maturity	-	
		Sorghum Varsha, CSV-13, CSV-15,SPB-1388 and Vijeta **Hybrid-** CSH-9, 16,14,18,13 and CSH-23	Harvest at physiological maturity	-	

2.1.2 Drought - Irrigated situation

Condition			**Suggested Contingency measures**		
	Major Farming situation	**Normal Crop**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delayed release of water in canals due to low rainfall	Deep loamy soils	Rice Narendra 97, Narendra 118, Narendra 80, NDR 359,	Transplanting with 3 to 4 seedlings/hill	Limited irrigation, Weed management	
		Short Duration Pigeon pea UPAS120	Direct seeded rice (Early) Saket-4, Ratna, Pant-12, Narendra-80, 2026, Ashwani and Govind	Limited irrigation, Weed management	

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Limited release of water in canals due to low rainfall	Deep loamy soils	Rice Narendra 97, Narendra 118, Narendra 80, Saket-4, Ratna, Pant-12, NDR 359, Ashwani and Govind	Transplanting with 3 to 4 seedlings/hill	Limited irrigation, Weed management	

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Non release of water in canals under delayed onset of monsoon in catchment	Deep loamy soils	Rice	For transplanted rice, prefer Govind, Narendra-118,97 , Ashwani, Saket-4, Ratna, Pant-12, Narendra-80, 2026 **(**Medium) Sarjoo-52, Pant-4, Narendra-359, 2026,2064 **(**Late)- Type-3, PB-1, Kashturi, Narendra Pant 4 and Malvya sugandh	Limited irrigation Weed management	

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Lack of inflows into tanks due to insufficient /delayed onset	Deep loamy soils	Not Applicable			

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
of monsoon					

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop**	**Change in crop/cropping system**	**Agronomic measures**	**Remarks on Implementation**
Insufficient groundwater recharge due to low rainfall	Deep loamy soils	Paddy	Replacewith catch crop like Toria T-9, T-36, PT-30 and PT-303 as per situation	Limited irrigation, Weeding and Management of pest and diseases	Seed supply through Govt. approved seed centers

2.2 Unusual rains (untimely, un seasonal etc.)

Condition	Suggested contingency measure			
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity stage**	**Post harvest**
Maize				Shift the produce to safer place
Rice	Banding around the field	Drain out excess water	Drain out excess water	
Pigeonpea	Drain out excess water			
Pearl millet				
Sorghum				
Sugarcane				
Horticulture				
Mango	Micro-site improvement around the plant	Drain out excess water	Drain out excess water	
Guava	Micro-site improvement around the plant	Drain out excess water	Drain out excess water	
Heavy rainfall with high speed winds in a short span[2]	Not applicable			

Outbreak of pests and diseases due to un seasonal rains				
Maize	Need based pant protection Measures --			Shift the produce to safer place
Rice				
Pearl millet				
Sorghum				
Sugarcane				
Horticulture				Grade the produce and market

2.3 Floods :

Condition	**Suggested contingency measure**			
Transient water logging/ partial inundation[1]	**Seedling / nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Horticulture				
Guava	Provide staking to less than 3 years aged plant to avoid lodging	Provide proper drainage to avoid water logging	-	-
Continuous submergence for more than 2 days[2]	Not applicable			

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

Extreme event type	**Suggested contingency measure**[r]			
	Seedling / nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat Wave				
Paddy	Drain out the ponded water if any and irrigate with fresh water	-	-	-
Horticulture				
Mango	Frequent irrigation	Frequent irrigation	Frequent irrigation	_
Guava	Frequent irrigation	Frequent	Frequent irrigation	

		irrigation		
Cold wave				
Potato	-	Frequent irrigation & Preventive spraying of fungicide		
Horticulture				
Mango	-	Frequent irrigation		
Guava	-	Frequent irrigation		
Frost				
Potato	-	Frequent irrigation & Preventive spraying of fungicide		

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

		Suggested contingency measures	
	Before the event	During the event	After the event
Drought			
Feed and Fodder availability	Top dressing of N in 2-3 split doses @ 20-25 kg N/ha in common property resources (CPRs) or private property resources (PPRs) like waste and degraded lands with the monsoon pattern for higher biomass production Promote cultivation of short duration fodder crops of sorghum/bajra/maize suitable to the district Sowing of fodder crops like Stylo and Cenchrus on bunds so as to provide fodder and strengthening of bunds Avoid burning of wheat and paddy straw and storing as dry fodder for future use Proper drying, bailing and densification of harvested dry fodder for transport to the needy villages Complete feed preparation using red gram stalks may be exploited Preserving maize fodder as silage for future use Establishment of silvi-pastoral system in CPRs with Stylosanthus hamata and Cenchrus ciliaris as grass with Leucaena leucocephala as tree component Creation of permanent fodder, feed and fodder seed banks in all drought prone	Harvest and use biomass of dried up crops (Sorghum, Bajra, Maize, Rice, Urd, etc) material as fodder. Harvest the tree fodder (Neem, Subabul, Acasia, Pipal etc) and unconventional feeds resources available and use as fodder for livestock (LS). Available feed and fodder should be cut from CPRs and stall fed in order to reduce the energy requirements of the animals In case of mild drought, the available dry fodder may be enriched with urea and molasses and the productive livestock should be supplemented with vitamin & minerals mixture. The available silage may be used as green fodder supplement for high yielders and pregnant animals In case of severe drought, UMMB, hay, concentrates and vitamin & mineral mixture should be transported to the needy areas from the reserves at the district level initially and latter stages from the near by districts. All the hay should be enriched with 2% Urea molasses solution or 1% common salt solution and fed to LS Herd should be split and supplementation should be given only to the highly productive and breeding animals Provision of emergency grazing/feeding (Cow-calf camps or other special arrangements to protect high productive & breeding stock) Available kitchen waste should be mixed with dry fodder while feeding	Green and concentrates supplementation should be provided to all the animals. Short duration fodder crops of should be sown in unsown and crop failed areas where no further routine crop sowing is not possible Promote cultivation of fodder crops during Rabi season

	villages	Arrangements should be made for mobilization of small ruminants across the districts where no drought exits with subsidized road/rail transportation and temporary shelter provision for the shepherds Unproductive livestock should to be culled during severe drought Create transportation and marketing facilities for the culled and unproductive animals (10000-20000 animals) in case of severe drought Subsidized loans (5-10 crores) should be provided to the livestock keepers for purchase of supplements, concentrate feed ingredients etc., in case of severe drought	
Floods	Minimum required quantity of hay and concentrates at house hold level should be stored for feeding the livestock a week period In case of early forewarning (EFW), harvest all the crops (Rice/maize/backgram/green gram) that can be useful as fodder in future (store properly) Protect the stored paddy straw from inundation of flood water All the large ruminants are immunized for the endemic diseases like HS and BQ during the month of May and FMD in July Procure and stock emergency medicines and vaccines for important contagious diseases. Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district Arrangement for transportation of animals from low lying area to safer places and	Transportation of animals to elevated areas Proper hygiene and sanitation of the animal shed In severe storms, un-tether or let loose the animals Use of unconventional and locally available cheap feed ingredients for feeding of livestock. Avoid soaked and mould infected feeds / fodders to livestock Emergency outlet establishment for required medicines or feed in each village Spraying of fly repellants in animal sheds and relief camps Carryout deworming to all animals entering into relief camps Identification and quarantine of sick animals Perform ring vaccination (8 km radius) in case of any disease outbreak Restrict movement of livestock in case of any epidemic	Repair of animal shed Bring back the animals to the shed Deworm the animals through mass camps Cleaning and disinfection of the shed Bleach (0.1%) drinking water / water sources Encouraging farmers to cultivate short-term fodder crops like cow pea, horse gram, sunhemp etc. Proper disposable of the dead animals / carcasses by burning / deep burying (4-8 feet) with lime powder (1kg for small ruminants and 5kg for large ruminants) in pit Drying the harvested

	also for rescue animal health workers to get involve in rescue operations		crop and fodder material and proper storage
Heat & Cold wave	In villages which are chronically prone to heat waves the following permanent measures are suggested Plantation of trees like Neem, Pipal, Subabul around the shed Spreading of husk/straw/coconut leaves on the roof of the shed Water sprinklers / foggers in the animal shed Application of white reflector paint on the roof to reduce thermal radiation effect Cold wave : Covering all the wire meshed walls / open area with gunny bags/ polyethylene sheets with a mechanism for lifting during the day time and closing during night	Allow the animals preferably early in the morning or late in the evening for grazing during heat waves Allow for grazing between 10AM to 3PM during cold waves Feed green fodder/silage / concentrates during day time and roughages / hay during night time in case of heat waves Add 25-50 ml of edible oil in concentrates per kg and fed to the animal during cold waves Apply / sprinkle lime powder (5-10g per square feet) in the animal shed during cold waves to neutralize ammonia accumulation Put on the foggers / sprinklers during heat weaves and heaters during cold waves in case of high productive animals In severe cases, vitamin 'C' (5-10ml per litre) and electrolytes (Electral powder @ 20g per litre) should be added in water during severe heat waves.	Green and concentrates supplementation should be provided to all the animals. Allow the animals for grazing (normal timings)
Health and Disease management	List out the endemic diseases (species wise) in that district and store vaccines for those diseases Timely vaccination (as per enclosed vaccination schedule) against all endemic diseases	Constitution of Rapid Action Veterinary Force Procurement of emergency medicines and medical kits Performing ring vaccination (8 km radius) in case of any outbreak Restricting movement of livestock in case of any epidemic	Conducting mass animal health camps Conducting fertility camps Mass deworming camps

	Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district	Rescue of sick and injured animals and their treatment	
Insurance	Insurance policy for loss of production due to drought may be developed Encouraging insurance of livestock	Listing out the details of the dead animals and loss of production in high yielders	Submission for insurance claim and availing insurance benefit Purchase of new productive animals
Drinking water	Identification of water resources Rain water harvesting and create water bodies/watering points (when water is scarce use only as drinking water for animals)	Restrict wallowing of animals in water bodies/resources Provision of wholesome clean drinking water at least 3 times in a day	Bleach (0.1%) drinking water / water sources Provide clean drinking water

2.5.2 Poultry

	Suggested contingency measures		
	Before the eventa	During the event	After the event
Drought			
Shortage of feed ingredients	Storing of house hold grain like maize, broken rice, bajra etc, in to use as feed in case of severe drought	Supplementation only for productive birds with house hold grain Supplementation of shell grit (calcium) for laying birds Culling of weak birds	Supplementation to all survived birds
Drinking water	Rain water harvesting	Sanitation of drinking water	Give sufficient water as per the bird's requirement
Health and disease management	Culling of sick birds. Deworming and vaccination against RD and fowl pox	Mixing of Vit. A,D,E, K and B-complex including vit C in drinking water (5ml in one litre water)	Hygienic and sanitation of poultry house Disposal of dead birds by burning / burying with lime powder in pit
Floods			
Shortage of feed ingredients	In case of early forewarning of floods, shift the birds to safer place Storing of house hold grain like maize, broken rice, bajra etc,	Use stored feed as supplement Don't allow for scavenging Culling of weak birds	Routine practices are followed Deworming and vaccination against RD

Drinking water	Provide clean drinking water	Sanitation of drinking water	Sanitation of drinking water
Health and disease management	In case of EFW, add antibiotic powder (Terramycin/Ampicilline/ Ampiclox etc., 10g in one litre) in drinking water to prevent any disease outbreak	Prevent water logging surrounding the sheds through proper drainage facility Assure supply of electricity by generator or solar energy or biogas Sprinkle lime powder to prevent ammonia accumulation due to dampness	Sanitation of poultry house Treatment of affected birds Disposal of dead birds by burning / burying with line powder in pit Disposal of poultry manure to prevent protozoal problem Supplementation of coccidiostats in feed Vaccination against RD
Heat wave			
Shelter/environment management	Provision of proper shelter with good ventilation	In severe cases, foggers/water sprinklers/wetting of hanged gunny bags should be arranged Don't allow for scavenging during mid day	Routine practices are followed
Health and disease management	Deworming and vaccination against RD and fowl pox	Supplementation of house hold grain Provide cool and clean drinking water with electrolytes and vit. C (5-10 ml per litre) In hot summer, add anti-stress probiotics in drinking water or feed (Reestobal etc., 10-20ml per litre)	Routine practices are followed
Cold wave			
Shelter/environment management	Provision of proper shelter Arrangement for brooding Assure supply of continuous electricity	Close all openings with polythene sheets In severe cases, arrange heaters Don't allow for scavenging during early morning and late evening	Routine practices are followed
Health and disease management	Arrangement for protection from chilled air	Supplementation of grains Antibiotics (Ampicilline/ Ampiclox etc., 10g in one litre) in drinking water to protect birds from pneumonia	Routine practices are followed