

**State: Uttar Pradesh**  
**Agriculture Contingency Plan for District: Pratapgarh**

1.0 District Agriculture profile					
1.1	Agro-Climatic/ Ecological Zone				
	Agro-Ecological Sub Region(ICAR)		Central Plain Zone		
	Agro-Climatic Zone (Planning Commission)		Upper Gangetic Plain Region		
	Agro-Climatic Zone (NARP)		UP-4 Central Plain Zone		
	List all the districts falling the NARP Zone* (^ 50% area falling in the zone)		Lakhimpur, Kheri, Sitapur, Hardoi, Farrukhabad, Etawah, Kanpur, Kanpur Dehat, Unnao, Lucknow, Rae Bareilly, Fatehpur and Allahabad.		
	Geographical coordinates of district headquarters		Latitude	Longitude	Altitude (mt)
			27.37N	79.63.E	
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS				
	Mention the KVK located in the district with address		Krishi Vigyan Kendra, Krishi Bhawan, Lakula Farm, Farrukhabad,		
Name and address of the nearest Agromet Field Unit(AMFU,IMD)for agro advisories in the Zone		CSA 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)	705.0	45	3 <sup>rd</sup> week of June	4 <sup>rd</sup> week of September
	Post monsoon (Oct-Dec)	36.6	10		
	Winter (Jan-March)	38.3	10	-	-
	Pre monsoon (Apr-May)	15.5	2	-	-
	Annual	795.4	67	-	-

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)	219.9	182.4	0.3	29.1	0.6	3.7	3.3	7.5	21.3	5.1

1.4	Major Soils	Area('000 ha)	Percent(%) of total
	Deep loamy	102.0	56 %
	Partial sodic, and slightly silty	80.0	44%

1.5	Agricultural land use	Area('000 ha.)	Cropping intensity (%)
	Net sown area	149.0	116 %
	Area sown more than once	61.9	
	Gross cropped area	210.9	

1.6	Irrigation	Area('000 ha)		
	Net irrigation area	138.9		
	Gross irrigated area	180.2		
	Rain fed area	10.2		
	Sources of irrigation (Gross Irrigated Area)	Number	Area('000 ha)	Percentage of total irrigated area
	Canals	--	3.9	2.2
	Tanks	-	0	
	Open wells	-	0	
	Bore wells(Tube Wells)	-	176.2	97.8
	Lift irrigation schemes	-	NA	
	Micro-irrigation	-	NA	
	Other sources	-	0	
	Total Irrigated Area	-	180.2	
	No. of Pump sets (2011-12)	33117		
	No. of Tractors	5471		
	Groundwater availability and use* (Data source: State/ Central Ground water Department/ Board)	No of blocks- Tehsils-	(%)area	Quality of water
	Over exploited			
	Critical			
	Semi-critical			
	Safe			
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 2013-14)**

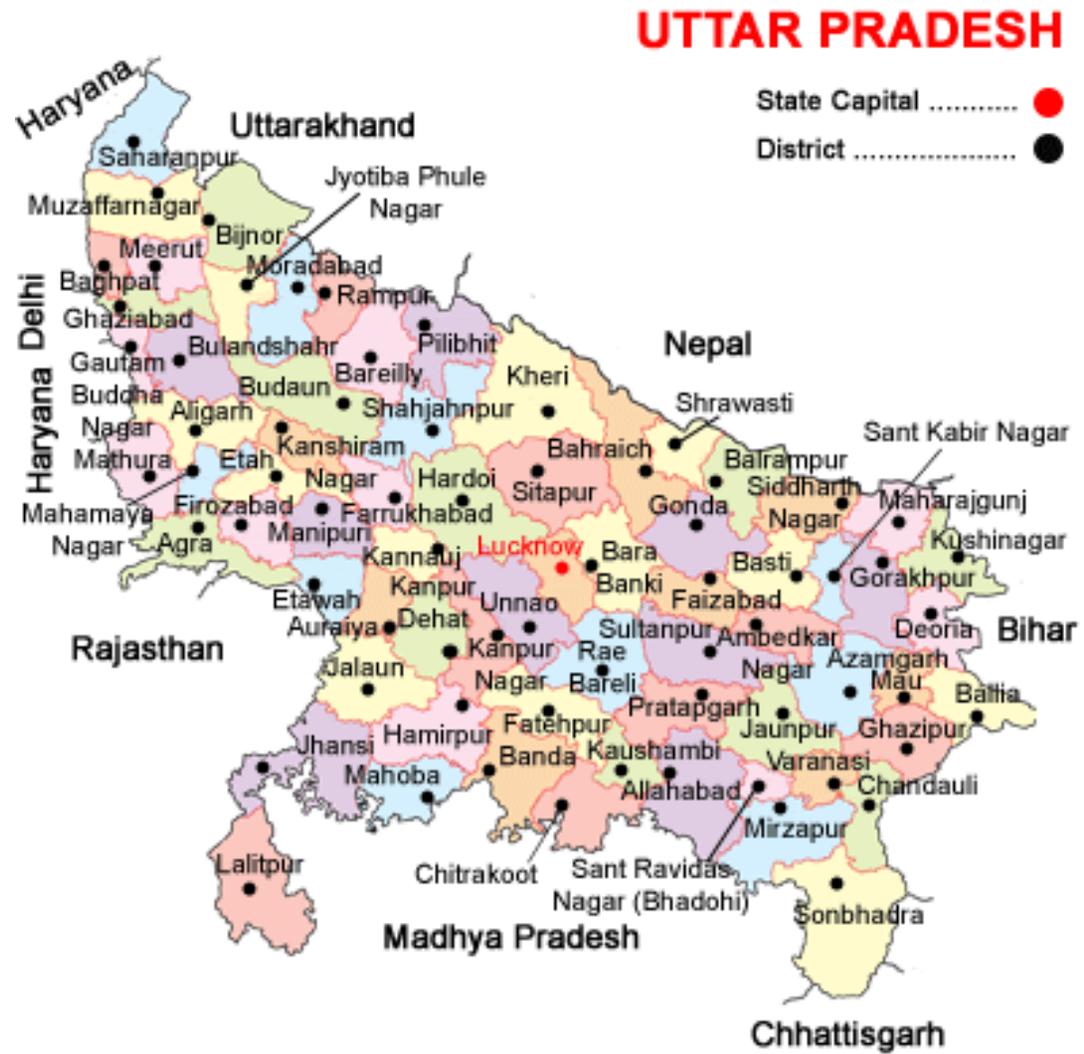
1.7	Major field crops cultivated	Area('000 ha)							Summer	Total
		Kharif			Rabi					
		Irrigated	Rain fed	Total	Irrigated	Rain fed	Total			
	Rice	13.2	0.3	13.5	-	-	-	-	13.5	
	Wheat	-	-	-	73.7	0.2	73.9	-	73.9	
	Maize	14.9	16.3	31.2	-	-	-	-	31.2	
	Pearl millet	0.6	3.3	3.8	-	-	-	-	3.8	
	Lentil	-	-	-	0.9	0.2	1.1	-	1.1	
	Potato	-	-	-	33.1	-	33.1	-	33.1	

1.8	Sowing window for 5 major field crops	Pearl millet	Maize	Rice	Urd	Sorghum	Moong	Wheat	Pea	Gram	Mustard
	Kharif – Rainfed	2 <sup>nd</sup> week of July to last week of July	2 <sup>nd</sup> week of June to First week of July	-	2 <sup>nd</sup> week of July to First week of August	First week of July to 2 <sup>nd</sup> week of July	First week of July to 2 <sup>nd</sup> week of July	-	-	-	-
	Kharif - Irrigated	-	-	3rd week of June to Last week of July	2 <sup>nd</sup> week of July to First week of August	First week of July to 2 <sup>nd</sup> week of July	-	-	-	-	-
	Rabi – Rainfed							First week of Nov to 3rd week of Dec	First week of Oct to first week of Nov	First week of Oct to first week of Nov	First week of Sep to 2nd week of Oct
	Rabi - Irrigated							2nd week of Nov to 2th week of Dec	-	-	-

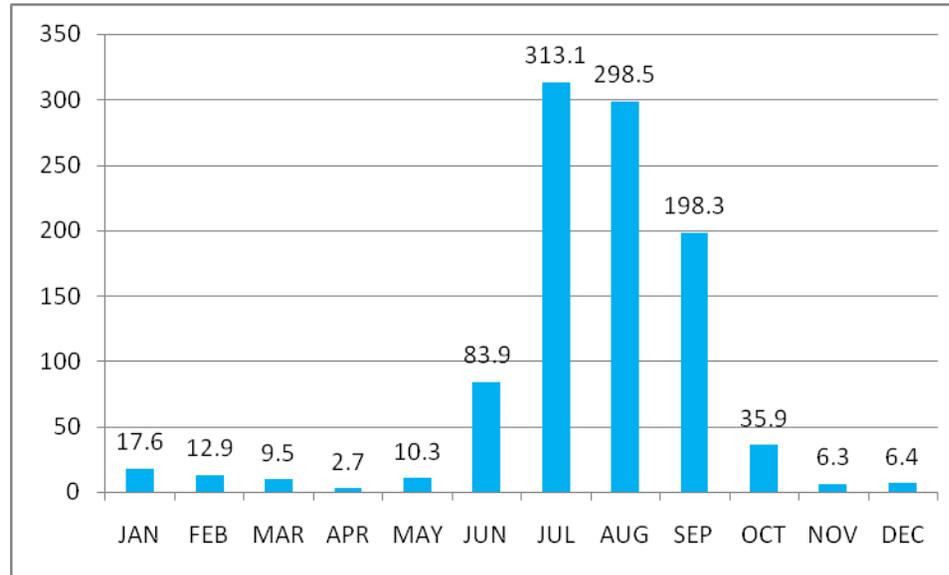
1.9	What is the major contingency the district is prone to?	Regular	Occasional	None
	Drought	-	✓	
	Flood	-	-	
	Cyclone	-	-	
	Hail storm	-	-	
	Heat wave	-	✓	
	Cold wave	-	-	
	Frost	-	✓	
	Sea water intrusion	-	-	
	Sheath Blight, Stemborer , Pyrilla loose smut, Heliothis, Rust etc white grub.	-	-	

<b>Include Digital maps of the district for</b>	Location map of district with in State as Annexure I	Enclosed : Yes
	Mean annual rainfall as Annexure 2	Enclosed : Yes
	Soil map as Annexure 3	Enclosed : Yes

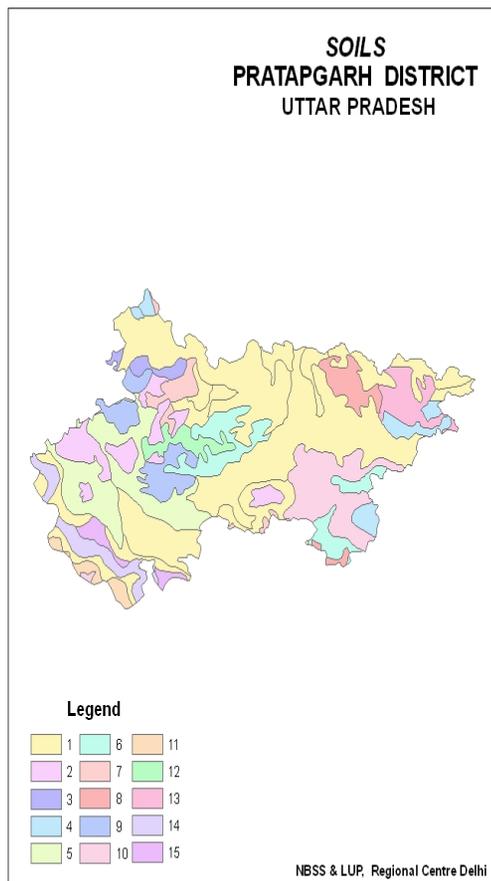
Annexure I  
Location map of Pratapgarh district



Annexure 2  
Average Month-wise rainfall (mm) in Pratapgarh District



## 1.10 Soil Map



### Alluvial plain (0-1% slope)

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

### Active Flood Plain (1-3% slope)

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

## 2.0 Strategies for weather related contingencies

### 2.1 Drought

#### 2.1.1 Rainfed situation

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)	Normal rainfall Deep loamy soils, deep silty and slightly eroded	Rice	No change	Green manuring +DSR, transplanting, weed management	Linked with UP Agro, SAU,s and ICAR (CSSRI, RRS, Lucknow)
		Maize	No change	Line sowing, earthing up, weed management, medium maturing varieties and hybrids	Use disease free certified seed from NSC, DMR, New Delhi
		Pigeon pea	No change	Line sowing with seed drill, intercropping with urd dhal	Linked with UP Agro, SAU,s and ICAR (IIPR, Kanpur)
	Deep loamy, partial sodic, sodic and slightly sodic	Rice	No change	Green manuring +DSR, transplanting with salt tolerant varieties like CSR-36, CSR-43 and CSR-30 (Basmati), ND-359, Narendra Usar Dhan-3 weed management	Linked with ICAR (CSSRI, RRS, Lucknow), SAU,s

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 4 weeks (July 3 <sup>rd</sup> week)	Deep loamy soils, deep silty and slightly eroded	Rice	No change	Green manuring +DSR, transplanting, weed management	Linked with UP Agro, SAU,s and ICAR (CSSRI, RRS, Lucknow)
		Maize	No change	Line sowing, earthing up, weed management, medium maturing varieties and hybrids	Use disease free certified seed from NSC, DMR, New Delhi
		Pigeon pea	No change	Line sowing with seed drill, intercropping with urd dhal	Linked with UP Agro, SAU,s and ICAR (IIPR, Kanpur)
	Deep loamy, partial sodic, sodic and slightly sodic	Rice	No change	Green manuring +DSR, transplanting with salt tolerant varieties like CSR-36, CSR-43 and CSR-30 (Basmati), ND-359, Narendra Usar Dhan-3 weed management	Linked with ICAR (CSSRI, RRS, Lucknow), SAU,s

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 6 weeks ( Aug. 1 <sup>st</sup> week)	Deep loamy soils, deep silty and slightly eroded	Rice	Change with Sorghum, Urd, Pearl millet, Til	Line sowing, weeding, Seed treatment with bio-growth regulators and	Linked with NSC, UPSDC, ICAR (CSSRI, RRS, Lucknow, IIPR,

				bio-fertilizers	Kanpur, IGFRI, Jhansi)
		Maize	No change	Line sowing, earthing up, weed management, medium maturing varieties and hybrids	Use disease free certified seed from NSC, DMR, New Delhi
		Pigeon pea	No change	Line sowing with seed drill, intercropping with urd dhal	Linked with UP Agro, SAU,s and ICAR (IIPR, Kanpur)
	<b>Deep loamy, partial sodic, sodic and slightly sodic</b>	Rice	Sorghum, Pearl millet, Maize	Seed treatment and soil application of bio-fertilizers and bio-growth enhancers.  Higher dose of organic manures	Linked with ICAR (CSSRI, RRS, Lucknow), SAU,s

<b>Condition</b>			<b>Suggested Contingency measures</b>		
<b>Early season drought (delayed onset)</b>	<b>Major Farming situation</b>	<b>Normal Crop / Cropping system</b>	<b>Change in crop / cropping system including variety</b>	<b>Agronomic measures</b>	<b>Remarks on Implementation</b>
<b>Delay by 8 weeks ( Aug. 3<sup>rd</sup> week)</b>	<b>Deep loamy soils, deep silty and slightly eroded</b>	Rice	Fallow	Moisture conservation,	-----
		Maize	Short duration vegetables like spinach, guar, radhish and amaranthus.	Moisture conservation, use of biofertilizers	ICAR (IIVR, Varanasi), SAU's
		Pigeon pea	Short duration vegetables like Spinach, guar, radhish and amaranthus	Moisture conservation, use of biofertilizers	ICAR (IIVR, Varanasi), SAU's

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 6 weeks (August 3 <sup>rd</sup> week)	Deep loamy, partial sodic, sodic and slightly sodic	Rice	Fallow	Moisture conservation,	-----

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)	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 loamy soils, deep silty and slightly eroded	Rice	No change	Mulching, 2% MOP foliar application	KVK, State Ag. Dept.
		Maize	No change	Mulching, earthing up	KVK, State Ag. Dept.
		Pigeon pea	No change	-----	-----

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)	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 loamy, partial sodic, sodic and slightly sodic	Rice	No change	Mulching, 2% MOP foliar application	KVK, State Ag. Dept.

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)					
At vegetative stage	Deep loamy soils, deep silty and slightly eroded	Rice	No change	Mulching, 2% MOP foliar application	KVK, State Ag. Dept.
		Maize	No change	Mulching, earthing up	KVK, State Ag. Dept.
		Pigeon pea	No change	-----	-----

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)					
At vegetative stage	Deep loamy, partial sodic, sodic and slightly sodic	Rice	No change	Mulching, 2 % MOP foliar application	KVK, State Ag. Dept.

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell)					
At flowering/ fruiting stage	Deep loamy soils, deep silty and slightly eroded	Rice	No change	Mulching, 2 % MOP foliar application, Use	ICAR (CSSRI, RRS, Lucknow, KVK, State Ag.

				of bio-growth regulators	Dept.
		Maize	No change	Mulching, earthing up	ICAR (CSSRI, RRS, Lucknow, KVK, State Ag. Dept.
		Pigeon pea	No change	-----	-----

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)					
At vegetative stage	Deep loamy, partial sodic, sodic and slightly sodic	Rice	No change	Mulching, 2 % MOP foliar application, Use of bio-growth regulators	ICAR (CSSRI, RRS, Lucknow, KVK, State Ag. Dept.

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)	Deep loamy soils, deep silty and slightly eroded	Rice	No change	Relay cropping of Toria, lentil	ICAR (CSSRI, RRS, Lucknow, KVK, State Ag. Dept.
		Maize	No change	-----	-----
		Pigeon pea	No change	-----	-----

**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	<b>Normal rainfall Deep loamy soils, deep silty and slightly eroded</b>	Rice: Saket-4, Ratna, Pant-12, Narendra-80, 2026, Sarjoo-52, Pant-4, Narendra-359, 2026,2064, Type-3, PB-1, Kashturi, Narendra lalmati and Malvy sugandh	Direct seeded Rice Saket-4, Ratna, Pant-12, Narendra-80, 2026	Limited irrigation, weed management	<i>Linked with SDC/SAUs</i>

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	<b>Normal rainfall Deep loamy, partial sodic, sodic and slightly sodic</b>	Rice	No change		Linked with ICAR (CSSRI, RRS, Lucknow), SAU,s
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Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment	<b>Deep loamy soils, deep silty and slightly eroded</b>	Rice: Saket-4, Ratna, Pant-12, Narendra-80, 2026, Sarjoo-52, Pant-4, Narendra-359, 2026,2064, Type-3, PB-1, Kashturi, Narendra lalmati and Malvy sugandh	Direct seeded Rice Saket-4, Ratna, Pant-12, Narendra-80, 2026, CSR-43	Limited irrigation, weed management. Sprinkler irrigation	<i>Linked with SDC/SAUs.</i>

Condition	Suggested Contingency measures				
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	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Change in crop/cropping system</b>	<b>Agronomic measures</b>	<b>Remarks on Implementation</b>
Non release of water in canals under delayed onset of monsoon in catchment	<b>Deep loamy, partial sodic, sodic and slightly sodic</b>	Rice	No change	Life saving irrigation, surface irrigation with small plots, Sprinkler irrigation	Linked with ICAR (CSSRI, RRS, Lucknow), SAU,s

<b>Condition</b>	<b>Suggested Contingency measures</b>				
	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Change in crop/cropping system</b>	<b>Agronomic measures</b>	<b>Remarks on Implementation</b>
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	<b>Deep loamy soils, deep silty and slightly eroded</b>	Rice: Saket-4, Ratna, Pant-12, Narendra-80, 2026, Sarjoo-52, Pant-4, Narendra-359, 2026,2064, Type-3, PB-1, Kashturi, Narendra lalmati and Malvya sugandh	Direct seeded Rice Saket-4, Ratna, Pant-12, Narendra-80, 2026, CSR-43	Limited irrigation, weed management. Sprinkler irrigation	<i>Linked with SDC/SAUs.</i>

<b>Condition</b>	<b>Suggested Contingency measures</b>				
	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Change in crop/cropping system</b>	<b>Agronomic measures</b>	<b>Remarks on Implementation</b>
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	<b>Deep loamy, Partial sodic, sodic and slightly sodic</b>	Rice	No change	Life saving irrigation, surface irrigation with small plots, Sprinkler irrigation	Linked with ICAR (CSSRI, RRS, Lucknow), SAU,s

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	<b>Deep loamy soils, deep silty and slightly eroded</b>	Rice	Catch crop Toria T-9, T-36, PT-30 and PT-303 as per situation	Limited irrigation, Weeding and Management of Pest and Disease	Seed supply through Govt. approved seed centers

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	<b>Deep loamy, partial sodic, sodic and slightly sodic</b>	Rice	Catch crop Toria T-9, T-36, PT-30 and PT-303 as per situation	Limited irrigation, Weeding and Management of Pest and Disease	Seed supply through Govt. approved seed centers

## 2.2 Unusual rains (untimely, un seasonal etc)

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
<b>Continuous high rainfall in a short span leading to water logging</b>				
Rice	Bunding around the field	Drainage	Early harvest	Store in dry place
Maize	Drainage	Drainage	Drainage	Store in dry place
Pearl millet	Drainage	Drainage	Drainage	Store in dry place
Sorghum	Drainage	Drainage	Drainage	Store in dry place
Pigeon pea	Drainage	Drainage	Drainage	Store in dry place

<b>Outbreak of pests and diseases due to un seasonal rains</b>				
Maize	Need based pant protection Measures	Need based pant protection Measures		Safe Storage
Rice	Need based pant protection Measures	Control of blight and Rice false smut using appropriate seed treatment, soil drenching and foliar application of Dithane M 45 and Bavistin respectively.	Control of blight and Rice false smut using appropriate seed treatment, soil drenching and foliar application of Dithane M 45 and Bavistin respectively.	Safe Storage
Pearl millet	Need based pant protection Measures	Need based pant protection Measures		Safe Storage
Sorghum	Need based pant protection Measures	Need based pant protection Measures		Safe Storage
Sugarcane	Need based pant protection Measures	Need based pant protection Measures		Safe Storage

### 2.3 Floods : Occasional events; Not Applicable

<b>Condition</b>	<b>Suggested contingency measure</b>			
	<b>Seedling / nursery stage</b>	<b>Vegetative stage</b>	<b>Reproductive stage</b>	<b>At harvest</b>
<b>Transient water logging/ partial inundation</b>				
<b>Horticulture</b>	<b>Not applicable</b>			
<b>Continuous submergence for more than 2 days</b>				
<b>Horticulture</b>				
<b>Sea water intrusion</b>				

## 2.4 Extreme events: Heat wave / Cold wave/Frost/ Hailstorm /Cyclone: Not Applicable

Extreme event type	Suggested contingency measure <sup>F</sup>			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Heat Wave	Not applicable			
Cold wave				
Frost				
Hailstorm				
Cyclone				

## 2.5 Contingent strategies for Livestock, Poultry & Fisheries

### 2.5.1 Livestock

	Suggested contingency measures		
	Before the event	During the event	After the event
<b>Drought</b>			
Feed and Fodder availability	<p>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</p> <p>Promote cultivation of short duration fodder crops of sorghum/bajra/maize suitable to the district</p> <p>Sowing of fodder crops like <i>Stylo</i> and <i>Cenchrus</i> on bunds so as to provide fodder and strengthening of bunds</p>	<p>Harvest and use biomass of dried up crops (Sorghum, Bajra, Maize, Rice, Urd, etc) material as fodder.</p> <p>Harvest the tree fodder (Neem, Subabul, Acasia, Pipal etc) and unconventional feeds resources available and use as fodder for livestock (LS).</p> <p>Available feed and fodder should be cut from CPRs and stall fed in order to reduce the energy requirements of the animals</p> <p>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 &amp; minerals mixture.</p> <p>The available silage may be used as green fodder supplement for high yielders and pregnant animals</p>	<p>Green and concentrates supplementation should be provided to all the animals.</p> <p>Short duration fodder crops of should be sown in unsown and crop failed areas where no further routine crop sowing is not possible</p> <p>Promote cultivation of fodder crops during Rabi season</p>

	<p>Avoid burning of wheat and paddy straw and storing as dry fodder for future use</p> <p>Proper drying, bailing and densification of harvested dry fodder for transport to the needy villages</p> <p>Complete feed preparation using red gram stalks may be exploited</p> <p>Preserving maize fodder as silage for future use</p> <p>Establishment of silvi-pastoral system in CPRs with <i>Stylosanthus hamata</i> and <i>Cenchrus ciliaris</i> as grass with <i>Leucaena leucocephala</i> as tree component</p> <p>Creation of permanent fodder, feed and fodder seed banks in all drought prone villages</p>	<p>In case of severe drought, UMMB, hay, concentrates and vitamin &amp; 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</p> <p>Herd should be split and supplementation should be given only to the highly productive and breeding animals</p> <p>Provision of emergency grazing/feeding (Cow-calf camps or other special arrangements to protect high productive &amp; breeding stock)</p> <p>Available kitchen waste should be mixed with dry fodder while feeding</p> <p>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</p> <p>Unproductive livestock should to be culled during severe drought</p> <p>Create transportation and marketing facilities for the culled and unproductive animals (10000-20000 animals) in case of severe drought</p> <p>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</p>	
<p><b>Heat &amp; Cold wave</b></p>	<p>In villages which are chronically prone to heat waves the following permanent measures are suggested</p> <ol style="list-style-type: none"> <li>i) Plantation of trees like Neem, Pipal, Subabul around the shed</li> <li>ii) Spreading of husk/straw/coconut leaves on the roof of the shed</li> <li>iii) Water sprinklers / foggers in the animal shed</li> <li>iv) Application of white reflector paint on the roof to reduce</li> </ol>	<p>Allow the animals preferably early in the morning or late in the evening for grazing during heat waves</p> <p>Allow for grazing between 10AM to 3PM during cold waves</p> <p>Feed green fodder/silage / concentrates during day time and roughages / hay during night time in case of heat waves</p> <p>Add 25-50 ml of edible oil in concentrates per kg and fed to the animal during cold waves</p> <p>Apply / sprinkle lime powder (5-10g per square feet) in the animal shed during cold waves to neutralize ammonia accumulation</p> <p>Put on the foggers / sprinklers during heat weaves and heaters during cold waves in case of high productive animals</p>	<p>Green and concentrates supplementation should be provided to all the animals.</p> <p>Allow the animals for grazing (normal timings)</p>

	<p>thermal radiation effect</p> <p><b>Cold wave :</b> 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</p>	<p>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.</p>	
<b>Health and Disease management</b>	<p>List out the endemic diseases (species wise) in that district and store vaccines for those diseases</p> <p>Timely vaccination (as per enclosed vaccination schedule) against all endemic diseases</p> <p>Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district</p>	<p>Constitution of Rapid Action Veterinary Force</p> <p>Procurement of emergency medicines and medical kits</p> <p>Performing ring vaccination (8 km radius) in case of any outbreak</p> <p>Restricting movement of livestock in case of any epidemic</p> <p>Rescue of sick and injured animals and their treatment</p>	<p>Conducting mass animal health camps</p> <p>Conducting fertility camps</p> <p>Mass deworming camps</p>
<b>Insurance</b>	<p>Insurance policy for loss of production due to drought may be developed</p> <p>Encouraging insurance of livestock</p>	<p>Listing out the details of the dead animals and loss of production in high yielders</p>	<p>Submission for insurance claim and availing insurance benefit</p> <p>Purchase of new productive animals</p>
Drinking water	<p>Identification of water resources</p> <p>Rain water harvesting and create water bodies/watering points (when water is scarce use only as drinking water for animals)</p>	<p>Restrict wallowing of animals in water bodies/resources</p> <p>Provision of wholesome clean drinking water at least 3 times in a day</p>	<p>Bleach (0.1%) drinking water / water sources</p> <p>Provide clean drinking water</p>

## 2.5.2

## Poultry

	Suggested contingency measures		
	Before the event <sup>a</sup>	During the event	After the event
<b>Drought</b>			
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
<b>Heat wave</b>			
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	Routine practices are followed

		(5-10 ml per litre) In hot summer, add anti-stress probiotics in drinking water or feed (Reestobal etc., 10-20ml per litre)	
<b>Cold wave</b>			
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