

## State:Uttar Pradesh

### Agriculture Contingency Plan for District: Shravasti

1.0 District Agriculture profile				
1.1	Agro-Climatic/ Ecological Zone			
	Agro-Ecological Sub Region(ICAR)	Eastern Plain		
	Agro-Climatic Zone (Planning Commission)	Middle Gangetic Plain Region(IV)		
	Agro-Climatic Zone (NARP)	UP-8 North eastern plain zone		
	List all the districts falling the NARP Zone* (^ 50% area falling in the zone)	Barabanki, Ambedarnagar, Faizabad, Sultanpur, Azamgrajh, Mau, Jaunpur, Varanshi		
	Geographical coordinates of district headquarters	Latitude	Latitude	Latitude (mt)
		27 <sup>0</sup> 75N'	82 <sup>0</sup> 07'E	
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS	-		
Mention the KVK located in the district with address	KVK BAHRAICH			
Name and address of the nearest Agromet Field Unit(AMFU,IMD)for agro advisories in the Zone	SAU Faizabad			

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)	994.5	49	2 <sup>nd</sup> week of June	4th week of September
	Post monsoon (Oct-Dec)	65.0	10		
	Winter (Jan-March)	52.9	10	-	-
	Pre monsoon (Apr-May)	35.4	2	-	-
	Annual	1147.8	71		

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)	192.9	136.9	34.4	21.1	0.1	0.1	1.8	0.5	3.3	1.3

<b>1.4</b>	<b>Major Soils</b>	Area('000 hac)	Percent(%) of total
	Deep, loamy soils and slightly	61.6	45%
	Deep, fine soils and slightly eroded associated with loamy soils	41.1	30%
	Deep, loamy soils	27.4	20%

<b>1.5</b>	<b>Agricultural land use</b>	Area('000 hac)	Cropping intensity (%)
	Net sown area	129.8	133 %
	Area sown more than once	52.4	
	Gross cropped area	182.2	

<b>1.6</b>	<b>Irrigation</b>	Area('000 ha)		
	Net irrigation area	65.3		
	Gross irrigated area	76.3		
	Rain fed area	64.5		
	Sources of irrigation (Gross Irr. Area)	Number	Area('000 ha)	Percentage of total irrigated area
	Canals	-	0	
	Tanks	-	0	
	Open wells	-	0	
	Bore wells(Tube wells)	-	76.7	100
	Lift irrigation schemes	-	NA	
	Micro-irrigation	-	NA	
	Other sources	-	0	
	Total Irrigated Area	-	76.7	
	Pump sets (2011-12)	46844		
	No. of Tractors	2371		
	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				

**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		
Rice	4.9	69.7	74.6	-	-	-	-	74.6	
Wheat	-	-	-	63.4	0.3	63.7	-	63.7	
Lentil	-	-	-	0.2	16.7	16.9	-	16.9	
Maize	0	11.2	11.2	-	-	-	+	11.2	
Sugarcane	5.4	0.2	5.6	-	-	-	-	5.6	
Pigeon pea	0	2.4	2.4	-	-	-	-	2.4	

**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	144.98	2006	-	-	-	-	144.98	2006	NA	
Maize	9.22	695	-	-	-	-	9.22	695	NA	
Wheat	-	-	161.863	2601	-	-	161.86	2601	NA	
Pigeon pea	1.38	542	-	-	-	-	1.38	542	NA	
Lentil	-	-	14.083	685	-	-	14.08	685	NA	
Sugarcane	279.39	49245	-	--	-	-	279.39	49245	NA	

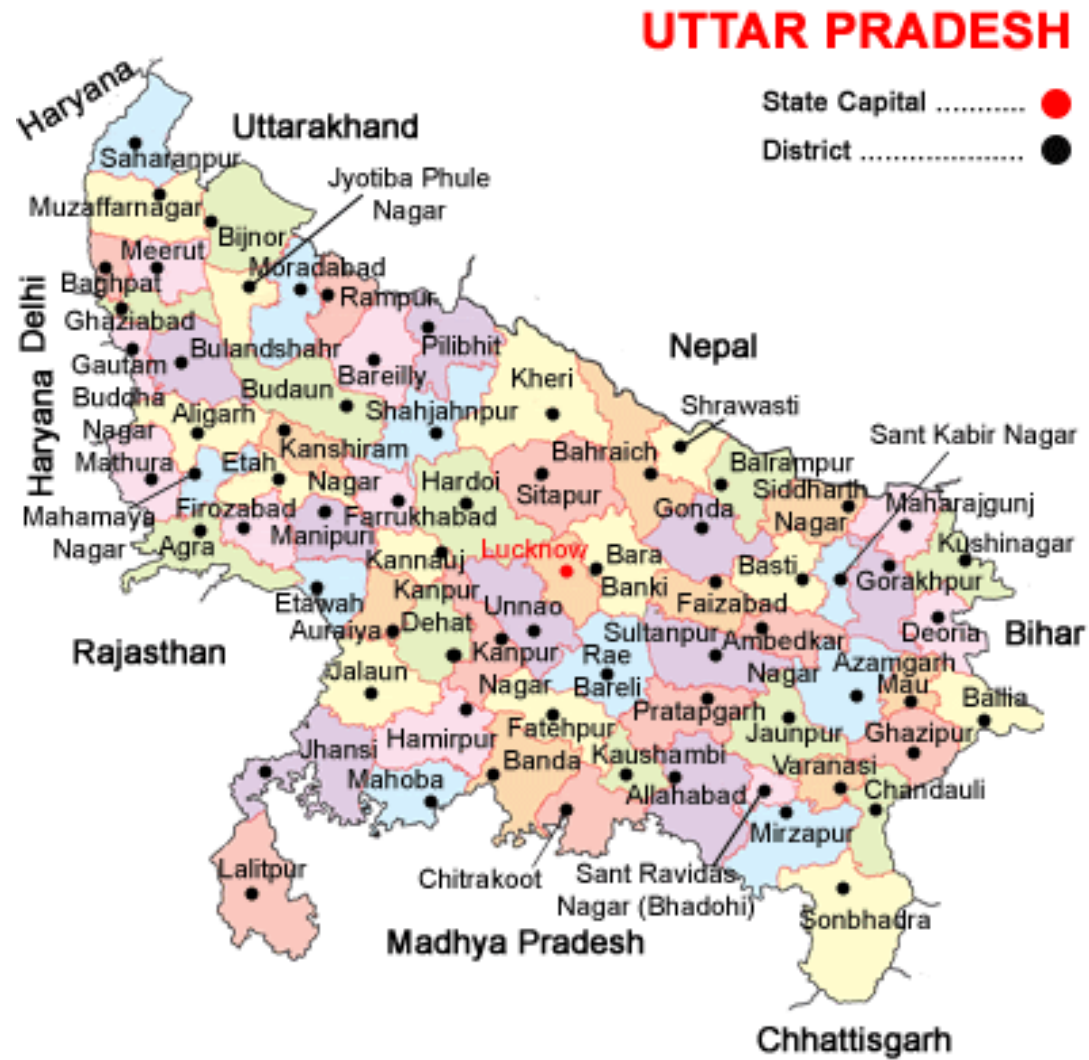
<b>1.9</b>	<b>Livestock(year 2007)</b>	Male(000)	Female(000)	Totat(000)
	Non descriptive Cattle (local low yielding)	77.025	85.670	162.695
	Improved cattle	0.000	0.000	0.000
	Crossbred Cattle	1.151	1.191	2.342
	Non descriptive Buffaloes (local low yielding)	13.862	46.258	60.120
	Descript Buffaloes	12.263	40.922	53.185
	Goat	55.302	73.433	128.735
	Sheep			4.545
	Other (Camel,Pig, Yak etc)			6.130
	Commerical dairy farms (number)			0.000

<b>1.9</b>	<b>Sowing window for 5 major field crops</b>	<b>Rice</b>	<b>Maize</b>	<b>Urd</b>	<b>Jowar</b>	<b>Pigeon Pea</b>	<b>Wheat</b>	<b>Lentil</b>	<b>Gram</b>	<b>Sugarcane</b>	<b>Musterd</b>
	Kharif – Rainfed	-	First week of July to 3 <sup>rd</sup> week of July	2 <sup>nd</sup> week of July to First week of August	First week of July to 3 <sup>rd</sup> week of July	First week of July to Last week of August	-	-	-	-	-
	Kharif - Irrigated	First week of July to First week of August	First week of June to First week of July	-	-	-	-	-	-	2nd week of Feb to last week of March	-
	Rabi – Rainfed						Last week of Oct to 2nd week of Nov	First week of Oct to Last week of Oct	First week of Oct to Last week of Oct	-	First week of Oct to 3 <sup>rd</sup> week of Oct
	Rabi - Irrigated						2nd week of Nov to 2 <sup>th</sup> week of Dec	-	-	First week of Oct to last week of Oct	-

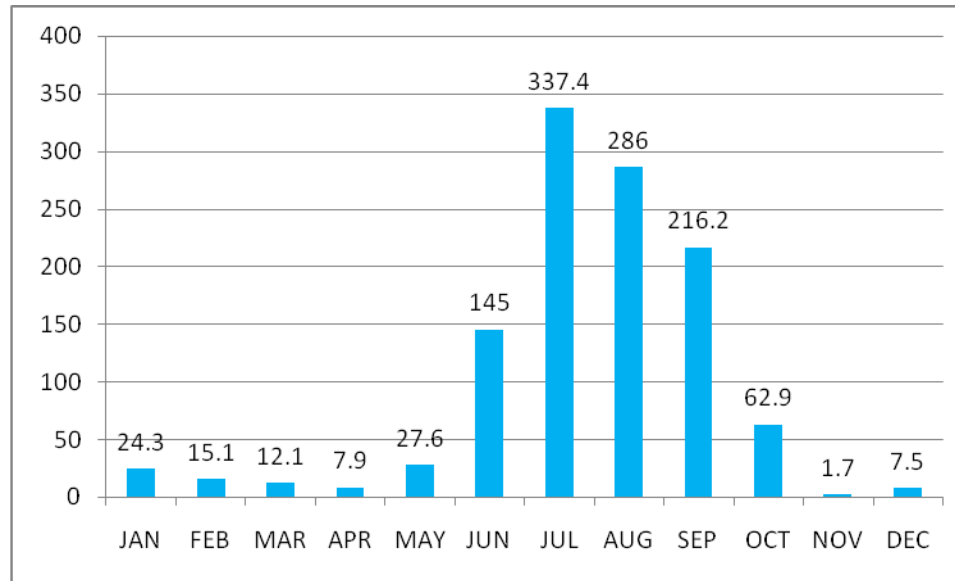
1.10	What is the major contingency the district is prone to?	Regular	Occasional	None
	Drought	-	-	
	Flood	-	-	
	Cyclone	-	-	
	Hail storm	-	✓	
	Heat wave	-	-	
	Cold wave	-	-	
	Frost	-	-	
	Sea water intrusion	-	-	
	Sheath Blight, Stemborrer , Pyrilla <i>loos smut</i> , Heliothis, <i>Yellow Rust</i> etc 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

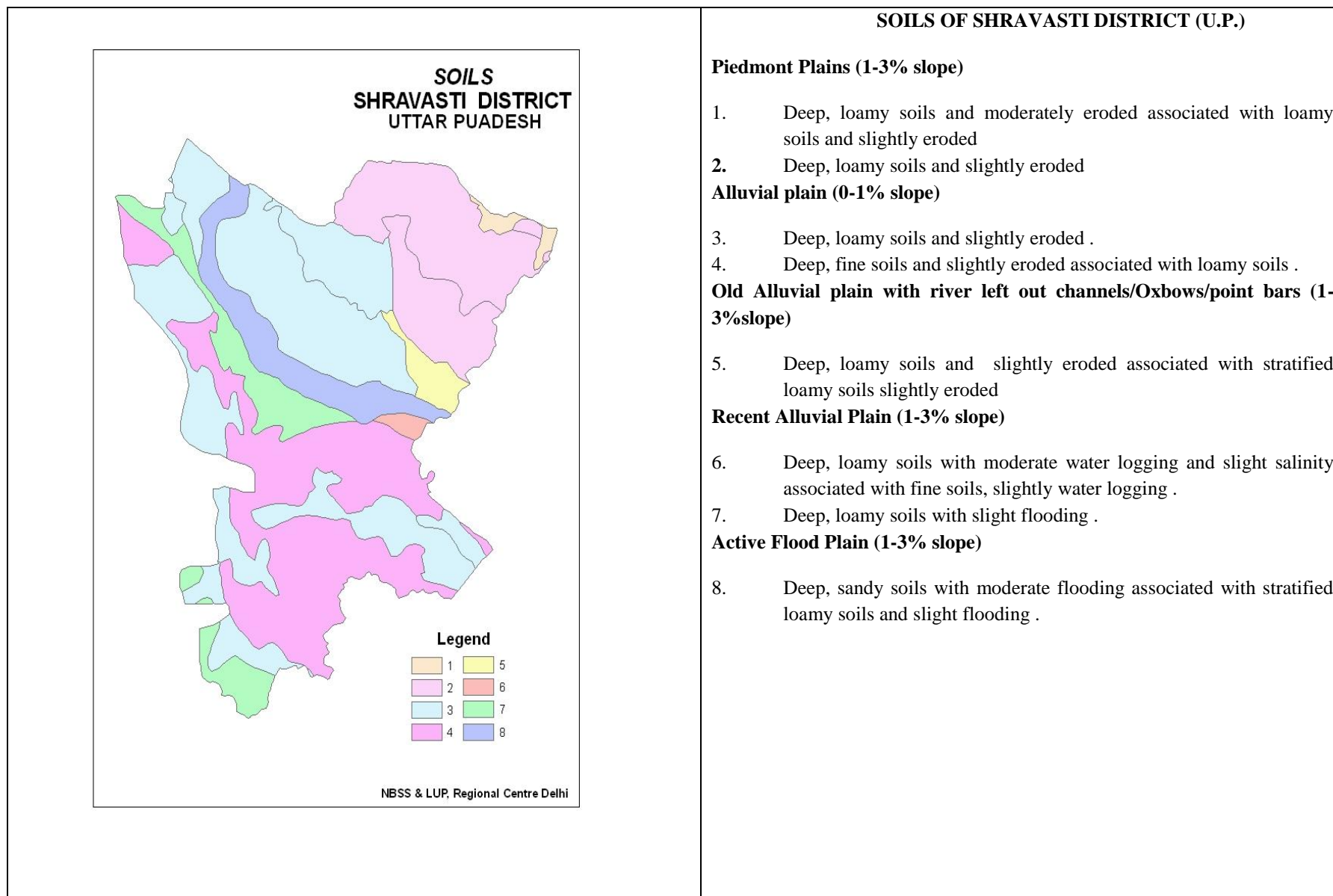
Annexure I  
Location map of Shravasti district



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



## 1.14 Soil map





## 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 (1 week of July)	Deep loamy soils	Rice	No change Narendra 97, Narendra 118, Narendra 80, NDR 359,	Direct seeded rice,	Linked with SDC/SAUs
	Deep, sandy soils	Maize	No change Maize (Naveen, Surya, Ganga2,5,& Others hybrid)	Line sowing	Linked with SDC/SAUs
		Pigeon pea	Long duration varieties like Narendra Pigeon pea 1, Narendra Pigeon pea 2, Azad, Amar, Malvi 13, Malvi 6 Intercropping of pigeon pea+Maize (Naveen, Surya, Ganga2,5,& Others hybrid)	Raised bed planting  Intercropping of pigeon pea(interrow spacing of 75 cm)- cm) +Maize with row ratio of 1:2	Linked with SDC/SAUs
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 (3 rd week of July)	Deep loamy soils	Rice	Maize((Naveen, Surya, Ganga2,5,& Others hybrid))	Line sowing of sesame and urd bean	Linked with SDC/SAUs
	Deep, sandy soils	Pigeon pea	No Change Pigeon pea Narendra Pigeon pea 1, Narendra Pigeon pea 2, Azad, Amar Intercropping of pigeonpea+urdbean (Azad Urd, Uttara, Narendra Urd 1, PU31, PU 19)	Raised bed planting Intercropping of pigeon pea(inter row spacing of 75 cm)- cm) +urd bean with row ratio of 1:2	Linked with SDC/SAUs

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 6 weeks (1st week of August)	Deep loamy soils	Rice	Sesame(Shekhar,Pragathi)  Urdbean(Azad Urd,Uttara,Narendra Urd 1, PU31, PU 19)	Line sowing of sesame and urd bean	
		Maize			
		Pigeon pea Deep, sandy soils	Long duration varieties like Narendra Pigeon pea 1, Narendra Pigeon pea 2, Azad, Amar,Malvi 13, Malvi 6 Intercropping of pigeon pea+urdbean (Azad Urd,Uttara,Narendra Urd 1, PU31, PU 19)	Raised bed planting  In sole pigeonpea, 20% higher seed rate) Intercropping of pigeon pea(interrow spacing of 75 cm)- cm) +urdbean with row ratio of 1:2	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 8 weeks (3 <sup>rd</sup> week of August)	Deep loamy soils	Rice	Fallow Followed by Toria/ Mustard	Conserve moisture	
		Maize	Fallow Followed by Toria/ Mustard	Conserve moisture	
		Pigeon pea Deep, sandy soils	Fallow	C conserve moisture	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Deep loamy soils	Rice	Life saving irrigation if available Weed control	Mulching with locally available material/weeds	
	Deep, sandy soils	Pigeon pea	Weed control Gap filling/thinning		

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	Rice	Life saving irrigation if available Weed control	Foliar spray with 1% MOP  Mulching with locally available material/weeds	
	Deep, sandy soils	Pigeon pea	Weed control Thinning to maintain optimum population	Mulching with locally available material/weeds	

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	Rice	Life saving irrigation if available Harvest at physiological maturity	-	
	Deep, sandy soils	Pigeon pea	Harvest at physiological maturity	-	

### 2.1.2 Drought - Irrigated situation

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Deep loamy soils	Rice	Transplanting with 3 to 4 seedlings/hill	Drum seeding SRI method Irrigation at critical stages Reduce spacing plant to plant i.e.20x 15 cm	Linked with

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Limited release of water in canals due to low rainfall	Deep loamy soils	Rice	Transplanting with 3 to 4 seedlings/hill	<ul style="list-style-type: none"> <li>• Drum seeding</li> <li>• SRI method</li> <li>• Irrigation at critical stages</li> <li>• Reduce spacing plant to plant (20x 15 cm)</li> </ul>	

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	Deep loamy soils	Rice	<ul style="list-style-type: none"> <li>• Transplanting with tube well irrigation</li> <li>• 2 to 3 seedlings/hill</li> </ul>	<ul style="list-style-type: none"> <li>• Drum seeding</li> <li>• SRI method</li> <li>• Irrigation at critical stages</li> <li>• Reduce spacing plant to plant (.20x 15 cm)</li> </ul>	

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

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	Deep loamy soils-tube well irrigated	Rice	<ul style="list-style-type: none"> <li>• Transplanting with tube well irrigation</li> <li>• 3 to 4 seedlings/hill</li> </ul>	<ul style="list-style-type: none"> <li>• Drum seeding</li> <li>• SRI method</li> <li>• Irrigation at critical stages</li> <li>• Reduce spacing plant to plant (.20x 15 cm)</li> </ul>	

## 2.2 Unusual rains (untimely, unseasonal etc) (for both rain fed and irrigated situations)

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	. The field should be kept under saturated condition for a week after transplanting for establishment of roots & Simulate growth of roots after wards follow the Alternate Wetting & Drying (AWD) method of water management till flowering .	Maintain a water level 3-5 cm for about one week during the flowering and drain out water after 15 days from the milk formation stage.	Harvest the crop when 80% of grains in panicles are ripened.	Thresh immediately after harvesting and dry gradually under shade up to 12% moisture content for seed purpose and 14% for milling.
Maize				
Pigeon pea	Drainage of Excess water & drenching of COC (Copper Oxy chloride) @ 2.5g/Liter water to avoid incidence of wilt & root rot.	Management of pod borer after monitoring by Pheromone trap	Harvest the crop when 80% of grains in panicles are ripened.	Thresh immediately after harvesting and dry gradually under shade up to 12% moisture content for seed purpose and 14% for milling.
<b>Horticulture</b>				
Mango	Provide staking to less than 3 years aged plant to avoid lodging	Provide proper drainage to avoid water logging	-	-
Guava	Provide staking to less than 3 years aged plant to avoid lodging	Provide proper drainage to avoid water logging	-	-

## 2.3 Floods- Not applicable

Condition	Suggested contingency measure <sup>o</sup>			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Transient water logging/ partial inundation<sup>1</sup></b>				
<b>Horticulture</b>	Not applicable			
<b>Continuous submergence for more than 2 days<sup>2</sup></b>				
<b>Horticulture</b>				

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

Extreme event type	Suggested contingency measure			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Heat Wave</b>				
Rice	<ul style="list-style-type: none"> <li>• Drain Out Hot water and add fresh water at evening</li> <li>• Prepare 1-1.5 M wide raised Nursery Beds with provision of 30 cm width between the beds.</li> </ul>	Frequent irrigation	Frequent irrigation	-
<b>Horticulture</b>				
Mango	-	-	Light & frequent irrigation during flowering	-
<b>Cold wave</b>	Not applicable			
<b>Frost</b>	Not applicable			
<b>Cyclone</b>	Not applicable			

## 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>Cyclone</b>	<p>As the district is chronically prone for cyclone, store minimum required quantity of hay and concentrates at house hold level for feeding the livestock a week period</p> <p>Harvest all the possible wetted grain/stover (Rice/maize/backgram/green gram etc) and use as animal feed.</p> <p>Protect the stored paddy/wheat straw from continuous rains</p> <p>Stock of anti-diarrheal drugs and electrolytes should be made available for emergency transport</p> <p>Keep stock of bleaching powder and lime</p> <p>Arrange for transportation of animals from low lying area to safer places and also for rescue animal health workers to get involve in rescue operations</p>	<p>Stall fed all the animals with stored feed and fodder</p> <p>Treatment of the sick, injured and affected animals through arrangement of mobile emergency veterinary hospitals / rescue animal health workers.</p> <p>Diarrhea out break may happen. Health camps should be organized</p> <p>In severe cases un-tether <b>or</b> let loose the animals</p> <p>Arrange transportation of highly productive animals to safer place</p> <p>Spraying of fly repellants in animal sheds</p> <p>Sprinkle lime in the shed</p>	<p>Repair of animal shed</p> <p>Bring back the animals to the shed</p> <p>Deworm the animals through mass camps</p> <p>Bleach / chlorinate (0.1%) drinking water or water resources</p> <p>Perform ring vaccination (8 km radius) in case of any disease outbreak</p> <p>Proper dispose 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</p> <p>Collect drowned crop and fodder material, dry it and store properly</p> <p>Sowing of short duration fodder crops in unsown and water logged areas when crops are damaged and no chance to replant</p> <p>Application of urea (20-25kg/ha) in the inundated areas and CPR's to enhance the bio mass production.</p>



<b>Insurance</b>	Insurance policy for loss of life due to cyclone may be developed Encouraging insurance of livestock	Listing out the details of the dead animals	Submission for insurance claim and availing insurance benefit Purchase of new productive animals
<b>Heat &amp; Cold wave</b>	<p>In villages which are chronically prone to heat waves the following permanent measures are suggested</p> <ul 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 thermal radiation effect</li> </ul> <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>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 waves and heaters during cold waves in case of high productive animals</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>	<p>Green and concentrates supplementation should be provided to all the animals.</p> <p>Allow the animals for grazing (normal timings)</p>

## 2.5.2

## Poultry

	Suggested contingency measures		
	Before the event	During the event	After the event
<b>Cyclone</b>			
Shortage of feed ingredients	In case of EFW, shift the birds to safer place Storing of house hold grain like maize, broken rice, bajra etc, Culling of weak birds	Use stored feed as supplement Don't allow for scavenging Protect from thunder storms	Routine practices are followed
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 in drinking water to prevent any disease outbreak	Sanitation of poultry house Treatment of affected birds Prevent water logging surrounding the sheds Assure supply of electricity Sprinkle lime powder (5-10g per square feet) to prevent ammonia accumulation due to dampness	Disposal of dead birds by burning / deep burying with lime powder in pit Disposal of poultry manure to prevent protozoal problem Supplementation of coccidiostats in feed Vaccination against Ranikhet Disease (0.5ml S/c)
<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	Supplementation of house hold grain	Routine practices are followed

	against RD and fowl pox	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)	
<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