

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

1.0 District Agriculture profile				
1.1	Agro-Climatic/ Ecological Zone			
	Agro-Ecological Sub Region(ICAR)	North 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		
	Geographical coordinates of district headquarters	Latitude	Latitude	Latitude
		26.55N	81.12E	
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS	-		
	Mention the KVK located in the district with address			
Name and address of the nearest Agromet Field Unit(AMFU,IMD)for agro advisories in the Zone	C.S.Azad University of Agriculture & Technology			

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)	855.9	49	2 <sup>nd</sup> week of June	4th week of September
	Post monsoon (Oct-Dec)	49.4	10		
	Winter (Jan-March)	42.3	10	-	-
	Pre monsoon (Apr-May)	16.5	2	-	-
	Annual	964.0	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)	307.0	250.9	1.4	40.7	2.4	7.0	10.2	11.5	24.1	15.7

1.4	Major Soils	Area('000 ha)	Percent(%) of total
	Deep, loamy soils	140.5	56 %
	Deep, silty soils	25.1	10 %
	Deep, fine soils moderately saline and sodic	45.2	18 %

1.5	Agricultural land use	Area('000 ha)	Cropping intensity (%)
	Net sown area	194.1	153.6%
	Area sown more than once	104.0	
	Gross cropped area	298.1	

1.6	Irrigation	Area('000 ha)		
	Net irrigation area	173.4		
	Gross irrigated area	266.1		
	Rain fed area	20.7		
	Sources of irrigation (Gross Irr.Area)	Number	Area('000 ha)	Percentage of total irrigated area
	Canals		133.7	50.3
	Tanks		0.030	0.01
	Open wells		0	
	Bore wells (Tube wells)		132.4	49.7
	Lift irrigation schemes		NA	
	Micro-irrigation		NA	
	Other sources		0	
	Total Irrigated Area		266.1	
	Pump sets	NA		
	No. of Tractors	NA		
	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 2011-12)**

1.7	Major field crops cultivated	Area ('000 ha)							
		Kharif			Rabi			Summer	Total
		Irrigated	Rain fed	Total	Irrigated	Rain fed	Total		
	Wheat	-	-	-	125.8	0.01	125.8	-	125.8
	Rice	117.9	0.3	118.2	-	-	-	-	118.2
	Pea	-	-	-	1.141	3.906	5.047	-	5.0
	Arhar	0	4.2	4.2	-	-	-	-	4.2
	Potato	-	-	-	4.2	0	4.2	-	4.2
	Juar	0	4.1	4.1	-	-	-	+-	4.1
	<b>Horticulture crops -Fruits</b>	Area ('000 ha)							
		Total			Irrigated		Rainfed		
	Mango	4.0			4.0		-		
	Guava	0.04			0.04		-		
	<b>Horticulture crops -</b>								
	Onion	-			-		-		
	Pea	3.1			3.1		-		

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

1.7	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)	
01	Rice	259.6	2184	-	-	-	-	259.6	2184	NA
02	Juar	3.2	765	-	-	-	-	3.2	765	NA
03	Wheat	-	-	354.0	2835	-	-	354.0	2835	NA
04	Pea	-	-	5.4	1085	-	-	5.4	1085	NA
05	Arhar	4.4	1041	-	-	-	+-	4.4	1041	NA
06	Potato	-	-	75.8	19879	-	-	75.8	19879	NA

1.9	Livestock(year 2007)	Male(000)	Female(000)	Totat(000)
	Non descriptive Cattle (local low yielding)	-	-	0.000
	Improved cattle	-	-	0.000
	Crossbred Cattle	-	-	0.000
	Non descriptive Buffaloes (local low yielding)	-	-	0.000
	Descript Buffaloes	-	-	0.000
	Goat	-	-	0.000
	Sheep	-	-	29.473
	Other (Camel,Pig, Yak etc)	-	-	48.754
	Commerical dairy farms (number)	-	-	0.000

1.10	Sowing window for 5 major field crops	Bajra	Maize	Rice	Jowar	Pigeon Pea	Wheat	Pea	Mustard
	Kharif –Rainfed	2 <sup>nd</sup> week of July to last week of July	3rd week of June to First week of July	-	First week of July to 2 <sup>nd</sup> week of July	First week of July to Last week of July	-	-	-
	Kharif - Irrigated	-	-	3rd week of June to Last week of July	First week of July to 2 <sup>nd</sup> 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, Stemborror , Pyrilla loos smut, Heliothis, Rust etc white grub.			√

## 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)  Delay by 2 weeks (1 week of July)	Deep loamy soils  & Deep, silty soils	Perl millet	No change ICMB155, WCC75,NDFB-3, Pusa322, Pusa 23, ICMH 451	Seed Treatment & Direct seeded ,	Linked with SDC/SAUs
		Jowar	Versa,CSV-13, CSV-15, Bundela, Hybrid CSH16, CSH 9, 13,14,18,23	Seed Treatment & Direct seeded ,	Linked with SDC/SAUs
		Pigeon pea	Long duration varieties like Narendra Arhar 1, Narendra Arhar 2, Azad, Amar,Malvi 13, Malvi 6 Intercropping of pigeonpea+ Perl millet (WCC75,NDFB-3, Pusa322, Pusa 23, ICMH 451)	Raised bed planting In sole pigeonpea, 20% higher seed rate) Intercropping of pigeonpea(interrow spacing of 75 cm)- cm) + Perl millet ( 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 <sup>rd</sup> week of July)	Deep loamy soils	Perl millet	No change ICMB155, WCC75,NDFB-3, Pusa322, Pusa 23, ICMH 451	Seed Treatment & Direct seeded ,	Linked with SDC/SAUs
		Jowar	Versa,CSV-13, CSV-15, Bundela, Hybrid CSH16, CSH 9, 13,14,18,23	Seed Treatment & Direct seeded ,	
		Pigeon pea Deep, sandy soils	Long duration varieties like Narendra Arhar 1, Narendra Arhar 2, Azad, Amar,Malvi 13, Malvi 6 Intercropping of pigeonpea+Jwar (Versa,CSV-13, CSV-15, Bundela, Hybrid CSH16, CSH 9, 13,14,18,23)	Raised bed planting  In sole pigeonpea, 20% higher seed rate) Intercropping of pigeonpea(interrow spacing of 75 cm)- cm) +Jwar 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 6 weeks (1 <sup>st</sup> week of August)	Deep loamy soils	Perl millet	No change ICMB155, WCC75,NDFB-3, Pusa322, Pusa 23, ICMH 451	Seed Treatment & Direct seeded ,	As fodder
		Jowar	Versa,CSV-13, CSV-15, Bundela, Hybrid CSH16, CSH 9, 13,14,18,23	Seed Treatment & Direct seeded ,	
		Pigeon pea Deep, sandy soils	Long duration varieties like Narendra Arhar 1, Narendra Arhar 2, Azad, Amar,Malvi 13, Malvi 6 Intercropping of pigeonpea+ Jwar (Versa,CSV-13, CSV-15, Bundela, Hybrid CSH16, CSH 9, 13,14,18,23))	Raised bed planting  In sole pigeonpea, 20% higher seed rate) Intercropping of pigeonpea(interrow spacing of 75 cm)- cm) +Jwar with row ratio of	

				1:2	
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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 (3 <sup>rd</sup> week of August)	Deep loamy soils	Perl millet	Fallow Followed by Toria/ Mustard	Conserve moisture	
		Jowar	Fallow Followed by Toria/ Mustard	Conserve moisture	
		Pigeon pea Deep, sandy soils	Fallow	<b>C conserve moisture</b>	

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 loamy soils  Deep, sandy soils	Perl millet	Weed Management		
		Jowar	Weed Management		
		Pigeon pea	Weed control Gap filling/thinning		

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 loamy soils	Perl millet	Weed Management		
		Jowar	Weed Management		

	Deep, sandy soils	Pigeon pea	Weed control Thinning to ,aintain optimum population	Mulching with locally available material/weeds	
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<b>Condition</b>			<b>Suggested Contingency measures</b>		
<b>Terminal drought</b> (Early withdrawal of monsoon)	<b>Major Farming situation</b>	<b>Normal Crop/cropping system</b>	<b>Crop management</b>	<b>Rabi Crop planning</b>	<b>Remarks on Implementation</b>
	Deep loamy soils	Perl millet	Weed Management	-	
		Jwar	Weed Management		
	Deep, sandy soils	Pigeon pea	Harvest at physiological maturity	-	

### 2.1.2 Drought - Irrigated situation

<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>
Delayed release of water in canals due to low rainfall	Deep loamy soils	Paddy Narendra 97, Narendra 118, Narendra 80, NDR 359,	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

<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>
Limited release of water in canals due to low rainfall	Deep loamy soils	Paddy Narendra 97, Narendra 118, Narendra 80, NDR 359,	Transplanting with 3 to 4	Drum seeding SRI method Irrigation at critical stages Reduce spacing plant to plant i.e.20x 15 cm	



Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
			Perl millet	Weed Management	
			Jowar	Weed Management	

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	Paddy Narendra 97, Narendra 118, Narendra 80, NDR 359,	Transplanting with tube well irrigation  2 to 3 seedlings/hill	Drum seeding SRI method Irrigation at critical stages Reduce spacing plant to plant i.e.20x 15 cm	

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	Paddy	Transplanting with tube well irrigation  3 to 4 seedlings/hill	Drum seeding SRI method Irrigation at critical stages Reduce spacing plant to plant i.e.20x 15 cm	

## 2.2 Unusual rains (untimely, unseasonal etc) (for both rain fed 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	. 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.
Perl millet	Weed Management	-	-	-
Jwar	Weed Management	-	-	-
Pigeonpea	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.
Wheat	Irrigation at critical stages	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.
Chickpea	Management of Pod borer	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>				
Guava	Provide staking to less than 3 years aged plant to avoid lodging	Provide proper drainage to avoid water logging	-	-
Mango	Provide staking to less than 3 years aged plant to avoid lodging	Provide proper drainage to avoid water logging	-	-
Ladies finger	Drain the Excess water	Management of fruit borer	-	-
Kharif onion	Drain the Excess water	Provide proper drainage to avoid water logging	-	-
<b>Heavy rainfall with high speed winds in a short span<sup>2</sup></b>	Not applicable			
<b>Outbreak of pests and diseases due to unseasonal rains</b>	Need based and recommended plant protection measures			

### 2.3 Floods- Not applicable

Condition	Suggested contingency measure <sup>o</sup>			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation	Not applicable			

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

Extreme event type	Suggested contingency measure <sup>r</sup>			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
<b>Heat Wave</b>				
Rice	<ul style="list-style-type: none"> <li>• Raised the nursery near lift or other irrigation sources</li> <li>• Prepare 1-1.5 M wide raised Nursery Beds with provision of 30 cm width between the beds.</li> </ul>	Apply	-	-
<b>Horticulture</b>				
Mango	-	-	Light & frequent irrigation during flowering	-

<b>Cold wave</b>	Not applicable			
<b>Horticulture</b>				
<b>Frost</b>	Not applicable			
<b>Hailstorm</b>	Not applicable			
<b>Cyclone</b>	Not applicable			