State: Uttar Pradesh
Agriculture Contingency Plan for District: Banda

1.0	District Agriculture profile			
1.1	Agro-Climatic/ Ecological Zone			
	Agro-Ecological Sub Region(ICAR)	Central Plain Zone		
	Agro-Climatic Zone (Planning Commission)	Central Plateau and Hill Region		
	Agro-Climatic Zone (NARP)	Bundelkhand zone(U.P-10)		
	List all the districts falling the NARP Zone* (^ 50% area falling in the zone)	Lalitpur, Jhansi, Jalaun, Chitrakut, Mahoba, Banda and Hamirpur		
	Geographical coordinates of district headquarters	Latitude	Longitude	Altitude
		25° 20' N	80° 22' E	538
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS	Zonal research Station, Bharari		
	Mention the KVK located in the district with address	Krishi Vigyan Kend4a, Village Kamasin, Banda Dist.		
	Name and address of the nearest Agromet Field Unit(AMFU,IMD)for agro advisories in the Zone	C. S. A 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)	850.6	55	2nd week of June	3rd week of September
	NE monsoon (Oct-Dec)	46.3	10	3rd week of December	2nd week of January
	Winter (Jan-March)	37.1	-	-	-
	Summer (Apr-May)	11.5	-	-	-
	Annual	945.9	65		

1.3	Land use pattern of the district (Latest statistics)	Geographical area	Cultivable area	Forest area	Land under non-agricultural use	Permanent pastures	Cultivable wasteland	Land under Misc.tree crops and groves	Barren and uncultivable land	Current fallows	Other fallows
	Area (000' ha)	438.9	389.9	5.4	31.9	0.4	12.6	1.5	11.3	19.4	12.9

1.4	Major Soils	Area('000 ha)	Percent(%) of total
	Rakar Soil		
	Parwa soils		
	Kabar soils		
	Maar soils		

1.5	Agricultural land use	Area(‘000 ha)	Cropping intensity (%)
	Net sown area	343.5	124.7%
	Area sown more than once	84.9	
	Gross cropped area	428.5	

1.6	Irrigation	Area(‘000 ha)		
	Net irrigation area	157.7		
	Gross irrigated area	205.9		
	Rain fed area	185.7		
	Sources of irrigation	Number	Area(’000 ha)	Percentage of total irrigated area
	Canals		109.8	53.3
	Tanks		5.6	2.7
	Open wells		14.7	7.1
	Bore wells		75.6	36.7
	Lift irrigation schemes			
	Micro-irrigation			
	Other sources		140	0.1
	Total Irrigated Area		205.9	
	Pump sets			
	No. of Tractors			
	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		
	Rice	53.2	1.1	54.3	0	0	0	0	54.3
	Wheat	0	0	0	145.8	13.6	159.4	0	159.4
	Pulses	0.001	7.07	7.071	3.8	146.9	150.7	0.5	158.3

	Oilseeds	0.02	15.3	15.3	0.2	4.7	4.9	0.01	20.2
	Millets	0	28.8	28.8	0	0	0	0	28.8
	Total	53.2	52.4	105.6	149.8	165.1	314.9	0.5	420.9

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

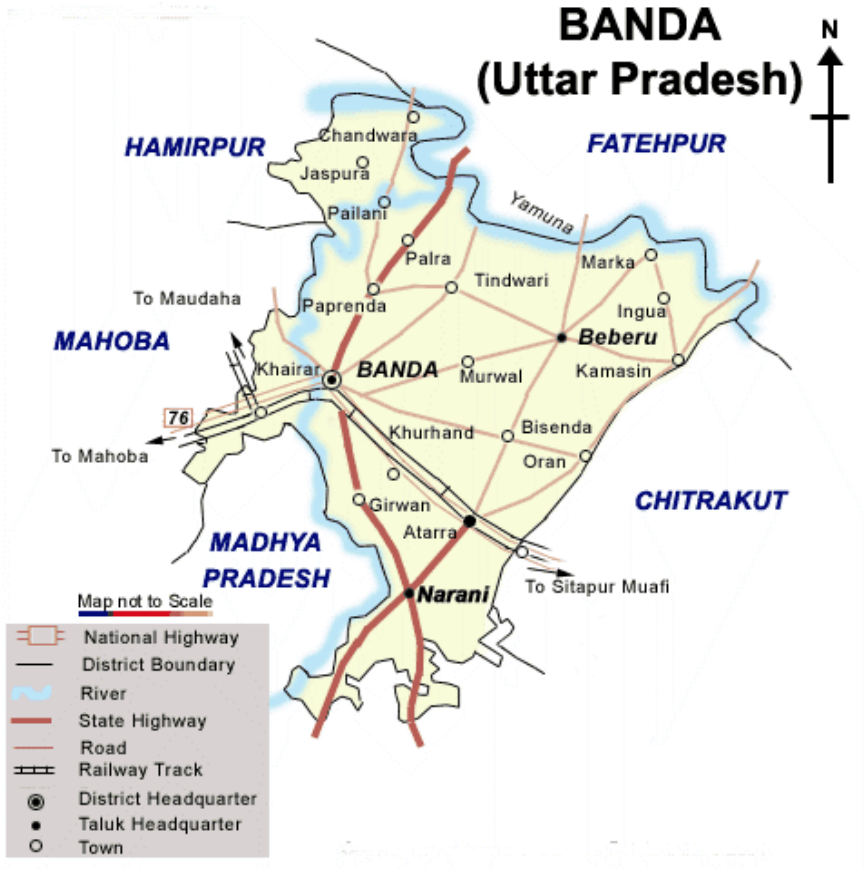
1.7	Major field crops cultivated	Area('000 ha)								
		Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 T)	Productivity (KG/HA)	Production ('000 T)	Productivity (KG/HA)	Production ('000 T)	Productivity (KG/HA)	Production ('000 T)	Productivity (KG/HA)	
	Rice	75.469	1468	0	0	0	0	75.469	1468	
	Wheat	0	0	291.777	1925	0	0	291.777	1925	
	Pulses	2.779	319	125.233	805	0.034	815	127.638	786	
	Oilseeds	2.798	164	2.336	505	0.004	1250	4.751	247	
	Millets	20.665	1126	0	0	0	0	20665	1126	
	Foodgrains	109.739	1216	441.326	1344	0.038	821	526.893	1313	

1.8	**Sowing window for 5 major field crops**	**Sesame**	**Jowar**	**Bajra**	**Black Gram**	**Green gram**	**Pigeon Pea**	**Gour**	**Wheat**	**Pea**	**Gram**	**Lentil**	**Mustard**
	Kharif –Rainfed	July	June-July	June-July	April, June-July	June-July	July	-	-	-	-	-	-
	Kharif - Irrigated	July	June-July	June-July	April, June-July	June-July	July	July	-	-	-	-	-
	Rabi –Rainfed	-	-	-	-	--	-	-		October-November	October-November	November	September
	Rabi - Irrigated	-	-	-	-	-	-	-	December	October-November	October-November	November	September

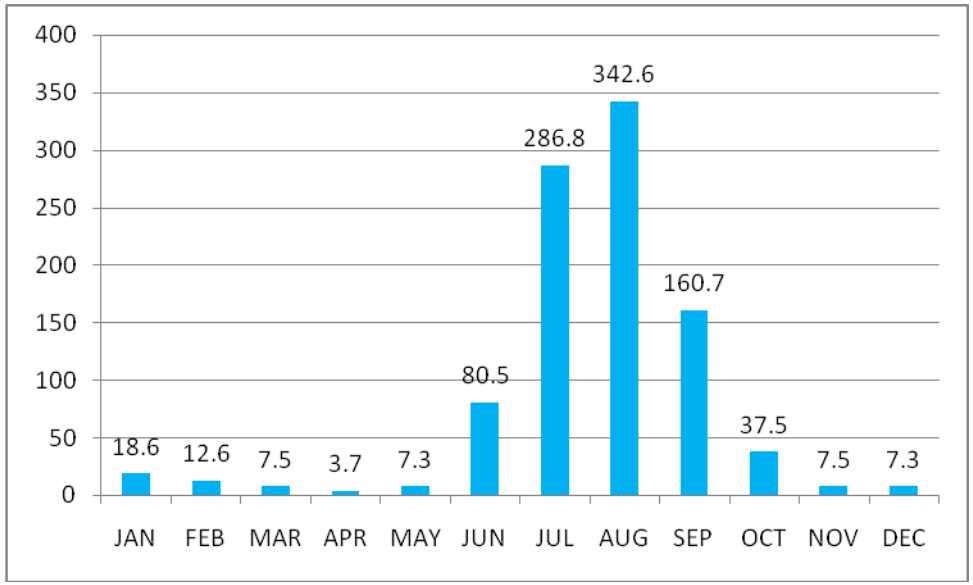
1.9	What is the major contingency the district is prone to?	Regular	Occasional	None
	Drought	✓	-	
	Flood	-	-	
	Cyclone	-	-	
	Hail storm	-	-	
	Heat wave	✓	-	
	Cold wave	-	-	
	Frost	-	-	
	Sea water intrusion	-	-	
	Sheath Blight, Stemborrer , Pyrilla loose smut, Heliothis, Rust etc white grub.	-	-	

1.14	Include Digital maps of the district for	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 : No

Annexure 01: Location map of the Uttar Pradesh state and district Banda



Annexure 02: Mean annual rainfall (mm) of district Banda



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 systems**	**Change in crops/ Cropping systems**	**Agronomic measures**	**Remark on implementation**
Delay by 2 weeks 4th week of June	Deep soil, Rakar, Parwa, Kabar, and maar Soil	Rice- Wheat Sesame- Pea Sesame-Gram Black Gram- Pea/Gram Jowar- Wheat Bajra- Wheat Pigeon Pea Green Gram- Lentil	Rice- Short duration Maize- Hybrid, HQPM-1 Pearl Millets- Raj-171 & Hybrid, **Sorghum**- Csv-13,15 & Hybrid	Mulching, Line Sowing , Light Irrigation, Weed Management and thinning,	Mixed farming
Delay by 4 weeks 4nd week of July	Deep soil, Rakar, Parwa, Kabar, and maar Soil	Sesame- Pea Sesame-Gram Black Gram- Pea/Gram Jowar- Wheat Bajra- Wheat Pigeon Pea Green Gram- Lentil	Replace rice with Green gram, Black Gram & Sorghum, **Green Gram**- PM-8, PDM-11, Samrat, Jyoti, Jagriti, Janpriya, **Black Gram**- T-9 PU-19,PU-40,PU-35 Sekhar-1,2&3	Sesame on ridges, Mulching, Line Sowing , Light Irrigation, Weed Management and thinning,	Inter cropping
Delay by 6 weeks 4th week of July	Deep soil, Rakar, Parwa, Kabar, and maar Soil	Black Gram- Pea/Gram Jowar- Wheat Bajra- Wheat Pigeon Pea Green Gram- Lentil Sesame- Pea Sesame-Gram	Replace rice with Green gram and pearl millet **Green Gram**- PM-8, PDM-11, Samrat, Jyoti, Jagriti, Janpriya Pearl Millets- Raj-171 & Hybrid,	Wider spacing 25 enhanced nutrients	Inter cropping
Delay by 8weeks 2nd week of August	Deep soil, Rakar, Parwa, Kabar, and maar Soil	Black Gram- Pea/Gram Jowar- Wheat Bajra- Wheat Pigeon Pea Green Gram- Lentil Sesame- Pea Sesame-Gram	Plan for toria		

Condition			Suggested contingency measures		
Early season drought (Normal onset)	**Major farming situation**	**Normal crop/ Cropping systems**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remark on implementation**
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/ op stand	Irrigated upland	Sesame- Pea Sesame-Gram Pigeon Pea	Pigeon Pea- NDR-1, NDR-2,MA-6, MA-13	Ridge-furrow sowing,	
	Irrigated lowland	Rice-Wheat Black Gram- Pea/Gram Jowar- Wheat Bajra- Wheat Green Gram- Lentil	Use of drought tolerant rice varieties- NDR-97, Susk Samrat Resowing & Gap filling Inter row harrowing	Use of additional Urea, Zink Sulphate, Mulching,	
	Un Irrigated upland	Sesame- Pea Sesame-Gram Pigeon Pea	Sesame-T-78, Pragti, Sekhar	Ridge-furrow sowing,	
	Un Irrigated lowland	Black Gram- Pea/Gram	**Green Gram**- PM-8, PDM-11, Samrat, Jyoti, Jagriti, Janpriya, **Black Gram**- T-9 PU-19,PU-40,PU-35 Sekhar-1,2&3	Ridge-furrow sowing,	
Mid season drought (Long dry spell consecutive 2 weeks rainless(.2.5mm period)					
At vegetative stage	Irrigated upland	Sesame- Pea Sesame-Gram Pigeon Pea	Pigeon Pea- NDR-1, NDR-2,MA-6, MA-13	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	
	Irrigated lowland	Rice-Wheat Black Gram- Pea/Gram Jowar- Wheat Bajra- Wheat Green Gram- Lentil	Use of drought tolerant rice varieties- NDR-97, Susk Samrat Resowing & Gap filling Inter row harrowing	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	
	Un Irrigated upland	Sesame- Pea Sesame-Gram Pigeon Pea	Sesame-T-78, Pragti, Sekhar	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	
	Un Irrigated lowland	Black Gram- Pea/Gram	**Green Gram**- PM-8,	Life saving Irrigation, straw	

			PDM-11, Samrat, Jyoti, Jagriti, Janpriya, **Black Gram**- T-9 PU-19,PU-40,PU-35 Sekhar-1,2&3	Mulch, Thinning, Inter cropping	
At flowering / fruiting stage	Irrigated upland	Sesame- Pea Sesame-Gram Pigeon Pea	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Spraying of 2% urea as foliar application KCI Spray	
	Irrigated lowland	Rice-Wheat Black Gram- Pea/Gram Jowar- Wheat Bajra- Wheat Green Gram- Lentil	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Spraying of 2% urea as foliar application KCI Spray	
	Un Irrigated upland	Sesame- Pea Sesame-Gram Pigeon Pea	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Spraying of 2% urea as foliar application KCI Spray	
	Un Irrigated lowland	Black Gram- Pea/Gram	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Spraying of 2% urea as foliar application KCI Spray	
		Normal crop/ Cropping systems	**Crop management**	**Rabi Crop planning**	**Remark on implementation**
Thermal drought (Early withdrawal of monsoon)	Irrigated upland	Sesame- Pea Sesame-Gram	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Toria	Early Rabi
	Irrigated lowland	Jowar- Wheat Bajra- Wheat Green Gram- Lentil	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Toria	Early Rabi
	Un Irrigated upland	Sesame- Pea Sesame-Gram Pigeon Pea	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Toria	Early Rabi
	Un Irrigated lowland	Black Gram- Pea/Gram	Life saving Irrigation, straw Mulch, Thinning, Inter cropping	Toria	Early Rabi

2.1.2 Drought –Irrigated situation

Condition			**Suggested contingency measures**		
Early season drought (delayed onset)	**Major farming situation**	**Normal crop/ Cropping systems**	**Change in crops/ Cropping systems**	**Agronomic measures**	**Remark on implementation**
Delayed release of water in canals due to low rainfall	Sandy Loam soils	Rice- Wheat	Rice- Short duration Varities- NDR-97, UPS-212, Susk Smrat, Sahbhagi	Direct sowing, Drum Seeder Micro irrigation	
		Millets- Mustard Pigeon Pea	No change	Micro irrigation/Thinning, Weed control	
		Sesame- Lentil Black gram/ Green gram	No change	Micro irrigation/Thinning, Weed control	
	clay /Silt loam soils	Soybean-Gram	No change	Micro irrigation/Thinning, Weed control	
		-	-	-	-
		-	-	-	-
Limited release of water in canals due to low rainfall	Sandy Loam soils	Rice- Wheat	Rice- Short duration Varieties- NDR-97, UPS-212, Susk Smrat, Sahbhagi	Direct sowing, Drum Seeder Micro irrigation	
		Millets- Mustard Pigeon Pea	No change	Micro irrigation/Thinning, Weed control	
		Sesame- Lentil Black gram/ Green gram	No change	Micro irrigation/Thinning, Weed control	
	clay loam soils	Soybean-Gram	No change	Micro irrigation/Thinning, Weed control	
		-	-	-	-
		-	-	-	-
Non release of water in canals under delayed onset of monsoon in catchment	Sandy Loam soils	Rice- Wheat	Rice may be replaced buy Pulses Green Gram- Samrat, Janpriya, Jagriti Black Gram- T-9, PU-	Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation	

			40, PU-35 Azad-3		
		Millets- Mustard Pigeon Pea	No change	Sowing of Pigeon pea at 90 cm+ two rows of inter crops on ridges Use of Micro- irrigation/ Sub surface irrigation	
		Sesame- Lentil Black gram/ Green gram	No change	Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation	
	clay loam soils	Soybean-Gram	No change	Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation	
		-			
		-			
Insufficient water recharge due to low rainfall	Upland tube well irrigated canal Sandy Loam soils	Rice- Wheat	Rice may be replaced buy Pulses Green Gram- Samrat, Janpriya, Jagriti Black Gram- T-9, PU-40, PU-35 Azad-3	Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation	
		Millets- Mustard Pigeon Pea	No change	Sowing of Pigeon pea at 90 cm+ two rows of inter crops on ridges Use of Micro- irrigation/ Sub surface irrigation	
		Sesame- Lentil Black gram/ Green gram	No change	Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation	
	Lowland tube well irrigated canal clay loam soils	Soybean-Gram	No change	Direct seeding in small beds, Use of Micro-irrigation/ Sub surface irrigation	

2.2 Unusual rains –(Untimely, unseasonal etc)

Condition			**Suggested contingency measures**	
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity stage'''**	**Post harvest''**
Soybean Black gram/ Green gram/	Provide Drainage	Proper bunding Drain out excess water	Harvest at physiological maturity	Shift to safer side
Sesame/ Pigeon pea	Provide Drainage	Proper bunding Drain out excess water	Harvest at physiological maturity	Shift to safer side
Condition			**Suggested contingency measures**	
Heavy rainfall with high speed winds in a short span	**Vegetative stage**	**Flowering stage**	**Crop maturity stage'''**	**Post harvest''**
Soybean Black gram/ Green gram/	Provide Drainage	Proper bunding Drain out excess water	Harvest at physiological maturity	Shift to safer side
Sesame/ Pigeon pea	Provide Drainage	Proper bunding Drain out excess water	Harvest at physiological maturity	Shift to safer side
Condition			**Suggested contingency measures**	
Outbreak of pests and diseases due to unseasonal rains	**Vegetative stage**	**Flowering stage**	**Flowering stage**	**Crop maturity stage'''**	**Post harvest''**
Soybean Black gram/ Green gram/	Bio pesticides use	Bio pesticides use	Bio pesticides use	Bio pesticides use	Shift to safer place
Sesame/ Pigeon pea	Bio pesticides use	Bio pesticides use	Bio pesticides use	Bio pesticides use	Shift to safer place

2.3 Floods

Condition	**Suggested contingency measures**			
Transient water logging/ partial inundation	**Seedling/Nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Soybean Black gram/ Green gram/	Provide drainage	Provide drainage	Provide drainage/ Prevent premature seed	Harvest at physiological maturity
Sesame/ Pigeon pea	Provide drainage	Provide drainage	Provide drainage/ Prevent premature seed	Harvest at physiological maturity
Pearl Millets	Provide drainage	Provide drainage	Provide drainage/ Prevent premature seed	Harvest at physiological maturity
Sorghum	Provide drainage	Provide drainage	Provide drainage/ Prevent premature seed	Harvest at physiological maturity