State: Uttar Pradesh
Agriculture Contingency Plan for Ambedkarnagar District

1.0 District Agriculture profile				
1.1	Agro-Climatic/ Ecological Zone			
	Agro-Ecological Sub Region(ICAR)	Eastern Plain, Hot Subhumid (moist) Eco-sub region (13.1)		
	Agro-Climatic Zone (Planning Commission)	Middle Gangetic Plain Region (IV)		
	Agro-Climatic Zone (NARP)	Eastern Plain Zone (UP-9)		
	List all the districts falling the NARP Zone* (^ 50% area falling in the zone)			
	Geographical coordinates of district headquarters	Latitude	Longitude	Altitude(mt)
		26°47' N	82°12' E	-
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS			
	Mention the KVK located in the district with address	Krishi Vigyan Kendra, Distt. Ambedkar Nagar		
	Name and address of the nearest Agromet Field Unit(AMFU,IMD)for agro advisories in the Zone	Narendra Dev University of Agriculture and Technology, Kumarganj, Faizabad		

1.2	Rainfall	Normal RF (mm)	Normal Rainy Days (Number)	Normal Onset	Normal Cessation
	SW monsoon (June-sep)	891.3	49	2nd week of June	3rd week of September
	Post monsoon (Oct-Dec)	57.0	10		
	Winter (Jan-March)	45.2	10	-	-
	Pre monsoon (Apr-May)	35.4	2	-	-
	Annual	1028.9	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)	236.2	190.8	0.328	4.1	0.5	3.9	4.4	3.4	10.5	5.0

1. 4	**Major Soils (common names like red sandy loam deep soils (etc.,)***	**Area ('000 ha)**	**Percent (%) of total**
	Deep, loamy soils and slightly eroded associated with silty soils	68.7	36
	Deep, loamy soils and slightly eroded	47.5	25
	Deep, fine soils moderately saline and sodic	23.0	12

1.5	Agricultural land use	Area('000 ha)	Cropping intensity (%)
	Net sown area	166.9	168.98 %
	Area sown more than once	115.1	
	Gross cropped area	282.0	

1.6	Irrigation	Area('000 ha)		
	Net irrigation area	158.16		
	Gross irrigated area	270.30		
	Rain fed area	8.76		
	Sources of irrigation (Gross Irrigated Area)	Number	Area('000 ha)	Percentage of total irrigated area
	Canals		35.255	13.0
	Tanks		0	
	Open wells		0	
	Bore wells(Tube wells)		235.053	87.0
	Lift irrigation schemes		NA	
	Micro-irrigation		NA	
	Other sources		0	
	Total Irrigated Area		270.308	
	Pump sets (2011-12)	64142		
	No. of Tractors	11773		
	Groundwater availability and use* (Data source: State/ Central Ground water Department/ Board)	No of blocks-Tehsils-	(%)area	Quality of water
	Critical			
	Semi-critical	1		
	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	-	-	-	118.354	0	118.354	-	118.354
	Rice	115.729	0.071	115.800	-	-	-	-	115.800
	Sugarcane	11.102	0	11.102	-	-	-	-	11.102
	Pea	-	-	-	4.447	0	4.447	-	4.447
	Potato	-	-	-	4.301	0	4.301	-	4.301
	Rapeseed Mustard	-	-	-	3.633	0	3.633	-	3.633
	Pigeonpea	Not available							

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

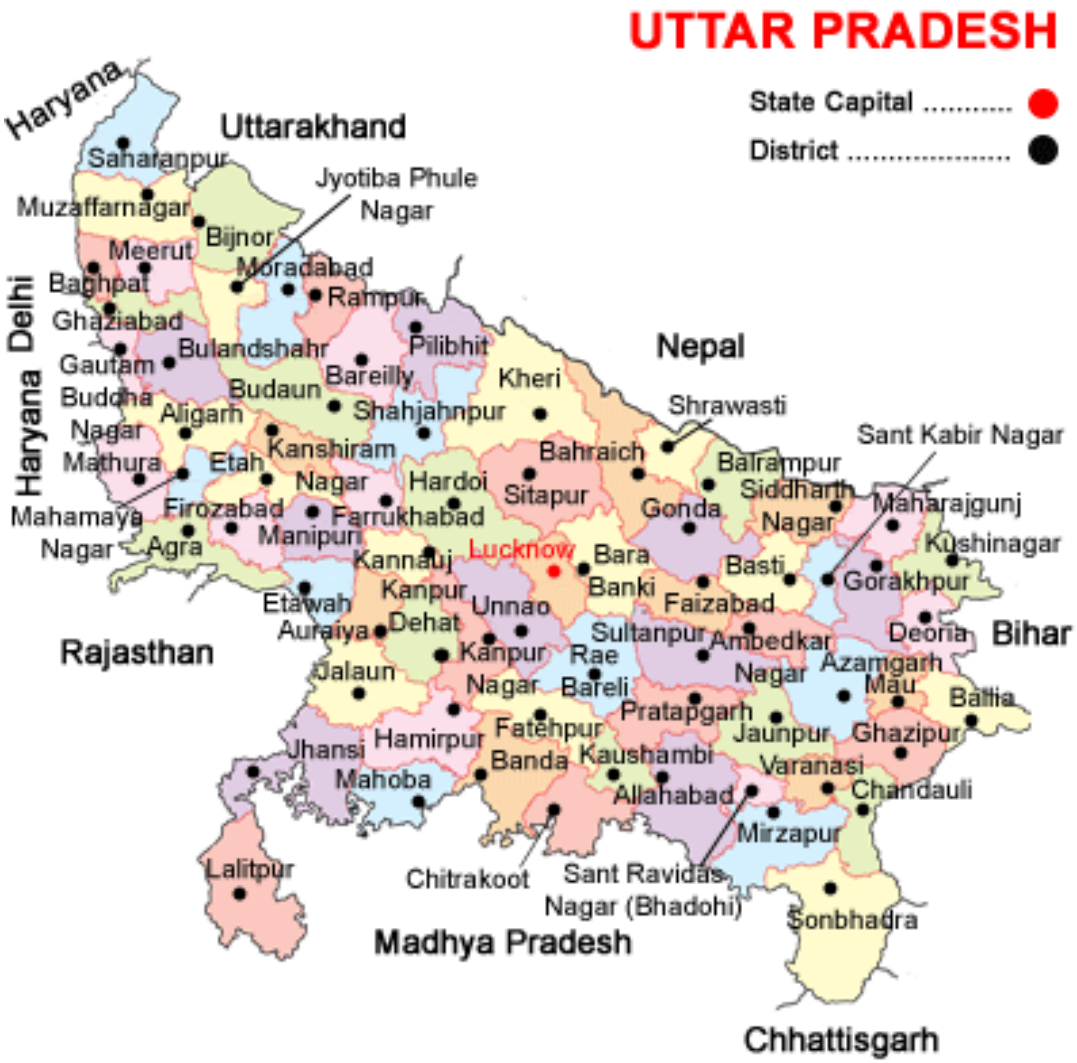
1.7	Major field crops cultivated	Area(‘000 ha)								
		Kharif		Rabi		Summer		Total		Crop residue as fodder (‘000 tons)
		Production (‘000 t)	Productivity (Kg/ha)	Production (‘000 t)	Productivity (Kg/ha)	Production (‘000t)	Productivity (Kg/ha)	Production (‘000 t)	Productivity (Kg/ha)	
	Rice	303.267	2637	-	-	-	-	303.267	2637	NA
	Wheat	-	-	387.291	32.79	-	-	387.291	3279	NA
	Pea	-	-	5.112	1149	-	-	5.112	1149	NA
	Sugarcane	589.642	52531	-	-	-	-	589.642	52531	NA
	Potato	-	-	79.210	19064	-	-	79.210	19064	NA
	Rapeseed Mustard	-	-	3.035	856	-	-	3.035	856	NA
	Pigeonpea	Not available								

1.8	**Normal sowing window for 5 major field crops**	**Rice**	**Maize**	**Pigeon Pea**	**Urd**	**Wheat**	**Barley**	**Mustard**	**Pea**
	Kharif –Rainfed	2nd week of June to last week of June	2nd week of June to 2nd week of luly	Last week of june 2nd week of August	Last week of june 2nd week of August	-	-	-	-
	Kharif - Irrigated	3rd week of June to last week of luly	2nd week of June to 2nd week of luly	-	-	-	-	-	-
	Rabi –Rainfed					-	Last week of Oct to First week of Nov	2nd week of Oct first week of Nov	2nd week of Sep to first week of Oct
	Rabi - Irrigated					3rd week of Nov to last week of Dec	-	2nd week of Oct first week of Nov	2nd week of Sep to first week of Oct

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 loos smut, Heliothis, Rust etc white grub.	-	-	

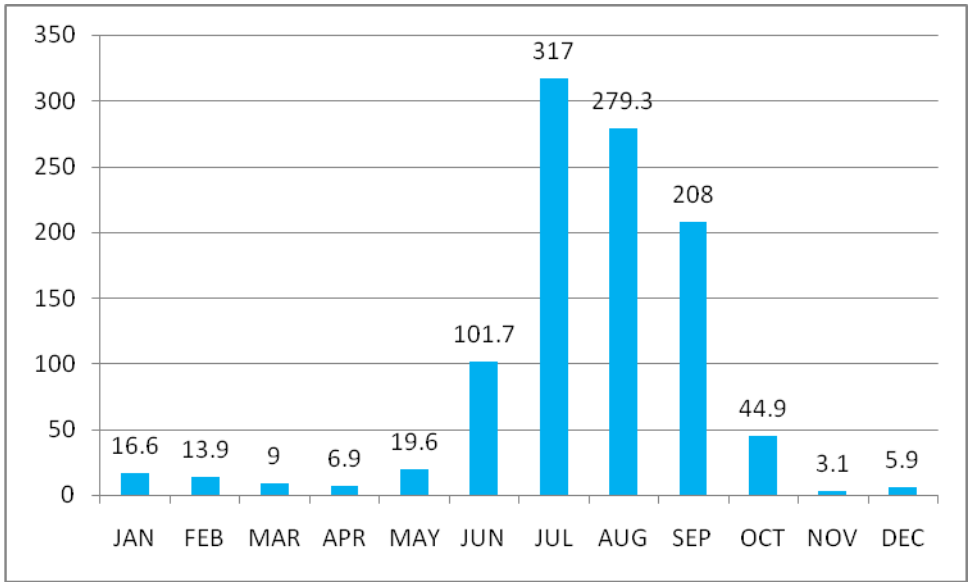
Annexure I

Location map of Ambedkarnagar district

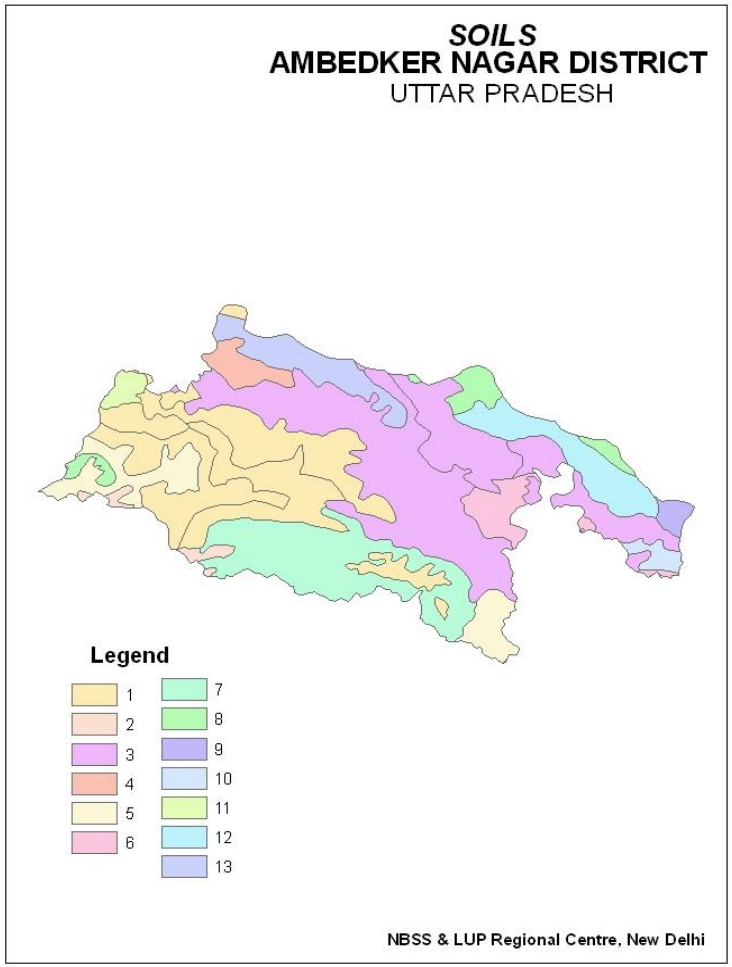


Annexure 2

Average Month-wise rainfall (mm) in Ambedkarnagar District



1.10. Soil map



SOILS OF AMBEDKAR NAGAR DISTRICT (U.P.)

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 and slightly saline/sodic associated with loamy soils with slightl salinity/sodicity
5. Deep, fine soils moderately saline and sodic associated with loamy soils, slightly eroded
6. Deep, loamy soils with moderately water logging associated with loamy soils with slight salinity/sodicty
7. Deep, silty soils and slightly eroded associated with loamy soils slightly saline and slightly sodic
8. Deep, loamy soils and slightly eroded associated with loamy soils with moderate salinity and sodicity and moderate water logging.
9. Deep, silty soils associated with loamy soils slightly eroded.
10. Deep, silty soils with moderate salinity/sodicity associated with loamy soils slightly eroded
11. Deep, silty soils and slightly eroded associated with fine soils

Old Alluvial plain with river left out channels/Oxbows/point bars (1-3%slope)

12. Deep, loamy soils and slightly eroded associated with stratified loamy soils slightly eroded

Active Flood Plain (1-3% slope)

13. Deep, stratified loamy soils, with severe flooding associated with loamy soils with moderate 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 (4 th week of June)	Deep loamy soils	Rice (Narendra 97, Narendra 118, Narendra 80, NDR 359)	No change	Direct seeded rice	Prefer disease free certified seed from a reliable source
		Pigeon pea (UPAS 120)	Prefer long duration varieties like Narendra Arhar 1, Narendra Arhar 2, Azad, Amar,Malvi 13, Malvi 6 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) +urdbean with row ratio of 1:2	
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 (2nd week of July)	Deep loamy soils	Rice	Replace with: Sesame (Shekhar,Pragathi) Urdbean (Azad Urd,Uttara,Narendra Urd 1, PU31, PU 19)	Line sowing of sesame and urd bean	Prefer disease free certified seed from a reliable source
		Pigeon pea (UPAS 120)	Prefer long duration varieties like Narendra Arhar 1, Narendra Arhar 2, Azad, Amar,Malvi 13, Malvi 6	• Raised bed planting • Intercropping of pigeon pea (inter	

			Intercropping of pigeonpea+urdbean (Azad Urd ,Uttara,Narendra Urd 1, PU31, PU 19)	row spacing of 75 cm)- cm) +urdbean with row ratio of 1:2	

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop**	**Change in crop/cropping system[c]**	**Agronomic measures**	**Remarks on Implementation**
Delay by 6 weeks (4th week of July)	Deep loamy soils	Rice	Sesame(Shekhar,Pragathi) Urdbean(Azad Urd,Uttara,Narendra Urd 1, PU31, PU 19)	Line sowing of sesame and urd bean	Prefer disease free certified seed from a reliable source
		Pigeon pea	Long duration varieties like Narendra Arhar 1, Narendra Arhar 2, Azad, Amar,Malvi 13, Malvi 6 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) +urdbean with row ratio of 1:2	

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 (2 ndweek of August)	Deep loamy soils	Rice	Keep fallow Conserve moisture	Conserve moisture	
		Pigeonpea (UPAS 120)	Keep fallow Conserve moisture	C onserve moisture	

Condition			**Suggested Contingency measures**		
Early season drought **(Normal onset)**	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management[c]**	**Soil nutrient & moisture conservation measues**	**Remarks on Implementation**
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	
		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 measues**	**Remarks on Implementation**
At vegetative stage	Deep loamy soils	Rice	Life saving irrigation if available Weed control	Foliar spray with 2% MOP Mulching with locally available material/weeds	
		Pigeon pea	Weed control Thinning to maintain optimum population	Mulching with locally available material/weeds	

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Rabi Crop planning**	**Remarks on Implementation**
	Deep loamy soils	Rice	Life saving irrigation if available Harvest at physiological maturity	-	
		Pigeon pea	Harvest at physiological maturity	-	

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	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	

Condition			Suggested Contingency measures		
	Major Farming situation	**Normal Crop/cropping system**	**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 seedling/hill	• Drum seeding • SRI method • Irrigation at critical stages • Reduce spacing plant to plant (20x 15 cm)	

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	Transplanting with tube well irrigation 3 to 4 seedlings/hill	• Drum seeding • SRI method • Irrigation at critical stages • Reduce spacing plant to plant (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	Rice	• Transplanting with tube well irrigation • 3 to 4 seedlings/hill	• Drum seeding • SRI method • Irrigation at critical stages • Reduce spacing plant to plant (20x 15 cm)	

2.2 Unusual rains (untimely, unseasonal 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**
Rice	Strengthening of bunds	Strengthening of bunds	Drain out standing water	Shift the harvested produce to safer place
Pigeon pea	Drainage of excess water & drenching of COC (Copper Oxy chloride) @ 2.5g/Liter water to avoid incidence of wilt & root rot.	Drain out standing water	Drain out standing water	Shift the harvested produce to safer place
Horticulture				
Mango	Provide staking to less than 3 years aged plant to avoid lodging	Provide proper drainage	Provide proper drainage	-
Guava	Provide staking to less than 3 years aged plant to avoid lodging	Provide proper drainage	Provide proper drainage	-
Heavy rainfall with high speed winds in a short span[2]				
Rice	-	-	Drain out standing water Harvest crop at physiological maturity	Shift the harvested produce to safer place
Pigeon pea	Drainage of Excess water & drenching of COC (Copper Oxy chloride) @ 2.5g/Liter water to avoid incidence of wilt & root rot.	Drain out standing water	Drain out standing water	Shift the harvested produce to safer place
Outbreak of pests and diseases due to unseasonal rains	Need based and recommended plant protection measures			

2.3 Floods

Condition	**Suggested contingency measure**			
Transient water logging/ partial inundation[1]	**Seedling / nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Rice	**Grow new seedlings**	**Drain out excess water**	**Drain out excess water**	
Pigeon pea	After drainage of flood water drench COC (Copper Oxy chloride) @ 2.5g/Liter water to avoid incidence of wilt & root rot.	**Drain out excess water**	**Drain out excess water**	-
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		
Continuous submergence for more than 2 days	Not applicable			

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

Extreme event type	**Suggested contingency measure**[r]			
	Seedling / nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat Wave				
Rice	• Drain Out Hot water and add fresh water at evening • Prepare 1-1.5 M wide raised Nursery Beds with provision of 30 cm width between the beds.	Frequent irrigation	Frequent irrigation	-
Horticulture				
Mango	Frequent irrigation		Light & frequent irrigation during flowering	
Guava				
Cold wave	Not applicable			
Horticulture				
Frost				
Horticulture				
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**
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/bajra etc.,) 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 also for rescue animal health workers to get involve in rescue operations	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 crop and fodder material and proper storage
Heat wave	In villages which are chronically prone to heat waves the following permanent measures are suggested	Allow the animals preferably early in the morning or late in the evening for grazing during heat waves	Green and concentrates supplementation should be provided to all the animals.

	i) Plantation of trees like Neem, Pipal, Subabul around the shed ii) Spreading of husk/straw/coconut leaves on the roof of the shed iii) Water sprinklers / foggers in the animal shed **iv)** Application of white reflector paint on the roof to reduce thermal radiation effect	Feed green fodder/silage / concentrates during day time and roughages / hay during night time in case of heat waves 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.	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 Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district	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 Rescue of sick and injured animals and their treatment	Conducting mass animal health camps Conducting fertility camps Mass deworming camps
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 event	**During the event**	**After the event**
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	Deworming and vaccination against RD and fowl pox	Supplementation of house hold grain Provide cool and clean drinking water with electrolytes	Routine practices are followed

management		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)	