

State: Jammu and Kashmir

Agriculture Contingency Plan for District: Anantnag

1.0 District Agriculture profile				
1.1	Agro-Climatic/Ecological Zone			
	Agro Ecological Sub Region (ICAR)	Western Himalayas, Warm Subhumid (To Humid With Inclusion Of Perhumid) Eco-Region (14.2)		
	Agro-Climatic Zone (Planning Commission)	Western Himalayan zone (I)		
	Agro Climatic Zone (NARP)	Mid to High altitude Temperate zone (JK-3)		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Srinagar, Baramulla, Kupwara, Ganderbal, Shopian, Bandipora, Kulgam, Budgam, Pulwama		
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		34°-03'	74°-48'	5211 ft
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	RRS Khudwani SKUAST-K		
	Mention the KVK located in the district with address	KVK-Pombai (Kulgam)		
Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	AMFU Srinagar and IMD Srinagar			

1.2	Rainfall	Normal RF(mm)	Normal Rainy days (number)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon:	-	-	-	
	NE Monsoon:	-	-	-	
	Annual	713.0	70	-	-

1.3	Land use pattern of the district (latest statistics)	Geographical Area(ha)	Cultivable area (ha)	Forest area (ha)	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)	72.149	49.493	0.288	4.861	5.427	3.031	1.119	4.065	0.118	0.112

1.4	Major Soils (common names like red sandy loam deep soils (etc.,))*	Area ('000 ha)	Percent (%) of total
	Silty clay loam	-	80
	Sandy to clay loam	-	20

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	47.619	155
	Area sown more than once	26.277	
	Gross cropped area	73.896	

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	30.704		
	Gross irrigated area	52.862		
	Rainfed area	16.00		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals	26681		
	Tanks	784		
	Open wells	15		
	Bore wells			
	Lift irrigation schemes			
	Micro-irrigation			
	Other sources (please specify)			

Total Irrigated Area			
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 (specify the problem such as high levels of arsenic, fluoride, saline etc)
Over exploited	-	-	-
Critical	-	-	-
Semi- critical	-	-	-
Safe	-	-	-
Wastewater availability and use	-	-	-
Ground water quality	--		
*over-exploited: groundwater utilization safe: <70%			

1.7 Area under major field crops & horticulture

1.7	Major field crops cultivated	Area ('000 ha)							
		<i>Kharif</i>			<i>Rabi</i>			Summer	Grand total
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
Paddy	25.307							25.307	
Maize		12.963						12.963	
Millets	-	-	-	-	-	-	-	-	
Pulses		15.06						15.05	
Oilseeds					19.017			19.017	
Others (specify)									

	Horticulture crops - Fruits	Area ('000 ha)		
		Total	Irrigated	Rainfed
	Apple	13.207		
	Pear	0.815		
	Apricot	0.234		
	Peach	0.176		
	Plum	0.306		
	Cherry, Walnut, Almond etc	0.113, 14.329, 0.685		
	Horticulture crops - Vegetables			
	Medicinal and Aromatic crops			
	Plantation crops			
	Eg., industrial pulpwood crops etc.			
	Fodder crops			
	Total fodder crop area			
	Grazing land			
	Sericulture etc			

	Others (specify)			
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1.8	Livestock	Male ('000)	Female ('000)	Total ('000)		
	Non descriptive Cattle (local low yielding)			345.0		
	Improved cattle			18.992		
	Crossbred cattle					
	Non descriptive Buffaloes (local low yielding)			8.2		
	Descript Buffaloes			-		
	Goat			50.9		
	Sheep			250.6		
	Others (Camel, Pig, Yak etc.)			0.2		
	Commercial dairy farms (Number)					
1.9	Poultry	No. of farms	Total No. of birds ('000)			
	Commercial		374.950			
	Backyard		412.00			
1.10	Fisheries (Data source: Chief Planning Officer)					
	A. Capture					
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats		Nets	Storage facilities (Ice plants etc.)
			Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	
		NA	NA	NA	NA	NA
	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds		No. of Reservoirs	No. of village tanks	
	B. Culture					
				Water Spread Area (ha)	Yield (t/ha)	Production ('000 tons)

	i) Brackish water (Data Source: MPEDA/ Fisheries Department)			
	ii) Fresh water (Data Source: Fisheries Department)			
	Others			

1.11 Production and Productivity of major crops

1.11	Name of crop	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)	
Major Field crops (Crops to be identified based on total acreage)										
	Paddy	262.4	4100	-	-	-	-	262.4	4100	
	Maize	9.0	1800							
	Oilseed			34.0	1700					
	Fodder crop									
Major Horticultural crops (Crops to be identified based on total acreage)										

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Rice	Maize	Pulses	Oil Seeds
	Kharif- Rainfed	-	3 rd week of April to 4 th week of May	3 rd week of May to 3 rd week of June	
	Kharif-Irrigated	3 rd week of April to 2 nd week of May	1 st week of April to 4 th week of May	3 rd week of May to 3 rd week of June	-
	Rabi- Rainfed				1 st week of October to 3 rd week of October

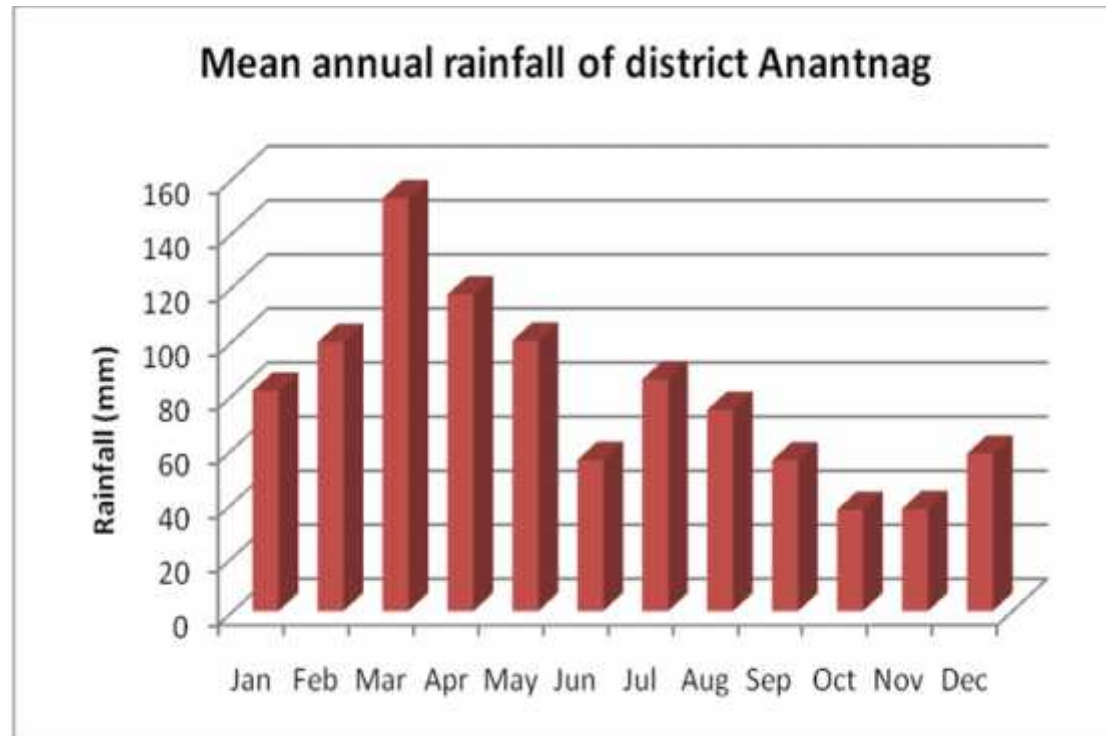
1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought			
	Flood			
	Cyclone			
	Hail storm			
	Heat wave			
	Cold wave			
	Frost			
	Sea water intrusion			
	Pests and disease outbreak (specify)			
	Others (specify)			

1.14	Include Digital maps of the district for	Location map of district within State as Annexure I	Enclosed: Yes
		Mean annual rainfall as Annexure 2	Enclosed: yes
		Soil map as Annexure 3	Enclosed: No

Annexure I
Map of Anantnag



Annexure II



2.0 Strategies for weather related contingencies

2.1 Drought- Not Applicable

2.1.1 Rainfed situation

Condition	Major Farming situation ^a	Normal Crop / Cropping system ^b	Suggested Contingency measures		
			Change in crop / cropping system ^c including variety	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delayed by two weeks	Pleistocene medium rainfall precipitatio	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	No change is recommended		
3 rd week of January	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize:C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash: Canadian red			

Condition	Major Farming situation ^a	Normal Crop / Cropping system ^b	Suggested Contingency measures		
			Change in crop / cropping system ^c including variety	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)					
Delayed by four weeks and six week	Pleistocene medium rainfall precipitation	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	No change is recommended	<ul style="list-style-type: none"> • Increase sowing depth of maize • Furrow sowing across the slope • Early sowing • Thinning in brown sarson and use as organic mulch 	
1 st week of February & 3 rd week of February		Oats (sabzar)			

	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize:C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash: Canadian red	No change is recommended		
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Condition	Major Farming situation ^a	Normal Crop / Cropping system ^b	Suggested Contingency measures		
			Change in crop / cropping system ^c including variety	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset) Delayed by 8 th week 1st week of March	Pleistocene medium rainfall precipitation	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	Maize (local)-Fallow Maize(local) +Beans-Fallow Maize(local) + Greengram/cowpea-Fallow	<ul style="list-style-type: none"> • Use local varieties • Follow water harvesting • Increase sowing depth • Early sowing • Use mulches • Increase quantity of organic manure 	
		Oats (sabzar)	Maize-local/ Beans-Canadian red/ Cowpea local		
	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize:C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash: Canadian red	Maize(local)-Fallow/ Maize(local)+ Beans-Fallow/ Maize(local)+Greengram/Cow pea-fallow		

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset)	Pleistocene soil medium rainfall precipitation	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	Maize (local)-Fallow Maize(local) +Beans-Fallow Maize(local) + Greengram/cowpea-Fallow	<ul style="list-style-type: none"> • Use local varieties • Follow water harvesting • Increase sowing depth • Early sowing • Use mulches Increase quantity of organic manure	
		Oats (sabzar)	Maize-local/ Beans-Canadian red/ Cowpea local		
	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize:C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash: Canadian red	Maize(local)-Fallow/ Maize(local)+ Beans-Fallow/ Maize(local)+Greengram/Cowpea-fallow		

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
Early season drought (Normal onset)					
Normal onset followed by 20 day dry spell	Pleistocene soil medium rainfall precipitation	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	<ul style="list-style-type: none"> • Thinning and gap filling • Reseeding /gap filling 	<ul style="list-style-type: none"> • Tillage • Mulching 	
		Oats (sabzar)			
	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize:C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash: Canadian red	Reseeding if germination fails		

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Pleistocene soil medium rainfall precipitation	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	<ul style="list-style-type: none"> Life saving irrigation Weeding & mulching Delay application of N dose 	<ul style="list-style-type: none"> Prepare furrow across the slope Spray urea 	
		Oats (sabzar)			
	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize: C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash: Canadian red			

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
Mid season drought (long dry spell)	Pleistocene soil medium rainfall precipitation	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	<ul style="list-style-type: none"> Life saving irrigation Tillage, mulch Weeding 	<ul style="list-style-type: none"> Spray micro nutrients and urea and potash as KCl Mulching 	
		Oats (sabzar)			

	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize:C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash :Canadian red	<ul style="list-style-type: none"> Organic mulch Thinning of plant stand to rationalize available moisture 		
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Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)/ Western disturbance	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
	Pleistocene soil medium rainfall precipitation	Maize + Greengram/ Maize + Rajmash Maize: C ₆ , C ₈ Greengram: Shalimar moong-1 Rajmash: Canadian red	Life saving irrigation from water storages	Lentil, brown sarson wheat vetch to be sown in the month of October followed by pre-sowing irrigation	
		Oats (sabzar)	Harvest greengram and beans for vegetable purpose		
			Harvest maize for fodder purpose and save excessive biomass as hay		
	Shallow soils high rainfall (high altitude)	Maize / Maize + Rajmash Maize:C-15, SKG-1, SKG-2, Shalimar maize hybrid-1 Rajmash :Canadian red			

2.1.2 Drought - Irrigated situation

Condition	Suggested Contingency measures			
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Remarks on Implementation ⁱ

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Delayed release of water in canals due to low rainfall/snowfall	Low land. snow melt Streams.Alluvial soils	Rice-brown sarson	Dealyed release of water is not situation as at early stages whatever snow is available water is releaaed	<ul style="list-style-type: none"> •Pre-sowing irrigation •Proper puddling in rice fields •Irrigate rice after disappearance of ponded water •Pre-sowing irrigation •Proper puddling in rice fields •Irrigate rice after disappearance of ponded water. •Plastering of bunds 	
		Rice-fodder oats			
		Rice- wheat			
	Tail ends of irrigated area	Rice-brown sarson	Not required		
		Rice-fodder oats			
		Rice- wheat			
Mid to high altitude Pleistocene soils	Rice-brown sarson				
	Rice-fodder oats				
	Rice- wheat				

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Limited release of water in canals due to low rainfall/snowfall	Low land. snow melt Streams.Alluvial soils	Rice-brown sarson	Maize+Beans-brown sarson Maize+Beans-Oats Maize+greengram /Cowpea-brown sarson	<ul style="list-style-type: none"> •Pre-sowing irrigation •Plant local varities. •Early sowing recommended •Increase organic manure as per availability 	
		Rice-fodder oats			
		Rice- wheat			
	Tail ends of irrigated area	a.Rice-brown sarson	Maize+beans-brown sarson Maize+beans-oats Maize+moong/cowpea-brown sarson		
		b.Rice-fodder oats c.Rice- wheat			
Mid to high altitude Pleistocene soils	a. Rice-brown sarson	Maize			
	b.Rice-fodder oats	Fodder maize			

Condition			Suggested Contingency measures		Remarks on Implementation ^j
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	
		c.Rice- wheat	MP cherry		

Condition			Suggested Contingency measures		Remarks on Implementation ^j
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	
Non release of water in canals under delayed onset of western disturbance in catchment	low land. snow melt Streams.Alluvial Soils	Conditions not applicable			

Condition			Suggested Contingency measures		Remarks on Implementation ^j
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	1) Farming Situation	Condition not applicable			

Condition			Suggested Contingency measures		Remarks on Implementation ^j
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	
Insufficient groundwater recharge due to low rainfall	1) Farming Situation	Condition not applicable			

2.2 Unusual rains (untimely, unseasonal etc) (for both rainfed and irrigated situations)

Condition	Suggested contingency measure			
	Vegetative stage ^k	Flowering stage ^l	Crop maturity stage ^m	Post harvest ⁿ
Continuous high rainfall in a short span leading to water logging				
Maize + Beans	Provide surface drainage along the slope	Provide surface drainage	Drain field. Provide staking if lodging is seen. Harvest around at physiological maturity	Spread crop at dry and safer place
Beans/ Greengram	do	do	Harvest crop by uprooting Not by picking	do
Fodder maize	do	Harvest crop as and when workable	-	
Rice	Drain excessive water.	Provide drainage and take measures against rice blast(prophylactic measures)		
Horticulture				
Apple	At dormant stage in case of heavy snowfall remove snow from trees In case of trunk craking join splits by nuts and bolts to save trees			
Heavy rainfall with high speed winds in a short span²				
Horticulture				
Outbreak of pests and diseases due to unseasonal rains				
Rice		Need based plant protection IPDM for pluses		Safe storage against storage pest and diseases
Brown sarson				
Maize				

Beans				
Horticulture				

2.3 Floods : Not experienced / encountered

Condition	Suggested contingency measure ^o			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation ¹				
Rice	NA	-Remove silt from the effected parts of field -Drain water from field	-Staking of lodged plants -Remove silt -Drain water -Prophylactic spray to control diseases	-Drain field -Remove silt -Harvest and take produce to safer place
Horticulture				
Continuous submergence for more than 2 days ²				
Horticulture				
Sea water intrusion ³				

2.4 Extreme events: Heat wave / Cold wave/Frost/ Hailstorm /Cyclone: Not experienced / encountered

Extreme event type	Suggested contingency measure ^r			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Heat Wave ^p	NA			
Horticulture				
Cold wave ^q				
Rice	At nursery stage use low polythene tunnel to Grow rice nursery as standard method	Increase water level in the paddy fields	Keep water level up	
Horticulture				
Frost				

Horticulture				
Hailstorm				
Horticulture				
Cyclone				
Horticulture				

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event ^s	During the event	After the event
Drought			
Feed and fodder availability	<ul style="list-style-type: none"> - Necessary arrangements to grow fodder on bunds/orchards and irrigated area as need based - Use excessive fodder for making hay and silage 	<ul style="list-style-type: none"> -Keep animals under shade -Use urea molasses treated roughage -Use feed blocks prepared from crop residue and apple pomace -Ensure availability of mineral mixture 	
Drinking water	Ensure storage of drinking water in storage tanks	Ensure storage of water	
Health and disease management	Arrangement and preparedness with required medicine stock	Vaccination for foot and mouth disease and other required dosage and vaccination if not done earlier	Culling sick and unproductive livestock.
Floods			
Feed and fodder availability	-	<ul style="list-style-type: none"> Take animals to safer places -Use feed blocks prepared from crop residue and apple pomace -Spread wet fodder at safer places to dry 	

Drinking water			
Health and disease management			
Cyclone			
Feed and fodder availability			
Drinking water			
Health and disease management			
Heat wave and cold wave			
Shelter/environment management	Provide heating and proper ventilation	Ensure live stock is not subjected to direct cold	
Health and disease management			

^s based on forewarning wherever available

2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event ^a	During the event	After the event	
Drought				
Shortage of feed ingredients	Ensure stock of feed	Utilise damaged food grains Utilise stored feed	Culling of affected birds	
Drinking water	Storage in water reservoirs	Use stored water	-	
Health and disease management	Preparedness and arrangement of	Mass vaccination	Culling of diseased birds	

	vaccination			
Floods				
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Cyclone				
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Heat wave and cold wave				
Shelter/environment management				
Health and disease management				

^a based on forewarning wherever available

2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event ^a	During the event	After the event
1) Drought			
A. Capture	Prepare additional water reservoirs and exigency ponds	<ul style="list-style-type: none"> • Protect brood stock by making deep trenches in the middle of ponds. • Sale of additional stock • Provide aeration • Stop feeding/restrict feeding 	-

		• Give chilling treatment	
Marine			
Inland			
(i) Shallow water depth due to insufficient rains/inflow			
(ii) Changes in water quality			
(iii) Any other			
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow			
(ii) Impact of salt load build up in ponds / change in water quality			
(iii) Any other			
2) Floods			
A. Capture			
Marine			
Inland			
(i) Average compensation paid due to loss of human life			
(ii) No. of boats / nets/damaged			
(iii) No.of houses damaged			
(iv) Loss of stock			
(v) Changes in water quality			
(vi) Health and diseases			
B. Aquaculture			
(i) Inundation with flood water			
(ii) Water contamination and changes			

in water quality			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps, aerators, huts etc)			
(vi) Any other			
3. Cyclone / Tsunami			
A. Capture			
Marine			
(i) Average compensation paid due to loss of fishermen lives			
(ii) Avg. no. of boats / nets/damaged			
(iii) Avg. no. of houses damaged			
Inland			
B. Aquaculture			
(i) Overflow / flooding of ponds			
(ii) Changes in water quality (fresh water / brackish water ratio)			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps, aerators, shelters/huts etc)			
(vi) Any other			
4. Heat wave and cold wave			

A. Capture			
Marine			
Inland			
B. Aquaculture			
(i) Changes in pond environment (water quality)			
(ii) Health and Disease management			
(iii) Any other			

^a based on forewarning wherever available