State: MAHARASHTRA

Agriculture Contingency Plan for District: GONDIA

1.0 District Agriculture profile				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	Central Highlands (Malwa And Bundelkhand), Hot Subhumid (Dry) Eco-Region (10.4)		
	Agro-Climatic Zone (Planning Commission)	Eastern plateau and hills region(VII)		
	Agro Climatic Zone (NARP)	Eastern Vidarbha zone (MH-9)		
	List all the districts or part thereof falling under the NARP Zone	Chandrapur, Bhandara, Gondia and Gadchiroli		
	Geographic coordinates of district headquarter : Gondia	Latitude	Longitude	Altitude
		21° 27' 36.03" N	80° 11' 52.37" E	346 m
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Zonal Agricultural Research Station(ZARS) , Sindewahi, District Chandrapur 441222 Ph No (07178)288225, & Fax No(07178) 288225		
	Mention the KVK located in the district	PC, Krishi Vigyan Kendra, Hiwara, District – Gondia Pin 441 614 Ph. No.& Fax (07182)280180		

1.2	**Rainfall**	Normal RF(mm)	Normal Rainy days (number)	Normal Onset	Normal Cessation
	SW monsoon (June-September):	1237.1	51	11th-20th June	1st -10th October
	NE Monsoon(October-December):	79.3	4	-	-
	Winter (January-February)	44.7	3		
	Summer (March-May)	16.8	2		
	Annual	1377.9	60		

1.3	**Land use pattern of the district** (latest statistics)	**Geographical Area**	**Cultivable area**	**Forest area**	**Land under non agricultural use**	**Perm anent pastures**	**Cultivable waste land**	**Land under miscellaneous tree crops and groves**	**Barren and uncultivable land**	**Current fallows**	**Other fallows**
	Area ('000 ha)	586	182.9	215	50	86	92	1	22	10	22

1. 4	**Major Soils (common names like red sandy loam deep soils (etc.,)***	**Area ('000 ha)**	**Percent (%) of total**		
	Deep black soil	462.3	78.9		
	Medium deep black soils	46.5	7.9		
	shallow black soils	77.1	13.1		
1.5	**Agricultural land use**	Area ('000 ha)*	Cropping intensity %		
	Net sown area	182.9	125.4		
	Area sown more than once	46.5			
	Gross cropped area	229.4			
1.6	**Irrigation**	Area ('000 ha)			
	Net irrigated area	98.6			
	Gross irrigated area	110.8			
	Rainfed area	84.3			
	Sources of Irrigation	**Number**	**Area ('000 ha)**	**Percentage of total irrigated area**	
	Canals		67.0	68.0	
	Tanks	-	-	-	
	Open wells	4280	31.5	31.9	
	Bore wells	-	-	-	
	Lift irrigation schemes	-	-	-	
	Micro-irrigation	-	-	-	
	Other sources (please specify)	-	7.2	7.8	
	Total Irrigated Area	-	105.7	-	
	Pump sets	35082	-	-	
	No. of Tractors	3313	-	-	

	Groundwater availability and use* (Data source: State/Central Ground water Department /Board)	No. of blocks/ 8 Tehsils	(%) area	Quality of water (specify the problem such as high levels of arsenic, fluoride, saline etc)
	Over exploited	-	-	-
	Critical	-	-	-
	Semi- critical	-	-	-
	Safe	Safe (60%)	-	-
	Wastewater availability and use	-	-	-
	Ground water quality			
*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%				

Source : District social & economic Abstract 2009

1.7 Area under major field crops and horticulture etc. (2008-09)

1.7	**Major Field Crops cultivated**	**Area ('000 ha)**							
		Kharif			***Rabi***			**Summer**	**Total**
		Irrigated	***Rainfed***	**Total**	***Irrigated***	***Rainfed***	**Total**		
	Paddy	89	101.3	190.3	-	-	-	15	205.3
	Pigeon pea	-	5.1	5.1	-	-	-	-	-
	Sesame	-	0.9	0.9	-	-	-	-	-
	Wheat	-	-	-	2.3	-	2.3	-	-
	Gram	-	-	-	4.0	2.1	6.1	-	-
	Others (specify) Linseed	-	-	-	-	10.7	10.7	-	-
	Plantation crops	**Total area**							
	Horticulture crops fruits	0.3							
	Vegetables	4.4							
	Others such as industrial pulpwood crops etc (specify)	-							
	Fodder crops	**Total area ('000 ha)**							
	Total fodder crop area	191.5							

	Grazing land	169.4
	Sericulture etc (Mulberry)	1.5
	Others (Specify)	4.5
	Horticulture crops – Fruits	**Total area ('000ha)**
	Mango	0.1
	Banana	0.2
Others (specify) Chickoo, Ber, Custard apple, Aonla		--
Total		0.3
	Horticultural crops - Vegetables	**Total area (ha)**
	Chilly	1.0
	Brinjal	2.2
	Peas	1.1
	Tomato	0.2
Others (specify) Gourds, Cucumber, Sweet potato, etc.		-
Total		4.5
	Medicinal and Aromatic crops	-

1.8	**Livestock**	**Male ('000)**	**Female ('000)**	**Total ('000)**
	Non descriptive Cattle (local low yielding)	209.6	160.3	369.9
	Crossbred cattle	4.1	12.9	17.1
	Non descriptive Buffaloes (local low yielding)	34.1	95.6	129.8
	Graded Buffaloes	1.6	2.7	4.4
	Goat	47.1	110.1	157.3
	Sheep			
	Others (Camel, Pig, Yak etc.)			
	Commercial dairy farms (Number)			
1.9	**Poultry**	**No. of farms**	**Total No. of birds ('000)**	
	Commercial	0	30.0	
	Backyard	0	130.7	

1.10	**Fisheries** (Data source: Chief Planning Officer)						
	A. Capture						
	i) Marine (Data Source: Fisheries Department) Not applicable	**No. of fishermen**	**Boats**		**Nets**		**Storage facilities (Ice plants etc.)**
			Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake and trap nets)	
		--	--	--	--	--	--
	ii) Inland (Data Source: Fisheries Department)	**No. Farmer owned ponds**	**No. of Reservoirs**		**No. of village tanks**		
		10	66(10813ha)		7018(11246ha)		
	B. Culture						
		Water Spread Area (ha)	**Yield (t/ha)**		**Production**		
	i) **Brackish water** (Data Source: MPEDA/ Fisheries Department)	--	--		--		
	ii) **Fresh water** (Data Source: Fisheries Department)	22055ha	0.7**(t/ha)**		15766t		
	Others	--	--		--		

1.11 Production and Productivity of major crops (Average of last 5 years: 2004, 05, 06, 07, 08; specify)

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	239.0	1256	-	-	-	-	239.0	1256	-
	Pigeon pea	4.2	826	-	-	-	-	4.2	826	-
	Wheat	-	-	1.6	700	-	-	1.6	700	-
	Gram	-	-	2.6	433	-	-	2.6	433	-
	Paddy	-	-			21.1	1410	21.1	1410	-

Major Horticultural crops (Crops to be identified based on total acreage)										
	Mango	-	-	-	-	-	-	3.8	20,000	-
	Papaya	-	-	-	-	-	-	12.8	64,000	-
	Banana	-	-	-	-	-	-	33.3	1,11,100	-
	Chilly	-	-	-	-	-	-	6.1	6,100	-
	Brinjal	-	-	-	-	-	-	41.9	19,000	-

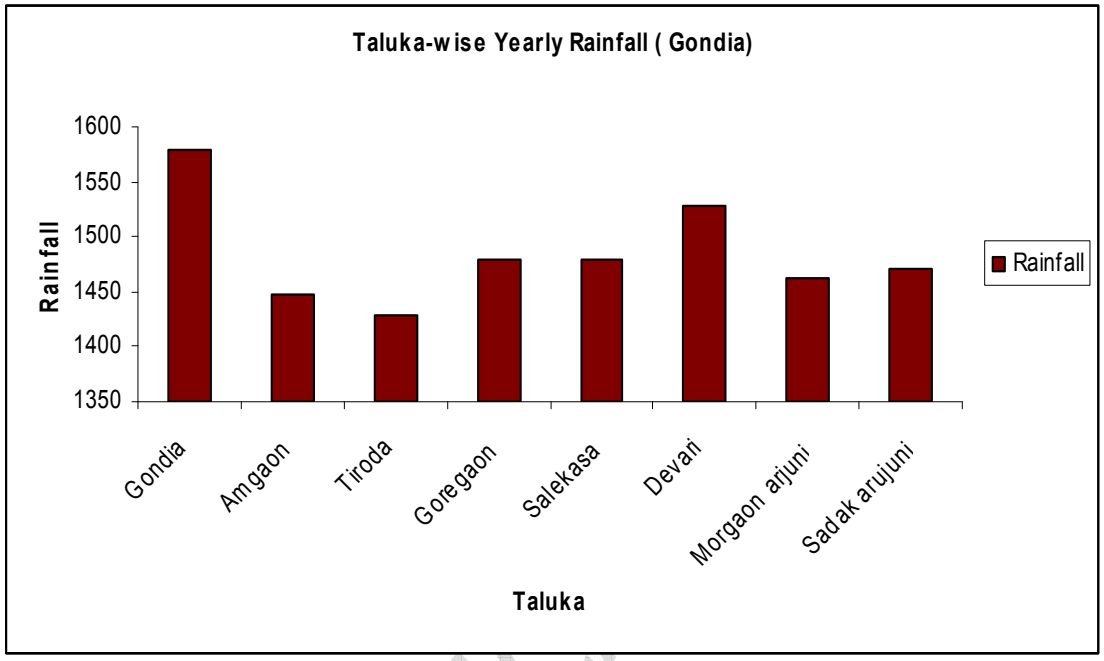
1.12	**Sowing window for 5 major field crops** (start and end of normal sowing period)	**Paddy**	**Pigeonpea**	**Wheat**	**Gram**	**Summer Paddy**
	Kharif- Rainfed	July 1st –July 4th	June 3rd to July 2nd	-	-	-
	Kharif-Irrigated	June 4th –July 2nd	-	-	-	-
	Rabi- Rainfed	-	-	-	15th November - 15th December	-
	Rabi-Irrigated	-	-	15th November – 15th December.	15th November - 15th December.	2nd January to 2nd February

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 (Leaf Blast, Stem Borer)	-	√	-
	Others (specify)	-	-	√

1.14	**Include Digital maps of the district for**	Location map of district within State as Annexure I	Yes
		Mean annual rainfall as Annexure 2	Yes
		Soil map as Annexure 3	Yes

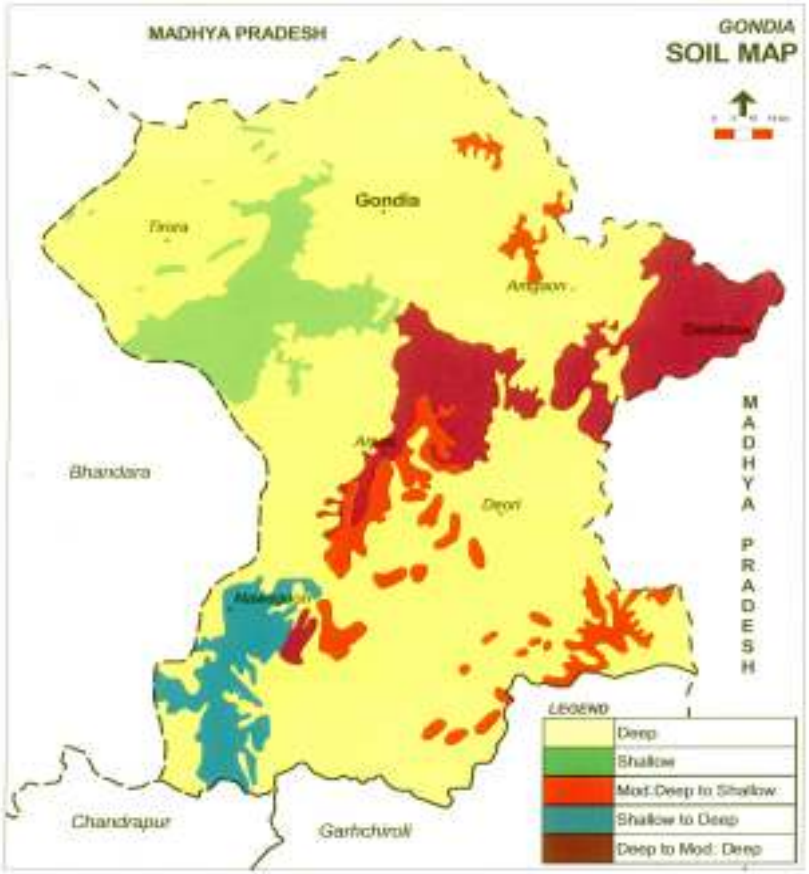
Annexure 1: Location Map of Gondia

Annexure 2: Mean Annual Rainfall



District Gondia		
Taluka	**Rainfall**	**Rainy Day**
Gondia	1578.5	74.6
Amgaon	1447.0	60.6
Tiroda	1429.2	63.6
Goregaon	1479.0	60.6
Salekasa	1479.0	60.6
Devari	1528.0	60.6
Morgaon arjuni	1462.0	60.6
Sadak arujuni	1471.0	60.6
Oveall	1484.2	62.7

Annexure 3: 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 June 25th to 1st July	Deep to very deep soil with high to moderate organic carbon content.	Paddy –Paddy Paddy – Fallow Paddy-Gram Paddy-Wheat Pigeonpea- Fallow	No Change	Community nursery to be raised at a point where water is available and transplantation under taken with the onset of rains	
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content.	Paddy –Paddy Paddy – Fallow Paddy-Gram Paddy-Wheat Pigeonpea- Fallow	No Change Re sowing with medium and short duration varieties, Paddy: PKV –HMT, SYE-2001, SKL -6, SYE-01, MTU-1010 Pigeon pea: ICPH-8863 and AKPH -4101.	-do-	
	Moderately deep soils on undulating topography with medium organic carbon content.	Paddy –Paddy Paddy – Fallow Paddy--Gram Paddy-Wheat Pigeonpea- Fallow	-do-	-do-	

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 4 weeks 9^{th}- 15^{th} July	Deep to very deep soil with high to moderate organic carbon content.	Paddy –Paddy Paddy – Fallow Paddy-Gram Paddy-Wheat Pigeonpea- Fallow	No change of crop , Short duration variety of paddy: SKL-06, SYE-01, MTU-1010 Pigeonpea: TAT-10, ICPL-87, AKT-8811.	Community nursery to be raised at a pond water is available and transplantation under taken with the receipt of rains. Higher seed rate preferred for paddy and Pigeon pea sowing.	
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content.	Paddy –Paddy Paddy – Fallow Paddy--Gram Paddy-Wheat Pigeonpea- Fallow	-do-	-do-	
	Moderately deep soils on undulating topography with medium O.C. content.	Paddy –Paddy Paddy – Fallow Paddy-Gram Paddy-Wheat Pigeonpea- Fallow	-do-	-do-	

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 6 weeks 23 rd-29 th July	Deep to very deep soil with high to moderate organic carbon content.	Paddy –Paddy Paddy – Fallow Paddy--Gram Paddy-Wheat Pigeonpea- Fallow	No change Prefer short duration variety JAKI- 9218 for Gram Preferred Variety like Wheat during rabi season: HD-2189 Pigeonpea: Variety like TAT-10 and AKT-8811 select for sowing on paddy bunds.	Reduce plant spacing for both the crop (15 x 15 cm) and use higher seed rate.	
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content .	Paddy –Paddy Paddy – Fallow Paddy--Gram Paddy-Wheat Pigeonpea- Fallow	-do-	-do-	
	Moderately deep soils on undulating topography with medium O.C. content.	Paddy –Paddy Paddy – Fallow Paddy--Gram Paddy-Wheat Pigeonpea- Fallow	-do-	-do-	

Condition			Suggested Contingency measures		
Early season drought	**Major Farming situation**	**Normal Crop / Cropping system**	**Change in crop / cropping system including variety**	**Agronomic measures**	**Remarks on Implementation**
Delay by 8 weeks 6 th -12 th Aug	Deep to very deep soil with high to moderate organic carbon content.	Paddy –Paddy Paddy – Fallow Paddy--Gram Paddy-Wheat Pigeonpea- Fallow	Paddy – fallow	Use short duration variety of paddy	
			Sesame- fallow	Sowing of semi Rabi Sesame variety N-8 during 1 st week of September on paddy bund and bandies.	

			Sunflower – Paddy	Sowing of Sunflower crop on ridges with 15-20 kg seed rate per ha.	
			Sunflower –Gram	Sowing of Gram variety JAKI-9218 in 1st week of November.	
			Sunflower- Wheat	Sowing of Sunflower in August 1st week and sowing of Wheat I 1st fortnight of Nov.	
			Fallow – Mustard / Maize/Gram/ Wheat /linseed	Crop like Mustard, Maize, Gram, Wheat, linseed are sown in rabi season if monsoon is delay more than eight weeks.	
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content .	-do-	-do-	-do-	
	Moderately deep soils on undulating topography with medium O.C. content.	-do-	-do-	-do-	

Early season drought **(Normal onset)**	**Major Farming situation**	**Normal Crop / Cropping system**	**Change in crop / cropping system including variety**	**Agronomic measures**	**Remarks on Implementation**
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Deep to very deep soil with high to moderate organic carbon content	Paddy –Paddy Paddy – Fallow Paddy--Gram Paddy-Wheat Pigeonpea- Fallow	• Community nursery to be raised at a point water is available and transplantation to be undertaken with the onset of rains. • Repeat transplanting of paddy seedling from community nursery • Gap filling in Pigeon pea	• Application of paddy straw for mulching in Pigeon pea. • Weeding to reduce transpiration losses competition for nutrient • Frequent inter cultural operation to keep the weed under control and reduce evaporation losses	

			for proper plant population • Re-sowing of Pigeon pea with subsequent rain and use short duration variety and higher seed rate.		
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content.	-do-	-do-	-do-	
	Moderately deep soils on undulating topography with medium O.C. content.	-do-	-do-	-do-	

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 and moisture conservation measures**	**Remarks on Implementation**
At vegetative stage	Deep to very deep soil with high to moderate organic carbon content	Paddy –paddy Paddy – fallow Paddy--Gram Paddy-Wheat Pigeon pea- fallow	• Removing unhealthy seedlings to reduce plant population. • Urea spray @ 2-3 % on arrival of rains. • Providing effective plant protection measures.	• Insitu water harvesting or runoff recycling are the measures for crop life saving. • Drop top dressing or reduce the dose. • Thinning • Frequent inter cultural operation to keep the weed under control and reduce evaporation losses	
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content .	-do-	-do-	-do-	

	Moderately deep soils on undulating topography with medium O.C. content.	-do-	-do-	-do-	

Condition			**Suggested Contingency measures**		
Mid season drought (long dry spell)	**Major Farming situation**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient and moisture conservation measures**	**Remarks on Implementation**
At flowering/ fruiting stage	Deep to very deep soil with high to moderate organic carbon content	Paddy-paddy Paddy-fallow Paddy- Gram Paddy-Wheat Pigeon pea-fallow	• Mulching in pigeon pea and sesame • May adopt relay cropping by sowing or • Broadcasting *Lathyrus* seed in standing paddy crop. • Gram is alternative crop for lathyrus to be used in relay cropping. • Re-sowing with rabi or semi-rabi crop	Provide protective irrigation with available water Reduce fertilizer dose at vegetative stage	
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content	-do-	-do-	-do-	
	Moderately deep soils on undulating topography with medium O.C. content.	-do-	-do-	-do-	

Condition			Suggested Contingency measures		
Terminal drought	**Major Farming situation**	**Normal cropping system**	**Crop management**	**Rabi Crop planning**	**Remarks**
	Deep to very deep soil with high to moderate organic carbon content	Paddy-paddy Paddy-fallow Paddy- Gram Paddy-Wheat Pigeon pea-fallow	• Provide life saving irrigation with available water to save paddy in the month of Oct. • May adopt relay cropping. • Crop like lentil Gram, Mustard and lathyrus to be sown in standing paddy crop to utilize available moisture. • If crop on PWP stage then harvest paddy for fodder purpose. • Apply crop residues in paddy bandies to save available moisture for rabi crop.	• Lathyrus variety Bio. L-212 is suitable for rabi season. • Gram variety JAKI-9218 is suitable for rabi season to grow in zero tillage condition. • Sunflower crop is suitable for rabi season. • Maize as contingency crop plan for food and fodder Purpose. • Mustard and linseed crop perform • very well in available soil-moisture • residues in paddy bandies.	
	Moderately deep soils on very gently sloping plains with medium to low organic carbon content .	-do-	-do-	-do-	
	Moderately deep soils on undulating topography with medium O.C. content.	-do-	-do-	-do-	

2.1.2 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	NA				

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	NA				

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	NA				

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	NA				

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	NA				

2.2 Unusual rains (untimely, unseasonal etc) (for both rainfed 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**
Paddy	Drain excess water above 5 cm.	Drainage excess water above 10 cm.	Drainage , Delay harvesting for few days.	Harvesting at physiological maturity, Drying of paddy on bunds. Salt treatment of wetted paddy seeds with 5 % common salt to prevent germination. Shifting of produce at safer place or covering with paddy straw. Use of PARAQUAT as pre-harvest desiccant @ 0.1 % spray application for early harvesting to avoid losses by unpredictable monsoon at later stages.
Pigeon pea	Drainage and hoeing , drenching or systemic fungicide spraying (redomil), Opening of ridges and furrow	Drainage and Hoeing, drenching or systemic fungicide spraying (redomil)	-do-	Drainage water and Shifting of produce at safer place
Gram	-do-	-do-	-do-	-do-
Wheat	Drainage	Drainage	-do-	-do-
Linseed	-do-	-do-	-do-	-do-
Heavy rainfall with high speed winds in a short span				
Paddy	Drainage excess water above 5 cm.	Drainage excess water above 10 cm.	Drainage , Delay harvesting	Harvesting at physiological maturity, Drying of paddy on bunds. Salt treatment of wetted paddy sheaves with 5 % common salt to prevent germination. Shifting of produce at safer place or covering with paddy straw. Use of PARAQUAT as pre-harvest desiccant @ 0.1 % spray application for early

				harvesting to avoid losses by un predictable monsoon at later stages.
Pigeon pea	Drainage and hoeing , drenching or systemic fungicide spraying (redomil), Opening of ridges and furrow	Drainage and hoeing , drenching or systemic fungicide spraying (redomil)	Drainage	Drainage water and Shifting of produce at safer place
Gram	-do-	-do-	-do-	-do-
Wheat	Drainage	Drainage		
Linseed	-	-	-	-

Outbreak of pests and diseases due to unseasonal rains				
Paddy	Spraying of Monocrotophos 36 EC 14 ml or Cypermetharin 10 EC 6 ml per 10 liter of water	Spraying of Monocrotophos 36 EC 14 ml or Cypermetharin 10 EC 6 ml per 10 Liter of water	Removal and destruction of infected panicles due to Loose smut	
Pigeon pea	Spraying of Endosulphan . 35 EC @ 20 ml or Quinolphos 25 EC @ 16 ml per 10 liters of water to control leaf roller and leaf minor.	-do-	Spraying of neem extract 5 % or Endosulphan. 35EC 20 ml or Quinolphos 25 EC 20 ml or HANPV 250 LE to control pod borer	
Gram	Spraying of Endosulphan. 35 EC @ 20 ml or Quinolphos 25 EC @ 16 ml per 10 liters of water to control leaf eating caterpillar	-do-	-do-	
Linseed	Spraying of Mancozeb @ 25 gm per 10 liter of water to control foliar blight		Spraying of Carbaryl @ 40 gm per 10 liter per water to control cut worms and stem borer.	

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
Heat Wave	NA			
Cold wave	NA			
Frost	NA			
Hailstorm	NA			
Cyclone	NA			

2.5 Contingent strategies for Livestock, Poultry and Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event	During the event	After the event
Drought	NA		

Floods	In case of early forewarning (EFW), harvest all the crops (paddy, wheat, gram, maize etc.) that can be useful as feed/fodder in future (store properly) Keeping sufficient of dry fodder to transport to the flood affected villages Don't allow the animals for grazing if severe floods are forewarned Keep stock of bleaching powder and lime Carry out Butax spray for control of external parasites Identify the Clinical staff and trained paravets and indent for their services as per schedules Identify the volunteers who can serve in need of emergency 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	Repair of animal shed Bring back the animals to the shed Cleaning and disinfection of the shed Bleach (0.1%) drinking water / water sources Encouraging farmers to cultivate short-term fodder crops like sunhemp. Deworming with broad spectrum dewormers 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 material and proper storage for use as fodder.
Cyclone	NA		
Heat & Cold wave	**NA**		
Insurance	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

Vaccination schedule in small ruminants (Sheep & Goat)

Disease	Season
Foot and mouth disease (FMD)	Preferably in winter / autumn
PPR	All seasons, preferably in June-July
Black quarter (BQ)	May / June
Enterotoxaemia (ET)	May
Haemorrhagic septicaemia (HS)	March / June
Sheep pox (SP)	December / march

Vaccination programme for cattle and buffalo:

Disease	**Age and season at vaccination**
Anthrax	**In endemic areas only, Feb to May**
HS	**May to June**
BQ	**May to June**
FMD	**November to December**

2.5.2 Poultry

	Suggested contingency measures		
	Before the event[a]	**During the event**	**After the event**
Drought	**NA**		
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		Use water sanitizers or offer cool hygienic 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
Cyclone	**NA**		
Heat wave	**NA**		
Cold wave	**NA**		

[a] based on forewarning wherever available

2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
1) Drought			
A. Capture	--	--	--
Marine	--	--	--
Inland	--	--	--
(i) Shallow water depth due to insufficient rains/inflow	Extra food supply / sale out fish-	Extra food supply / sale out fish	--
(ii) Changes in water quality	--	--	--
(iii) Any other	--	--	Increase duration of lease period for one year.
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	--	pH maintenance	200 Kg lime / ha.
2) Floods			
A. Capture			
Marine			
Inland			
(i) Average compensation paid due to loss of human life	As per Govt .norm	--	1 lakh per fisherman nomineefor death OR 0.5 lakh for disablity
(ii) No. of boats / nets/damaged	--	--	0.01 lakh /fisherman Coop Soc. For tank
(iii) No.of houses damaged	--	--	--
(iv) Loss of stock	--	--	0.01 lakh /fisherman Coop Soc. For tank
(v) Changes in water quality	--	pH maintenance	200 Kg lime / ha

(vi) Health and diseases	--	Ulcerative syndrome	25% subsidy on treatment
B. Aquaculture			
(i) Inundation with flood water	--	--	--
(ii) Water contamination and changes in water quality	--	pH maintenance	200 Kg lime / ha.
(iii) Health and diseases	--	Ulcerative syndrome	25% subsidy on treatment
(iv) Loss of stock and inputs (feed, chemicals etc)	--	--	per fisherman Rs 500/-
(v) Infrastructure damage (pumps, aerators, huts etc)	--	--	--
3. Cyclone / Tsunami			
A. Capture	--	--	--
Marine	--	--	--
(i) Average compensation paid due to loss of fishermen lives	As per Govt .norm	--	1 lakh per fisherman nominee.
(ii) Avg. no. of boats / nets/damaged	--	--	--
(iii) Avg. no. of houses damaged	--	--	--
Inland			--
B. Aquaculture			
(i) Overflow / flooding of ponds	As per Govt .norm	--	0.005 / fisherman or Rs 500/-
(ii) Changes in water quality (fresh water / brackish water ratio)	--	PH maintenance	200 Kg lime / ha.
(iii) Health and diseases	--	Ulcerative syndrome	25% subsidy on treatment
(iv) Loss of stock and inputs (feed, chemicals etc)	--	--	0.005 / fisherman or Rs 500/-
(v) Infrastructure damage (pumps, aerators, shelters/huts etc)	--	--	--
4. Heat wave and cold wave	--	--	--
A. Capture	--	--	--
Marine	--	--	--
Inland	--	--	--
B. Aquaculture			
(i) Changes in pond environment (water quality)	--	PH maintenance	200 Kg lime / ha.
(ii) Health and Disease management	--	Ulcerative syndrome	25% subsidy on treatment