State: ASSAM
Agricultural contingency Plan: Dima Hasao District

1. District Agricultural profile				
1.1	Agro-Climatic /Ecological Zone			
	Agro Ecological Sub Region (ICAR)	Purvanchal (Eastern range) warm to hot humid Eco sub region		
	Agro-Climatic Region (Planning Commission)	Eastern Himalayan Region		
	Agro-Climatic Zone (NARP)*	Hills Zone of Assam		
	List all the districts falling under the NARP Zone	1. Dima Hasao 2. Karbi Anglong		
	Geographic coordinates of district	Latitude	Longitude	Altitude
		$25^0 3'$ N- $25^0 47'$ N	$92^0 37'$E – $93^0 17'$ E	600 m – 1866m
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS	Regional Agricultural Research Station, Assam Agricultural University, Diphu		
	Mention the KVK located in the district	In the process of establishment		
1.2	Rainfall	Average (mm)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep)	964.4	1st week of June	Last week of September
	NE monsoon (Oct – Dec)	156.7	1st week of October	Last week of December
	Winter (Jan – Feb)	42.5	Sporadic rain & erratic in behaviour	-
	Summer (Mar– May)	355.5	1st week of April	-
	Annual	1519.1	-	-

- If a district falls in two NARP zones, mention the zone in which more than 50% area falls

1.3	Land use pattern of the diatrict (latest statistics)	Geographical 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)	489	67.3	NA	NA	NA	NA	NA	NA	-

1.4	Major Soils	Area (ha)	Percent of total
	1. Alfisoil/ Ultisol	NA	
	2. Inceptisol	NA	
1.5	Agricultural land use	Area (‘000 ha)	Cropping intensity (%)
	Net sown area	43.676	109
	Area sown more than once	4.233	
	Net irrigated area	9.862	
	Gross cropped area	47.809	

1.6	Irrigation	Area (‘000 ha)		
	Net cultivated area	43.676		
	Net irrigated area	9.862		
	Gross cultivated area	47.809		
	Gross irrigated area	13.215		
	Rainfed area	23.160		
	Source of irrigation	Number	Area (‘000 ha)	% area
	Tanks	8	0.025	
	Bore wells	Nil		
	Lift irrigation	3	0.175	
	Other sources (River & stream)	-	9.482	
	Total		9.862	
	Pumpsets	260	0.180	
	Micro-irrigation			
	Ground water availability and use	No. of blocks	% of area	Quality of water
	Over exploited	-	-	-
	Critical	-	-	-

	Semi-critical	-	-	-
	Safe	-	-	-
	Waste water availability and use	-	-	-

* Over-exploited: ground water utilization> 100% ; Critical: 90 – 100%; Semi-critical: 70-90%; Safe: < 70%

1.6. a.	**Fertilizer and Pesticides use**	Type	Total quantity (000'tonnes) in 2005-06
1	Fertilizers*	Urea	16 kg/ha
		DAP	
		Potash (MOP)	8 kg/ha
		SSP	9 kg/ha
		Other straight fertilizers (specify)	
		Other complex fertilizers (specify)	
		Biofertilizers	200g/ha
2	Chemical Pesticides*	Insecticides	150 ml/ha
		Fungicides	120 g/ha
		Weedicides	
		Others (specify)	

Source : District Agriculture Office, Dima Hasao

Area under major field crops & horticulture etc.:

1.7		Field crops	Total area (Ha)	Irrigated (Ha)	Rainfed (Ha)
	1	Winter paddy	7890	5000	2890
	2	Autumn paddy (Jhoom)	4392	1062	3330
	3	Maize	6414	-	6414
	4	Sugar cane	3793	-	3793
	5	Black gram	539	-	539
	6	Cotton	10	-	10
	7	Rape & Mustard	2933	-	2933
	8	Sesame	2547	-	2547
		Horticultural crops – Fruits			
	1	Banana	850	-	850
	2	Orange	1977	-	1977
	3	Pineapple	1789	-	1789
	4	Papaya	315	-	315
	5	Lime & lemon	335	-	335

	6	Litchi	98	-	98
	7	Sweet potato	87	-	87
	8	Mango	58	-	58
	9	Guava	94	-	94
	10	Tapioka	64	-	64
		Horticultural crops- Vegetables & Spices			
	1	Potato	275	-	275
	2	Rabi vegetables	1620	1500	120
	3	Kharif vegetables	3310	2300	1010
	4	Turmeric	472	-	472
	5	Ginger	3270	-	3270
	6	Chilli	2515	-	2515
	7	Black peeper	65	-	65
		Plantation crops			
	1	Coconut	63	-	63
	2	Arecanut	125	-	125

- If break-up data (irrigated, rainfed) is not available, give total area\
-

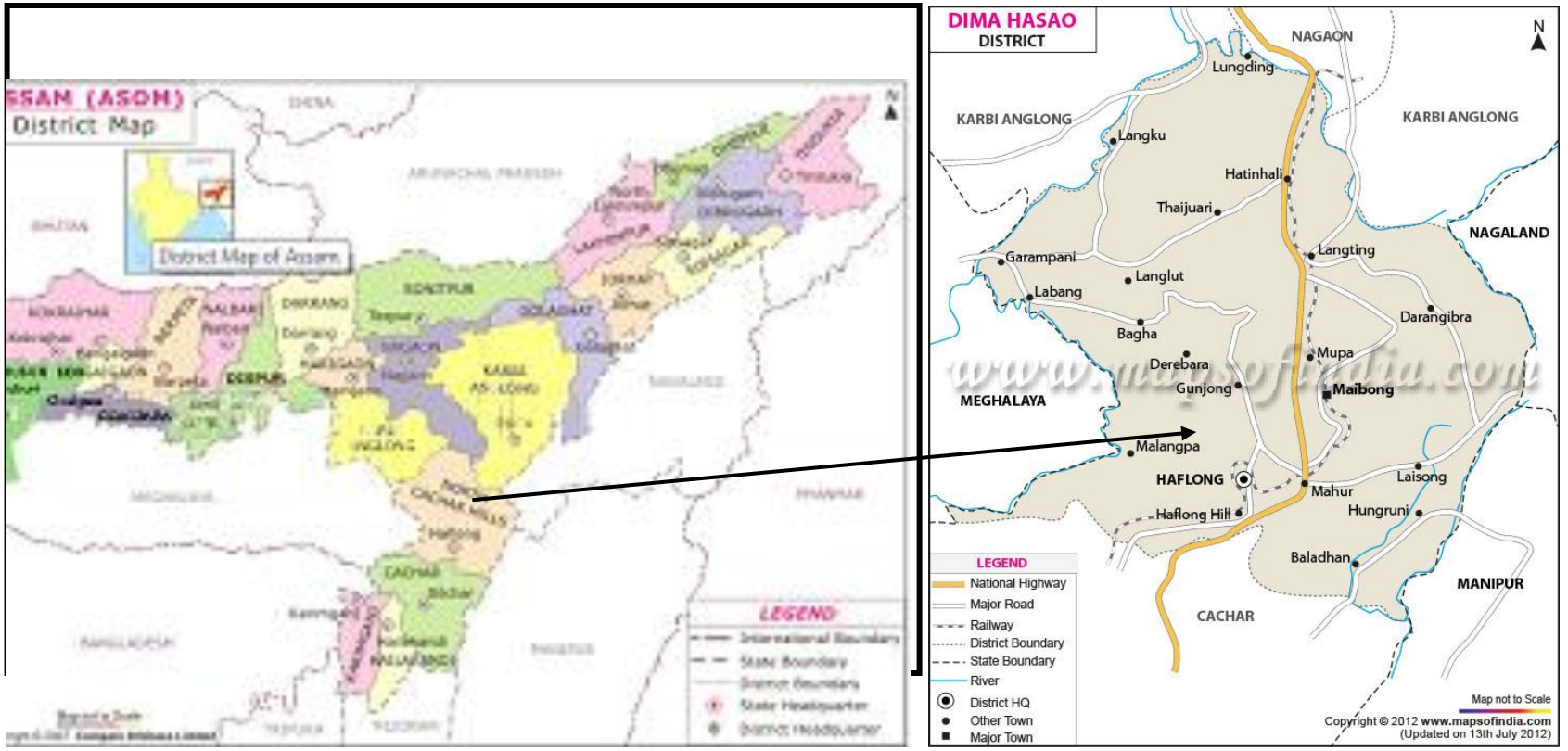
1.8	Live stock	Number (‘000)		
	Cattle	-		
	Buffaloes	-		
	Commercial dairy farms	-		
	Goat	-		
	Sheep	-		
	Others (Pig)	-		
1.9	Poultry	-		
	Commercial	-		
	Backyard	-		
1.10	Inland Fisheries	Area (ha)	Yield (t/ha)	Production (tones)
	Fresh water	-	-	-
	Others	-	-	-

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)										
Crop 1	Rice	13.492	1710	-	-	5.402	1230	18.894	1538	-
Crop 2	Rape & Mustard	-	-	1.203	410	-	-	1.203	410	-
Crop 3	Maize	4.811	750	-	-	-	-	4.811	750	-
Crop 4	Sugarcane	127.369	33580	-	-	-	-	127.369	33580	-
Crop 5	Sesame	1.274	500	-	-	-	-	1.274	500	-
Others	-	-	-	-	-	-	-	-	-	-
Major Horticultural crops (Crops to be identified based on total acreage)										
Crop 1	Ginger	16.350	5000	-	-	-	-	16.350	5000	-
Crop 2	Pineapple	18.534	10360	-	-	-	-	18.534	10360	-
Crop 3	Banana	12.325	14500	-	-	-	-	12.325	14500	-
Crop 4	Orange	15.816	8000	-	-	-	-	15.816	8000	-
Crop 5	Limes & lemons	1.642	4900	-	-	-	-	1.642	4900	-
Others	-	-	-	-	-	-	-	-	-	-

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Crop 1: Rice	2: Rape & Mustard	3: Maize	4: Sugarcane	5: Sesame
	Kharif - Rainfed	June- July	-	April - May	March - April	July - August
	Kharif - Irrigated	June- July	-	April - May	March - April	July - August
	Rabi - Rainfed		15^{th} October – 15^{th} November	-	-	-
	Rabi - Irrigated		15^{th} October – 7^{th} December	August - September	-	-
	Summer - Rainfed	March-May	-	-	-	-
	Summer - Irrigated	March-April	-	-	-	-

1.13	What is the major contingency the district is prone to? (Tick mark and mention years if known during the last 10 year period)	Regular			Sporadic			None
		Severe	Moderate	Mild	Severe	Moderate	Mild	
	Drought					√		
	Flood							√
	Cyclone							√
	Hail storm					√		
	Heat wave							√
	Cold wave							√
	Frost							√
	Sea water intrusion							√
	Pests and diseases (specify)						√	
	Others							

1.14	Include Digital Map of the district	Locations map of district within State as Annexure 1	Enclosed : Yes
		Mean annual rainfall as Annexure 2	Enclosed : No
		Soil map as Annexure 3	Enclosed : No



Location of district Dima Hasao in Assam

Annexure 1

2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rain fed situation

Condition			Suggested Contingency measure		
Early season drought (delayed onset)	Major Farming situation	Normal crop /cropping system	Change in crop /cropping system including variety	Agronomic measure	Remarks on Implementation
Delay by 2 Weeks (Specify month)* June 3rd week (REFER TO THE MATRIX TABLE)	Farming situation1: Low rainfall – Upland/ hills slope situation	Cropping system1: Autumn rice – fallow	No change Variety: Farmers Variety (Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon)	1)) Intensive weeding 2) Foliar spraying of 2% Urea 3) Anti-transpirant Spraying viz. soluble starch and PMA 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Cropping system2: Autumn rice – Kharif Blackgram	No change Variety: Autumn rice:, Farmers' variety (Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon) Blackgram: T9, PU 31, farmers' variety	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3) Intensive weeding and mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Cropping system 3: Autumn rice- Toria	No change Variety: Autumn rice: Farmers Variety (Prang, Sok-et, Sok Jangsik,	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA	

			Maichu, Soksu, Sok-Ravon) Toria : M 27, TS 36, TS 38	3) Intensive weeding and mulching with weedings	
		Cropping system 4: Autumn rice as mixed crop with maize, sesame	No change Variety: Autumn rice: Farmers Variety (Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon) Sesame: Farmers' variety Maize: composites	Intensive weeding and mulching with weedings Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control Reducing plant population and judicial clipping of leaves for reducing transpiration loss	
		Cropping system 5: Sugarcane (Annual)	No change Variety: Farmers' variety	1) Earthing & Mulching with sugarcane trash and weedings 2) Reducing leaf area to reduce transpiration loss	
		Cropping system 6: Sesame – fallow	No change Variety: Farmers' variety		
		Cropping system 7: Maize – fallow	No change Variety: Composites		
		Cropping system 8: Fallow – toria	No change Variety: M 27, TS 36		
	Farming Situation 2: Low rainfall – Medium lowland situation	Cropping system 1: Winter rice – fallow	No change Variety: Ranjit, Bahadur, Pankaj, Gaya, farmers' variety (Jabra, Araimah, Sok Palam, Daria, Barisa, Sotang)	Raising community nursery specially for var. Ranjit as delayed sowing leads to low yield or even total crop failure	

		Cropping system 2: Winter rice –Toria	Bahadur, Pankaj, Gaya, farmers' variety Variety: Sali rice:Ranjit, Bahadur, Pankaj, Gaya, farmers' variety	Raising community nursery	
		Cropping system 3: Fallow - Summer rice	No change Variety: Ranjit, Bahadur, Mahsuri, Jaymoti, Kanaklata		

Condition			Suggested Contingency measure		
Early season Drought (delayed onset)	Major Farming situation	Normal crop /cropping system	Change in crop /cropping system including variety	Agronomic measure	Remarks on Implementation
Delay by 4 Weeks (Specify month)* July 1st week	Farming situation1: Low rainfall – Upland/ hills slope situation	Cropping system1: Autumn rice – fallow ,	No change (Crop sown during April-May is continuing crop cycle) Variety: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3) Intensive weeding and mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Cropping system2: Autumn rice – Blackgram	No change Variety: Autumn rice: Prang,	1)Foliar spraying of 2% Urea	

			Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Blackgram: T9, farmers' variety	2)Spraying with anti-transpirant viz. soluble starch and PMA 3) Intensive weeding and mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Cropping system 3: Autumn rice- Toria	No change Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Toria : M 27, TS 36, TS 38	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3) Intensive weeding and mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Cropping system 4: Autumn rice as mixed crop with maize, sesame Maize: OPV	No change Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Sesame: Farmers' variety	1)Intensive weeding and mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Cropping system 5:	No change	Earthing & Mulching	

		Sugarcane (Annual)	Variety: Farmers' variety	with sugarcane trash, Clipping of bottom leaves to reduce transpiration	
		Cropping system 6: Sesame – fallow	No change Variety: Farmers' variety		
		Cropping system 7: Maize – fallow Variety: OPV	No change	1)Weeding & mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Cropping system 8: Fallow – toria	No change Variety: M 27, TS 36, TS 38		
	Farming Situation 2: Low rainfall – Medium lowland situation	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety(Jabra, Araimah, Sok Palam, Daria, Barisa, Sotang)	Variety: Gitesh, Srimanta, Bharati, Gaya, Luit, Disang, Kolong, farmers' variety		
		Cropping system 2: Winter rice – toria Variety: Rice: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers'	Variety: Rice:Luit, Kapili, Disang, Kolong, Haccha, Srimanta, Bharati, Gaya, farmers' variety		

		variety (Jabra, Araimah, Sok Palam, Daria, Barisa, Sotang) Toria: TS 36, TS 38			
		Cropping system 3: Fallow - Summer rice	No change		

Condition			Suggested Contingency measure		
Early season Drought (delayed onset)	Major Farming situation	Normal crop/ cropping system	Change in crop /cropping system including variety	Agronomic measure	Remarks on Implementation
Delay by 6 Weeks (Specify month)* July 3rd week	Farming situation1: Low rainfall – Upland/ hills slope situation	Cropping system1: Autumn rice – fallow Variety: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri, farmers' variety	Cropping system: Sesame Variety: ST 1683, AST 1, Madhavi, Koliabor local, farmer's variety	Ridge and furrow method adopted Line sowing across the slope	
		Cropping system2: Autumn rice – Blackgram Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri, Haccha Blackgram: T9, PU 31, KU 301, farmers' variety	Cropping system: Blackgram Variety: T9, PU 31, KU 301,farmers' variety		
		Cropping system 3: Autumn rice- Toria Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri, Haccha	Cropping system : Toria Variety: M 27, TS 36, TS 38		

		Toria : M 27, TS 29, TS 36			
		Cropping system 4: Autumn rice as mixed crop with maize, sesame Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri, Haccha Sesame: Farmers' variety Maize: OPV	Cropping system: Sesame Variety: ST 1683, AST 1, Madhavi, Koliabor Local	Ridge and furrow method adopted	
		Cropping system 5: Sugarcane (Annual) Variety: Farmers' variety	No change	Stripping should be delayed	
		Cropping system 6: Sesame – fallow Variety: Farmers' variety	No change		
		Cropping system 7: Maize – fallow Variety: OPV	Cropping system: Sesame Variety: ST 1683, AST 1, Madhavi, Koliabor Local,farmer's variety Black gram Variety: T9, KU 301, PU 31	Drought affected maize crop be used as fodder Ridge and furrow method sowing in sesame and creation of drainage channel	
		Cropping system 8: Fallow – toria Variety: M 27, TS 36, TS 38	No change		
	Farming Situation 2: Low rainfall – Medium lowland situation	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety	Variety: Luit, Kapili, Kolong, Disang, Srimanta, Bharati, Gaya, farmers' variety	Dry seed bed Community nursery Direct sowing of rice	

		Cropping system 2: Winter rice – toria Variety: Rice: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety Toria: TS 36, TS 38	Variety: Rice: Luit, Kapili, Kolong, Disang, Srimanta, Bharati, Gaya, farmers' variety	Dry seed bed Life saving irrigation for rice nursery Community nursery Direct sowing of rice	
		Cropping system 3: Fallow- Summer rice	No change		

Condition			Suggested Contingency measure		
Early season Drought (Normal onset)	Major Farming situation	Crop/cropping system	Crop management	Soil nutrient & moisture conservation measure	Remarks on Implementation
Normal onset followed by 15-20 days dry spell after sowing	Farming situation1: Low rainfall – Upland/ hills slope situation	Cropping system1: Autumn rice – fallow Variety: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri, Haccha	Intensive weeding Close observation on disease pest for effective control Foliar spraying of 2% Urea Spraying with anti-transpirant viz. soluble starch and PMA Spraying of 0.5 – 1.0% MOP solution		
		Cropping system2: Autumn rice – Blackgram Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri,	Intensive weeding Close observation on disease pest for effective control Foliar spraying of 2% Urea Spraying with anti-transpirant viz. soluble		

		Haccha Blackgram: T9, KU 301, PU 31,farmers' variety	starch and PMA Spraying of 0.5 – 1.0% MOP solution		
		Cropping system 3: Autumn rice- Toria Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri, Haccha Toria : M 27, TS 36, TS 38	Intensive weeding Close observation on disease pest for effective control Foliar spraying of 2% Urea Spraying with anti-transpirant viz. soluble starch and PMA Spraying of 0.5 – 1.0% MOP solution		
		Cropping system 4: Autumn rice as mixed crop with maize, sesame Variety: Autumn rice: Prang, Sok-et, Sok Jangsik, Maichu, Soksu, Sok-Ravon, Inglongkiri, Haccha Sesame: Farmers' variety Maize: OPV	Intensive weeding and mulching with weedings and forest litters Close observation on disease pest for effective control Reduction of plant population Clipping off lower leaves in maize		
		Cropping system 5: Sugarcane (Annual) Variety: Farmers' variety	No change Clipping off the lower leaves	Earthing & Mulching with sugarcane trash and weedings	
		Cropping system 6: Sesame – fallow Variety: Farmers'	No change		

		variety			
		Cropping system 7: Maize – fallow Variety: Composites	No change Clipping off the lower leaves	Earthing & Mulching with sugarcane trash and weedings	
		Cropping system 8: Fallow – toria Variety: M 27, TS 36, TS 38	No change		
	Farming Situation 2: Low rainfall – Medium lowland situation	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Pankaj, Gaya, Gitesh, farmers' variety	1) Life saving irrigation to seedlings 2) Spray 0.5-1.0% MOP solution 3) Spray 2.0% urea solution Close observation on disease pest incidence and adopt prompt remedial measures	1) Close the channels between beds to prevent runoff 2) Apply cowdung powder to the nursery bed	
		Cropping system 2: Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Gaya, Pankaj, Gitesh, farmers' variety	1) Close the channels between beds to prevent runoff 2) Life saving irrigation to seedlings 3) Close observation on disease pest incidence and adopt prompt remedial measures Spray 0.5-1.0% MOP solution Spray 2.0% urea solution	Apply cowdung powder to the nursery bed	
		Cropping system 3: Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri,	No change		

		Joymoti, Kanaklata			
Condition			Suggested Contingency measure		
Mid season (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation	Crop/cropping system	Crop management	Soil nutrient & moisture conservation measure	Remarks on Implementation
At vegetative stage	Farming Situation 2: Low rainfall – Medium lowland situation	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Pankaj, Gaya, Gitesh, farmers' variety	1) Strengthen bunds and prevent runoff 2) Delay top dressing of urea and adopt foliar spray 3) Close observation on disease pest incidence and adopt prompt remedial measures Spray 0.5-1.0% MOP solution Spray 2.0% urea solution		

		Cropping system 2: Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Pankaj, Gaya, farmers' variety	1) Strengthen bunds and prevent runoff 2) Delay top dressing of urea and adopt foliar spray 3) Close observation on disease pest incidence and adopt prompt remedial measures Spray 0.5-1.0% MOP solution Spray 2.0% urea solution		
		Cropping system 3: Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri, Joymoti, Kanaklata	No change		

Condition			Suggested Contingency measure		
Mid season drought (long dry spell)	Major Farming situation	Crop/cropping system	Crop management	Soil nutrient & moisture conservation measure	Remarks on Implementation
At reproductive stage	Farming Situation 2: Low rainfall – Medium lowland situation	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Pankaj, Gitesh, Gaya, farmers' variety	1) Strengthen bunds and prevent runoff 2) Close observation on disease pest incidence and adopt prompt remedial measures	Life saving irrigation from nearby water sources	
		Cropping system 2: Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Pankaj, Gitesh, Gaya, farmers' variety	1) Strengthen bunds and prevent runoff 2) Close observation on disease pest incidence and adopt prompt remedial measures	Life saving irrigation from nearby water sources	
		Cropping system 3: Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri, Joymoti, Kanaklata	No change		
Condition			Suggested Contingency measure		
Terminal drought	Major Farming situation	Crop/cropping system	Crop management	Rabi Crop planning	Remarks on

					Implementation
	Farming Situation 2: Low rainfall – Medium lowland situation	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Pankaj, Gitesh, Gaya, farmers' variety	No change		
		Cropping system 2: Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Pankaj, Gitesh, Gaya, farmers' variety	No change		
		Cropping system 3: Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri, Joymoti, Kanaklata	No change		

2.2 Floods

Condition	**Suggested contingency measures**			
Transient water logging/ partial inundation	**Seedling/ nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Rice	Drainage of the Nursery bed, If not possible go for re -sowing	Apply 50% N + 50% K2O as top dressing during the tillering stage. In partially damaged field. gap filling may be done by redistributing the tillers.	If flood comes during reproductive stage, emphasis should be given on forthcoming rabi crops. Utilization of residual soil moisture and use of recharged soil profile for growing pulses	Harvest crop immediately Arrange for quick drying Utilization of residual soil moisture and use of recharged

		Wet seeding of sprouted seeds (@75-80 kg/ha) of tolerant varieties Jalashree, Jalkunwari, Swarna sub (tolerant upto 15 day submergence) Management of pests & diseases	Growing of vegetables after receding flood water	soil profile for growing pulses Growing of vegetables after receding flood water

2.3 Contingent strategies for Livestock, Poultry & Fisheries

2.3.1 Livestock

Drought	**Suggested contingency measures**		
	Before the event	During the event	After the event
Feed and fodder availability	Livestock insurance Encourage fodder cultivation in village grazing lands & near rivers**,** On boundaries of agricultural field trees or shrubs like Sesbania, Subabul, Neem, Jackfruit etc should be planted, Excess fodder may be stored as hay/silage, Establish fodder bank near forest areas, Training & awareness camp among extension personnel for needful at time of exigencies.	Utilizing fodder from perennial trees and fodder bank reserves. Transporting excess fodder from adjoining districts. Utilizing the existing crops which fail to grow adequately due to failure of monsoon for feeding of animals. Use of unconventional livestock feed such as sugar cane top, sugar cane baggase, and banana plant, seasonal crop residue, also water hyacinth and others like tree pods and seeds etc. Improving poor quality roughages by ammonia treatment/ urea treatment, urea molasses mineral blocks etc and feeding them.	Avail crop insurance Supplementary feeding of remaining livestock and the replacement of stock
Drinking water	Preserve water in community tanks, ponds etc with sanitization Wells or dug wells may be constructed in advance Training & awareness camp among extension personnel	Animals not to be exposed to unprotected water sources. Rather they should be commonly fed and given good quality drinking water from protected water sources created by the community	Prepare future plan

Health and diseases management	Arrange vaccination programme Training & awareness camp among extension personnel	Conducting animal health camps and treating the affected animals, Supplementation of mineral and vitamin mixtures	Culling of unproductive livestock, Proper disposal of dead animals
Floods			
Feed and fodder availability	Livestock insurance Encourage fodder cultivation in village grazing lands & near rivers**,** On boundaries of agricultural field trees or shrubs like Sesbania, Subabul, Neem, Jackfruit etc should be planted, Excess fodder may be stored as hay/silage, Establish fodder bank near forest areas, Training & awareness camp among extension personnel for needful at time of exigencies.	Prioritise animals- as suckling animals, suckling animals along with their nursing mothers, producing and working animals, sick and old animals, adult open and non-producing animals as the feed and water may be in short supply. Procured feeds and fodders should be fed to all animals on the order of priority of animals. Straws and stoves that got soaked during floods need not be thrown away and fed to animals. Partial drying chuffing and sprinkling concentrate mixture can improve intake and utility.	Provision of supplementary feeding (concentrate / roughage) with vitamin & minerals.
Drinking water	Preserve safe drinking water in community tanks which is not prone to seepage or flood water does not enter. Arrange chlorine tablets for sanitization of water and bleaching powder for disinfection of habitats & shelter places , Training & awareness camp among extension personnel	Drinking water is made available to the animals in any kind of clean container available with the farmer.	Provision of clean drinking water.
Health and diseases management	Prior construction of shelter places in elevated points, Vaccination of livestock Keep the emergency service kit fully equipped (first Aid Requisites)	There should be one veterinarian for 3 to 4 village to work with local volunteers. The team should be well equipped with contingent items. Keep the animals loose in paddock (sheltered or unsheltered) Releasing animals from the unnatural and harmful position or situation, binding broken limbs, administering painkillers, anti-poison and anti-shock drugs.	Prompt and appropriate attention to injuries by providing necessary medicines to the livestock owners. Vaccination campaign against common endemic diseases of the areas (like H.S. B.Q, Anthrax etc.) must be taken up urgently. Improving shed hygiene especially in the farmers household through cleaning and disinfection

2.3.2 Poultry

Drought	**Suggested contingency measures**		
	Before the event	During the event	After the event
Feed and fodder availability	Insurance of Poultry farms Ensure procurement of feed ingredients sufficiently ahead Establish feed serve bank	Feed utilisation from feed bank Feed supplementation be made to the farms	Availing insurance Attempt will be made for supply of feed ingredient or compound feed to the farmers
Drinking water	Check water source for ensuring sufficient potable water during draoght	Attempt will be made to provide sanitized drinking water	Availability of water be ensured by digging of bore well
Health and diseases management	Procurement of vaccines and medicines and anti stress agent. Feeding antibiotics Procurement of litter materials	Administration of vaccines Continue feeding of anti stress agent	Culling of affected birds
Floods			
Feed and fodder availability	Ensure procurement of feed ingredients / compound feed sufficient ahead as feed supply to the farm will hamper due to submergence of the connecting roads	Supply the compound feed to the poultry farm under submerged area	Supply be continued till the situation is under control
Drinking water	Protect the water sources from submergence	Attempt will be made to provide sanitized drinking water	Water sources be sanitized with bleaching powder or any water sanitizer
Health and diseases management	Procurement of vaccines and medicines. Feeding antibiotics Procurement of litter materials	Continue feeding antibiotics Prevent entrance of flood water to the shed Replace wet litter Proper disposal of dead birds if any	Disinfection of the farm premises. Feeding antibiotics and de-worming. Replace wet litter Disinfection of sheds. Proper disposal of dead birds if any

2.3.3 Fisheries

Drought	**Suggested contingency measures**		
	Before the event	During the event	After the event
Shallow water in ponds due to insufficient rains/inflow	1. Restricted release of water from reservoir. 2. Supplementary water harvest structures like pond and tanks has to be developed. 3. Renovation and maintenance of existing water harvest structures	1. Restrict lifting of water for irrigation purpose of crops 2. Catch the stock, market the produce to reduce the density of population in ponds.	1. Excavate the ponds to increase the depth. 2. Try to release water into the pond if it rains in off-season
Impact of heat & salt load build up in ponds / change in water quality	1.Prepare to release water into the habitat	1. Mixing of water from the water harvest structure like ponds and tanks into the fish habitat.	1. Monitoring the water quality and health of aquatic organisms
Floods			
Inundation with flood waters	1. Construction of humane shelter. 2.Storage of sand filled bags for emergency use. 3. Repair and maintenance of bunds. 4. Preparedness for relief 5. Insurance coverage provision for life and property	1. Timely broadcast and telecast and other types of announcement warning about the danger level with respect to water level. 2. Evacuation of people to flood shelter areas. 3. Relief operation.	1. Relief operation will continue. 2. Care of health of affected people 3. Settlement of insurance. 4. Financial support to other people.
Water contamination & change in BOD	Take appropriate measures to check seepage into pond e.g. Raising bunds to prevent entry of water	Check the water quality & take appropriate action	1. Application of lime and geolite. 2. Application of Alum. 3. Application of KMnO4
Health and diseases management	Stock preventive medicines, vaccines	Prevent influx of diseased fish from outside source, check through nets Administer medicines through random catch Disinfect water by lime , KMnO4	1. Application of lime and KMnO4. 2. Assessment of the health status of fish and accordingly control measure should be taken. 3. Control on transport of brooders and seeds.