State: ASSAM
Agricultural contingency Plan for District : Karbi Anglong

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. Karbi Anglong 2. North Cachar Hills		
	Geographic coordinates of district	Latitude	Longitude	Altitude
		$25^0 33' - 26^0 35'$ North	$92^0 10' – 93^0 50'$ East	100 m – 1400m
	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	Krishi Vigyan Kendra, Karbi Anglong, Diphu		
1.2	Rainfall	Average (mm)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep)	764.08	1st week of June	Last week of September
	NE monsoon (Oct – Dec)	135.57	1st week of October	Last week of December
	Winter (Jan – March)	50.25	Sporadic rain & erratic in behaviour	-
	Summer (Apr – May)	255.32	1st week of April	-
	Annual	1205.22		

- 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	)ther fallows
	Area (ha)	10,43,396	501149	75777	73084	50373	74385	53923	52295	

1.4(a)	Major Soils	Area (‘000 ha)	Percent of total
	1. Alfisol/ Ultisol	939.056	90
	2. Inceptisol	104.340	10
1.4(b)	Major Soils Type	Area (‘000 ha)	Percent of total
	Clay Loam	235.153	22.54
	Sandy	199.918	19.16
	Sandy Loams	608.325	58.30
1.5	Agricultural land use	Area (‘000 ha)	Cropping intensity (%)
	Net sown area	176.433	129
	Area sown more than once	51.165	
	Net irrigated area	5.052	
	Gross cropped area	227.598	

1.6	Irrigation	Area (‘000 ha)		
	Net cultivated area	176.433		
	Net irrigated area	5.052		
	Gross cultivated area	227.598		
	Gross irrigated area	8.246		
	Rainfed area	171.381		
	Source of irrigation	Number	Area (‘000 ha)	% area
	Tanks	495	0.388	7.68
	Bore wells	20	0.225	4.45
	Lift irrigation	8	3.568	70.62
	Other sources	-	0.871	17.24
	Total	-	5.052	100.00
	Pumpsets			
	Micro-irrigation			
	Ground water availability and use	No. of blocks	% of area	Quality of water
	Over exploited	-	-	-
	Critical	-	-	-
	Semi-critical	-	-	-
	Safe	11	100.00	-
	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	943

		DAP Potash (MOP) SSP Other straight fertilizers (specify) Other complex fertilizers (specify)	760 128 750
2	Chemical Pesticides*	Insecticides Fungicides Weedicides Others (specify)	

Source : District Agriculture Office, Diphu, Karbi Anglong

1.7 Area under major field crops & horticulture etc.

1.7	Field crops	Total area (Ha)	Irrigated (Ha)	Rainfed (Ha)
	Rice	133565	3682	129883
	Rape & Mustard	19110	1519	17591
	Maize	12165	600	11565
	Sugarcane	8100	-	8100
	Sesame	3255	-	3255
	Wheat	1560	450	1110
	Jute	1520	-	1520
	Arhar	1293	-	1293
	Cotton	912	-	912
	Black gram	883	-	883
	Pea	725	100	625
	Green gram	670	-	670
	Horticultural crops - Fruits			
	Pineapple	2310	-	2310
	Banana	2157	-	2157
	Orange	1186	-	1186
	Lime & lemon	884	-	884
	Papaya	716	-	716
	Horticultural crops- Vegetables & Spices			

	Ginger	2512	-	2512
	Rabi vegetables	2501	1545	956
	Kharif vegetables	2002	-	2002
	Turmeric	900	-	900
	Potato	830	150	680
	Chilli	470	-	470
	Onion	350	200	150
	Plantation crops			
	Arecanut	1497	-	1497
	Coconut	558	-	558

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

1.8	Live stock	Number (‘000)		
	Cattle	286.642		
	Buffaloes	18.498		
	Commercial dairy farms	-		
	Goat	142.438		
	Sheep	0.580		
	Others (Pig)	125.275		
1.9	Poultry	454.176		
	Commercial	-		
	Backyard	-		
1.10	Inland Fisheries	Area (ha)	Yield (t/ha)	Production (tones)
	Fresh water	632.78	1.4	890.45
	Others	-	-	-

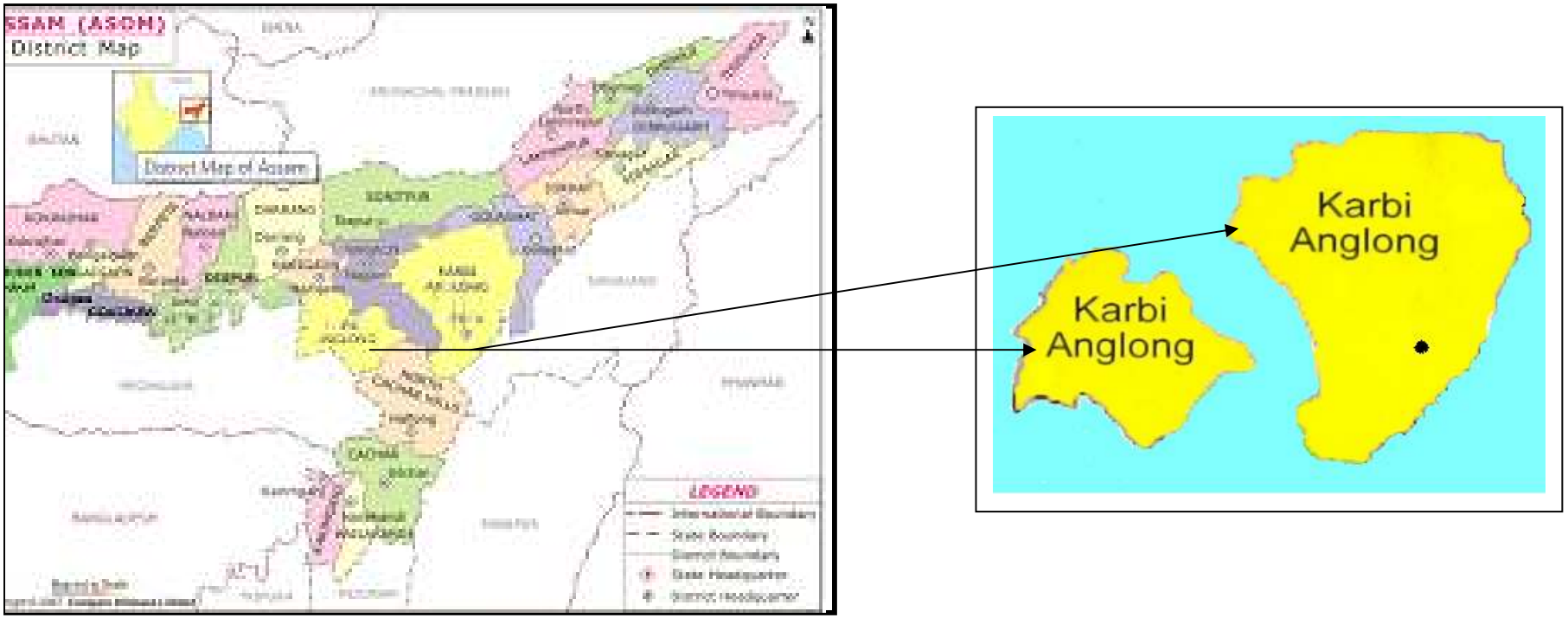
1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder (‘000 tons)
		Production (‘000 t)	Productivity (kg/ha)	Production (‘000 t)	Productivity (kg/ha)	Production (‘000 t)	Productivity (kg/ha)	Production (‘000 t)	Productivity (kg/ha)	
Major Field crops (Crops to be identified based on total acreage)										

	Rice	350.120	2969	12.369	3837	34.867	2810	397.356	2975	
	Rape & Mustard	-	-	13. 021	703	-	-	13. 021	703	
	Maize	25.350	2195	1.468	2447	-	-	26. 818	2207	
	Sugarcane	398.820	52428	-	-	-	-	398.820	52428	
	Sesame	2.428	758	-	-	-	-	2.428	758	
Others										
Major Horticultural crops (Crops to be identified based on total acreage)										
	Ginger	14.662	6312	-	-	-	-	14.662	6312	
	Pineapple	-	-	-	-	-	-	32.341	15313	
	Banana	-	-	-	-	-	-	30.858	15097	
	Orange	-	-	-	-	-	-	15.058	13897	
	Limes & lemons	-	-	-	-	-	-	3.798	4297	
Others										

1.12	**Sowing window for 5 major field crops (start and end of normal sowing period)**	**Rice**	**Rape & Mustard**	**Maize**	**Sugarcane**	**Sesame**
	Kharif - Rainfed	June- July	-	April - May	March - April	July - August
	Kharif - Irrigated	-	-	-	-	-
	Rabi - Rainfed	November-December	15th October – 15th November	-	-	-
	Rabi - Irrigated	November-December	15th October – 7th 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 Severe Moderate Mild	None
	Drought		√	
	Flood		√	
	Cyclone			√
	Hail storm			√
	Heat wave			√
	Cold wave			√
	Frost			√
	Sea water intrusion			√
	Pests and diseases (specify)		√	
	Others			

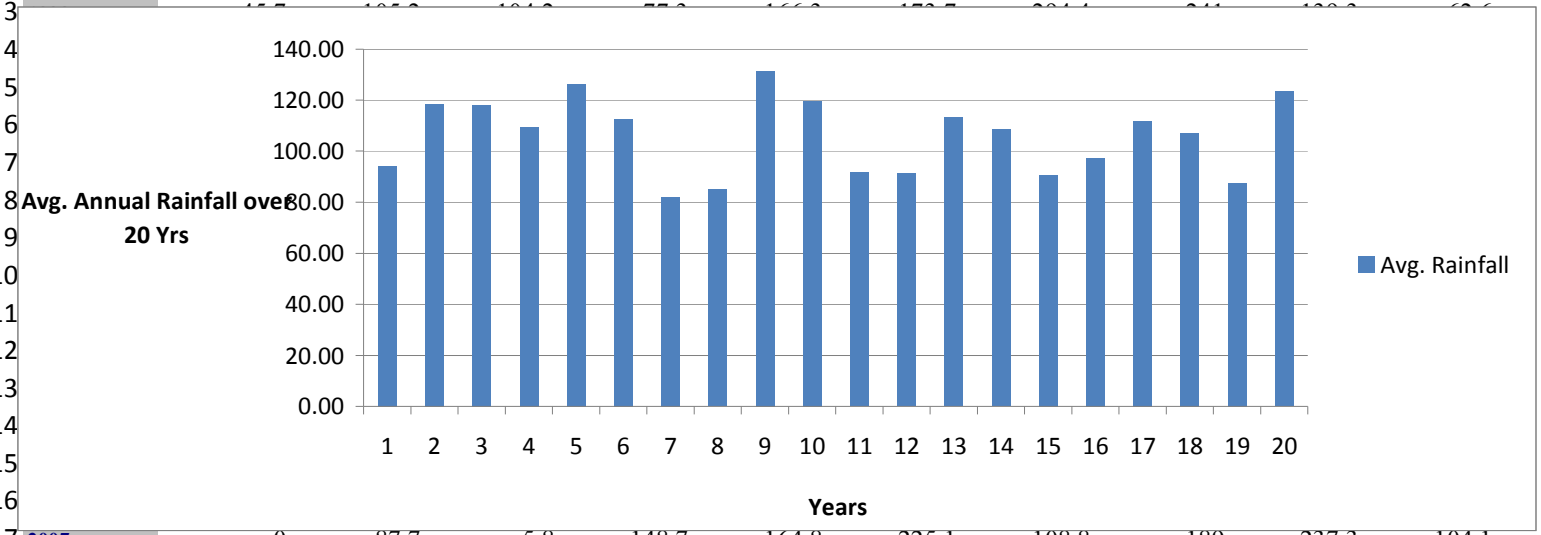
1.14	Include Digital Map of the district	Locations map of district within State as Annexure 1	Enclosed: Yes
		Mean annual rainfall as Annexure 2	Enclosed: Yes
		Soil map as Annexure 3	Enclosed: Yes



Annexure1

Location of district Karbi Anglong in Assam

Sl No	Year												
1	1991	22.8	29.2	57.4	82.9	208	152.4	71.7	162.8	182.4	103.1	3.3	52.4
2	1992	4.4	63.1	15.8	113.8	98.2	164.7	335.5	245.7	216.1	102.3	30.4	31.2
3												7.8	0
4												51.8	0
5												76.7	0
6												0	0
7												11.5	20.5
8												97	0
9												1.5	3.6
10												1.2	0
11												7	0
12												75.8	13.8
13												3	11.2
14												28	6.4
15												0	0
16												36.8	4.2
17	2007	0	87.7	5.8	148.7	164.8	225.1	108.8	189	237.3	104.1	68.8	0
18	2008	18.7	1.5	49.8	18	89.3	214.8	156.7	340	278.3	118.8	0	0
19	2009	0	2.5	10.9	2.3	210.9	145.5	213.1	160.7	217.2	89.1	0	0
20	2010	0	6.2	34.4	93.6	162.2	236.2	294.6	205.2	305.7	135	0	8.4



Annexure2

Avg. Annual Rainfall (1991 to 2010)

	L	M	H
OC	Below 4%	4 – 75%	Above 75%
P	Upto 20 kg / ha	20 – 50	Above 50 Kg / ha
K	Upto 125 Kg / ha	125 – 300	Above 300 Kg / ha

pH	pto 5.8 Acidic	5.9 – 6.2 Weakly acidic	6.3 – 6.9 Near nutral
	7.0 Nutral	Above 7.0 Alkaline	

Annexure3

Soil Fertility Index Map of the District Karbi Anglong

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 [a]**	**Normal crop /cropping system [b]**	**Change in crop /cropping system including variety**	**Agronomic measure[d]**	**Remarks on Implementation [e]**
Delay by 2 Weeks (Specify month)* June 3rd week	Low rainfall – Upland/ hills slope situation (Sandy Loam to clay loam)	Autumn rice – fallow Variety: Inglongkiri, Maibee, Dimrou, farmers' variety	No change	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3) Intensive weeding 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Autumn rice – Summer Blackgram Variety: Autumn rice: Inglongkiri, Maibee, Dimro, farmers' variety	No change	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and	

		Blackgram: T9, farmers' variety		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	
		Autumn rice- Toria Variety: Autumn rice: Inglongkiri, Maibee, Dimrou, farmers' variety Toria : M 27	No change	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3) Intensive weeding and mulching with weedings	
		Autumn rice as mixed crop with maize, sesame Variety:	No change	1)Intensive weeding and mulching with weedings	

		Autumn rice: Inglongkiri, Maibee, Dimrou, farmers' variety Sesame: Farmers' variety Maize: composites		4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Sugarcane (Annual) Variety: Farmers' variety	No change	Earthing & Mulching with sugarcane trash	
		Sesame – fallow Variety: Farmers' variety	No change	No change	
		Maize – fallow Variety: Composites	No change	No change	
		Fallow – toria Variety: M 27	No change	No change	
	Farming Situation 2: Low rainfall – Medium lowland situation	Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Monohar Sali, Gaya, farmers' variety	No change	No change	
		Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Gaya, farmers' variety	No change	No change	
		Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri,	No change	No change	

Condition			**Suggested Contingency measure**		
Early season Drought (delayed onset)	**Major Farming situation [a]**	**Normal crop /cropping system [b]**	**Change in crop /cropping system including variety**	**Agronomic measure[d]**	**Remarks on Implementation [e]**
Delay by 4 Weeks (Specify month)* July 1st week	Farming situation1: Low rainfall – Upland/ hills slope situation(Sandy Loam to clay loam)	Autumn rice – fallow Variety: Inglongkiri, Maibee, Dimro, farmers' variety	No change	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	
		Autumn rice – Blackgram Variety: Autumn rice: Inglongkiri, Maibee, Dimro, farmers' variety	No change	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA	

		Blackgram: T9, farmers' variety		3) Intensive weeding and mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Autumn rice- Toria Variety: Autumn rice: Inglongkiri, Maibee, Dimro, farmers' variety Toria : M 27	No change	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	

		Autumn rice as mixed crop with maize, sesame Variety: Autumn rice: Inglongkiri, Maibee, Dimro, farmers' variety Sesame: Farmers' variety Maize: OPV	No change	1)Intensive weeding and mulching with weedings 4) Close observation on disease like Blast and pest like stem borer, thrips etc. for effective control	
		Sugarcane (Annual) Variety: Farmers' variety	No change	Earthing & Mulching with sugarcane trash	
		Sesame – fallow Variety: Farmers' variety	No change	No change	
		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	

		Fallow – toria Variety: M 27	No change	No change	
	Farming Situation 2: Low rainfall – Medium lowland situation(Sandy Loam to clay loam)	Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety	Variety: Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety	No change	
		Winter rice – toria Variety: Rice: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety Toria: TS 36, TS 38	Variety: Rice: Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety	No change	
		Fallow - Summer rice	No change	No change	

Condition			**Suggested Contingency measure**		
Early season Drought (delayed onset)	**Major Farming situation [a]**	**Normal crop/ cropping system [b]**	**Change in crop /cropping system including variety**	**Agronomic measure[d]**	**Remarks on Implementation [e]**
Delay by 6 Weeks (Specify month)* July 3rd week	Low rainfall – Upland/ hills slope situation (Sandy Loam to clay loam)	Autumn rice – fallow Variety: Inglongkiri, Maibee, Dimro, farmers' variety	Cropping system: Sesame Variety: ST 1683, AST 1, Madhavi, farmer's variety	Ridge and furrow method adopted Line sowing across the slope	
		Autumn rice – Blackgram Variety: Autumn rice:	Cropping system: Blackgram Variety:	No change	

		Inglongkiri, Maibee, Dimro, farmers' variety Blackgram: T9, PU 31, farmers' variety	T9, PU 31,farmers' variety		
		Autumn rice- Toria Variety: Autumn rice: Inglongkiri, Maibee, Dimro, farmers' variety Toria : M 27, TS 29, TS 36, TS-38	Cropping system : Toria Variety: M 27, TS 29, TS 36	No change	
		Autumn rice as mixed crop with maize, sesame Variety: Autumn rice: Inglongkiri, Maibee, Dimro, farmers' variety Sesame: Farmers' variety Maize: OPV	Cropping system: Sesame Variety: ST 1683, AST 1, Madhavi, farmer's variety	Ridge and furrow method adopted	
		Sugarcane (Annual) Variety: Farmers' variety	No change	Stripping should be delayed	
		Sesame – fallow Variety: Farmers' variety	No change	No change	
		Cropping system 7: Maize – fallow	Cropping system: Sesame	Drought affected maize crop be used	

		Variety: OPV	Variety: ST 1683, AST 1, Madhavi, farmer's variety	as fodder Ridge and furrow method sowing in sesame	
		Fallow – toria Variety: M 27	No change	No change	
	Farming Situation 2: Low rainfall – Medium lowland situation	Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety	Variety: Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety	Dry seed bed Community nursery	
		Winter rice – toria Variety: Rice: Ranjit, Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety Toria: TS 36, TS 38	Variety: Rice: Bahadur, Mahsuri, Srimanta, Bharati, Gaya, farmers' variety	Dry seed bed Community nursery	
		Fallow- Summer rice	No change	No change	

Condition			**Suggested Contingency measure**		
Early season Drought (Normal onset)	**Major Farming situation [a]**	**Crop/cropping system [b]**	**Crop management [c]**	**Soil nutrient & moisture conservation measure[d]**	**Remarks on Implementation [e]**
Normal onset	Farming situation1:	Cropping system1:	1) Intensive	1)Foliar spraying of	

followed by 15-20 days dry spell after sowing	Low rainfall – Upland/ hills slope situation (Sandy Loam to clay loam)	Autumn rice – fallow Variety: Inglongkiri, Maibee, Dimrou, farmers' variety	weeding 2) Close observation on disease pest for effective control	2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3)Spraying of 0.5 – 1.0% MOP solution	
		Cropping system2: Autumn rice – Blackgram Variety: Autumn rice: Inglongkiri, Maibee, Dimro, farmers' variety Blackgram: T9, farmers' variety	1) Intensive weeding 2) Close observation on disease pest for effective control	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3)Spraying of 0.5 – 1.0% MOP solution	
		Cropping system 3: Autumn rice- Toria Variety: Autumn rice: Inglongkiri, Maibee, Dimrou, farmers' variety Toria : M 27	1) Intensive weeding 2) Close observation on disease pest for effective control	1)Foliar spraying of 2% Urea 2)Spraying with anti-transpirant viz. soluble starch and PMA 3)Spraying of 0.5 – 1.0% MOP solution	
		Cropping system 4:	1)Intensive weeding		

		Autumn rice as mixed crop with maize, sesame Variety: Autumn rice: Inglongkiri, Maibee, Dimrou, farmers' variety Sesame: Farmers' variety Maize: composites	and mulching with weedings 2) Close observation on disease pest for effective control		
		Cropping system 5: Sugarcane (Annual) Variety: Farmers' variety		Earthing & Mulching with sugarcane trash	
		Cropping system 6: Sesame – fallow Variety: Farmers' variety	No change	No change	
		Cropping system 7: Maize – fallow Variety: Composites	No change	No change	
		Cropping system 8: Fallow – toria Variety: M 27	No change	No change	
	Low rainfall – Medium lowland situation (Sandy Loam to clay loam)	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Monohar Sali, Gaya, farmers' variety	1) Life saving irrigation to seedlings 2) Spray 0.5-1.0% MOP solution 3) Spray 2.0% urea solution	1) Close the channels between beds to prevent runoff 2) Apply cowdung powder to the nursery bed	

				3) Close observation on disease pest incidence and adopt prompt remedial measures	
		Cropping system 2: Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Gaya, 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	2) Apply cowdung powder to the nursery bed 2) Spray 0.5-1.0% MOP solution 3) Spray 2.0% urea solution	
		Cropping system 3: Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri, Kanaklata, Joymati	-	-	
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	Low rainfall – Medium lowland situation (Sandy Loam to clay loam)	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Monohar Sali, Gaya, farmers' variety	1) Strengthen bunds and prevent runoff 2) Delay top dressing of urea and adopt 3) Close observation on disease pest incidence and adopt prompt remedial measures	1) Spray 0.5-1.0% MOP solution 2) Spray 2.0% urea solution	
		Cropping system 2: Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Gaya, farmers' variety	1) Strengthen bunds and prevent runoff 2) Delay top dressing of urea and adopt 3) Close observation on disease pest incidence and adopt prompt remedial measures	1) Spray 0.5-1.0% MOP solution 2) Spray 2.0% urea solution	
		Cropping system 3: Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri,	-	-	
Condition			**Suggested Contingency measure**		
Mid season drought (long dry spell)	**Major Farming situation [a]**	**Crop/cropping system [b]**	**Crop management [c]**	**Soil nutrient & moisture conservation measure[d]**	**Remarks on Implementation [e]**

At reproductive stage	Farming Situation 2: Low rainfall – Medium lowland situation (Sandy Loam to clay loam)	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Monohar Sali, 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, 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,	-	-	
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(Sandy Loam to clay loam)	Cropping system 1: Winter rice – fallow Variety: Ranjit, Bahadur, Mahsuri, Monohar Sali, Gaya, farmers' variety	No change	No change	
		Cropping system 2: Winter rice –Toria Variety: Sali rice: Ranjit, Bahadur, Mahsuri, Gaya, farmers' variety	No change	No change	
		Cropping system 3: Fallow - Summer rice Variety: Ranjit, Bahadur, Mahsuri,	No change	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	Apply 50% N + 50% K2O as top dressing during the tillering	If flood comes during reproductive stage, emphasis	Harvest crop immediately

	not possible go for re -sowing	stage. In partially damaged field. gap filling may be done by redistributing the tillers. Wet seeding of sprouted seeds (@75-80 kg/ha) of tolerant varieties Jalashree, Jalkunwari (tolerant upto 15 day submergence) Management of pests & diseases	should be given on forthcoming rabi crops. Utilization of residual soil moisture and use of recharged soil profile for growing pulses Growing of vegetables after receding flood water	Arrange for quick drying Utilization of residual soil moisture and use of recharged 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 etc should be planted, Excess fodder may be stored as hay/silage, Establish fodder bank near	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 biogases, and banana plant Crop	Avail crop insurance Supplementary feeding of remaining livestock and the replacement stock

	forest areas, Training & awareness camp among extension personnel for needful at time of exigencies.	residues such as water hyacinth and other like tree pods and seeds etc. Improving poor quality roughages by ammonia treatment, urea treatment, urea molasses mineral block etc and feeding them.	
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 outside rather they should be commonly fed.	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 etc should be planted, Excess fodder may be stored as hay/silage, Establish fodder bank near forest areas,	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.

	Training & awareness camp among extension personnel for needful at time of exigencies.		
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 antistress agent. Feeding antibiotics Procurement of litter materials	Administration of vaccines Continue feeding of antistress 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	Restricted release of water from reservoir. Supplementary water harvest structures like pond and tanks has to be developed. Renovation and maintenance of existing water harvest structures	Restrict lifting of water for irrigation purpose of crops Catch the stock, market the produce to reduce the density of population in ponds.	Excavate the ponds to increase the depth. 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	Mixing of water from the water harvest structure like ponds and tanks into the fish habitat.	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	1. Application of lime and KMnO4. 2. Assessment of the health status of fish and accordingly

		random catch Disinfect water by lime , KMnO4	control measure should be taken. 3. Control on transport of brooders and seeds.