

State: ASSAM

Agriculture Contingency Plan for District: SIVASAGAR

1.0 District Agriculture profile					
1.1	Agro-Climatic/Ecological Zone				
	Agro Ecological Sub Region (ICAR)	Assam And Bengal Plain, Hot Subhumid To Humid (Inclusion Of Perhumid) Eco-Region. (15.4)			
	Agro-Climatic Zone (Planning Commission)	Eastern Himalayan Region (II)			
	Agro Climatic Zone (NARP)	Upper Brahmaputra Valley Zone(AS-2)			
	List all the districts or part thereof falling under the NARP Zone	Tinsukia, Dibrugarh, Sivasagar, Jorhat, Golaghat			
	Geographic coordinates of district headquarters	Latitude		Longitude	Altitude
		26.45 ⁰ to 27.15 ⁰ N		94.25 ⁰ to 95.25 ⁰ E	86.6 m
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ZRS: AAU, Jorhat – 13 Regional Agricultural Research Station, Titabar Citrus Research Station, Tinsukia Sugarcane Research Station, Buralikson			
Mention the KVK located in the district	Krishi Vigyan Kendra, Sivasagar				

1.2	Rainfall	Normal RF(mm)	Normal Rainy days (number)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep):	352.43	-	1 st Week of June	2nd week of October
	NE Monsoon(Oct-Dec):	53.13	-	3rd week of October	2 nd Week of November
	Winter (Jan- March)	59.93	-		
	Summer (Apr-May)	247.8	-		
	Annual	1478.1 mm	-		

1.3	Land use pattern of the district (latest statistics)	Geographical area ('000 ha)	Cultivable area ('000 ha)	Forest area ('000 ha)	Land under non-agricultural use ('000 ha)	Permanent Pastures ('000 ha)	Cultivable wasteland ('000 ha)	Land under Misc. tree crops and groves ('000 ha)	Barren and uncultivable land ('000 ha)	Current Fallows ('000 ha)	Other fallows ('000 ha)
	Area ('000 ha)	260.29	136.822	30.46	56.15	7.330	1.820	20.061	7.336	4.71	2.931

Source : Statistical Hand Book , ASSAM, 2011

1.4	Major Soils (common names like red sandy loam deep soils (etc.,))*	Area ('000 ha)	Percent (%) of total
1.	Inseptisol (Old alluvial soil)		
	Fine soil	6.932	3
	Fine Loamy	129.931	58
2.	Entisol (Recent alluvial soil)		
	Course loamy	20.603	9
	Fine loamy	29.609	13
	Course silty	5.647	2
	Fine soil	32.666	15
	Others (specify):		

* mention colour, depth and texture (heavy, light, sandy, loamy, clayey etc) and give vernacular name, if any, in brackets (data source : SREP, Sivasagar District)

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	136.822	134
	Area sown more than once	18.440	
	Gross cropped area	155.262	

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	3.874		
	Gross irrigated area			
	Rainfed area	106.871		
	Sources of Irrigation	Number	Area ('000 ha)	% of total irrigated area
	Canals			
	Tanks			
	Shallow tubewell	224		
	Low lift pump	327		
	Deep tubewell	3		

Open wells			
Bore wells	7		
Lift irrigation schemes			
Micro-irrigation			
Other sources (please specify) (LLP)	327		
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 > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%			

1.7 Area under major field crops & horticulture (as per latest figures) (Specify year 2009-10)

1.7a	Major field crops cultivated	Area ('000ha)							
		<i>Kharif</i>			<i>Rabi</i>			Summer	Grand total
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
Winter Rice	-	-	106.726	-	-		-	106.726	
Autumn Rice	-	-	0.4455	-	-		-	0.4455	
Summer Rice	-	-		-	-	0.01378	-	0.01378	
Wheat	-	-		-	-	0.0842	-	0.0842	
Greengram	-	-	0.0305	-	-		-	0.0305	
Blackgram	-	-	0.250	-	-		-	0.250	
Peas	-	-		-	-	0.333	-	0.333	
Rape and Mustard	-	-		-	-	1.263	-	1.263	
Sugarcane	-	-	0.087	-	-		-	0.087	
Jute	-	-	0.05875	-	-		-	0.05875	
1.7b	Horticulture crops - Fruits	-							
		Total			Irrigated		Rainfed ('000 ha)		
	Banana		1.887	-			1.887		
	Orange		0.185	-			0.185		
	Pine apple		0.1755	-			0.1755		
	Papaya		0.151	-			0.151		
	Arecanut		3.175	-			3.175		

	Coconut	0.493	-	0.493
	Litchi	0.043	-	0.043
	Mango	0.089	-	0.089
	Jackfruit	0.445	-	0.445
	Assam lemon	0.810	-	0.810
	Onion	0.0805	---	0.0805
	Ginger	0.19627	-	0.19627
	Turmeric	0.23013	-	0.23013
	Chilli	0.10034	-	0.10034
	Blackpepper	0.0422	-	0.0422
	Garlic	0.0395	-	0.0395
	Coriander	0.024	-	0.024
	Potato	0.945	-	0.945
Others (specify)	Other fruits	0.022	-	

Source: Deptt. of Agriculture, 2009-10

1.7c	Horticulture crops - Vegetables	Total area ('000 ha)	Irrigated area ('000 ha)	Rainfed area ('000 ha)
1	Summer vegetable	1.882		
2	Winter vegetable	3.236		
1.7d	Medicinal and Aromatic crops	Total area ('000 ha)	Irrigated area ('000 ha)	Rainfed area ('000 ha)

1				
Others (specify)				
1.7e	Plantation crops	Total area ('000 ha)	Irrigated area ('000 ha)	Rainfed area ('000 ha)
1	areca nut	3.175		
2	Coconut	0.493		
Others (Specify)	Eg., industrial pulpwood crops etc.			
1.7f	Fodder crops	Total area ('000 ha)	Irrigated area ('000 ha)	Rainfed area ('000 ha)
1	-	-	-	-
Others (Specify)	-	-	-	-
1.7g	Grazing land			
1.7h	Sericulture etc		-	
1	Eri	7.62334		
2	Muga	9.80154		
3	Mulbery	4.704		
1.7i	Others (specify)			

1.8	Livestock (in number) (Data source: SHA, 2011)	Male ('000)	Female ('000)	Total ('000)	
	Indigenous Cattle	-	-	308.222	
	Cross bread cattle	-	-	14.834	
	Buffaloes	-	-	16.520	
	Goat	-	-	75.488	
	Others (Pig,	-	-	62.994	
	Commercial dairy farms (Number)			-	
1.9	Poultry	No. of farms	Total No. of birds ('000)		
	Fowl	-	408.658		
	Duck	-	131.795		
1.10	Fisheries (Data source: Chief Planning Officer of district)				
	A. Capture				
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats		Storage facilities (Ice plants etc.)
			Mechanized	Non-mechanized	
	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds		No. of Reservoirs	No. of village tanks
	B. Culture				
			No.	Yield (t/ha)	Production ('000 tons)
	i) Brackish water (Data Source: MPEDA/ Fisheries Department)				
ii) Fresh water (Data Source: Fisheries Department)					
Others					
Reg. beel fisheries		23			
Reg. river fisheries		9			

1.11 Production and Productivity of major crops (Average of 3 years, 205-06, 2006-07, 2007-08)

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)							
Major Field crops (Crops to be identified based on total acreage)										
1	Winter Rice	262.0378	3500							
2	Autumn Rice	0.53825	2056.667							
3	Summer Rice	0.10275	2333.333							
4	Wheat	0.0425	700							
5	Greengram	0.016425	650							
6	Blackgram	0.1275	700							
7	Peas	0.1555	573.3333							
8	Rape and Mustard	0.69125	696.6667							
9	Sugarcane	4.9125	60000							
10	Jute	0.45925	10416.67							

Major Horticultural crops (Crops to be identified based on total acreage)										
1	Banana	19.0085	15185							
2	Orange	0.134	1615							
3	Pine apple	2.45525	14550							
4	Papaya	1.53975	12511.67							
5	Arecanut	2.67025	1060							
6	Coconut		80 nuts /plant							
7	Litchi	0.1335	4270							
8	Mango	0.2785	4316.667							
9	Jackfruit	8.16475	24621							
10	Assam lemon	3.11875	6211.667							
11	Onion	0.117	2010							

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Sali Paddy	Rape & mustard	Potato	Wheat	Maize
	Kharif- Rainfed	June to July	Mid Oct to Mid November			March to April
	Rabi- Rainfed	-	-	Mid Oct to Mid November	Oct- Nov	Oct- Nov
	Rabi-Irrigated	-	-	-	-	

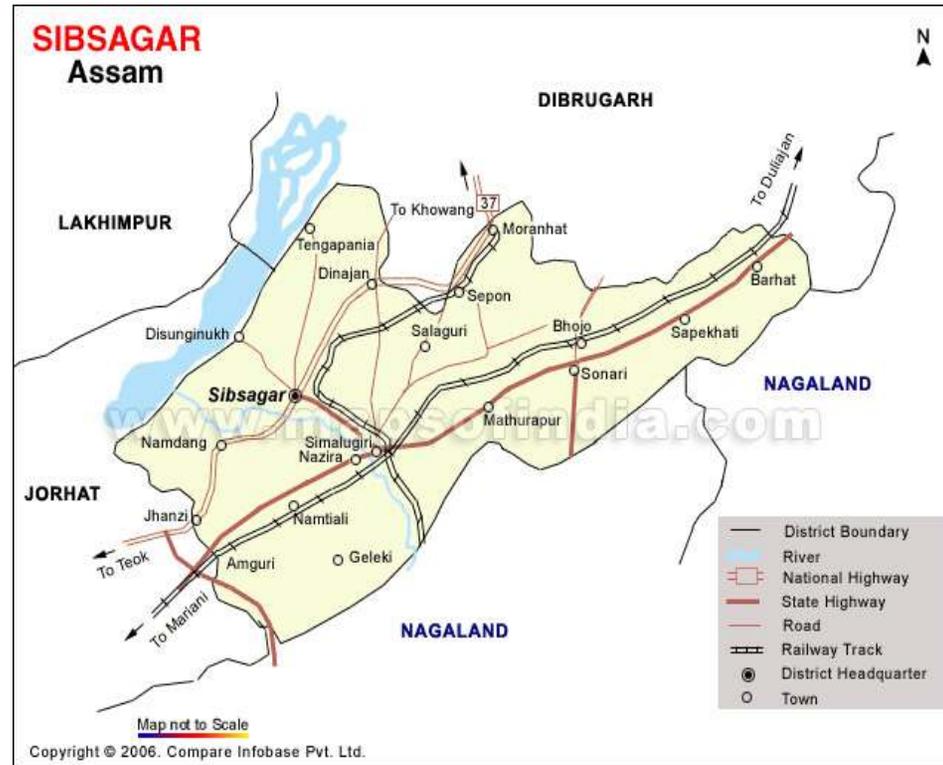
1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought		✓	
	Flood	✓		
	Cyclone			✓
	Hail storm		✓	
	Heat wave			✓
	Cold wave			✓
	Frost			✓
	Sea water intrusion			✓
	Pests and disease outbreak (specify)		✓	
	Others (specify)			
	Crop	Severe	Moderate	Mild
	Winter Rice		Stem borer, Case worm, Leaf folder, Gandhi bug, Rodent, Blast, Hispa, WBPH, BLB, Bakane,	BPH, GPH, False smut
	Rapseed & Mustard		Aphid and saw fly	
	Wheat		Rodent	
	Banana		Cercospora leaf spot	

	Vegetables	Bacterial wilt , Late blight of potato/tomato	Fungal wilt, Damping off, anthracknose in chili, White grub, Fruit and shoot borer, TLCV Collar rot, blight,	
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6 out of 10 years = Regular

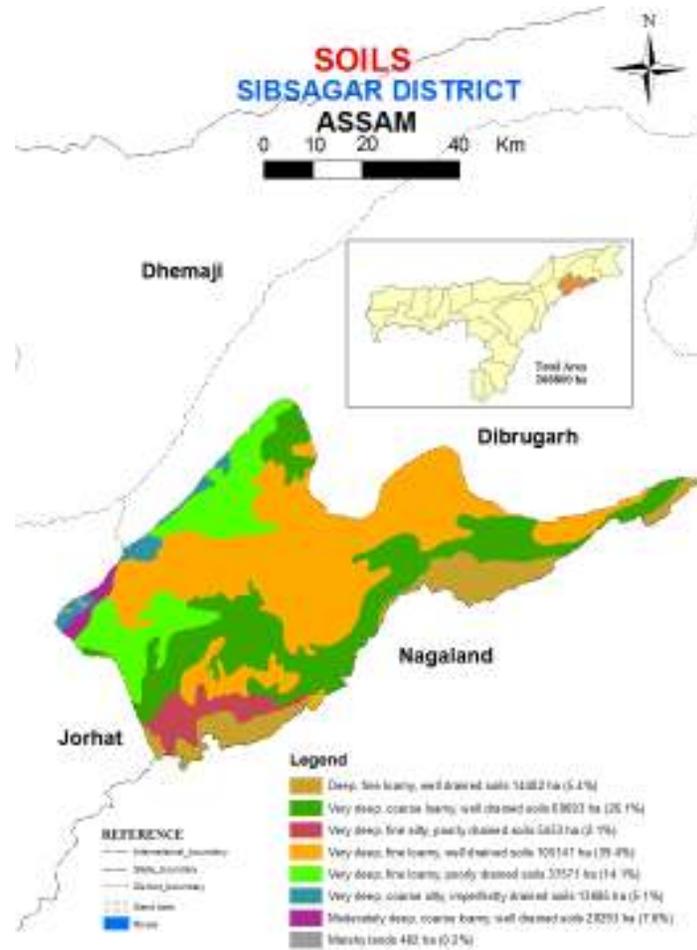
1.14	Include Digital maps of the district for	Location map of district within State as Annexure I	Enclosed: Yes
		Mean annual rainfall as Annexure 2	Enclosed: Yes
		Soil map as Annexure 3	Enclosed: Yes

Annexure – 1: LOCATION MAP SIVASAGAR DISTRICT



Annexure – 3: SOIL MAP OF Sivasagar

Source: NBSS & LUP, Regional Centre, Jorhat



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)					
Delay by 4 weeks (Specify month) July 1 st week	Rainfed medium land	a. Sali Rice	No need of change		
	Rainfed low land situation	a. Bao Rice	-do-	1. Use of organic manure if possible 2. 3 % foliar spray of KCl	
		b.Rice + Wheat (DWR/Sonalika)	Grow Medium duration rice varieties like Lachit, Chilarai followed by short duration wheat variety	1.Use closure spacing 10cmx10cm 2.Use of sufficient organic manure	1. The seed should be made available through Seed Village or ASC, Assam, 2. Production of vermicompost or enriched compost may be promoted through community basis
	Up land situation	Kharif Maize	Nil	1. Use of organic manure if possible 2. Mulching between the rows	LLP may be provided on community basis

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)					
Delay by 6 weeks (Specify month) July 3 rd week	Rainfed medium land	Sali Rice	Sowing of seeds for medium duration varieties like Jaya, Satyaranjan, Basundhara, Pankaj, IR 36 etc	1. Closure spacing of 10cmx10cm 2.Use organic manure 3.Provision of life saving irrigation if possible.	1. The seed should be made available through Seed Village or ASC, Assam, 2. Production of vermicompost or enriched compost may be promoted through community basis
	Rainfed low land situation	Bao Rice	-do-	1. Use of organic manure 2. 2 % foliar spray of KCl on leaves if drought appears.	

		b.Rice + Wheat	Grow Medium duration rice varieties like Lachit, Chilarai followed by short duration wheat variety	1.Use closure spacing of 10cmx10cm 2.Use of organic manure 3.Provision of life saving irrigation if possible.	1.The seed should be made available through Seed Village or ASC, Assam, 2.Production of vermicompost or enriched compost may be promoted through community basis
	Up land situation	Kharif Maize	Nil	1. Use of organic manure 2..Mulching between the rows	LLP may be provided on community basis

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)					
Delay by 8 weeks (Specify month) August 1 st week	Rainfed medium land	a. Sali Rice	1. Use of local Sali varieties i.e, Monohar Sali , Andrew Sali etc. 2. Use of short duration rice varieties like Luit, Disang as pre germinated direct seeding. 3. Use of staggered planting variety like Gitesh, Prafulla etc.	1. Closure spacing of (10cm x 10cm)with 4-5 nos of seedling per hill	1. The seed should be made available through Seed Village or ASC, Assam, 2. The contingent varieties should be raised on community basis
	Rainfed low land situation	a. Bao Rice	1. Land should be prepared for Rape & mustard crop	1.Use of high yielding oilseed variety(TS-36, TS-38)	Seeds and inputs should be made available at farmers doorstep
		b.Rice + Wheat (DWR/Sonalika)	The land should be prepared for early cultivation of wheat		1. The seed should be made available through ASC, Assam,

	Up land situation	Kharif Maize	Nil	1. Use of organic manure if possible 2. Mulching between the rows	LLP may be provided on community basis
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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
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Rainfed medium land	Monocrop a. Sali Rice	<ul style="list-style-type: none"> • Sprinkle water manually in nursery bed of rice since the area of nursery bed is very small. • Re-sowing of rice seeds can be done since sowing time is still available (upto July) 	<ul style="list-style-type: none"> • Application of sufficient amount of organic manures in nursery bed before sowing • Balance fertilization in nursery bed 	
	Rainfed low land situation	a. Bao Rice	Potash @3 % may be sprayed.		
		b.Rice + Wheat (DWR/Sonalika)	The land should be prepared for early cultivation of wheat		1.The seed should be made available through ASC, Assam,
	Up land situation	Kharif Maize	Nil	1. Use of organic manure if possible 2. Mulching between the rows	1.LLP may be provided on community basis

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)					
At vegetative stage	1) Farming Situation: Rainfed medium land	a. Sali Rice	<ul style="list-style-type: none"> • Proper weeding • Thinning the plant population 	<ul style="list-style-type: none"> • Application of sufficient amount of organic manures in nursery bed before sowing. • Stop top dressing of urea. 	
	Rainfed low land situation	a. Bao Rice	Potash @3 % may be sprayed.		
		b. Rice + Wheat (DWR/Sonalika)	The land should be prepared for early cultivation of wheat		1. The seed should be made available through ASC, Assam,
	Up land situation	Kharif Maize	Nil	<ol style="list-style-type: none"> 1. Use of organic manure if possible 2. Mulching between the rows 	LLP may be provided on community basis

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)					
At flowering/ fruiting stage	Rainfed medium land	a. Sali Rice	<ul style="list-style-type: none"> • Proper weeding • Thinning the plant population and • Spraying of KCl @ 3% 	<ul style="list-style-type: none"> • Stop top dressing of urea. • Crop may be used as fodder 	KCl is to be made available to farmers
	Rainfed low land situation	a. Bao Rice	Spraying of KCl @ 3%		
		b. Rice + Wheat (DWR/Sonalika)	The land should be prepared for early cultivation of wheat		1. The seed should be made available through ASC, Assam,
	Up land situation	Kharif Maize	Nil	<ol style="list-style-type: none"> 1. Use of organic manure if possible 2. Mulching between the rows 	LLP may be provided on community basis

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
Terminal drought (Early withdrawal of monsoon)					
	Rainfed medium land	a. Sali Rice	Spray 2% urea	<ul style="list-style-type: none"> • The crop may be used as fodder • Land should be prepared for Toria and Potato 	The seed should be made available through ASC, Assam
	Rainfed low land situation	a. Bao Rice			
		b. Rice + Wheat (DWR/Sonalika)	The land should be prepared for early cultivation of wheat		1. The seed should be made available through ASC, Assam,

	Up land situation	Kharif Maize	Nil	1. Use of organic manure if possible 2. Mulching between the rows	LLP may be provided on community basis
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2.1.2 Drought - Irrigated situation

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
Delayed release of water in canals due to low rainfall	Irrigated medium land	a. Sali Rice	Potato and toria	<ul style="list-style-type: none"> Limited irrigation Drip irrigation 	The seed should be made available through ASC, Assam
		b. Rice + Wheat	The land should be prepared for early cultivation of wheat		1. The seed should be made available through ASC, Assam,

2.1.3 Pre monsoon flood and hailstorm under irrigated situation

Condition	Major Farming situation ^f	Normal Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Pre monsoon flood	Irrigated medium land	a. Sali Rice	Adoption of short duration rice varieties like Luit, Disang	<ul style="list-style-type: none"> Limited irrigation Drip irrigation 	The seed should be made available through ASC, Assam

Condition	Major Farming situation ^f	Normal Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Hail storm under irrigated condition	Irrigated medium land	a. Sali Rice			

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				
Crop : Rice	Provide Community drainage	Provide drainage	Harvesting at physiological maturity stage	Shift to safer place
Rape & mustard	<ul style="list-style-type: none"> • Provide drainage • Harvest the crop for vegetable purpose 	Provide drainage	Drain out excess water Harvesting at physiological maturity	Shift to safe place dry in shade and turn frequently
Wheat	Provide drainage	Provide drainage	Drain out excess water Harvest for vegetable purpose	Safe storage against storage pest and disease
potato	Provide drainage	Provide drainage	Drain out excess water Harvest immediately	<ul style="list-style-type: none"> • Safe storage against storage pest and disease • Dispose at early as possible
Maize	Provide drainage	Provide drainage	Drain out excess water	Safe storage against storage pest and disease
Horticulture				
Banana (specify)	Provide drainage	Provide drainage	Harvesting at physiological maturity stage	
Bhot Jalakia	Provide drainage	Provide drainage	Harvesting at physiological maturity stage	
Vegetables	Provide drainage	Provide drainage Application of hormones , nutrients etc to prevent flower drop	Harvesting at physiological maturity stage	
Heavy rainfall with high speed winds in a short span²				
Sali Rice	Provide Community drainage	Provide drainage The crop may be used as fodder	Harvesting at physiological maturity stage	Shift to safer place
Rape & mustard	<ul style="list-style-type: none"> • Provide drainage • Harvest the crop as vegetables 	Provide drainage	Drain out excess water Harvesting at physiological maturity	Shift to safe place dry in shade and turn frequently
Horticulture				

Banana	Provide drainage	Provide drainage	Harvesting at physiological maturity stage	
Bhot Jalakia	Provide drainage, Plant protection measures	Provide drainage, Application of hormones	Harvesting at physiological maturity stage	
Vegetables	Provide drainage	Provide drainage Application of hormones , nutrients etc to prevent flower drop	Harvesting at physiological maturity stage	

Outbreak of pests and diseases due to unseasonal rains				
Sali Rice	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 		
Rape and mustard	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 		
Wheat	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 		
Maize	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 	<ul style="list-style-type: none"> • Need based plant protection measure • IPM and IDM Strategies 		
Potato	<ul style="list-style-type: none"> • Application of pesticides as prophylactic measures • IPM and IDM Strategies 	<ul style="list-style-type: none"> • Application of pesticides as prophylactic measures • IPM and IDM Strategies 		

2.3 Floods : Not experienced / encountered

Condition	Suggested contingency measure ^o			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation¹				
Sali Rice	Re-sowing with short duration varieties like Luit, Disang, Kolong etc	Drain out on community basis	Preparedness for rabi crops	Preparedness for rabi crops
Rape and mustard	Re-sowing with late sown	Preparedness for short duration	Preparedness for other	• Harvest quickly before flood

	varieties like TS -36,TS-48 etc	vegetable crops like Amaranthus, French been etc	vegetables	inundation at physiological maturity, <ul style="list-style-type: none"> • Transfer the produce to safer places
Horticulture				
Continuous submergence for more than 2 days²				
Sali Rice				
Horticulture				
Sea water intrusion³				

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				
Cold wave ^q				
Frost				
Hailstorm				
Cyclone				

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	Insurance Encourage perennial fodder on bunds and waste land on community basis Establishing fodder banks, encouraging fodder crops in irrigated area Silage – using excess fodder for silage	Utilizing fodder from perennial trees and Fodder bank reserves Utilizing fodder stored in silos Transporting excess fodder from adjoining districts Use of feed mixtures	Availing Insurance Culling unproductive livestock
Drinking water	Preserving water in the tank for drinking purpose Excavation of Bore wells	Using preserved water in the tanks for drinking Wherever ground water resources are available priority for drinking purpose	
Health and disease management	Veterinary preparedness with medicines and vaccines	Conducting mass animal Health Camps and treating the affected once in Campaign	Culling sick animals
Floods			
Feed and fodder availability	Silage preparation Mass awareness for unconventional feed and byproducts		
Drinking water		<ul style="list-style-type: none"> • Care for not to drink contaminated water • Provide quality water 	Vaccination for various diseases
Health and disease management			
Cyclone			
Feed and fodder availability			
Drinking water			
Health and disease management			

Heat wave and cold wave			
Shelter/environment management			
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	Insurance & Integration Establishing geed serve Bank	Utilizing from feed serve banks	Availing insurance Strengthening feed Reserve Banks	
Shortage of feed ingredients				
Drinking water	Emergency Veterinary preparedness with medicines vaccination to birds	Campaign and Mass Vaccination	Culling affected birds	
Health and disease management	Timely vaccination	Conducting animal health camp	Culling unproductive birds Availaing insurance provision	Vaccination and animal health camp
Floods				
Shortage of feed ingredients	Storage of sufficient feed	Conducting animal health camp	Culling unproductive birds Availaing insurance provision	
Drinking water	Storing drinking water	Isolation of seek birds	-	-
Health and disease management	Timely vaccination	Conducting animal health camp	Culling unproductive birds Availaing insurance provision	Vaccination and animal health camp
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

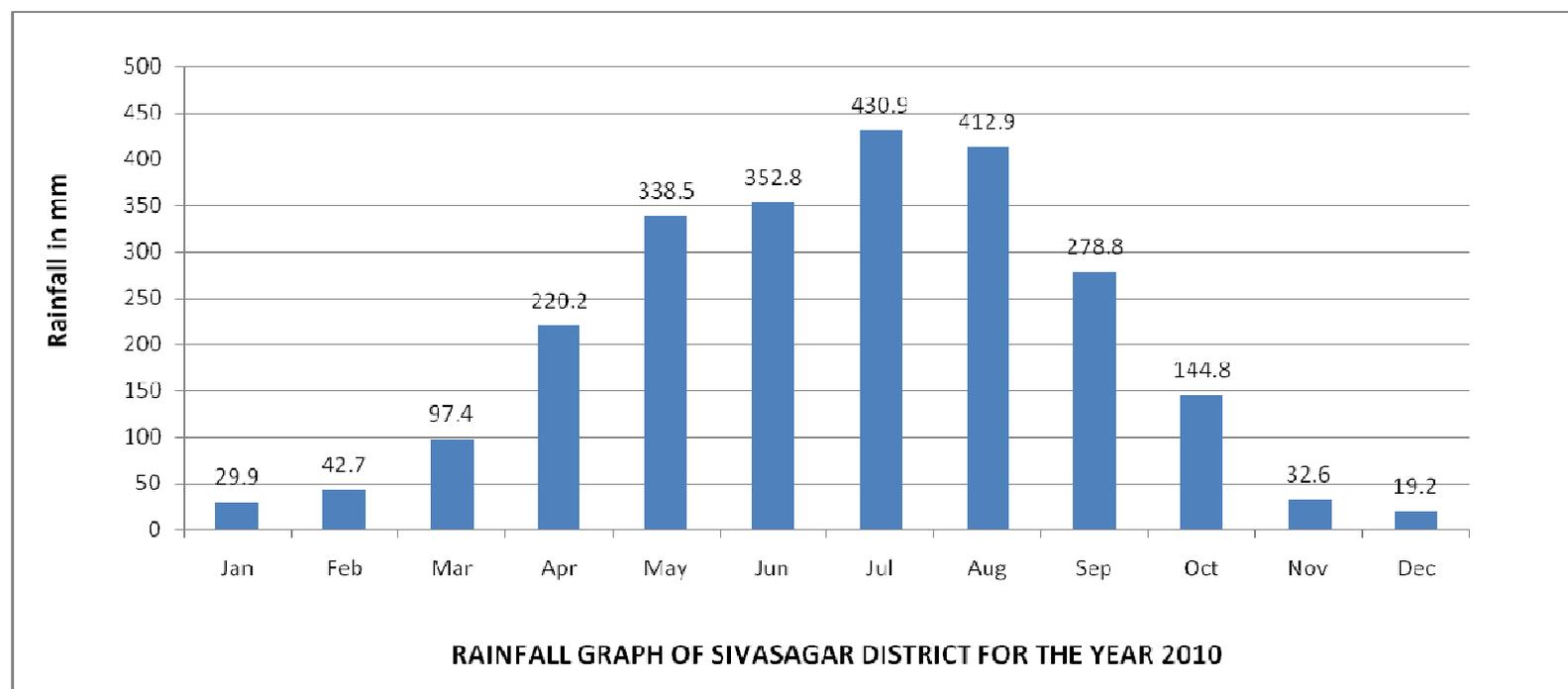
2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event ^a	During the event	After the event
1) Drought			
A. Capture			
Marine	-	-	-
Inland			
(i) Shallow water depth due to insufficient rains/inflow	<ul style="list-style-type: none"> • Stop over exploitation 	<ul style="list-style-type: none"> • Stop over exploitation • Fingerlings and brood fishes, if caught, to be released back to safer waters • Shift fish stock to deeper water, especially in case of pens • Drying of fish or production of value added fish products from the over harvested stock 	<ul style="list-style-type: none"> • Re stocking, wherever possible.
(ii) Changes in water quality	<ul style="list-style-type: none"> • Thinning out of stock against reduced dissolved oxygen and space 	-	-
(iii) Any other			
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow	<ul style="list-style-type: none"> • For pond construction select soils with sufficient clay for retention of water. • Apply sufficient organic manure during preparation to minimize water 	<ul style="list-style-type: none"> • Pump in water from other water source (nearby spring, stream, rivers etc) or ground water, if any. • Reduce food for minimum 	<ul style="list-style-type: none"> • Extended seed production • Restock the pond. • Integrated fish farming

	<p>loss through seepage.</p> <ul style="list-style-type: none"> • Insurance • Excavation of bore wells • Reduce biomass and stocking density through partial harvesting. • Sell out the fishes attaining marketable size to minimize loss. • Stock fishes that can thrive low water depth, like air breathing fishes. • Maintenance of proper record for claiming compensation, especially in schemes assisted by Govt. or financial institutes. • Planning for rain water harvest. 	<p>metabolism.</p> <ul style="list-style-type: none"> • Restrict fertilizer for preventing algal bloom and minimum stress. • Dig deep trench in convenient part of the pond to save brood fishes. • Careful observation on daily basis. • Scare away birds and other animals (attracted by shallow water to catch fish) – may be vector for diseases. 	<ul style="list-style-type: none"> • Short duration culture of species that are fast growing in initial stage and can be marketed at small size (minor and medium carps). • Air breathing fish culture • Claim compensation with support of record and documents. • Paddy cum fish culture
(ii) Impact of salt load build up in ponds / change in water quality	<ul style="list-style-type: none"> • Thinning out of stock against reduced dissolved oxygen and space 	<ul style="list-style-type: none"> • Recirculation of water and/or aeration. • Careful observation on daily basis. 	-
(iii) Any other	-	-	-
2) Floods			
A. Capture			
Marine	-	-	-
Inland	<ul style="list-style-type: none"> • Preparation for pen and cage culture 	<ul style="list-style-type: none"> • Pen & cage culture • Can get engaged in other related activities like net and gear making. 	<ul style="list-style-type: none"> • Desilting & weed removal if possible
(i) No. of boats / nets/damaged			
(ii) No.of houses damaged			
(iii) Loss of stock			<ul style="list-style-type: none"> • Pen & cage culture
(iv) Changes in water quality			
(v) Health and diseases			

B. Aquaculture			
(i) Inundation with flood water	<ul style="list-style-type: none"> • Insurance • Repairing, turfing and compaction of peripheral embankments. • Horticulture on the embankment to prevent erosion. • Sufficient bamboo poles and nylon nets to be kept ready. • ‘High stocking multiple harvesting’ can be taken up. • Sell out the fishes attaining marketable size to minimize loss. • Maintenance of proper record for claiming compensation, especially in schemes assisted by Govt. or financial institutes. 	<ul style="list-style-type: none"> • Surround the pond with nets supported by bamboo poles to prevent escape of fish. • Supply sufficient food to fishes to reduce tendency of escaping from the pond. • • 	<ul style="list-style-type: none"> • Desilting. • Restock the pond if original stock escapes. • Integrated fish farming • Short duration culture of species that are fast growing and can be marketed at small size. • Claim compensation with support of record and documents. • Removal of unwanted/ predatory fish from pond before stocking. • Paddy cum fish culture • • •
(ii) Water contamination and changes in water quality	<ul style="list-style-type: none"> • Prevent entry of water from outside. • Precaution to prevent entry of pesticide/insecticide laden water from nearby agricultural land. • Apply lime regularly as per recommendation. 	<ul style="list-style-type: none"> • Apply lime regularly as per recommendation. 	<ul style="list-style-type: none"> • Apply lime regularly as per recommendation. • Remove muck and debris, if entered with flood. • Apply preventive agents (eg. CIFAX) before on set of winter.
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			<ul style="list-style-type: none"> • After possible repairing of the physical damage, take up late seed rearing to be stocked in the next year.
(v) Infrastructure damage (pumps, aerators, huts etc)			
(vi) Any other			<ul style="list-style-type: none"> • Small scale homestead ornamental fish production, depending on the market.
4. Heat wave and cold wave	-	-	-
A. Capture	-	-	-

Marine	-	-	-
Inland	-	-	-
B. Aquaculture	-	-	-
(i) Changes in pond environment (water quality)	<ul style="list-style-type: none"> Apply lime regularly as per recommendation. Apply preventive agents (eg. CIFAX) before on set of winter. 	<ul style="list-style-type: none"> Apply lime regularly as per recommendation. Restrict application of fertilizer as per requirement. 	<ul style="list-style-type: none"> Apply lime regularly as per recommendation.
(ii) Health and Disease management			



AGRICULTURE CONTINGENCY PLAN

District : SIVASAGAR, ASSAM

