

State: GUJARAT

Agriculture Contingency Plan for District: SABARKANTHA

1.0 District Agriculture profile					
1.1	Agro-Climatic/Ecological Zone				
	Agro Ecological Sub Region (ICAR)	North Gujarat plain (Inclusive of Aravalli range and East Rajasthan Uplands) hot, dry, semi – arid eco-subregion (4.2)			
	Agro-Climatic Zone (Planning Commission)	Gujarat Plains and Hills Region (XIII)			
	Agro Climatic Zone (NARP)	North Gujarat Agroclimatic zone (GJ-4)			
	List all the districts or part thereof falling under the NARP Zone	Gandhi Nagar, Kheda, Mehsana And Sabarkanta			
	Geographic coordinates of district headquarters	Latitude		Longitude	
		23 ⁰ 03' N		73 ⁰ 39' E	
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Agricultural Research Station, S.D. Agricultural University, Talod Maize Research Station, , S.D. Agricultural University Bhiloda			
	Mention the KVK located in the district	Krushi Vigyan Kendra, S.D. Agricultural University, Khedbrahma, Taluka- Khedbrahma			
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):	807	35	4 th week of June	2 nd week of September
	NE Monsoon(Oct-Dec):				
	Winter (Jan- March)			-	-
	Summer (Apr-May)			-	-
	Annual	807	35	-	-

1.3	Land use pattern of the district (latest statistics)	Geographical area	Cultivable 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)	730.0	445.0	126.0	42.0	33.0	15.0	-	35.0	34.0	-

(Source: District Panchayat Report, Report of Agriculture Department)

1.4	Major Soils (common names like red sandy loam deep soils (etc.,)*)	Area ('000 ha)	Per cent (%) of total
	Sandy loam (<i>Goradu</i>)	191.1	26.18
	Medium black	412.0	56.44
	Hilly Soils	126.9	17.38

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	445.0	118.0
	Area sown more than once	79.0	
	Gross cropped area	524.0	

(Source: District Panchayat Report, Report of Agriculture Department)

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	163.0		
	Gross irrigated area	177.0		
	Rainfed area	282.0		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals	544 Km	23.0	13.0
	Tanks		0.6	0.3
	Open wells	81136	90.6	51.2
	Bore wells	5561	44.8	25.3
	Lift irrigation schemes			
	Micro-irrigation	9514	18.0	10.2
	Other sources (please specify)			
	Total Irrigated Area		177.0	
	Pump sets	73714		

No. of Tractors	10034		
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	1(Idar)		
Critical	2(Meghraj, Modasa)		
Semi- critical	10(Rest of the Block)		
Safe	-		
Wastewater availability and use	-		
Ground water quality	-		

*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%

Source: Statistical information received from District Panchayat, Himatnagar, Sabarkantha.

1.7 Area under major field crops & horticulture (as per latest figures) (Average of 2004-05 to 2008-09)

1.7	S.No.	Major field crops cultivated	Area ('000 ha)							
			<i>Kharif</i>			<i>Rabi</i>			Summer	Grand total
			Irrigated	Rainfed	Total	Irrigated	Rainfed	Total		
1	Maize	-	112.0	112.0					112.0	
2	Cotton (Lint)	74.6	17.8	92.4					92.4	
3	Wheat				88.4		88.4		88.4	
4	Groundnut			52.4				5.4	57.8	
5	Pulses (Tur, Urad, Greengram)		42.5	42.5					42.5	
6	Castor			42.0					42.0	
S.No.	Horticulture crops – Fruits	Area ('000 ha)								
		Total								
1	Mango	3.1								
2	Ber	2.2								
3	Citrus	1.8								
4	Sapota	1.5								
5	Aonla	1.2								
	Horticulture crops – Vegetables	Total								
1	Cucurbits	2.6								
2	Okra	1.3								
3	Brinjal	1.3								
4	Tomato	0.9								
5	Clusterbean	0.2								

Other s (speci fy)	Cowpea	0.1
	Medicinal and Aromatic crops	Total
1	Ginger	0.1
2	Turmeric	0.1
	Plantation crops	Total
1	Nil	
Other s (Speci fy)	Eg., industrial pulpwood crops etc.	
	Fodder crops	Total
1	Crop1	-
	Total fodder crop area	32.4
	Grazing land	33.4
	Sericulture etc	
	Others (specify)	

(Source: District Panchayat Report, Report of Agriculture Department)

1.8	Livestock Source: 26th survey Report (08-09), Dept. of A. H., Gujarat State	Male ('000)	Female (No's)	Total (No's)
	Non descriptive Cattle (local low yielding)			468850
	Crossbred cattle			151846
	Non descriptive Buffaloes (local low yielding)			
	Graded Buffaloes			774928
	Goat			343981
	Sheep			66695
	Others (Camel, Pig, Yak etc.)			4728
	Commercial dairy farms (Number)			
1.9	Poultry	No. of farms	Total No. of birds (No's)	
	Commercial		15015 (layer) + 143350(broilers) + 2126(ducks) = 160491	

	Backyard								240875
1.10	Fisheries (Data source: Gujarat Fisheries Statistics 2006-07 and MARCH-10, Commissioner of Fisheries, Govt. of Gujarat)								
	A. Capture								
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats		Nets				
			Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)			
			-	509					
	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds		No. of Reservoirs		No. of village tanks			
				57 (15097 ha)					
	B. Culture								
		Water Spread Area (ha)		Yield (t/ha)		Production (MT)			
	i) Brackish water (Data Source: MPEDA/ Fisheries Department)	-		-		-			
	ii) Fresh water (Data Source: Fisheries Department)					279			
	Others	-		-		-			

(Data source: Gujarat Fisheries Statistics 2006-07 and MARCH-10, Commissioner of Fisheries, Govt. of Gujarat)

1.11 Production and Productivity of major crops (Average of last 5 years: 2004, 05, 06, 07, 08, 09: specify years)

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)										
1	Maize	147.0	1315.0	-	-	-	-	147.0	1315	205.8
2	Cotton (Lint)	298.3	560.0			-	-	298.3	560	894.9
3	Wheat			223.9	2505			223.9	2505	256.5

4	Groundnut	59.5	1176.0	-	-	7.5	1413	67.0	1203	167.5
5	Pulses (Tur, Urad, Greengram)	29.4	871.0	-	-			29.4	871	45.0
6	Castor	66.1	1550.0	-	-	-	-	66.1	1550	99.2
Major Horticultural crops (Crops to be identified based on total acreage)										
1	Mango			-	-	-	-	24.8	8000	
2	Ber							22.9	10540	
3	Citrus							15.6	8460	
4	Sapota							15.2	9970	
5	Aonla							10.9	9440	

(Source: District Panchayat Report, Report of Agriculture Department)

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Maize	Cotton	Wheat	Groundnut	Pulses	Castor
	Kharif- Rainfed	3 rd week of June- 1 st week of July.	3 rd week of June-3 rd week of July		21 st June-15 th July	3 rd week of June- 1 st week of July.	
	Kharif-Irrigated		3 rd week of June-3 rd week of July				3 rd week of July - 3 rd week of Aug.
	Rabi- Rainfed						
	Rabi-Irrigated			3 rd week to 4 th week of November			

1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought		✓	
	Flood			✓
	Cyclone			✓

	Hail storm			✓
	Heat wave		✓	
	Cold wave			✓
	Frost			✓
	Sea water intrusion			✓
	Pests and disease outbreak (specify)			✓
	Others (specify)			

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

2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 2 weeks. i.e. July 1 st week	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat <u>Cotton (Bt)</u>	No change	No change	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC, GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs.
		Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 &	No change	No change	

	6, GAUG-1 -Semi spreading GG-20			30000/-)
	Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	No change	<ul style="list-style-type: none"> Ridge & furrow method of sowing (90 cm) Or Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> Ridge & furrow maker can be provided under RKVY or other Govt. Agency. Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)
	Maize -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	As such	As such	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)
	Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	No change	No change	do
	Green gram Guj.Mung-1,2,3 & 4, K-851	No change	No change	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)
	Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	No change	No change	do
	Fodder crop <u>Jowar</u> : GFS-4,5 S-1049 (sundhiya jowar)	<u>Jowar</u> : S-1049, SSG-59-3 (Multicut) <u>Bajra</u> : GF Bajra-1 (Multicut)	As such	<ul style="list-style-type: none"> Seed source NSC, GUJCOMASOL, GSSC.
	<u>Maize local</u>	African tall	As Such	do

Medium rainfall, Medium black soil (Khedbrahma, Meghraj)	Cropping system: Cotton-Wheat, Maize-Wheat & Paddy-Wheat <u>Cotton (Bt)</u>	No change	No change	-
	Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	No change	<ul style="list-style-type: none"> Ridge & furrow method of sowing (90 cm) Or Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> Ridge & furrow maker can be provided under RKVY or other Govt. Agency. Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)
	<u>Rice</u> - <u>Transplanting Var.</u> GR-3,4,5,6 GR-7(Scented), GR-8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. - <u>Drill paddy</u> Sathi-34, 36, GR-3, Sukhvel-20, IR-28, GR-5,8 & 9	No change	No change	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)
	<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	As such	As such	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)
	Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 - <u>Semi spreading</u> GG-20	No change	No change	do
Green gram Guj.Mung-1,2,3 & 4, K-851	No change	No change	do	

	Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	No change	No change	do
	Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	No change	No change	do
	Fodder crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<u>Jowar:</u> S-1049, SSG-59-3 (Multicut) <u>Bajra:</u> GF Bajra-1 (Multicut)	As such	Seed source NSC, GUJCOMASOL, GSSC.
	<u>Maize local:</u>	African tall	As Such	do
High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur,Bayad, Vadali, Vijaynagar)	Cropping system: Cotton- Wheat, Maize-Wheat & Groundnut- Wheat <u>Bajra</u> GHB-558,538,577,719,732	<ul style="list-style-type: none"> Grow short duration early maturing varieties of Bajra viz.GHB-538, GHB-577 	<ul style="list-style-type: none"> 20 Per Cent higher seed rate Seed priming with thiourea (0.05%) for four hours Sowing by adopting compartmental bunding (3.0 X 4.5 m) 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)
	<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	As such	As such	do
	Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	No change	<ul style="list-style-type: none"> Ridge & furrow method of sowing (90 cm) Or 	<ul style="list-style-type: none"> Ridge & furrow maker can be provided under RKVY or other Govt. Agency. Breeder seed source SAU Certified seed source NSC,GSSC,

				<ul style="list-style-type: none"> • Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> • GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-)
		<p>Groundnut</p> <p><u>-Spreading type</u> GAUG-10, GG-11, 12 & 13.</p> <p><u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1</p> <p><u>-Semi spreading</u> GG-20</p>	No change	No change	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC, GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-)
		<u>Cotton (Bt)</u>	No change	No change	
		<p>Pigeonpea</p> <p>T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1</p>	No change	No change	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC, GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-)
		<p>Fodder crop</p> <p><u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)</p>	<p><u>Jowar:</u> S-1049, SSG-59-3 (Multicut)</p> <p><u>Bajra:</u> GF Bajra-1 (Multicut)</p>	As such	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC.
		<u>Maize local:</u>	African tall	As Such	do

Condition	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Suggested Contingency measures	
				Agronomic measures	Remarks on Implementation
<p>Early season drought (delayed onset)</p> <p>Delay by 4 weeks (Specify month)</p> <p>July 3rd Week</p>	<p>High rainfall</p> <p>Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)</p>	<p>Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat</p> <p><u>Cotton (Bt)</u></p>	<p>Early maturing Bt-Cotton + Green gram or Black gram (1:1 Row ratio)</p>	<p>Conservation furrow at every third row</p>	<p>Furrow maker can be provided under RKVY or other Govt. Agency.</p>

	<p>Groundnut -<u>Spreading type</u> GAUG-10, GG-11, 12 & 13. -<u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 -<u>Semi spreading</u> GG-20</p>	<p><u>Cowpea</u> -Guj.Cowpea-1,2,4 &5 Only as a vegetable purpose, green pod marketing <u>Clusterbean-</u> HG-75,Guj Guar-1 and 2 only <u>Mothbean-</u> -Gujarat Mothbean-1, GMO-2 <u>Green gram-</u> Gujarat Moong-4 <u>Black gram-</u> Gujarat Urad-1</p>	<ul style="list-style-type: none"> • Sowing at 60 cm spacing • Fertilizer reduction by 30 Per Cent 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASO L • Seed drill under RKVY (costing Rs. 30000/-)
	<p>Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1</p>	<p>No Change</p>	<ul style="list-style-type: none"> • Ridge & furrow method of sowing (90 cm) Or • Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASO L • Seed drill under RKVY (costing Rs. 30000/-) • Ridge & furrow maker can be provided under RKVY or other Govt. Agency.
	<p><u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti</p>	<ul style="list-style-type: none"> • Gujarat Maize 4 or 6 + Tur GT-101 (2:1 row ratio) • Gujarat Maize 4 or 6 + Urad Guj.-1 (1:1 row ratio) 	<ul style="list-style-type: none"> • Sow the crop at 75cm distance • Reduce the fertilizer application by 30 Per Cent 	<p>--</p>
	<p>Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1</p>	<p>Dual purpose Sorghum Gujarat Jowar-39 and Malvan</p>	<p>---</p>	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASO L • Seed drill under RKVY (costing Rs. 30000/-)
	<p>Green gram Guj.Mung-1,2,3 & 4, K-851</p>	<p>Gujarat Moong-4</p>	<ul style="list-style-type: none"> • Sowing at 60 cm spacing • Fertilizer reduction by 30 Per Cent 	<p>do</p>

		Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	Gujarat Urad-1	do	do
		Fodder crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<u>Jowar:</u> S-1049, SSG-59-3 (Multicut) <u>Bajra:</u> GF Bajra-1 (Multicut)	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate
		<u>Maize local:</u>	African tall	do	<ul style="list-style-type: none"> • Bund maker can be provided under RKVY
Medium rainfall, Medium black soil (Khedbrahma, Meghraj)		Cropping system: Cotton-Wheat, Maize-Wheat & Paddy-Wheat <u>Cotton (Bt)</u>	Early maturing Bt-Cotton + Green gram or Black gram (1:1 Row ratio)	<ul style="list-style-type: none"> • Conservation furrow at every third row 	<ul style="list-style-type: none"> • Furrow maker can be provided under RKVY or other Govt. Agency.
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	No Change	<ul style="list-style-type: none"> • Ridge & furrow method of sowing (90 cm) Or • Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASO L • Seed drill under RKVY (costing Rs. 30000/-) • Ridge & furrow maker can be provided under RKVY or other Govt. Agency.
		<u>Rice</u> <u>-Transplanting Var.</u> GR-3,4,5,6 GR-7(Scented), GR-8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. <u>-Drill paddy</u> Sathi-34, 36, GR-3, Sukhvel-20, IR-28, GR-5,8 & 9	Paddy Variety GR-11, GR-12, GR-13, Jaya, Gurjari, Dandi	<ul style="list-style-type: none"> • SRI Techniques • Staggering of Nursery 	---

		<p><u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti</p>	<ul style="list-style-type: none"> • Gujarat Maize 4 or 6 + Tur GT-101 (2:1 row ratio) • Gujarat Maize 4 or 6 + Urad Guj.-1 (1:1 row ratio) 	<ul style="list-style-type: none"> • Sow the crop at 75cm distance • Reduce the fertilizer application by 30 Per Cent 	---
		<p>Groundnut -<u>Spreading type</u> GAUG-10, GG-11, 12 & 13. -<u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 -<u>Semi spreading</u> GG-20</p>	<p><u>Cowpea</u> -Guj.Cowpea-1,2,4 &5 Only as a vegetable purpose, green pod marketing <u>Clusterbean</u>- HG-75,Guj Guar-1 and 2 only <u>Mothbean</u>- -Gujarat Mothbean-1, GMO-2 <u>Green gram</u>- Gujarat Moong-4 <u>Black gram</u>- Gujarat Urad-1</p>	<ul style="list-style-type: none"> • Sowing at 60 cm spacing • Fertilizer reduction by 30 Per Cent 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASO L • Seed drill under RKVY (costing Rs. 30000/-)
		<p>Green gram Guj.Mung-1,2,3 & 4, K-851</p>	<p>Gujarat Moong-4</p>	<ul style="list-style-type: none"> • Sowing at 60 cm spacing • Fertilizer reduction by 30 Per Cent 	do
		<p>Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1</p>	<p>Gujarat Urad-1</p>	<ul style="list-style-type: none"> • Sowing at 60 cm spacing • Fertilizer reduction by 30 Per Cent 	do
		<p>Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1</p>	<p>Dual purpose Sorghum Gujarat Jowar-39 and Malvan</p>	---	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASO L • Seed drill under RKVY (costing Rs. 30000/-)
		<p>Fodder crop <u>Jowar</u>: GFS-4,5 S-1049 (sundhiya jowar)</p>	<p><u>Jowar</u>: S-1049, SSG-59-3 (Multicut) <u>Bajra</u>: GF Bajra-1 (Multicut)</p>	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate

	<u>Maize local:</u>	African tall	do	<ul style="list-style-type: none"> Bund maker can be provided under RKVY
High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur, Bayad, Vadali, Vijaynagar)	Cropping system: Cotton-Wheat, Maize-Wheat & Groundnut-Wheat <u>Bajra</u> GHB-558,538,577,719,732	<ul style="list-style-type: none"> Short duration early maturing Var. GHB-538& 577 Karingdo as a mixed crop along with pearl millet third row Reduce 25% acreage of pearl millet by Guar and Mothbean 	<ul style="list-style-type: none"> Sowing at 60 cm-seed priming with thiurea (0.05%) for four hours Sowing by adopting compartmental bunding (3.0 X 4.5 m) 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMASO L Seed drill under RKVY (costing Rs. 30000/-)
	<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> Gujarat Maize 4 or 6 + Tur GT-101 (2:1 row ratio) Gujarat Maize 4 or 6 + Urad Guj.-1 (1:1 row ratio) 	<ul style="list-style-type: none"> Sow the crop at 75cm distance Reduce the fertilizer application by 30 Per Cent
	Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	No Change	<ul style="list-style-type: none"> Ridge & furrow method of sowing (90 cm) Or Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-) Ridge & furrow maker can be provided under RKVY or other Govt. Agency.
	Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1	<u>Cowpea</u> -Guj.Cowpea-1,2,4 & 5 Only as a vegetable purpose, green pod marketing <u>Clusterbean</u> - HG-75,Guj Guar-1 and 2 only <u>Mothbean</u> - -Gujarat Mothbean-1, GMO-2	<ul style="list-style-type: none"> Sowing at 60 cm spacing Fertilizer reduction by 30 Per Cent 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC, GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-)

		<u>-Semi spreading</u> GG-20	<u>Green gram-</u> Gujarat Moong-4 <u>Black gram-</u> Gujarat Urad-1		
		<u>Cotton (Bt)</u>	<ul style="list-style-type: none"> • Early maturing Bt-Cotton + Green gram or Black gram (1:1 Row ratio) 	<ul style="list-style-type: none"> • Conservation furrow at every third row 	<ul style="list-style-type: none"> • Furrow maker can be provided under RKVY or other Govt. Agency.
		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Dual purpose Sorghum Gujarat Jowar-39 and Malvan	---	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC, GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-)
		Fodder crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<u>Jowar:</u> S-1049, SSG-59-3 (Multicut) <u>Bajra:</u> GF Bajra-1 (Multicut)	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate
		<u>Maize local:</u>	African tall	do	Bund maker can be provided under RKVY

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset)					
Delay by 6 weeks August 1 st week	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> • Castor (GCH-4,5 or 7) • Castor (GCH-4,5 or 7) + Clusterbean (Guj Guar 1 or 2) 	<ul style="list-style-type: none"> • Seed hardening (soaking the seed 8 hours in water followed by shadow drying) • Sow the castor crop at 120 cm 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMAS OL

			<ul style="list-style-type: none"> One row of Cowpea or Clusterbean between regular two row of castor without giving any fertilizer 	<p>spacing</p> <ul style="list-style-type: none"> Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> Seed drill under RKVY (costing Rs. 30000/-) Ridge & furrow maker can be provided under RKVY or other Govt. Agency.
		<p>Groundnut</p> <p><u>-Spreading type</u> GAUG-10, GG-11, 12 & 13.</p> <p><u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1</p> <p><u>-Semi spreading</u> GG-20</p>	<p><u>Clusterbean</u> Hg-75, Gujarat Guar 1 or 2</p> <p><u>Fodder Jowar</u> GJ-39, Malvan</p>	<ul style="list-style-type: none"> 25% higher seed rate with 60 cm spacing Reduce the fertilizer by 40 Per Cent Seed hardening (soaking the seed 3 to 4 hours in water followed by shadow drying) In fodder Sorghum, apply 20 kg S/ha through Gypsum 	do
		<p>Castor</p> <p>GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1</p>	<p><u>Castor</u> (GCH-4,5 or 7) + <u>Mothbean</u> (GMO-2) (1:2 row ratio) (two line of Mothbean in regular spacing of Castor)</p>	<ul style="list-style-type: none"> Seed hardening (soaking the seed 4 to 6 hours in water followed by shadow drying) Compartmental bunding(3.6X5.0m) Reduction in fertilizer application by 50 Per Cent Sowing distance 120 cm for castor No fertilizer application for inter crop 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMAS OL Seed drill under RKVY (costing Rs. 30000/-) Bund maker provide under RKVY
		<p><u>Maize</u></p> <p>-Private Hybrids- Pusa early hybrids-1 & 2</p> <p>-Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti</p>	<p><u>Fodder Jowar</u> GJ-39, Malvan</p>	<ul style="list-style-type: none"> Wider spacing at 60 cm with 25 Per Cent higher seed rate Reduce the fertilizer application by 40 Per Cent In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMAS OL Seed drill under RKVY (costing Rs. 30000/-) Gypsum provided under subsidies rate by Govt. Agency
		<p>Pigeonpea</p> <p>T.15-15, Pusa Ageti, BDN-2, ICPL-87,</p>	<p>Dual purpose Sorghum</p> <p>Gujarat Jowar-39 and Malvan</p>	---	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMAS

		GT-1, GT-100, GT-101, Banas, GTH-1			OL • Seed drill under RKVY (costing Rs. 30000/-)
		Green gram Guj.Mung-1,2,3 & 4, K-851	<u>Fodder sorghum</u> -GJ-39, Malvan	<ul style="list-style-type: none"> Wider spacing at 60 cm with 25 Per Cent higher seed rate Reduce the fertilizer application by 40 Per Cent In fodder Sorghum, apply 20 kg S/ha through Gypsum 	do
		Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	<u>Fodder sorghum</u> -GJ-39, Malvan	do	do
		Fodder crop Jowar: GFS-4,5 S-1049 (sundhiya jowar)	<u>Jowar</u> : S-1049, SSG-59-3 (Multicut) <u>Bajra</u> : GF Bajra-1 (Multicut)	<ul style="list-style-type: none"> Compartmental Bunding (3.6 m x 6.0 m) S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> Seed source NSC, GUJCOMASOL, GSSC. Gypsum may supplied by GSFC under subsidies rate
		<u>Maize local</u> :	African tall	do	<ul style="list-style-type: none"> Bund maker can be provided under RKVY
	Medium rainfall, Medium black soil (Khedbrahma, Meghraj)	Cropping system: Cotton-Wheat, Maize-Wheat & Paddy-Wheat <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> Castor (GCH-4,5 or 7) Castor (GCH-4,5 or 7) + Clusterbean (Guj Guar 1 or 2) One row of Cowpea or Clusterbean between regular two row of castor without giving any fertilizer 	<ul style="list-style-type: none"> Seed hardening (soaking the seed 8 hours in water followed by shadow drying) Sow the castor crop at 120 cm spacing Compartmental bunding (3.6 X 6.0m) 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMAS OL Seed drill under RKVY (costing Rs. 30000/-) Ridge & furrow maker can be provided under RKVY or other Govt. Agency.
		Castor	<u>Castor</u> (GCH-4,5 or 7) +	<ul style="list-style-type: none"> Seed hardening (soaking the seed 4 	<ul style="list-style-type: none"> Breeder seed source SAU

	GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<u>Mothbean</u> (GMO-2) (1:2 row ratio) (two line of Mothbean in regular spacing of Castor)	to 6 hours in water followed by shadow drying) <ul style="list-style-type: none"> • Compartmental bunding (3.6 X 5.0 m) • Reduction in fertilizer application by 50 Per Cent • Sowing distance 120 cm for castor • No fertilizer application for inter crop 	<ul style="list-style-type: none"> • Certified seed source NSC,GSSC,GUJCOMAS OL • Seed drill under RKVY (costing Rs. 30000/-) • Bund maker provide under RKVY
	<u>Rice</u> <u>-Transplanting Var.</u> GR-3,4,5,6 GR-7(Scented), GR-8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. <u>-Drill paddy</u> Sathi-34, 36, GR-3, Sukhvel-20, IR-28, GR-5,8 & 9	<u>Clusterbean</u> Hg-75, Gujarat Guar 1 or 2 <u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • 25% higher seed rate with 60 cm spacing • Reduce the fertilizer by 40 Per Cent • Seed hardening (soaking the seed 3 to 4 hours in water followed by shadow drying) • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMAS OL • Seed drill under RKVY (costing Rs. 30000/-) • Gypsum provided under subsidies rate by Govt. Agency.
	<u>Maize</u> -Private Hybrids- Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	do
	Groundnut <u>-Spreading type</u> GAUG-10, GG-11, 12 & 13. <u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1	<u>Clusterbean</u> Hg-75, Gujarat Guar 1 or 2 <u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • 25% higher seed rate with 60 cm spacing • Reduce the fertilizer by 40 Per Cent • Seed hardening (soaking the seed 3 to 4 hours in water followed by shadow drying) • In fodder Sorghum, apply 20 kg 	do

		<u>-Semi spreading</u> GG-20		S/ha through Gypsum	
		Green gram Guj.Mung-1,2,3 & 4, K-851	<u>Fodder sorghum</u> -GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMAS OL • Seed drill under RKVY (costing Rs. 30000/-)
		Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	<u>Fodder sorghum</u> -GJ-39, Malvan	do	do
		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Dual purpose Sorghum Gujarat Jowar-39 and Malvan	---	do
		Fodder crop Jowar: GFS-4,5 S-1049 (sundhiya jowar)	<u>Jowar</u> : S-1049, SSG-59-3 (Multicut) <u>Bajra</u> : GF Bajra-1 (Multicut)	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate
		<u>Maize local</u> :	African tall	do	Bund maker can be provided under RKVY
	High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur,Bayad, Vadali, Vijaynagar)	Cropping system: Cotton-Wheat, Maize-Wheat & Groundnut-Wheat <u>Bajra</u> GHB- 558,538,577,719,732	<ul style="list-style-type: none"> • Clusterbean HG-75, Gujarat Guar 1 or 2 	<ul style="list-style-type: none"> • 25% higher seed rate with 60 cm spacing • Reduce the fertilizer by 40 Per Cent • Seed hardening (soaking the seed 3 to 4 hours in water followed by shadow drying) 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMAS OL • Seed drill under RKVY (costing Rs. 30000/-) • Ridge & furrow maker can be provided under RKVY

				or other Govt. Agency.
		<ul style="list-style-type: none"> Fodder sorghum GJ-39 and Malvan 	<ul style="list-style-type: none"> Wider spacing at 60 cm with 25 Per Cent higher seed rate Reduce the fertilizer application by 40 Per Cent In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMAS OL Seed drill under RKVY (costing Rs. 30000/-) Ridge & furrow maker can be provided under RKVY or other Govt. Agency.+ Gypsum provided under subsidies rate by Govt. Agency.
	<u>Maize</u> -Private Hybrids- Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> Wider spacing at 60 cm with 25 Per Cent higher seed rate Reduce the fertilizer application by 40 Per Cent In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMAS OL Seed drill under RKVY (costing Rs. 30000/-) Ridge & furrow maker can be provided under RKVY or other Govt. Agency.+ Gypsum provided under subsidies rate by Govt. Agency.
	Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<u>Castor</u> (GCH-4,5 or 7) + <u>Mothbean</u> (GMO-2) (1:2 row ratio) (two line of Mothbean in regular spacing of Castor)	<ul style="list-style-type: none"> Seed hardening (soaking the seed 4 to 6 hours in water followed by shadow drying) Compartmental bunding (3.6 X 5.0 m) Reduction in fertilizer application by 50 Per Cent Sowing distance 120 cm for castor No fertilizer application for inter crop 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMAS OL Seed drill under RKVY (costing Rs. 30000/-) Bund maker provide under RKVY
	Groundnut	<u>Clusterbean</u>	<ul style="list-style-type: none"> 25% higher seed rate with 60 cm 	<ul style="list-style-type: none"> Breeder seed source SAU

	<p>-<u>Spreading type</u> GAUG-10, GG-11, 12 & 13.</p> <p>-<u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1</p> <p>-<u>Semi spreading</u> GG-20</p>	Hg-75, Gujarat Guar 1 or 2 <u>Fodder Jowar</u> GJ-39, Malvan	<p>spacing</p> <ul style="list-style-type: none"> • Reduce the fertilizer by 40 Per Cent • Seed hardening (soaking the seed 3 to 4 hours in water followed by shadow drying) • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Certified seed source NSC,GSSC,GUJCOMAS OL • Seed drill under RKVY (costing Rs. 30000/-) • Gypsum provided under subsidies rate by Govt. Agency.
	<u>Cotton (Bt)</u>	<ul style="list-style-type: none"> • Castor (GCH-4,5 or 7) • Castor (GCH-4,5 or 7) + Clusterbean (Guj Guar 1 or 2) • One row of Cowpea or Clusterbean between regular two row of castor without giving any fertilizer 	<ul style="list-style-type: none"> • Seed hardening (soaking the seed 8 hours in water followed by shadow drying) • Sow the castor crop at 120 cm spacing • Compartmental bunding (3.6 X 6.0 m) 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMAS OL • Seed drill under RKVY (costing Rs. 30000/-) • Ridge & furrow maker can be provided under RKVY or other Govt. Agency.
	Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Dual purpose Sorghum Gujarat Jowar-39 and Malvan	---	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMAS OL • Seed drill under RKVY (costing Rs. 30000/-)
	Fodder crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<u>Jowar:</u> S-1049, SSG-59-3 (Multicut) <u>Bajra:</u> GF Bajra-1 (Multicut)	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate
	<u>Maize local:</u>	African tall	do	Bund maker can be provided under RKVY

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 8 weeks August 3 rd week	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat <u>Cotton (Bt)</u>	<u>Clusterbean</u> Hg-75, Gujarat Guar 1 or 2 <u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> 25% higher seed rate with 60 cm spacing Reduce the fertilizer by 40 Per Cent Seed hardening (soaking the seed 3 to 4 hours in water followed by shadow drying) In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMASOL Seed drill under RKVY (costing Rs. 30000/-) Ridge & furrow maker can be provided under RKVY or other Govt. Agency. Gypsum provided under subsidies rate by Govt. Agency.
		Groundnut <u>-Spreading type</u> GAUG-10, GG-11, 12 & 13. <u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 <u>-Semi spreading</u> GG-20	<u>Sesame</u> Purva (semi rabi var.) Purva-1	As such	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMASOL
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> Castor (GCH-4,5 or 7) + Cowpea (GC-4 (one line of Cowpea in regular spacing of castor) Or <ul style="list-style-type: none"> Castor (GCH-4,5 or 7) + Purva Til (purva-1) 	<ul style="list-style-type: none"> Seed hardening (soaking the seed 4 to 6 hours in water followed by shadow drying) Reduction in fertilizer application by 50 Per Cent Sowing distance 120 cm for castor No fertilizer application for inter crop 	<ul style="list-style-type: none"> Breeder seed source SAU Certified seed source NSC,GSSC,GUJCOMASOL Bund maker provide under RKVY Seed drill can be provided under RKVY or any other Govt. Agency on subsidies rate

		(1:1 Row ratio)		
	<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-) • Gypsum provided under subsidies rate by Govt. Agency.
	Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Dual purpose Sorghum Gujarat Jowar-39 and Malvan	---	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-)
	Green gram Guj.Mung-1,2,3 & 4, K-851	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-) • Gypsum provided under subsidies rate by Govt. Agency.
	Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	<u>Fodder Jowar</u> GJ-39, Malvan	do	do
	Fodder crop <u>Jowar:</u> GFS-4,5, S-1049 (sundhiya jowar)	<u>Jowar:</u> S-1049, SSG-59-3 (Multicut) <u>Bajra:</u> GF Bajra-1 (Multicut) Reduce the 25 % seed rate	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate • Bund maker can be provided under RKVY
	<u>Maize local:</u>	<u>Jowar:</u> S-1049, SSG-59-3 (Multicut) <u>Bajra:</u> GF Bajra-1 (Multicut) Reduce the 25 % seed rate	do	<ul style="list-style-type: none"> • Bund maker can be provided under RKVY • Gypsum may supplied by GSFC under subsidies rate

Medium rainfall, Medium black soil (Khedbrahma, Meghraj)	Cropping system: Cotton- Wheat, Maize-Wheat & Paddy-Wheat <u>Cotton (Bt)</u>	<u>Clusterbean Hg-75</u> , Gujarat Guar 1 or 2 <u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • 25% higher seed rate with 60 cm spacing • Reduce the fertilizer by 40 Per Cent • Seed hardening (soaking the seed 3 to 4 hours in water followed by shadow drying) • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-) • Ridge & furrow maker can be provided under RKVY or other Govt. Agency. • Gypsum provided under subsidies rate by Govt. Agency.
	Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Castor (GCH-4,5 or 7) + Cowpea (GC-4 (one line of Cowpea in regular spacing of castor) Or <ul style="list-style-type: none"> • Castor (GCH-4,5 or 7) + Purva Til (purva-1) (1:1 Row ratio) 	<ul style="list-style-type: none"> • Seed hardening (soaking the seed 4 to 6 hours in water followed by shadow drying) • Reduction in fertilizer application by 50 Per Cent • Sowing distance 120 cm for castor • No fertilizer application for inter crop 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Bund maker provide under RKVY • Seed drill can be provided under RKVY or any other Govt. Agency on subsidies rate
	<u>Rice</u> <u>-Transplanting Var.</u> GR-3,4,5,6 GR-7(Scented), GR-8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. <u>-Drill paddy</u> Sathi-34, 36, GR-3, Sukhvel-20, IR-28, GR-5,8 & 9	Keep fellow	<ul style="list-style-type: none"> • Residual moisture be utilized for sowing gram or wheat (Duram) 	---
	<u>Maize</u> <u>-Private Hybrids-Pusa early</u>	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source

	hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti		<ul style="list-style-type: none"> • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-) • Gypsum provided under subsidies rate by Govt. Agency.
	Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 - <u>Semi spreading</u> GG-20	<u>Sesame</u> Purva (semi rabi var.) Purva-1	As such	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL
	Green gram Guj.Mung-1,2,3 & 4, K-851	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-) • Gypsum provided under subsidies rate by Govt. Agency.
	Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	<u>Fodder Jowar</u> GJ-39, Malvan	do	do
	Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Dual purpose Sorghum Gujarat Jowar-39 and Malvan	---	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-)
	Fodder crop <u>Jowar</u> : GFS-4,5, S-1049 (sundhiya jowar)	<u>Jowar</u> :S-1049, SSG-59-3 (Multicut) <u>Bajra</u> :GF Bajra-1 (Multicut) Reduce the 25 % seed rate	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate • Bund maker can be provided under RKVY

		<u>Maize local:</u>	<u>Jowar:</u> S-1049, SSG-59-3 (Multicut) <u>Bajra:</u> GF Bajra-1 (Multicut) Reduce the 25 % seed rate	<ul style="list-style-type: none"> • Compartmental Bunding(3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Bund maker can be provided under RKVY • Gypsum may supplied by GSFC under subsidies rate
High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur,Bayad, Vadali, Vijaynagar)		Cropping system: Cotton-Wheat, Maize-Wheat & Groundnut-Wheat <u>Bajra</u> GHB-558,538,577,719,732	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-) • Ridge & furrow maker can be provided under RKVY or other Govt. Agency. • Gypsum provided under subsidies rate by Govt. Agency.
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<u>Fodder Jowar</u> GJ-39, Malvan	<ul style="list-style-type: none"> • Wider spacing at 60 cm with 25 Per Cent higher seed rate • Reduce the fertilizer application by 40 Per Cent • In fodder Sorghum, apply 20 kg S/ha through Gypsum 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-) • Gypsum provided under subsidies rate by Govt. Agency.
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Castor (GCH-4,5 or 7) + Cowpea (GC-4 (one line of Cowpea in regular spacing of castor) <p>Or</p> <ul style="list-style-type: none"> • Castor (GCH-4,5 or 7) + Purva Til 	<ul style="list-style-type: none"> • Seed hardening (soaking the seed 4 to 6 hours in water followed by shadow drying) • Reduction in fertilizer application by 50 Per Cent • Sowing distance 120 cm for castor • No fertilizer application for inter crop 	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Bund maker provide under RKVY • Seed drill can be provided under RKVY or any other Govt. Agency on subsidies rate

			(purva-1) (1:1 Row ratio)		
		Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 - <u>Semi spreading</u> GG-20 <u>Cotton (Bt)</u>	<u>Sesame</u> Purva (semi rabi var.) Purva-1	As such	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL
		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Dual purpose Sorghum Gujarat Jowar-39 and Malvan	---	<ul style="list-style-type: none"> • Breeder seed source SAU • Certified seed source NSC,GSSC,GUJCOMASOL • Seed drill under RKVY (costing Rs. 30000/-)
		Fodder crop <u>Jowar</u> : GFS-4,5, S-1049 (sundhiya jowar)	<u>Jowar</u> :S-1049, SSG-59-3 (Multicut) <u>Bajra</u> :GF Bajra-1 (Multicut) Reduce the 25 % seed rate	<ul style="list-style-type: none"> • Compartmental Bunding (3.6 m x 6.0 m) • S applicaton @ 20 kg/ha in form of Gypsum 	<ul style="list-style-type: none"> • Seed source NSC, GUJCOMASOL, GSSC. • Gypsum may supplied by GSFC under subsidies rate • Bund maker can be provided under RKVY
		<u>Maize local</u> :	<u>Jowar</u> :S-1049, SSG-59-3 (Multicut) <u>Bajra</u> : GF Bajra-1 (Multicut) Reduce the 25 % seed rate	do	<ul style="list-style-type: none"> • Bund maker can be provided under RKVY • Gypsum may supplied by GSFC under subsidies rate

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat <u>Cotton (Bt)</u>	Gap filling and thinning to retain one plant / hill	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate
		Groundnut <u>-Spreading type</u> GAUG-10, GG-11, 12 & 13. <u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 <u>-Semi spreading</u> GG-20	Gap filling	do	do
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	Gap filling and Thinning to retain one plant/hill	do	do
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	Gap filling and thinning to maintain 20 cm plant to plant distance	do	do
		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Gap filling and Thinning to retain one plant/hill	do	do
		Green gram Guj.Mung-1,2,3 & 4, K-851	----	do	do
		Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	----	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate

		Fodder crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	As such	As such	-----
		Maize local:	As such	As such	----
Medium rainfall, Medium black soil (Khedbrahma, Meghraj)		Cropping system: Cotton-Wheat, Maize-Wheat & Paddy-Wheat <u>Cotton (Bt)</u>	Gap filling and thinning to retain one plant / hill	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	do
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	do	do	do
		<u>Rice</u> <u>-Transplanting Var.</u> GR-3,4,5,6 GR-7(Scented), GR- 8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. <u>-Drill paddy</u> Sathi-34, 36, GR-3, Sukhvel-20, IR-28, GR-5,8 & 9	----	Apply irrigation if required	----
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	Gap filling and thinning to maintain 20 cm plant to plant distance	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate
		Groundnut <u>-Spreading type</u> GAUG-10, GG-11, 12 & 13. <u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6,	Gap filling	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate

		GAUG-1 - <u>Semi spreading</u> GG-20			
		Green gram Guj.Mung-1,2,3 & 4, K-851	----	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	do
		Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	----	do	do
		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	Gap filling and Thinning to retain one plant/hill	do	do
		Fodder crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	As such	As such	-----
		Maize local:	As such	As such	-----
	High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur, Bayad, Vadali, Vijaynagar)	Cropping system: Cotton-Wheat, Maize-Wheat & Groundnut-Wheat <u>Bajra</u> GHB-558,538,577,719,732	Thinning to maintain 10 to 15 cm plant to plant distance	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	Gap filling and thinning to maintain 20 cm plant to plant distance	do	do
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	Gap filling and Thinning to retain one plant/hill	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate
		Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13.	Gap filling	Conservation of soil moisture by hoeing and weeding. Use weeds as mulch	do

		- <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 - <u>Semi spreading</u> GG-20 <u>Cotton (Bt)</u>			
		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT- 101, Banas, GTH-1	Gap filling and Thinning to retain one plant/hill	do	do
		Fodder crop Jowar: GFS-4,5 S-1049 (sundhiya jowar)	As such	As such	-----
		Maize local:	As such	As such	-----

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 & moisture conservation measures	Remarks on Implementation
At vegetative stage	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> Reduce the plant population by 15 to 20 Per Cent and use as mulching material Alternate furrow irrigation or irrigation through MIS if possible 	<ul style="list-style-type: none"> Conservation of soil moisture by hoeing and weeds use as mulch Mulching of farm byproduct @ 10t/ha (castor shell or Bajra husk) Postponed the top dressing of N fertilizers Mulching (Plastic film 25 micron & 200 kg/ha) 	<ul style="list-style-type: none"> Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate Mulching material under RKVY or Govt. subsidies rate Water harvested structure can be constructed under NAREGA
		Groundnut	<ul style="list-style-type: none"> Weeding & hoeing 	<ul style="list-style-type: none"> Aviod top dressing of N 	<ul style="list-style-type: none"> Implements for hoeing &

		<p><u>-Spreading type</u> GAUG-10, GG-11, 12 & 13.</p> <p><u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1</p> <p><u>-Semi spreading</u> GG-20</p>	<ul style="list-style-type: none"> • Protection against sucking pest(Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • If possible life saving irrigation through MIS 	<p>fertilizers</p> <ul style="list-style-type: none"> • Mulching of farm byproduct @ 10t/ha (castor cell or Bajara husk) • Mulching (Plastic film 25 micron @200 kg/ha) 	<p>weeding be procured under RKVY or Govt. subsidies rate</p> <ul style="list-style-type: none"> • Mulching material can be provided under RKVY • MIS can be provided under subsidies rate through GGRC
		<p>Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1</p>	<ul style="list-style-type: none"> • Reduce the plant population by 10 to 15 Per Cent and use as mulch • Alternate furrow irrigation • If possible life saving irrigation through MIS 	<ul style="list-style-type: none"> • Conservation of soil moisture by hoeing and weeds use as mulch • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra) • Postponed the top dressing of N fertilizers • Mulching (Plastic film 25 micron @ 200 kg/ha)+ Spraying of 5% kaolin solution 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under NAREGA • MIS can be provided under subsidies rate through GGRC
		<p><u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti</p>	<ul style="list-style-type: none"> • Thining of 20 Per Cent plant from the line and use as fodder • Life saving irrigation • Earthingup by harrowing • Control of leaf borer apply 3 to 4 granules of tenic in leaf hole 	<ul style="list-style-type: none"> • Delayed top dressing of N fertilizers 	<ul style="list-style-type: none"> • Soil earthing up implement be procured under RKVY or Govt. subsidies rate
		<p>Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1</p>	<ul style="list-style-type: none"> • Reduce the plant population by 10 to 15 Per Cent and use as mulch • Alternate furrow irrigation • weeding • Protection against sucking pest (Spraying of 	<ul style="list-style-type: none"> • Conservation of soil moisture by hoeing and weeds use as mulch • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra) • Postponed the top dressing of N fertilizers • Mulching (Plastic film 25 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under

			<p>Methyle o demeton or Diamethioate 10 ml/10 lit of water)</p> <ul style="list-style-type: none"> • If possible life saving irrigation through MIS 	micron @ 200 kg/ha)	<p>NAREGA</p> <ul style="list-style-type: none"> • MIS can be provided under subsidies rate through GGRC
		<p>Green gram Guj.Mung-1,2,3 & 4, K-851</p>	<ul style="list-style-type: none"> • Removal of 20% plant from the row • Weeding • Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • If possible life saving irrigation through MIS 	Interculturing	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate
		<p>Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1</p>	<ul style="list-style-type: none"> • Removal of 20% plant from the row • Weeding • Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • -If possible life saving irrigation through MIS • Alternate furrow irrigation or irrigation through MIS if possible. 	<ul style="list-style-type: none"> • Interculturing • weeds use as mulch • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra husk) • Postponed the top dressing of N fertilizers • Mulch9ing (Plastic film 25 micron & 200 kg/ha) 	--
		<p>Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)</p>	<ul style="list-style-type: none"> • Interculturing • Soil mulch by selo interculturing • Life saving irrigation if possible. 	<ul style="list-style-type: none"> • Restrict the fertilizer application if moisture is insufficient • Reduce 25% plant population 	---
		Maize local:	do	do	---
	Medium rainfall,	Cropping system: Cotton-Wheat, Maize-			

Medium black soil (Khedbrahma, Meghraj)	Wheat & Paddy-Wheat <u>Cotton (Bt)</u>	Reduce the plant population by 15 to 20 Per Cent and use as mulching material	Conservation of soil moisture by hoeing and	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under NAREGA
	Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Reduce the plant population by 10 to 15 Per Cent and use as mulch • Alternate furrow irrigation • If possible life saving irrigation through MIS 	<ul style="list-style-type: none"> • Conservation of soil moisture by hoeing and weeds use as mulch • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra) • Postponed the top dressing of N fertilizers • Mulching (Plastic film 25 micron @ 200 kg/ha)+ Spraying of 5% kaolin solution 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under NAREGA • MIS can be provided under subsidies rate through GGRC
	<u>Rice</u> -Transplanting Var. GR-3,4,5,6 GR-7(Scented), GR-8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. -Drill paddy Sathi-34, 36, GR-3, Sukhvel-20, IR-28, GR-5,8 & 9	Life saving irrigation	Delayed top dressing of N fertilizers	---
	<u>Maize</u> -Private Hybrids-Pusa	<ul style="list-style-type: none"> • Thining of 20 Per Cent plant from the line and 	Delayed top dressing of N fertilizers	Soil earthing up implement be procured under RKVY or

	early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> use as fodder Life saving irrigation Earthingup by harrowing Control of leaf borer apply 3 to 4 granules of tenic in leaf hole 		Govt. subsidies rate
	Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 - <u>Semi spreading</u> GG-20	<ul style="list-style-type: none"> Weeding & hoeing Protection against sucking pest(Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) If possible life saving irrigation through MIS 	<ul style="list-style-type: none"> Aviod top dressing of N fertilizers Mulching of farm byproduct @ 10t/ha (castor cell or Bajara husk) Mulching (Plastic film 25 micron @200 kg/ha) 	<ul style="list-style-type: none"> Implements for hoeing & weeding be procured under RKVY or Govt. subsides rate Mulching material can be provided under RKVY MIS can be provided under subsidies rate through GGRC
	Green gram Guj.Mung-1,2,3 & 4, K-851	<ul style="list-style-type: none"> Removal of 20% plant from the row Weeding Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) If possible life saving irrigation through MIS 	Interculturing	Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate
	Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	do	Interculturing	do

		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	<ul style="list-style-type: none"> • Reduce the plant population by 10 to 15 Per Cent and use as mulch • Alternate furrow irrigation • weeding • Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • If possible life saving irrigation through MIS 	<ul style="list-style-type: none"> • Conservation of soil moisture by hoeing and weeds use as mulch • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra) • Postponed the top dressing of N fertilizers • Mulching (Plastic film 25 micron @ 200 kg/ha) 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under NAREGA • MIS can be provided under subsidies rate through GGRC
		Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<ul style="list-style-type: none"> • Interculturing • Soil mulch by selo interculturing • Life saving irrigation if possible. 	<ul style="list-style-type: none"> • Restrict the fertilizer application if moisture is insufficient • Reduce 25% plant population 	---
		Maize local:	<ul style="list-style-type: none"> • Interculturing • Soil mulch by selo interculturing • Life saving irrigation if possible. 	<ul style="list-style-type: none"> • Restrict the fertilizer application if moisture is insufficient • Reduce 25% plant population 	---
	High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur, Bayad, Vadali, Vijaynagar)	Cropping system: Cotton-Wheat, Maize-Wheat & Groundnut-Wheat <u>Bajra</u> GHB-558,538,577,719,732	<ul style="list-style-type: none"> • Thinning of 20 to 25 % plants within row • Life saving irrigation if possible 	<ul style="list-style-type: none"> • Conservation of soil moisture by hoeing and weeding • Postponed the top dressing of N fertilizers • Spraying of 5 % kaoline solution 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under

					NAREGA
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> • Thining of 20 Per Cent plant from the line and use as fodder • Life saving irrigation • Earthingup by harrowing • Control of leaf borer apply 3 to 4 granules of tenic in leaf hole 	Delayed top dressing of N fertilizers	Soil earthing up implement be procured under RKVY or Govt. subsidies rate
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Reduce the plant population by 10 to 15 Per Cent and use as mulch • Alternate furrow irrigation • If possible life saving irrigation through MIS 	<ul style="list-style-type: none"> • Conservation of soil moisture by hoeing and weeds use as mulch • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra) • Postponed the top dressing of N fertilizers • Mulching (Plastic film 25 micron @ 200 kg/ha)+ Spraying of 5% kaolin solution 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under NAREGA • MIS can be provided under subsidies rate through GGRC
		Groundnut <u>-Spreading type</u> GAUG-10, GG-11, 12 & 13. <u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 <u>-Semi spreading</u> GG-20 <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> • Weeding & hoeing • Protection against sucking pest(Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • If possible life saving irrigation through MIS 	<ul style="list-style-type: none"> • Aviod top dressing of N fertilizers • Mulching of farm byproduct @ 10t/ha (castor cell or Bajara husk) • Mulching (Plastic film 25 micron @200 kg/ha) 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under NAREGA • MIS can be provided under subsidies rate through GGRC

		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	<ul style="list-style-type: none"> • Reduce the plant population by 10 to 15 Per Cent and use as mulch • Alternate furrow irrigation • weeding • Protection against sucking pest (Spraying of Methyl demeton or Diamethioate 10 ml/10 lit of water) • If possible life saving irrigation through MIS 	<ul style="list-style-type: none"> • Conservation of soil moisture by hoeing and weeds use as mulch • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra) • Postponed the top dressing of N fertilizers • Mulching (Plastic film 25 micron @ 200 kg/ha) 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate • Water harvested structure can be constructed under NAREGA • MIS can be provided under subsidies rate through GGRC
		Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<ul style="list-style-type: none"> • Interculturing • Soil mulch by selo interculturing • Life saving irrigation if possible. 	<ul style="list-style-type: none"> • Restrict the fertilizer application if moisture is insufficient • Reduce 25% plant population 	---
		Maize local:	do	do	---

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell)					
At flowering/ fruiting stage	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> Reduce the plant population by 15 to 20 Per Cent and use as mulching material Alternate furrow irrigation or irrigation through drip system Protect the crop against parawilt: Band application of organic manures and 25% NPK as additional dose Spraying of 0.5 % MgSO₄ solution Drenching of <i>Trichoderma Viride</i> and <i>Pseudomonas fluorescense</i> (PGPS) 100 gm in 10 lit. water 	<ul style="list-style-type: none"> Avoid top dressing of N fertilizers Mulching of farm byproduct @ 10t/ha (castor shell or Bajra husk) Mulching (Plastic film 25 micron @ 200 kg/ha) 	Mulching material like plastic film can be provided under RKVY or Cotton Mission
		Groundnut <u>-Spreading type</u> GAUG-10, GG-11, 12 & 13. <u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 <u>-Semi spreading</u> GG-20	Life saving irrigation	<ul style="list-style-type: none"> Mulching of farm byproduct @ 10t/ha (castor cell, Bajra, wheat husk) Mulching (Plastic film 25 micron @ 200 kg/ha) 	<ul style="list-style-type: none"> Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate Mulching material under RKVY or Govt. subsidies rate
		<u>Castor</u> GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> Removal of plant population from 20% and use as mulch Alternate furrow irrigation or irrigation through MIS if possible Remove the 2 lower elder leaves and use as mulch 	<ul style="list-style-type: none"> Avoid top dressing of N fertilizers Spraying of 5% kaolin solution Mulching of farm byproduct @ 10t/ha (castor shell or Bajra 	<ul style="list-style-type: none"> Kaolin and mulching material provided under RKVY or other Govt. Agency MIS can be provided under

				husk) <ul style="list-style-type: none"> Mulching (Plastic film 25 micron @ 200 kg/ha) 	GGRC
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 &6, Narmada moti	<ul style="list-style-type: none"> Removal of 20 % plant and use as fodder Removal of barren plants and use as fodder Life saving irrigation De tesseling of every third row and use as fodder 	<ul style="list-style-type: none"> Mulching of farm byproduct as mulching material @ 10t/ha (castor shell or Bajra) Postponed the top dressing of N fertilizers Mulching (Plastic film 25 micron @ 200 kg/ha) 	Mulching material under RKVY or Govt. subsidies rate
		<u>Pigeonpea</u> T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	<ul style="list-style-type: none"> Removal of 20% to 25 % plant from the row and use as fodder life saving irrigation Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) Protection against podborer (spraying of monocrotophos 10 ml, endosulphan 20 ml or Acefet 20 gm in 10 lit of water at 50% flowering followed by 15 day) 	---	Sprayers and duster be procured under RKVY or pulse production mission
		<u>Green gram</u> Guj.Mung-1,2,3 & 4, K-851	do	---	do
		<u>Black gram</u> Zandewal, T-9, TPU-4, Pusa-1, Guj. Urad-1	do	---	do
		Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	Life saving irrigation if possible.	<ul style="list-style-type: none"> Restrict the fertilizer application if moisture is insufficient Reduce 30 % plant population 	---
		<u>Maize local:</u>	Life saving irrigation if possible.	Reduce 25% plant population	---
	Medium	Cropping system:			

rainfall, Medium black soil (Khedbrahma, Meghraj)	Cotton-Wheat, Maize- Wheat & Paddy-Wheat <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> • Reduce the plant population by 15 to 20 Per Cent and use as mulching material • Alternate furrow irrigation or irrigation through drip system • Protect the crop against parawilt: • Band application of organic manures and 25% NPK as additional dose • Spraying of 0.5 % MgSO₄ solution • Drenching of <i>Trichoderma Viride</i> and <i>Pseudomonas fluorescense</i> (PGPS) 100 gm in 10 lit. water 	<ul style="list-style-type: none"> • Avoid top dressing of N fertilizers • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra husk) • Mulching (Plastic film 25 micron @ 200 kg/ha) 	Mulching material like plastic film can be provided under RKVY or Cotton Mission
	<u>Castor</u> GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Removal of plant population from 20% and use as mulch • Alternate furrow irrigation or irrigation through MIS if possible • Remove the 2 lower elder leaves and use as mulch 	<ul style="list-style-type: none"> • Avoid top dressing of N fertilizers • Spraying of 5% kaolin solution • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra husk) • Mulching (Plastic film 25 micron @ 200 kg/ha) 	<ul style="list-style-type: none"> • Kaolin and mulching material provided under RKVY or other Govt. Agency • MIS can be provided under GGRC
	<u>Rice</u> - <u>Transplanting Var.</u> GR-3,4,5,6 GR-7(Scented), GR-8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. - <u>Drill paddy</u> Sathi-34, 36, GR-3, Sukhvel-20, IR-28,	<ul style="list-style-type: none"> • Life saving irrigation • Protect crop against stem borer and leaf roller (apply carbosulphan 5% 20 kg/ha or kartep hydrochloride 4 % granules 25 kg/ha in standing crop) 	Delayed top dressing	---

		GR-5,8 & 9			
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> Removal of 20 % plant and use as fodder Removal of barren plants and use as fodder Life saving irrigation De tesseling of every third row and use as fodder 	<ul style="list-style-type: none"> Mulching of farm byproduct as mulching material @ 10t/ha (castor shell or Bajra) Postponed the top dressing of N fertilizers Mulching (Plastic film 25 micron @ 200 kg/ha) 	Mulching material under RKVY or Govt. subsidies rate
		<u>Groundnut</u> - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 - <u>Semi spreading</u> GG-20	Life saving irrigation	<ul style="list-style-type: none"> Mulching of farm byproduct @ 10t/ha (castor cell, Bajra, wheat husk) Mulching (Plastic film 25 micron @ 200 kg/ha) 	<ul style="list-style-type: none"> Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate Mulching material under RKVY or Govt. subsidies rate
		<u>Green gram</u> Guj.Mung-1,2,3 & 4, K-851	<ul style="list-style-type: none"> Removal of 20% to 25 % plant from the row and use as fodder Life saving irrigation Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) Protection against podborer (spraying of monocrotophos 10 ml, endosulphan 20 ml or Acefet 20 gm in 10 lit of water at 50% flowering followed by 15 day) 	---	Sprayers and duster be procured under RKVY or pulse production mission
		<u>Black gram</u> Zandewal, T-9, TPU-4, Pusa-1, Guj.Urad-1	do	---	do
		<u>Pigeonpea</u> T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	do	---	Sprayers and duster be procured under RKVY or pulse production mission

		Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	Life saving irrigation if possible.	<ul style="list-style-type: none"> • Restrict the fertilizer application if moisture is insufficient • Reduce 30 % plant population 	---
		<u>Maize local:</u>	do	Reduce 25% plant population	---
High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur,Bayad, Vadali, Vijaynagar)		Cropping system: Cotton-Wheat, Maize-Wheat & Groundnut-Wheat <u>Bajra</u> GHB- 558,538,577,719,732	<ul style="list-style-type: none"> • Remove the barren tillers and use as fodder • Remove the every fourth row and use as dry fodder • Life saving irrigation if possible 	<ul style="list-style-type: none"> • Spraying of 5% kaolin solution 	<ul style="list-style-type: none"> • Labour for harvesting can be provided under MANREGA • Kaolin provided under RKVY or NFSM
		<u>Maize</u> -Private Hybrids-Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> • Removal of 20 % plant and use as fodder • Removal of barren plants and use as fodder • Life saving irrigation • De tesseling of every third row and use as fodder 	<ul style="list-style-type: none"> • Mulching of farm byproduct as mulching material @ 10t/ha (castor shell or Bajra) • Postponed the top dressing of N fertilizers • Mulching (Plastic film 25 micron @ 200 kg/ha) 	Mulching material under RKVY or Govt. subsidies rate
		Castor GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Removal of plant population from 20% and use as mulch • Alternate furrow irrigation or irrigation through MIS if possible • Remove the 2 lower elder leaves and use as mulch 	<ul style="list-style-type: none"> • Avoid top dressing of N fertilizers • Spraying of 5% kaolin solution • Mulching of farm byproduct @ 10t/ha (castor shell or Bajra husk) • Mulching (Plastic film 25 micron @ 200 kg/ha) 	<ul style="list-style-type: none"> • Kaolin and mulching material provided under RKVY or other Govt. Agency • MIS can be provided under GGRC

	<p>Groundnut -<u>Spreading type</u> GAUG-10, GG-11, 12 & 13.</p> <p>-<u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1</p> <p>-<u>Semi spreading</u> GG-20</p> <p><u>Cotton (Bt)</u></p>	Life saving irrigation	<ul style="list-style-type: none"> • Mulching of farm byproduct @ 10t/ha (castor cell, Bajra, wheat husk) • Mulching (Plastic film 25 micron @ 200 kg/ha) 	<ul style="list-style-type: none"> • Implements for hoeing & weeding be procured under RKVY or Govt. subsidies rate • Mulching material under RKVY or Govt. subsidies rate
	<p>Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1</p>	<ul style="list-style-type: none"> • Removal of 20% to 25 % plant from the row and use as fodder • life saving irrigation • Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • Protection against podborer (spraying of monocrotophos 10 ml, endosulphan 20 ml or Acefet 20 gm in 10 lit of water at 50% flowering followed by 15 day) 	---	<ul style="list-style-type: none"> • Sprayers and duster be procured under RKVY or pulse production mission
	<p>Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)</p>	Life saving irrigation if possible.	<ul style="list-style-type: none"> • Restrict the fertilizer application if moisture is insufficient • Reduce 30 % plant population 	---
	<u>Maize local:</u>	do	Reduce 25% plant population	---

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)					
At Maturity stage	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	Cropping System: Cotton-Wheat, Groundnut-Wheat and Maize Wheat <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> • Pick up lint from brusted ball • Alternate furrow irrigation • Cut down the lower unproductive twigs and kept as mulch 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		<u>Groundnut</u> - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 - <u>Semi spreading</u> GG-20	<ul style="list-style-type: none"> • Harvest the crop at physiological maturity stage • Life saving irrigation 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		<u>Castor</u> GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Alternate furrow irrigation • Harvest the mature spike • Harvest the spike at physiological maturity stage 	---	---
		<u>Maize</u> -Private Hybrids- Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> • Harvest the crop at physiological maturity stage • Life saving irrigation in alternate furrow • Harvest the green cob and sale it 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		Pigeonpea	<ul style="list-style-type: none"> • Alternate furrow irrigation 	<ul style="list-style-type: none"> • Land preparation for rabi 	---

		T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	<ul style="list-style-type: none"> • Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • Protection against podborer (spraying of monocrotophos 10 ml, endosulphan 20 ml or Acefet 20 gm in 10 lit of water at 50% flowering followed by 15 day) • Pickup green pod and market as green vegetable • Harvest the crop at physiological maturity stage 	<p>crop according to ground water recharging</p> <ul style="list-style-type: none"> • Procurements of inputs 	
		Green gram Guj.Mung-1,2,3 & 4, K-851	<ul style="list-style-type: none"> • Life saving irrigation • Harvest mature pods 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj. Urad-1	<ul style="list-style-type: none"> • Life saving irrigation • Harvest mature pods 	do	---
		Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<ul style="list-style-type: none"> • Harvest the crop and drying 	<ul style="list-style-type: none"> • Land preparation for rabi crops • Procurement of inputs 	---
		<u>Maize local:</u>	do	do	---
	Medium rainfall, Medium black soil (Khedbrahma, Meghraj)	Cropping system: Cotton-Wheat, Maize-Wheat & Paddy-Wheat <u>Cotton (Bi)</u>	<ul style="list-style-type: none"> • Pick up lint from brusted ball • Alternate furrow irrigation • Cut down the lower unproductive twigs and kept as mulch 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		<u>Castor</u>	<ul style="list-style-type: none"> • Alternate furrow irrigation 	---	---

		GCH-2,GCH-3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Harvest the mature spike • Harvest the spike at physiological maturity stage 		
		<u>Rice</u> <u>-Transplanting Var.</u> GR-3,4,5,6 GR-7(Scented), GR-8, 11, IR-22, IR-28, Gurjary, Masoori, Jaya, GR-101, GR-103, Ambica, Jirasal, Kamod-118. <u>-Drill paddy</u> Sathi-34, 36, GR-3, Sukhvel-20, IR-28, GR-5,8 & 9	<ul style="list-style-type: none"> • Harvest the crop at physiological maturity stage • Life saving irrigation 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		<u>Maize</u> -Private Hybrids- Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> • Harvest the crop at physiological maturity stage • Life saving irrigation in alternate furrow • Harvest the green cob and sale it 	do	---
		Groundnut <u>-Spreading type</u> GAUG-10, GG-11, 12 & 13. <u>-Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG-1 <u>-Semi spreading</u> GG-20	<ul style="list-style-type: none"> • Harvest the crop at physiological maturity stage • Life saving irrigation 	do	---
		Green gram	<ul style="list-style-type: none"> • Life saving irrigation 	do	---

		Guj.Mung-1,2,3 & 4, K-851	<ul style="list-style-type: none"> Harvest mature pods 		
		Black gram Zandewal, T-9, TPU-4, Pusa-1, Guj. Urad-1	<ul style="list-style-type: none"> Life saving irrigation Harvest mature pods 	<ul style="list-style-type: none"> Land preparation for rabi crop according to ground water recharging Procurements of inputs 	---
		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT-101, Banas, GTH-1	<ul style="list-style-type: none"> Alternate furrow irrigation Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) Protection against podborer (spraying of monocrotophos 10 ml, endosulphan 20 ml or Acefet 20 gm in 10 lit of water at 50% flowering followed by 15 day) Pickup green pod and market as green vegetable Harvest the crop at physiological maturity stage 	<ul style="list-style-type: none"> Land preparation for rabi crop according to ground water recharging Procurements of inputs 	---
		Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	Harvest the crop and drying	<ul style="list-style-type: none"> Land preparation for rabi crops Procurement of inputs 	<ul style="list-style-type: none"> Breeder seeds from SAUs Certified seeds from GUJCOMOSOL, GSSC, NSC, NFSM
		<u>Maize local:</u>	do	do	do
	High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur, Bayad, Vadali,	Cropping system: Cotton-Wheat, Maize-Wheat & Groundnut-Wheat <u>Bajra</u> GHB-	Harvest the crop at physiological maturity stage	<ul style="list-style-type: none"> Land preparation for rabi crop according to ground water recharging Procurements of inputs 	---

	Vijaynagar)	558,538,577,719,732			
		<u>Maize</u> -Private Hybrids- Pusa early hybrids-1 & 2 -Improved Var. Farm sameri, Guj.Maize-1,2,3,4 & 6, Narmada moti	<ul style="list-style-type: none"> • Harvest the crop at physiological maturity stage • Life saving irrigation in alternate furrow • Harvest the green cob and sale it 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		Castor GCH-2,GCH- 3,GCH-5,GCH-6 (root rot resistance), GCH-7 (wilt resistance), GAUCH-1	<ul style="list-style-type: none"> • Alternate furrow irrigation • Harvest the mature spike • Harvest the spike at physiological maturity stage 	---	---
		Groundnut - <u>Spreading type</u> GAUG-10, GG-11, 12 & 13. - <u>Bunch type (Errect)</u> J-11, GG-2, GL-24, GG4, 5 & 6, GAUG- 1 - <u>Semi spreading</u> GG-20 <u>Cotton (Bt)</u>	<ul style="list-style-type: none"> • Harvest the crop at physiological maturity stage • Life saving irrigation 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---

		Pigeonpea T.15-15, Pusa Ageti, BDN-2, ICPL-87, GT-1, GT-100, GT- 101, Banas, GTH-1	<ul style="list-style-type: none"> • Alternate furrow irrigation • Protection against sucking pest (Spraying of Methyle o demeton or Diamethioate 10 ml/10 lit of water) • Protection against podborer (spraying of monocrotophos 10 ml, endosulphan 20 ml or Acefet 20 gm in 10 lit of water at 50% flowering followed by 15 day) • Pickup green pod and market as green vegetable • Harvest the crop at physiological maturity stage 	<ul style="list-style-type: none"> • Land preparation for rabi crop according to ground water recharging • Procurements of inputs 	---
		Fodder_crop <u>Jowar:</u> GFS-4,5 S-1049 (sundhiya jowar)	<ul style="list-style-type: none"> • Harvest the crop and drying 	<ul style="list-style-type: none"> • Land preparation for rabi crops • Procurement of inputs 	<ul style="list-style-type: none"> • Breeder seeds from SAUs • Certified seeds from GUJCOMOSOL, GSSC, NSC, NFSM
		<u>Maize local:</u>	do	do	do

2.1.2 Drought - Irrigated situation

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed released of water in canals due to low rainfall	Situation does not arise				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non released of water incanals under delayed onset of moonson in catchment	Situation does not arise				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non released of water in canals under delayed onset of monsoon in catchment	Situation does not arise				

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	Situation does not arise				

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	High rainfall Sandy loam Soil (Himmatnagar, Prantij, Talod, Dhansura)	<u>Wheat:</u> GW 496, GW 273, GW 322, GW 366	<ul style="list-style-type: none"> GW 11 & GW 173 Reduce area under wheat and replace by <u>Gram:</u> ICC 4, Gram Gujarat 1 & 2, <u>Cumin:</u> Guj 4 <u>Fenugreek:</u> Guj Fenugreek 1 <u>Leafy Vegetables:</u> Palak, Methi <u>Dill Seed:</u> Guj. Dillseed 1 <u>Barley:</u> RD 2052 <u>Isabgol:</u> Guj.Isabgul 1 &2	<ul style="list-style-type: none"> Pressurized irrigation at critical stage Narrow and short water basin in all the crops 	<ul style="list-style-type: none"> Seed sources Breeder-SAUs Certified: GSSC, GUJCOMASOL, NSC Pressurized irrigation system through Gujarat Green Revolution Co.Ltd, under subsidized rate.
		<u>Cotton:</u> Bt cotton	-	<ul style="list-style-type: none"> Adoption of drip irrigation and mulching (plastic mulch 50 micron 370 kg/ha) 	Pressurized irrigation system through Gujarat Green Revolution Co.Ltd, under subsidized rate.
		<u>Castor</u>	-	<ul style="list-style-type: none"> Adoption of drip irrigation and mulching (plastic mulch 50 micron 370 kg/ha) 	do
		<u>Cucurbits</u>	<u>Bottle guard:</u> Pusa navin, Anand-1 <u>Bitter gourd:</u> Arka harit <u>Musk melon:</u> Durgapura Madhu, Durgapura selection	<ul style="list-style-type: none"> Double row furrow basin planting Alternate furrow irrigation 	—

		<u>Okra:</u> Guj Okra-1, Parbhani kranti	<u>Cluster bean</u> Pusa Navabahar	<ul style="list-style-type: none"> • Double row furrow basin planting Alternate furrow irrigation 	—
		<u>Brinjal:</u> GOB-1, Doli-5, Pusa Purple round, Pusa Purple long	<u>Gram</u> ICCC-4, Guj-1 & 2 <u>Cumin</u> Guj- 1,2,3 & 4/ <u>Coriander</u> Guj-1 & 2, <u>Fenugreek</u> Guj- 1, <u>Leafy vegetable</u> <u>Radish</u> Japanese white, Pusa hemani, Pusa resham/ <u>Carrot/ cauliflower</u> Snow ball-16, hissar-1, <u>Cabbage</u> Pride of India, Early drum head, Pusa drum head,	<ul style="list-style-type: none"> • Alternate furrow irrigation through drip system 	Mulching material can be provided under RKVY
		<u>Tomato:</u> Vaishali, Abhinav	<u>Cluster bean</u> Pusa Navabahar	<ul style="list-style-type: none"> • Trailing system 	—
		<u>Cluster bean</u> Pusa Navabahar	Reduce the 25% area	<ul style="list-style-type: none"> • Alternate furrow irrigation through drip system 	<ul style="list-style-type: none"> • Drip system can be provided under GGRC
		<u>Cowpea (summer)</u> Pusa falguni	do	<ul style="list-style-type: none"> • Ridge & furrow method Sowing • Alternate furrow irrigation 	<ul style="list-style-type: none"> • Implement can be provided under RKVY
		<u>Ginger:</u> Sugandha	-	<ul style="list-style-type: none"> • Ridge & furrow irrigation 	<ul style="list-style-type: none"> • Ridge & furrow system can be provided under RKVY
		<u>Turmeric:</u> Kesar	-----	do	do
		<u>Lucerne:</u> GALL-1 (Anand-2) Local (Kachchhi)	GALL-1	As such	Seed source from NSSC

		<u>Oat:</u> Cant, Local	<u>Bajra</u> (multicut) GF Bajra-1	As such	do
Medium rainfall, Medium black soil (Khedbrahma, Meghraj)	<u>Wheat:</u> GW 496, GW 273, GW 322, GW 366	<ul style="list-style-type: none"> GW 11 & GW 173 Reduce area under wheat and replace by <u>Gram:</u> ICC 4, Gram Gujarat 1 & 2, <u>Cumin:</u> Guj 4 <u>Fenugreek:</u> Guj Fenugreek 1 <u>Leafy Vegetables:</u> Palak, Methi <u>Dill Seed:</u> Guj. Dillseed 1 <u>Barley:</u> RD 2052 <u>Isabgol:</u> Guj.Isabgul 1 &2	<ul style="list-style-type: none"> Pressurized irrigation at critical stage Narrow and short water basin in all the crops 	<ul style="list-style-type: none"> Seed sources Breeder-SAU's Certified: GSSC, GUJCOMASOL, NSC Pressurized irrigation system through Gujarat Green Revolution Co.Ltd, under subsidized rate. 	
	<u>Cotton:</u> Bt cotton	-	Adoption of drip irrigation and mulching (plastic mulch 50 micron 370 kg/ha)	Pressurized irrigation system through Gujarat Green Revolution Co.Ltd, under subsidized rate.	
	<u>Castor</u>	-	do	do	
	<u>Cucurbits</u>	<u>Bottle guard:</u> Pusa navin, Anand-1 <u>Bitter gourd:</u> Arka harit <u>Musk melon:</u> Durgapura Madhu, Durgapura selection	Double row furrow basin planting Alternate furrow irrigation	—	
	<u>Okra:</u> Guj Okra-1, Parbhani kranti	<u>Cluster bean</u> Pusa Navabahar	do	—	

		<u>Brinjal:</u> GOB-1, Doli-5, Pusa Purple round, Pusa Purple long	<u>Gram</u> ICCC-4, Guj-1 & 2 <u>Cumin</u> Guj- 1,2,3 & 4/ <u>Coriander</u> Guj-1 & 2, <u>Fenugreek</u> Guj- 1, <u>Leafy vegetable</u> <u>Radish</u> Japanese white, Pusa hemani, Pusa resham/ <u>Carrot/ cauliflower</u> Snow ball-16, hissar-1, <u>Cabbage</u> Pride of India, Early drum head, Pusa drum head,	Alternate furrow irrigation through drip system	Mulching material can be provided under RKVY
		<u>Tomato:</u> Vaishali, Abhinav	<u>Cluster bean</u> Pusa Navabahar	Trailing system	—
		<u>Cluster bean</u> Pusa Navabahar	• Reduce the 25% area	• Alternate furrow irrigation through drip system	• Drip system can be provided under GGRC
		<u>Cowpea</u> (summer) Pusa falguni	do	• Ridge & furrow method Sowing • Alternate furrow irrigation	• Implement can be provided under RKVY
		<u>Ginger:</u> Sugandha		• Ridge & furrow irrigation	• Ridge & furrow system can be provided under RKVY
		<u>Turmeric:</u> Kesar	-----	do	do
		<u>Lucerne:</u> GALL-1 (Anand-2) Local (Kachchi)	GALL-1	As such	Seed source from NSSC
		<u>Oat:</u> Cant, Local	<u>Bajra</u> (multicut) GF Bajra-1	As such	do

High rainfall, Medium black Soil. (Idar, Bhiloda, Modasa, Malpur,Bayad, Vadali, Vijaynagar)	<u>Wheat:</u> GW 496, GW 273, GW 322, GW 366	<ul style="list-style-type: none"> GW 11 & GW 173 Reduce area under wheat and replace by <u>Gram:</u> ICC 4,Gram Gujarat 1 & 2, <u>Cumin:</u> Guj 4 <u>Fenugreek:</u> Guj Fenugreek 1 <u>Leafy Vegetables:</u> Palak, Methi <u>Dill Seed:</u> Guj. Dillseed 1 <u>Barley:</u> RD 2052 <u>Isabgol:</u> Guj.Isabgul 1 &2	<ul style="list-style-type: none"> Pressurized irrigation at critical stage Narrow and short water basin in all the crops 	<ul style="list-style-type: none"> Seed sources Breeder-SAU's Certified: GSSC, GUJCOMASOL, NSC Pressurized irrigation system through Gujarat Green Revolution Co.Ltd, under subsidized rate.
	<u>Cotton:</u> Bt cotton	-	Adoption of drip irrigation and mulching (plastic mulch 50 micron 370 kg/ha)	Pressurized irrigation system through Gujarat Green Revolution Co.Ltd, under subsidized rate.
	<u>Castor</u>	-	do	do
	<u>Cucurbits</u>	<u>Bottle guard:</u> Pusa navin, Anand-1 <u>Bitter gourd:</u> Arka harit <u>Musk melon:</u> Durgapura Madhu, Durgapura selection	Double row furrow basin planting Alternate furrow irrigation	—
	<u>Okra:</u> Guj Okra-1, Parbhani kranti	<u>Cluster bean</u> Pusa Navabahar	do	—

		<u>Brinjal:</u> GOB-1, Doli-5, Pusa Purple round, Pusa Purple long	<u>Gram</u> ICC-4, Guj-1 & 2 <u>Cumin</u> Guj- 1,2,3 & 4/ <u>Coriander</u> Guj-1 & 2, <u>Fenugreek</u> Guj- 1, <u>Leafy vegetable</u> <u>Radish</u> Japanese white, Pusa hemani, Pusa resham/ <u>Carrot/ cauliflower</u> Snow ball-16, hissar-1, <u>Cabbage</u> Pride of India, Early drum head, Pusa drum head,	Alternate furrow irrigation through drip system	Mulching material can be provided under RKVY
		<u>Tomato:</u> Vaishali, Abhinav	<u>Cluster bean</u> Pusa Navabahar	Trailing system	—
		<u>Cluster bean</u> Pusa Navabahar	<ul style="list-style-type: none"> Reduce the 25% area 	Alternate furrow irrigation through drip system	Drip system can be provided under GGRC
		<u>Cowpea</u> (summer) Pusa falguni	<ul style="list-style-type: none"> Reduce the 25% area 	<ul style="list-style-type: none"> Ridge & furrow method Sowing Alternate furrow irrigation Ridge & furrow irrigation 	Implement can be provided under RKVY
		<u>Ginger:</u> Sugandha		<ul style="list-style-type: none"> Ridge & furrow irrigation 	Ridge & furrow system can be provided under RKVY
		<u>Turmeric:</u> Kesar	-----	do	do
		<u>Lucerne:</u> GALL-1 (Anand-2) Local (Kachchi)	GALL-1	As such	Seed source from NSSC
		<u>Oat:</u> Cant, Local	<u>Bajra</u> (multicut) GF Bajra-1	As such	do

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

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging				
Maize	-	-	Harvest mature cobs	To cover produce with plastic sheet (100 µm, UV stabilized colour plastic) or shift produces to farm shed and protection against pest/disease damage in storage etc,
Cotton	<ul style="list-style-type: none"> • Surface drainage(for water logging) • Interculturing for aeration • Apply 25 kg N/ha as additional dose 	<ul style="list-style-type: none"> • Surface drainage(for water logging) • Apply 25 kg N/ha as additional dose • Protect the crop against whitefly and sucking pest(acefet 75 CE 15 gm, Trizophos 40 EC 25 ml, Emidachloropid 2.5 ml in 10 lit of water) 	<ul style="list-style-type: none"> • Surface drainage (for water logging) • Protect the crop against Ball Warm(Endosulphan 35 EC Politreen C 44 EC 20 ml in 10 lit of water) • Apply 25 kg N/ha as additional dose 	Cover the produce with plasticsheet(100 micron UV stabilized colour plastic)
Wheat	-	-	Surface drainage (for management of water logging, lodging crop and to control black point in grain.) Spray Mancozeb 0.2%	To cover produce with plastic sheet (100 µm, UV stabilized colour plastic) or shift produces to farm shed and protection against pest/disease damage in storage etc,
Groundnut	-	-	Quick surface drainage , Ditch channel around field	do
Pulses	-	-	Quick drainage , Harvest mature pods	<ul style="list-style-type: none"> • To cover produce with plastic sheet (100 µm , UV stabilized colour plastic) or shift produces to farm shed and protection against pest/disease damage in storage

				etc,
Horticulture				
Mango	-	Spray 0.2% wettable sulphur or 0.005% Hexaconazole for protection against PM	-	Unripe fruit may be used for pickles.
Ber	-	Spray 0.2 % wettable sulphur for protection against PM	-	-
Citrus	<ul style="list-style-type: none"> Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm 	<ul style="list-style-type: none"> Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm 	<ul style="list-style-type: none"> Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm, collect mature fruits 	-
Sapota	-	<ul style="list-style-type: none"> Spray 0.2% wettable sulphur or 0.05% Hexaconazole for protection against powdery mildew Provide drainage 	<ul style="list-style-type: none"> Harvest the matured fruits Provide drainage Protect the fruit against fruit spot (Difenconazole 0.05% spray) 	Transfer the fruits to safer place
Aonla	-	//	<ul style="list-style-type: none"> Harvest the fruits Protect the crop against fruit spots disease (Carbendazin 0.025 %) 	//
Heavy rainfall with high speed winds in a short span²				
Maize	-	-	Harvest mature cobs, Quick surface drainage	To cover produce with plastic sheet (100 µm , UV stabilized colour plastic) or shift produces to farm shed and protection against pest/disease damage in storage etc,
Cotton	<ul style="list-style-type: none"> Surface drainage(for water logging) Interculturing for aeration Apply 25 kg N/ha as additional dose 	<ul style="list-style-type: none"> Surface drainage(for water logging) Apply 25 kg N/ha as additional dose Protect the crop against whitefly and sucking pest(acefet 75 CE 	<ul style="list-style-type: none"> Surface drainage (for water logging) Protect the crop against Ball Warm(Endosulphan 35 EC Politreen C 44 EC 20 ml in 10 lit of water) 	Cover the produce with plasticsheet(100 micron UV stabilized colour plastic)

		15 gm, Trizophos 40 EC 25 ml, Emidachloropid 2.5 ml in 10 lit of water)	<ul style="list-style-type: none"> Apply 25 kg N/ha as additional dose 	
Wheat	Surface drainage (to control water logging condition)	Surface drainage (to control water logging condition)	<ul style="list-style-type: none"> Surface drainage (for management of water logging, lodging crop and to control black point in grain, Spray Mancozeb 0.2%) 	To cover produce with plastic sheet (100 µm , UV stabilized colour plastic) or shift produces to farm shed and protection against pest/disease damage in storage etc,
Groundnut	-	-	<ul style="list-style-type: none"> Quick surface drainage , Ditch channel around field 	do
Pulses	-	-	<ul style="list-style-type: none"> Quick drainage , Harvest mature pods 	do
Horticulture				
Mango	-	Spray 0.2% wettable sulphur or 0.005% Hexaconazole for protection against PM	Collect fallen fruits	Unripe fruit may be used for pickles.
Ber	-	Spray 0.2 % wettable sulphur for protection against PM	-	-
Citrus	Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm	Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm	<ul style="list-style-type: none"> Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm, collect mature fruits 	-
Sapota	-	<ul style="list-style-type: none"> Spray 0.2% wettable sulphur or 0.05% Hexaconazole for protection against powdery mildew Provide drainage 	<ul style="list-style-type: none"> Harvest the matured fruits Provide drainage Protect the fruit against fruit spot (Difenconazole 0.05% spray) 	Transfer the fruits to safer place
Aonla	-	<ul style="list-style-type: none"> Spray 0.2% wettable sulphur or 0.05% Hexaconazole for protection against powdery mildew Provide drainage 	<ul style="list-style-type: none"> Harvest the fruits Protect the crop against fruit spots disease (Carbendazin 0.025 %) 	Transfer the fruits to safer place
Outbreak of pests and diseases due to unseasonal rains				

Cotton	<ul style="list-style-type: none"> • Surface drainage(for water logging) • Interculturing for aeration • Apply 25 kg N/ha as additional dose 	<ul style="list-style-type: none"> • Surface drainage(for water logging) • Apply 25 kg N/ha as additional dose • Protect the crop against whitefly and sucking pest(acefet 75 CE 15 gm, Trizophos 40 EC 25 ml, Emidachloropid 2.5 ml in 10 lit of water) 	<ul style="list-style-type: none"> • Surface drainage (for water logging) • Protect the crop against Ball Warm(Endosulphan 35 EC Politreen C 44 EC 20 ml in 10 lit of water) • Apply 25 kg N/ha as additional dose 	Cover the produce with plasticsheet(100 micron UV stabilized colour plastic)
Wheat	Spray Mancozeb 0.2% (To control leaf Blight & rust)	Spray Mancozeb 0.2% (To control leaf Blight & rust)	To control black point in grain Spray Mancozeb 0.2%	-
Groundnut	<ul style="list-style-type: none"> • Spray 0.005% Hexaconazole for rust & tikka 	Spray 0.005% Hexaconazole for rust & tikka	Spray 0.005% Hexaconazole for rust & tikka	-
Horticulture				
Mango	-	Spray 0.2% wettable sulphur or 0.005% Hexaconazole for protection against PM	Collect fallen fruits	Unripe fruit may be used for pickles.
Ber	-	Spray 0.2 % wettable sulphur for protection against PM	-	-
Citrus	Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm	Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm	<ul style="list-style-type: none"> • Control citrus canker by spray of Copper Oxy chloride 0.2 % & streptocycline 100 ppm, • collect mature fruits 	-
Sapota	-	<ul style="list-style-type: none"> • Spray 0.2% wettable sulphur or 0.05% Hexaconazole for protection against powdery mildew • Provide drainage 	<ul style="list-style-type: none"> • Harvest the matured fruits • Provide drainage • Protect the fruit against fruit spot (Difenconazole 0.05% spray) 	Transfer the fruits to safer place
Aonla	-	<ul style="list-style-type: none"> • Spray 0.2% wettable sulphur or 0.05% Hexaconazole for protection against powdery 	<ul style="list-style-type: none"> • Harvest the fruits • Protect the crop against fruit spots disease(Carbendazin 	do

		mildew • Provide drainage	0.025 %)	
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2.3 Floods

Condition	Suggested contingency measure ^o			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation ¹	Not Expected in this District			
Continuous submergence for more than 2 days ²	Not Expected in this District			
Sea water intrusion ³	Not Expected in this District			

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	Light & frequent irrigation to all crops	Light & frequent irrigation to all crops	Light & frequent irrigation to all crops	-
Cold wave	NA	NA	NA	NA
Frost	NA	NA	NA	NA
Hailstorm	NA	NA	NA	NA
Cyclone	NA	NA	NA	NA

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

		Suggested contingency measures		
	Before the event	During the event	After the event	
Drought	<ul style="list-style-type: none"> • Veterinary preparedness • Assessment of resources • Integration with the district system • Plan for rapid mobilization of resources specially Silage. • Dry fodder (fodder bank), complete feed blocks (CFBs) 	-Assure and mobilize water supply	- Impact assessment	
Feed and fodder availability	<p>As the district is occasionally prone to drought the following measures to be taken to ameliorate the fodder deficiency</p> <p>Avoid burning of wheat straw</p> <p>Establishment of fodder bank at village level with available dry fodder (wheat straw and stover of bajra/sorghum and also groundnut haulms)</p> <p>Increase area under perennial fodder cultivation with high yielding Hybrid Napier varieties.</p> <p>Conservation of maize/bajra/sorghum green fodder as silage</p> <p>Sowing of cereals (Sorghum/Bajra) and leguminous crops (Lucerne, Berseem, Horse gram, Cowpea) during early</p>	<p>Harvest and use biomass of dried up crops (Groundnut, Wheat, Maize, Sorghum, Green gram etc..) material as fodder</p> <p>Use of unconventional and locally available cheap feed ingredients especially groundnut cake and haulms as supplement for livestock during drought</p> <p>Utilizing fodder from fodder bank reserves.</p> <p>Utilizing stored silage/hay.</p> <p>Transporting complete feed/fodder and dry roughages to the affected areas.</p> <p>Concentrate ingredients such as Grains, brans, chunnies & oilseed cakes, low grade grains etc. unfit for human consumption should be procured from Govt. Godowns for feeding as supplement for high productive animals</p>	<p>Training/educating farmers for feed & fodder storage.</p> <p>Maintenance / repair of silo pits and feed/fodder stores.</p> <p>Encourage progressive farmers to grow multi cut fodder crops of sorghum/bajra/maize(UP chari, MP chari, HC-136, HD-2, GAIN T BAJRA, L-74, K-677, Ananad/African Tall etc.,</p> <p>Supply of quality fodder seed (multi cut</p>	

	<p>monsoon under dry land system for fodder production</p> <p>Encourage fodder production with Maize, Jowar, Bajra , Cowpea, Barseem, Lucerne etc.,</p> <p>Processing & storage of feed/fodder and roughages in the form of complete feed/blocks.</p>	<p>during drought</p> <p>Continuous supplementation of mineral mixture to prevent infertility.</p> <p>Encourage mixing available kitchen waste with dry fodder while feeding to the milch animals</p>	<p>sorghum/bajra/maize varieties) and fodder slips of Napier, guinea grass well before monsoon</p> <p>Replenish the feed and fodder banks</p>
Drinking water	<p>Adopt various water conservation methods at village level to improve the ground water level for adequate water supply.</p> <p>Identification of water resources</p> <p>Desilting of ponds</p> <p>Rain water harvesting and create water bodies/watering points (when water is scarce use only as drinking water for animals)</p> <p>Construction of drinking water tanks in herding places/village junctions/relief camp locations</p> <p>Community drinking water trough can be arranged in shandies /community grazing areas</p>	<p>Adequate supply of drinking water.</p> <p>Restrict wallowing of animals in water bodies/resources</p> <p>Add alum in stagnated water bodies</p>	<p>Watershed management practices shall be promoted to conserve the rainwater. Bleach (0.1%) drinking water / water sources</p> <p>Provide clean drinking water</p>
Health and disease management	<p>Procure and stock emergency medicines and vaccines for important endemic diseases of the area</p> <p>All the stock must be immunized for endemic diseases of the area</p> <p>Vaccination for HS & FMD</p> <p>Surveillance and disease monitoring network to be established at Joint Director (Animal Husbandry) office in the district</p>	<p>Carryout deworming to all animals entering into relief camps</p> <p>Identification and quarantine of sick animals</p> <p>Constitution of Rapid Action Veterinary Force</p> <p>Performing ring vaccination (8 km radius) in case of any outbreak</p> <p>Restricting movement of livestock in case of any epidemic</p>	<p>Keep close surveillance on disease outbreak.</p> <p>Undertake the vaccination depending on need</p> <p>Keep the animal houses clean and spray disinfectants Farmers should be advised to breed their milch animals during July-September so that the</p>

	<p>Adequate refreshment training on draught management to be given to VAS, Jr.VAS, LI with regard to health & management measures</p> <p>Procure and stock multivitamins & area specific mineral mixture</p>	<p>Drainage of water from and around animal sheds, pasture areas.</p> <p>Tick control measures be undertaken to prevent tick borne diseases in animals</p> <p>Rescue of sick and injured animals and their treatment</p> <p>Organize with community, daily lifting of dung from relief camps</p>	<p>peak milk production does not coincide with mid summer</p>
Floods	Not applicable		
Cyclone	Not applicable		
Cold wave	Not applicable		
Heat wave	<p>Arrangement for protection from heat wave</p> <p>i) Plantation around the shed</p> <p>ii) H₂O sprinklers / foggers in the shed</p> <p>iii) Application of white reflector paint on the roof</p> <p>iv) Thatched sheds should be provided as a shelter to animal to minimize heat stress</p>	<p>Allow the animals early in the morning or late in the evening for grazing during heat waves</p> <p>Feed green fodder/silage / concentrates during day time and roughages / hay during night time in case of heat waves</p> <p>Put on the foggers / sprinklers/fans during heat waves in case of high yielders (Jersey/HF crosses)</p> <p>In severe cases, vitamin 'C' and electrolytes should be added in H₂O during heat waves.</p>	<p>Feed the animals as per routine schedule</p> <p>Allow the animals for grazing (normal timings)</p>
Insurance	<p>Encouraging insurance of livestock</p>	<p>Listing out the details of the dead animals</p>	<p>Submission for insurance claim and availing insurance benefit</p> <p>Purchase of new productive animals</p>

2.5.2 Poultry

2.5.3

	Suggested contingency measures			Convergence/ linkages with ongoing programs, if any
	Before the event	During the event	After the event	
Drought				
Shortage of feed ingredients	Buffer stock of readymade feed	Ensure sufficient water supply	Resumption of routine management	
Drinking water				
Health and disease management	Routine vaccination and medication should be followed	Attention should be paid towards general management	-----do-----	
Floods	Poultry requires excellence in general management in respect of litter management and bio- security			
Shortage of feed ingredients				
Drinking water				
Health and disease management				Culling of affected birds
Cyclone	In case of uncontrollable condition it is advisable to sell of the flock at the earliest			Resumption of routine management
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Heat wave and cold wave		Adopting measures for maintaining the in house temperature at or near to physiological optimum temperature		
Shelter/environment management		Measures to maintain at or near physiological optimum temperature		
Health and disease management		Nutritional manipulation like use of fats/edible oil in the ration, extra supplementation of methionine, biotin, choline chloride and vitamin C etc.		Culling of affected birds

2.5.3 Fisheries/ Aquaculture

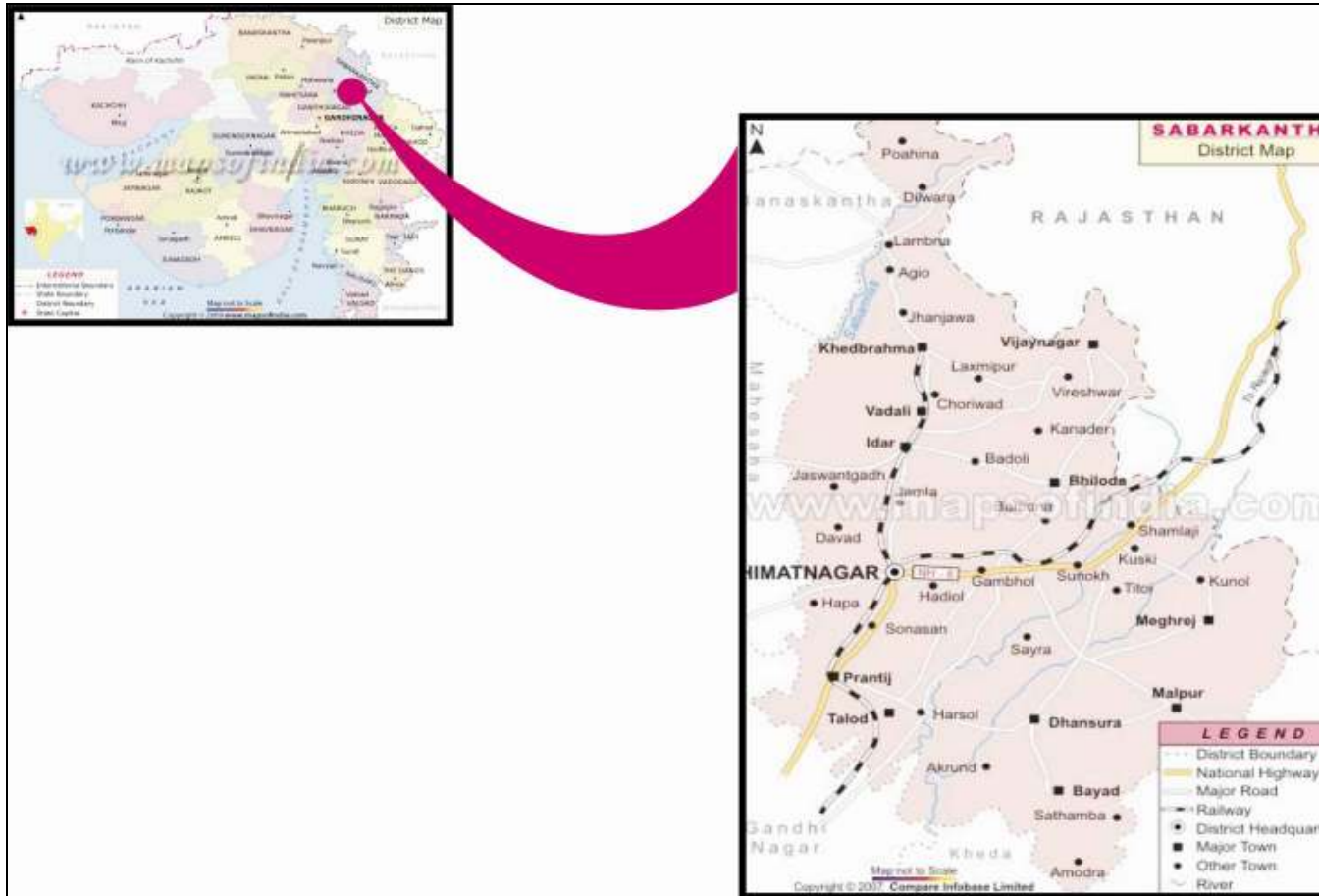
	Suggested contingency measures		
	Before the event ^a	During the event	After the event
1) Drought			
A. Capture			
Marine	Nil	Nil	
Inland	<ul style="list-style-type: none"> • Insure water storage & supply well in advance • Harvesting & marketing 	<ul style="list-style-type: none"> • Watering of the ponds • Harvesting & marketing 	<ul style="list-style-type: none"> • Restocking of the ponds • Fertilization & manuring of ponds
(i) Shallow water depth due to insufficient rains/inflow	<ul style="list-style-type: none"> • First to ensure the water supply to maintain minimum level of water for fishes in that particular period. If not possible then harvesting & marketing 	<ul style="list-style-type: none"> • To maintain water level is the only option otherwise harvesting & marketing 	<ul style="list-style-type: none"> • Regular operations for the remaining stock and also restoring of new one
(ii) Changes in water quality	<ul style="list-style-type: none"> • Oxygen depletion may lead to death of fishes • Ensure water supply or harvest the stock 	<ul style="list-style-type: none"> • Harvesting & marketing • Emptying of pond 	<ul style="list-style-type: none"> • Manuring, fertilization & rewatering • Establishment of new stock
(iii) Any other			
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow	<ul style="list-style-type: none"> • Water is only the major component or necessity for such operations • Ensure water supply or otherwise stoppage of the operation / culling temporary • Water managerial practices 		
(ii) Impact of salt load build up in ponds / change in water quality	<ul style="list-style-type: none"> • Attempts to be made to minimize oxygen depletion from water and also for oxygenation of water 	<ul style="list-style-type: none"> • Oxygenation of water • Stirring of water with pumps 	<ul style="list-style-type: none"> • Re-establishment of normal managerial conditions
(iii) Any other	<ul style="list-style-type: none"> • Training and Awareness 		
2) Floods			
A. Capture			
Marine	-Not applicable		
Inland			
(i) Average compensation paid due to loss of human life	<ul style="list-style-type: none"> • Fishing should be prohibited because of breeding season 		
(ii) No. of boats / nets/damaged	<ul style="list-style-type: none"> • Insurance 		

	<ul style="list-style-type: none"> • Arrangement of boats, nets etc in surplus 		
(iii) No. of houses damaged	<ul style="list-style-type: none"> • Co-ordination with the district administration & assurance to fisherman 	<ul style="list-style-type: none"> • Rescue & Help • Programme in collaboration with district system 	<ul style="list-style-type: none"> • Rehabilitation of fisherman for all their necessities
(iv) Loss of stock	<ul style="list-style-type: none"> • Training & Awareness 	<ul style="list-style-type: none"> • Compensation 	<ul style="list-style-type: none"> • Compensation
(v) Changes in water quality	<ul style="list-style-type: none"> • Preparation for checking the inflow of outside runoff water in to the pond runoff water into the ponds 	<ul style="list-style-type: none"> • Arrangement of checking overflow of ponds • Overflow of ponds • Net installations to capture the fishes going out due to overflow 	<ul style="list-style-type: none"> • Proper oxygenation • Maintenance of water pH
(vi) Health and diseases		<ul style="list-style-type: none"> • Water treatment to minimize ectoparasite infestation 	
B. Aquaculture			
(i) Inundation with flood water			
(ii) Water contamination and changes in water quality			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps, aerators, huts etc)			
(vi) Any other			
3. Cyclone / Tsunami			
A. Capture	Not applicable		
Marine	Not applicable		
(i) Average compensation paid due to loss of fishermen lives			
(ii) Avg. no. of boats / nets/damaged			
(iii) Avg. no. of houses damaged			

Inland			
B. Aquaculture			
(i) Overflow / flooding of ponds			
(ii) Changes in water quality (fresh water / brackish water ratio)			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps, aerators, shelters/huts etc)			
(vi) Any other			
4. Heat wave and cold wave			
A. Capture			
Marine			
Inland			
B. Aquaculture			
(i) Changes in pond environment (water quality)			
(ii) Health and Disease management			
(iii) Any other			

Annexure-I

LOCATION MAP OF SABARKANTHA DISTRICT (GUJARAT)



Annexure-II

