



SATARA DISTRICT

CONTINGENT CROP PLANNING AND AGRO ADVISORY

EDITORS

Dr. A. V. Solanke	Dr. M. P. Badgujar
Dr. P. M. Chawdhari	Dr. R. M. Garkar
Dr. T. J. Bhor	Dr. M. V. Ajotikar
Shri. S. U. Deshmukh	Prof. S. V. Nalawade

2017

STATE: MAHARASHTRA

Agriculture Contingency Plan for District: SATARA

1.0 District Agriculture Profile:	
1.1	Agro-Climatic/Ecological Zone
	Agro Ecological Sub Region (ICAR) AER.6.1 : Deccan Plateau for semi arid region Western plateau and hills region
	Agro-Climatic Region (Planning Commission) Agro Climatic Zone (NARP)* Western Maharashtra Scarcity Zone (MH-6) - ZARS, Solapur Sub Montane Zone – ZARS, Kolhapur Plain Zone – ZARS, Ganeshkhind, Pune
	List of the districts falling under the NARP zone Scarcity Zone - Sangli, Nandurbar, Nasik (SN Eastern Part), Dhule, Ahmednagar, Pune, Solapur, Satara(SN Eastern part), Kolhapur (Part), Jalgaon Western Maharashtra Plain Zone – Pune (Eastern Part), Kolhapur, Sangli, Central part of Satara, Nashik (Central Part) Sub Montane Zone – western Part of Satara, Nashik (Western Part), Kolhapur, Pune
	Geographic coordinates of district Latitude 17° 5' – 18° 11' N Longitude 73° 3' -74° 5' E Altitude 515 m MSL
	Name and address of the concerned ZRS / ZARS /RARS /RRS / RRTTS Central Sugarcane Research Station, Padegaon, Tal-Phaltan, Dist.Satara (M.S.) Pin-415521, Phone No.02169-265333, 35, 37 Fax: No.02169-265333 Email: csrspadegaon@rediffmail.com/csrspadegaon.mpkv@gov.in
	Mention the KVK located in the district KVK, Bargaon Tal Satara Dist Satara KVK, Kalavade, Tal.Karad, Dist.Satara. Pin code 415 110
1.2	Rainfall
	Average (mm) Rainy days
	Normal Onset (Specify week and month) 2 nd week of June
	Normal Cessation (Specify week and month) 2 nd week of Oct
	SW monsoon (June-Sep): Rainy days - -
	NE Monsoon (Oct-Dec): Rainy days - -
	Winter (Jan-Feb.) Rainy days - -
	Summer (March-May) Rainy days - -
	Annual Rainy days 1426

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)	1058.24	799.45	13.57	28.03	74.01	22.00	6.61	53.01	53.88	7.68

Source: District compressive plan (SAO, Satara)

1.4	Major Soils	Area ('000 ha)	Percentage of total area
	Shallow grey/Red/Laterite/ black soils	517.24	64.7
	Deep black soils	147.90	18.5
	Medium black soils	134.31	16.8
1.5	Agricultural land use	Area ('000 ha)	Cropping intensity % -
	Net sown area	580.40	128.4 %
	Area sown more than once	219.05	
	Gross cropped area	799.45	
1.6	Irrigation	Area ('000 ha)	
	Net irrigated area	94.67	
	Gross irrigated area	283.03	
	Rainfed area	421.75	
Sources of Irrigation		Number	% area
	Canals	12	20.0
	Tanks	-	-
	Open wells	63146	65.0
	Bore wells	-	-
	Lift irrigation	3157	5.0
	Other sources	-	10.0
	Total	74843	
	Pump sets	-	
	No. of tractors	-	

Source: District compressive plan (SAO, Satara)

Groundwater availability and use		No. of blocks /Tahsils	% area	Quality of water (Specify the problems such as high levels of arsenic, fluorides, salinity etc)
Over exploited				Data not available
Critical				
Semi-critical				
Safe				
Wastewater availability and use				
Ground water quality				

1.7 Area under major field crops and horticulture etc.

Sr. No.	Major field crops cultivated	Area(000 ha)												
		Kharif					Rabi							
		Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Summer	Total		
1.	Pearl millet	-	25.8	25.8	-	-	-	-	-	-	-	-	-	25.8
2.	Groundnut	-	39.4	39.4	-	-	-	-	-	-	-	-	290.0	229.4
3.	Kharif Jowar	-	33.8	33.8	-	-	-	-	-	-	-	-	-	33.8
4.	Paddy	-	48.00	48.00	-	-	-	-	-	-	-	-	-	48.00
5.	Soybean	-	47.0	47.0	-	-	-	-	-	-	-	-	-	47.0
6.	Rabi Jowar	-	-	-	-	-	-	134.7	-	134.7	134.7	-	-	134.7
7.	Wheat	-	-	-	-	-	33.4	-	-	33.4	33.4	-	-	33.4
8.	Chickpea	-	-	-	-	-	-	24.8	-	24.8	24.8	-	-	24.8
9.	Sugarcane	-	65.7	65.7	-	-	-	-	-	-	-	-	-	65.7
10.	Nachni/Ragi	-	7	7	-	-	-	-	-	-	-	-	-	7
11.	Maize	-	11.8	11.8	-	-	-	-	-	-	-	-	-	11.8

		Area ('000 ha)		
Horticulture –		Total Area ('000 ha)	Irrigated	Rainfed
Fruit Crops-				--
Mango		7.8	7.8	--
Grapes				--
Banana				--
Vegetables Crops- Onion etc		18.30	18.30	--
Medicinal and Aromatic crops				--
Plantation Crops/Flowers				--
Total fodder crop area		--	--	--
Grazing land		--	--	--
Sericulture etc.		--	--	--
Other specify		--	--	--
1.8	Livestock	Total (000)		
	Cattle		367.00	
	Buffaloes total		363.00	
	Total Bovine		730.00	
	Goat and Sheep		637.00	
	Others		0	
1.9	Poultry		1367	

1.10 Fisheries						
A. Capture						
	No. of fisherman	Boats		Nets		
		Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore seines, stake & trap nets)	Storage facilities (Ice plants etc.)
i) Marine						
ii) Inland		Not applicable				

B. Culture		
	Water spread area (ha)	Yield (t/ha)
Fresh Water	15445	1950 MT (2011-12)
Brackish Water		Not applicable
Others		

1.11 Production & Productivity of major crops (2011-12)

1.11	Major field crops	Kharif		Rabi		Summer		Total	
		Prod. ('000 t)	Productivity (kg/ha)	Prod. ('000 t)	Productivity (kg/ha)	Prod. ('000 t)	Productivity (kg/ha)		
1	Pearl millet	17.20	665	--	--	--	--	106	663
2	Groundnut			--	--	--	--	142	952
3	Kharif Jowar	56.70	1678	--	--	--	--	67	1229
4	Paddy	70.8	1475	--	--	--	--	87	1877
5	Soybean	--	--	--	--	--	--	16	1437
6	Rabi Jowar	--	--	215	956	--	--	215	956
7	Wheat	--	--	74	1641	--	--	74	1641
8	Chickpea	--	--	5	698	--	--	5	698
9	Sugarcane	4590	85518	--	--	--	--	4590	85518
10	Nachni/Ragi	6.9	982	--	--	--	--	--	--
11	Maize	24.5	2076	--	--	--	--	--	--

Source: Satara District Agricultural Plan

1.12	Sowing window for major field crops	Pearl millet	Ground nut	Kharif Sorghum	Paddy	Soybean	Rabi Sorghum	Wheat	Chickpea	Sugarcane
	Kharif- Rainfed	2 nd Fortnight of June to 1 st Fortnight of July	15 th June to 15 th July	1 st fortnight of June	--	15 th June to 10 th July	-	-	-	-
	Kharif-Irrigated	-	-	-	15 th June to 10 th July	--	-	--	-	Adsali: 15 th July-15 th Aug.
	Rabi- Rainfed	-	-	-	-	--	15 th Sept. to 15 th Oct.	--	15 th Sept. to 15 th Oct.	
	Rabi-Irrigated	-	-	-	-	--	--	-1 st Fortnight of Nov.	-	Suru:15 th Jan-15 th Feb Preseasonal: 15 th Oct - Nov 15 th

1.13	What is the major contingency the district is prone to?	Regular	Occasional	None
	Drought	-	√(Long dryspells of 15 to 20 days in kharif)	-
	Flood	-	-	√
	Cyclone	-	-	√
	Hail storm	-	--	√
	Heat wave	-	-	√
	Cold wave	--	√ (Rare)	√
	Frost	-	-	√
	Sea water intrusion	-	-	√
	Pests and disease outbreak (Woolly aphids, stem borer, leaf spot)	-	√	-

1.14	Include Digital maps of the district for	Enclosed: Yes
	Location map of district with in state as Annexure I	Enclosed: Yes
	Mean Annual rainfall as Annexure 2	Enclosed: Yes
	Soil map as Annexure 3	Enclosed: Yes

2.0 Strategies for weather related contingencies:

2.1 Drought :

2.1.1 Rainfed situation

Condition		Suggested Contingency measures			Remarks on Implementation
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	
Delay by 2 weeks June 4 th week	Shallow soils	Pearl millet	No change (Adishakti, Dhanshakti, Shradhdha, Saburi, Shanti)	Adopt recommended package of practices	Seed source : • Central campus MPKV, Rahuri, KVK, Bargaon, KVK, Dhule • NSC, MSSC • Private Agency
		Finger millet	Phule Nachani, GPU-28, Dapoli-1, GPU-26, GPU-28	Adopt recommended package of practices	
		Groundnut	JL-24, JL-501, JL-286, Phule Unnati, Phule Unap and Phule Bharti.	Use BBF Adopt recommended package of practices	
	Medium soils	Pigeonpea	Pearl millet (Shanti/ Adishakti/ Dhanshakti) + Pigeonpea (Vipula/ BSMR736/ BSMR853) (2:1) Soybean + Pigeonpea (3:1)	Hoeing at 25 DAS and weeding	
		<i>Kharif</i> Jowar	No change (CSH-14, CSH-16, CSH-17 CSH-21, CSH-25 and CSH-30)	Adopt recommended package of practices Thinning, Hoeing at 25 DAS and weeding	
		Upland Paddy	No change	Adopt recommended package of practices	
		Low land Paddy	Early Varieties : Phule Radha, Karjat 184, Karjat 7 and R-24 Mid Late : Indrayani, Bhogawati, Phule Samrudhi and Karjat 5.	Staggered planting in nurseries for timely availability of seedlings. Use 21 days old seedlings; 2 to 3 seedlings/ hill.	

				<ul style="list-style-type: none"> Sowing at wider spacing at 45 cm row spacing Prefer early cultivar of soybean (JS-9305) Seed treatment with Thirum+Carbendazim 2g each/kg Treat pigeonpea seed with Trichoderma 5 g/kg of seed 	
	Soybean	Soybean(Phule Agrani, JS-335, DS-228, JS 9305, Phule Sangam) Soybean + Pigeonpea (3:1)	No change	Adopt recommended package of practices Opening of conservation furrow after every two rows	
	Maize		No change	Adopt recommended package of practices	
Deep soils	Sorghum		No change	Adopt recommended package of practices	
	Upland Paddy		Indrayani, Pavana, Phule Samrudhi	Adopt recommended package of practices	
	Low land Paddy		Indrayani, Pavana, Phule Samrudhi	Staggered panting in nurseries for timely availability of seed	
	Soybean		No change (Phule Agrani, JS-335, DS-228, JS 9305, Phule Sangam)	Adopt recommended package of practices	
	Maize		No change	Adopt recommended package of practices Opening of conservation furrow after every two rows	
	<i>Kharif</i> Fallow for Man Dahiwadi and Khatav Tahsil		---	Take up soil and water conservation practices (like compartment bunding, ridges and furrow etc) for rabi crops	

Suggested Contingency measures						
Condition	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation	
Early season drought (delayed onset) Delay by 4 weeks (July 2 nd week)	Shallow soils	Pearl millet	Pearl millet or Pearl millet (Shanti/ Adishakti/ Dhanshakti) + Pigeonpea (Vipula/ BSMR736/ BSMR853) (2:1)	<ul style="list-style-type: none"> Basal Application of 25 kg K₂O per ha for pearl millet Two intercultivations at 30 and 45 DAS 	Seed source : <ul style="list-style-type: none"> Central campus MPKV, Rahuri, KVK, Bargaon, KVK Dhule NSC, MSSC 	
		Groundnut	Groundnut (JL-24/ JL-501/ JL-286) + Pigeonpea (Vipula/ BSMR736/ BSMR853) (6:2)	<ul style="list-style-type: none"> BBF Planting with polythene mulch Two intercultivations at 20 and 40 DAS Application of Gypsum at the time of 50 % flowering @250 kg/ha 		
		Finger millet	Pearl millet (Shanti /Adishakti / Dhanshakti) + Pigeonpea (Vipula / BSMR736/ BSMR853) (2:1)	<ul style="list-style-type: none"> Basal Application of 25 kg K₂O per ha for pearl millet Two intercultivations at 30 and 45 DAS 		
			Phule Nachani, GPU-28, Dapoli-1, GPU-26, GPU-28	<ul style="list-style-type: none"> Increase spacing (30 X 10 cm) / Hoeing at 24 DAS Transplanting of seedling at 20 X 40 cm pair row with application of bricket (N and P) 		

Medium soils	Soybean	Sunflower (Bhanu, Phule Raviraj, Phule Bhaskar) , Sunflower (Bhanu, Phule Raviraj, Phule Bhaskar) + Pigeonpea(Vipula / BSMR736/ BSMR853) (2:1)	<ul style="list-style-type: none"> • Hoeing at 30DAS • Opening of conservation furrow in between two rows of sole sunflower for water/moisture conservation at 30DAS • Opening of conservation furrow after harvest of sunflower in case of Sunflower + Pigeonpea intercropping 		
		Pigeonpea or Pearl millet (Shanti/ Adishakti/ Dhanshakti) + Pigeonpea (Vipula/ BSMR736/ BSMR853) (2:1)	<ul style="list-style-type: none"> • Basal Application of 25 kg K₂O per ha for pearl millet • Opening of conservation furrow in between two rows of sole Pigeonpea for water/moisture conservation at 30DAS • Opening of conservation furrow after harvest of Pearl millet in case of Pearl millet + Pigeonpea intercropping 		
		Upland Paddy	Phule Radha		Hoeing , Staggered planting in nurseries for timely availability of seedlings
	Low land Paddy	Phule Radha, Karjat 184, Karjat 7 , Phule Samrudhi and R 24	Rahu method only (Pregerminated seed of paddy sown with drum seeder in puddle field) . Staggered planting in nurseries for timely availability of seedlings		
		Fodder sorghum (Phule Godhan/ Phule Amrita/ MP Chari/CSV-21F)	Application of 20:20 N: P ₂ O ₅ kg/ha as basal and remaining 20kg N per ha at 30DAS with sufficient moisture in soil		
	Deep soils	Maize	---		Adopt recommended package of practices Opening of conservation furrow after every two rows
		<i>Khari</i> /Fallow	---		Take up soil and water conservation practices (like compartment bunding, ridges and furrow etc) for <i>rabi</i> crops

Suggested Contingency measures						
Condition	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation	
Early season drought (delayed onset) Delay by 6 weeks (July 4 th week)	Shallow soils	Pearl millet	Pearl millet(Shraddha, Saburi, Shanti, Adishakti, Dhanshakti)	<ul style="list-style-type: none"> Basal Application of 25 kg K₂O per ha for pearl millet Two intercultivations at 30 and 45 DAS 	Seed source : <ul style="list-style-type: none"> Central campus MPKV, Rahuri, College of Agril., Pune and Dhule NSC, MSSC 	
		Groundnut	Pearl millet(Shraddha, Saburi, Shanti, Adishakti, Dhanshakti)	As above		
		Finger millet	GPU-28,Dapoli-1, RAU-8	<ul style="list-style-type: none"> Increase spacing (30 X 10 cm) / Hoeing at 24 DAS Transplanting of seedling at 20 X 40 cm pair row with application of bricket (N and P) 		
	Medium soils	Pigeonpea	Sunflower (SS-56/Bhanu, Raviraj, Phule Bhaskar)	<ul style="list-style-type: none"> Opening of conservation furrow in between two rows of sole sunflower for water/moisture conservation at 30DAS Hoeing at 30 DAS 		
		Soybean	Sunflower (Bhanu, Phule Raviraj, Phule Bhaskar)	As above		
		Sorghum	Fodder sorghum (Phule Amrita/ MP Chari/CSV-21F)	Application of 20:20 N: P ₂ O ₅ kg/ha as basal and remaining 20kg N per ha at 30DAS with sufficient moisture in soil		
	Deep soils	<i>Kharif</i> Fallow	---	Take up soil and water conservation practices (like compartment bunding, ridges and furrow etc) for <i>rabi</i> crops		

Condition	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Suggested Contingency measures	
				Agonomic measures	Remarks on Implementation
Early season drought (delayed onset) Delay by 8 weeks 2 nd week of August.					
Not applicable for this district					

Condition	Major Farming situation	Normal Crop /cropping system	Crop management	Suggested Contingency measures		Remarks on Implementation
				Soil nutrient & moisture conservation measures	Seed source :	
Early season drought (Normal onset) Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Shallow soils	Pearl millet	--		<ul style="list-style-type: none"> Weeding and Hoeing 	Central campus MPKV, Rahuri, ARS, Mohol ZARS, Solapur NSC MSSC NRCS, Solapur MAU, Parbhani
		Groundnut	----		<ul style="list-style-type: none"> As above 	
		Finger millet			<ul style="list-style-type: none"> As above 	
	Medium soils	Pigeonpea	Gap filling with seed priming		<ul style="list-style-type: none"> Spray 2% urea or DAP Weeding /hoeing 	
		Pearl millet	--		<ul style="list-style-type: none"> Weeding and Hoeing 	
		Sorghum	Resowing with sufficient moisture if population is less than 30 %		<ul style="list-style-type: none"> Opening of conservation furrow Protective irrigation 	
					<ul style="list-style-type: none"> Hoeing and weeding 	
		Low land Paddy	Gap filling/resowing		<ul style="list-style-type: none"> Weeding and Hoeing 	

				<ul style="list-style-type: none"> • Weeding and Hoeing • Weeding/Hoeing
			<ul style="list-style-type: none"> • Opening of conservation furrow • Protective irrigation • Hoeing and weeding • Weeding and Hoeing 	<ul style="list-style-type: none"> • Weeding and Hoeing
				<ul style="list-style-type: none"> • Weeding and Hoeing
			<ul style="list-style-type: none"> • Weeding/Hoeing 	
			<ul style="list-style-type: none"> • Weeding and Hoeing 	
			Take up soil and water conservation practices (like compartment bunding, ridges and furrow etc) for <i>rabi</i> crops	

Condition		Suggested Contingency measures				Remarks on Implementation
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		
At vegetative stage	Shallow soils	Pearl millet	Protective irrigation from available sources	Hoeing and weeding Kaoline spray @ 8% 2 % urea spray	Seed source with MSSC, NSC and ARS, K. Digranj ARS, Karad MPKV, Rahuri	
		Groundnut	Protective irrigation from available sources	As above		
		Finger millet	Protective irrigation from available sources	As above		
	Medium soils	Pearl millet	Protective irrigation	Hoeing and weeding Kaoline spray @ 8% 2 % urea spray		
		Pigeon pea	Protective irrigation and thinning	Hoeing and weeding Kaoline spray @ 8% 2 % urea spray Opening of conservation furrow in between two rows of pigeon pea		
	Low land Paddy Upland Paddy	Sorghum	Protective irrigation	Use antitranspirant Kaoline spray @ 8% Postpone N dose Hoeing and weeding Thinning of every third row and apply as mulch		
				Hoeing and weeding 2 % urea spray		
		Low land Paddy Upland Paddy	Protective irrigation from available sources	Hoeing and weeding 2 % urea spray		
				Hoeing and weeding 2 % urea spray		
				Hoeing and weeding 2 % urea spray		

		Soybean		Hoeing and weeding Kaoline spray @ 8% 2 % urea spray	
	Deep soils	Sorghum	Protective irrigation	Use antitranspirant Kaoline spray @ 8% Postpone N dose Hoeing and weeding Thinning of every third row and apply as mulch	
		Upland Paddy	Protective irrigation	Hoeing and weeding 2 % urea spray	
		Low land Paddy	Protective irrigation	Hoeing and weeding 2 % urea spray	
		Soybean	Protective irrigation	Hoeing and weeding Kaoline spray @ 8% 2 % urea spray	
		Maize	Protective irrigation	Hoeing and weeding 2 % urea spray	
		<i>Kharif</i> Fallow	---	Take up soil and water conservation practices (like compartment bunding, ridges and furrow etc) for <i>rabi</i> crops	

Condition	Major Farming situation	Normal Crop/cropping system	Crop management	Suggested Contingency measures	
				Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period) At Flowering/ fruiting stage	Shallow soils	Pearl millet	Protective irrigation from available sources	Hoing and weeding Kaoline spray @ 8% 2 % urea spray	Seed source with MSSC, NSC and ARS, K. Digras ARS, Karad MPKV, Rahuri
		Groundnut	Protective irrigation from available sources	Use of antitranspirant Kaoline spray @ 8%, Mulching	
		Finger millet	Protective irrigation from available sources	--	
	Medium soils	Pearl millet	Protective irrigation	Hoing and weeding Kaoline spray @ 8% 2 % urea spray	
		Pigeon pea	Protective irrigation and thinning	Hoing and weeding Kaoline spray @ 8% 2 % urea spray Opening of conservation furrow in between two rows of pigeon pea	
		Sorghum	Protective irrigation	2 % urea spray	
		Low land Paddy	Protective irrigation	2 % urea spray	
		Upland Paddy	Protective irrigation	2 % urea spray	
		Soybean	Protective irrigation	Hoing	
		Deep soils	Sorghum	Protective irrigation	
	Upland Paddy		Protective irrigation	2 % urea spray	
	Low land Paddy		Protective irrigation	2 % urea spray	
	Soybean		Protective irrigation	Hoing 2 % urea spray	
		Maize	Protective irrigation	Hoing and weeding 2 % urea spray	
Kharij Fallow		---	Take up soil and water conservation practices (like compartment bunding, ridges and furrow etc) for <i>rabi</i> crops		

Condition		Suggested Contingency measures				Remarks on Implementation
Terminal drought	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi crop planning		
(Early withdrawal of monsoon)	Shallow soils	Pearl millet	Protective irrigation or Harvest at physiological maturity stage, In case of poor grain filling harvest for fodder	No Rabi crop	Seed source with MSSC, NSC and ARS, K. Digraj ARS, Karad MPKV, Rahuri	
			Protective irrigation or Harvest at physiological maturity stage	No Rabi crop		
	Medium soils	Finger millet	Harvest at physiological maturity stage	No Rabi crop		
		Pearl millet	Protective irrigation or Harvest at physiological maturity stage, In case of poor grain filling harvest for fodder	Chick pea (Vijay/ Digvijay)/ Safflower (Bhima/ Phule kusuma)/ Sunflower (SS-56/Bhanu, Phule Bhaskar)		
			Pigeon pea	Protective irrigation		No Rabi crop
			Sorghum	Protective irrigation or Harvest at physiological maturity stage, In case of poor grain filling harvest for fodder		Chick pea (Vijay/ Digvijay)/ Safflower (Bhima/ Phule kusuma)/ Sunflower (SS-56/Bhanu, Phule Bhaskar)
		Low land Paddy	Protective irrigation/ Harvest at physiological maturity stage	Chick pea (Vishal/Vikas/ Vijay/ Digvijay)		
		Upland Paddy	Protective irrigation/ Harvest at physiological maturity stage	Chick pea (Vishal/Vikas/ Vijay/ Digvijay)		
		Soybean	Protective irrigation/ Harvest at physiological maturity stage	Wheat (Samadhan)/ Chick pea (Vijay/ Digvijay)/ Safflower (Bhima/ Phule kusuma)/ Sunflower (SS-56/ Bhanu, Phule Bhaskar)		

					Chick pea (Vijay/ Digvijay)/ Safflower (Bhima/ Phule kusuma)/ Sunflower (SS-56/Bhanu/ Phule Bhaskar)
				Protective irrigation or Harvest at physiological maturity stage, In case of poor grain filling harvest for fodder	Chick pea (Vishal/Vikas/ Vijay/ Digvijay)
			Upland Paddy	Protective irrigation/ Harvest at physiological maturity stage	Chick pea (Vishal/Vikas/ Vijay/ Digvijay)
			Low land Paddy	Protective irrigation/ Harvest at physiological maturity stage	Chick pea (Vishal/Vikas/ Vijay/ Digvijay)
			Soybean	Protective irrigation/ Harvest at physiological maturity stage	Wheat(Samadhan)/ Chick pea (Vijay/ Digvijay)/ Safflower (Bhima/ Phule kusuma)/ Sunflower (SS-56/Bhanu/ Phule Bhaskar)
			Maize	Protective irrigation/ Harvest at physiological maturity stage	Chick pea (Vishal/Vikas/ Vijay/ Digvijay)
			<i>Kharij</i> Fallow		Rabi Sorghum (M-35-1 /Phue Vasudha/ Phule Anuradha/ Phule chitra/ Phule Yashodha/ CSV- 18/ PKV- Kranti) Chick pea (Vijay/ Digvijay)/ Safflower (Bhima/ Phule kusuma)/ Sunflower (SS- 56/Bhanu, Phule Bhaskar)
Deep soils					

2.1.2 Irrigated situation

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
<p>Delayed release of water in canals due to low rainfall OR Limited release of water in canals due to low rainfall</p>	<p><i>Kharif</i> and <i>rabi</i> cropping under canal irrigation</p>	Sugarcane	No change	Pared row planting Alternate furrow irrigation from available source Trash mulching Adopt Drip irrigation	<p>Seed source with CSRS Padegaon MSSC, NSC and ARS, K. Digranj ARS, Karad MPKV, Rahuri</p>
		Soybean	Short duration varieties viz., JS- 9305	Wider row spacing of 45 cm give one supplemental irrigation at flowering	
		Wheat	Trambak, Tapovan Samadhan	Irrigate at critical growth stages CRI and flowering stage	
		Turmeric/Ginger	Turmeric: Salem, Phule Swarupa Ginger: Mahim Reo D Janero, Varada	Adopt raised bed planting, adopt drip irrigation	
		Onion	N-2-4-1, Baswavant-780, Phule Samarth	Hoeing, Weeding, Life saving irrigation	
		Tomato	Dhanasree, Baghyasree, Phule Raja	Life saving irrigation Hoeing	
		Brinjal	Hybrid Krishna	Life saving irrigation Hoeing	
		Potato	Kufri Pokhraj, Kufri Laukarand Khufri Surya	Life saving irrigation and earthing up	
		Tuberose	Phule Rajani	Life saving irrigation Hoeing, Weeding	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		Remarks on Implementation
			Change in crop/cropping system	Agonomic measures	
Non release of water in canals under delayed onset of monsoon in catchment	<i>Kharif</i> and <i>rabi</i> cropping under canal irrigation	Sugarcane	Pigeonpea, sunflower, chickpea, sorghum	Wider row spacing of 45 cm, give one supplemental irrigation at flowering stage	
		Soybean	Short duration varieties viz. JS-9305	Wider row spacing of 45 cm, give one supplemental irrigation at flowering stage	
		Wheat	Chickpea (Vijay, Digvijay) Safflower (Bhima)	Irrigate at critical growth stages CRI and flowering stage	
		Turmeric/Ginger	Soybean, Short duration varieties viz. JS-9305 Chickpea (Vijay, Digvijay)	Wider row spacing of 45 cm, give one supplemental irrigation at flowering stage	
		Onion	N-2-4-I, Baswavant-780, Phule Samarth	Hoeing, Weeding, Life saving irrigation	
		Tomato	Dhanasree, Baghyasree, Phule Raja	Life saving irrigation	
		Brinjal	Hybrid Krishna	Hoeing	
		Potato	Kufri Pokhraj, Kufri Laukarand Khufri Surya	Life saving irrigation and earthing up	
		Tuberose	Phule Rajani	Life saving irrigation	

Condition	Major Farming situation	Normal Crop/cropping system ^g	Suggested Contingency measures		Remarks on Implementation ^j
			Change in crop/cropping system ^h	Agonomic measures ⁱ	
Lack of inflows into tanks due to insufficient /delayed onset of monsoon			Not applicable		

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		Remarks on Implementation
			Change in crop/cropping system	Agronomic measures	
Insufficient groundwater recharge due to low rainfall	<i>Kharif</i> and <i>rabi</i> cropping under lift irrigation	Sugarcane	No change	Pared row planting Alternate furrow irrigation from available source Trash mulching Adopt Drip irrigation	Seed source with MSSC, NSC and ARS, K. Digranj ARS, Karad MPKV, Rahuri
		Soybean	Short duration varieties viz., JS- 9305	Wider row spacing of 45 cm give one supplemental irrigation at flowering	
		Wheat	Trambak, Tapovan	Irrigate at critical growth stages CRI and flowering stage	
		Turmeric/ Ginger	Turmeric: Salem, Phule Swarupa Ginger: Mahim Reo D Janero, Varada	Adopt raised bed planting, adopt drip irrigation	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		Remarks on Implementation
			Change in crop/cropping system	Agronomic measures	
	<i>Borewell/open well irrigated situation</i>	Pomegranate	--	Mulching around tree basin, adopt drip irrigation	
		Capsicum	--	As above	
		Onion	N-2-4-1, Baswavant-780, Phule Samarath	Hoeing, Weeding, Life saving irrigation	
		Tomato	Dhanasree, Baghyasree, Phule Raja	Life saving irrigation Hoeing	
		Brinjal	Hybrid Krishna	Life saving irrigation Hoeing	
		Potato	Kufri Pokhraj, Kufri Laukarand Khufri Surya	Life saving irrigation and earthing up	
		Tuberose	Phule Rajani	Life saving irrigation Hoeing, Weeding	

2.2 Unusual rains:

Condition	Suggested contingency measure			Flowering stage	Crop maturity stage	Post harvest
	Vegetative stage					
Continuous high rainfall in a short span leading to water logging						
Paddy	Drain out excess water			Drain out excess water	Harvest at physiological maturity stage	Harvest & dry in drying shade
Pearl millet	As above			As above	As above	As above
<i>Kharif</i> Sorghum	As above			As above	As above	As above
Soybean	As above			As above	As above	As above
Groundnut	As above			As above	As above	As above
Horticulture						
Mango	Drain out excess water			Drain out excess water	Immediate harvesting & marketing	
Grapes	As above			As above	As above	
Banana	As above			As above	As above	
Heavy rainfall with high speed winds in a short span²						
Paddy	Drain out excess water			Drain out excess water	Harvest at physiological maturity stage	Harvest & dry in drying shade
Pearl millet	As above			As above	As above	As above
<i>Kharif</i> Sorghum	As above			As above	As above	As above
Soybean	As above			As above	As above	As above
Sugarcane	As above			As above	Drain out excess water	--
Horticulture						
Mango	Darin out excess water and staking			Darin out excess water and staking	Early harvest & marketing	
Grapes	As above			As above	--	--

Outbreak of pests due to unseasonal rains	Vegetative Stage	Flowering Stage	Crop maturity stage	Post harvest
Sugarcane	<p>Early shoot borer Soil application of Chlorantraniliprole 0.4 % GR @ 18.75 kg / ha</p> <p>White grub Drenching of Fipronil 40% + Imidacloprid 40% WG @ 440 – 500 g in 1000 – 1250 liters of water per hectare.</p>	<p>Top shoot borer Soil application of Chlorantraniliprole 0.4 % GR @ 18.75 kg / ha</p> <p>White woolly aphid</p> <ul style="list-style-type: none"> ➤ De-trashing of canes if infestation exceeds low intensity and remove water shoots. ➤ Release of <i>Dipha aphidivora</i> @ 2500 grubs per ha or <i>Micromus igorotus</i> @ 1000 larvae per ha. ➤ Avoid excessive use of nitrogenous fertilizers. 		
Groundnut	<p>Thrips: Spray Quinalphos 25 % EC @ 1400 ml in 500-1000 liters of water per ha.</p> <p>Jassids: Imidacloprid 17.8%SL @ 100-125 ml in 500 liters of water per ha.</p>	<p>Leaf Roller: Spray Quinalphos 25 % EC @ 10-14 ml in 10 liters of water.</p>		
Paddy	<p>Stem Borer: Phorate 10 % G 10kg/ha or Quinolphos 5G 15 kg/ ha or Carbofuran 3G 16.5ka/ha</p>			
Sorghum	<p>Shoot fly: Spray 5 % NSE or Quinalphos 25 % EC @ 15 ml in 10 liters of water.</p> <p>Stem borer: Spray 5 % NSE or application of Quinalphos 5%G @ 15 kg / ha in leaf whorl.</p>	<p>Stem borer: Spray 5 % NSE or application of Quinalphos 5%G @ 15 kg / ha in leaf whorl</p>		

Chickpea	<p>Aphids / Jassids: * 1</p> <p>Heliothis : Spray 5 % NSE</p>	<p>Heliothis : Installation of pheromone traps. Spray 5 % NSE or HaNPV (Heliokil) @ 10 ml per 10 liters of water and / or chlorantraniliprole 18.5 % SC @ 2 ml / 10 liters of water.</p>		
	<p>Spodoptera / Hairy caterpillar / Semi looper :</p> <ul style="list-style-type: none"> ➤ Installation of pheromone traps. ➤ * 1 	<p>Spodoptera / Hairy caterpillar / Semi looper :</p> <ul style="list-style-type: none"> ➤ Installation of pheromone traps. ➤ * 1 		
Soybean	<p>Spodoptera :</p> <ul style="list-style-type: none"> ➤ Installation of pheromone traps. ➤ Caster can be use as trap crop. ➤ Spray SLNPV 500 LE or Indoxacarb 15.8 % EC @ 6.6 ml per 10 liters of water <p>Hairy caterpillar :</p> <ul style="list-style-type: none"> ➤ Collection and destruction of egg masses. 	<p>Spodoptera :</p> <ul style="list-style-type: none"> ➤ Installation of pheromone traps. ➤ Caster can be use as trap crop. ➤ Spray SLNPV 500 LE or Indoxacarb 15.8 % EC @ 6.6 ml per 10 liters of water <p>Hairy caterpillar :</p> <ul style="list-style-type: none"> ➤ Collection and destruction of egg masses. 		
Wheat	<p>Wheat Aphid: Thiomethoxam 25 WG 50g/ha in 500lit. water</p>			
Pigeon pea		<p>Pod Borer: Spray 5 % NSE or HaNPV (Heliokil) @ 10 ml per 10 liters of water and / or chlorantraniliprole 18.5 % SC @ 2 ml / 10 liters of water.</p>		

* 1 - As per "Directorate of Plant Protection, Quarantine & Storage Central Insecticide Board & Registration Committee, Faridabad," there is no insecticide registered for particular pest on particular crop.

Outbreak of diseases due to unseasonal rains	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Sugarcane	Diseases Rust: Spray Tebuconazole @ 0.1% or 0.3 % Mancozeb Brown Spot: Carbendazim 0.1 % Pokkha Boeng : 0.3 % Mancozeb or Carbendazim 0.1 %	---	--	--
Groundnut	Diseases Leaf spot & Rust – Spray Mancozeb 75 WP 0.25 % or Carbendazim 50WP 0.1 %	Diseases Leaf spot & Rust – Spray Mancozeb 75 WP 0.25 % or Carbendazim 50WP 0.1 %	--	Proper drying for control of <u>Aspergillus</u>
Paddy	Blight: Carbendazim 50WP 500g /ha or Copper oxychloride 50% @ 1250 g/ha	Bacterial blight: Streptocycline 75g /ha + Copper oxychloride 50% @ 1250 g/ha		
Sorghum	Blight : Copper oxychloride 4 g/lit	Grain mould: Spray Carbendazim 10 g or Thirum 20 g or Captan 20g per 10 liter water	Grain mould: Spray Carbendazim 10 g or Thirum 20 g or Captan 20g per 10 liter water	-
Chickpea	Wilt/ Root rot – Treat seed with carbendazim + mancozeb (2 g each/kg) or Phule Trichoderma 5 g/kg.			
Wheat	Rust: Mancozeb 1.5 kg/500lit water Blight: Mancozeb(0.2%) + Copper oxychloride (0.2%)			
Pearl millet	Downy Mildew (Gosavi): Copper oxychloride 1.0 kg/ha or Metaxil MZ 72 4 g/lit	Ergot: Thirum+ Copper oxychloride (1:2) 500 to 600 g/ha spray		
Pigeon pea	Wilt – Treat seed with carbendazim + mancozeb (2 g each/kg) or Phule Trichoderma 5 g/kg			
Soybean	Root rot/collar rot- Treat seed with carbendazim + mancozeb (2 g each/kg) or Phule Trichoderma 5 g/kg.	Rust – <ul style="list-style-type: none"> • Early sowing in last week of may • Use of disease resistant variety • Spraying the crop with Propiconazole @ 0.1% 	Charcoal rot- Provide protective irrigation	

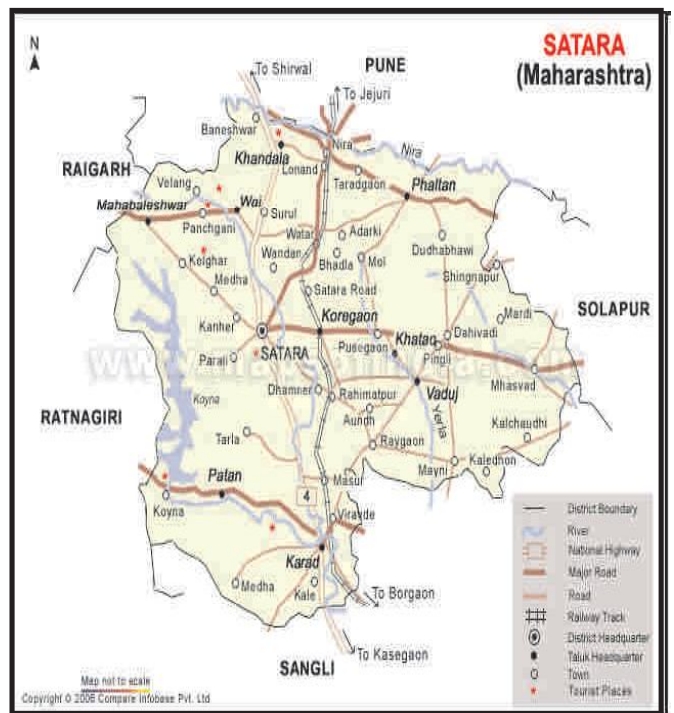
Onion	Blight - Dithane M-45 @ 0.25%, Thrips - Lambda cyhalothrin 4.9 % CS @ 300 ml/ha. OR Oxydematon Methyl 25% EC @ 1200/500 lit @ 1200ml/500lits of water	Blight - Dithane M-45 @ 0.25%, Thrips - Lambda cyhalothrin 4.9 % CS @ 300 ml/ha. OR Oxydematon Methyl 25% EC @ 1200/500 lit OR Quinoliphos 25 % EC @ 1200ml/500lits of water	
Tomato	Blight - Dithane M-45 @ 0.25%, Thrips - Lambda cyhalothrin 4.9 % CS @ 300 ml/ha. OR Oxydematon Methyl 25% EC @ 1200/500 lit OR Quinoliphos 25 % EC @ 1200ml/500lits of water Early and late blight - Azoxystrobin 23% SC @ 500 ml/500 lit of water OR COC 50 % WP 2.5 kg/ 1000lit of water OR Dithane M-45 @ 0.25%, Late blight : Cyzafamid 34.5 % SC @ 200 ml / 500 lit of water		Buck eye spot - Metalaxy 8 %
Cole crop	Downy mildew - Metalaxy 8 % + Mancozeb 64% @ 0.2% Dimond black moth – Azadirachtin 0.03% (300 ppm), Neem oil based WSP @ 250 ml/500lit of water, <i>Bacillus thurengensis</i> 600-1000g/500 lit of water		
Leafy vegetable	Blight - Dithane M-45 @ 0.25%		
Aster	Blight - Dithane M-45 @ 0.25%		
Tuberose	Blight - Dithane M-45 @ 0.25%, Stem rot - Drenching Captan 0.3%, Thrips- Methyl dimeton 25% 1ml / l.		

2 Floods: Not applicable

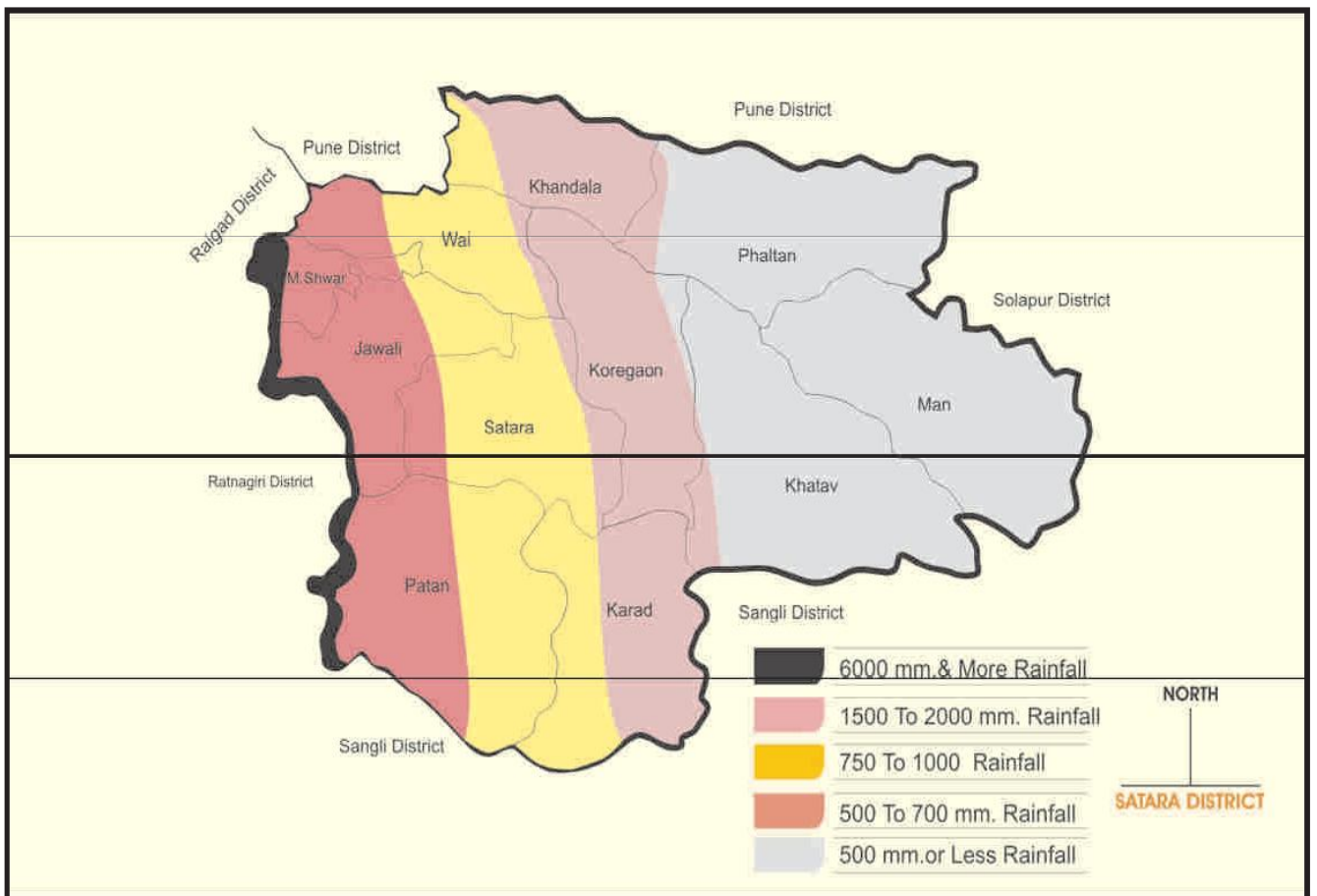
2.3 Extreme events: Heat wave/Cold wave/Frost/Hailstorm/Cyclone : Not applicable

2.5 Contingent strategies for Livestock, Poultry & Fisheries : Separate Chapter given (Animal Component for All District)

Annexure-I: Location Map of Maharashtra and Satara



Annexure-II: Mean rainfall of Satara District



Annexure-III: Soil Map of Satara District

