



NASHIK DISTRICT

CONTINGENT CROP PLANNING AND AGRO ADVISORY

EDITORS

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2017

STATE : MAHARASHTRA
Agriculture Contingency Plan for District: NASHIK

1.0 District Agriculture profile	
1.1	Agro-Climatic/Ecological Zone
	Western Ghat and coastal plain hot humid (6.2)
	Western plateau and hills region (IX)
	Western Ghat Zone - ZARS, Igatpuri, Dist. Nashik
	Western Maharashtra Scarcity Zone (MH-6),- ZARS, Solapur
	Sub Montane Zone – ZARS, Kolhapur
	Plain Zone – ZARS, Ganeshkhind, Pune
	Western Ghat Zone - Nashik (Western Part), Nandurbar, Satara, Kolhapur, Pune
	Scarcity Zone - Sangli, Nandurbar, Nasik (Eastern Part), Dhule, Ahmednagar, Pune, Solapur, Satara(Part), Kolhapur (Part), Jalgaon
	Western Maharashtra Plain Zone – Pune (Eastern Part), Kolhapur, Sangli, Satara, Nashik (Central Part)
	Sub Montane Zone – Part of Satara, Nashik (Western Part) , Kolhapur, Pune
	Latitude Longitude Altitude
	19°00'02.38" NL 73°46'51.07 EL 1945 ft MSL
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS
	Zonal Agricultural Research Station, Igatpuri, Dist-Nashik, 422 403 E-mail: adrigatpuri@gmail.com
	Mention the KVK located in the district
	Krishni Vignyan Kendra, Yashwantrao Chavan Maharashtra Open University, Nashik. PIN 422 005 Krishni Vignyan Kendra , Malegaon Dist. Nasik
1.2	Rainfall
	Normal rainfall (mm) Normal rainy days (No.) Normal onset Normal cessation
	SW monsoon (June-Sep) 926.2 29 18 th to 24 th June 22 nd to 28 th October
	NE Monsoon(Oct-Dec) 105.3 8 - -
	Winter (Jan-Feb) 8.2 2 - -
	Summer(Mar-May) 36.1 3 - -
	Annual 1076.0 42 - -
1.3	Land use pattern of the district (latest statistics)
	Geographical area Cultivable area Forest area Land non-agricultural use Permanent pastures Cultivable waste land Land under Misc. tree crops and groves Barren and uncultivable land Current fallows Other fallows
	Area ('000 ha) 1485.4 674.6 450.5 18.6 25.1 131.7 5.7 35.7 93.1 28.9

Source: District socio-economic review (2015-16)

1.4	Major Soils (mention colour and texture of soils)	Area (000 ha)		
	Shallow red soils	536.7		
	Medium red / black soils	170.3		
1.5	Deep black soils	101.9		
	Agricultural land use	Area (000 ha)		
	Net sown area	674.6		
1.6	Area sown more than once	69.9		
	Gross cropped area	744.5		
	Irrigation	Area (000 ha)		
Sources of Irrigation	Net irrigated area	199.8		
	Gross irrigated area	199.8		
	Rainfed area	474.8		
	Canals	Number	Area ('000 ha)	Percentage of total irrigated area
	Tanks	922	25.1	12.55
	Open wells	153871	9.7	4.85
	Bore wells	143	151.6	75.80
	Lift irrigation schemes	21	6.7	3.35
	Micro-irrigation	--	3.3	1.65
	Other sources	--	--	--
	Total irrigated area	--	3.4	1.80
	Pump sets (Diesel + Electrical)5359+96209	101568	199.8	100.00
	No. of tractors	16000		

Source: District socio-economic review (2015-16)

1.7 Area under major field crops & horticulture etc. (2011-12)

1.7	Major field crops cultivated	Area ('000 ha)										
		Kharif		Total		Irrigated		Rabi		Summer		Total
		Irrigated	Rainfed	Rainfed	Total	Irrigated	Rainfed	Rainfed	Total	Irrigated	Rainfed	
	Pearl millet	--	130.4	130.4	--	--	--	--	3.0	--	133.4	
	Maize	--	82.4	82.4	--	2.1	2.1	--	--	--	84.1	
	Low land Paddy	--	41.6	41.6	--	--	--	--	--	--	41.6	
	Groundnut	--	23.9	23.9	--	--	--	2.1	--	26.0		
	Finger millet	--	35.6	35.6	--	--	--	--	--	35.6		
	Sugarcane	20.1	--	20.1	--	--	--	--	--	20.1		
	Soybean	8.7	13.8	22.5	--	--	--	--	--	22.5		
	Wheat	--	--	--	33.9	--	--	--	--	33.9		
	Chickpea	--	--	--	--	21.1	--	--	--	21.1		
	Cotton	19.0	17.3	36.3	-	--	-	-	-	36.3		
	Horticultural crops-Fruits	Total area('000 ha)			Irrigated		Rainfed					
	Grape		29.4			29.4				--		
	Pomegranate		31.4			31.4				--		
	Guava		1.7			1.7				--		
	Horticultural crops-Vegetables	Total area ('000 ha)			Irrigated		Rainfed					
	Onion		68.2			68.2				--		
	Tomato		13.6			13.6				--		
	Cauliflower, Cabbage		--			--				--		
	Medicinal & Aromatic crops	Total area			Irrigated		Rainfed					
	Not applicable					NA						
	Plantation crops	Total area			Irrigated		Rainfed					
	Not applicable					NA						
	Fodder crops	Total area ('000 ha)			Irrigated ('000 ha)		Rainfed ('000 ha)					
	Lucerne		9.8			9.8				--		
	Maize		24.7			18.5				6.2		
	Total fodder crop area		34.5			28.3				6.2		
	Grazing land		42.2			-				-		
	Sericulture		1.2			-				-		
	Others specify		-			-				-		

Source: Comprehensive District Agriculture plan 2015-16 DASAO Nashik

1.8	Livestock	Male ('000)	Female ('000)	Total ('000)
	Cattle	543.3	472.5	1015.8
	Buffaloes	185.5	83.0	268.5
	Commercial dairy farms	--	--	65
	Goat	--	--	599.8
	Sheep	--	--	356.4
	Others (Camel, Pig, Yak etc)	--	--	36.7

1.9	Poultry	No. of farms	Total No. of birds ('000)
	Commercial	-	15501.1
	Backyard	-	379.1

1.10	Fisheries	No. of fishermen	Boats		Nets	
	A. Capture		Mechanized	Non-mechanized	Mechanized	Non-mechanized
	i. Marine					
		NA	--	--	--	--
	ii. Inland	No. Farmers own ponds	No. of Reservoirs		No. of village tanks	
		0	123		922	
	B. Culture	Water spread area (ha)	Yield (t/ha)		Production ('000 t)	
	i. Brackish water	--	--		--	
	ii. Fresh water	18424	0.195		4100	
	Other	--	--		--	

Source: District socio-economic review (2015-16)

1.11 Production and productivity of major crops (Av. of last five years 2011-15)

1.11	Name of crop	Kharif		Rabi		Summer		Total	
		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									
	Pearl millet	209.0	1110	--	--	--	--	209.0	1110
	Low land Paddy	46.9	1352	--	--	--	--	46.9	1352
	Maize	100.4	2884	6.5	2826.0	--	---	106.9	2855
	Finger millet	33.1	787	--	--	--	--	33.1	787
	Groundnut	26.2	966	--	--	2.8	1272.7	29.0	1119.3
	Soybean	40.2	1786					40.2	1786
	Chickpea	-		23.7	548.6			-	
	Wheat			67.9	1886				
	Sugarcane	36.1	86					36.1	86
	Cotton	25.6	329					25.6	329
Major Horticultural crops									
	Grape	777.0	25064.5					777.0	25064.5
	Pomegranate	596.7	19003.1					596.7	19003.1
	Onion	1052.8	16000.0					1052.8	16000.0
	Tomato	1051.3	25641.4					1051.3	25641.4
	Cabbage, Cauliflower	241.6	20827.5					241.6	20827.5

Source: Comprehensive District Agriculture plan 2010 and 2015-16. DASAO Nasik, Source: District socio-economic review (2015)

1.12	Sowing window for 5 major crops	Low land / upland Paddy	Millet Pearl millet and Finger millet	Maize	Groundnut	Cotton	Soybean	Wheat
	Kharif-Rainfed	2 nd week to 3 rd week of June	3 rd week of June to 2 nd week of July	3 rd week of June to 2 nd week of July	3 rd week of June to 2 nd week of July	3 rd week of June to 1 st week of July	3 rd week of June to 3 rd week of July	--
	Kharif-Irrigated	--	--	--	--	-	--	--
	Rabi-Rainfed	--	--	--	--	-	--	End of Oct
	Rabi-Irrigated	--	--	Nov-Dec	--	-	--	T.S 2 nd week of Nov -End of Nov. L.S. 2 nd fortnight of Dec.

1.13	What is the major contingency the district is prone to?	Regular	Occasional	None
	Drought	-	√	-
	Flood	-	√	-
	Cyclone	-	-	√
	Hail storm	-	√	-
	Heat wave	-	-	√
	Cold wave	-	-	√
	Frost	-	-	√
	Sea water inundation	-	-	√
	Pests and diseases out break (specify)	-	√	-

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 II (Give histogram)	Enclosed : Yes
	Soil map as Annexure II	Enclosed : Yes

2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Suggested Contingency measures						
Condition	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation	
Early season drought (delayed onset) Delay by 2 Week July 1 st week	Shallow red soils	Pearl millet	Dhanshakti, Adishakti, mahashakti	Hoeing at 15 and 30 DAS	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors	
		Groundnut	JL-24 , JL-286, JL-501, Phule Bharati, Phule Unnati	As above		
	Medium red / black soils	Finger millet	Dapoli-1, Dapoli Saphed, Phule Nachani, Dapoli-2	Paired row planting, Application of fertilizers in briquette form @ 50:40:25 NPK Kg/ha.		
		Low land Paddy	Indrayani,, Phule Radha, Phule Samrudhi, Bhogavati	Paired row transplanting, Application of fertilizers in briquette form @ 56:30:30 NPK Kg/ha.		
		Maize	Karveer, Rajarshee, Phule maharshi	Sowing on ridges and furrows		
		Niger	Phule Karala, Phule Vaitarna	Thinning, Hoeing and weeding		
		Onion	Basavant -780	Raise seedling under irrigation		
		Maize	Karveer, Rajarshee,	Sowing on ridges and furrows		
		Cotton	Bt cotton	Opening of furrows for moisture conservation in between two rows ,Drip irrigation		
		Soybean	DS 228, JS 335, Phule Agrani, P. Sangam	Hoeing, Weeding		
Condition	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation	
Early season drought (delayed onset) Delay by 4 Week July 3 rd week	Shallow red soils	Pearl millet	Dhanshakti, Adishakti, Mahashakti	Hoeing at 15 and 30 DAS	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors	
		Groundnut	JL-24 , JL-286, JL-501, Phule Bharati, Phule Unnati	As above		
		Finger millet	Dapoli-1, Dapoli Saphed, Phule Nachani	Paired row planting, Application of fertilizers in briquette form @ 50:40:25 NPK Kg/ha. Raising of seedling under irrigation in June.		

	Medium red / black soils	Low land Paddy	Indrayani,, Phule Radha, Phule Samrudhi,Bhogavati	Staggered nursery sowing in June.
		Maize	Karveer, Rajarshee, P. maharshi	Sowing on ridges and furrows
		Niger	Phule Karala, Phule Vaitarna	Thinning, Hoeing and weeding
		Onion	Basavant -780, Phule Samarth	Raise seedling under irrigation
	Deep black soils	Maize	Karveer, Rajarshee, P. maharshi	Sowing on ridges and furrows
		Soybean	DS 228, JS 335, Phule Agrani, P. sangam	Hoeing, Weeding

Suggested Contingency measures					
Condition	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agromomic measures	Remarks on Implementation
Early season drought (delayed onset) Delay by 6 weeks August 1 st week	Shallow red soils	Pearl millet	Dhanshakti,Adishakti, Mahashakti	Hoeing at 15 and 30 DAS	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors
		Groundnut	Pearl millet (Dhanshakti,Adishakti, Mahashakti)	As above	
		Finger millet	Sowing of semi rabbi crop. Horsegram Phule sakas		
Medium red / black soils		Low land Paddy	Early variety R-24		
		Maize	Karveer, Rajarshee, P. maharshi	Sowing on ridges and furrows	
		Niger	Horsegram Phule sakas. Cowpea Phule vithai, Phule pandhari.		
		Onion	Phule Samarth	Raise seedling under irrigation	
	Deep black soils	Maize	Karveer, Rajarshee, P. maharshi	Sowing on ridges and furrows	

Suggested Contingency measures					
Condition	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agromomic measures	Remarks on Implementation
Early season drought (delayed onset) Delay by 8 weeks August 3 rd week					
			Suitable for semi rabbi.		

Suggested Contingency measures						
Condition	Major Farming situation	Normal Crop / Cropping system	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.	Shallow red soils	Pearl millet	Hoeing /mulching Protective irrigation with sprinkler , through farm pond.	Opening of conservation furrows, Organic mulch.	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors	
		Groundnut	As above	As above		
	Medium red / black soils	Finger millet	Organic mulch.	Organic mulch.		Weeding and hoeing.
		Low land Paddy	Protective irrigation in nursery.	Protective irrigation in nursery.		Weeding in nursery
		Maize	Hoeing /mulching Protective irrigation with sprinkler , through farm pond.	Hoeing /mulching Protective irrigation with sprinkler , through farm pond.		Weeding and hoeing.
		Niger	Thinning	Thinning		Weeding, Hoeing
	Deep black soils	Onion	Protective irrigation with sprinkler	Protective irrigation with sprinkler		Weeding , Sprinkler irrigation
		Maize	Protective irrigation in alternate rows,	Protective irrigation in alternate rows,		Hoeing, Moisture conservation by opening of furrows
		Cotton	Gap filling ,Hoeing	Gap filling ,Hoeing		Opening of dead furrows
		Soybean	Hoeing and thinning	Hoeing and thinning		Weeding , Sprinkler irrigation
Condition			Suggested Contingency measures			
Mid season drought (long dry spell, consecutive 2 weeks rainless (2.5 mm) At vegetative stage	Major Farming situation	Normal Crop / Cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation	
		Pearl millet	Hoeing Protective irrigation through farm pond	Opening of conservation furrows, Organic mulch. 8% Kaoline spray. 2% Urea spray.		
	Groundnut	As above	As above	As above		
	Finger millet	Hoeing and Organic mulch	2% Urea spray.			
	Medium red / black soils	Low land Paddy	Protective irrigation through farm pond	--		
		Maize	As above	8% Kaoline spray		
		Niger	Weeding, Hoeing	Mulching		
	Onion	--		Weeding , Sprinkler irrigation		

Deep black soils	Maize	Protective irrigation in alternate rows,	Hoing, Moisture conservation by opening of furrows
	Cotton	Hoing ,Protective irrigation, Drip	Drip irrigation
	Soybean	Protective irrigation	Protective irrigation, 8% Kaoline spray

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) At reproductive stage	Shallow red soils	Pearl millet	Protective irrigation through farm pond	--	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors	
		Groundnut	As above	--		
		Finger millet	-	--		
	Medium red / black soils	Low land Paddy	Protective irrigation	Protective irrigation		--
		Maize	Protective irrigation in alternate rows	--		
		Niger	--	--		
	Deep black soils	Onion	--	Sprinkler irrigation		--
		Maize	Protective irrigation in alternate rows,	--		
		Cotton	Protective irrigation, Drip	Drip irrigation		--
		Soybean	--	-		--
Condition				Suggested Contingency measures		
Terminal drought (early withdrawal of monsoon)	Major Farming situation	Normal Crop/ cropping system	Crop management	Rabi Crop planning		
				Remarks on Implementation		
	Shallow red soils	Pearl millet	In case of poor grain filling harvest for fodder	--	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors	
		Groundnut	Protective irrigation or harvest at physiological maturity	--		
Medium red / black soils	Finger millet	In case of poor grain filling harvest for fodder	--			
	Low land Paddy	Protective irrigation	Cowpea , Lentil, Wheat, Mustard as post paddy crop.			

	Maize	Protective irrigation in alternate rows	Chickpea (Vijay, Diggvijay)
	Niger	--	--
	Onion	--	Ragbhi onion (N-2-4-1)
Deep black soils	Maize	Protective irrigation in alternate rows,	
	Cotton	Protective irrigation, Drip	Drip irrigation
	Soybean	--	-

2.1.2 Irrigated situation

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop /Cropping system	Change in crop/Cropping system	Agronomic measures	
Delayed release of water in canals due to low rainfall	Medium deep black / red soils	Sugarcane	No Change	Alternate furrow / drip irrigation, Sugarcane trash mulching	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors
		Onion	Late <i>khari</i> f onion, Phule Samartha	Sprinkler irrigation	
		Vegetables	No Change	Drip irrigation & paper mulch	
		Wheat	Samadhan , Netravati, Trimbak,	Irrigate at critical growth stages through Sprinkler irrigation	
		Chickpea	Vijay, Diggvijay, Vishal , Virat , Vikram	Irrigate at critical growth stages through Sprinkler irrigation	
Limited release of water in canals due to low rainfall	Medium deep black / red soils	Normal Crop /Cropping system	Change in crop/Cropping system	Agronomic measures	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors
		Sugarcane	No Change	Alternate furrow / drip irrigation, Sugarcane trash mulching	
		Onion	Late <i>khari</i> f onion-Phule samartha	Sprinkler irrigation	
		Vegetables	No Change	Sprinkler irrigation	
		Wheat	Trimbak, Godavari, Tapovan or Chickpea (Vijay, Diggvijay, Vishal)	Irrigate at critical growth stages through Sprinkler irrigation	
Non release of water in canals under delayed	Medium deep	Normal Crop /Cropping system	Change in crop/Cropping system	Agronomic measures	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors
		Sugarcane	No Change	Alternate furrow / drip irrigation,	

onset of monsoon in catchment	black / red soils	Onion	Late <i>kharif</i> onion	Sugarcane trash mulching	MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors
		Vegetables	No Change	Sprinkler irrigation	
		Wheat	Samadhan , Netravati	Sprinkler irrigation through critical growth stages	
		Chickpea	Vijay, Digvijay, Vishal , Virat , Vikram	Irrigate at critical growth stages through Sprinkler irrigation	

Condition	Major Farming situation	Normal Crop /Cropping system	Change in crop /Cropping system	Suggested Contingency measures	
				Agronomic measures	Remarks on Implementation
Lack of inflows into tanks due to Insufficient /delayed onset of monsoon	Medium deep black / red soils	Sugarcane	No crops can be taken under such situation and for grape and pomegranate, give life saving irrigation from other sources.		
		Grape			
		Pomegranate			
		Onion			
		Wheat			
		Chickpea			
Condition Insufficient groundwater recharge due to low rainfall	Medium deep black / red soils – Open well irrigated	Normal Crop /Cropping system	Change in crop /Cropping system	Suggested Contingency measures	
		Sugarcane	--	Agronomic measures	Remarks on Implementation
		Grape	--	Alternate furrow / drip irrigation, Sugarcane trash mulching	Linkages with MPKV, Rahuri, College of Agriculture Pune, Dhule, Kolhapur, NSC, MSSC, Private co. distributors
		Pomegranate	--	Drip irrigation, mulching with residues / grassess	
		Onion	Pearl millet	As above	
		Wheat (Phule samadhan)	Chickpea (Vijay, Digvijay, Vishal)	Protective irrigation	
		Chickpea	Vijay, Digvijay, Vishal	Sprinkler irrigation at critical stage	

2.2 Unusual rains

Condition	Suggested contingency measure				Post harvest
	Vegetative stage	Flowering stage	Crop maturity stage		
Continuous high rainfall in a short span leading to water logging					
Pearl millet	Drain out excess water	Drain out excess water	Harvest the crop	Cover with tarpaulin, drying in shade	
Maize	As Above	As Above	As above	As Above	
Soybean	As above	As Above	As above	As above	
Finger millet	As Above	As Above	As above	As above	
Lowland Paddy	--	--	Drain out excess water	--	
Cotton	Drain out excess water	Drain out excess water	Drain out excess water		
Soybean	Drain out excess water	Drain out excess water	Harvest the crop	Cover with tarpaulin, drying in shade	

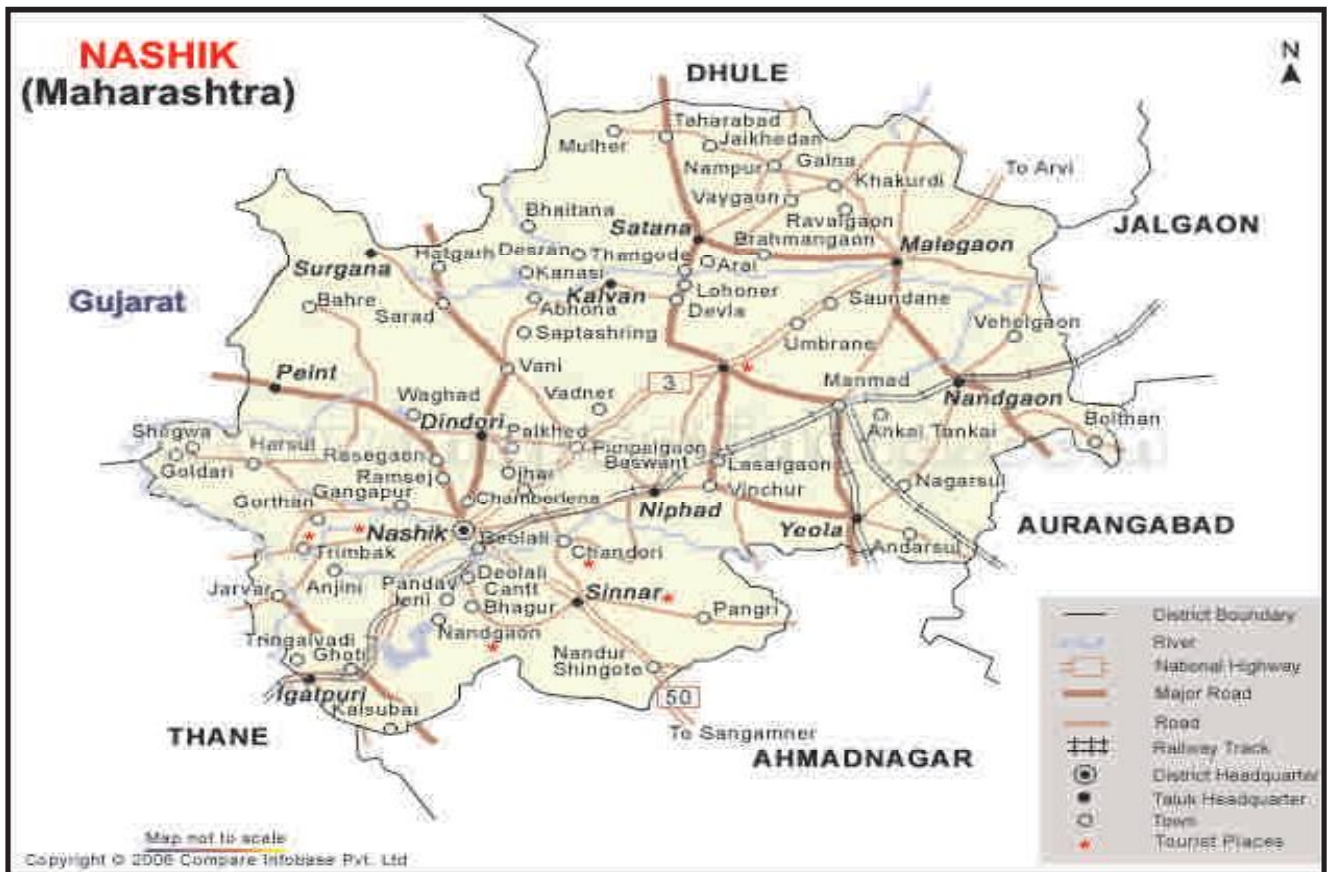
Horticulture	Suggested contingency measure				Post harvest
	Vegetative stage	Flowering stage	Crop maturity stage		
Onion	Drain out excess water , Drenching with fungicide	Drain out excess water	Drain out excess water	Protect produce properly	
Tomato	As Above	Staking to plants Drain out excess water	As above	As above	
Grape	As above	Plant protection measures Drain out excess water	Harvesting, Drain out excess water	As above	
Pomegranate	Drain out excess water, Plant protection measures	As above	As Above	As above	
Heavy rainfall with high speed winds in a short span – Not applicable					

Outbreak of pests and diseases due to unseasonal rains	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Finger millet	<p>Leaf Blast and Neck Blast : Spraying of Carbendazim 50 WP 1g/L water and subsequent 2-3 spray at interval of 15 days</p> <p>Turcium leaf blight 2-3 spraying of Mancozeb 75 WP @ 0.25 % & subsequent 2-3 sprays at interval of 15 days</p> <p>Aphids : Spraying of Dimethoate 30% /</p>	<p>Earhead Catterpillar Quinolphos 25 EC @20ml/L or dusting with Methyl parathion 2% @ 20kg/ha</p> <p>Aphids: Spraying of Dimethoate 30% / Monocrotophos 36SL @ 1 ml/L Stem borer: Carbaryl 50 wp @2.5g/Lor Application of Carbofuron 33kg or Phorate 10kg/ha</p>		
Maize	<p>Leaf Blast/ Neck Blast: Carbendazim 50 WP 1 g/L subsequent 2-3 spray at interval of 15 days . Mancozeb 75% WP 20g/10 lit</p> <p>Leaf scald: Spraying of Carbendazim 50 WP 1 g/Propiconazole 25 EC 1 ml/L</p> <p>Sheath blight: Spraying of Propiconazole 1 ml/L</p> <p>Leaf roller / Leaf folder /Stem borer: Spraying of Chlorantranilprole 18.5 SC @0.30ml/L or Cartaphydrochloride 50SP @2.0g/L. Bacillus thuringiensis 2.5g/L. Beauveria bassiana @ 4g/L</p> <p>Brown plant hoppers:: Fipronil 5SC 2.0 ml/L or Flonicamid 50WG 0.30ml/L</p>	<p>Leaf Blast /Neck Blast: Spraying of Carbendazim 50 WP 1 g/L subsequent 2-3 spray at interval of 15 days</p> <p>Leaf scald: Spraying of Carbendazim 50 WP 1 g/Propiconazole 25 EC 1 ml/L</p> <p>Sheath rot: Spraying of Propiconazole 25 EC /Hexaconazole 25 EC 2 ml/L</p> <p>False smut: Spraying with Chlorothalonil 75WP 2g/L</p> <p>Leaf roller / /Stem borer: Spraying of Chlorantranilprole 18.5 SC @0.30ml/L or Cartaphydrochloride 50SP @2.0g/L. Bacillus thuringiensis 2.5g/L. Beauveria bassiana @ 4g/L</p>	<p>Sheath rot: Spraying of Propiconazole 25 EC/Hexaconazole 2 ml/L</p> <p>False smut: Spraying with Chlorothalonil 75WP2g/L</p> <p>Brown plant hoppers: Fipronil 5SC 2.0 ml/L or Flonicamid 50WG 0.30ml/L</p>	
Lowland Paddy	<p>Leaf eating caterpillar/Hairy caterpillar: Spraying of Chlorantranilprole 18.5SC @0.30ml/L</p> <p>Girdle beetle &Stem fly: Quinalphos 25EC @2.0ml/L Trizophos 40EC @1.25ml/L</p>	<p>Leaf eating caterpillar/Hairy caterpillar: Spraying of Spraying of Chlorantranilprole 18.5SC @0.30ml/L</p> <p>Girdle beetle &Stem fly: Quinalphos 25EC @2.0ml/L Trizophos 40EC @1.25ml/L</p>		
Soybean	<p>Leaf eating caterpillar/Hairy caterpillar: Spraying of Chlorantranilprole 18.5SC @0.30ml/L</p>	<p>Leaf eating caterpillar/Hairy caterpillar: Spraying of Spraying of Chlorantranilprole 18.5SC @0.30ml/L</p> <p>Girdle beetle &Stem fly: Quinalphos 25EC @2.0ml/L Trizophos 40EC @1.25ml/L</p>		
Sugarcane	<p>Insect pest – i) Stem borer – - Soil application of 10G Phorate @ 20</p>	<p>a) Insect pest – ii) Top shoot borer - Removal of dead heads</p>		

	kg/ha or Fipronil 0.3GR 25kg/ha or Fipronil 5SC 3.0ml/L - Removal of dead heads ii) Top shoot borer - Removal of dead heads - 20 EC Chloropyriphos 20% @ 5 lit. in 100 lit. water through channel	- 20 EC Chloropyriphos 20% @ 5 lit. in 100 lit. water through channel Woolly aphids: Spraying of Metasystoc 2.0ml/L		
Pearl millet	a) Insect pest - Grass hopper - Dusting of methyl parathion 2% @ 20 kg / ha	a) Disease – Rust – - Spraying of Mancozeb 75 WP 2.5g/L b) Insect pest - Blistar beetle - Dusting of methyl parathion 2% @ 20 kg /ha		
Chickpea	Disease - Wilt / root rot- - seed treatment with carbendazim 50WP + thirum (2 g each / kg) or Phute trichoderma 5 g /kg Gram pod borer: Emamectin benzoates 5SC @ 0.40g/L, Heliokil 1.0ml/L	a) Disease - Wilt / root rot- - seed treatment with carbendazim 50WP + thirum (2 g each / kg) or Phute trichoderma 5 g /kg b) Insect pest – Gram pod borer: - Use of pheromone traps @ 5 /ha - Spraying of Quinoliphos 25% / Chloropyriphos 20% @ 20 ml / 10 lit. Heliokil 1.0ml/L	a) Insect pest – Heliiothis (Gram pod borer) - Use of pheromone traps @ 5 /ha - Spraying of Quinoliphos 25% / Chloropyriphos 20% @ 2.0 ml / L	
Horticulture				
Onion	Alternaria leaf blight & Purple Blotch: Mancozeb 75% 2.5g. or Carbendenzim 50WP 1g. or Tebuconazole 1 ml/L Thrips : Fipronil 80WG @20g/100L water	Thrips : Fipronil 80WG @20g/100L water		
Tomato	Alternaria leaf blight: Mancozeb 75WP 2.5g/L or COC 2.5g or Propineb 1.5g/L White fly/Mites/Thrips: Spiromesifen 22.9% @1.0ml/L, Thiamethoxam 25WG@0.50g/L Mites: Fenazaquin 10EC 2.0ml/L Imidacloprid 17SL 0.5ml/L	Alternaria leaf blight: Mancozeb 75WP 2.5g /L or COC 2.5g/L or Propineb 1.5g/L Fruit borer : Flubendiamide 39.35SC @ 20g/100lit of water. HaNPV @ 1.0ml /lit of water.		
Cauliflower/ Cabbage	Thrips/Aphids/Jassids: Soil application of Phorate 10G 10 kg/ha or Spinosad 2.5SC @1.0ml/L or Diamethoate 30% 1.5ml/L Diamond black moth: Bacillus thuringiensis @ 2.0g/L. Beauveria bassiana 10% SC @	Anthracnose – spraying of Mancozeb 75WP 2.5g or Copper oxichloride 50WP 2.5g or chlorothalonil 2.5 g/L Black rot: Spraying of Copper oxichloride 50WP 3g + Streptomycin 0.01 g/L		

	<p>3.00ml/L. Emamectin benzoates 5 SG @ 0.40g/L.Lufenurons 4EC @ 1.0ml/L. Fipronil 5SC @2.0ml/L</p>	<p>Thrips/Aphids/Jassids: Soil application of Phorate 10G 10 kg/ha or Spinosad 2.5SC @1.0ml/L or Diamethoate 30% 1.5ml/L Diamond black moth: Bacillus thuringiensis @ 2.0g/L. Beauveria bassiana 10% SC @ 3.00ml/L. Emamectin benzoates 5 SG @ 0.40g/L.Lufenurons 4EC @ 1.0ml/L. Fipronil 5SC @2.0ml/L</p>	<p>a) Insect pest – Mealy bug – Use of sticky traps on trunks and girdles, Spraying of Bufrofezin 25SC 21.50ml/</p>	
Grape	<p>Disease – Anthraxnose – spraying of carbendazium 50 WP 0.1 % or Propineb 70 WP 3.0g/L COC 50WP 2.5g/L Powdery mildew - Spraying of wettable sulfur 80 WP 0.2 % Downy mildew – spraying of bordo mixture 0.4 to 1.0 % or Metalaxyl mancozeb 0.2 % or Cymoxanil mancozeb 0.2 % or Finamidone mancozeb 0.25% Insect pest – Thrips: Lambda cyhalothrin 5CS@0.50ml/L .Fipronil 80WG @0.85g/L. Emamectin benzoate @ 5SC 0.22g/L Mealy bug – Use of sticky traps on trunks and girdles, Spraying of Bufrofezin 25SC 21.50ml/L</p>	<p>Disease –Powdery mildew - Spraying of wettable sulfur 80 WP 0.2 % or Hexaconazole 5EC 1ml or Difenconazole 25EC 0.5 ml, Myclobutanil 10WP 0.4 g/L, Azoxystrobin 23 SC 0.5 ml/L ii) Downy mildew –Mancozeb 1.5 to 2.0g or Cymoxanil + mancozeb 0.2 % or Propineb 70wp 3g/L a) Insect pest – Thrips: Lambda cyhalothrin 5CS@0.50ml/L .Fipronil 80WG @0.85g/L. Emamectin benzoate @ 5SC 0.22g/L Mealy bug – Use of sticky traps on trunks and girdles, Spraying of Bufrofezin 25SC 21.50ml/</p>	<p>a) Disease – Powdery mildew- Difenconazole 25EC 0.5ml/L Anthraxnose – spraying of carbendazium 50 WP 0.1 % Or Propineb 70wp 3.0g/L b) Insect pest – Thrips: Lambda cyhalothrin 5CS@0.50ml/L .Fipronil 80WG @0.85g/L. Emamectin benzoate @ 5SC 0.22g/L Mealy bug – Use of sticky traps on trunks and girdles, Spraying of Bufrofezin 25SC 21.50ml/</p>	
Pomegranate	<p>a) Disease - i) Bacterial oily spot (Xanthomonas spp.) – Adopt recommended special package of University / NRC, Pomegranate ii) Fungal spot- Spraying of carbendazium 50 WP 0.1 % b) Insect pest - Shot hole borer - Use Geru paste with chloropyriphos 20% 2.0ml/L - Soil application of phorate 10G @ 10g/plant in basin</p>	<p>a) Disease - i) Bacterial oily spot (Xanthomonas spp.) – Adopt recommended special package of University / NRC, Pomegranate ii) Fungal spot- Spraying of carbendazium 50WP 0.1 % b) Insect pest - Shot hole borer - Use Geru paste with chloropyriphos 20% 2.0ml/L - Soil application of phorate 10G @ 10g/plant in basin</p>	<p>Disease - i) Bacterial oily spot (Xanthomonas spp.) – Adopt recommended special package of University / NRC, Pomegranate</p>	

Annexure I: Map of Nashik District



Annexure III: Soil Map of Nashik District

