Nanaji Deshmukh Krushi Sanjeevani Prakalp

Strategic Research & Extension Plan (SREP)
Climate Resilient Agriculture Supplement
of
District Beed

Prepared by

Agricultural Technology Management Agency(ATMA), Beed

and

Project Management Unit

Nanaji Deshmukh Krushi Sanjeevani Prakalp, Mumbai

INTRODUCTION

The Project on Climate Resilient Agriculture in Maharashtra (PoCRA) is a project of Government of Maharashtra with Partnership of World Bank and the project is implemented in 5220 vulnerable villages in 16 districts of Marathwada, Vidarbha and North Maharashtra. The project development objectives (PDO) is 'to enhance climate resilience and profitability of smallholder farming system in selected districts of Maharashtra'. On the backdrop of frequent droughts affecting the agriculture in the state, the project is focused on enhancing climate resilience at farm level. Climate Resilient Agriculture involves sustainable agricultural practices that enhance productivity, mitigate risks, and reduce greenhouse gas emissions. The farmers can ensure food security in the face of extreme weather events and climate change by adopting climate-resilient agriculture practices. The extension functionary of the Department of Agriculture is mandated to disseminate knowledge and skills about resilient technologies to the farming community. The district-level authority of the Department of Agriculture prepares the strategy for need-based extension with the help of the Agriculture Universities and Krushi Vidnyan Kendras. In order to facilitate this process, the Government of India has directed the states to prepare a Strategic Research and Extension Plan (SREP) at the district level as an integral part of extension reforms under the Agriculture Technology Management Agency (ATMA) initiative.

SREPs are multi-year strategy documents for the dissemination of innovations and the coordinated interaction in the field between State Agricultural Universities (SAU), Regional Research Stations (KVK), district-level agricultural extension services (ATMA) and the farming community. SREPs are developed under the leadership of the Project Director (ATMA), whose responsibility is to bring together researchers, extensionists, farmers and other stakeholders to make, based on joint diagnostic studies, district extension plan and recommendations for expanded adaptive research to introduce innovations in technology dissemination to cater to local needs and situations. The project had taken a conscious decision to review and update the current SREPs to mainstream climate vulnerability and its impact on farming in project districts as well as to explore the potential for strengthening existing value chains with up-to-date market intelligence. This task is accomplished with preparation of climate resilient agriculture supplement as a supportive document to the current SREP of each project district. As per the project agreement between the Government of Maharashtra and the World Bank, the updation of SREPs is considered as one of the project assessment indicators. The document is prepared by the Project Director (ATMA) in consultation with the field functionary of the Department of Agriculture, State Agriculture Universities (SAUs), Krushi Vigyan Kendras (KVKs), Farmers, Farmer Producer Organizations from the district. The SREP supplement contains an account of weather analysis, information about cropping pattern, impact of climate change on crop yields, coping mechanisms adopted by the farmers, adoption level of climate resilient technologies, constraints in marketing of agriculture produce and scope for value chain development. The SREP supplement ends with comprehensive template for Village Adaptation Plan which will act as guide for the Agriculture Assistants who are the cutting edge extension workers. It will be helpful to extension workers while carrying out extension of 'climate resilience technologies.

INDEX

Chapter 1: General Profile of the District

Beed district along with the other four districts of the Marathwada region was formerly a part of the Nizam's State. After the reorganisation of the States in 1956 the region was included in the Bombay State. Since the bifurcation of the Bombay State into Maharashtra and Gujarat in 1960, Beed along with the other districts of Marathwada has become an integral part of Maharashtra. In 1880 A.D. The Hyderabad State proposed to compile Gazetteers for all the Districts of the Nizam's Dominions.

1.1 Geographical area and location of the district

Beed District is located between 18.28’ to 19.28’ North latitude and 74.54’ to 76.57’ East longitudes. It is bound by Aurangabad and Jalna districts to the North; by Parbhani and Latur to the East; by Osmanabad districts to the South; and by Ahmednagar district to the West. Balaghat Hill ranges run through the district; these hill ranges are about 2000 to 2200 ft. above the sea level. The Northern part of the district falls under the Godavari Valley, while the Southern part falls under the Manjra River valley. The total geographical area of the district is 10615 sq. kms; which form 0.44% of the total geographical area of the State of Maharashtra. Of this total area 235 sq. km (2.20%) is urban area, while 10380 sq. km. (97.8%) is rural area

District Profile				
Sr.No.	Name of the district	District Code	Latitude	Longitude
1	Beed	523	18.9901° N, 75.7531° E	18.9901° N, 75.7531° E

(Source: District data and SREP ATMA, Beed)

1.2 Tehsil details

Sr. No.	Tehsil	Total Villages
1	Ambejogai	106
2	Ashti	177
3	Bid	228
4	Dharur	69
5	Georai	198
6	Kaij	122
7	Majalgaon	126
8	Parli	106
9	Patoda	105
10	Shirur (Kasar)	94
11	Wadwani	45

Tehsil details

Sr. No.	Name of the block / Taluka / Mandal	Geographical Area (In ha.)	No. of Gram Panchayats	No. of Revenue Villages
1	Beed	155716.74	175	239
2	Patoda	76925.65	59	107
3	Ashti	147381.69	125	177
4	Shirur	64647.81	52	95
5	Majalgaon	90294.87	91	121
6	Georai	145347.82	137	192
7	Dharur	57613.33	55	74
8	Wadwani	41042.42	35	49
9	Ambajogai	90160.07	99	106
10	Kaij	113861.46	114	135
11	Parali	77866.31	89	107
	Total	1060858.17	1031	1402

(Source Census 2011 and SREP)

Agricultural and allied census:

Geographical area of the district is 106,860,.0 ha. The area under forest is 321,56 ha which is 3 % of total area. Cultivable land is 876,000 ha (81.97%).

Particulars	Area (ha)	Percentage
Total Geographical area	1068600	—
Cultivable land	876000	81.97
Area under forest	32156	3.00
Irrigated area	143663	16.39
Un-irrigated area	732337	83.61
Light soil	184000	21.00
Medium soil	490600	56.00
Heavy soil	201400	22.99
Kharif cropped area	554800	63.33
Rabi cropped area	378800	43.24
Net sown area	919212	110.73

1.3 Demographic information

Sr. No.	Name of the Block	Total Population	% of Literacy	Male No.	Female No.	Workers No.				Categories No.			
						Agri.		None. Agri					
						Male	Female	Male	Female	SC	ST	OBC	Gen.
1	Beed	481195	80.66	251698	229497	121997	71724	8441	8235	58803	4544	65489	352359
2	Patoda	125081	73.92	65854	59227	35226	28872	1562	1742	12331	1130	15831	95779
3	Ashti	243607	75.75	126561	117046	67980	56868	2941	4682	24838	5231	30025	183513
4	Shirur	128583	73.12	67626	60957	35293	30152	1840	4057	10596	1345	16405	100237
5	Majalgaon	255181	73.23	132830	122351	68577	44946	4239	6059	40032	2873	37377	174899
6	Georai	338610	73.85	176307	162303	91471	70449	6693	10950	42338	4021	49944	242307
7	Dharur	122110	73.73	63858	58252	31705	22404	2382	3382	19724	3649	16910	81827
8	Wadwani	87685	72.69	45866	41819	22841	17358	1879	2858	12511	797	12709	61668
9	Ambejogai	271957	81.47	140878	131079	69609	38768	4558	5296	44382	2293	35582	189700
10	Kaij	243832	77.18	128207	115625	64765	48550	4263	5627	38709	3331	32772	169020
11	Parali	287208	78.59	149421	137787	75069	40084	4486	4666	46990	3508	39846	196864
	Total	2585049	76.99	1349106	1235943	684533	470175	43284	57554	351254	32722	352890	1848173

(Source: Census 2011 and ATMA SREP, Beed)

1.4 Annual average rainfall & Temperature of the district

The city has Semi-arid, hot and dry climate consisting mainly of three seasons. Summers are long, ranging almost five months from mid-February to June. Temperatures in summer fall between 31°C (87.8°F) – 40°C (104°F) (1997 average). However, it may reach higher than 40°C in the summer. May is the hottest month of the year with an average day temperature of 42°C (107.6°F). Winters are short with temperatures ranging within 12°C (53.6°F) – 20°C (68°F). December is the coldest month in a year. Occasionally, temperature may fall as low as 3°C (37.4°F) or 4°C (39.2°F) due to northern cold waves.

1.5 River network of the district

In the Beed district, big and important rivers are Godavari, Manjra, Seena, Bindusara, Kundalika and Vaan. The Godavari forms the boundary of the district from the village of Kuranpimpri to Borkhed throughout the northern border. The southern boundary mostly coincides with the course of the Manjra but makes a considerable number of deviations from it, comes to the north and others to the south. The south - eastern boundary similarly follows the course of the Sina with three deviations away from the river and one only beyond it to include a small stretch to the south of the river in Aurangpur village. Leaving aside the boundaries formed by these rivers, the district boundary elsewhere is the result of historic accidents and administrative convenience. All the streams of the district drain into one of the three principal rivers viz the Godavari the Manjra and the Sina which are along the northern southern and the south – eastern boundaries of the district.

The tributaries of the Godavari in order from the west to the east of their confluence with that river are the Lendi, the Amrita, The Sindphana, the Saraswati, the Gunwati and the Wan. https://www.mapsofindia.com/maps/maharashtra/rivers/beed.html

Godavari:

Godavari is the important river of the Beed district which flows in a winding course with the general trend from north- west to south – east direction through the northern border of the Georai and the Majalgaon tehsils. The tributaries of the Godavari in order from the west to the east of their confluence with that river are the Lendi, the Amrita, The Sindphana, the Saraswati, the Gunwati and the Wan.

Sindphana River:

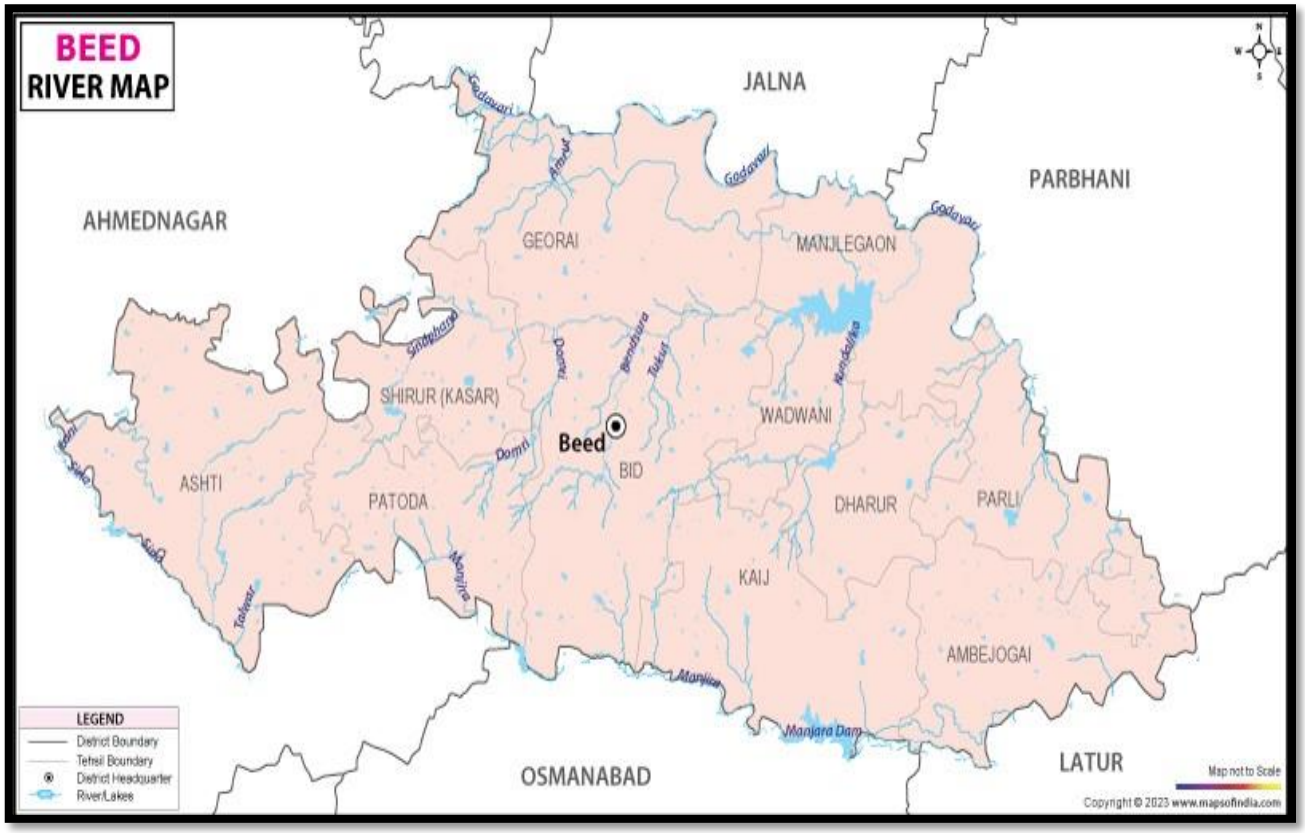
Sindhphana rises in the Chincholi hills at the North- Western apex of the Balaghat. Plateau and flows in a north- easterly course past Amalner about a kilometre's below Chavarwadi it makes a right angular turn to follow the trend of the small tributary , The Gana in a north – westerly direction flowing by the Hingawadi and the resumes again it north – easterly course the trend of the another tributary, the Belapar below the confluence. After the confluence of the other tributary, The Kina, The Sindphana, has a fairly long easterly course up to about Majalgaon ,where after it flows north – eastward and northwards to join the Godavari at Kshetra Manjrath.

Manjra River:

The Manjra sometimes called the Wanjra river rises in the northern edge of the Balaghat Plateau a little above Gaurwadi flows first southwards and then southeast words right across the plateau towards the opposite side and makes an abrupt from sakat. After Pimpalgaon ghat the course becomes zigzag motion but with a general easterly trend up to near Bhatangli in Osmanabad where it is joined by the Rena. Throughout, a greater part of this course the river

forms the southern boundary of the district. The river flows in the deep bed with high banks which rises sometimes as much as 9 meters but on the average 5.5 meters above the bed of the river in the district so that the water is not available for the irrigation of the banks. Recently Mahasangvi project has been constructed. Particularly all the streams of the plateau drain into Manjra. There are two directions in the flow of these river one from the north – east to the south –east and the other from the north to south corresponding to structural lines of the weakness

Drainage includes surface as well as underground flow of natural water. It is related to cloudiness, insulation, humidity, precipitation, wind velocity, wind direction, surface flow, and also related to nature of topography, vegetation, soil cover and its human utilization pattern. Wainganga is the main river in the Beed District. It flows for 1,465 km, first eastwards across the Deccan Plateau then turns southeast, entering the West Godavari district and East Godavari district of Andhra Pradesh, until it splits into two distributaries that widen into a large river delta and flow into the Bay of Bengal.



(www.mapsofindia.com)

1.6 Irrigation potential of the district

1.6 Irrigation Potantial of The District

Sr.No.	Tahsil	Bindusara	Bodhegaon	Borna Project	Dokewadi Project	Jaikwadi (Majalgaon)	Jaikwadi (Paithan)	Kambli	Kara	Kari	Kundlika	Manjara	Mehkari	Palaswadi	Ruti	Saraswati	Sindfana	Sina Nimgaon	Talwar	Van	Total
1	Ambajogai	0	0	0	0	0	0	0	0	0	0	5584	0	0	0	0	0	0	0	0	5584
2	Ashti	0	0	0	0	0	0	1451	2871	717	0	0	4052	0	1930	0	0	3637	1372	0	16035
3	Beed	3925	0	0	3191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7116
4	Dharur	0	16	0	0	0	0	0	0	0	191	0	0	0	0	2090	0	0	0	0	2297
5	Georai	0	0	0	0	0	36920	0	0	0	0	0	0	0	0	0	0	0	0	0	36920
6	Kaij	0	0	0	63	0	0	0	0	0	0	861	0	1723	0	0	0	0	0	0	2648
7	Majalgaon	0	0	0	0	27937	22241	0	0	0	414	0	0	0	0	47	0	0	0	0	50642
8	Parli	0	2632	159	0	15891	0	0	0	0	0	0	0	0	0	0	0	0	0	5727	24411
9	Patoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Shirur (K)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2903	0	0	0	2903
11	Wadwani	0	0	0	0	0	0	0	0	0	2856	0	0	0	0	0	0	0	0	0	2856

Data Collected from MRSAC, Nagpur

1.7 Soil formation in the district and type of soil District (Area in Ha.)

Tehsil Wise Soil Depth Categories and Their Area Distribution in Beed District (Area in Ha)										
Sr. No.	Tehsil	Soil Depth Categories				Soil Depth Categories		Settlements	Water bodies	Total
		Very shallow (< 10 cm)	Shallow to very shallow (< 25 cm)	Shallow (10 to 25 cm)	Moderately deep (25 to 50 cm)	Deep (50 to 100 cm)	Very deep (> 100 cm)			
1	Ambajogai	1994.93	235.62	24677.4	14530	34165.1	10178.8	2163.37	1887.64	89832.8
2	Ashti	565.49	801.11	60224.8	17483.1	40369.8	19886.4	2764.91	4968.56	147064.1
3	Beed	1790.72	439.83	41642.1	27112.1	48569.4	27991.8	4610.15	4813.01	156969.1
4	Dharur	251.33	31.42	23829.2	5607.78	19038.2	2089.17	893.63	1829.82	53570.49
5	Georai	502.66	329.87	19415.2	20828.9	64638.7	33096.9	3713.8	3460.54	145986.6
6	Kaij	612.61	15.71	19415.2	32075.9	38249.2	16823.4	1660.32	3723.49	112575.7
7	Majalgaon	486.95	0	5843.4	9142.1	38531.9	26782.3	2006.16	7025.52	89818.31
8	Parli	2136.3	172.79	25368.5	7854.04	29217	8827.94	2286.15	2501.31	78364.08
9	Patoda	989.61	298.45	25509.9	18378.5	20279.1	7963.99	1254.31	2163.77	76837.62
10	Shirur Ka.	534.07	518.37	26468.1	5277.91	21912.8	6848.72	1609.81	2114.12	65283.87
11	Wadwani	15.71	31.42	15221.1	5764.86	13383.3	6911.55	673.99	2553.54	44555.47
Total										1060858

(Source - Data Collected from MRSAC, Nagpur)

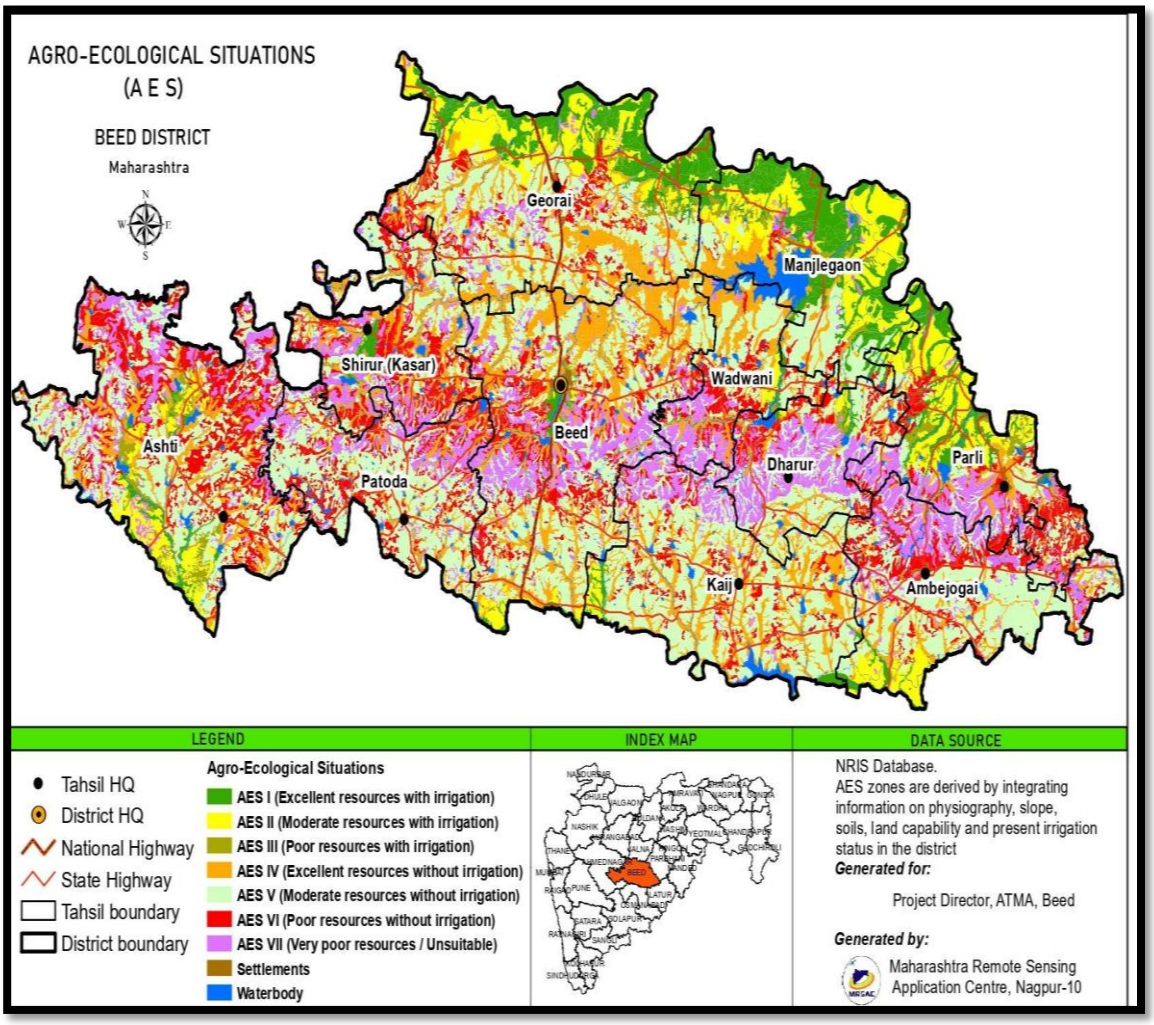
1.8 Agro-Ecological Situations

Agro-Ecological Situation including their characteristics and coverage

Sr. No.	Name of the Agro- climatic Zone (ACZ)	Name of the Agro-Ecological Situation (AES)	Blocks covered
1	Western Maharashtra Scarcity Zone	AES I (Excellent resources with irrigation)	Georai, Majalgaon, Parali
2	Central Maharashtra Plateau Zone	AES II (Moderate resources with irrigation)	Georai, Majalgaon, Parali, Ashti
3	Central Maharashtra Plateau Zone	AES III (Poor resources with irrigation	Ashti, Parali, Majalgaon
4	Central Maharashtra Plateau Zone	AES IV (Excellent resources without irrigation)	Beed, Ambejogai, Kaij, Georai, Shirur
5	Central Maharashtra Plateau Zone	AES V (Moderate resources without irrigation)	Patoda, Kaij, Ashti, Georai, Beed, Ambejogai
6	Western Maharashtra Scarcity Zone	AES VI (Poor resources without irrigation)	Ashti, Shirur, Beed, Patoda, Wadwani, Parali
7	Western Maharashtra Scarcity Zone	AES VII (Very poor resources without irrigation/ unsuitable)	Dharur, Ambejogai, Beed, Patoda, Shirur, Parali, Ashti

(Source - Data Collected from MRSAC, Nagpur)

Beed District Agro Ecological Situation map



Chapter 2: Agriculture Profile of District

2.1 Land use classification of the district

Forest, Agriculture, land which is not available for cultivation, grazing and cultivable waste land, follow land and net sown area etc.

Sr. No.	Standard Land Use Classification	Sub Category	No./Ac/Ha/Lakhs
1	Urban or Built-up Land (Total Area 158.31 Sq. Kms.)	Residential Houses	5.21 Lakhs
		Commercial Buildings	NA
		Schools	Urban & Rural 4201
		Hospitals	375
		Government Buildings	NA
		Industries	152
2	Rural Land		10812.39 Sq. Kms.
3	Agricultural Land (Total Area 762826 Ha)	Cropland	395000 Ha
		Net Area Sown	368000 Ha
		Grassland (Grazing/Non-Grazing)	31000 Ha
4	Forest Land		28000 Ha
5	Water (% of area covered 3.62%)	River	4
		Lakes (Artificial/Natural)	5
		Ponds (Artificial/Natural)	524
		Dam / Reservoir	18
		Canals	NA
		Well	34730
		Minor Irrigation Projects	186
		K.T. Wears	40
		Tubewells	615
6	Wetland		153488 Ha
7	Barren and Wasteland (Total Area 101000 Ha)	Uncultivable waste Land	21000 Ha
		Barren Land	78500 Ha
		Beach	Nil

Land use classification of the district (Land use pattern)

Tahsil Wise Land Use Area of District (Area in Ha.)

Sr.No.	Tahsil	Crop land	Forest	Scrab land	Industrial	Tree Clad Area	Canal/ Drain	Barren Rocky	Gullied /Ravenous Land	Settlements	Water Bodies	Total
1	Ambajogai	73273.4	2534.92	8094.16	87.414	0	0	0	0	2163.27	1887.64	88040.89
2	Ashti	115754.12	2423.996	20139.24	34.96	0	0	0	0	2764.91	4968.56	146085.8
3	Beed	119509.56	2026.84	20906.36	244.75	17.48	0	17.48	0	4610.15	4813.01	151745.6
4	Dharur	39110.5	3126.61	15296.73	0	0	0	0	0	893.63	1829.82	60257.3
5	Georai	131980.78	0	4353.01	244.75	0	489.5	0	69.93	3713.8	3460.54	144312.3
6	Kaij	100725.88	84.33	8391.35	52.45	0	0	0	0	1660.32	3723.49	114637.8
7	Majalgaon	79294.35	0	1206.26	192.3	0	594.39	0	0	2006.16	7025.52	90318.99
8	Parli	60761.76	1148.13	14947.09	769.21	69.93	209.78	0	0	2286.15	2501.31	82693.36
9	Patoda	69209.09	3233.97	11031.13	34.96	52.45	0	0	0	1254.21	22163.77	76979.68
10	Shirur (K)	44676.72	2.79	15174.36	0	0	0	0	0	1609.81	2114.12	63577.79
11	Wadwani	30874.19	974.236	7080.2	34.96	17.48	0	0	0	673.99	2553.54	42208.63
Total		865170.35	15555.822	126619.89	1695.754	157.34	1293.67	17.48	69.93	23636.4	57041.32	1060858

(Source: Census 2011 and SREP ATMA)

2.2 Agriculture land holdings

Sr. No.	Name of the Block	Operational holding (Number and area)							
		Small 0 to 1 Ha		Medium 1 to 2 ha		Marginal above 2 ha		Total	
		No. of holdings	Area	No. of holdings	Area	No. of holdings	Area	No. of holdings	Area
1	Beed	75330	24071.1	25311	38541.4	18565	67135.7	119206	129748
2	Patoda	28167	10408.5	14744	17795.2	10287	38062.7	53198	66266.4
3	Ashti	48622	20613.2	25006	33078.4	20810	68664	94438	122356
4	Shirur	30968	11346.9	11862	16293.9	7488	24399.8	50318	52040.6
5	Majalgaon	32488	15790.9	17326	23165.2	10356	35485.5	60170	74441.6
6	Georai	67967	31120.4	30501	41914.5	15869	49463.8	114337	122499
7	Dharur	22949	9126.2	10584	14259	5877	20244.1	39410	43629.3
8	Wadvani	16049	7003.3	7341	11304.6	5191	16066.9	28581	34374.8
9	Ambejogai	31522	13786.3	16656	21048.8	10751	38732.7	58929	73567.8
10	Kaij	45296	19739.9	22270	30470.7	14868	49170.1	82434	99380.7
11	Parali	34285	13781.9	14550	18346.9	8612	34780.3	57447	66909.1
	Total	433643	176789	196151	266219	128674	442206	758468	885213

(Source: Census 2011 and SREP, ATMA)

2.3 Different types of irrigation facilities/water resources available in the district

Irrigation facilities are well and canals. Total direct irrigation available through the canal is 100,741 ha.

Irrigation Source	No.	Cover area
Dams	119	20131 (ha.)
Wells	135056	110896 (ha.)
Boor wells,	18051	39153 (ha.)
Farm pond,	328	70504 (ha.)
River	10693 (Sq. Kms)	

2.4 Types of crops grown, cropping pattern

Sr. No.	Blocks	Major Crops						Cropping system
		Name	Area (ha)	Name	Area	Name	Area (ha)	
1	Beed	Cotton	53625	Soybean	49856	R. Jowar	35803	Sole crop of Cotton, Soybean & R. Jowar
2	Patoda	Soybean	50389	Gram	5494	R. Jowar	19994	Sole crop of Soybean, Gram, R. Jowar, Tur
3	Ashti	Udid	30375	Tur	17419	R. Jowar	27892	Sole crop of Udid, Tur & R. Jowar
4	Shirur	Cotton	29433	Soybean	7712	R. Jowar	9179	Sole crop of Cotton, Soybean & R. Jowar
5	Majalgaon	Soybean	30754	Cotton	26641	Gram	15728	Sole crop of Soybean, Cotton, Gram, Bajra + Tur
6	Georai	Cotton	85346	R. Jowar	9248	Wheat	16635	Sole crop of Cotton, R. Jowar & Wheat
7	Dharur	Cotton	20603	Soybean	15299	Gram	7532	Sole crop of Cotton, Soybean & Wheat
8	Wadwani	Cotton	16369	Soybean	6682	R. Jowar	3068	Sole crop of Cotton, Soybean & R. Jowar
9	Ambejogai	Soybean	63091	Gram	47750	R. Jowar	5900	Soybean, Gram, R. Jowar,
10	Kaij	Soybean	84000	Gram	40749	Rajma	3887	Sole crop of Soybean, Gram, Rajma
11	Parali	Soybean	38545	Gram	14641	R. Jowar	8767	Soybean, Gram, R. Jowar, Cotton + Tur

(Source: District data and SREP, ATMA)

2.5 Year wise area, production and productivity of major crops for last 5 Years

Sr. No.	crop	2017-18 to 2021-22			2022-23		
		Area	Production (M.T.)	Productivity	Area	Production (M.T.)	Productivity
1	Soybean	241683	218965	906	344732	525027	1523
2	Cotton	341513	435931	217	273118	596040	371
3	mung	21448	8322	388	15514	12830	827
4	Tur	56227	42733	760	48520	42552	877
5	Bajra	61887	50190	811	36425	44147	1212

(Source: District data SREP, ATMA)

2.6 Other facilities map

(KVK, KSK, ACABC, AEIC, SPU. Nurseries & Food Nurseries)

Sr. No.	Name of APMC	KVK	KSK	ACABC	AEIC	SPU	Nurseries	FN
1	Ambejogai	1	407	-	1	2	1	1
2	Asthi	0	526	1	1	1	1	1
3	Beed	0	783	1	3	3	1	1
4	Dharur	0	257	-	0		1	1
5	Georai	1	1195	-	0		1	1
6	Kaij	0	692	-	0		1	1
7	Majalgaon	0	559	-	0		1	1
8	Parali	0	371	-	0		1	1
9	Patoda	0	141	-	0		1	1
10	Shirur kasar	0	425	-	0		1	1
11	Wadvani	0	287	-	0	6	1	1
TOTAL		2	5643	2	5		11	11

(Source: district data of statistical department DSAO Beed)

FPC Information supported by SMART / NDKSP / MAGNET

Sr. No	Scheme Name	No. of. FPCs	Disbursement
1	SMART	42	11
2	NDKSP	38	27
3	MAGNET	1	1

(Source: District data FPO/FPC List of supported by govt scheme)

Tehsil wise FPO /FPC list of supported by govt scheme

Sr. No.	Taluka	NDKSP	SMART	MAGNET
1	Ambejogai	0	6	
2	Asthi	2	2	
3	Beed	21	12	1
4	Dharur	2	1	
5	Georai	1	8	
6	Kaij	5	4	
7	Majalgaon	1	1	
8	Parali	1	2	
9	Patoda	4	3	
10	Shirur kasar	2	2	
11	Wadwani	0	1	
TOTAL		38	42	1

(Source: DIU unit, SMART project and DPIU unit of NDKSP)

Chapter 3: Weather trend of district

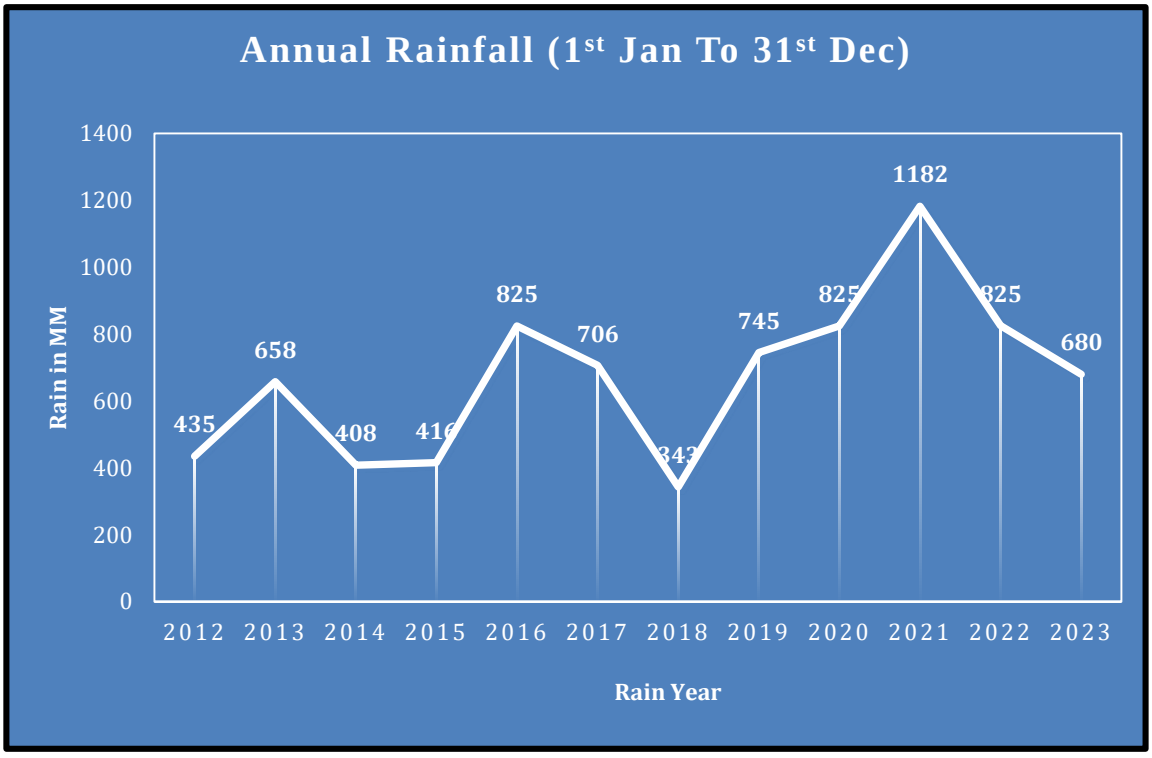
Introduction

Mahavedh project is operationalised by the Government of Maharashtra (GoM) through Public Private Partnership with M/S Skymet Weather Services pvt.ltd. At present 2127 Automatic Weather Stations (AWS) have been installed at circle level in Maharashtra. Weather data fetched from these Automatic Weather Stations (AWS) is useful for implementation of Public Welfare and Development schemes, Research and Development, Disaster management and Allied services.

PoCRA seamlessly combines forecast data from IMD and historical weather data from Mahavedh through APIs, integrating and storing the information in a database. This consolidated data is utilized to generate tailored weather-based advisories for farmers. Leveraging AICRPAM's crop calendars, PoCRA's automated systems craft pest and disease advisories to enhance agricultural decision-making.

3.1Annual average rainfall of last twelve years

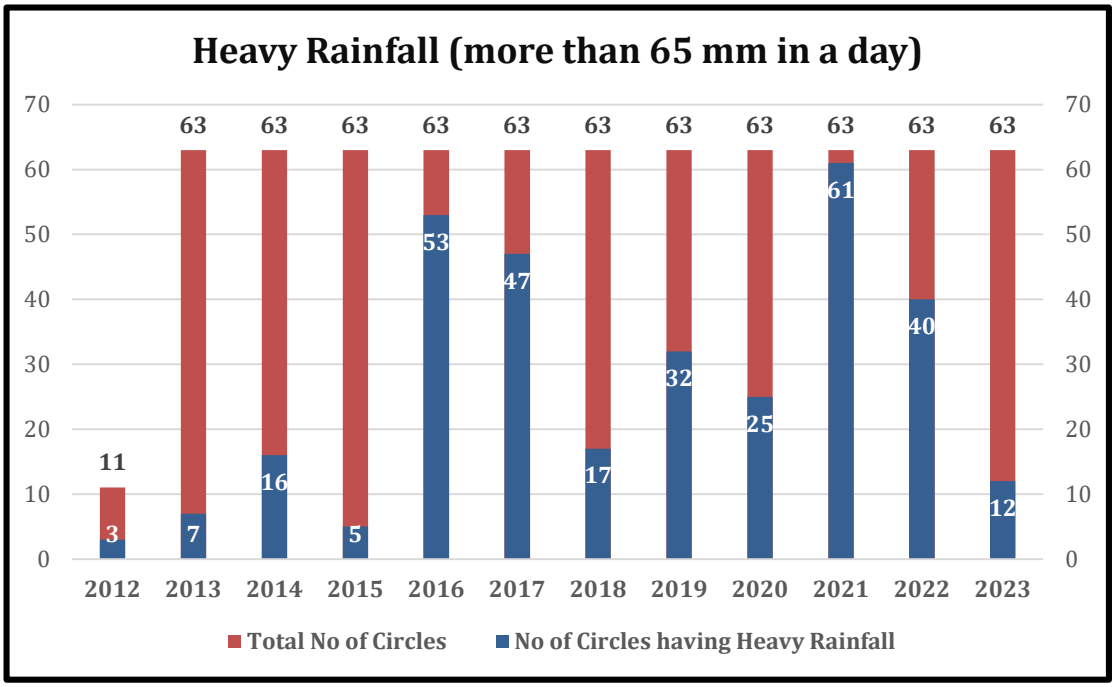
Normal or average rainfall is the amount of precipitation that we expect per year (in a given area). It is obtained and set by calculating the average (mean) of precipitation recorded in an area. Annual rainfall or precipitation is the sum of daily rainfall in a year.



The graph 3.1 presents annual rainfall data of Beed district from 2012 to 2023, highlighting fluctuations in precipitation. Notably, the lowest recorded rainfall was in year 2018 at 343 mm, while the highest occurred in year 2021 with a total of 1182 mm rainfall.

3.2Heavy rainfall

Heavy rainfall is defined as rainfall that exceeds 65 mm in 24 hours.



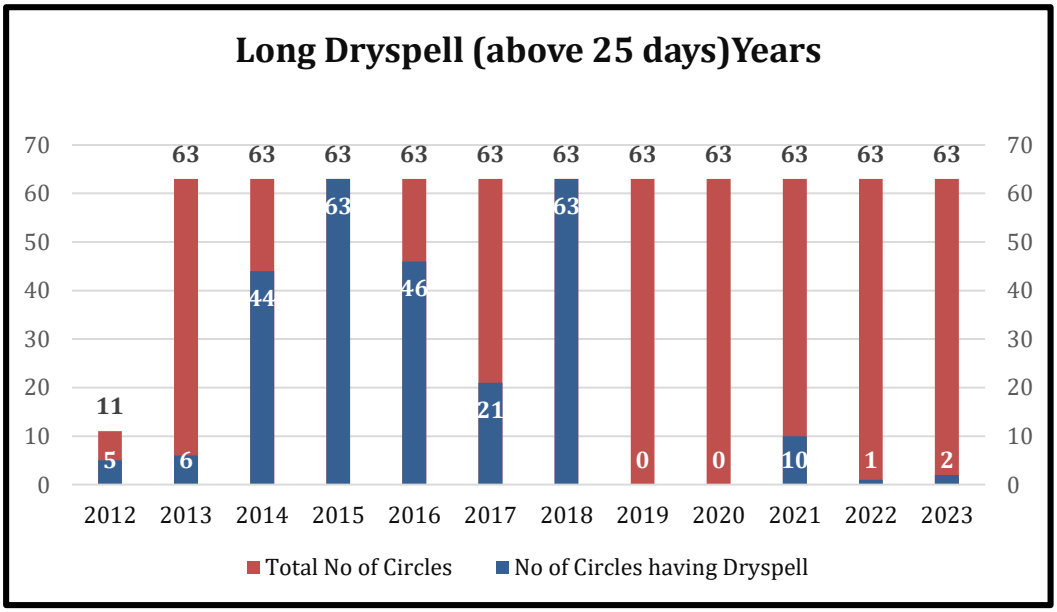
The provided graph 3.2 illustrates occurrences of heavy rainfall in 63 circles within the Beed district from year 2012 to 2023. Notably, in year 2021, heavy rainfall affected the maximum number of circles, with 61 circles out of the 63 circles experiencing such conditions. Conversely, the year 2015 recorded minimum number of circles, which is only 5 circles being affected by heavy rainfall in the district.

3.3Dry spells:

A dry day is when rainfall is below 2.5 mm, and consecutive dry days form a dry spell in monsoon period. Longer dry spells impact crop growth. Categories include very short (up to 7 days), short (7-14 days), medium (14-25 days), and long (more than 25 days) dry spells, each influencing crop development differently.

3.3.1 Long Dry spell

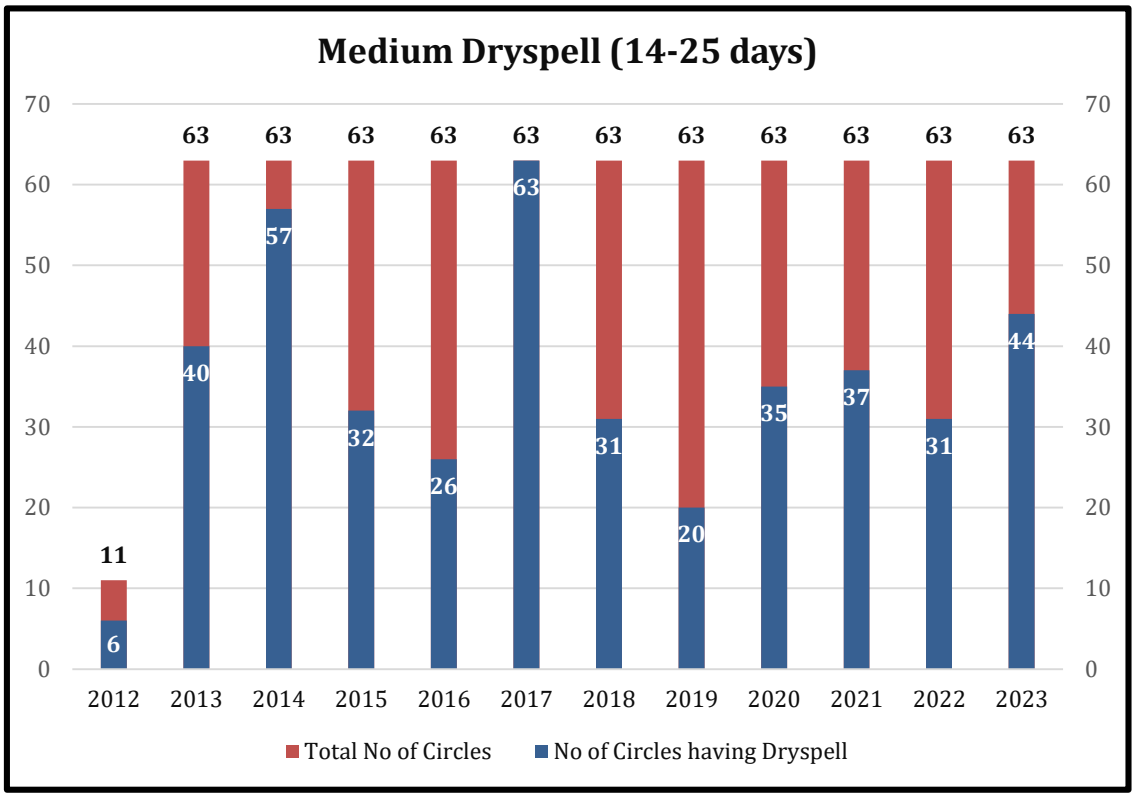
Long Dry spell is a prolonged period above 25 days of dry days in monsoon period



A graph (Graph 3.3.1) that shows the trend of long dry spells observed in a Beed district. The data covers the total number of circles and the circles that affected long dry spell (more than 25 days) from the year 2012 to 2023. The graph shows that in 2018 and 2015, all circles in the district experienced severe dry spells. Conversely, in year 2019 and 2020, there was no dry spell, across all 63 circles in the district.

3.3.1 Medium Dry spell

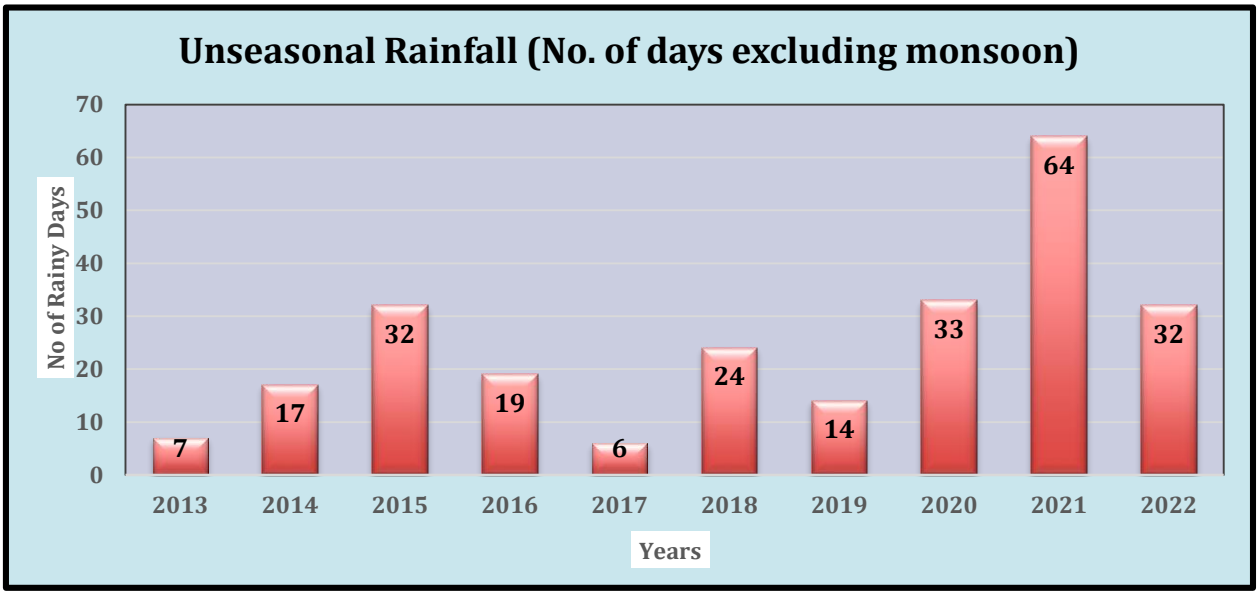
Medium Dry spell a period of 14-25 days of dry weather.



A graph (Graph 3.3.2) that shows the trend of medium dry spells observed in a Beed district. The data covers the total number of circles and the circles that affected dry spell (14 to 25 days) from the year 2012 to 2023. The graph shows that in year 2017, all circles in the district experienced medium dry spells. Conversely, in year 2016 and 2019, there was less number of circles experienced medium dry spells.

3.4 Unseasonal rainfall.

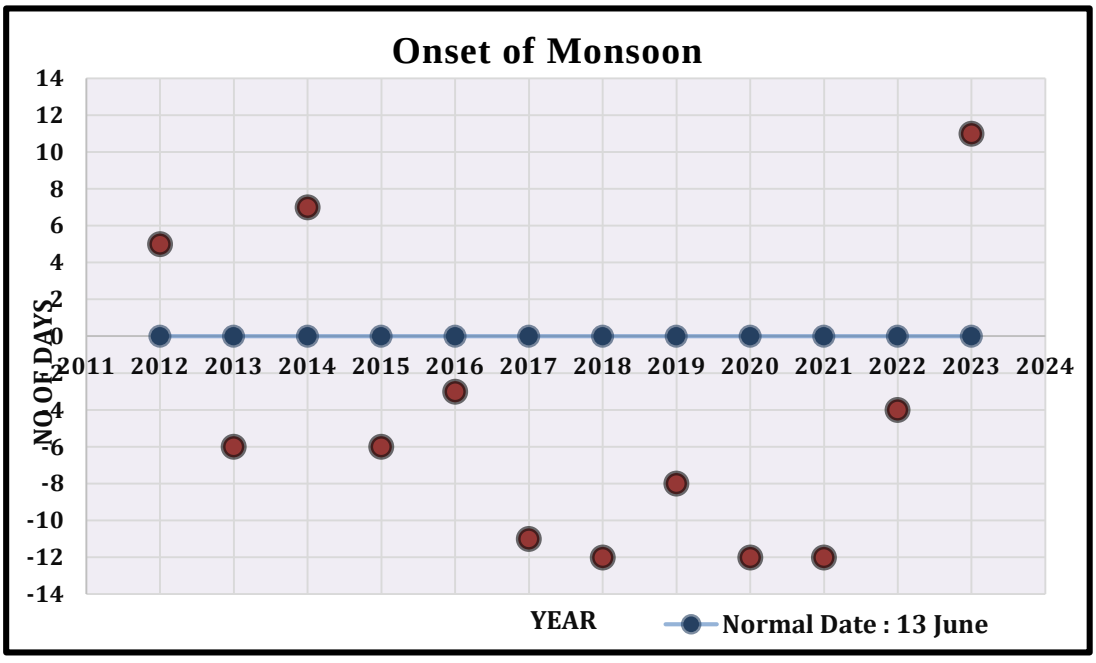
Rainfall received during non mosoon days is treated as unseasonal rainfall. Unseasonal rains-when there is a sudden change in atmospheric pressure, it can result in precipitation, even during non-monsoon seasons.



The graph 3.4 illustrates the annual occurrences of unseasonal rainfall in the Beed district from year 2013 to 2022. The data reveals a variation ranging from 6 days to 64 days of unseasonal rainfall.

3.5 Monsoon onset delay

The onset of the southwest monsoon refers to the time when the southwest monsoon winds begin to establish over a region, bringing widespread rainfall. The onset of the monsoon in Maharashtra typically occurs around early June. However, the exact timing can vary slightly from year to year. According to the document published by IMD dated 15th May, 2020 (CRS research report), Normal monsoon onset date is 13th June in Beed district.

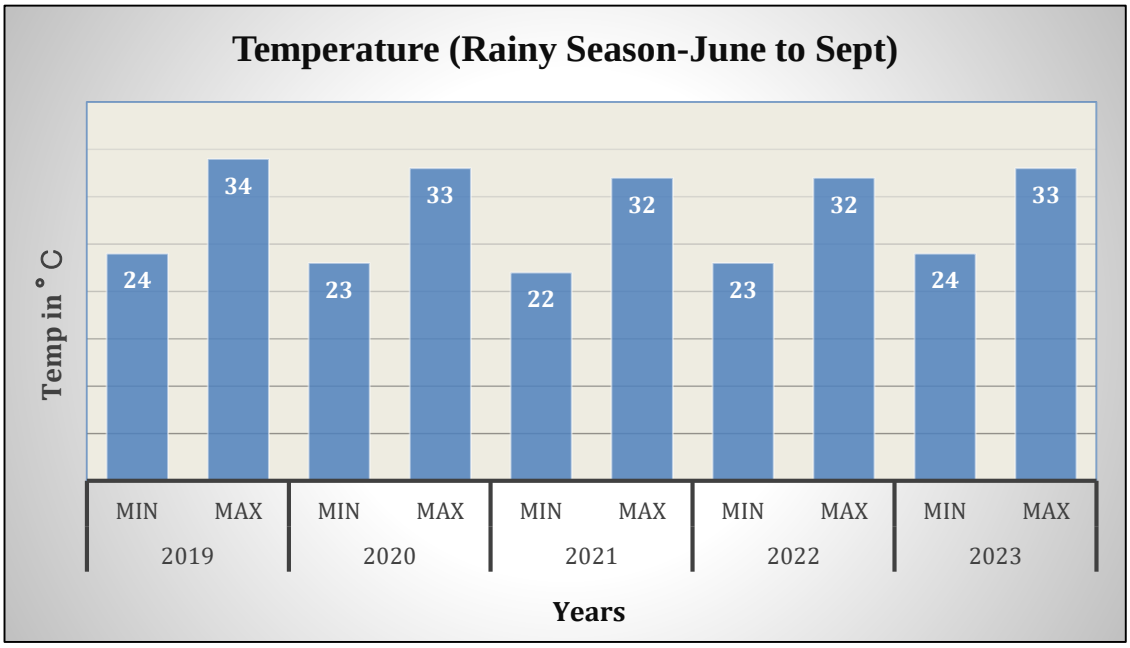


The graph 3.5 depicts the annual onset of the monsoon. The blue line represents the normal day of onset of monsoon. The onset days show variations ranging from -12 to 11 days. Notably, in year 2012, 2014 and 2023 the monsoon arrived delayed than the normal onset date. However, in remaining years the monsoon was notably arrived earlier.

3.6 Temperature.

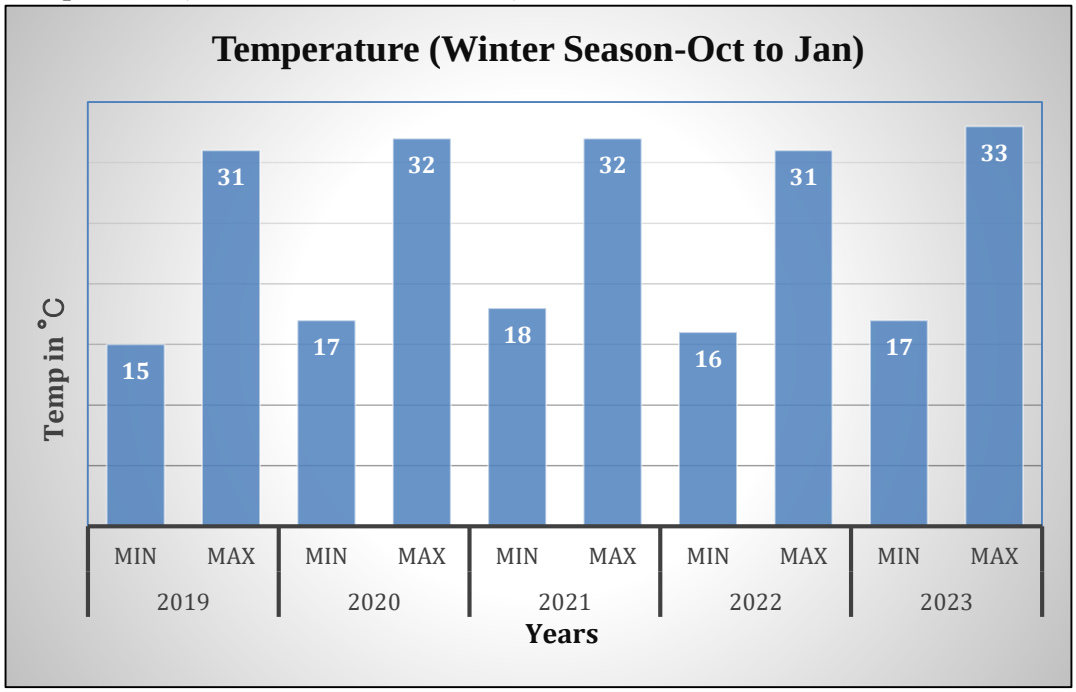
Temperature is a physical quantity that quantitatively expresses the attribute of hotness or coldness. The average temperature is 27.5 °C, with a minimum of 17°C and a maximum of 38°C. On the coldest nights, the temperature usually drops to around 15°C. On the warmest days, the temperature usually reaches around 40°C.

3.6.1Temperature (Rainy Season-June to Sept)



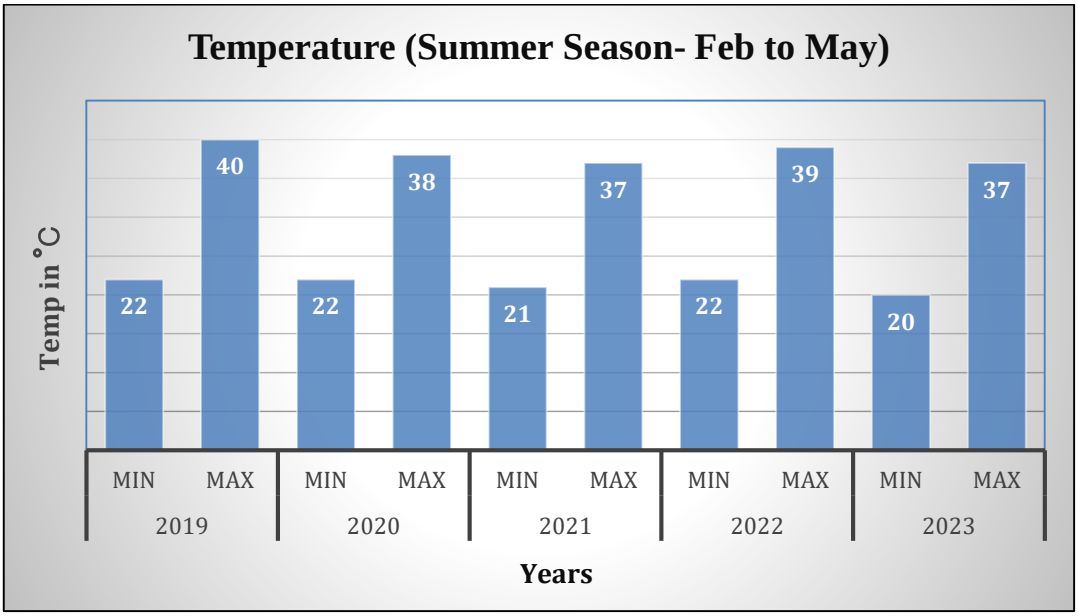
The graph 3.6.1 presents the temperature in the Beed district during the rainy season from year 2019 to 2023 exhibited a consistent range, with minimum temperatures fluctuating between 22-24°C and maximum temperatures ranging from 32-34 °C.

3.6.2 Temperature (Winter Season-Oct to Jan)



The graph 3.6.2 presents the temperature in the Beed district during the winter season from year 2019 to 2023 exhibited a consistent range, with minimum temperatures fluctuating between 15-18°C and maximum temperatures ranging from 31-33°C.

3.6.3 Temperature (Summer Season- Feb to May)

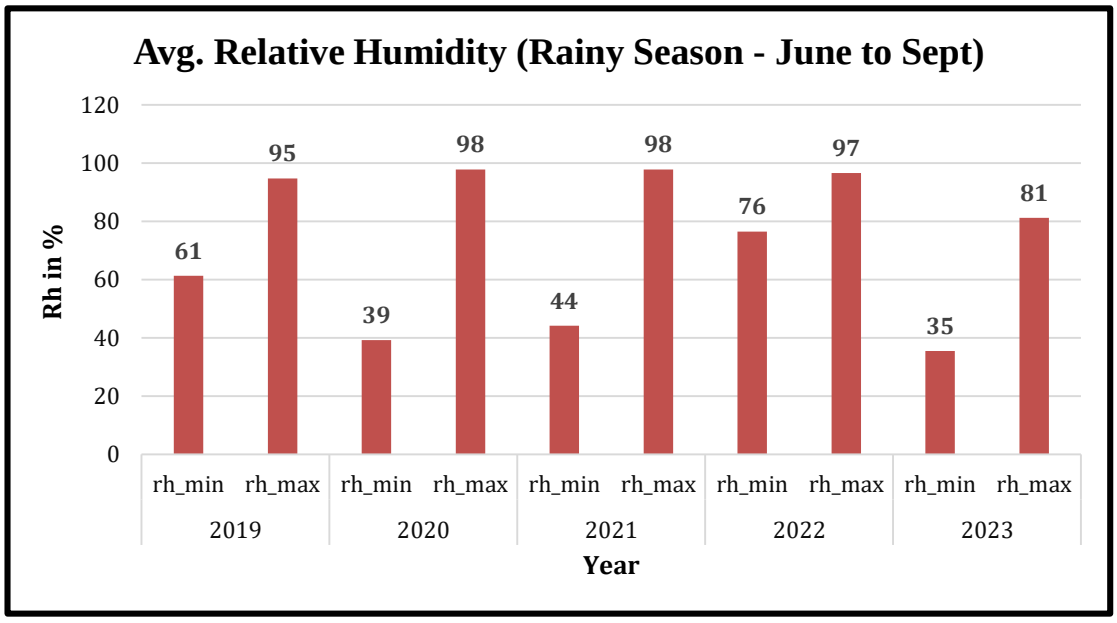


The graph 3.6.3 presents the temperature in the Beed district during the summer season from 2019 to 2023 exhibited a consistent range, with minimum temperatures fluctuating between 20-22 °C and maximum temperatures ranging from 37-40 °C.

3.7 Relative Humidity

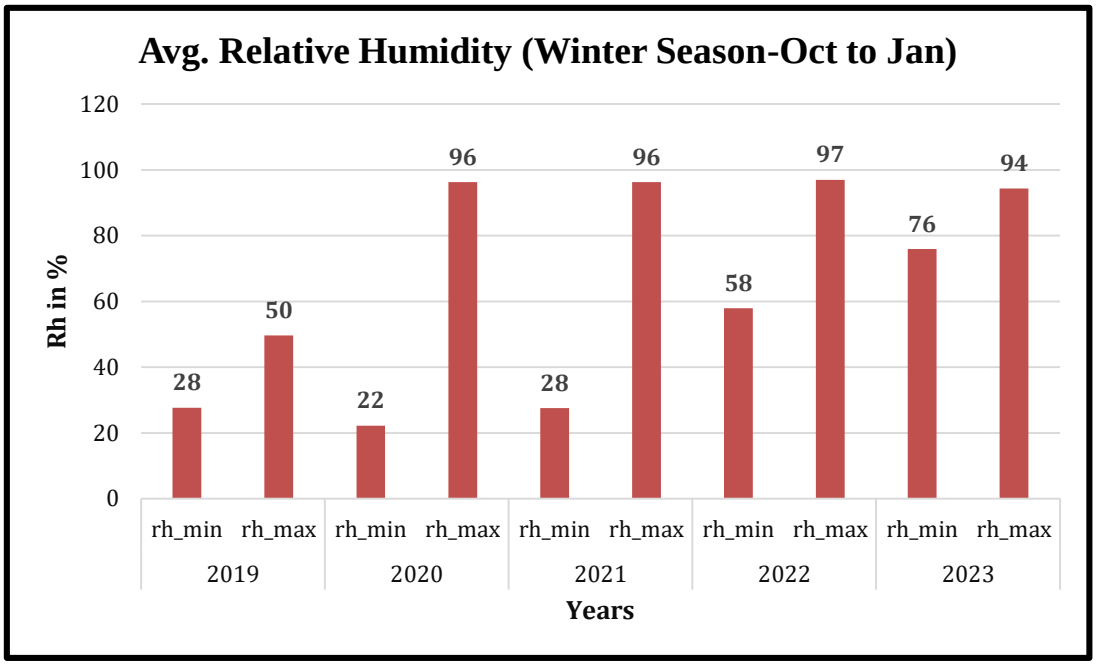
Relative Humidity is the ratio of the actual quantity of moisture at a certain temperature and pressure to the maximum it can hold at the same temperature and pressure. It is usually multiplied by 100 and expressed in percent.

3.7.1 Avg. Relative Humidity (Rainy Season - June to Sept)



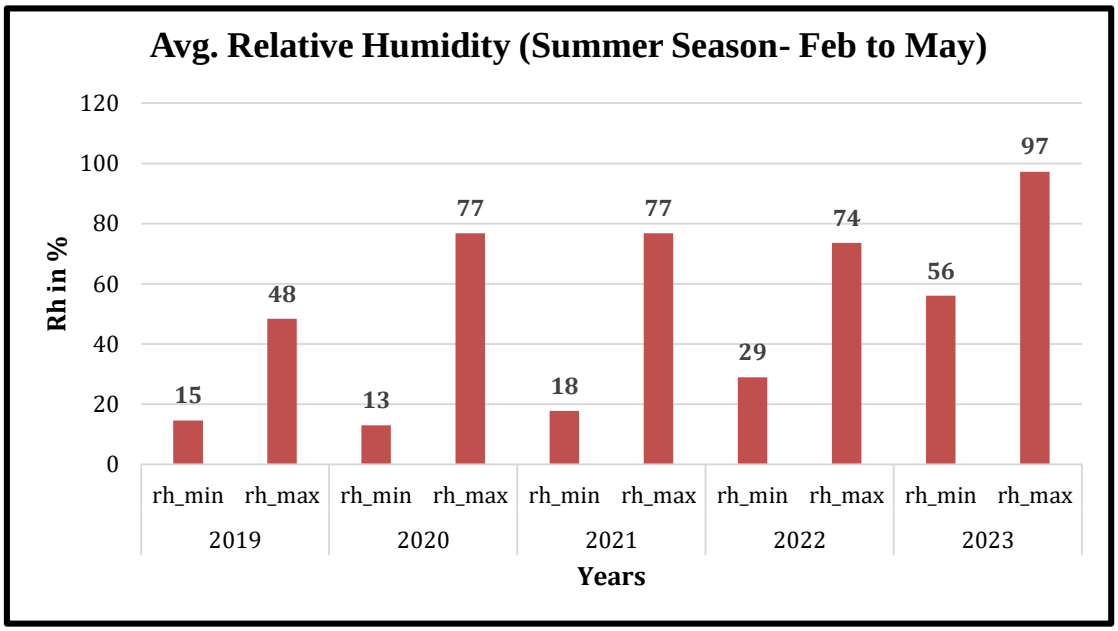
The graph 3.7.1 illustrates humidity levels during the rainy season in the Beed district, revealing a variation in minimum humidity from 35% to 76% and maximum humidity ranging between 81% and 98%.

3.7.2 Avg. Relative Humidity (Winter Season-Oct to Jan)



The graph 3.7.2 illustrates humidity levels during the winter season in the Beed district, revealing a variation in minimum humidity from 22% to 76% and maximum humidity ranging between 50% and 97%.

3.7.3 Avg. Relative Humidity (Summer Season- Feb to May)



The graph 3.7.3 illustrates humidity levels during the summer season in the Beed district, revealing a variation in minimum humidity from 13% to 56% and maximum humidity ranging between 48% and 97%.

Chapter 4: Impact of climate variability on agriculture production

4.1 Impact of Temperature on

4.1.1 Crop growth and yield

- High air temperature: Stunted Shoot and Root growth
- Reduction in crop duration (Early maturity, Growing degree days)
- As day length Increases, vegetative growth is higher as compared to reproductive growth.
- Increased respiration rate, resulting in water loss from plant body and higher absorption from soil.
- Leaf abscission, leaf scorching, leaf senescence, and limitation in yield.
- Flower drop in pulses,
- Desiccation of pollens: poor grain setting, distorted, wrinkled, discoloration of grains
- Poor grain filling in cobs/spikelets/pods.
- Physiological Injuries occurred.

4.1.2 Water availability

- Higher evapo-transpiration demand resulting greater amount of water loss from soil surface.
- Warm air holds more moisture than cool air, resulting in desiccation.
- Increase in salt concentration and accumulation of salts at root zone and soil surface (Root tip burning) resulting in uptake.
- Increase in osmatic potential
- Caking of upper layer of soil surface in calcareous soils.

4.1.3 Pests and diseases infestation: -

- Consumption rate of sucking pests is increased.
- Reduce in time of pupation - Potentiality of increase in number of generations.
- Geographic ranges may increase.
- Changing phenology synchronization between crop, pest and natural enemies.
- Risk of diseases may increase in crops.
- Reduced efficacy of spray solution.

4.2 Impact of rainfall on

4.2.1 Crop growth & yield

- Late onset results delay in sowing reduces growth and yield, hamper crop production.
- Insufficient rainfall leads to drought conditions and negatively affects the crop growth & yield.
- Drought condition leads to moisture stress, wilting and yield reduction.
- Heavy and high intensity rainfall results in seed rotting, poor germination.

4.2.2 Irrigation supply, drought & flood

- Scanty rainfall results in poor storage in water sources and reduced ground water recharge

- Drought: reduces crop yield and increase in water demand for consumption & industries.
- Heavy rains cause floods, loss of fertile top layer of soil (soil erosion) removal of nutrients.
- Flood: Submergence of lands, crop/property damage & threat to life.

4.2.3 Pest and disease Infestation and its management

- High rainfall: Immediate knock down effect is seen in sucking pests but gradual increase in pest density
- Pest population build up (Lepidoptera and Coleopteran pests)
- High humidity increases pest and disease infestation

4.2.4 Soil erosion & nutrient loss

- Loss of fertile top layer of soil (soil erosion) and removal of nutrients.
- Gullies and ravines formation, Erode of adjoining surface near water bodies
- Siltation of water bodies (reduced capacity)
- Nutrient loss through leaching.
- Loss of top fertile soil declining soil fertility.

4.2.5 Harvest and storage

- Hindrance and delay in harvesting,
- Sprouting of grains in pods and cobs
- Quality deterioration of farm produce (Fungus & mold development)
- Increased moisture content at storage favours insurgence in stored grain pests

4.3 Impact of other calamities (cyclones & Hail storms)

- Uprooting of vegetation
- Sedimentation deposit on plants
- Loss of moisture
- Increase in surface friction-is most devastating.
- Defoliation of standing vegetation
- Flower and fruit drops
- Chilling injury to plants.
- Lodging of crops.

Crops	Kharif Crops				Rabi Crops		
Impact of Temperature	**Cotton**	**Pigeon Pea**	**Soybean**	**Pearl millet**	**Chick Pea**	**Wheat**	**Sorghum**
Crop growth and Yield	Early sowing and high temp results in Reddening Increase in internode length Dropping down of leaves Loss of turgidity of leaves Square drop Boll bursting Early maturity Yield Loss	Stunted growth Reduced no of flowers Flower drop Pod setting Yield Loss Early maturity	Stunted growth Reduced no of flowers Flower drop Pod setting Yield Loss Early maturity	Stunted growth and reduced tillering Length of cob less No of filled grains per cob Early maturity Yield Loss	Stunted growth and reduced branching Reduced no of flowers Flower drop Pod setting Yield Loss Early maturity	Stunted growth and reduced tillering Length of spikelets less No of filled grains per spike Early maturity Yield Loss	Stunted growth Reduced internode length, Reduced Height Increased in stem girth Reduced Length and size of cob Loose cob
Water availability	High evapo- transpiration Increased water demand Increase in osmatic potential	High evapo-transpiration Increased water demand Increase in osmatic potential	Hollow pods Increased water demand Increase in osmatic potential	High evapo-transpiration Increased water demand	Hollow pods Increased water demand Increase in osmatic potential	1. Increased water demand	1. Increased water demand
Pest and disease Infestation	Increase Dahiya disease. Increase Incidence of Thrips and White fly & PBW	1. Increase Incidence of leaf roller.	Increase incidence of sucking pest increase infestation of stem fly	Increased incidence of Blister beetle, Hairy caterpillar and FAW in initial stage	Increase incidence of pod borer. Ascochyta blight increased	Increase incidence of sucking pest increase infestation of smut diseases	Increased incidence of sucking pest (Aphid) and FAW in initial stage

2. Impact of Rainfall

Impact ofRainfall on	Kharif Crops				Rabi Crops		
	Cotton	**Pigeon Pea**	**Soybean**	**Pearl millet**	**Chick Pea**	**Wheat**	**Sorghum**
Crop growth and Yield	Excess rainfall results in stunted growth Square drop Quality of lint deteriorate	Excess rainfall results in stunted growth Yellowing (Pallor) of leaves Chlorosis in leaves.	Excess rainfall results in stunted growth Chlorosis in leaves	Excess rainfall results in stunted growth Reduced tillering	Late rainfall delay (extended) in sowing window	Late rainfall delay (extended) in sowing window	Late rainfall delay (extended) in sowing window
Irrigationsupply drought, flood	1.Delayed sowing 2. Dropping down of leaves Loss of turgidity of leaves Reduced boll size and weight 5. Para wilt and uprooting	Flower drop Less no of pods Pod filling and grains per pod Reduced grain size, distortion of grains	Flower drop Less no of pods Poor Pod filling and pod setting Reduced grain size, distortion of grains Discoloration of grains	Hollow cobs Poor grain filling Reduced grain size	Poor grain filling Reduced grain size Hollow pods	Poor grain filling Reduced grain size, cracked and shrivelled grains Discoloration of grains Hollow spikelets	Poor grain filling Reduced grain size
Pest and disease Infestation	Due to high rainfall decrease in pest population of sucking pest but increased in attack of bollworms is observed. Continuous rain falls and high humidity at boll formation stage increases boll rot.	Attack of pigeon pea pod borer increases if heavy rainfall occurs. It was noticed that the Phytophthora blight disease occurred in 1st week of August after heavy rains when maximum temperature was 32.8 and relative	Incidence of snails increases when continuous cloudy weather with precipitation occurs Bacterial blight generally observed when cool and rainy weather prevalent	Incidence of Rust, Hairy caterpillar and FAW	Larval population of Gram pod borer showed non-significant negative correlation with rainfall. Diseases like Alternaria blight, collar rot, fusarium wilt, dry root rot etc increases.	Infestation of termites Diseases like crown rot, root rot, leaf rust etc. increases.	Increased incidence of sucking pest (Aphid) and Smut disease

	High relative humidity range (76% to 87 %) and low rain fall of (2 – 40.6 mm) increases Alternaria leaf spot disease.	humidity was 76.5 percent and Maximum mortality was observed during continuous drizzling which continued for 2 to 3 days Wilt disease incidence was observed at flowering stage and it gradually increased with the lack of moisture in soil.					
Soil erosion and nutrient loss	Uprooting / lodging of plants leaching of nutrients	Uprooting / lodging of plants leaching of nutrients	Uprooting / lodging of plants leaching of nutrients	Uprooting / lodging of plants leaching of nutrients	leaching of nutrients	lodging of plants leaching of nutrients	lodging of plants leaching of nutrients
Harvest and storage	Quality of lint deteriorate Reduced staple length Difficult in picking Yellowing of lint	Discoloration of grains Reduced germination of seed Value addition impaired dal quality	Discoloration of grains Reduced germination of seed Purple grains increases Fungus and mould formation	Keeping quality is reduced Reduced market price Discoloration of grains	Keeping quality is reduced Reduced market price Discoloration of grains	Keeping quality is reduced Reduced market price Discoloration of grains	Fodder quality impaired Reduced palatability Offensive odour and Mould development

(Source: KVK, Khamgaon)

Chapter 5: Measures to cope with climatic variability

5.1 Recommendation of Universities

5.1.1 Rainfall condition-

1) Heavy Rainfall:

- Opening of dead furrows
- Opening of trenches around field for safe disposal of excess water
- Drainage improvement of Soil (summer deep ploughing, Breaking of hard pan by Subsoiler in heavy soils).
- Inter cropping, Crop rotation, use of wind brakes & cover crops.
- Use of organic mulch
- Contour trenches
- Use of BBF

2) Low Rainfall: -

- Short durational varieties
- Use of drought resistant varieties.
- Use of BBF
- Inter cropping, Crop rotation, use of wind brakes & cover crops.
- In situ -Rain water harvesting measures/ moisture conservation
- Mulching.
- Protective irrigation
- Improved irrigation technique uses. (Drip, sprinkler, Pepsi drip)

3) Dry spell / water stress: -

- Undertake water conservation measures.
- Use Stress tolerant crop variety.
- Use of micro dams, ponds, wells, reserve sources of water.
- Spraying of potassium nitrate /DAP/micronutrient, Sea weed extract for reduction of ET.
- Use of Vasant Urja to avoid water/biotic stress for 8-10 days in crops.

4) Terminal drought:

- Techniques for moisture retention in soil.
- Use of Improved irrigation efficient devices.
- Water conservation measure mulching.
- Utilization of ground water resources
- Water reutilization techniques.
- Reduced tillage.
- Weed control measures
- Soil fertility management practices.

5) Late onset of monsoon: -

- Compartment bunding & rain water harvesting, farm Pond establishment.

- Contingency crop planning.
- Weather forecasting & advisory services.
- Publicity with Insurance Agency.
- Need to develop appropriate technologies for varieties, equipment's, changing monsoon strategies, crop patterns etc. to keep the resource poor.

5.1.2 Hailstorms: -

- Protective cultivation.
- Use of weather forecasting.
- Use of location specific recommendations given in Agro-met Advisory bulletin.
- Use of straw thatch in fruit crops, polythene tunnels, skirting's bags
- Cloud seeding
- Use of nutritional supplement, plant bio-regulators and canopy management.
- Application of nitrogen/ humic acid
- Use of potassium nitrate.
- Use of paints on shoots of fruit plants.
- Training and pruning of fruit crops.
- Crop specific management.

5.1.3 Soil degradation:

- Practicing crop rotations.
- Use of cover crops, conservation tillage and use of wind brakes.
- Agro-forestry practices
- Afforestation.
- Control over grazing.
- Planting of shelter belts.
- Control of mining activities.
- Waste land management.
- Waste/ garbage/ Industrial effluents safe use management.
- 'Van Mahotsav' program planning.

5.2 Best practices developed by farmers in the district.

- Trash mulching.
- Paired row planting.
- Sowing of soybean by dibbling on ridges and furrow method.
- Crop rotation methodologies. ex. green gram-Coriander–Wheat–Sesame.
- Farm pond- coco coir technology.
- Irrigation through rain pipe/Pepsi pipe.
- Traps (Light, Sticky, Noise) development.
- Mulberry production
- Protection from wild animals (Electric).

Pre monsoon

- Promotion of short duration Soybean varieties (MAUS 612 & MAUS 162) against long durational varieties (KDS 726 & KDS 753).

- Promotion for planting cotton and Pigeon pea.
- Diverse plantings of crops.
- Promotion of Millet crops (Sorghum, Pearl Millet)
- Promotion for intercropping. (Green gram, sesame, Castor, Sunflower)
- Use of sub-soiler for braking hard pan
- Sowing of crops after receiving minimum 75 to 100 mm rainfall.
- Use of FYM, compost.
- Use of polythene mulching in Cotton
- Soil test-based recommendation of fertilizers and micro-nutrients
- Tillage and sowing practices against the slope

On set of Monsoon

- Seed rate as per germination test
- Seed treatment with bio inoculants
- Use of BBF planter - Less seed rate
- Dibbling of seeds by hand dibbler
- Maintain adequate plant population
- Use of pre-emergence herbicides

Mid-Season

- Timely weeding and inter-culturing
- Opening of dead furrow
- Use of protective/ lifesaving irrigation through sprinkler.
- Use of 'Vasant- Urja' - biopolymer & Sea weed extract 'Sagarika' to overcome biotic & abiotic stress
- Use of Nano urea spray
- Use of 2% urea/ 2% DAP/ potassium nitrate / Grade 2 micro nutrient spray
- Integrated Pest and diseases management (light/ Sticky/ pheromones traps & Use of Organic inputs)
- Use of growth retardant in cotton & growth regulator in soybean & pigeon pea
- De-topping in cotton & nipping in pigeon pea

Trash Mulching Activity By Shri. Govindrao
Village -Pondul; Dist-Beed

Chapter 6: Climate Resilient Technology (CRT) Interventions and its impact on yield of crops

6.1 CRTs Interventions

Climate Resilient Technologies promoted under PoCRA			
Technology	**Resilience Feature**	**Benefits**	**Suitable Crops**
1. Cultivation by broad bed furrow (BBF) method	Resilience to moisture stress, poor soil drainage, nutrient (fertilizer) loss	Ensures optimum moisture and aeration at root level, helps drain out water in excess rainy condition, saves seed, ensures proper fertilizer placement in root zone, helps develop optimum microclimate under crop canopy, helps in proper intercultural operations, reduces cost of cultivation.	All field crops both in Kharif and Rabi season
2. Intercropping	Resilience to risk due to crop failure, moisture stress, pest incidence	Ensures optimum use of soil moisture & nutrients, overcomes risk due to aberrant climatic variabilities, helps in effective pest management, and reduces financial risk in farming.	Cotton, soybean, pulses, sorghum & pearl millet
3. Use of climate resilient seed varieties	Resilience to moisture stress due to dry spell & drought, pest epidemic, infestation by wilt & soil borne pathogens	Higher yields than existing varieties, helps escape drought condition due to shorter durations, tolerance to moisture stress, resistance to pest & disease infestation fetches good price due to better consumer preference.	All crops
4. Seed treatment	Resilience to biotic stress	Protection from soil born pathogen and pests, enhances good root development.	All field crops
5. Integrated Nutrient Management	Resilience to abiotic stresses including soil salinity, nutrient deficiencies, susceptibility to pest & disease	Enhances crop health, higher yields, enhances quality of produce, resistance to biotic & abiotic stresses, enhances quality of produce, enhances consumer preference, helps to fetch better market price.	All crops

6. Integrated Pest Management	Resilience to pest & disease epidemic, environmental hazards	Protection from pest & disease attack, reduction in use of chemical pesticide, helps in production of residue free agriculture commodities, reduces environmental hazards, enhances quality of produce, enhances consumer preference in domestic and export market, helps to fetch better market price.	All crops
7. Furrow opening	Resilience to moisture stress,	Helps in conservation of moisture around root zone of crops during dry spell.	Cotton, soybean, pulses, sorghum & pearl millet
8. Foliar spray of 2% Urea at flowering and 2% DAP at boll development	resilience to poor nutrition & moisture stress		Cotton
9. Protective irrigation through farm pond	resilience to moisture stress during dry spell & drought condition	Overcomes moisture stress during critical stages, improves nutrient uptake, and enhances increase in yield.	All crops
10. Conservation tillage	Resilience to moisture stress, soil & nutrient loss	Enhances level of soil carbon, soil fertility & water holding capacity, better crop health and higher yields, enhances quality of produce, resistance to biotic & abiotic stresses, and enhances quality of produce.	All crops
11. Incorporation of biomass	Resilience to soil organic carbon (SOC) loss	Enhances level of soil carbon and soil fertility, enhances water holding capacity of soil, leading to better crop health and higher yields, tolerance to moisture stresses.	All crops
12. Canopy management in fruit crops	Resilience to stress management	Enhances fruit bearing capacity, enhances quality of fruits, and reduces cost of harvesting.	Mango, Pomegranate & Guava
13. Cultivation of citrus crops on broad ridges	Resilience to poor soil drainage & soil borne diseases	Enhances proper microclimate around root zone, helps in retaining optimum soil moisture, avoids contact of water with stem collar, and prevents infection by phytophthora & other soil borne pathogens.	Mandarin orange, Sweet orange and Kagzi Lime

6.2 Impact of CRT on crop yield based on FFS data.

FFS (Farmers' Field School) sessions have been implemented in the project village since 2018, focusing on soybean, cotton, pigeon pea and gram crops in the Beed district. FFS aims to promote sustainable and efficient farming. It does this by introducing effective practices for selected crops, improving farmers' knowledge with concepts like IPM and INM, empowering them to make informed decisions and working towards reducing cultivation costs, restoring soil fertility and increasing productivity. In essence, the FFS focuses on sustainable farming and empowering farmers as decision-makers. The adoption of climate resilient technology (CRT) was promoted on the FFS plot during these sessions. A comparison of the crop yields between the FFS plot and the control plot is detailed below, as per the data captured in the FFS app.

Year wise crop yield (Kg/ha)

Year	Soybean		Cotton		Pigeon Pea		Gram	
	FFS Plot	**Control Plot**	**FFS Plot**	**Control Plot**	**FFS Plot**	**Control Plot**	**FFS Plot**	**Control Plot**
2019	948	903	457	463	667	564	1075	937
2020	1386	1222	1337	1100	1053	909	1318	1157
2021	1606	1338	1275	993	953	765	1568	1292
2022	2434	2017	1284	1003	1022	723	1680	1233
Average	**1593.50**	**1370.00**	**1088.25**	**889.75**	**923.75**	**740.25**	**1410.25**	**1154.75**

The FFS plot for soybean crops benefited from various CRT interventions, including seed treatment with fungicide and biofertilizer, sowing using the BBF method, intercropping, protective irrigation during dry spells and foliar spray of Neem seed kernel extract (NSKE). As a result, the yield of the FFS plot increased by 16.31% compared to the control plot.

The FFS plot for cotton crops benefited from various CRT interventions, including seed treatment with biofertilizer, intercropping, protective irrigation during dry spells, foliar spray of Neem seed kernel extract (NSKE), nipping of bud and use of traps (Pheromone traps, sticky traps). As a result, the yield of the FFS plot increased by 22.31% compared to the control plot.

The FFS plot for Pigeon pea crops benefited from various CRT interventions, including as Seed treatment with fungicide and biofertilizer, protective irrigation in dry spell, foliar spray of Neem seed kernel extract (NSKE), topping. As a result, the yield of the FFS plot increased by 24.79% compared to the control plot.

The FFS plot for Gram crops benefited from various CRT interventions, including as Seed treatment with fungicide and biofertilizer, sowing by BBF method, protective irrigation, NSKE, and use of pheromone traps. As a result, the yield of the FFS plot increased by 22.13% compared to the control plot.

6.3 Impact of CRT on Crop Yield Based on Broad Bed Furrow (BBF)

(Source: Nana Deshmukh Krishi Sanjeevani Project)

Objectives:

1. Yield Improvement: The primary objective of BBF is to assess the impact of implementing Broad Bed Furrow (BBF) technology as a Climate Resilient Technology (CRT) on crop yield. It quantifies the increase in crop yield, such as soybean, tur, Chana or other crops, resulting from the adoption of BBF technology.

2.**Water Management:** Evaluate how BBF technology affects water management in agriculture. This includes the efficient utilization of water resources, reduced water wastage, and improved soil moisture retention.

3. **Impact of BBF:** The impact of BBF technology on soil health and fertility and productivity. BBF enhances nutrient retention, reduces soil erosion, and promotes overall soil health. Due to BBF pattern soil moisture and aeration is maintained so uptake of nutrient is easy its result on crop yield is increased by 10 to 15 %. The adoption of BBF technology contributes to climate resilience, especially in regions prone to droughts or excess rainfall in Beed district area under BBF in the last three 2020-2023 total covered area 4274 Ha.

Farmer Name: Shri.Ganpat Damodar Nandure, At.Post.Ruidharur Tq. Dharur Dist.Beed
Crop: Soybean Yield: - 14 Qt/Ha

Impact of BBF on crop yield

Sr.No	Name of APMC	BBF/ Ha.
1	Ambajogai	1193
2	Asthi	163
3	Beed	297
4	Dharur	196
5	Georai	255
6	Kaij	968
7	Majalgaon	130
8	Parali	725
9	Patoda	137
10	Shirur kasar	115
11	Wadwani	95
TOTAL		4274

6.4 Impact of Dibbling method on crop yield

In Beed district farmers adopt dibbling methods in light soil. In villages of Georai and Majalgaon taluka a major number of farmers cultivated sugarcane on bed and later on harvesting of sugarcane they continued to dibble soybean seed. Their average yield is 8-11 q/ha.

Dibbling Method Village - Mangrul, tal- Majalgaon Dist-Beed

Impact of Dibbling method on crop yield

Sr. No.	Name of tehsil	Dibbling method/ ha
1	Ambajogai	57
2	Asthi	23
3	Beed	19
4	Dharur	13
5	Georai	19
6	Kaij	34
7	Majalgaon	19
8	Parali	17
9	Patoda	9.2
10	Shirur kasar	10
11	Wadwani	11.9
TOTAL		232.1

6.5 Impact of Zero Tillage on Yield Crops (District Data):

Zero tillage, also known as No-till farming, is an agricultural practice in which crops are planted into the soil without prior ploughing or tilling of the field. This method has several potential impacts on crop yields, In Beed district as shown in table there are hundreds of farmers who are practicing SRT on area 340.57 ha. The following are the impacts of SRT.

Impact of SRT on crop yield

Sr. No.	Name of APMC	SRT Yield / Ha.
1	Ambajogai	95
2	Asthi	13.5
3	Beed	21
4	Dharur	19
5	Georai	23
6	Kaij	64
7	Majalgaon	30
8	Parali	27
9	Patoda	15.9
10	Shirur kasar	13.17
11	Wadwani	19
	TOTAL	340.57

Farmer Name: - Shri. Kamlakar Raut, village Kalegaon kaij Tel. Ambejogai

Soil Erosion Reduction: Zero tillage helps to protect the topsoil from erosion, especially in areas with sloping or vulnerable soils. By leaving crop residues on the field surface, it acts as a natural barrier against wind and water erosion, preserving the soil structure and nutrients.

Improved Soil Health: It can improve soil structure and enhance microbial activity. Reduced soil disturbance promotes the development of beneficial soil organisms, leading to healthier, more fertile soil. soil disturbance in zero tillage conserves soil moisture, which can be particularly beneficial in regions with limited rainfall or during drought conditions. This can result in more consistent crop yields in the district.

Reduced Fuel and Labour Costs: Farmers practicing zero tillage save on fuel and labour costs associated with traditional ploughing and tilling, which can contribute to overall profitability. Reduces cost of cultivation.

6.6 Impact of Neem-Based Extracts on Yield Crops (District Data):

The neem-based extracts, derived from the neem tree (*Azadiracta indica*), The products are neem oil and neem-based pesticides are widely used in agriculture for their various benefits used on crops. Neem-based extracts can positively affect crop yield in several ways:

Neem extracts, particularly neem oil and neem-based pesticides, have natural insecticidal and fungicidal properties. They can help control a wide range of agricultural pests and diseases. By reducing pest and disease pressure, crops can grow more vigorously and produce higher yields.

Neem-based products are often used as part of integrated pest management (IPM) strategies. They can protect beneficial insects and microbes, which can help maintain a balanced ecosystem in the field. This can indirectly contribute to improved crop yields.

Farmer Name: Shri. Govind Jadhav Village- Kumbhefal, tel. Ambejogai

Chapter 7: Plan to cope with weather related contingencies of Beed District

(Source- http://www.icar-crida.res.in/)

7.1 Drought

7.1.1 Rainfed situation

7.1.1.1. Early season drought (delayed onset)

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 2 weeks4th week of June	Medium deep to deep black soils with assuredrainfall	Pearl millet	No Change	Normal package of practices recommended by MAU, Parbhani	Linkage with MAU, Parbhani, MSSC, NSCfor supply of seed
		Cotton			
		Sorghum			
		Pigeon pea			
		Soybean			
	Shallow soils with assuredrainfall	Pearl millet / Pearl millet + Pigeon pea			
		Sorghum			
		Pigeon pea			
		Soybean			
	Medium deep to deep black soils with low rainfall (Asthi, patoda &Sirur kasar tehsils)	Pearl millet			
		Cotton			
		Sorghum			
		Pigeon pea			
		Soybean			
	Shallow soils with low rainfall (Asthi, patoda &Sirur Khasa tehsils)	Pearl millet / Pearl millet + Pigeon pea			
		Sorghum			
		Pigeon pea			
		Soybean			

Early season drought (delayed onset)	Major Farming situation	Normal Crop/Croppingsystem including variety	Suggested Contingency measures		
			Normal Change in Crop/Croppingsystem including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks 2nd week of July	Medium deep to deep black soils with assured rainfall	Pearl millet	No change. Prefer varieties like ICTP-8203, GHB 558, AIMP-92901, Shardha Saburi	Seed treatment	• Linkage with MAU, MSSC and NSC for seed. • Linkage with MAIDC for implements. • Linkage with MAU, KVK for agro techniques
		Cotton	Cotton + Pigeon pea in 6:1 row proportion (Bt. cotton hybrids likeBunny, Mahyco, Ankur, Ajit 51)	• Use 10% higher seed rate • Follow *in situ* soil moisture conservation measures like alternate furrow opening with Balaram plough	
		Sorghum	Sorghum (CSH-9, 11,16, PVK-401, 809) + Pigeon pea MAUS-47 / 71, BSMR 736 / 853) in 4: 2 row proportion	Normal package of practices recommended by MAU, Parbhani	
		Pigeon pea	Soybean (JS-335, MAUS-71) + Pigeon pea (BSMR 736, 853, BDN- 708, 711) in 4:2 or 6:3 row proportion		
		Soybean			
	Shallow soils with assured rainfall	Pearl millet / Pearl millet + Pigeon pea	No change. Prefer varieties like ICTP-8203, GSB 558, AIMP-92901 Shardha, Saburi		
		Sorghum	Sorghum (CSH-9, 11,16, PVK-401, 809) + Pigeon pea (BSMR 736, 853, BDN-708, 711) in 4:2 row proportion		
		Pigeon pea	Soybean (JS-335, MAUS-71) + Pigeon pea (BSMR 736, 853, BDN- 708, 711) in 4:2 row proportion		

		Soybean	Soybean (JS-335, MAUS-71) + Pigeon pea (BSMR- 736, 853, BDN- 708, 711) in 4:2 or 6:3 rowproportion		
	Medium deep to deep black soils with low rainfall (Asthi, patoda & Sirur kasar tehsils)	Pearl millet	No change. Prefer varieties like ICTP-8203, GHB- 558, AIMP-92901, Shardha, Saburi		
		Cotton	Cotton + Pigeon pea in 6:1 row proportion (Bt. cotton hybrids like bunny, Mahyco, Ankur, Ajit 51)	Follow *in situ* soil moisture conservation measures like alternate furrow opening with Balaram plough	
		Sorghum	Sorghum + Pigeon pea in 4 : 2 row proportion, (MAUS-47 / 71 + BSMR 736, 853)	Normal package of practices recommended by MAU, Parbhani.	
		Pigeon pea	Soybean (JS-335, MAUS-71)+ Pigeon pea (BSMR- 736, 853, BDN- 708, 711) in 4 : 2 row proportion		
		Soybean	Soybean (JS-335, MAUS-71)+ Pigeon pea (BSMR- 736, 853, BDN- 708, 711) in 4 : 2 or 6:3 row proportion		
	Shallow soils with low rainfall (Asthi,patoda & Sirur Kasar tehsils)	Pearl millet / Pearl millet + Pigeon pea	No change		
		Sorghum	No change. Prefer varieties like CSH- 9, 11,16, PVK-401, 809		
		Pigeon pea	No change. Prefer varieties like BSMR 853, BDN- 708, 711		
		Soybean	No change. Prefer intercropping withPigeon pea in 4:2 or 6:3 row proportion		

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/Cropping system including variety**	**Change in Crop/Cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 6weeks 4th week ofJuly	Medium deep to deep black soils with assured rainfall	Pearl millet	Pearl millet (ICTP-8203, GHB- 558, AIMP- 92901, Shardha ,Saburi) + Pigeon pea (BSMR853, 853, BDN-708, 711) in 4:2 or 3:3 row proportion	Normal package of practices recommended byMAU, Parbhani Conservation furrow, Inter cultivation(Hoeing, weeding)	Supply of seed cumfertilizer drill underRKVY, ZILLA PARISHAD, MAIDC
		Cotton	Hybrid Maize (Decalp, Kargil, Maharaja)	Wider spacing (60 x 30 cm) for maize crop	
		Sorghum	Pigeon pea (BSMR 853, BDN-708, 711)	Give protective irrigation during drought, experienced either at flowering and grain filling stages	
		Pigeon pea	Sunflower (Morden, SS-56, LSH-36, Mahico-17, BSH-1)	Normal package of practices recommended by MAU, Parbhani	
		Soybean	Pearl millet (ICTP-8203, GHB 558, AIMP- 92901, Shradha, Saburi) + Pigeon pea (BSMR853, 708, BDN-708, 711) in 4:2 or 3:3 row proportion	Normal package of practices recommended by MAU, Parbhani	
	Shallow soils with assured rainfall	Pearl millet / Pearl millet + Pigeon pea	Prefer Pearl millet + Pigeon pea intercropping in 4:2 or 3: 3 row proportion	-do-	
		Sorghum	Pigeon pea BSMR 853, 708, BDN-708, 711)	-do-	
		Pigeon pea	Sunflower (Morden, SS-56, LSH-36, Mahico- 17, BSH-1)	-do-	

		Soybean	Pearl millet (ICTP-8203, GHB- 558, AIMP-92901, Shradha, Saburi) + Pigeon pea (BSMR 853, 708, BDN-708, 711) in 4:2 or 3:3 row proportion	-do-	
	Medium deep to deep black soils with low rainfall (Asthi , patoda & Sirur kasar tehsils)	Pearl millet	Pearl millet + Pigeon pea in 4:2 or 3:3 row proportion, Niger local, Sesamum (No- 85, JLT-7), Fodder Sorghum (Nilwa, MP Chari, Pusa Chari)	-do-	
		Cotton	Castor (VI-9, Aruna, DCS-9 (Jyoti),GCH-4, 5, 6 and DCH-117, 32)	-do-	
		Sorghum	Pearl millet + Pigeon pea in 4:2 or 3:3 row proportion	-do-	
		Pigeon pea	Pigeon pea (BDN-708, 711), Sunflower (Morden, SS-56, LSH-36, Mahyco-17, BSH-1)	-do-	
		Soybean	Pearl millet (PPC-6, AIMP-92901 , Shradha, Saburi), Sesamum, Panjab-1 Castor (VI-9, Aruna, DCS-9 (Jyoti), GCH-4, 5,6 and DCH-117, 32)	-do-	
	Shallow soils with low rainfall (Asti, Patoda & SirurKasar tehsils)	Pearl millet	No change	Normal package of practices recommended by MAU, Parbhani	
		Sorghum	Cotton / Maize/ Pigeon pea (BSMR 736, 853, BDN 708, BDN 711) / Pearl millet (Shradha,Saburi, AIMP-92901) or Sunflower (Morden, SS-56, LSFH-35, BSH-1)	-do-	
		Pigeon pea	Prefer varieties like BSMR 736, 853, BDN 708, 711	-do-	
		Soybean	Prefer intercropping with Pigeon pea in 4:2 or 6:2 row proportion	-do-	

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	**Major Farming situation**	**Normal Crop/Cropping system including variety**	**Change in Crop/Cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delay by 8weeks 2nd week ofAug	Medium deep to deep blacksoils with assured rainfall	Pearl millet	Pearl millet + Pigeon pea (BDN-708, 711) in 4:2 or 3:3 row proportion	• Dry sowing 8 - 10 days before rains with 15 - 20 % higher seed rate. • Seed hardening i.e. 18 hrs soaking in water followed by 24 hrs shade drying. • Open conservation furrow for every 6-8 rows with Balaram plough. • Intercultivation (Hoeing, weeding) and mulching.	• Linkage with MAU, MSSC and NSC for seed • Linkage with MAIDC for implements • Linkage with MAU, KVK for agro-techniques
		Cotton	Hybrid Maize (Decalp, Kargil,Maharaja)	Follow *in situ* soil moisture conservation Measures like alternate furrow opening withBalaram plough.	
		Sorghum	Pigeon pea (BDN-708, 711)	Open conservation furrow for every 6-8 rows with Balaram plough.	
		Pigeon pea	Sunflower (Morden, SS-56, LSH- 36, Mahico-17, BSH-1)	-do-	
		Soybean	Pearl millet (ICTP-8203, GSB 558, AIMP-92901 shardha, Saburi) + Pigeon pea (BDN-708, 711) in 4:2 or 3:3 row proportion	-do-	
	Shallow soils with assured rainfall	Pearl millet	Hybrid Maize (Decalp, Kargil, Maharaja)	-do-	
		Sorghum	Pigeon pea (BDN-708, 711)	-do-	
		Pigeon pea	Sunflower (Morden, SS-56, LSH-36, Mahico-17, BSH-1), Castor (VI-9, Aruna, DCS-9 (Jyoti) GCH-4, 5, 6	-do-	

			and DCH-117, 32)		
		Soybean	Pearl millet + Pigeon pea in 4:2 or3:3 row proportion, Niger local, Sesamum (No-85, JLT-7),	-do-	
			Fodder Sorghum (Nilwa, MP Chari, Pusa Chari), Fodder maize(African tall), Castor (VI-9, Aruna, DCS-9 Jyoti),GCH-4, 5, 6 and DCH-117, 32)		
	Medium deep to deep black soils with low rainfall (Asthi, patoda & Sirur kasar tehsils)	Pearl millet	Pearl millet + Pigeon pea in 4:2 or 3: 3 row proportion	-do-	
		Cotton	Pigeon pea (BDN-708,711) Sunflower (Morden, SS-56, LSH-36, Mahico-17, BSH-1), Castor (VI-9, Aruna, DCS-9 (Jyoti),GCH-4, 5, 6 and DCH- 117, 32), Sesamum, (Punjab-1)	Follow *in situ* soil moisture conservation. Measures like alternate furrow opening withBalaram plough.	
		Sorghum	Pearl millet (PPC-6, Shradha, Saburi), sesamum, (Punjab-1)Castor (VI-9, Aruna, DCS-9 (Jyoti),GCH-4, 5, 6 and DCH-117, 32),	Open conservation furrow for every 6-8 rows with Balaram plough	
		Pigeon pea	Castor (VI-9, Aruna, GCH-4, 5, 6 and DCH-117 / 32)	-do-	
		Soybean	Pearl millet / Sunflower	-do-	

	Shallow soils with low rainfall (Asthi, patoda & Sirur Khasar tehsils)	Pearl millet / Pearl millet + Pigeon pea	No change. Prefer intercropping with Pigeon pea	-do-	
		Sorghum	Sunflower (Morden, SS-56, LSH-36, Mahico-17, BSH-1)	-do-	
		Pigeon pea	Castor (VI-9, Aruna, DCS-9 (Jyoti), GCH-4, 5, 6 and DCH-117 / 32)	-do-	
		Soybean	Sunflower (Morden, SS-56, LSH-36, Mahico-17, BSH-1)	-do-	

7.1.1.2. Early season drought (Normal onset)

Condition	Major Farming situation	Normal Crop/ Cropping system	Suggested Contingency measures		
Early season drought (Normal onset)			**Crop management**	**Soil nutrient & moisture Conservation measures**	**Remarks on Implementation**
Normal onset followed by 15-20 days dry spell after sowing germination / crop stand etc.	Medium deep todeep black soils with assured rainfall	Pearl millet	Gap filling or transplanting of seedlings either from the same field orfrom nursery or gap filling with Pigeon pea	Interculture with harrow / hoe.	• Linkage with MAU, MSSC and NSC for seed. • Linkage with MAIDC for implements. • Linkage with MAU,KVK for agro techniques
		Cotton	Gap filling within the rows with same cultivar or Pigeon pea to maintain at least 75% plantpopulation. • Raise cotton seedlings in polythene bags and transplant when sufficient soil moisture isavailable. • Give protective irrigationwherever possible	• Avoid applying fertilizers till sufficient soil moisture is available • Interculture with harrow/hoe	
		Sorghum	Gap filling with pearl millet / Pigeon pea	Interculture with harrow/ hoe.	
		Pigeon pea	Gap filling within the rows with sameor short duration cultivar to maintain at least 75% plant population	-do-	

		Soybean	• Gap filling within the rows with same or short duration cultivar tomaintain at least 75% plant population • If the plant population is less than 50% go for re-sowing of the crop	-do-	
	Shallow soils with assured rainfall	Pearl millet	Gap filling or transplanting of seedlings either from the same field or from nursery or gap filling withPigeon pea	Interculture with harrow/hoe.	
		Sorghum	Gap filling with Pigeon pea	-do-	
		Pigeon pea	Gap filling within the rows with same or short duration cultivar to maintainat least 75% plant population.	-do-	
		Soybean	• Gap filling within the rows with same or short duration cultivar tomaintain at least 75% plant population. • If the plant population is less than 50% go for re-sowing of the crop.	-do-	
	Medium deep to deep black soils with low rainfall(Asthi, patoda& sirur kasar tehsils)	Pearl millet	Gap filling or transplanting of seedlings either from the same field orfrom nursery or gap filling with Pigeon pea	-do-	
		Cotton	• Gap filling within the rows with same cultivar or Pigeon pea tomaintain at least 75% plant Population. • Raise cotton seedlings in polythene bags and transplant when sufficient soil moisture isavailable. • Give protective irrigationwherever possible	• Avoid applying fertilizers till sufficient soil moisture is available • Interculture with harrow /hoe	
		Sorghum	Gap filling with pearl millet / Pigeon pea	Interculture with harrow / hoe	
		Pigeon pea	Gap filling within the rows with same or short duration cultivar to maintainat least 75% plant population	-do-	

		Soybean	• Gap filling within the rows with same or short duration cultivar tomaintain at least 75% plant population • If the plant population is less than50% go for re-sowing of the crop	-do-	
	Shallow soils with low rainfall (Asthi, patoda &Sirur Khasar tehsils)	Pearl millet	Gap filling or transplanting of seedlings either from the same field orfrom nursery or gap filling with Pigeon pea	Interculture with harrow / hoe.	
		Sorghum	Gap filling with pearl millet / Pigeon pea	-do-	
		Pigeon pea	Gap filling within the rows with same or short duration cultivar to maintainat least 75% plant population	-do-	
		Soybean	• Gap filling within the rows with same or short duration cultivar tomaintain at least 75% plant population • If the plant population is less than 50% go for re-sowing of the crop	-do-	

7.1.1.3. Mid-season drought(long dry spell)

Condition	**Major Farming situation**	**Normal Crop/Cropping system**	**Suggested Contingency measures**		
Mid-season drought			**Crop management**	**Soil nutrient & moisture Conservation measures**	**Remarks on Implementation**
Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period) **At vegetative stage**	Medium deep to deep blacksoils with assured rainfall	Pearl millet	• Avoid top dressing of fertilizerstill sufficient soil moisture is available. • Interculture with harrow for weeding and to create soil mulch. • Give protective irrigation ifpossible	• Opening of alternate furrowswith Balaram plough. • Mulching with crop residue@ 3-5 t /ha within the rows • Spraying of 2% urea or DAP	• Linkage with MAU,MSSC and NSC for seed. • Linkage with MAIDCfor implements. • Linkage with MAU,KVK for agro techniques
		Cotton	-do-	-do-	

		Sorghum	• Avoid top dressing of fertilizerstill sufficient soil moisture is available. • Protective irrigation if possible • Intra row thinning	-do-	
		Pigeon pea	-do-	-do-	
		Soybean	Interculture for weeding and to create soil mulch.	-do-	
	Shallow soils with assured rainfall	Pearl millet	Gap filling or transplanting of seedlings either from the same field orfrom nursery or gap filling with Pigeon pea	• Opening of alternate furrowswith Balaram plough. • Interculture with hoe.	
		Sorghum	Gap filling with Pigeon pea	-do-	
		Pigeon pea	Gap filling within the rows with same or short duration cultivar tomaintain at least 75% plant population	-do-	
		Soybean	-do-	-do-	
	Medium deep to deep black soils with low rainfall (Asthi, patoda & Sirur kasar tehsils)	Pearl millet	Gap filling or transplanting of seedlings either from the same field orfrom nursery or gap filling with Pigeon pea	• Opening of alternate furrows with Balaram plough. • Interculture with hoe.	
		Cotton	• Gap filling within the rows with same cultivar or Pigeon pea tomaintain at least 75% plant population. • Raise cotton seedlings in polythene bags and transplant when sufficient soil moisture is available. • Give protective irrigationwherever possible	• Avoid applying fertilizers till sufficient soil. moisture is available • Opening of alternate furrowswith Balaram plough. • Interculture with harrows	

		Sorghum	Gap filling with pearl millet / Pigeon pea	• Opening of alternate furrows with Balaram plough • Interculture with hoe	
		Pigeon pea	Gap filling within the rows with same or short duration cultivar to maintainat least 75% plant population	-do-	
		Soybean	-do- or if the plant population is less than 50% resow the crop	-do-	
	Shallow soils withlow rainfall (Asthi, patoda &Sirur Kasar tehsils)	Pearl millet	Gap filling or transplanting of seedlings either from the same field orfrom nursery or gap filling with Pigeon pea	Opening of alternate furrows with Balaram plough Interculture with hoe.	
		Sorghum	Gap filling with pearl millet / Pigeon pea	-do-	
		Pigeon pea	Gap filling within the rows with same or short duration cultivar to maintainat least 75% plant population	-do-	
		Soybean	-do- or if the plant population is less than 50% re-sow the crop	-do-	

Condition	**Major Farming situation**	**Normal Crop/Croppingsystem**	**Suggested Contingency measures**		
Mid-season drought (long dry spell)			**Crop management**	**Soil nutrient & moisture Conservationmeasures**	**Remarks on Implementation**
At flowering/fruitingstage	Medium deep todeep black soils with assured rainfall	Pearl millet	Give protective irrigation	Foliar spray of 2% urea and DAP	• Linkage with MAIDC / DSAO for intercultural implements (Harrow,hoe). • Linkage with
		Cotton	Give protective irrigation with drip	• Foliar spray of 2% KNO_3,urea and DAP. • Mulching with crop residue@ 3-5 t /ha within the rows.	
		Sorghum	Give protective irrigation	If feasible spray anti-transparent 6% kaolin	
		Pigeon pea		Foliar spray of 2% KNO_3, urea and DAP	

		Soybean	Give protective irrigation with sprinkler	-do-	RKVY for farm ponds and micro irrigation system.
	Shallow soils with assured rainfall	Pearl millet / Pearl millet + Pigeon pea	Give protective irrigation	-do-	
		Sorghum	• Give protection irrigation • In case of severe stress harvest as green fodder	If feasible spray anti-transparent 6% kaolin	
		Pigeon pea	Give protective irrigation	Foliar spray of 2% urea, DAP	
		Soybean			
	Medium deep todeep black soils with low rainfall(Asthi, patoda &Sirur kasar tehsils)	Pearl millet	Give protective irrigation	-do-	
		Cotton	Give protective irrigation with drip	• Foliar spray of 2% KNO_3, urea, DAP, DAP, MgSo4,Zinc, Boron. • Mulching with crop residue@ 3-5 t /ha within the rows	
		Sorghum	-do-	Foliar spray of 2% urea, DAP	
		Pigeon pea	-do-	-do-	
		Soybean	-do-	-do-	
	Shallow soils with low rainfall (Asthi, patoda &Sirur Kasar tehsils)	Pearl millet / Pearl millet + Pigeon pea	-do-	-do-	
		Sorghum	• Give protection irrigation • In case of severe stress harvest as green fodder	If feasible spray anti-transparent 6% kaolin. Foliar spray of 2% urea,DAP	
		Pigeon pea	Give protection irrigation	Foliar spray of 2% urea and DAP	
		Soybean			

Condition	**Major Farming situation**	**Normal Crop/Cropping System**	**Suggested Contingency measures**		
			Crop management	**Rabbi crop planning**	**Remarks on implementation**
Terminal drought (Early	Medium deepto deep	Pearl millet	Lifesaving irrigation or harvest at physiological maturity	Plan for rabbi crops chickpea / safflower	Linkage with RKVY forfarm

withdrawal of monsoon	black soils with assured rainfall	Cotton	• Lifesaving irrigation with drip • Picking	If possible, adopt relay cropping of chickpea, safflower, rabbi sorghum	ponds and micro irrigation system.
		Sorghum	Lifesaving irrigation or harvest at physiological maturity or harvest for fodder	Plan for rabbi crops chickpea / safflower	
		Pigeon pea	Lifesaving irrigation	-do-	
		Soybean	-do-	-do-	
	Shallow soils with assured rainfall	Pearl millet / Pearl millet + Pigeon pea	Lifesaving irrigation or harvest at physiological maturity	Plan for rabbi crops chickpea / safflower	
		Sorghum	• Lifesaving irrigation • In case of severe stress harvest as greenfodder	Plan for rabbi crops chickpea / safflower	
		Pigeon pea	Lifesaving irrigation	Foliar spray of 2% KNO_3, urea and DAP	
		Soybean	-do-	-do-	
	Medium deep to deep black soils with lowrainfall (Asthi, patoda & Sirur kasar tehsils)	Pearl millet	Lifesaving irrigation or harvest at physiological maturity	Plan for rabbi crops chickpea / safflower	
		Cotton	• Lifesaving irrigation with drip • Picking	If possible, adopt relay cropping of chickpea, safflower, rabbi sorghum	
		Sorghum	Lifesaving irrigation or harvest at physiological maturity	-do-	
		Pigeon pea	Lifesaving irrigation	-do-	
		Soybean	-do-	-do-	
	Shallow soils with low rainfall (Asthi, patoda& Sirur Khasar tehsils)	Pearl millet / Pearl millet + Pigeon pea	Lifesaving irrigation or harvest at physiological maturity	Plan for rabbi crops chickpea / safflowerafter harvest of sole pearl millet	
		Sorghum	• Lifesaving irrigation • In case of severe stress harvest as greenfodder	Plan for rabbi crops chickpea / safflower	
		Pigeon pea	Lifesaving irrigation	Foliar spray of 2% KNO_3, urea and DAP	
		Soybean		Plan for rabbi crops chickpea / safflower /sorghum	

7.1.2. Irrigated situation

Condition	Suggested Contingency measures				
	Major Farming situation	**Normal Crop/Cropping System**	**Change in crop / cropping system**	**Agronomic measures**	**Remarks on Implementation**
Delayed release of water in canals due to low rainfall	Medium deep todeep black soils with assured rainfall	Sugarcane	No change or irrigated cotton	• Raising of nurseries with single budded setts to save the time and water for pre-seasonal planting • Drip system for enhancing the water productivity • Mulching with sugarcane trash between rows and frequent interculture to conserve moisture	Supply of seed throughMSSC, NFSM, MAU, Village seed production programme
		Turmeric	No change	Use drip irrigation	
	Shallow black soils with assured rainfall	Sweet orange	No change	Drip irrigation, Basin mulch	
		Ginger	Rabbi onion / summer pearl millet	Use drip irrigation	
		Vegetable crops	Cotton / Maize	-do-	
	Shallow soils with low rainfall (Asthi,Patoda& Sirur, Khasar tehsils)	Vegetable crops	Cotton / Fodder maize	-do-	
		Ginger	No change	-do-	
		Kharif Onion	Semi Rabbi Onion	-do-	
Limited release of water in canals due to low rainfall	Medium deep to deep black soils with assured rainfall	Sugarcane	No change or irrigated cotton	• Raising of nurseries with single budded setts to savethe time and water for pre-seasonal planting • Drip system for enhancingthe water productivity • Mulching with sugarcanetrash between rows and frequent interculture to conserve moisture	Supply of seed throughMSSC, NFSM, MAU, Village seed production programme
	Shallow black soils with assured rainfall	Ginger / Turmeric	Cotton / Maize / Wheat / Chickpea	• Irrigation at critical crop growth stages • Use drip / sprinkler	

Condition	Suggested Contingency measures				
	Major Farming situation	**Normal Crop/Cropping system**	**Change in crop / cropping system**	**Agronomic measures**	**Remarks on Implementation**
Non release ofwater in canalsunder delayed onset of monsoon in catchment	Medium deep to deepblack soils with assured rainfall	Sugarcane	No change or cotton	• Raising of nurseries with single budded setts to save the time andwater for pre-seasonal planting • Drip system for enhancing the water productivity • Mulching with sugarcane trashbetween rows and frequent interculture to conserve moisture	• Supply of seed through MSSC, NFSM, MAU, Village seed production programme
	Shallow black soils with assured rainfall	Ginger / Turmeric	Cotton / Maize / Wheat / Chickpea	• Irrigation at critical crop growthstages • Use drip / sprinkler irrigation	
Insufficient groundwater recharge due to lowrainfall	Medium deep to deep black soils with assured rainfall	Sugarcane	No change or cotton	• Raising of nurseries with single budded sets to save the time and waterfor pre-seasonal planting • Drip system for enhancing the waterproductivity • Mulching with sugarcane trash between rows and frequent interculture to conserve moisture	Supply of seed through MSSC, NFSM, MAU, Village seed production programme
		Ginger / Turmeric	Cotton / Maize / Wheat / Chickpea	• Irrigation at critical crop growth stages • Use drip / sprinkler irrigation	
	Shallow black soils with assured rainfall	Ginger / Turmeric	Cotton / Maize / Wheat /Chickpea	• Irrigation at critical crop growth stages • Use drip / sprinkler irrigation	
	Medium deep to deep blacksoils with low rainfall (Asthi, Patoda & Sirur kasar tehsils)	Sugarcane	No change or cotton	• Raising of nurseries with single budded sets to save the time and water for pre-seasonal planting • Drip system for enhancing the waterproductivity • Mulching with sugarcane trashbetween rows and frequent interculture to conserve moisture	
		Ginger / Turmeric	Cotton / Maize / Wheat /Chickpea	• Irrigation at critical crop growth stages • Use drip / sprinkler irrigation	
	Shallow soils with low rainfall (Asthi, Patoda & Sirur Khasar tehsils)	Wheat	Safflower / Chickpea	• Mulching • Use drip / sprinkler irrigation • Irrigation at critical crop growth stages	
		Turmeric / Ginger	Pigeon pea	-do-	

7.2 Unusual rains (untimely, unseasonal etc.) (For both rainfed and irrigated situations)

Condition	**Suggested contingency measure**			
Continuous high rainfall in a short span leading to water logging	**Vegetative stage**	**Flowering stage**	**Crop maturity Stage**	**Post-harvest**
Cotton, Pearl millet	• Drain excess water • Interculture at optimum soilmoisture • Apply 25KgN/Ha to cotton	Drain excess water	Drain out excess waterTimely harvest	Protect picked cotton from drenching and soiling Dry wet cotton and market
Soybean, Pigeon peaand short duration pulses	Drain out excess water	-do-	-do-	Shift to safer placeDry the produce
Horticulture				
Mango	Opening of field channels to drain out excess water and avoid surface ponding, Interculture at optimum soil moisture	Opening of field channels to drain out excess water and avoidsurface ponding, Interculture at optimum soil moisture	Collect fallen fruits, grade andmarket if feasible	Grading, cleaning and marketing of fruits
Sweet orange				
Heavy rainfall with high-speed winds in a short span				
Cotton, Pearl millet	• Drain excess water • Interculture at optimum soil moisture • Apply 25KgN/Ha to cotton	Drain excess water	Drain out excess waterTimely harvest	Protect picked cotton from drenching and soiling Dry wet cotton and marketing
Soybean, Pigeon pea and short durationpulses	Drain out excess water	-do-	-do-	Shift to safer placeDry the produce
Horticulture				
Mango	-	Provide support to prevent lodging and uprooting in young orchards	Apply multi-nutrient and hormonal spray to promote flowering	Shift produce to safer place
Sweet orange	-do	-do-	-do-	-do-
Outbreak of pests and diseases due to unseasonal rains				
Cotton	• Apply soil drench of carbendazim 0.1% or COC @ 3g/litre at base of	• Apply foliar spray of streptocycline sulphate @ 6g/60 litre + COC @	Foliar spray of carbendazim 0.1% or Ditane M45 0.2% to prevent boll rot	-

	plants to prevent wilt in low lying patches	25g/10 litre to prevent bacterial leaf blight • Apply Sulphur 25g/10 litre (300 mesh) to prevent grey mildew • Apply MgSO4 25 kg/ha soil application or 1% MgSO4 foliar spray to prevent leaf reddening		
Pearl millet			Apply Dithane M 45 0.2% onear heads immediately after cessation of rains	
Soybean	• Manually remove infested plants or plant parts from below the girdles • Protect against semilooper when density reaches >4 larvae per meter row with foliar spray of NSKE 5% or dimethoate 30 EC 1ml/litre	-		
Horticulture				
Mango	• Spray imidacloprid 0.3 ml or dimethoate 1 ml/liter to control hopper • Drench the seedlings with COC 0.25% against root rot	Protect against hopper	• Spray Dithane M 45 3g/litre or carbendazim 1g/literagainst anthracnose • Spray Sulphur 0.5%to control powdery mildew	Maintain aeration in storage toprevent fungal infection and blackening or fruits
Sweet orange	Protect against Citrus Psylla with foliar spray of malathion 50 EC 10ml or quinalphos 25 EC 10 ml or cypermethrin 25EC 4 ml per 10 liters	Protect against Citrus Psylla with foliar spray of malathion 50 EC 10 ml or quinalphos 25 EC 10 mlor cypermethrin 25EC 4 ml per 10 liters	-	-

Chapter 8: Agro meteorological Advisory

8.1 Agro-Meteorogical advisory

8.1.1 Importance/ Need of Agromet advisory

Indian agriculture has been dependent on weather from the last century, but since the last few years the uncertainty of weather is becoming dangerous for agriculture business in the country. Due to climate change, farmers have to face many calamities such as heavy rainfall, cyclonic storms, extreme cold, extreme temperatures, hail and drought. All these factors are having an adverse effect on crop production. Our farmers eagerly await the southwest monsoon before the Kharif season. The use of weather forecasting is not limited to sowing but it is useful in every operation from harvesting to storage of the crop. In short, right from plowing the field to the time the produce/commodity reaches the market. The Meteorological Department under the Ministry of Earth Science (MoES), is doing its best under the Gramin Krishi Mausam Seva Scheme to reduce the losses of the farmers by collecting and organizing climate/weather, soil and crop information and to amalgamate them with weather forecast to assist farmer

8.1.2 Forecasts or advisories generated at district level

In the Beed district Skymet Pvt.ltd setup 63 AWS throughout the Mahaved project .They collect data from the units and provide generated data to the district. Also forecasts or advisories generated from Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani and district follows that.

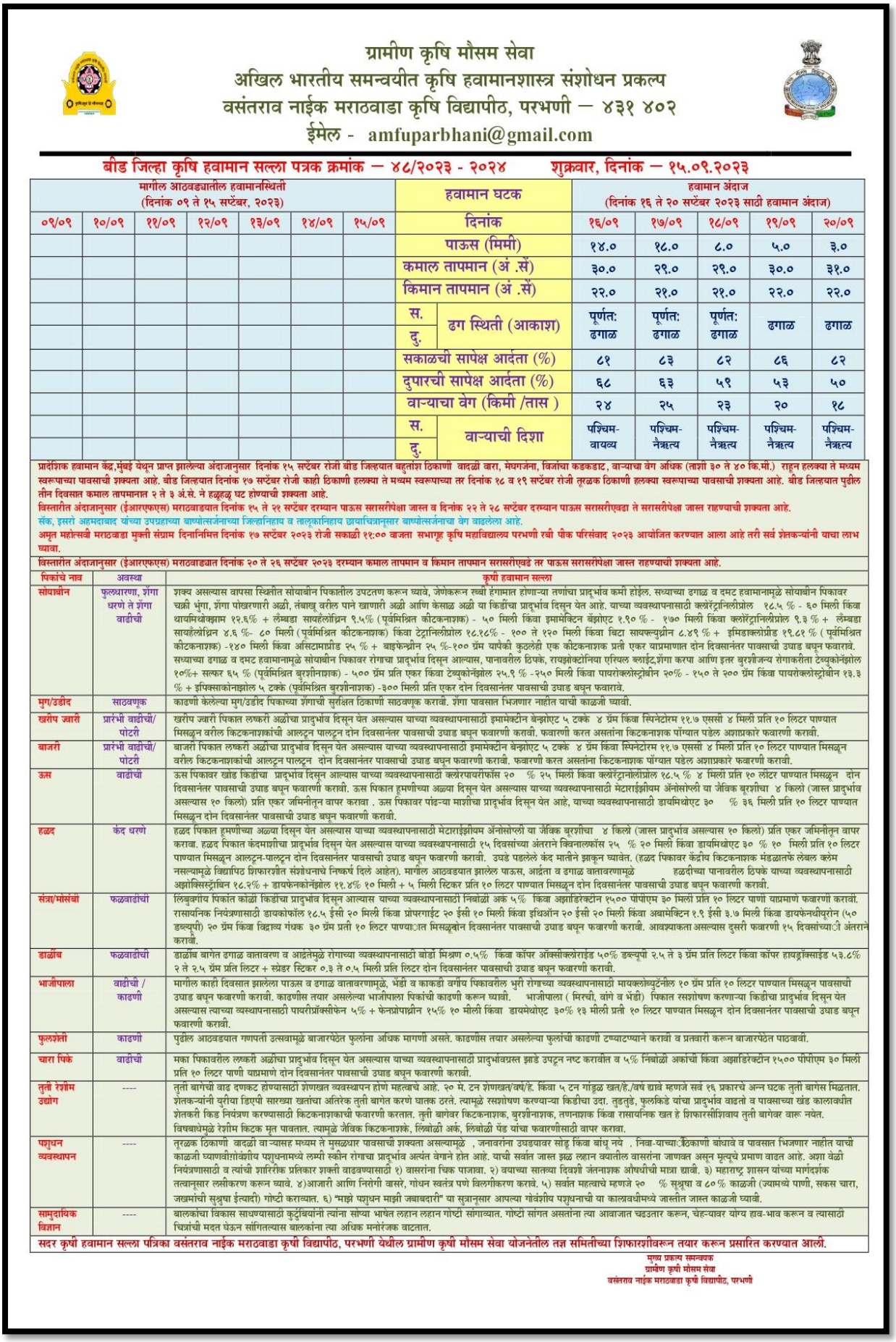
8.1.3 DAMU information

Due to the ongoing climate change, agricultural production is reduced due to large scale loss of crops, and the main reason is that the information about the changing climate does not reach the farmers in time. Daily information on meteorological factors is collected at this centre and based on the weather forecast provided by India Meteorological Department, Pune Regional Meteorological Centre, Nagpur, every Tuesday and Friday, Agricultural Science Centre, Khamgaon Beed, all agricultural subject specialists, Agriculture and Animal Husbandry of the district Under the guidance of officers in the department, agricultural advice is doing important work to reach the farmers.

8.1.4 Other sources of Agro-met advisory

Forcast or Advisories generated at district level and other sources

District and Block Wise process of Agromet Advisory Generation



ग्रामीण कृषि मौसम सेवा
अखिल भारतीय समन्वयीत कृषि हवामानशास्त्र संशोधन प्रकल्प
वसंतराव नाईक मराठवाडा कृषि विद्यापीठ, परभणी – ४३१ ४०२
ईमेल - amfuparbhani@gmail.com

बीड जिल्हा कृषि हवामान सल्ला पत्रक क्रमांक – ४८/२०२३ - २०२४ शुक्रवार, दिनांक – १५.०९.२०२३

मागील आठवड्यातील हवामानस्थिती (दिनांक ०९ ते १५ सप्टेंबर, २०२३)							हवामान घटक	हवामान अंदाज (दिनांक १६ ते २० सप्टेंबर २०२३ साठी हवामान अंदाज)				
०९/०९	१०/०९	११/०९	१२/०९	१३/०९	१४/०९	१५/०९	दिनांक	१६/०९	१७/०९	१८/०९	१९/०९	२०/०९
							पाऊस (मिमी)	१४.०	१८.०	८.०	५.०	३.०
							कमाल तापमान (अं .सें)	३०.०	२९.०	२९.०	३०.०	३१.०
							किमान तापमान (अं .सें)	२२.०	२१.०	२१.०	२२.०	२२.०
							स. ढग स्थिती (आकाश)	पूर्णत: ढगाळ	पूर्णत: ढगाळ	पूर्णत: ढगाळ	ढगाळ	ढगाळ
							दु.					
							सकाळची सापेक्ष आर्दता (%)	८१	८३	८२	८६	८२
							दुपारची सापेक्ष आर्दता (%)	६८	६३	५९	५३	५०
							वाऱ्याचा वेग (किमी /तास)	२४	२५	२३	२०	१८
							स. वाऱ्याची दिशा	पश्चिम-वायव्य	पश्चिम-नैऋत्य	पश्चिम-नैऋत्य	पश्चिम-नैऋत्य	पश्चिम-नैऋत्य
							दु.					

प्रादेशिक हवामान केंद्र,मुंबई येथून प्राप्त झालेल्या अंदाजानुसार दिनांक १५ सप्टेंबर रोजी बीड जिल्हयात बहुतांश ठिकाणी वादळी वारा, मेघगर्जना, विजांचा कडकडाट, वाऱ्याचा वेग अधिक (ताशी ३० ते ४० कि.मी.) राहून हलक्या ते मध्यम स्वरूपाच्या पावसाची शक्यता आहे. बीड जिल्हयात दिनांक १७ सप्टेंबर रोजी काही ठिकाणी हलक्या ते मध्यम स्वरूपाच्या तर दिनांक १८ व १९ सप्टेंबर रोजी तुरळक ठिकाणी हलक्या स्वरूपाच्या पावसाची शक्यता आहे. बीड जिल्हयात पुढील तीन दिवसात कमाल तापमानात २ ते ३ अं.से. ने हळूहळू घट होण्याची शक्यता आहे.

विस्तारीत अंदाजानुसार (ईआरएफएस) मराठवाडयात दिनांक १५ ते २१ सप्टेंबर दरम्यान पाऊस सरासरीपेक्षा जास्त व दिनांक २२ ते २८ सप्टेंबर दरम्यान पाऊस सरासरीएवढा ते सरासरीपेक्षा जास्त राहण्याची शक्यता आहे.

सॅंक, इसरो अहमदाबाद यांच्या उपग्रहाच्या बाष्पोत्सर्जनाच्या जिल्हानिहाय व तालूकानिहाय छायाचित्रानुसार बाष्पोत्सर्जनाचा वेग वाढलेला आहे.

अमृत महोत्सवी मराठवाडा मुक्ती संग्राम दिनानिमित्त दिनांक १७ सप्टेंबर २०२३ रोजी सकाळी ११:०० वाजता सभागृह कृषि महाविद्यालय परभणी रबी पीक परिसंवाद २०२३ आयोजित करण्यात आला आहे तरी सर्व शेतकऱ्यांनी याचा लाभ घ्यावा.

विस्तारीत अंदाजानुसार (ईआरएफएस) मराठवाड्यात दिनांक २० ते २६ सप्टेंबर २०२३ दरम्यान कमाल तापमान व किमान तापमान सरासरीएवढे तर पाऊस सरासरीपेक्षा जास्त राहण्याची शक्यता आहे.

पिकांचे नाव	अवस्था	कृषी हवामान सल्ला
सोयाबीन	फुलधारणा, शेंगा धरणे ते शेंगा वाढीची	शक्य असल्यास वापसा स्थितीत सोयाबीन पिकातील उपटलण करून घ्यावे, जेणेकरून रब्बी हंगामात होणाऱ्या तणांचा प्रादुर्भाव कमी होईल. सध्याच्या ढगाळ व दमट हवामानामुळे सोयाबीन पिकावर चक्री भुंगा, शेंगा पोखरणारी अळी, तंबाखू वरील पाने खाणारी अळी आणि केसाळ अळी या किडींचा प्रादुर्भाव दिसून येत आहे. याच्या व्यवस्थापनासाठी क्लोरेंट्रानिलीप्रोल १८.५ % - ६० मिली किंवा थायमिथोक्झाम १२.६% + लॅम्बडा सायहॅलोथ्रिन ९.५% (पूर्वमिश्रित कीटकनाशक) - ५० मिली किंवा इमामेक्टिन बेंझोएट १.९० % - १७० मिली किंवा क्लोरेंट्रानिलीप्रोल ९.३ % + लॅम्बडा सायहॅलोथ्रिन ४.६ %- ८० मिली (पूर्वमिश्रित कीटकनाशक) किंवा टेट्रानिलीप्रोल १८.१८% - १०० ते १२० मिली किंवा बिटा सायफ्लुथ्रीन ८.४९ % + इमिडाक्लोप्रीड १९.८१ % (पूर्वमिश्रित कीटकनाशक) -१४० मिली किंवा असिटामाप्रीड २५ % + बाइफेन्थ्रीन २५ %-१०० ग्रॅम यापैकी कुठलेही एक कीटकनाशक प्रती एकर याप्रमाणात दोन दिवसानंतर पावसाची उघाड बघून फवारावे. सध्याच्या ढगाळ व दमट हवामानामूळे सोयाबीन पिकावर रोगाचा प्रादुर्भाव दिसून आल्यास, पानावरील ठिपके, रायझोक्टोनिया एरियल ब्लाईट,शेंगा करपा आणि इतर बुरशीजन्य रोगाकरीता टेब्युकोनॅझोल १०%+ सल्फर ६५ % (पूर्वमिश्रित बुरशीनाशक) - ५०० ग्रॅम प्रति एकर किंवा टेब्युकोनॅझोल २५.९ % -२५० मिली किंवा पायरोक्लोस्ट्रोबीन २०% - १५० ते २०० ग्रॅम किंवा पायरोक्लोस्ट्रोबीन १३.३ % + इपिक्साकोनाझोल ५ टक्के (पूर्वमिश्रित बुरशीनाशक) -३०० मिली प्रति एकर दोन दिवसानंतर पावसाची उघाड बघून फवारावे.
मुग/उडीद	साठवणूक	काढणी केलेल्या मुग/उडीद पिकाच्या शेंगाची सुरक्षित ठिकाणी साठवणूक करावी. शेंगा पावसात भिजणार नाहीत याची काळजी घ्यावी.
खरीप ज्वारी	प्रारंभी वाढीची/ पोटरी	खरीप ज्वारी पिकात लष्करी अळीचा प्रादुर्भाव दिसून येत असल्यास याच्या व्यवस्थापनासाठी इमामेक्टीन बेन्झोएट ५ टक्के ४ ग्रॅम किंवा स्पिनेटोरम ११.७ एससी ४ मिली प्रति १० लिटर पाण्यात मिसळून वरील किटकनाशकांची आलटून पालटून दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी. फवारणी करत असतांना किटकनाशक पॉंग्यात पडेल अशाप्रकारे फवारणी करावी.
बाजरी	प्रारंभी वाढीची/ पोटरी	बाजरी पिकात लष्करी अळीचा प्रादुर्भाव दिसून येत असल्यास याच्या व्यवस्थापनासाठी इमामेक्टीन बेन्झोएट ५ टक्के ४ ग्रॅम किंवा स्पिनेटोरम ११.७ एससी ४ मिली प्रति १० लिटर पाण्यात मिसळून वरील किटकनाशकांची आलटून पालटून दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी. फवारणी करत असतांना किटकनाशक पॉंग्यात पडेल अशाप्रकारे फवारणी करावी.
ऊस	वाढीची	ऊस पिकावर खोड किडीचा प्रादुर्भाव दिसून आल्यास याच्या व्यवस्थापनासाठी क्लोरपायरीफॉस २० % २५ मिली किंवा क्लोरेंट्रानीलीप्रोल १८.५ % ४ मिली प्रति १० लीटर पाण्यात मिसळून दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी. ऊस पिकात हुमणीच्या अळया दिसून येत असल्यास याच्या व्यवस्थापनासाठी मेटाराईझीयम ॲनीसोप्ली या जैविक बुरशीचा ४ किलो (जास्त प्रादुर्भाव असल्यास २० किलो) प्रति एकर जमिनीतून वापर करावा . ऊस पिकावर पांढऱ्या माशीचा प्रादुर्भाव दिसून येत आहे, याच्या व्यवस्थापनासाठी डायमिथोएट ३० % ३६ मिली प्रति १० लिटर पाण्यात मिसळून दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी.
हळद	कंद धरणे	हळद पिकात हुमणीच्या अळया दिसून येत असल्यास याच्या व्यवस्थापनासाठी मेटाराईझीयम ॲनीसोप्ली या जैविक बुरशीचा ४ किलो (जास्त प्रादुर्भाव असल्यास २० किलो) प्रति एकर जमिनीतून वापर करावा. हळद पिकात कंदमाशीचा प्रादुर्भाव दिसून येत असल्यास याच्या व्यवस्थापनासाठी १५ दिवसांच्या अंतराने क्विनालफॉस २५ % २० मिली किंवा डायमिथोएट ३० % १० मिली प्रति १० लिटर पाण्यात मिसळून आलट्न-पालट्न दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी. उघडे पडलेले कंद मातीने झाकून घ्यावेत. (हळद पिकावर केंद्रीय किटकनाशक मंडळातर्फे लेबल क्लेम नसल्यामूळे विद्यापिठ शिफारशीत संशोधनाचे निष्कर्ष दिले आहेत). मागील आठवडयात झालेल्या पाऊस, आर्द्रता व ढगाळ वातावरणामूळे हळदीच्या पानावरील ठिपके याच्या व्यवस्थापनासाठी ॲझोक्सिस्ट्रॉबिन १८.२% + डायफेनकोनॅझोल १९.४% १० मिली + ५ मिली स्टिकर प्रति १० लिटर पाण्यात मिसळून दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी.
संत्रा/मोसंबी	फळवाढीची	लिंबुवर्गीय पिकात कोळी किडींचा प्रादुर्भाव दिसून आल्यास याच्या व्यवस्थापनासाठी निंबोळी अर्क ५% किंवा ॲझाडिरेक्टीन १५०० पीपीएम ३० मिली प्रति १० लिटर पाणी याप्रमाणे फवारणी करावी. रासायनिक नियंत्रणासाठी डायकोफॉल १८.५ ईसी २० मिली किंवा प्रोपरगाईट २० ईसी १० मिली किंवा इथिऑन २० ईसी २० मिली किंवा ॲबामेक्टिन १.९ ईसी ३.७ मिली किंवा डायफेनथ्यूरोन (५० डब्ल्यूपी) २० ग्रॅम किंवा विद्राव्य गंधक ३० ग्रॅम प्रती १० लिटर पाण्यात मिसळून दिवसानंतर पावसाची उघाड बघून फवारणी करावी. आवश्याकता असल्यास दुसरी फवारणी १५ दिवसांच्या अंतराने करावी.
डाळींब	फळवाढीची	डाळींब बागेत ढगाळ वातावरण व आर्द्रतेमुळे रोगाच्या व्यवस्थापनासाठी बोर्डो मिश्रण ०.५% किंवा कॉपर ऑक्सीक्लोराईड ५०% डब्ल्यूपी २.५ ते ३ ग्रॅम प्रति लिटर किंवा कॉपर हायड्रॉक्साईड ५३.८% २ ते २.५ ग्रॅम प्रति लिटर + स्प्रेडर स्टिकर ०.३ ते ०.५ मिली प्रति लिटर दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी.
भाजीपाला	वाढीची / काढणी	मागील काही दिवसात झालेला पाऊस व ढगाळ वातावरणामूळे, भेंडी व काकडी वर्गीय पिकावरील भुरी रोगाच्या व्यवस्थापनासाठी मायक्लोब्युटॅनील १० ग्रॅम प्रति १० लिटर पाण्यात मिसळून पावसाची उघाड बघून फवारणी करावी. काढणीस तयार असलेल्या भाजीपाला पिकांची काढणी करून घ्यावी. भाजीपाला (मिरची, वांगे व भेंडी) पिकात रस्शोषण करणाऱ्या किडीचा प्रादुर्भाव दिसून येत असल्यास त्याच्या व्यस्थापनासाठी पायरीप्रॉक्सीफेन ५% + फेनप्रोपाथ्रीन १५% १० मीली किंवा डायमेथोएट ३०% १३ मीली प्रती १० लिटर पाण्यात मिसळून दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी.
फुलशेती	काढणी	पुढील आठवड्यात गणपती उत्सवामूळे बाजारपेठत फुलांना अधिक मागणी असते. काढणीस तयार असलेल्या फुलांची काढणी टप्प्याटप्प्याने करावी व प्रतवारी करून बाजारपेठेत पाठवावी.
चारा पिके	वाढीची	मका पिकावरील लष्करी अळीचा प्रादुर्भाव दिसून येत असल्यास याच्या व्यवस्थापनासाठी प्रादुर्भावग्रस्त झाडे उपटून नष्ट करावीत व ५% निंबोळी अर्काची किंवा ॲझाडिरेक्टीन १५०० पीपीएम ३० मिली प्रति १० लिटर पाणी याप्रमाणे दोन दिवसानंतर पावसाची उघाड बघून फवारणी करावी.
तुती रेशीम उद्योग	----	तुती बागेची बाढ दणकट होण्यासाठी शेणखत व्यवस्थापन होणे महत्वाचे आहे. २० मे. टन शेणखत/वर्ष/हे. किंवा ५ टन गांडूळ खत/हे./वर्ष द्यावे म्हणजे सर्व १६ प्रकारचे अन्न घटक तुती बागेस मिळतात. शेतकऱ्यांनी युरीया डिएपी सारख्या खतांचा अतिरेक तुती बागेत करणे घातक ठरते. त्यामूळे रस्शोषण करणाऱ्या किडीचा उदा. तुडतुडे, फुलकिडे यांचा प्रादुर्भाव वाढतो व पावसाच्या खंड कालावधीत शेतकरी किड नियंत्रण करण्यासाठी किटकनाशकाची फवारणी करतात. तूती बागेवर किटकनाशक, बुरशीनाशक, तणनाशक किंवा रासायनिक खत हे शिफारसीशिवाय तुती बागेवर वारू नयेत. विषबाधेमूळे रेशीम किटक मृत पावतात. त्यामूळे जैविक किटकनाशके, लिंबोळी अर्क, लिंबोळी पेंड यांचा फवारणीसाठी वापर करावा.
पशुधन व्यवस्थापन	----	तुरळक ठिकाणी वादळी वाऱ्यासह मध्यम ते मुसळधार पावसाची शक्यता असल्यामूळे , जनावरांना उघड्यावर सोडू किंवा बांधू नये . निवा-याच्याठिकाणी बांधावे व पावसात भिजणार नाहीत याची काळजी घ्यानवीगोवंशीय पशुधनामध्ये लम्पी स्कीन रोगाचा प्रादुर्भाव अत्यंत वेगाने होत आहे. याची सर्वात जास्त झळ लहान वयातील वासरांना जाणवत असून मृत्यूचे प्रमाण वाढत आहे. अशा वेळी नियंत्रणासाठी व त्यांची शारिरीक प्रतिकार शक्ती वाढवण्यासाठी १) वासरांना चिक पाजावा. २) वयाच्या सातव्या दिवशी जंतनाशक औषधीची मात्रा द्यावी. ३) महाराष्ट्र शासन यांच्या मार्गदर्शक तत्वानुसार लसीकरण करून घ्यावे. ४)आजारी आणि निरोगी वासरे, गोधन स्वतंत्र पणे विलगीकरण करावे. ५) सर्वात महत्वाचे म्हणजे २० % सूश्रूषा व ८०% काळजी (ज्यामध्ये पाणी, सकस चारा, जखमांची सुश्रुषा ईत्यादी) गोष्टी कराव्यात. ६) "माझे पशुधन माझी जबाबदारी" या सुत्रानुसार आपल्या गोवंशीय पशुधनाची या कालावधीमध्ये जास्तीत जास्त काळजी घ्यावी.
सामुदायिक विज्ञान	----	बालकांचा विकास साधण्यासाठी कुटुंबियांनी त्यांना सोप्या भाषेत लहान लहान गोष्टी सांगाव्यात. गोष्टी सांगत असतांना त्या आवाजात चढउतार करून, चेहऱ्यावर योग्य हाव-भाव करून व त्यासाठी चित्रांची मदत घेऊन सांगितल्यास बालकांना त्या अधिक मनोरंजक वाटतात.

सदर कृषी हवामान सल्ला पत्रिका वसंतराव नाईक मराठवाडा कृषी विद्यापीठ, परभणी येथील ग्रामीण कृषी मौसम सेवा योजनेतील तज्ञ समितीच्या शिफारशीवरून तयार करून प्रसारित करण्यात आली.

मुख्य प्रकल्प समन्वयक
ग्रामीण कृषी मौसम सेवा
वसंतराव नाईक मराठवाडा कृषी विद्यापीठ, परभणी

(Advisory given by VNMKV, Parbhani)

8.1.5 Different apps/dashboard/channels/stations/means used to disseminate The information

There are two apps for forecasting which are Phule Krishi Vahini, Krushik app and Agrowon apps and newspaper. This is the sample advisory provided

Project on Climate Resilient Agriculture project dashboard, IMD (Indian Meteorological Department) website, DDMA (District Disaster Management Authority), Beed website etc. also generate advisory.

8.1.6 Utilization of Agro-met advisory by farmers in changing climatic condition

Farmers Awareness programme based on weather forecasting:

Keeping in mind the main objective to reduce the incidence of occurrence, the importance of weather forecasting in agribusiness is conveyed to the farmers by organizing farmer public awareness programs at village level through the leading agro meteorological specialists and other agricultural specialists at the Agricultural Science Centre, Digholamba, as well as the importance of weather forecasting in the farmers' fields. Crop problems are directly communicated. Under the Farmer Awareness Program, farmers are registered with their mobile numbers and added to WhatsApp groups of their respective talukas, so that they can get weather information at home. So far, more than 1460 agricultural weather advisory leaflets have been sent to the farmers of Beed district through WhatsApp groups to villages in all 11 talukas of the district. Also, more than 55000 farmers benefited from the agricultural climate advisory leaflet. Every week feedback is taken from the farmers regarding the agricultural advisory leaflets on climate.

Mode of Dissemination: Also, to the Agriculture Department, District Officer's Office, Animal Husbandry Department, Akashwani Kendra Newspaper and various agriculture related social organizations working for the farmers in the district, weather based agricultural advisory pamphlets are disseminated.

1. Increased Awareness: Agromet advisories help farmers stay informed about changing climate conditions, including temperature variations, precipitation patterns, and extreme weather events.

2. **Crop Planning:** Farmers use agromet advisories to plan their cropping calendars, optimizing planting and harvesting times to align with favourable weather conditions.

3. **Risk Mitigation:** By receiving timely weather forecasts, farmers can take preventive measures to protect crops from adverse weather, reducing the risk of crop failure due to unexpected climatic events.

4. **Water Management:** Agromet advisories aid in efficient water management, allowing farmers to plan irrigation schedules based on predicted weather conditions, minimizing water wastage.

5. **Pest and Disease Control:** Farmers utilize advisories to anticipate and combat potential outbreaks of pests and diseases, adjusting their pest management strategies accordingly.

6. **Resource Allocation:** With accurate weather forecasts, farmers can allocate resources more effectively, such as deciding on the appropriate amount of fertilizers and pesticides needed for specific weather conditions.

7**. Technology Adoption:** Agromet advisories facilitate the adoption of modern agricultural technologies, as farmers can align their practices with climate-smart solutions for improved resilience.

8. **Financial Planning:** Farmers can make informed financial decisions by incorporating agromet advisories into their risk management strategies, securing investments against climate-related uncertainties.

9. Community Collaboration: Agromet advisories encourage collaboration among farmers, as shared information fosters a sense of community resilience in adapting to changing climate patterns.

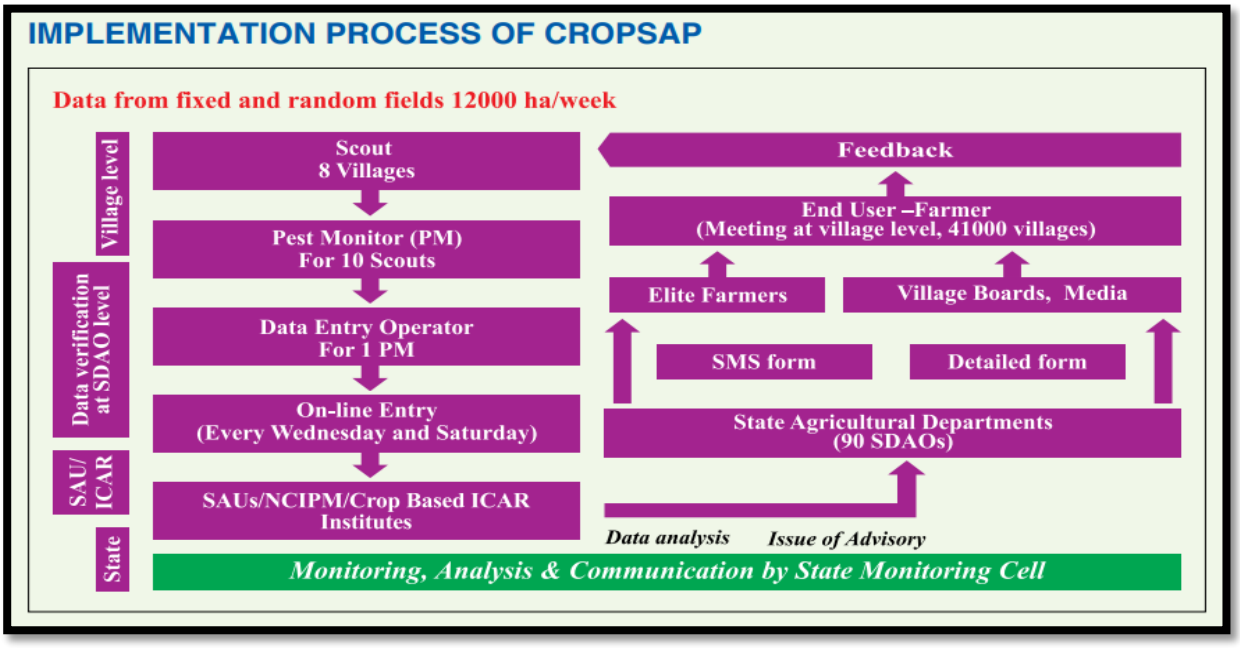
10. **Government Policy Impact:** The utilization of agromet advisories can influence agricultural policy decisions, as the collective data from farmers provides valuable insights into the impact of climate change on agriculture, guiding policymakers in creating adaptive measures.

8.2 Advisory Base on Pest Surveillances Agriculture activity

8.2.1 Implementation Status of CROPSAP:

CROPSAP in district level general Pest disease management is also recommended on a regular basis. All adversaries circulate at time of crop management for each and every crop.

CROPSAP provided a larger canvas for pest management implementation in terms of technological use, number of stakeholders, number of crops, area covered, skill imparted and employment generated. The pest affected areas across soybean, cotton, Tur, Grams are implemented with scientifically based pest management practices across Beed district.



8.2.2 Impact on Crop pests and diseases management

1. Pest and disease management consists of a range of activities that support each other. Most management practices are long-term activities that aim at preventing pests and diseases from affecting a crop. Management focuses on keeping existing pest populations and diseases low.
2. CROPSAP advisory gives farmer ideas about infestation of pests before it reaches above ETL Level.
3. Due to regular CROPSAP advisories farmers can schedule exact time and quantity / concentration for the use of pesticides.
4. CROPSAP advisory reduces unwanted use of pesticides hence decreases production cost of crops.
5. As it reduces the cost of production it increases the total income of farmers.
6. Use of CROPSAP data Government can make in time policy about severe pest attack e.g. Pink bollworm attack in cotton in the year 2018.

CROPSAP ADVISORY					
Date	Crop	Dist	Taluka	Brief Advisory	Detail Advisory
16/10/2023	Cotton (Kapas)	Beed	Ambejogai	Release of Trichogramma bacterae @ 60,000 eggs/acre at weekly intervals. Collect and destroy rosette flowers.	For white fly, jassid and bollworm Pyriproxyfen 05 + Fenpropathrin 15 % EC @ 12 ml or Fipronil 15% + Flonicamid 15% WDG @ 8 gm or Acephate 50 % + Imidacloprid 01.80 % SP @ 20 gm per 10 lit. of water.
16/10/2023	Cotton (Kapas)	Beed	Wadwani	Release of Trichogramma bacterae @ 60,000 eggs/acre at weekly intervals. Collect and destroy rosette flowers.	For white fly, jassid and bollworm Pyriproxyfen 05 + Fenpropathrin 15 % EC @ 12 ml or Fipronil 15% + Flonicamid 15% WDG @ 8 gm or Acephate 50 % + Imidacloprid 01.80 % SP @ 20 gm per 10 lit. of water.
16/10/2023	Cotton (Kapas)	Beed	Shirur Kasar	Release of Trichogramma bacterae @ 60,000 eggs/acre at weekly intervals. Collect and destroy rosette flowers.	For white fly, jassid and bollworm Pyriproxyfen 05 + Fenpropathrin 15 % EC @ 12 ml or Fipronil 15% + Flonicamid 15% WDG @ 8 gm or Acephate 50 % + Imidacloprid 01.80 % SP @ 20 gm per 10 lit. of water.
16/10/2023	Cotton (Kapas)	Beed	Patoda	Release of Trichogramma bacterae @ 60,000 eggs/acre at weekly intervals. Collect and destroy rosette flowers.	For white fly, jassid and bollworm Pyriproxyfen 05 + Fenpropathrin 15 % EC @ 12 ml or Fipronil 15% + Flonicamid 15% WDG @ 8 gm or Acephate 50 % + Imidacloprid 01.80 % SP @ 20 gm per 10 lit. of water.

Chapter 9: Commodity wise status of climate Resilient Agriculture value chain

9.1 Existing marketing scenario in the district

The Beed district is located in the state of Maharashtra, India. It is a predominantly agricultural district, with over 70% of the population employed in agriculture. The main crops grown in the district include jowar, bajra, soybean, and cotton. There are a number of different marketing channels used in the Beed district.

These include:

Traditional Mandi (market) system: This is the most traditional marketing channel in the district. Farmers sell their crops to traders at mandis, which are open-air markets where farmers can bring their produce to sell.

Private traders: Private traders are another important marketing channel in the Beed district. Private traders purchase crops from farmers directly, either at the farm gate or at mandis.

Agricultural cooperatives: Agricultural cooperatives are farmer-owned and farmer-controlled organizations that market their members' crops. Cooperatives are becoming increasingly popular in the Beed district, as they offer farmers a more transparent and competitive market.

Government agencies: Government agencies also play a role in the marketing of agricultural produce in the Beed district. The government procures crops from farmers at a minimum support price (MSP). The MSP is a price that the government guarantees to pay for certain crops, in order to protect farmers from price fluctuations.

The marketing scenario in the Beed district is changing rapidly as a result of a number of factors, including:

The growth of the internet : The internet is providing farmers with new opportunities to market their crops directly to consumers. There are a number of online platforms that connect farmers with buyers, such as Crofarm, Ninjakart, and BigHaat.

The increasing demand for organic produce: The demand for organic produce is increasing, both in India and abroad. This is creating new opportunities for farmers in the Beed district, as the district has a strong reputation for producing high-quality organic produce.

The government's focus on improving market infrastructure: The government is investing in improving market infrastructure in the Beed district, such as building new mandis and cold storage facilities. This is helping to improve the efficiency of the marketing system and reduce post-harvest losses.

The changing marketing scenario is creating new challenges and opportunities for farmers in the Beed district. Farmers need to be aware of the latest marketing trends and technologies in order to take advantage of new opportunities. They also need to be able to adapt to the changing demands of consumers.

Information regarding markets for the district Beed

Sr. No	Name of the block	Name of the market centre	Periodicity (weekly / daily)	Important commodities handled	Commodity wise quantity in qtls. handled (annual)	Area covered	No. of farm families covered
1	Ashti	Agriculture Produce Market Committee	Daily	Onion, Pigeon Pea, bajara, Jawar, Groundnut, wheat, Gram Tur	189653	Ashti Taluka	94438
2	Patoda	Agriculture Produce Market Committee	Weakly	Cotton, Soybean wheat jowar bajra	16055	Patoda taluka	6411
3	Shirur	Agriculture Produce Market Committee	Weakly	Cotton, soybean wheat jowar bajra	10255	Shirur ka. taluka	5042
4	Georai	Agriculture Produce Market Committee	Daily	Cotton, Pigeon Pea, bajaraJawar, Groundnut,wheat	673946	Georai Taluka	70674
5	Majalgaon	Agriculture Produce Market Committee	Daily	Cotton, soybean wheat jowerbajara mung gram tur	405941	Majalgaon Taluka	41383
6	Wadvani	Agriculture Produce Market Committee	Weakly	Cotton, soybean wheat jowar bajra	13426	Wadvani Taluka	4284
7	Beed	Agriculture Produce Market Committee	Daily	Bajara, Jowar, Cotton, Pigeon pea, Wheat Mung tur corn soybean	116475	Beed Taluka	50000
8	Kaij	Agriculture Produce Market Committee	Daily	Cotton, Jawar, Bajara, tur etc	200646	Kaij Taluka	10550
9	Dharur	Agriculture Produce Market Committee	Daily	Cotton, Jawar, Bajara, soybean Wheat, gram tur	237623	Dharur Taluka	37441
10	Parali	Agriculture Produce Market Committee	Daily	Cotton, Jawar, Bajara, soybean Wheat, gram tur	29425	Parali Taluka	8465
11	Ambajogai	Agriculture Produce Market Committee	Daily	Cotton, Jowar, Bajara, Wheat, Pigeon pea	168343	Ambajogai Taluka	14819

Year wise Marketable Surplus of Major Crops: 2022-2023

Crop	Input	Unit (Quintal)	Min. Rate	Min. Input	Max Rate M	Max Input M	Average Rate	Average Input	Total Value
Mustard	9	Quintal	5725	1	6200	1	5865	7	52652
Tur	13148	Quintal	2500	0.5	8800	1.5	6648	13146	87837615
Mung bean	9031	Quintal	1400	0.5	8080	2	2458	9028	21519741
Rajma	558	Quintal	3000	3	8500	3	5638	552	3130922
Dhane	20	Quintal	8921	5	1300	2	10045	13	195555
soybeans	38402.5	Quintal	2500	1	7335	11	5476	38390	209875710
linseed	36	Quintal	5801	1	9387	1	6716	34	245786
til	43	Quintal	1050	3	16600	4	11762	36	517238
Castor	8	Quintal	5500	4	6196	1	5865	3	45896
Chinchoka	80.5	Quintal	1400	39	1500	24.5	1462	17	116000
Mung bean	1426	Quintal	3000	0.5	7701	0.5	6607	1425	9501733
sunflower	455.5	Quintal	4000	13	6800	1	5741	441	2637678
groundnut	163	Quintal	4200	1	5886	7	5277	155	857340
Groundnut pods	17	Quintal	5000	10	5999	5	5400	2	90395
tamarind	296	Quintal	1250	15	6500	10	4393	271	1121466
millet	9361	Quintal	1330	1	8640	2.5	2396	9357	22224410
Udid	3414	Quintal	2000	1.5	7490	2	5984	3411	20765858

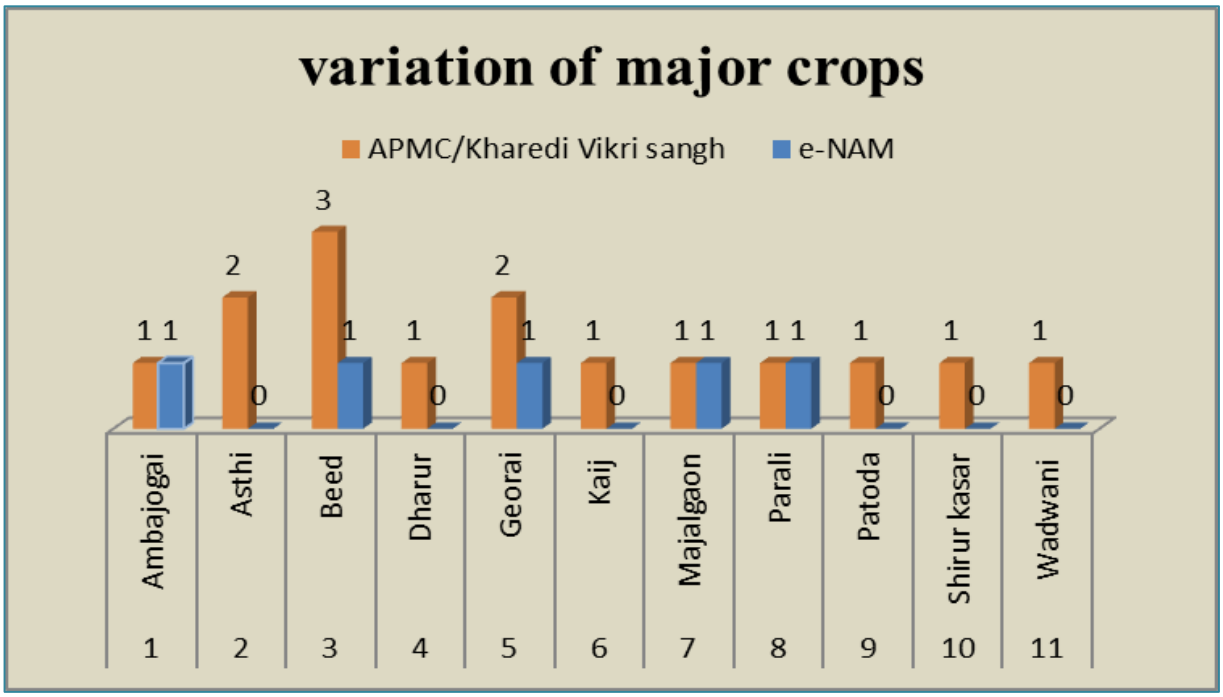
Maize	948	Quintal	1520	1.5	2591	30	2170	916	2074823
gram	3928	Quintal	2500	1	5950	16.5	4175	3910	16547221
sorghum	19991	Quintal	1000	2	5101	3	2546	19986	50832876
Kardai	10.5	Quintal	4700	2	5301	1.5	4981	7	53024
TOTAL	101346								450243939

Year wise price variation of major crops. (Table/Graph)

complete the point

Markets available in the district with commodities handled e-NAM, e-MARKETS, APMC/ Kharedi Vikri Sangh

Sr. No.	Name of APMC	APMC/Kharedi Vikri Sangh	e-Nam	e-Markets
1	Ambajogai	1	1	-
2	Asthi	2	0	-
3	Beed	3	1	-
4	Dharur	1	0	-
5	Georai	2	1	-
6	Kaij	1	0	-
7	Majalgaon	1	1	-
8	Parali	1	1	-
9	Patoda	1	0	-
10	Shirur kasar	1	0	-
11	Wadwani	1	0	-
Total		15	5	



9.2 Constraints in existing value chain

While farmer selling their agriculture produce, farmer bear transporting cost, agent commission in APMC and also village level agent purchase at low cost

1. Due to lack of infrastructure i.e. warehouses at village level farmers have to sell their produce because of insufficient storage capacity.
2. Low economic condition of farmers.

Potential for strengthening of commodity wise value chain

Strengthening is going on using SMART, NDKSP AND MAGNET

The project will focus on strengthening the traditional agricultural system to make it more market-oriented and broadening the participation of the private sector in the value chain. The project has the following three major components.

1. **Strengthening of institutional arrangements for agribusiness reforms**

Under this component, strengthening of agriculture and marketing department, capacity building (training) of employees/officers in this department, establishment of crop value chain development interest promotion councils, establishment of technical room for policy changes etc. Items included.

2. **Setting up a risk mitigation system**

Warehouse based Sub Projects are risk mitigation

These sub-projects will provide godown and grain storage facilities for farmers at village level in a decentralized manner. These projects were mainly implemented through various executive Primary Agriculture Cooperative Society PACS. will go

3.Beneficiary Organization Eligibility Criteria: -

Registered Community Based Organization (CBO)

By making FPCs, Primary Agricultural Cooperative Society (PACS), Divisional Federation (CLF), (CMRC)

4. Cotton Value Chain: -

Under this component clean and homogenous cotton is produced and cotton bales (Gathan) are sold under the brand name Smart Cotton through an electronics platform and also developing the cotton value chain.

It will be implemented through the Department of Agriculture, Maharashtra State Co-op. and Cotton Growers Marketing Federation Ltd

SMART COTTON PROJECT SUPPORTED GATHAN

9.3 Potential for strengthening of commodity wise value chains

1. Soybean:

- Soybean refinery oil
- Soy bean food product-based technology viz.

-Tofu, Soy milk, Soy nuts, Soy chakli, Soy snacks, Seed production speciality food grade soybean tur dal has high demand in the market.

2. Cotton: In cotton Suitable soil for high yielding and long staple length BT varieties

3. Sugarcane: Direct Marketing sugarcane to Jay Bhavani SSK, Gajanan SSK, Yedeshwari sugar factory, and vikas Sugar factory and other sugar factories.

9.4 FPCs' Contribution in Value chain development

9.4.1 Status of FPCs in the district

In Beed district total 362 FPCs formed. Among them 115 FPCs in KSP, 11 in SMART and 14 FPCs in MACP get the benefit of subsidy. They applied for various types of activities like CHC, Grain cleaning and grading, processing unit, Godown Construction, spice processing unit, Dal mill etc. in our project.

Information about FPCs supported by SMART / NDKSP / MAGNET/ MACP		
Scheme Name	**No. of FPCs**	**Disbursement**
SMART	42	11
NDKSP	38	27
MAGNET	15	5
MACP	14	14

NDKSP Supported activity list			
Sr.No.	Activity	Numbers	Disbursement in Lac.
1	Custom Hiring Centre	128	1408.36
5	Cleaning and Grading Centre	10	123.82
3	Construction of Godown/Pack House	3	36
4	Geranium oil extraction unit	3	55.47
5	Refrigerated van	13	140.61
6	Other Agribusiness	11	209.37
Total		168	1973.63

9.4.2 Assessment of FPCs in the district

9.4.2.1 Objectives of Evaluation

- The study is an attempt to assess the Farmer Producer Companies of project area and find whether these companies are performing and earning sufficient returns to sustain business. The report has also proposed a rating method to measure the performance of FPCs considering different 8 parameters. The reports analyzed 131 Farmer Producer Companies with the help of parameters. The parameters were further assigned performance scores on the basis of efficiency and effectiveness with the help of Automatic Rating Meter.
- On the basis of assessment report, suggesting the measures for strengthening of FPCs e.g. capacity building, climate resilience adaptation.

Table no. 9.4.2.1.a. Criteria for Evaluation of FPCs

Criteria	Max. Score
Organization and Administration (Core foundation strength)	21
Governance (Control System in Place)	11
Management (Decision making processes)	8
Infrastructure (Assets and resources)	5
Finance (Financial Base and health)	25
Business and Market Linkages (Resource quality)	21
Capacity Building (Resource quality)	5
Climate Resilience (Adaptability to climate risk)	4
Final Score	100

Scoring Method of Evaluation

- The maximum score for the above mention parameter was 100. The FPC rating report was generated by calculating the obtained score for a FPC. From these scores the result boxes were generated in the report indicating areas where this particular FPC needs to be improved. Selected questions were grouped under every parameter and weightage was accorded to each question under each parameter. The final score was calculated by using formula:

$$\textbf{Score}=\frac{\boldsymbol{Maximum\ Obtained\ Score}}{\boldsymbol{Maximum\ Obtainable\ Score}}\times\mathbf{100}$$

9.4.2.2 Output of evaluation.

All the major parameter noted above can be classified on the basis of percentage and frequency. The total obtained percent score was use for categorization of the parameter. The parameter was categories into three categories i.e. below 50% marks, 50- 75% marks, and above 75% marks. And all the FPCs were categories in three categories which help to analysed the present situation of the FPCs present in the project area and will also help to given suggestion to them. This analysis can be useful for the project also for developed different strategies plan for the project area.

The main findings from the survey and the observations from the detailed interactions with the member or directors of the FPCs created insights in terms of how the FPCs operate today, where the members want it to go in the future, how the Directors perceive the plan of action for the future and in which focus areas the gaps between reality and expectation lie

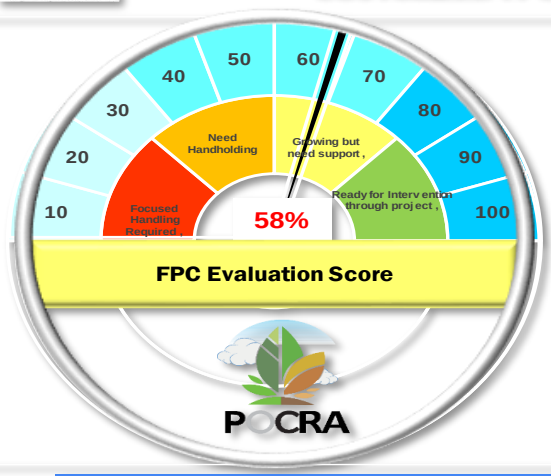
Customized FPC Evaluation Report

Nanaji Deshmukh Krush Sanjivani Praklap

Maharashtra Project on Climate Resilient Agriculture

(Project of government of Maharashtra in partnership with World Bank)

CUSTOMIZED FPC EVALUATION REPORT



Name of FPC

Dhanya Vidhata Agro.Producer Company Ltd.

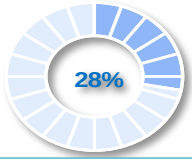
Address

At Post Hatola ,Tq Ambajogai , Dist-Beed, Pincode- 431517

Score Report

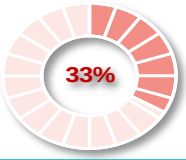
Criteria	Max. Score	Score Obtained
Organization & Adminstration (Core Foundation Strength)	21	17
Governance (Control Systems in Place)	11	11
Management (Decision making processes)	8	8
Infrastructure (Assets and resources)	5	3
Finance (Financial base and health)	25	7
Business & Market Linkages (Resource quality)	21	7
Capacity Building (Resource quality)	5	3
Climate Resilience (Adaptability to climate risk)	4	2
Final Score	100	58

What could improve your FPC?



Finance

Regular auditing, regular share transfers to members, regular compliances to ROC will help in better financial management . Various financial resources maybe tapped to generate additional finances



Business & Market Linkages

Bankable business plans will help in increasing financial turnover. Backward and forward linkages should be developed for commodity procurement, value addition and marketing

Climate Resilience

The FPC should promote various climate resilient agricultural technologies.

For more Information contact us at Project Director, ATMA, Beed

9.4.4 FPCs and their Activities

Sr.No.	Taluka	Village	Name of the Farmer Group	Activity Name
1	Dharur	Anjandhav	Kai. Shankarrao Dajiba admane farmers producer company limited.	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
2	Beed	Neknoor	Samrudhi sericulture agro producer company limited	Other Agribusiness Activity, Sericulture Unit (Silk Thread Manufacturing)
3	Beed	Udand wadgaon	Bankatswami agro producer company limited udandwadgaon	Other Agribusiness Activity, Cattle Feed Unit
4	Beed	Anjanvati	Sant tukavipra agro farmer producer company limited	Other Agribusiness Activity, cattle feed
5	Beed	Anjanvati	Sant tukavipra agro farmer producer company limited	Other Agribusiness Activity, cattle feed Expansion
6	Patoda	Patoda	Dnyanesh agro farmers producer company limited	Complete Seed Processing Unit (Equipment, Godown/ Shade).
7	Kaij	Yewata	Yewteshwar agro producer company limited	Other Agribusiness Activity, Atta Mill.
8	Beed	Neknoor	Deepankur agro producer company lim. Neknoor	Other Agribusiness Activity, Geranium Oil Distillation Plant.
9	Beed	Udandwadgaon	Adikant seeds agro producer company limited	Spices Unit
10	Beed	Sakhare borgaon	Adesh seeds agro producer company lim.sakhare borgaon	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
11	Beed	Ambil Wadgaon	Bankat swami farmers producer company limited neknoor	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
12	Beed	Patoda (Belkhandi)	Bindusara sankalp farmer producer company limited	Grain Processing Unit (Cleaning/Sorting/Grading Unit)

13	Patoda	Patoda	Dnyanesh agro farmers producer company limited	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
14	Beed	Sakhare borgaon	Adesh seeds agro producer company lim. sakhare borgaon	Spices Unit
15	Parli	Sarfarajpur	Sau suma krushi vikas farmers producer company limited	Medicinal/Aromatic Plants Processing Unit
16	Beed	Wadwadi	Creative shetkari producer company limited Wadwadi	Oil Extraction Unit
17	Beed	Udand wadgaon	Bankatswami agro producer company limited udandwadgaon	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
18	Kaij	Yewata	Jyotirmay agro producer company limited	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
19	Beed	Nalwandi	Mahatma fule shetkari gat nawandi	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
20	Beed	Neknoor	Samrudhi sericulture agro producer company limited	Other Agribusiness Activity, Silk Processing Extension Project
21	Manjlegaon	Talkhed	Sindphana womans agro producer company limited	Grain Processing Unit (Cleaning/Sorting/Grading Unit).
22	Kaij	Jiwachiwadi	Lokneta shetkari producer company limited jivachiwadi	Pulse Mill (Dal Mill)
23	Ashti-Bid	Gandhanwadi	Shivshambho shetkari bachat gat gandhanwadi	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
24	Patoda	Chincholi	Sant wamanbhau shetkari swayamsahayta bachat gat chincholi nath	Other Agribusiness Activity, Wooden Rotary Oil Mill
25	Beed	Masewadi	Grishma agro farmers producer company limited	Establishment of Integrated Packhouse/Aggregation Centers.
26	Patoda	Therala	Dadaji agro farmers producer company limited	Grain Processing Unit (Cleaning/Sorting/Grading Unit)

27	Kaij	Bawchi	Ramwadgaon farmer producer company limited	Spices Unit
28	Beed	Waghira	Waghira farmers producer company limited	Establishment of Integrated Packhouse/Aggregation Centers
29	Ashti-Bid	Gitewadi	Agro unnati farmer producer company ltd	Other Agribusiness Activity, Atta And Besan Center
30	Beed	Jaitalwadi	Newone farmers producer company limited jaitalwadi	Establishment of Integrated Packhouse/Aggregation Centers
31	Dharur	Pangri	Narsinha farmers producer company ltd	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
32	Georai	govindwadi (chavhanwadi)	Giriraajagro farmer producer company limited	Other Agribusiness Activity Geranium Essential Oil Processing Unit
33	Beed	Mandavkhel	Mandavkhel farmers producer company limited mandawkhel	Establishment of Integrated Packhouse/Aggregation Centers
34	Kaij	Ladewadgaon	Vaswadi shetkari gat ladewadgoan	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
35	Beed	Chousala	Anuprita farmers producer company limited chousala	Grain Processing Unit (Cleaning/Sorting/Grading Unit)
36	Beed	Palsingan	Yuvasaksham shetkari producer company limited	Establishment of Integrated Packhouse/Aggregation Centers
37	Beed	Safepur	Green sahyadri farmers producer company ltd	Grain Processing Unit (Cleaning/Sorting/Grading Unit)

9.4.3 Information about FPCs supported by SMART/ NDKSP/ MAGNET

Scheme Name	No. of FPCs	Disbursement
SMART	42	11
NDKSP	38	27
MAGNET	15	5
MACP	14	14

Chapter 10: Extension strategies for adaptation to climate change

I) Preparation of Village Adaptation Plan

- Need for participatory micro-planning and pre-season meetings
- Process for micro-planning and seasonal meetings- agenda, stakeholders, duration, material required, information needed etc.
- Role of Village Agriculture Development Committee of Gram panchayat
- Components of Village Adaptation Plan to be prepared for each village

❖ **Planning for water security**

a. Computation of water budget
b. Water conservation structures
c. Groundwater recharge structures (including recharge of wells)
d. Water harvesting structures
e. Micro-irrigation plan

❖ **Planning for soil health**

a. Soil health Card status of the village
b. Status of Organic Carbon content
c. Soil health based advisory- crop suitability
d. On-farm production of biofertilizers
e. Production of organic inputs
f. Regenerative agriculture plan
g. Soil erosion/ degradation arresting measures

❖ **Crop planning based on water budget and market demand**

a. Current cropping pattern
b. Available water balance (post monsoon)
c. Last year prices of crops
d. Crop diversification
e. Proposed cropping pattern (season and crops)

❖ **Planning for Carbon sequestration**

a. Agro-forestry plantation
b. Horticulture plantation
c. Forage/ Cover crop cultivation
d. Bamboo plantation
e. Live fencing plan

❖ **Planning for reduction of production cost**

a. Reducing cost on labour intensive operations (by mechanization)
b. Reducing use of chemical fertilizers (by enhancing use of bio/ organic fertilizers)
c. Reducing use of chemical pesticides (by enhancing use of bio/ natural pesticides)
d. Reducing tillage operations (by conservation agriculture)
e. Reducing excessive water usage (by micro-irrigation)

❖ **Planning for conservation and production of climate resilient variety seed**

a. Identification of CRV.
b. Production programme for Truthful/ Certified/ Foundation seeds- status
c. Conservation of indigenous seed having climate resilient characters- details of such seeds with location and characteristics

❖ **Adoption of climate resilient technologies**

a. Identification of CRT useful to the village and creating awareness
b. Plan of demonstration of CRT (FFS, Method/ Result Demonstrations)
c. Most prominently adopted technologies and their impact
d. Innovative technologies adopted
e. Validation of technologies developed by Progressive farmers

❖ **Integrated Pest Management Plan**

a. Identification of common pests on major crops based on *CROPSAP*
b. Plan of IPM technologies to be adopted
c. On-farm production of bio-pesticides, natural pesticides etc.
d. Skill training to reduce pesticide hazard

❖ **Integrated farming systems**

a. Potential for crop based and other livelihood activities
b. Households to be engaged in IFS
c. Plan for market linkage for IFS produce

❖ **Preparation of contingency plan**

a. Village level weather forecast mechanism
b. Preparedness for contingencies
c. Crop insurance promotion and status
d. Monitoring of contingencies
e. Assessment of losses due to natural calamities if any

❖ **Strengthening of commodity value chains**

a. Assessing existing commodity value chains
b. Identification of gaps in existing value chains
c. Assessing volume of commodity to be marketed
d. Assessing warehouse availability and available capacity
e. Assessing transportation facilities
f. Plan for infrastructure
g. Plan for market linkage of major commodities
h. Role of Women Self Help Groups, Farmer Groups, FPCs

II. Convergence of Govt. Programs with Extension Plan

1) Nanaji Deshmukh Krishi Sanjivani Project implementing villages in beed district have other Government Scheme benefits to Farmers as Prime Minister Fasal Vima Yojana for sustainable agriculture crop.

2) Weather based insurance scheme for orchards.

3) Chief minister sustainable irrigation scheme for farm pond, IWMP,Jalyukt Shivar and MREGS

4 CROPSAP With the help of cropsap advisory farmer get know proper pest management to keep the pest populations below economic threshold levels (ETL)

5). Agriculture Sanjeevani week :- From 1st july to 7st July 2020, meetings were organized in 391 villages with the participation of 21150 farmers and guidance was given regarding preparation of Kharif season, importance of seed germination, seed treatment, soil testing, various schemes of agriculture department, precautions to be taken while handling/spraying chemical pesticides.

6) SMART: 43 applications have been received under the project for various activities and 27 applications have received pre-sanction and 12 construction work, procurement process is in progress.

7) NDKSP: - Till date 80008 farmers of the district have been registered on the online portal DBT Pokhara and a total of 133643 individual benefit applications have been registered. Out of which till date 55040 farmers have been given subsidy amounting to Rs.25062.97 cr. Also under the agribusiness component till date 168 farmer groups and farmer producer companies in the district have distributed subsidies amounting to Rs.1973.63cr.

8. Farm Field School for training of different crop technology at the farm level to improve an adaptation level of new technology such as BBF Technology in soybean.

9. Village level Farmer meeting for Kharip & Rabi Pre-planning

10. Weather based fruit insurance scheme for fruit production.

11. Demonstration plot from different scheme for increasing adoption level of farmers for new technology

III. Monitoring mechanism for village adaptation progress

i) Climate resilience in the agriculture production system is the main component under the project.
ii) The activity identified under the compounds have been prioritized thru participatory micro planning
iii) Farmer field school (FFS) is one of the mean activities for monterey mechanism.
iv) DBT technology is be used to insure the transparency
v) Participatory development of many water plants.
vi) Climate-smart agriculture and resilient farming system.
vii) Promoting efficient and sustainable use of water for agriculture.
viii) Fold back activities to support the project.
ix) Benefits, issues and challenges have been recorded.
x) Micro Planning for kharif and Rabi season before the start of season.
xi) Regular monitoring for village adoption progress by taking Review meeting of field staff, , Field visit, monthly agriculture university scientist & officers field visit, Exposure visit

IV. Strategy for revisiting the village adaptation plan

i) The process of mainstreaming adaptation has the potential to improve the resilience of development outcomes, enhance community resilience to climate change impact and safeguard investment.
ii) As climate change impacts become more evident and climate change-induced extreme weather events become more intense and frequent it is important to integrate climate change adaptation in village adoption plans.
iii) Main streaming can have multiple entry points and requires coordination among villagers (Farmers), institutions and extension workers or staff.
iv) Fortnightly evaluation of village adoption plan. According to the need base some changes may take place.

Annexure I Sample Village Level Micro-Plan

https://mlpv2.mahapocra.gov.in/vdp.php?census_code=559551

गाव विकास आराखडा प्रपत्र

महाराष्ट्र शासन - कृषि विभाग
नानाजी देशमुख कृषि संजीवनी प्रकल्प

POCRA

गाव विकास आराखडा

गाव समुहाचा क्रमांक-

गावाचे नाव- सेन्सस कोड- 559551

महसुल मंडळ- तालुका-

उपविभाग- जिल्हा-

गावसमुहातील इतर समाविष्ठ गावे

अ. क्र	गावाचे नाव	सेन्सस कोड	अ. क्र	गावाचे नाव	सेन्सस कोड

सुक्ष्मनियोजन प्रक्रिया कालावधी - ते

गाव विकास आराखडा तयार करणा-या कृषि सहाय्यकाचे नाव -

गाव विकास आराखडयाची तांत्रिक तपासणी करणारे कार्यालय - उपविभागीय कृषि अधिकारी,

ग्राम कृषि संजीवनी समिती मंजूरी ठराव क्रमांक व दिनांक - ठराव क्रमांक दि. --

ग्रामसभा मंजूरी ठराव क्र व दिनांक - ठराव क्रमांक दि. --

जिल्हास्तरीय समन्वय समितीकडील मंजूरीचा दिनांक - _____

जिल्हा अधिक्षक कृषि अधिकारी, कार्यालय

अनुक्रमणिका

१) प्रस्तावना व पार्श्वभूमी, प्रकल्पाची गरज

नानाजी देशमुख कृषि संजीवनी प्रकल्पांतर्गत दि. च्या शासन निर्णयानुसार मॊजे ता. जि. गावाची निवड झालेली आहे. मॊजे हे गाव जिल्हा ठिकाणापासून किमी अंतरावर दिशेला वसलेले आहे. गावाचे प्रक्षेत्र असलेल्या भागात येते. गावाचे भॊगोलिक क्षेत्रफ़ळ हेक्टर आहे. गावाची सध्याची लोकसंख्या असून साक्षरतेचे प्रमाण आहे. हे गाव रीठ गाव .

मॊजे गावाचा प्रमुख व्यवसाय शेती यावर आधारीत आहे. गावात पिकाखालील क्षेत्र हे आहे. खरीप हंगामामध्ये ही पिके प्रामुख्याने घेण्यात येतात. रबी हंगामामध्ये ही पिके घेतली जातात. त्याव्यतिरिक्त ही फ़ळपिके आहेत. तर प्रामुख्याने भाजीपाला घेतला जातो. गावामध्ये उत्पादीत शेतीमालावर आधारीत **0** प्रक्रिया उद्योग आहेत. गावातील शेतीमाल विक्रीकरिता येथे बाजारपेठ उपलब्ध आहे. गावात शेती बरोबरच हे शेतीपुरक व्यवसाय आहेत. सद्यस्थितीत गावाच्या पाण्याच्या ताळेबंदानुसार **0 (कोटी लिटर)** इतका अपधाव शिल्लक आहे. गावात ही मृद व जलसंधारणाची कामे अस्तित्वात आहेत. गावात मृद व जलसंधारणाची कामे हाती घेण्यास वाव . गावात मृद व जलसंधारणाची कामे या कारणामुळे हाती घेता येणार नाहीत. गावाचे पर्जन्यमान सरासरी **0** मि मी आहे. पडणारा पाऊस पिकांकरिता पुरेसा असतो. सर्वसाधारणपणे पावसातील घटकांमुळे शेतीचे नुकसान होते. भूजलाचे कमी प्रमाण व पाण्याची साठवण देखील कमी असल्यामुळे गावातील शेतीसाठी पाण्याचे नियोजन करणे क्रमप्राप्त आहे. लहान व मध्येम शेतक-यांची तसेच अनु. जाती/ जमातीतील आणि महिला शेतक-यांचे उत्पन्न वाढविण्याच्या उद्देशाने तसेच बदलत्या हवामानास तोंड देण्यासाठी शेतीमध्ये इ. बाबींना वाव आहे.

गावाच्या या वैशिष्ट्यामुळे गावातील शेती/ शेती पुरक व्यवसाय/ शेती आधारित व्यवसाय वृद्धींगत करता येणे शक्य आहे. गावामध्ये नानाजी देशमुख कृषि संजीवनी प्रकल्पातील बाबींचा लाभ शेतक-यांनी घेतलेला आहे.

2) गावाचा विकास आराखडा तयार करण्यासाठी राबविलेला कार्यक्रमाचा तपशील

2.1 सुक्ष्मनियोजन प्रक्रिया कालावधी

नानाजी देशमुख कृषि संजीवनी प्रकल्पांतर्गत गाव विकास आराखडा तयार करण्यासाठी लोकसहभागी पद्धतीने सुक्ष्मनियोजन प्रक्रिया दि. -- पासून दि. -- पर्यंत राबविण्यात आली. त्याचा तपशील पुढीलप्रमाणे आहे.

सुक्ष्मनियोजन दिवस	तारीख	कार्यक्रम (सुक्ष्मनियोजन तंत्र / उपक्रम)	उपस्थिती	
			महिला	पुरुष
1	--	प्रभात फेरी	--	--
		संसाधन नकाशा	--	--
		संकलित सामाजिक व आर्थिक माहितीवर चर्चा	--	--
		गावातील शेती व निगडीत बाबीसंबंधी ऋतूचक्र, समयरेषा आणि परिस्थिती विश्लेषण विषयी चर्चा	--	--
		-शिवार फेरी व विहीर निरिक्षण		
		-संसाधन नकाशा व अहवाल व त्यावर चर्चा	--	--
2	--	-शिवार फेरी व विहीर निरिक्षण		
		लक्ष्य गट चर्चा - शेती मुल्यसाखळी, शेती परिस्थिती विश्लेषण, नैसर्गिक संसाधने व शेतीचे नियोजन ;	--	--
		शेतकरी गट/ कृषि आधारीत उद्योग/ प्रगतीशील शेतकरी माहिती	--	--
		- प्रस्तावित कामांचा मसुदा App द्वारे/ प्रिटद्वारे वाचून दाखविणे	--	--
		महिला सभा	--	--
3	--	- पाण्याचा ताळेबंद नुसार जलसंधारण कामे व पिक नियोजन आराखडा अंतिम करणे	--	--
		प्रस्तावित कामांचा मसुदा अंतिम करणे	--	--
		सामाजिक व पर्यावरणीय सुची	--	--
		ग्राम कृषि संजीवनी समिती सभा	--	--
4	--	- ग्रामसभा	--	--
		प्रस्तावित कामांच्या मसुद्यास व गाव विकास आराखड्यास मंजूरी देणे	--	--

Annexure II Sample Village Profile

https://ffsauditlogs.blob.core.windows.net/mahapocra/scripts/pdf/pocra-village-profile-559551-2024-2.pdf

नानाजी देशमुख कृषि संजीवनी प्रकल्प — सत्यमेव जयते — कृषी विभाग महाराष्ट्र शासन

भौगोलिक तपशील

माहिती उपलब्ध नाही

हवामान अंदाज व पीक सल्ला

माहिती उपलब्ध नाही

वैयक्तिक लाभार्थी तपशील

नोंदणी केलेले शेतकरी - 219	अर्जांची एकूण संख्या - 495
पूर्वसंमती दिलेले अर्ज - 79	लाभ दिलेले अर्ज- 82
लाभार्थी संख्या - 50	लाभार्थी महिला शेतकरी - 22
अनुसूचित जाती लाभार्थी - 0	अनुसूचित जमाती लाभार्थी - 1
वितरीत अनुदान रक्कम - 3220087	बँकेसोबत आधार संलग्न नसलेले शेतकरी - 7

घटकनिहाय वितरित अनुदान

घटक/बाब	एकूण अर्ज	पूर्व समंती प्राप्त अर्ज	नाकारलेल्या अर्जांची संख्या	लाभार्थी शेतकरी	वितरीत केलेला निधी (रू)
Apiculture	1	0	1	0	0
Backyard Poultry	4	0	3	0	0
Compost (Vermicompost / NADEP / Organic input production unit)	1	0	0	0	0
Drip Irrigation	66	16	23	15	1152922
Farm Mechanization	2	0	2	0	0
Farm Pond (Individual)	10	1	7	1	138049
FFS host farmer assistance / Promotion of BBF technology/ Zero Tillage Technology etc.	7	6	1	3	8400
Horticulture Plantation / Agroforestry	76	18	52	16	567214
Pipes	21	0	21	0	0
Recharge of open dug wells	3	0	3	0	0
Saline and Sodic lands (Farm ponds/ Sprinklers / Water pump/ FFS)	3	0	3	0	0

3	दुबार पिकाखालील क्षेत्र (Double Cropped Area)		NA
4	एकूण लागवडीखालील क्षेत्र (Gross cropped Area)		NA
5	एकुण सिंचित क्षेत्र (Irrigaterd Area)	हंगामी बागायत	NA
		बारमाही बागायत	NA
6	एकूण वन क्षेत्र (Total Forest Area)		NA
7	कायम पड क्षेत्र (Permanent Fallow Area)		NA
8	चालू पड क्षेत्र (Current Fallow Area)		NA
9	गवत पड व चराऊ कुरणे (Pasture Land)		NA
10	इतर पड क्षेत्र (Other Fallow Area)		NA
11	बिगर कृषि क्षेत्र (Area put to non-Agricultural use)		NA

पिकनिहाय क्षेत्र (क्षेत्र हेक्टर)

अ.क्र.	पिकाचा वर्ग	पिकाखालील क्षेत्र
1	तृणधान्य	NA
2	कडधान्य	NA
3	गळितधान्य	NA
4	नगदी पिके (कापूस,ऊस)	NA
5	भाजीपाला पिके	NA
6	फळपिके	NA
7	चारा पिके	NA
8	इतर	NA
एकूण		NA

निरीक्षण विहिरींची पाण्याची पातळी

सूक्ष्म नियोजन आराखडयानुसार गावतील सरासरी भुजल पातळी -- (खोली मी मध्ये) निरीक्षण साठी निवडलेल्या विहिरीचा तपशील

माहिती उपलब्ध नाही

शेतमाल निहाय घाऊक बाजारातील आवक व बाजार भाव बाबत माहीती

माहिती उपलब्ध नाही

Sericulture	148	13	80	5	889052
Shadenet House	2	0	0	0	0
Small ruminants	64	0	64	0	0
Sprinkler Irrigation	76	24	23	24	449450
Water Pumps	2	1	1	1	15000
Well	9	0	8	0	0
Total	495	79	292	65	3220087

कृषी व्यवसाय घटकाचा तपशील

नोंदणी केलेल्या FPC/SHG/Farmer Group ची संख्या - 0
एकूण अर्जांची संख्या - 0
पूर्वसंमती दिलेल्या अर्जांची संख्या - 0
कार्यारंभ आदेश दिलेल्या अर्जांची संख्या - 0
लाभ दिलेल्या FPC/SHG/Farmer Group ची संख्या - 0
अनुदान वितरीत रक्कम, रु. - 0

मृद व जलसंधारण तपशील

पावसाचे प्रमाण (मिमी) - 1150.5
उपलब्ध अपधाव (TCM) - 624.07
अडवलेला अपधाव (TCM) - 39.7
शिल्लक अपधाव (TCM) - 584.37
प्रस्तावित क्षेत्र उपचार (हे.) - 250
प्रस्तावित नाला उपचार संख्या - 11
कामांची एकूण रक्कम - 23.1
तयार अंदाज पत्रकांची संख्या - 0
एकूण तांत्रिक मंजुरींची संख्या - 0
पूर्ण झालेल्या ई निविदा संख्या - 0
सुरु झालेल्या कामांची संख्या - 0
पूर्ण झालेल्या कामांची संख्या - 0
निधी वितरण केलेल्या कामांची संख्या - 0
खर्च झालेली एकूण रक्कम (रू) - 0

पिक पद्धतींचा तपशील

माहिती उपलब्ध नाही

भूमी उपयोगिता वर्गीकरण

गावाचे एकूण भौगोलिक क्षेत्र 585 हे असून निव्वळ पिकाखाली त्यापैकी 0% क्षेत्र आहे. गावाचे भूरूप ढोबळमानाने उंचसखल/ डोंगराळ/ सपाट प्रकारचे आहे. गावातील निव्वळ पिकाखालील क्षेत्रापैकी 0% क्षेत्राकरिता सिंचनसुविधा उपलब्ध आहे.

अ.क्र.	तपशील	क्षेत्र (हेक्टर)
1	एकूण भौगोलिक क्षेत्र (Total Geographical Area)	585
2	पिकाखालील निव्वळ क्षेत्र (Net Cropped Area)	NA

नानाजी देशमुख कृषि संजीवनी प्रकल्प सत्यमेव जयते कृषी विभाग महाराष्ट्र शासन

नजिकचे गोदाम / वखारकेंद्रा बाबत माहीती

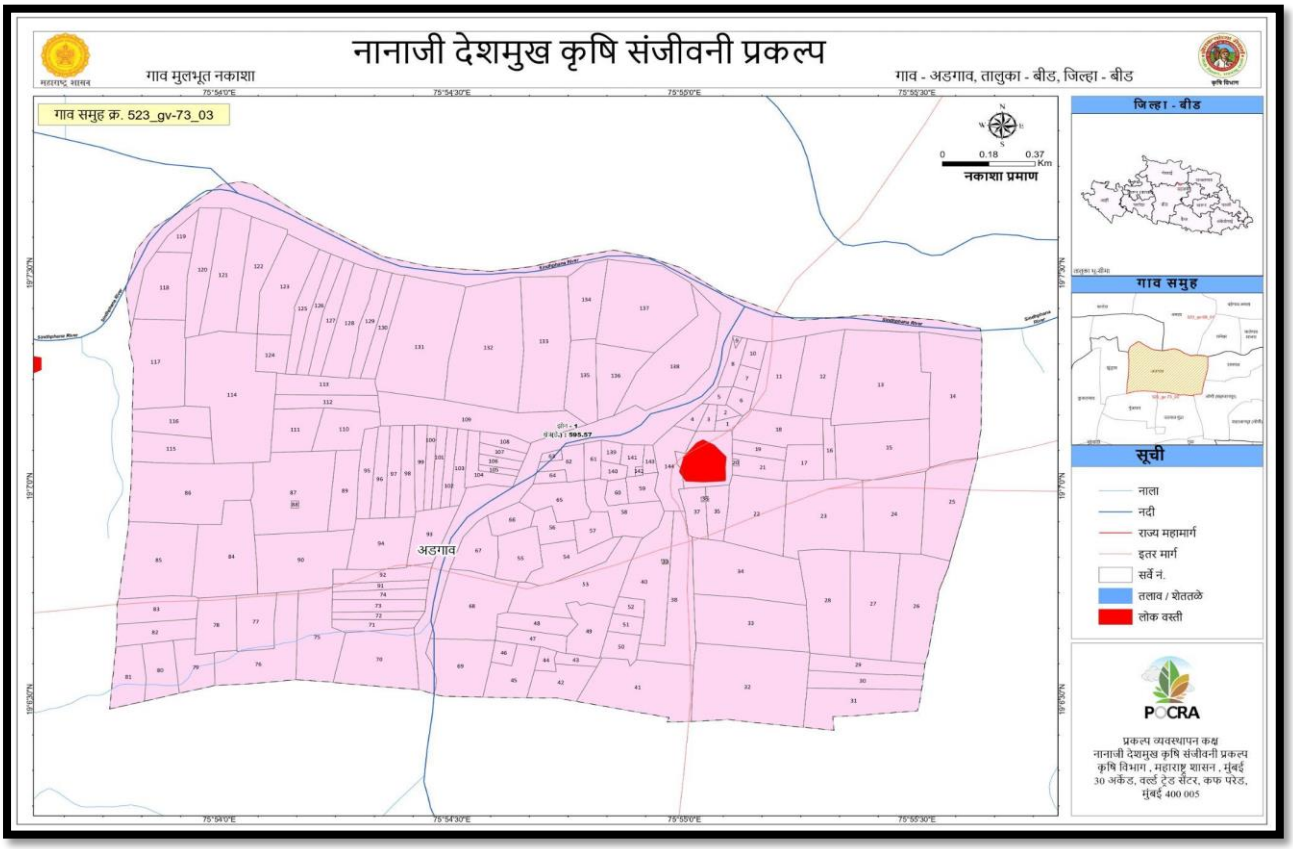
एकूण क्षमता (MT)	उपलब्ध क्षमता (MT)	तारीख
9210	2914	30/11/2023
गोदाम नाव	ईमेल	दूरध्वनी
BEED	beed.wh@mswc.in	02442-227210

गोदामाचा पत्ता -MSWC, PLOT NO.47, MIDC AREA - 431122
गावापासून अंतर(कि.मी.) - 17.55

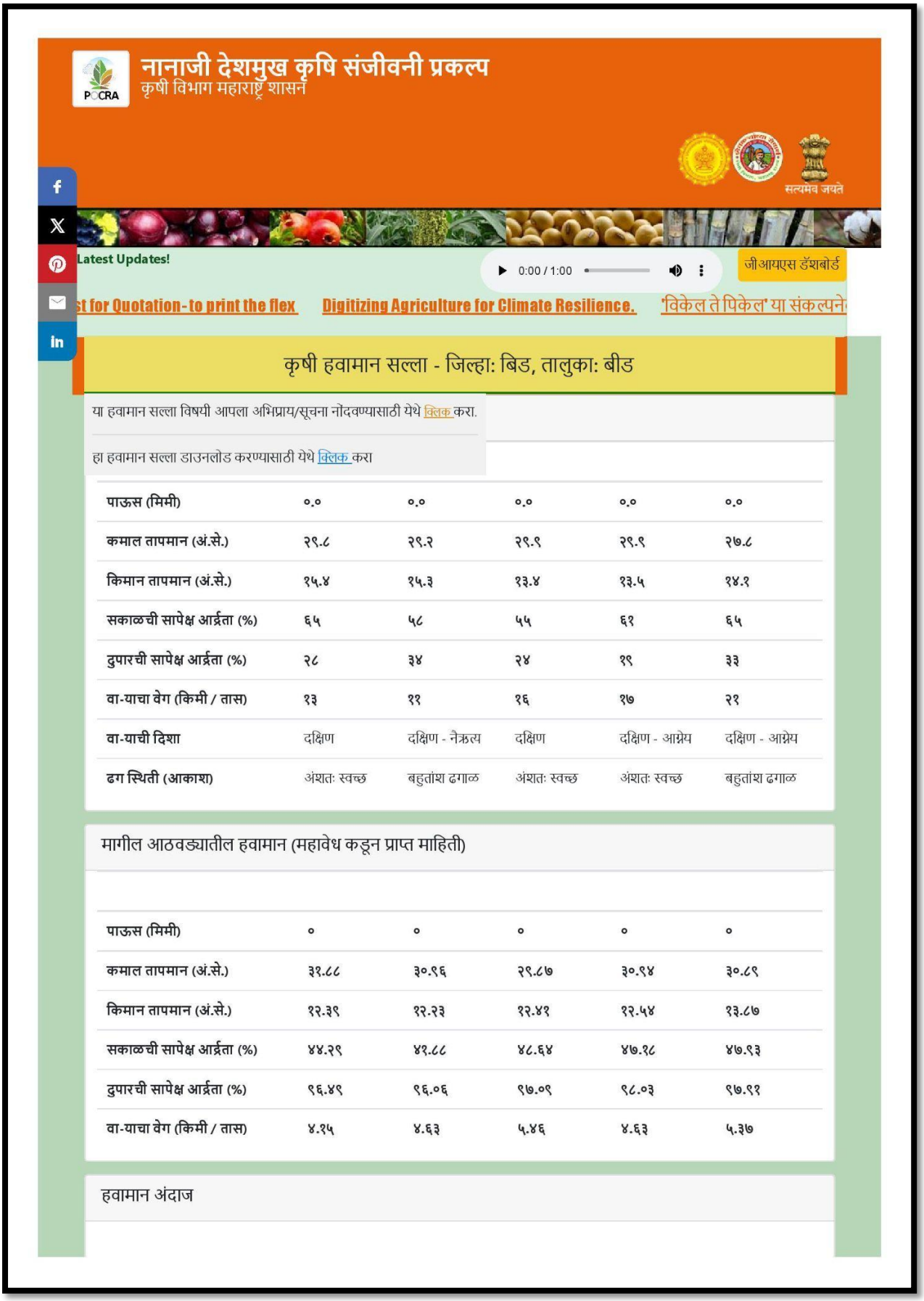
Sources of Information:

1. General Census 2011
2. Agriculture Census 2010
3. PoCRA DBT Portal
4. PoCRA MLP Application
5. PoCRA FFS Application
6. PoCRA Training Application
7. PoCRA SSO system

Annexure III Sample Village Map（गावाचा मुलभूत नकाशा）



Annexure IV Sample Agro-met Advisory
(तालुका निहाय हवामान अंदाज व कृषी सल्ला)



नानाजी देशमुख कृषि संजीवनी प्रकल्प
कृषी विभाग महाराष्ट्र शासन

सत्यमेव जयते

Latest Updates!

0:00 / 1:00

जीआयएस डॅशबोर्ड

st for Quotation-to print the flex Digitizing Agriculture for Climate Resilience. 'विकेल ते पिकेल' या संकल्पने

कृषी हवामान सल्ला - जिल्हा: बिड, तालुका: बीड

या हवामान सल्ला विषयी आपला अभिप्राय/सूचना नोंदवण्यासाठी येथे क्लिक करा.

हा हवामान सल्ला डाउनलोड करण्यासाठी येथे क्लिक करा

पाऊस (मिमी)	०.०	०.०	०.०	०.०	०.०
कमाल तापमान (अं.से.)	२९.८	२९.२	२९.९	२९.९	२७.८
किमान तापमान (अं.से.)	१५.४	१५.३	१३.४	१३.५	१४.१
सकाळची सापेक्ष आर्द्रता (%)	६५	५८	५५	६१	६५
दुपारची सापेक्ष आर्द्रता (%)	२८	३४	२४	१९	३३
वा-याचा वेग (किमी / तास)	१३	११	१६	१७	२१
वा-याची दिशा	दक्षिण	दक्षिण - नैऋत्य	दक्षिण	दक्षिण - आग्नेय	दक्षिण - आग्नेय
ढग स्थिती (आकाश)	अंशतः स्वच्छ	बहुतांश ढगाळ	अंशतः स्वच्छ	अंशतः स्वच्छ	बहुतांश ढगाळ

मागील आठवड्यातील हवामान (महावेध कडून प्राप्त माहिती)

पाऊस (मिमी)	०	०	०	०	०
कमाल तापमान (अं.से.)	३१.८८	३०.९६	२९.८७	३०.९४	३०.८९
किमान तापमान (अं.से.)	१२.३९	१२.२३	१२.४१	१२.५४	१३.८७
सकाळची सापेक्ष आर्द्रता (%)	४४.२९	४१.८८	४८.६४	४७.१८	४७.९३
दुपारची सापेक्ष आर्द्रता (%)	९६.४९	९६.०६	९७.०९	९८.०३	९७.९१
वा-याचा वेग (किमी / तास)	४.१५	४.६३	५.४६	४.६३	५.३७

हवामान अंदाज

हवामान कोरडे राहण्याची शक्यता आहे. आकाश अंशतः स्वच्छ ते बहुतांश ढगाळ राहण्याची शक्यता. तापमान १३.४ ते २९.९ अंश से. दरम्यान असण्याची शक्यता.

पीक सल्ला

गाव	पीक	पीक सल्ला
	कापूस	इमामेक्टींन बेंन्झोएट ५ एसजी ४ ग्रॅम किंवा फ्ल्युबेन्डामाईड ३९.३५ एससी २ मिली प्रती १० लिटर पाण्यातून फवारणी करावी. मर रोग नियंत्रणासाठी कार्बेंडेझीम ५० डब्ल्यूपी १० ग्रॅ १० लि. पाण्यात मिसळून आळवणी करावी. - 2024-01-01
	हरभरा	घाटेअळीसाठी प्रति हे. ५ कामगंध सापळे लावावेत. पक्षीथांबे प्रति हे. ५० उभारावेत. इमामेक्टींन बेंन्झोएट ५ एस जी ४ ग्रॅम प्रती १० लिटर पाण्यातून फवारणी करावी. - 2023-12-28
	Sorghum	नविन लष्करी अळीसाठी क्लोरॅनट्रानिलीप्रोल १८.५ एससी ४ मिली प्रति १० लि. पाण्यात मिसळून फवारणी
	Hybrid	प्रोल १८.५ एससी ४ मिली प्रति १० लि. पाण्यात मिसळून फवारणी करावा. - 2023-12-28
	तूर	घाटेअळीसाठी फ्ल्यूबेंडामाईड ३९.३५ एससी २ मिली किंवा क्लोरॅनट्रानिलीप्रोल १८.५ एससी २.५ मिली प्रति १० लि. पाण्यातून फवारणी करावी. - 2023-12-28

या हवामान सल्ला विषयी आपला अभिप्राय/सूचना नोंदवण्यासाठी येथे क्लिक करा.

हा हवामान सल्ला डाउनलोड करण्यासाठी येथे क्लिक करा

टीप:

वरील सल्ला भारतीय हवामान खात्याच्या अंदाजावर आधारित असून कृषि विद्यापीठाच्या शिफारशीप्रमाणे स्थानिक पीक परिस्थितीनुसार/ क्रॉपसॅपअंतर्गत तयार केलेला आहे. प्रकल्प व्यवस्थापन कक्ष मुंबई येथून सदर हवामान अंदाज व कृषि सल्ला प्रसारित करण्यात येत आहे.

Contact Us

कृषी विभाग
महाराष्ट्र शासन

नानाजी देशमुख कृषि संजीवनी प्रकल्प
(PoCRA),
30 अ/ब, आर्केड, वर्ल्ड ट्रेड सेंटर,
कफपरेड,
मुंबई 400005.

Phone: 022-22163351
Email: pmu@mahapocra.gov.in
हेल्पलाईन क्रमांक- 9355056066