Rabi Crop Advisory

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Dist:Wardha Tal:- Samudrapur

Basic Principles

1. Rabi cultivable land is limited by Kharif Land
2. End monsoon Soil Moisture left from Kharif Crops is available for Rabi crops
3. End monsoon Soil Moisture left from Long Kharif/Annual crops is utilized by Long Kharf/Annual Crops.
4. Total crop water demand is computed after subtracting the soil moisture which is available.
5. Water available from ground water recharge and surface storage is first allocated for Long kharif. This is computed as per common practices (number of waterings) by farmers. This may not match full-yield water requirement.
6. Finally, water remaining from Step 5 is used rabi cropping pattern

Village Profile

Cropping Details		
Season	Crop	Area(H)
Long_Kharif	cotton	255
Kharif	soybean	167
Long_Kharif	piegon pea	25
Kharif	vegetable	3.5
Long_Kharif	turmeric	3
Long_Kharif	sugercane	1

Kharif:-170.5H

Long Kharif:-284H

Total Geo. Area:- 664.46 H

Rainfall:-1244 mm
        8265.88 TCM

Year: 2019

Plugin output(Table 1)

	GW Recharge in Monsoon(TCM)	Runoff in Monsoon (TCM)	Soil Moisture Monsoon end(TCM)	Post Monsoon Deficit(TCM)
Kharif	410.22	2922.10	290.49	0.00
Long/Annual	184.78	2007.48	218.24	467.54
Total	594.99	4929.59	508.73	467.54

Rainfall(TCM)	8541.63

Surface water availability

structures	TCM/unit	fillings	evaporation	per unit TCM	Count	TCM
FP without lining	2.2	2	50	2.2	5	11
MNB	5	2	30	7		0
CNB	6	2	30	8.4	4	33.6
KT weir	30	2	50	30	1	30
well				0	47	0

Total :- 74.6 TCM

Long Kharif allocation

50 mm per watering

Season	Crop	Area(H)	Number of Watering	Watering Amount(TCM)
LongKharif	cotton	255	2	255
LongKharif	tur	25	2	25
Annual	turmeric	3	13	19.5
Annual	sugarcane	1	14	7
Total				306.5

Summary Table

	Component	TCM	Area	mm
1	Soil Moisture Kharif Monsoon End	290.49	170.50	170.37
2	Soil Moisture Long Kharif Monsoon End	218.24	284.00	76.84
3	Ground Water recharge Monsoon End	594.99	-	-
4	Surface Water Storage Monsoon End	74.60	-	-
5	Water to be used for Long & Annual(From GW+storage)	306.50	284.00	107.98
6	Drinking Water	16.12		
7	Soil Moisture for Rabi = 1	290.49	170.50	170.37
8	Ground Water For Rabi =3+4-5-6	72.61	-	-

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	80	350	170	270	0.77	1
Wheat(5)	20	525	170	420	0.80	2.5
Jawari(3)	50	425	170	320	0.75	1.5
Maize(5)	20	500	170	420	0.84	2.5

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	100	350	170	270	0.77	1
Maize(5)	70	500	170	420	0.84	2.5

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	170	350	170	270	0.77	1

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Combinations for Rabi Area Advisory

Combinations	crops	Area	AET/PET	Avg_Yield (Quintal) Per Hect	Expected _Yield	MSP	Total Revenue (Per Hect)
C1	Harbhara(2)	80	0.77	12	7.87	4875	38,366
	Wheat(5)	20	0.80	40	32	1925	61600
	Jawari(3)	50	0.75	10	7.5	2500	18750
	Maize(5)	20	0.84	15	12.6	1760	22,176
C2	Harbhara(2)	100	0.77	12	7.87	4875	38,366
	Maize(5)	70	0.84	15	12.6	1760	22,176
C3	Harbhara(2)	170	0.77	12	7.87	4875	38,366

Mandava

Dist:-Osmanabad Tal:- Washi

Village Profile

Total Geo. Area:- 1734.28 H
Current fallow:- 104.28 H

Kharif:-1447 H

Long Kharif:- 183 H

Rainfall:- 492 mm
            8532.65 TCM

Cropping Details		
Season	Crop	Area(H)
Kharif	soybean	1380
Long_Kharif	piegon pea	130
Long_Kharif	cotton	43
Kharif	maize	25
Kharif	black gram	25
Long_Kharif	sugercane	10
Kharif	green gram	8
Kharif	sorghum	7
Kharif	bajra	1
Kharif	groundnut	1

Plugin output(Table 1)

	GW Recharge in Monsoon(TCM)	Runoff in Monsoon (TCM)	Soil Moisture Monsoon end(TCM)	Post Monsoon Deficit(TCM)
Kharif	631.67	2475.34	1776.75	0.00
Long/Annual	20.09	167.64	81.77	218.65
Total	651.76	2642.98	1858.52	218.65

Rainfall(TCM)   8532.65

Surface water availability

structures	TCM/unit	fillings	evaporation	per unit TCM	Count	TCM
FP lining	2.2	2	50	2.2	30	66
CNB	6	2	30	8.4	2	16.8
KT weir	30	2	50	30	1	30

Total :- 112.8 TCM

Long Kharif allocation

50 mm per watering

Season	Crop	Area(H)	Number of Watering	Watering Amount(TCM)
LongKharif	cotton	43	2	43
LongKharif	tur	130	2	130
Annual	sugarcane	10	14	70
Total				243

Summary Table

	Component	TCM	Area	mm
1	Soil Moisture Kharif Monsoon End	1776.75	1447	122.79
2	Soil Moisture Long Kharif Monsoon End	81.77	27.00	302.85
3	Ground Water recharge Monsoon End	651.76	1447	45.04
4	Surface Water Storage Monsoon End	112.80	-	-
5	Water to be used for Long & Annual(From GW+storage)	243.00	27.00	900.00
6	Drinking Water	78.30		
7	Soil Moisture for Rabi = 1	1776.75	1447	122.79
8	Ground Water For Rabi =3+4-5-6	443.26	-	-

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	100	350	123	222	0.63	1
Wheat(5)	40	525	123	372	0.71	2.5
Jawari(3)	50	425	123	272	0.64	1.5
Maize(5)	50	500	123	372	0.74	2.5

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	250	350	123	270	0.63	1
Maize(5)	60	500	123	420	0.75	2.5

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	400	350	123	270	0.63	1

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Combinations for Rabi Area Advisory

Combinations	crops	Area	AET/PET	Avg_Yield (Quintal) Per Hect	Expected _Yield	MSP	Total Revenue (Per Hect)
C1	Harbhara(2)	100	0.63	12	7.56	4875	36,855
	Wheat(5)	40	0.71	40	28.4	1925	54670
	Jawari(3)	50	0.64	10	6.4	2500	16,000
	Maize(5)	50	0.74	15	11.1	1760	19536
C2	Harbhara(2)	250	0.63	12	7.56	4875	36,855
	Maize(5)	60	0.74	15	11.1	1760	19536
C3	Harbhara(2)	400	0.63	12	7.56	4875	36,855

Malegaon

Dist:Jalna Tal:- Badnapur

Village Profile

Total Geo. Area:- 827.0 H
Current fallow:- 127 H

Kharif:-172 H

Long Kharif:- 528 H

Rainfall:- 530.75 mm
           4389.30 TCM

Cropping Details		
Season	Crop	Area(H)
Long_Kharif	cotton	494
Kharif	maize	57
Kharif	bajra	48
Kharif	soybean	39
Long_Kharif	piegon pea	34
Kharif	green gram	19
Kharif	vegetable	9

Plugin output(Table 1)

	GW Recharge in Monsoon(TCM)	Runoff in Monsoon (TCM)	Soil Moisture Monsoon end(TCM)	Post Monsoon Deficit(TCM)
Kharif	169.63	615.19	201.86	0.00
Long/Annual	2.50	456.97	215.39	834.93
Total	172.13	1072.16	417.25	834.93

Rainfall(TCM)   4389.30

Surface water availability

structures	TCM/unit	fillings	evaporation	per unit TCM	Count	TCM
Compartment Bunding	0.45	2	50	0.45	457	205.65
FP lining	2.2	2	50	2.2	19	41.8
CNB	6	2	30	8.4	7	58.8
PT	10	2	50	10	2	20

Total :- 326.25 TCM

Long Kharif allocation

50 mm per watering

Season	Crop	Area(H)	Number of Watering	Watering Amount(TCM)
LongKharif	cotton	494	1	247
LongKharif	tur	34	2	34
Total				281

Summary Table

	Component	TCM	Area	mm
1	Soil Moisture Kharif Monsoon End	201.86	172	117.36
2	Soil Moisture Long Kharif Monsoon End	215.39	528.00	40.79
3	Ground Water recharge Monsoon End	172.13	827	20.81
4	Surface Water Storage Monsoon End	326.25	-	-
5	Water to be used for Long & Annual(From GW+storage)	281.00	528	53.22
6	Drinking Water	23.94		
7	Soil Moisture for Rabi = 1	201.86	172	117.36
8	Ground Water For Rabi =3+4-5-6	217.38	-	-

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	60	350	118	217	0.62	1
Wheat(5)	20	525	118	367	0.69	2.5
Jawari(3)	30	425	118	267	0.62	1.5
Maize(5)	20	500	118	367	0.73	2.5

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	120	350	118	217	0.62	1
Maize(5)	30	500	118	367	0.73	2.5

Each watering is assumed to be of 50mm and that it contributes as much to AET.

 # The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Crop-wise water requirement
(fixed number of waterings)

Crop #	Area	PET(mm)	SM (mm)	Total AET	AET/PET	TCM/Ha
Harbhara(2)	150	350	118	217	0.62	1

*Each watering is assumed to be of 50mm and that it contributes as much to AET.

The number in parenthesis indicates the number of waterings

& Yield is approximated as the ration AET/crop-PET.

Combinations for Rabi Area Advisory

Combinations	crops	Area	AET/PET	Avg_Yield (Quintal) Per Hect	Expected _Yield	MSP	Total Revenue (Per Hect)
C1	Harbhara(2)	60	0.62	12	7.44	4875	36,270
	Wheat(5)	20	0.69	40	27.6	1925	53,130
	Jawari(3)	30	0.62	10	6.2	2500	15,500
	Maize(5)	20	0.73	15	10.95	1760	19,272
C2	Harbhara(2)	120	0.62	12	7.44	4875	36,270
	Maize(5)	30	0.73	15	10.95	1760	19272
C3	Harbhara(2)	150	0.63	12	7.44	4875	36,270

Combinations for Rabi Area Advisory

Combinations	crops	Malegaon Area(Ha)	Mandava Area(Ha)	Faridpur Area(Ha)
C1	Harbhara(2)	60	100	80
	Wheat(5)	20	40	20
	Jawari(3)	30	50	50
	Maize(5)	20	50	20
C2	Harbhara(2)	120	250	100
	Maize(5)	30	60	70
C3	Harbhara(2)	150	400	170

The number in parenthesis indicates the number of waterings

Backup:- Reference MSP Values

Crop	MSP (per quintal)
Wheat	1925
Maize	1760
Harbhara	4875
Jawari	2500