Draft Report

केंद्रीय भूमि जल बोर्ड

जल संसाधन, नदी विकास और गंगा संरक्षण मंत्रालय

भारत सरकार

Central Ground Water Board

Ministry of Water Resources, River Development and Ganga Rejuvenation

Government of India

Report on

AQUIFER MAPPING AND GROUND WATER MANAGEMENT PLAN

AUSA, CHAKUR, LATUR, NILANGA & RENAPUR TALUKAS

Latur District, Maharashtra

मध्य क्षेत्र, नागपुर

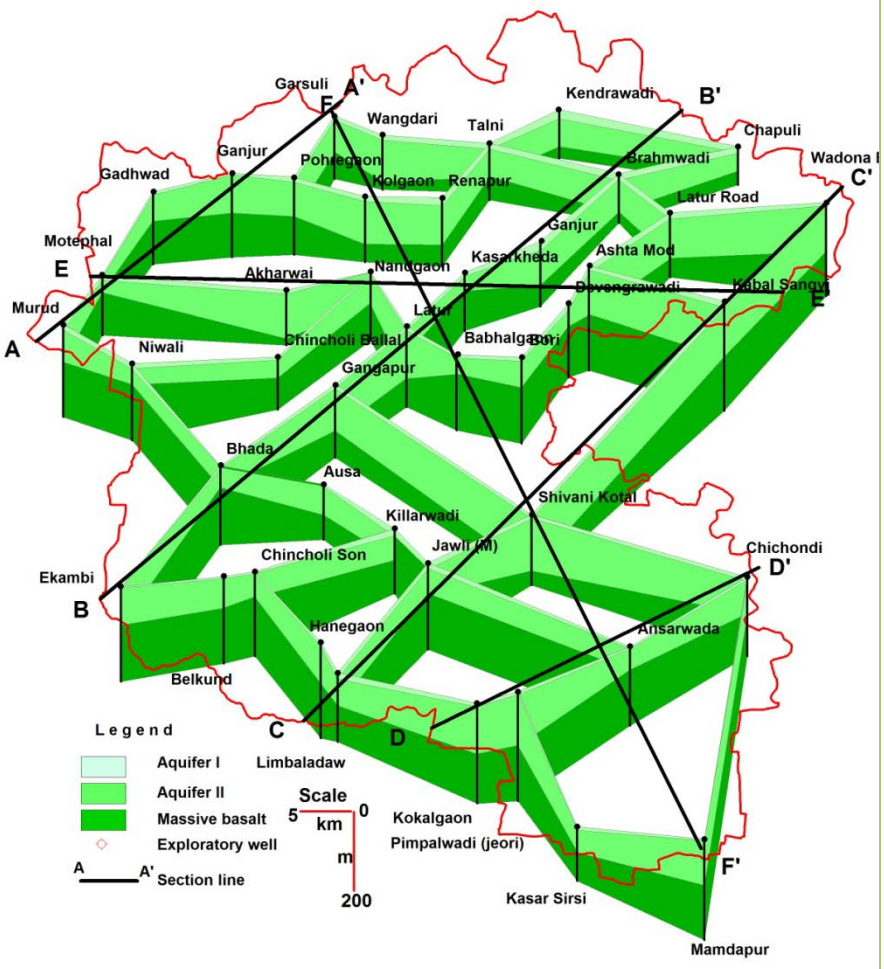
Central Region, Nagpur

भारत सरकार
Government of India
जल संसाधन, नदी विकास एवं गंगा संरक्षण मंत्रालय
Ministry of Water Resources, River Development & Ganga Rejuvenation
केन्द्रीय भूमि जल बोर्ड
CENTRAL GROUND WATER BOARD

जल बचत जल संचय

जलभृत नक्शे तथा भूजल प्रबंधन योजना

Aquifer Maps and Ground Water Management Plan



AUSA, CHAKUR, LATUR, NILANGA & RENAPUR TALUKA OF LATUR DISTRICT MAHARASHTRA

AUSA,CHAKUR, LATUR, NILANGA & RENAPUR TALUKAS, LATUR DISTRICT, Maharashtra

मध्य क्षेत्र, नागपुर / Central Region, Nagpur
जून 2016 / June 2016

PART-II

AQUIFER MAPS AND GROUND WATER MANAGEMENT PLANS AUSA,CHAKUR,LATUR,NILANGA & RENAPUR TALUKAS, LATUR DISTRICT, MAHARASHTRA STATE

CONTRIBUTORS'

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PART-II

AQUIFER MAPS AND GROUND WATER MANAGEMENT PLANS AUSA, CHAKUR, LATUR, NILANGA & RENAPUR TALUKAS, LATUR DISTRICT, MAHARASHTRA STATE

CONTENTS

AQUIFER MAPS AND GROUND WATER MANAGEMENT PLANS, AUSA, CHAKUR, LATUR, NILANGA & RENAPUR TALUKAS, LATUR DISTRICT, MAHARASHTRA STATE

1 BRIEF INTRODUCTION

In XII five-year plan (2012-17), National Aquifer Mapping (NAQUIM) has been introduced to carry out detailed hydrogeological investigation on toposheet scale (1:50,000). Keeping in view the current demand vis-à-vis supply and futuristic requirement of water, Central Ground Water Board has taken up NAQUIM in Over-exploited, Critical and Semi-Critical talukas and prioritised stress areas. Hence, water stress area i.e., Ausa, Chakur, Latur, Nilanga & Renapur Talukas of Latur district has been taken up to carry out detailed hydrogeological investigation covering an area of 4472.39 sq.km in the year 2015-16. The index map of the study area is presented below- **Fig 1.1**.

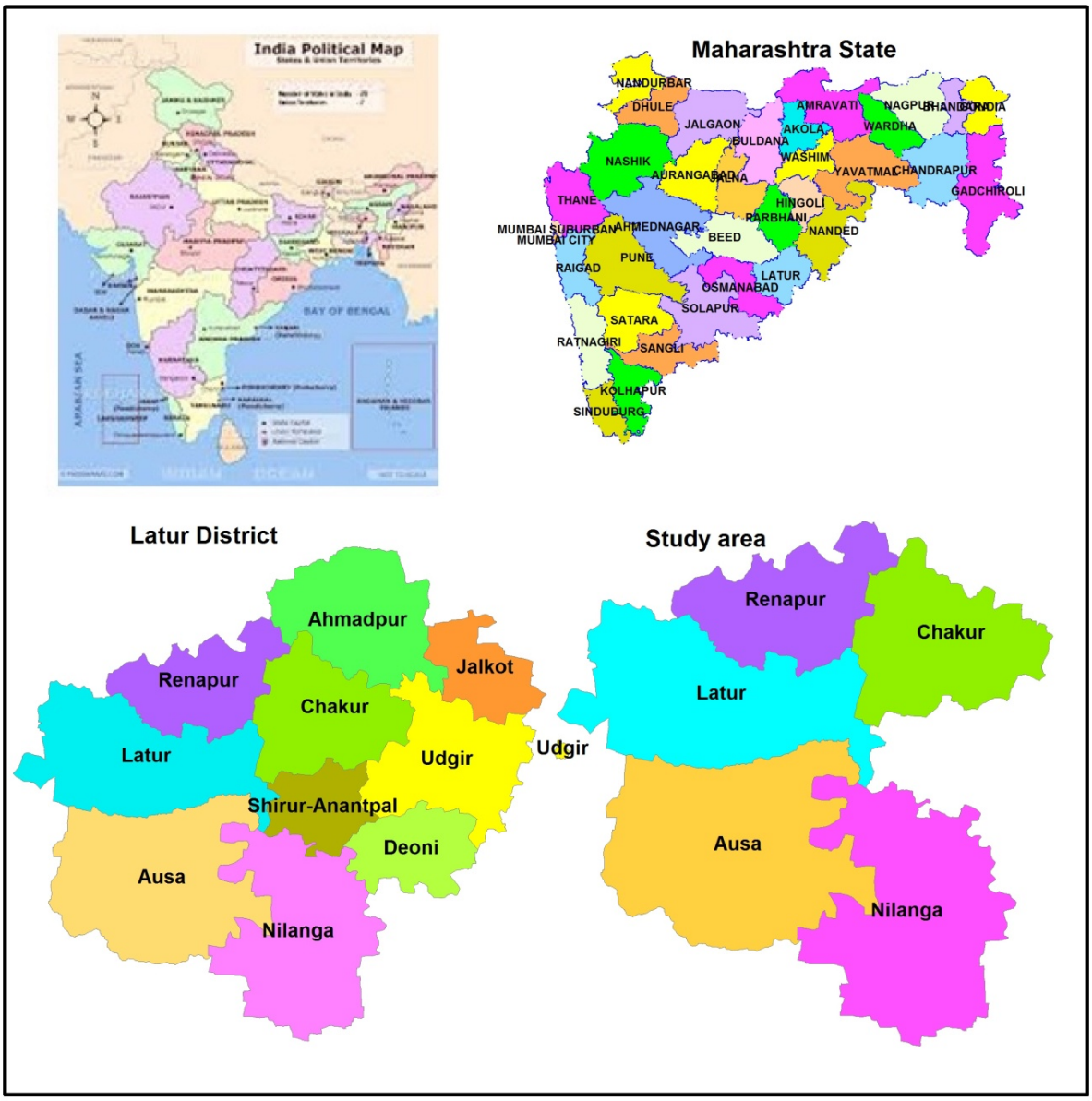
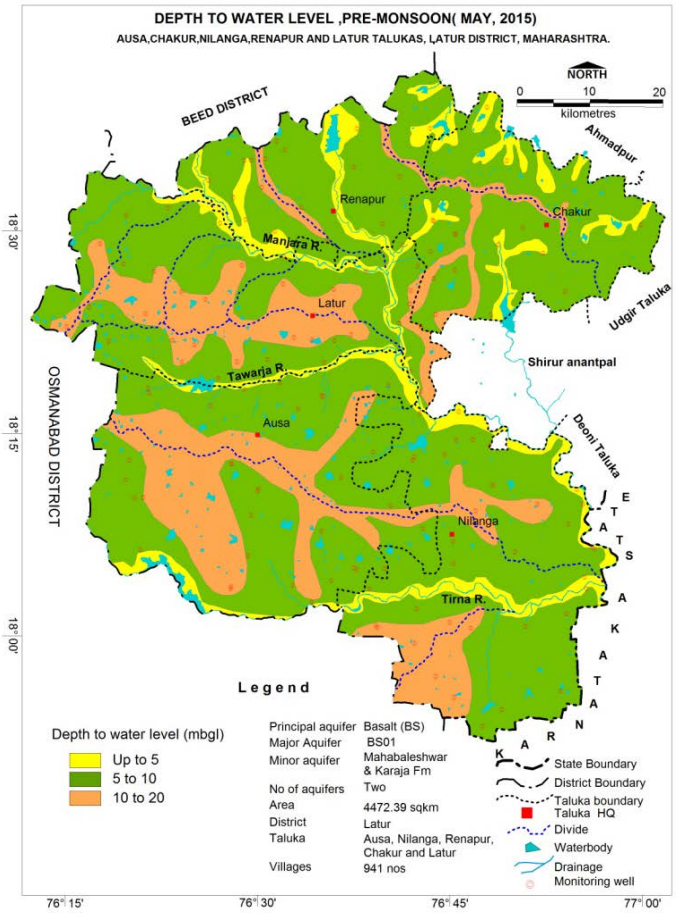
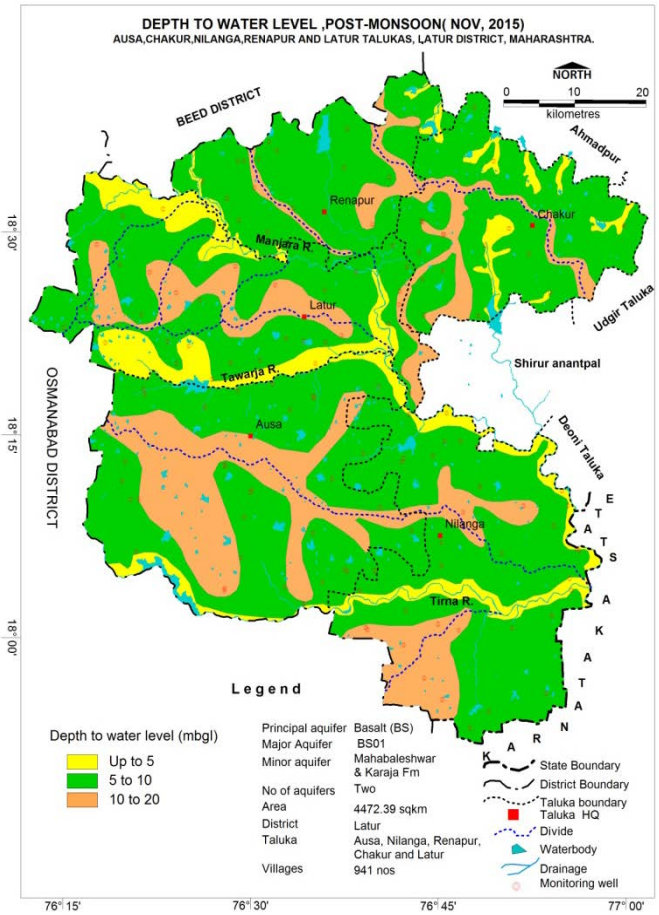


Fig 1.1 Index map of the Study area

2 SALIENT FEATURES

PARTICULARS	Chakur	Renapur	Ausa	Nilanga	Latur
District	Latur	Latur	Latur	Latur	Latur
State	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra
Area (sq.km.)	520.21	512.22	1213.67	1255.58	970.71
Population (2011) Rural/Urban	177956/0	142187/0	273453/36118	289083/36172	286711/396955
Total	177956	142187	309571	325255	683666
Rainfall (mm)					
I. Normal Annual Rainfall	858.5 mm	782.1 mm	742.8 mm	823.3 mm	730.4 mm
II. Current Rainfall (2015)	469.3 (-45 % deficient)	577.7 (-26 % deficient)	413.2 (-44% deficient)	573(-30% deficient)	483.7(-34 % deficient)
III. Rainfall Trend (mm/yr)	-24.13 (1998 to 2015)	-14.8 (1998 to 2015)	-30.27 (1998 to 2015)	-13.26 (1998 to 2015)	-1.74 (1901 to 2015)
Agriculture (sq.km.)					
i. Principal Crops					
Jawari	65.65	74.83	248.82	134.36	120.11
Wheat	11.97	15.19	52.0	12.97	23.59
Sugarcane	23.58	40.87	56.33	46.22	82.83
Onion	2.25	0.4	8.36	1.9	3.5
Grape	1.29	0.43	2.3	0.23	0.38
Mango	3.05	1.61	2.24	0.96	3.72
Sunflower	1.9	0.44	7.44	6.61	0.23
ii. Cultivable Area	480.67	470	1144.07	1125	919.75
iii. Net Sown Area	461.39	450	1041.04	883.13	716.09
iv. Forest	1.55	10.3	2.35	3.5	0.88
Irrigation Sources (sq.km.)					
i. Ground water	28.89	80.33	53.18	67.04	125.37
ii. Surface Water	80.77	75.88	133.45	134.04	128.74
Data Utilised					
i. Key Observation Wells	16	19	33	35	36
ii. GW exploration	8EW+ 1 OW + 1 Pz	8 EW+ 0 OW + 2 Pz	7 EW+ 0 OW +1 Pz	10 EW+ 0 OW + 1 Pz	16 EW+ 4 OW + 2Pz
iii. VES					
iv. GWQ sampling locations- AQI	11	7	13	12	43
AQII	3	0	3	4	15
Existing / Future Water Demands (MCM)					
Domestic & Industrial	1.63/ 2.43 (2025)	1.34/ 2.2 (2025)	3.57/ 7.02 (2025)	4.4/ 7.34 (2025)	4.24/ 7.1 (2025)
Irrigation	41.44 / 9.42	36.93 / 5.5	98.15 / 33.7	96.54 / 15.87	101.9 / 11.35
Water Level Behaviour					
Aquifer I					
Pre-monsoon WL (m bgl)	7 to 25	3.4 to 24	6.6 to 28	5.12 to 27	5.8 to 22.8
Post-monsoon WL (m bgl)	4.5 to 16	4.6 to 10.5	4.1 to 18	4.5 to 20	3.1 to 16.6
Pre-monsoon WL Trend –Rise (m/y)	0	0.0 to 0.58	0.00 to 0.14	0	0.01 to 0.54
Pre-monsoon WL Trend-Fall(m/y)	-0.03 to 0.6	-0.007 to-0.8	-0.08 to -0.75	-0.071 to 0.73	-0.1 to 0.58
Post-monsoon WL Trend -Rise(m/y)	0.01 to 0.06	.01 to 0.15	0.0071 to 0.38	0.14 to 0.4	0.01 to 0.36
Post-monsoon WL Trend -Fall(m/y)	-0.07 to -0.54	-0.02 to -0.44	-0.0071 to -0.7	-0.08 to -0.64	-0.08 to -0.5
Aquifer II					
Pre-monsoon WL (Aq-II) m bgl	11 to 65	14 to 70	*9 to 78*	9 to 78	18 to 80
Post-monsoon WL (Aq-II) m bgl	6 to 45	10.9 to 47	*1.9 to 58*	5 to 55	2.15 to 56


DEPTH TO WATER LEVEL ,PRE-MONSOON(MAY, 2015)
AUSA,CHAKUR,NILANGA,RENAPUR AND LATUR TALUKAS, LATUR DISTRICT, MAHARASHTRA.
NORTH
0 10 20
kilometres
BEED DISTRICT
Ahmadpur
Renapur
Chakur
Manjara R.
Latur
Udgir Taluka
Shirur anantpal
Tawarja R.
Ausa
Deoni Taluka
OSMANABAD DISTRICT
Nilanga
Tirna R.
LATASA KARANATA
Legend
Depth to water level (mbgl)
Up to 5
5 to 10
10 to 20
Principal aquifer Basalt (BS)
Major Aquifer BS01
Minor aquifer Mahabaleshwar & Karaja Fm
No of aquifers Two
Area 4472.39 sqkm
District Latur
Taluka Ausa, Nilanga, Renapur, Chakur and Latur
Villages 941 nos
State Boundary
District Boundary
Taluka boundary
Taluka HQ
Divide
Waterbody
Drainage
Monitoring well
76°15'
76°30'
76°45'
77°00'
18°30'
18°15'
18°00'


DEPTH TO WATER LEVEL ,POST-MONSOON(NOV, 2015)
AUSA,CHAKUR,NILANGA,RENAPUR AND LATUR TALUKAS, LATUR DISTRICT, MAHARASHTRA.
NORTH
0 10 20
kilometres
BEED DISTRICT
Ahmadpur
Renapur
Chakur
Manjara R.
Latur
Udgir Taluka
Shirur anantpal
Tawarja R.
Ausa
Deoni Taluka
OSMANABAD DISTRICT
Nilanga
Tirna R.
LATASA KARANATA
Legend
Depth to water level (mbgl)
Up to 5
5 to 10
10 to 20
Principal aquifer Basalt (BS)
Major Aquifer BS01
Minor aquifer Mahabaleshwar & Karaja Fm
No of aquifers Two
Area 4472.39 sqkm
District Latur
Taluka Ausa, Nilanga, Renapur, Chakur and Latur
Villages 941 nos
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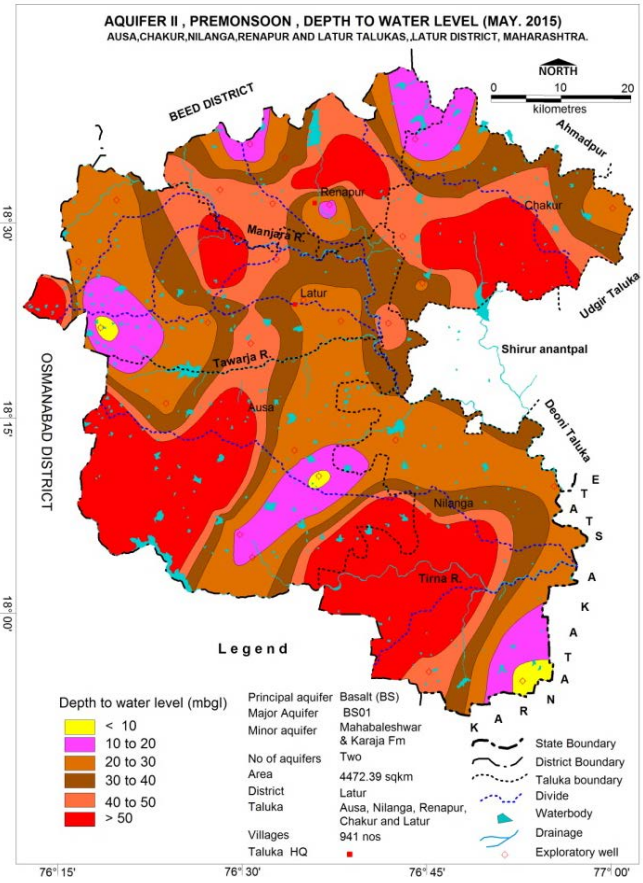
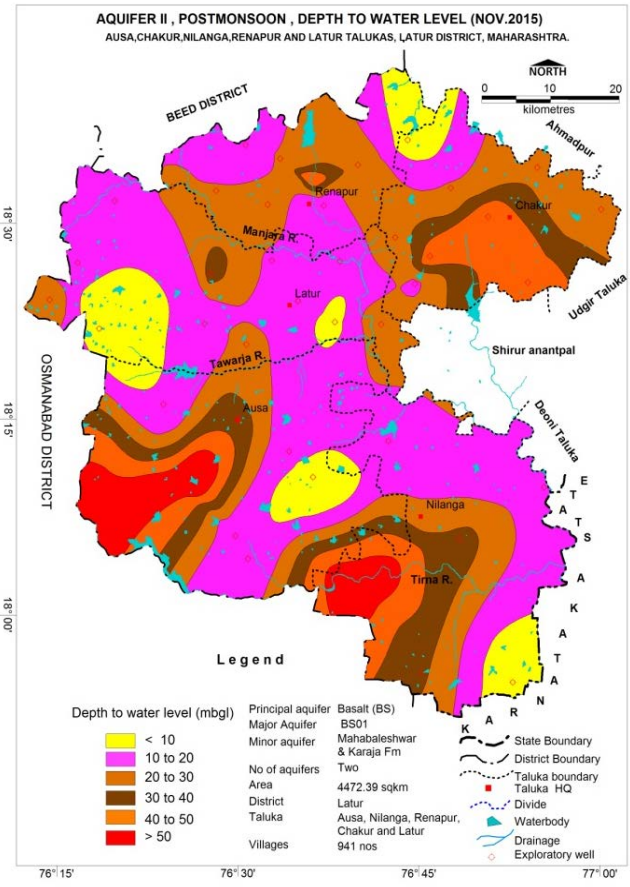
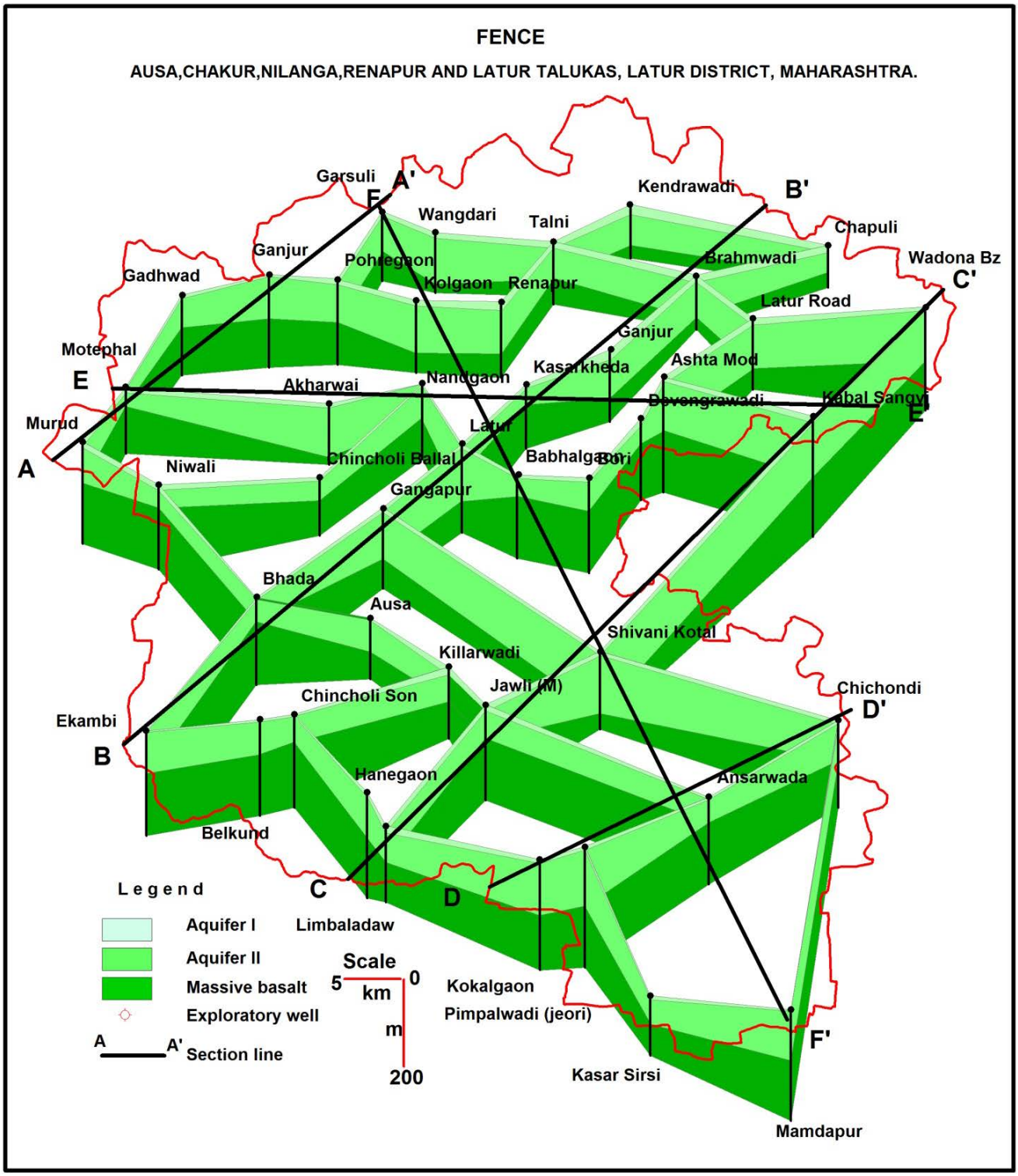
Taluka boundary
Taluka HQ
Divide
Waterbody
Drainage
Monitoring well
76°15'
76°30'
76°45'
77°00'
18°30'
18°15'
18°00'

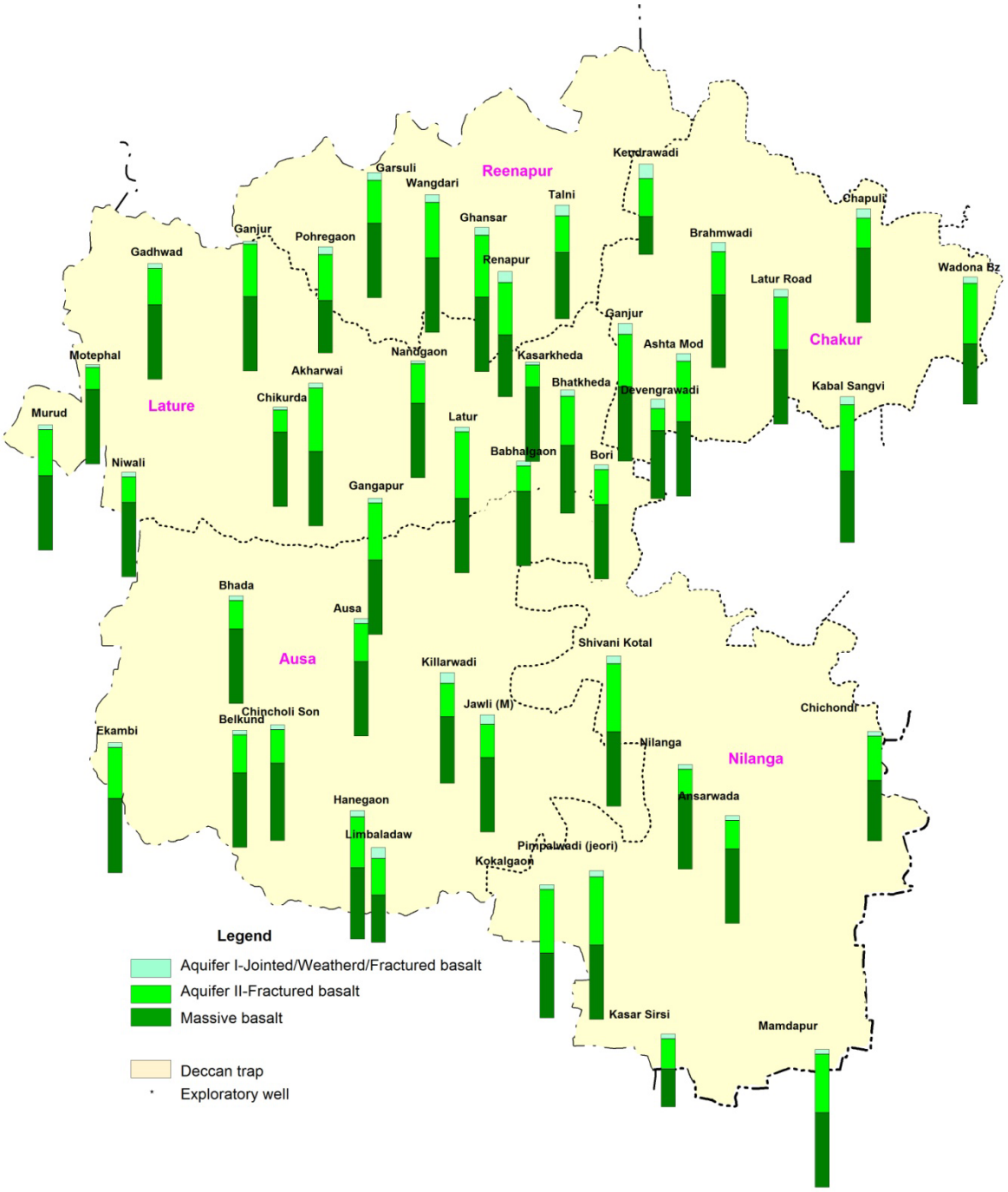

AQUIFER II , PREMONSOON , DEPTH TO WATER LEVEL (MAY. 2015)
AUSA,CHAKUR,NILANGA,RENAPUR AND LATUR TALUKAS, LATUR DISTRICT, MAHARASHTRA.
NORTH
0 10 20
kilometres
BEED DISTRICT
Ahmadpur
Renapur
Chakur
Manjara R.
Latur
Udgir Taluka
Shirur anantpal
Tawarja R.
Ausa
Deoni Taluka
OSMANABAD DISTRICT
Nilanga
Tirna R.
LATASA KARANATA
Legend
Depth to water level (mbgl)
< 10
10 to 20
20 to 30
30 to 40
40 to 50
> 50
Principal aquifer Basalt (BS)
Major Aquifer BS01
Minor aquifer Mahabaleshwar & Karaja Fm
No of aquifers Two
Area 4472.39 sqkm
District Latur
Taluka Ausa, Nilanga, Renapur, Chakur and Latur
Villages 941 nos
Taluka HQ
State Boundary
District Boundary
Taluka boundary
Divide
Waterbody
Drainage
Exploratory well
76°15'
76°30'
76°45'
77°00'
18°30'
18°15'
18°00'

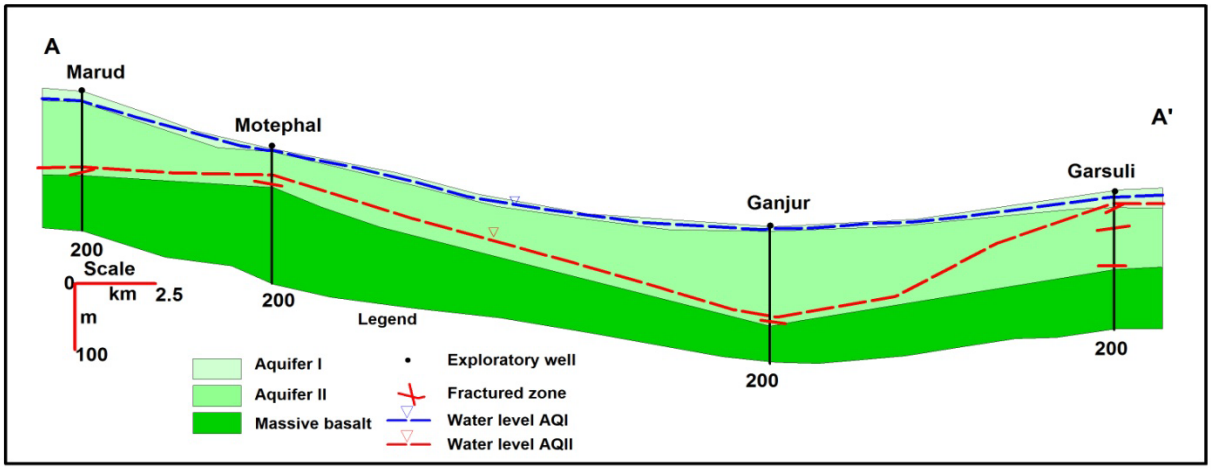

AQUIFER II , POSTMONSOON , DEPTH TO WATER LEVEL (NOV.2015)
AUSA,CHAKUR,NILANGA,RENAPUR AND LATUR TALUKAS, LATUR DISTRICT, MAHARASHTRA.
NORTH
0 10 20
kilometres
BEED DISTRICT
Ahmadpur
Renapur
Chakur
Manjara R.
Latur
Udgir Taluka
Shirur anantpal
Tawarja R.
Ausa
Deoni Taluka
OSMANABAD DISTRICT
Nilanga
Tirna R.
LATASA KARANATA
Legend
Depth to water level (mbgl)
< 10
10 to 20
20 to 30
30 to 40
40 to 50
> 50
Principal aquifer Basalt (BS)
Major Aquifer BS01
Minor aquifer Mahabaleshwar & Karaja Fm
No of aquifers Two
Area 4472.39 sqkm
District Latur
Taluka Ausa, Nilanga, Renapur, Chakur and Latur
Villages 941 nos
State Boundary
District Boundary
Taluka boundary
Taluka HQ
Divide
Waterbody
Drainage
Exploratory well
76°15'
76°30'
76°45'
77°00'
18°30'
18°15'
18°00'

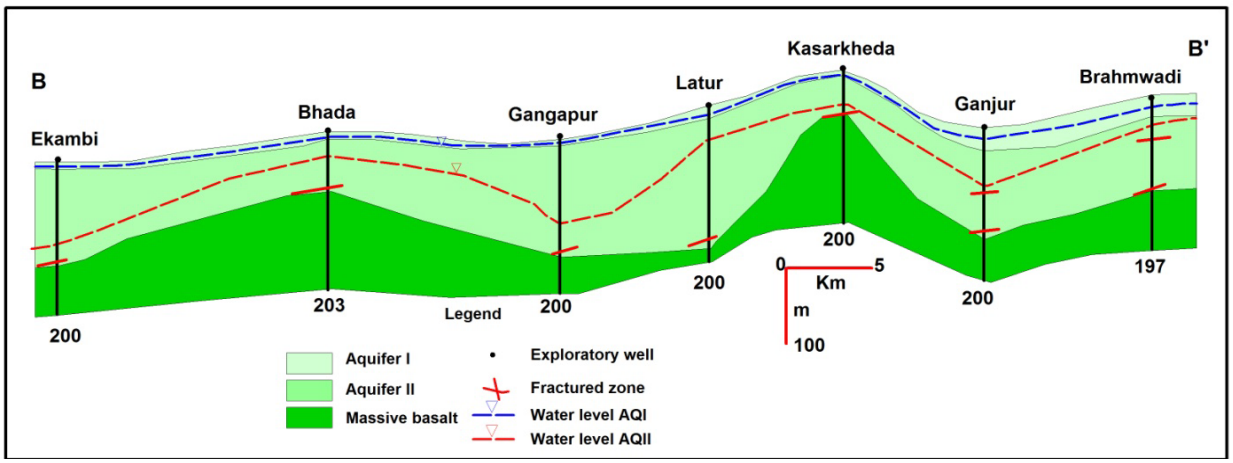
3 AQUIFER DISPOSITION

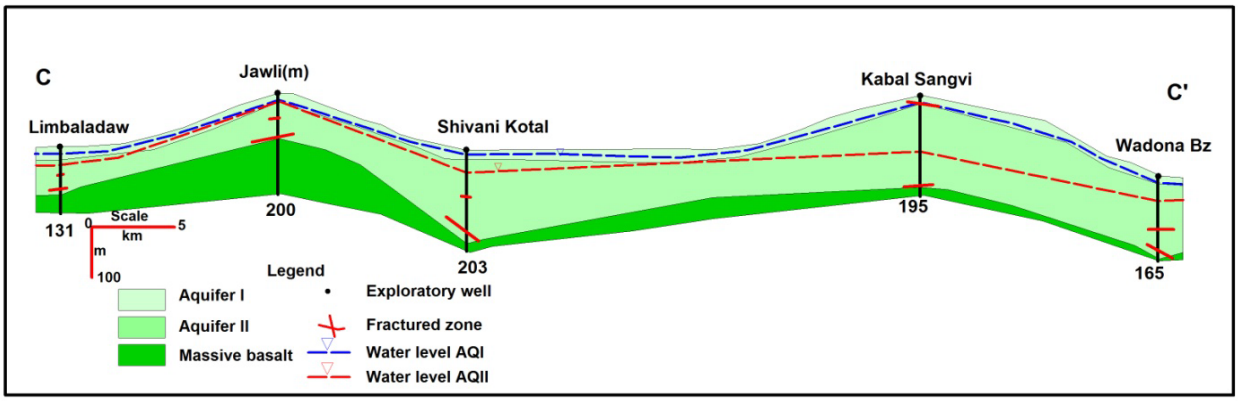
2-D and 3-D Aquifer Disposition	**Aquifer**: **Basalt**; **Aquifer I** - Weathered/Fractured Basalt: Depth range- 8 to 25 m and thickness of 6 to 18m. **Aquifer II** - Jointed/Fractured Basalt: Depth range - 20 to 189 m, Thickness – 0.5 to 9.0 m

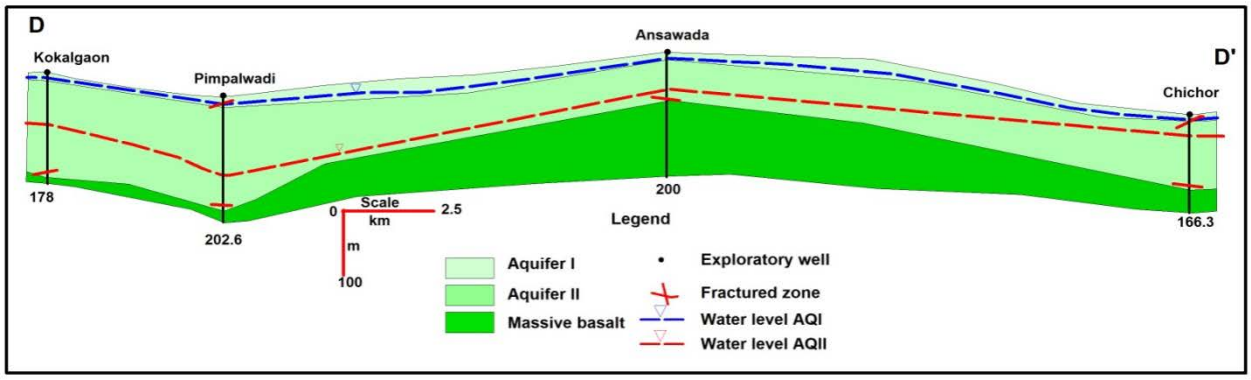


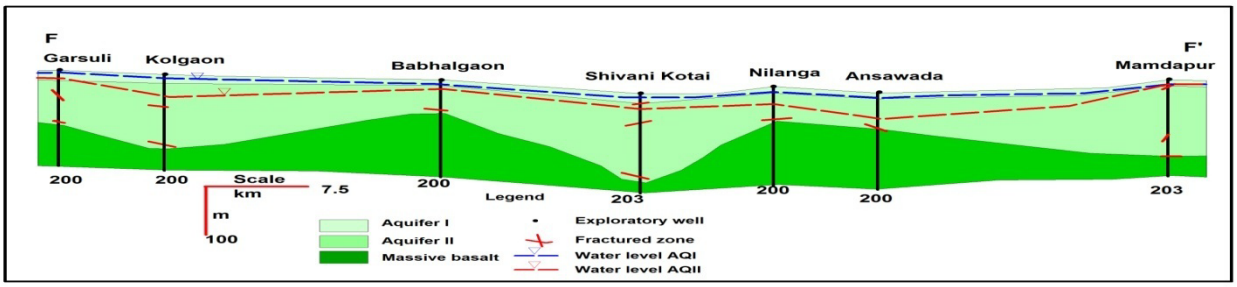

Reenapur
Lature
Ausa
Chakur
Nilanga
Garsuli
Wangdari
Kendrawadi
Talni
Ghansar
Chapuli
Ganjur
Pohregaon
Brahmwadi
Gadhwad
Renapur
Latur Road
Wadona Bz
Ganjur
Motephal
Nandgaon
Kasarkheda
Ashta Mod
Akharwai
Bhatkheda
Chakur
Kabal Sangvi
Chikurda
Devengrawadi
Murud
Latur
Babhalgaon
Bori
Niwali
Gangapur
Bhada
Ausa
Shivani Kotal
Killarwadi
Jawli (M)
Chichondi
Chincholi Son
Belkund
Ekambi
Nilanga
Ansarwada
Hanegaon
Limbaladaw
Pimpalwadi (jeori)
Kokalgaon
Kasar Sirsi
Mamdapur
Legend
Aquifer I-Jointed/Weatherd/Fractured basalt
Aquifer II-Fractured basalt
Massive basalt
Deccan trap
Exploratory well


A
A'
Marud
Motephal
Ganjur
Garsuli
200
200
200
200
Scale
0
km
2.5
m
100
Legend
Aquifer I
Aquifer II
Massive basalt
Exploratory well
Fractured zone
Water level AQI
Water level AQII

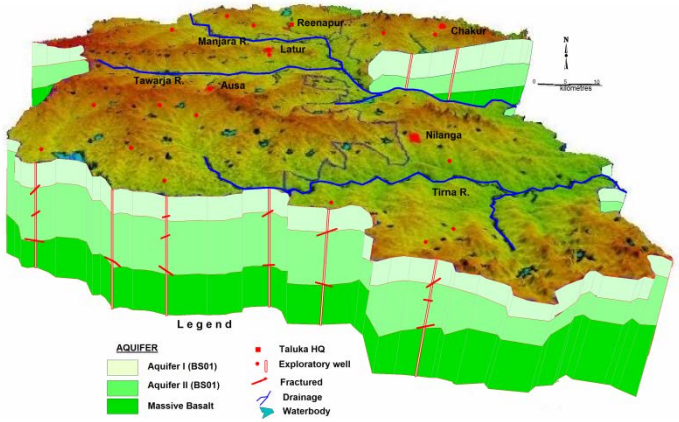

B
B'
Ekambi
Bhada
Gangapur
Latur
Kasarkheda
Ganjur
Brahmwadi
200
203
200
200
200
200
197
0
5
Km
m
100
Legend
Aquifer I
Aquifer II
Massive basalt
Exploratory well
Fractured zone
Water level AQI
Water level AQII


C
C'
Limbaladaw
Jawli(m)
Shivani Kotal
Kabal Sangvi
Wadona Bz
131
200
203
195
165
Scale
0
5
km
m
100
Legend
Aquifer I
Aquifer II
Massive basalt
Exploratory well
Fractured zone
Water level AQI
Water level AQII

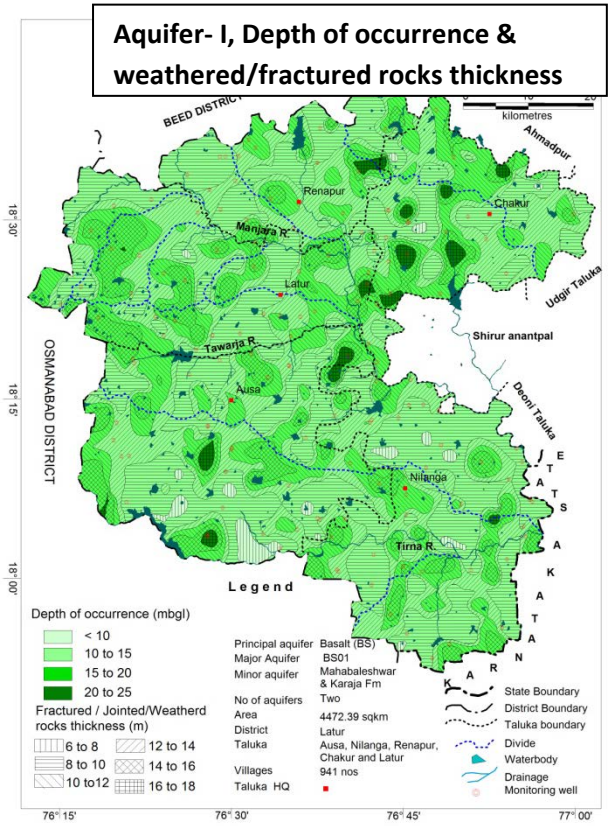

D
D'
Kokalgaon
Pimpalwadi
Ansawada
Chichor
178
202.6
200
166.3
Scale
0
2.5
km
m
100
Legend
Aquifer I
Aquifer II
Massive basalt
Exploratory well
Fractured zone
Water level AQI
Water level AQII


F
F'
Garsuli
Kolgaon
Babhalgaon
Shivani Kotai
Nilanga
Ansawada
Mamdapur
200
200
200
203
200
200
203
Scale
km
7.5
m
100
Legend
Aquifer I
Aquifer II
Massive basalt
Exploratory well
Fractured zone
Water level AQI
Water level AQII

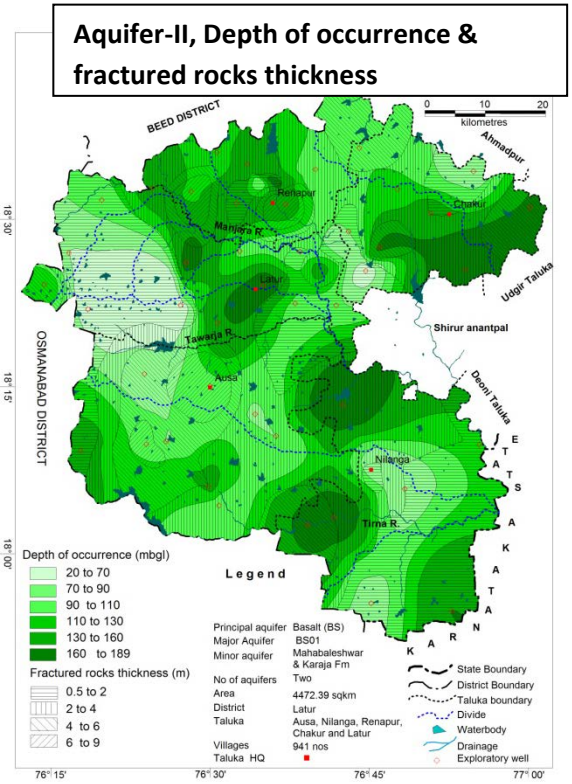
3-D Aquifer Disposition



Aquifer- I, Depth of occurrence & weathered/fractured rocks thickness



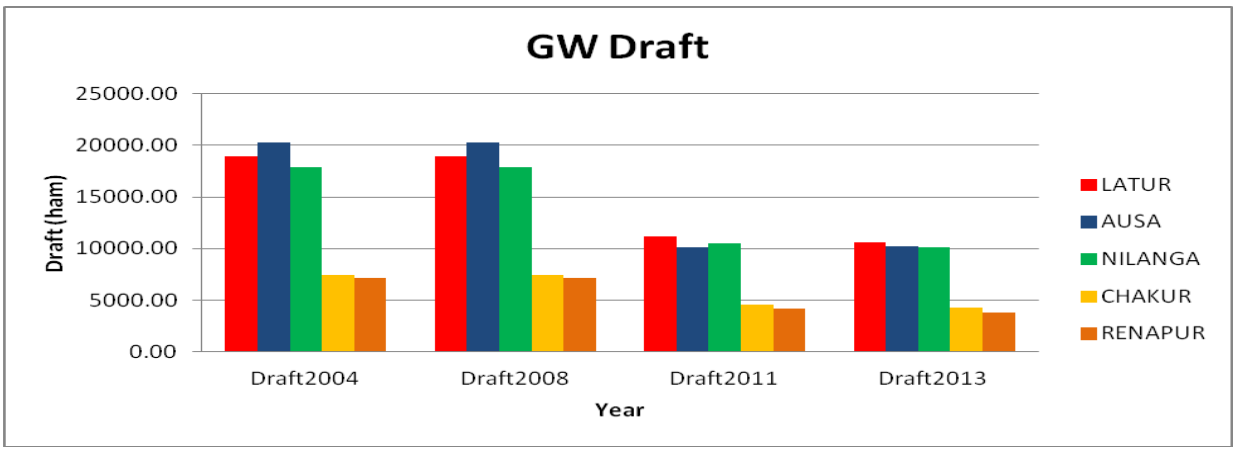
Aquifer-II, Depth of occurrence & fractured rocks thickness



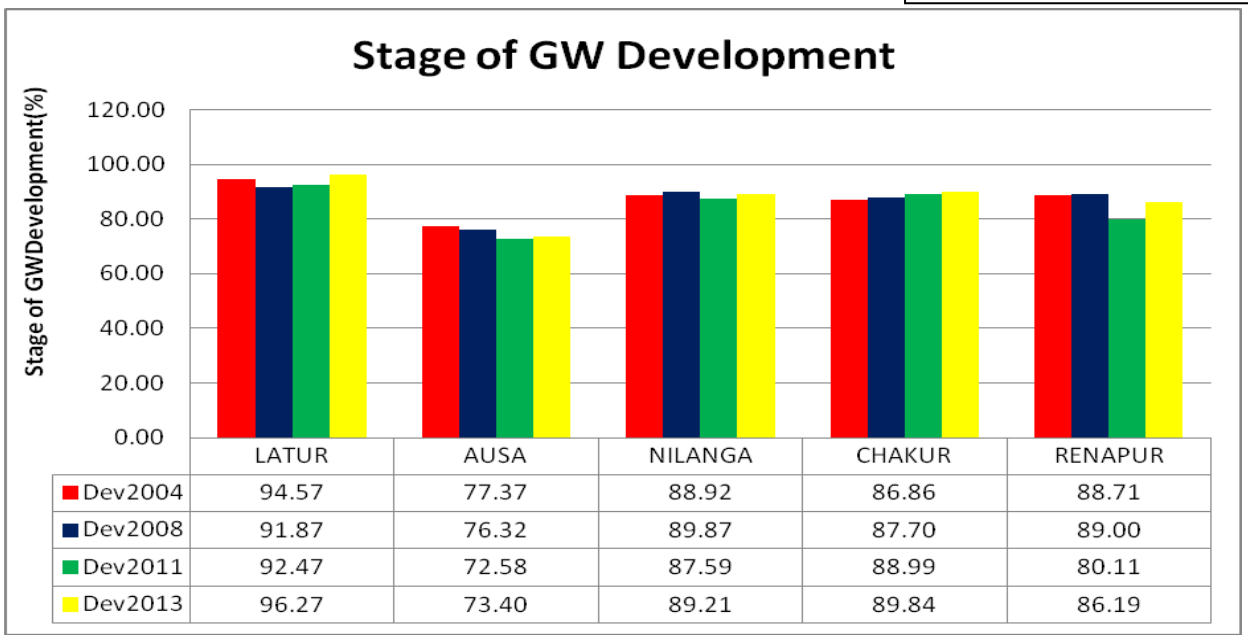
Aquifer	Formation	Depth range (mbgl)	SWL (mbgl)	Thickness (m)	Fractures Zones encountered (m bgl)	Yield	Sustaina-bility	Aquifer parameter (Transmissivity – m^2/day)	Sy/S	Suitability for drinking/ irrigation
Aquifer-I	Weathered/Fractured /Jointed Basalt	6-25	4.60 to 23.15	6 to 18	4 to 25	10 to 100 m^3/day	1 to 2 Hours – recurring	-	0.02	Yes for both (except Nitrate affected villages for drinking)
Aquifer-II	Jointed/Fractured Basalt	20-189	6 to > 50	0.5 to 9.0	20 to 189	25 - 200 LPM	1 to 2 hours	T- 10-25 m^2/day	0.0024 to 1.25 x10^{-4}	Yes for both

4 GROUND WATER RESOURCE, EXTRACTION, CONTAMINATION AND OTHER ISSUES

	Chakur	Renapur	Ausa	Nilanga	Latur
Aquifer wise Ground Water Resource availability and Extraction					
Ground Water Resource (MCM)					
Aquifer –I: upto 25 m					
Availability	47.94	44.41	138.58	113.15	110.26
Withdrawal	43.07	38.28	101.72	100.94	106.14
Ground Water Resource (MCM) **Aquifer –II:** 20 to 189 m					
Availability	2.5	2.68	5.69	0.74	1.261
Withdrawal	0	0	0	0	
Stage of GW Development	89.84%	86.19%	73.40%	89.21%	96.27%
Present Category	Safe	Safe	Safe	Safe	Semi-Critical
Ground Water Related Issues					
Over Exploitation	Stage of GW Development has increased over the period of time. Overdraft for irrigation purpose.				
Deeper Water Levels	In AQII Deeper Water Levels (DTW> 40 m) – Area 1980sq km				
Declining Water Levels	Declining Water Levels area –Pre-monsoon 2959 sq.km & Post-monsoon 1880 sq.km (Falling Trend > 0.20 m/yr)				
GW based irrigation of cash crops like sugarcane	Sugarcane crop (249.8.5sq.km)– water intensive crop.				
Micro Irrigation	About 50 % area of Sugarcane are under drip irrigation through GW, thus further scope of implementing WUE in Sugarcane crop,Banana,Onion and Grape crops				

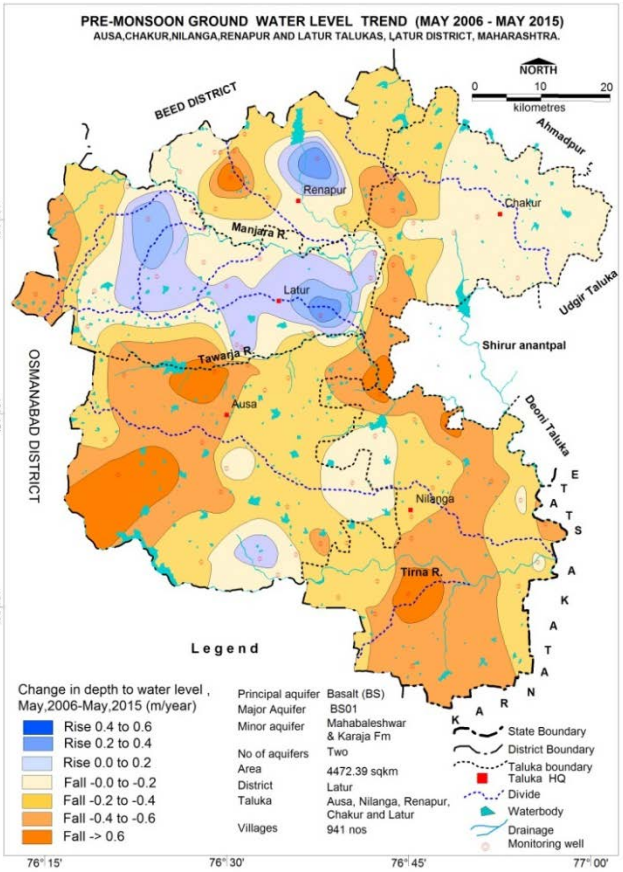


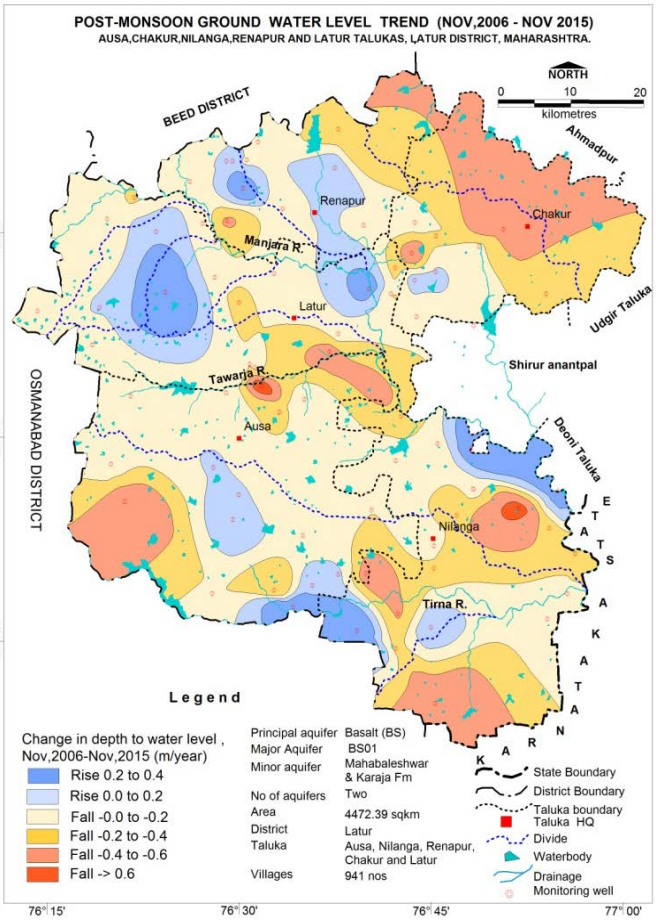
ISSUE: OVER-EXPLOITATION



	LATUR	AUSA	NILANGA	CHAKUR	RENAPUR
Dev2004	94.57	77.37	88.92	86.86	88.71
Dev2008	91.87	76.32	89.87	87.70	89.00
Dev2011	92.47	72.58	87.59	88.99	80.11
Dev2013	96.27	73.40	89.21	89.84	86.19

ISSUE: DECLINE OF WATER LEVEL



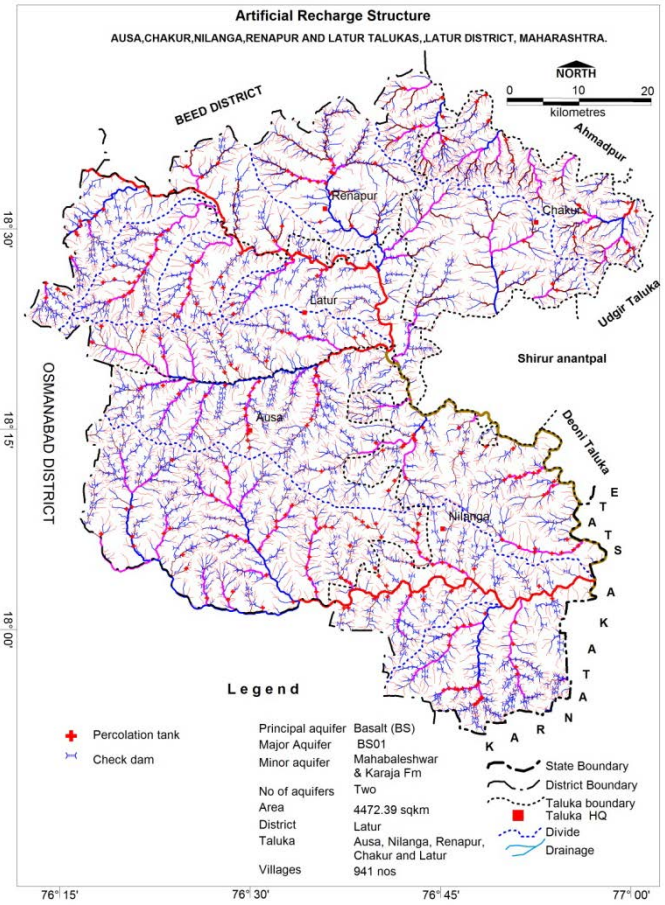


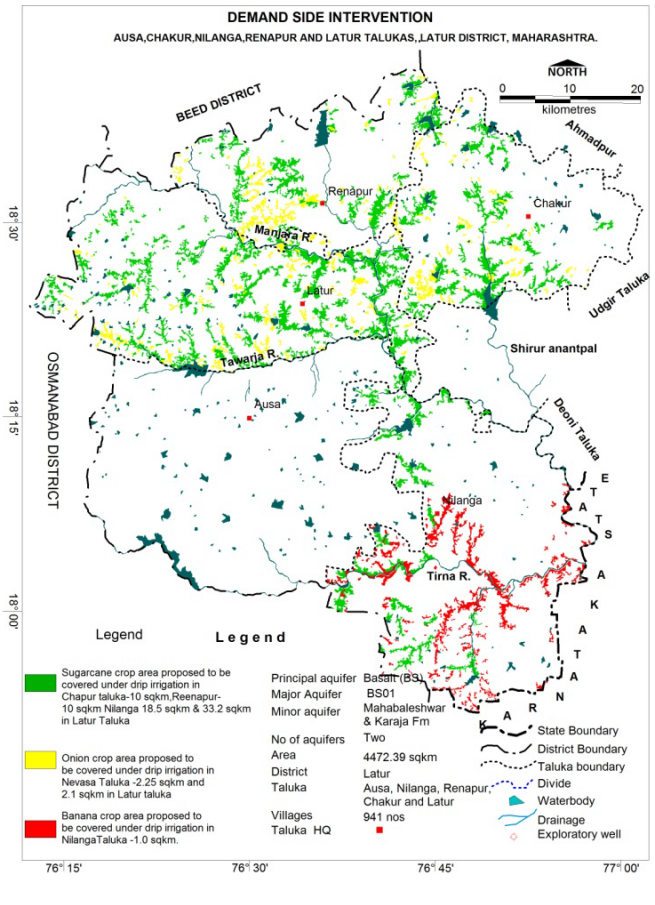
5 GROUND WATER RESOURCE ENHANCEMENT AND PROPOSED MANAGEMENT INTERVENTIONS

	Chakur	Renapur	Ausa	Nilanga	Lattur
5.1 Resource Enhancement by Supply Side Interventions					
Recharge Potential	10.84	13.3044	43.0476	38.0972	35.82
Surface water requirement @ 75% efficiency	14.41	17.694852	57.25331	50.6693	47.64
Availability of Surplus surface runoff	6.056	7.436	24.06	21.29	20.02
Surplus runoff considered for planning	6.056	7.436	24.06	21.29	20.02
Proposed Artificial Recharge Structures					
PT	21	26	84	75	70
CD	61	74	241	213	200
Volume of Water expected to be recharged @ 75% efficiency (MCM)	4.523	5.565	18.0225	16.0425	15
Proposed RTRWH					
Households to be covered	8700	7205	16110	15960	33472
Total RWH potential	0.246	0.185889	0.46	0.41	0.95

Rainwater harvested / recharged @ 80% runoff co-efficient	0.197	0.1487112	0.36	0.33	0.76
Estimated Expenditure (Rs. in Cr.)	13.05	10.8075	24.17	23.94	50.21
RTRWH Economically not viable & Not Recommended. Total estimated Cost of RTRWH would be- 122.17 Cr. For Harvesting 1.79 MCM of Rain Water.					
Total volume of water expected to be recharged/ conserved by AR	4.523	5.565	18.0225	16.0425	15
Total Estimated Expenditure for AR	49.8	61.2	198.3	176.4	165

Block	**Chakur**		**Renapur**		**Ausa**		**Nilanga**		**Latur**	
DEMAND SIDE INTERVENTIONS										
Cropping Pattern change-not recommended										
Micro irrigation techniques	**Cropped area**	**Proposed area**	**Cropped area**	**Proposed area**	**Cropped area**	**Proposed area**	**Cropped area**	**Proposed area**	**Cropped area**	**Proposed area**
Sugarcane cropped area (Sqkm)	**23.58**	**10**	**40.87**	**10**			**46.22**	**18.5**	**82.83**	33.2
Total volume of water expected to be saved	**8.3**		**8.3**				**15.355**		**27.565**	
Estimated Expenditure (Rs. in Cr.) @ Rs. 60,000/- per acre	**15**		**15**				**28.5**		**48**	
Onion cropped area	**2.25**	**2.25**							**3.5**	2.1
Total volume of water expected to be saved	**0.585**								**0.546**	
Estimated Expenditure (Rs. in Cr.) @ Rs. 60,000/- per acre	**3.375**								**3.15**	
Banana/Grape cropped area	**Grape-1.29**	**1.29**					**Banana-1.35**	**1**		
Total volume of water expected to be saved	**0.25**						**0.79**			
Estimated Expenditure (Rs. in Cr.) @ Rs. 60,000/- per acre	**1.935**						**1.5**			
Alternate Sources	**Nil**		**Nil**		**Nil**		**Nil**		**Nil**	


Artificial Recharge Structure
AUSA,CHAKUR,NILANGA,RENAPUR AND LATUR TALUKAS, ,LATUR DISTRICT, MAHARASHTRA.
NORTH
0 10 20
kilometres
BEED DISTRICT
Ahmadpur
Renapur
Chakur
Latur
Udgir Taluka
Shirur anantpal
OSMANABAD DISTRICT
Ausa
Deoni Taluka
Nilanga
LATASTAKA
Legend
Percolation tank
Check dam
Principal aquifer Basalt (BS)
Major Aquifer BS01
Minor aquifer Mahabaleshwar & Karaja Fm
No of aquifers Two
Area 4472.39 sqkm
District Latur
Taluka Ausa, Nilanga, Renapur, Chakur and Latur
Villages 941 nos
State Boundary
District Boundary
Taluka boundary
Taluka HQ
Divide
Drainage
18° 30'
18° 15'
18° 00'
76° 15'
76° 30'
76° 45'
77° 00'


DEMAND SIDE INTERVENTION
AUSA,CHAKUR,NILANGA,RENAPUR AND LATUR TALUKAS, ,LATUR DISTRICT, MAHARASHTRA.
NORTH
0 10 20
kilometres
BEED DISTRICT
Ahmadpur
Renapur
Chakur
Manjara R.
Latur
Udgir Taluka
Shirur anantpal
Tawarja R.
OSMANABAD DISTRICT
Ausa
Deoni Taluka
Nilanga
Tirna R.
LATASTAKA
Legend
Legend
Sugarcane crop area proposed to be covered under drip irrigation in Chapur taluka-10 sqkm,Reenapur-10 sqkm Nilanga 18.5 sqkm & 33.2 sqkm in Latur Taluka
Onion crop area proposed to be covered under drip irrigation in Nevasa Taluka -2.25 sqkm and 2.1 sqkm in Latur taluka
Banana crop area proposed to be covered under drip irrigation in NilangaTaluka -1.0 sqkm.
Principal aquifer Basalt (BS)
Major Aquifer BS01
Minor aquifer Mahabaleshwar & Karaja Fm
No of aquifers Two
Area 4472.39 sqkm
District Latur
Taluka Ausa, Nilanga, Renapur, Chakur and Latur
Villages 941 nos
Taluka HQ
State Boundary
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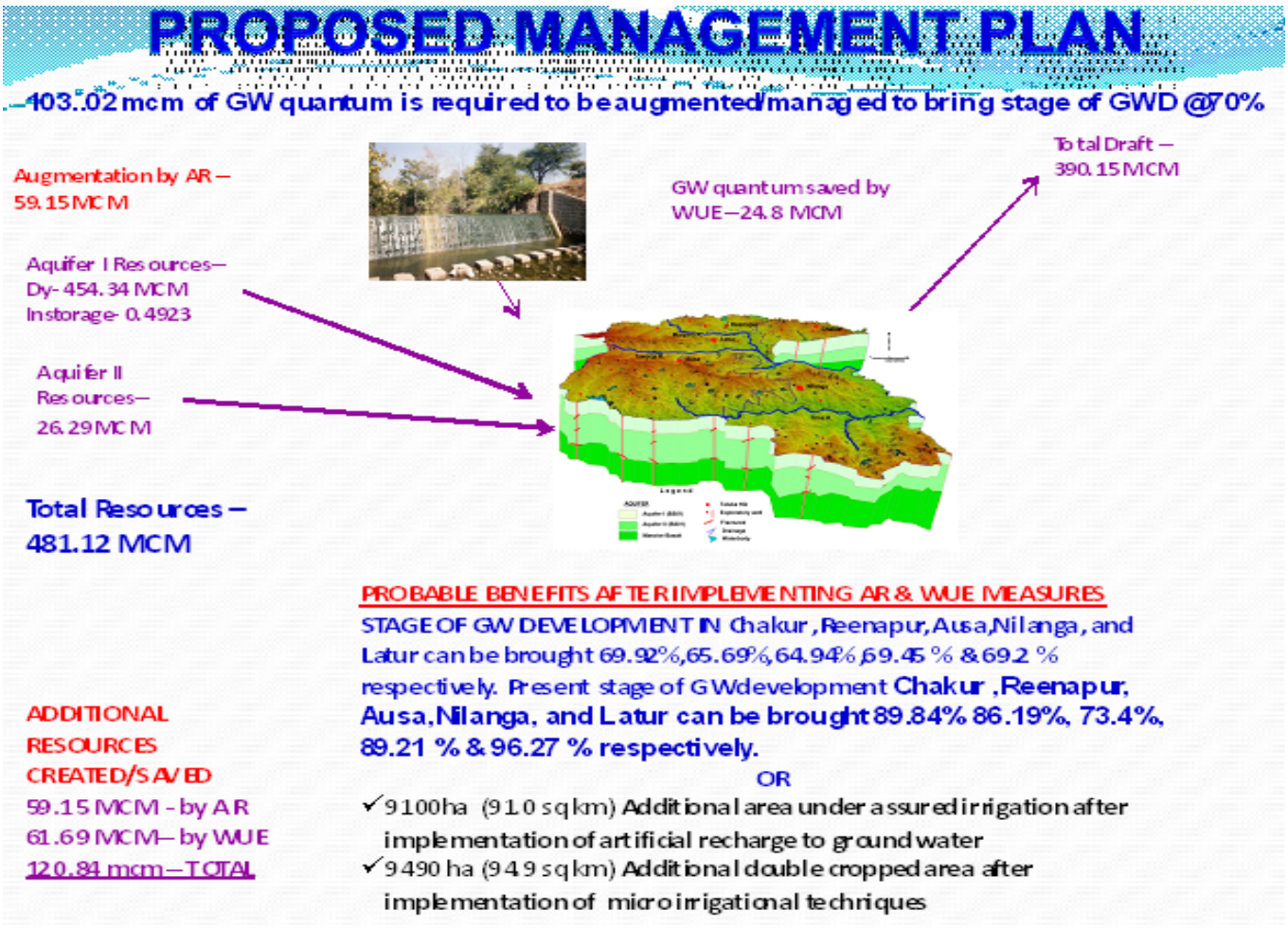
Taluka boundary
Divide
Waterbody
Drainage
Exploratory well
18° 30'
18° 15'
18° 00'
76° 15'
76° 30'
76° 45'
77° 00'



5.1 Probable Benefits

	Chakur	Renapur	Ausa	Nilanga	Lattur
GW resources available after implementing above measures (Artificial recharge and micro irrigation)	13.6575	13.865	18.0225	32.1875	43.111
Stage of GW Development after intervention in %	69.92	65.69	64.95	69.457	69.20

5.2 Regulatory Measures

	Chakur	Renapur	Ausa	Nilanga	Lattur
Regulatory Measures	Regulation of wells below 60 m	Regulation of wells below 60 m	Regulation of wells below 60 m	Regulation of wells below 60 m	

6 SUM UP

A thorough study was carried out based on data gap analysis, data generated in-house; data acquired from State Govt. departments and GIS maps prepared for various themes. All the available data was brought on GIS platform and an integrated approach was adopted for preparation of aquifer maps and aquifer management plans of Ausa,Chakur,Latur,Nilanga & Renapur Talukas of Latur district

The study area is spanning over 4472.39 sq.km. Geologically the area is occupied by Basalt and the stage of ground water development is 89.84 % in Chakur , 86.19 % in Renapur , 73.4 % in Ausa 89.21 in Nilanga and 96.27 % in Laturr taluka. The area has witnessed ground water depletion and over exploitation over a period of time. In Aquifer-I, the deeper water levels of >15 m bgl has been observed in central parts of Latur and Ausa talukas, southern parts of Nilanga taluka, while in Aquifer –II, deeper water levels of > 40 mbgl has been observed in major parts (about 1980 Sqkm in premonsoon) of the study area. The declining water level trend > 0.20 m/yr. has been observed in major part about 1808 sqkm during postmonsoon and 2959 sqkm during premonsoon trend(2006 to 2015). This has been due to cultivation of water intensive cash crop like Sugarcane (249.8 sq.km), which are completely dependent on ground water irrigation.

Ground water management plan has been prepared with the objective of bringing the current stage of ground water development down to 70% and decline of water level may be arrested, so that the taluka comes under Safe category by adopting both, supply side and demand side interventions.

As a part of supply side interventions, a total of 276 Percolation Tanks and 789 Check Dam is proposed in Ausa,Chakur,Latur,Nilanga & Renapur Talukas ,which will augment ground water resources to the tune of 59.15 MCM (41.4 MCM by Percolation Tanks and 17.75 MCM by Check Dam). The total cost of implementing these interventions will be Rs. 650.7 crore.

As a part of demand side interventions, change in irrigation techniques from surface flooding to drip irrigation is also proposed. A total of 71.7 sqkm out of 249.8 sqkm Sugarcane crop area in Ausa,Chakur,Latur,Nilanga & Renapur Talukas ,4.35 sqkm onion ,1.0 sqkm Banana and 1.29 sqkm Grape cropped is proposed to be covered under drip irrigation techniques instead of flood irrigation that will save 61.69 MCM of water resources. The total cost of implementing these interventions will be Rs 116.46 crore.

In Ausa,Chakur,Latur,Nilanga & Renapur Talukas, a total of 59.15 MCM resources will be augmented after adopting artificial recharge, whereas and 61.69 MCM will be saved after implementing water user efficiency measures (drip irrigation). This will bring the stage of ground water development to 69.92 % in Chakur , 65.69 % in Renapur , 64.95 % in Ausa 69.45 in Nilanga and 69.2 % in Laturr taluka respectively from the present stage of 89.84 % in Chakur , 86.19 % in Renapur , 73.4 % in Ausa 89.21 in Nilanga and 96.27 % in Laturr taluka This will probably result in arresting the decline of water levels. These interventions also need to be supported by regulation of deeper aquifer and hence it is recommended to regulate/ban deeper tubewells/borewells of more than 60 m depth in these talukas, so that the deeper ground water resources are protected for future generation and also serve as ground water sanctuary in times of distress/drought.

Similarly IEC activities and capacity building activities needs to be aggressively propagated to establish the institutional framework for participatory groundwater management.