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GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
CENTRAL GROUND WATER BOARD

PLAN ON
ARTIFICIAL RECHARGE TO GROUNDWATER AND
WATER CONSERVATION IN
RAMACHANDRAPURAM MANDAL, CHITTOOR DISTRICT,
ANDHRA PRADESH

SOUTHERN REGION
HYDERABAD
AUGUST-2016

PLAN ON
ARTIFICIAL RECHARGE TO GROUNDWATER AND
WATER CONSERVATION IN
RAMACHANDRAPURAM MANDAL, CHITTOOR DISTRICT,
ANDHRA PRADESH

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AT A GLANCE

Name of the Mandal	RAMACHANDRAPURAM
District	CHITTOOR
State	ANDHRA PRADESH
Total Area(sq. km)	143
Area suitable for Artificial Recharge (sq.km.)	114
Latitude and Longitude	13.457530 to 13.562800 and 79.235350 to 79.443060.
Average Annual Rainfall (mm)	1051
Geology	BGC
Average Depth To Water Level (Decadal) (Pre Monsoon)	7.50
Average Depth To Water Level (Decadal) (Post Monsoon)	4.50
Ground Water Resources (2011)	
Annual Replenishable Ground Water Resources (MCM/yr)	18.33
Net Annual Ground Water Availability(MCM)/yr	16.50
Net Annual Ground Water Draft(MCM)/yr	19.47
Projected Demand for Domestic and Industrial Use(MCM)/yr	1.81
Stage of Ground Water Development (%)	118
Surface runoff available (MCM)/yr	34.89
Total Storage Created in the Mandal by Various Agencies (MCM)/yr	3.38
Artificial Recharge/Conservation Measures	
Recharge Structures Proposed (No.s)	Percolation Tanks: 29, Check Dams: 76 Farm ponds: 460, Recharge Shafts: 240
Improving Water use Efficiency	Micro Irrigation System: 2300 ha
Tentative Total Cost in Lakhs (Rs.)	2648.41
Expected Recharge/Savings (MCM)/yr	13.37

1. INTRODUCTION

Ramachandrapuram Mandal is one of over-exploited Mandal in Chittoor district, Andhra Pradesh State, which is economically backward and chronically drought affected. The Mandal has 17 inhabited villages and with 23 gram panchayats.

2. LOCATION

The Mandal lies between north latitudes 13.457530 to 13.562800 and between east longitudes 79.235350 to 79.443060. The Mandal occupies the eastern part of the Chittoor district and is bounded on the north by Tirupati Rural Mandal, on the East by Narayanavanam Mandal, on the south by Ramakuppam Mandal and west by Chandragiri Mandal. (Fig.1) The geographical area of the Mandal is 143 sq.km.

3. PHYSIOGRAPHY AND DRAINAGE

The area is drained by streams which are tributaries of Palar River. The streams are mostly ephemeral in nature. The drainage pattern is dendritic, rectangular to sub rectangular due to the influence of geological structures. (Fig.2)

4. RAINFALL

The average rainfall in the Mandal is 1051 mm. The rainfall during the South-west monsoon season i.e., June-September accounts for about 85% of the total rainfall.

5. LAND USE PATTERN

Out of the total geographical area of 143 sq.km, the area covered by forest is 60.14 sq.km and the net area sown is 38.31 sq.km. Barren and uncultivable land is 8.23 sq.km. The land for non agricultural use accounts for 9.92 sq.km.(Fig.3).

6. HYDROGEOLOGY

The area is underlain by granitic gneisses of Archaean age (Fig.4). Ground water occurs in weathered and fractured zones under water table and semi- confined conditions. The weathered zone thickness as per the GEC report is 8 m. The weathered zone has been extensively tapped by dug and dug cum bore wells up to 20 m depth, which are mostly dry now. Ground water occurs in the fractured granites up to 200 m bgl. However, the potential fractures are encountered between 50-100 m bgl. The cumulative yield varies from 2-5 lps.

7. GROUND WATER LEVEL SCENARIO

The depth to water level during the pre-monsoon and post-monsoon varies from 10 to 20 m. The depth to water levels maps for pre and post monsoon period (2014) are shown in Fig 5 & 6 respectively. Decadal mean water level trend during post monsoon is depicted in the Fig.7.

8. DYNAMIC GROUND WATER RESOURCES

The Ground water availability, Utilization and stage of Development in Ramachandrapuram Mandal Chittoor District is given in Table-1.

Table-1: Ground water resources of Ramachandrapuram Mandal, Chittoor district.

Annual Replenishable Ground water resources (MCM)	18.33
Net Annual Ground Water Availability(MCM)/yr	16.50
Net Annual Ground Water Draft(MCM)/yr	19.47
Projected Demand for Domestic and Industrial use up to 2025. (MCM)	1.81
Stage of Ground water development (%).	118
Whether notified or not with year of notification.	No

9. NEED FOR ARTIFICIAL RECHARGE AND CONSERVATION METHODS

The ground water withdrawal is more than the recharge with a stage of development above hundred percent. The long term water level trend mostly shows a declining trend and the water levels are very deep ranging upto 20 m. The sustainability of bore wells has become questionable as many bore wells are either drying up or have recorded reduced yields. There is no surface water irrigation facility in the area. All these factors indicate that there is an urgent need for artificial recharge and water conservation in the Mandal.

10. JUSTIFICATION OF THE ARTIFICIAL RECHARGE PROJECT

Ramachandrapuram Mandal falls under high stage of ground water development i.e., 118 % and with sufficient amount of uncommitted surface runoff. The area is completely dependent on ground water for domestic, industrial and irrigation purposes. During the monsoons runoff quickly flows out of the area without natural recharge to ground water. It is necessary to apply artificial recharge techniques to allow more and more recharge through check dams, PTs, MPTs, farm ponds, recharge shafts to cope up with the withdrawal pattern and also to improve ground water situation through various interventions including on farm activities and micro irrigation systems (Sprinkler-Drip-HDPE).

11. AVAILABILITY OF SURPLUS, SURFACE WATER FOR ARTIFICIAL RECAHRGE OR CONSERVATION

The runoff was calculated by taking into account of normal rainfall of the mandal and corresponding runoff yield from Strangers table. The existing storage created by various artificial recharge structures constructed by the State Government, if any, was deducted for calculating the runoff yield to recommend new AR structures.

Total Geographical area (Sq.kms)	143
Hilly Area (Sq.kms)	29
Area suitable for Artificial Recharge (sq.km.)	114
Runoff Yield in MCM/yr.	34.89
Existing No. of Check Dams	164
Storage created MCM/yr.	1.169
Existing No. of Percolation Tanks	314
Storage created MCM/yr.	2.22
Total Existing Storage Created	3.38

12. FEASIBLE ARTIFICIAL RECHARGE STRUCTURES

Since the mandal is categorized as over exploited, there is an immediate need for improving ground water scenario and to ensure sustainability of ground water sources. It is also suggested to create additional storage capacity of surface water bodies which would result in supplementing irrigation thereby reducing the ground water draft. The run off available in the mandal has been assessed as 31.51 MCM/yr, which could be considered for further planning of artificial recharge. However, the number of artificial recharge structures feasible has been recommended in areas, by considering the utilizable yield, number of existing structures, land use, drainage pattern and also where the post monsoon water levels (decadal mean) are more than 5 m bgl., and or decadal trends are either falling or showing insignificant raising trend

A) Check dams and Percolation Tanks

The area is covered by seasonal nalas – drains, which carry discharge during monsoon period along with silt load and debauched into the water bodies within a short duration. It is proposed to identify such nalas for construction of check dams/Percolation tank with recharge shafts, so as to harness ground water and to increase soil moisture content.

- The site selected for check dam/Percolation Tank should have sufficient thickness of permeable soils or weathered material to facilitate recharge of stored water within a short span of time. The water stored in these structures is mostly confined to the stream course and height is normally less than 2m.
- These are designed based on stream width and excess water is allowed to flow over the crest wall. In order to avoid scouring from excess runoff water cushions are provided on the downstream side. To harness maximum runoff in the stream, a series of such check dams can be constructed to have recharge on a regional scale.
- Considering the annual monsoon rainfall of 1051 mm, sufficient rain water can be harnessed. This will improve ground water regime as well as delaying the instant flow into the main river.
- The flow in these seasonal rivers can be sustained up to about 2 to 3 months after monsoon.

- Recharge trenches can also be constructed along upstream side of the check dam/Percolation Tank in the impoundment area for enhancing the ground water recharge rate.

Thus, a total of 76 **Check dams and 29 Percolation tanks** are recommended.

B). Recharge Shafts

The existing check dams and percolation tanks lose their storage capacity as well as recharge capacity due to siltation. Hence, Recharge shafts are recommended in the existing Check dams and Percolation tanks to enhance the ground water recharge. During the heavy downpours, there will be sufficient accumulation of runoff, which can also effectively be utilized for recharge by constructing recharge shafts. Hence, it is proposed to construct 83 and 157 recharge shafts of 165 mm dia with 30 m depth in the existing check dams and percolation tanks respectively.

C). Farm Ponds

A farm pond is a large dug out in the earth, usually square or rectangular in shape, which harvests rain water and stores it for future use. It has an inlet to regulate inflow and an outlet to discharge excess water. The pond is surrounded by a small bund, which prevents erosion on the banks of the pond. The size and depth depend on the amount of land available; the type of soil water from the farm pond is conveyed to the fields manually, by pumping, or by both methods.

Advantages of Farm Ponds

- They provide water to start growing crops, without waiting for rain to fall.
- They provide irrigation water during dry spells between rainfalls. This increases the yield, the number of crops in one year, and the diversity of crops that can be grown.
- Bunds can be used to raise vegetables and fruit trees, thus supplying the farm household with an additional source of income and of nutritious food.
- Farmers are able to apply adequate farm inputs and perform farming operations at the appropriate time, thus increasing their productivity and their confidence in farming.
- They check soil erosion and minimize siltation of waterways and reservoirs.
- They supplies water for domestic purposes and livestock.
- They promote fish rearing.
- They recharge the ground water.
- They improve drainage.

- The excavated earth has a very high value and can be used to enrich soil in the fields, levelling land, and constructing farm roads.

As per the Land use classification, majority of the area is covered by the agricultural field. Hence, it is proposed to construct 460 farm ponds in 23 villages of the Mandal @ 20 farm ponds in each village.

D). Micro Irrigation System (Sprinkler /drip/HDPE pipes)

Micro irrigation is defined as the frequent application of small quantities of water directly above and below the soil surface; usually as discrete drops, continuous drops or tiny streams through emitters placed along a water delivery line. In flood/furrow irrigation method more than 50% of applied water is wasted through seepage to deeper level, localized inundation causes loss through evaporation and it leaches out the nutrients from the plant. While through drip & sprinkler irrigation wastages of irrigational water could be minimized. The studies on different crops, has revealed that irrigation water is saved drastically. The conveyance losses (mainly seepage & evaporation) can be saved up to 25 to 40% through utilization of HDPE pipes. Initially the scheme is proposed to be implemented in worst affected areas showing deepest water levels and significant declining trends. It is proposed to take up micro irrigation system in 2300 ha @ 100 ha per village.

13. TENTATIVE COST ESTIMATES (RAMACHANDRAPURAM MANDAL)

S.No.	Feasible Artificial Recharge & Water Conservation structures/	No. of Structures/ Quantity	Total Volume (MCM)	Tentative unit cost (in Rs lakh)	Total tentative cost (in Rs Lakh)	Expected Annual GW recharge/savings (MCM)
1	Proposed Masonry Check dams Crest Length -10-15 m, Height-1-2 m) (0.007 MCM*4 fillings)	76	2.128	5	380	1.596
2	Recharge shaft in Check dam (50% of the existing Check dams)	83	0.913	0.5	41.5	0.913
3	Proposed Percolation Tanks (100*100*2.5)* 4 fillings)	29	2.9	15	435	2.175
4	Renovation Desilting, Repairs and installation of Recharge Shafts in existing PTS (50% of the existing PTS)	157	1.727	1	157	1.727
5	Proposed Farm Pond (6 filling) 5*5*1.5 dimension @ 20 farm ponds per each village	460	0.06624	0.25	115	0.059616
6	Proposed Sprinkler/drip/HDPE pipes for 100 ha in each village	2300	13.8	0.6	1380	6.9
7	Proposed Piezometers up to 50 mbgl @ one PZ per Village	23	0	0.6	13.8	0
8 (i)	Total (No. of AR Structures)	828	7.73		1142.3	6.471
8 (ii)	Total (ha)	2300			1380	6.9
	Total (8(i) + 8 (ii))				2522.3	13.371
9	Impact Assessment & O & M -5 % of Total cost of the Scheme				126.115	
	Grand Total				2648.415	

*(Expected annual GW Recharge/Savings MCM - CDS& PTS: 75%, Farm ponds - 90%, Sprinklers-50%, Recharge shafts in existing CDS and PTS-100%)

Note: The type, number and cost of structure may vary according to site, after the ground truth verification.

14. TIME SCHEDULE

Steps	Quarters							
	1st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th
Identification of line department/implementing agency and preparation of DPR								
Approval of Scheme and releases of sanction of funds								
Implementation of ARS								

Phase = one quarter or 3 months or equivalent to financial quarter

A). Operation and Maintenance

In all projects impact assessment has to be carried out to ensure that project is economically viable, socially equitable and environmentally sustainable by inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse. Accordingly it is proposed to have impact assessment as well as operation & Maintenance at the rate of 5% of the total cost of the project for 5 years from the completion of artificial recharge project.

B). Expected Benefits

The benefits of the project are:

1. The implementation of the project would result in additional recharge/Ground water savings to the tune of 13.371 MCM.
2. Ground water recharge will help in arresting the rapid decline in ground water resources and will also ensure improvement in quality of ground water by dilution.
3. Proposed structures and measures will also enhance the ground water potential and would ensure sustainability of ground water resources. It is estimated that the stage of ground water development may likely to be reduced from the present 118% to 65% (53%)
4. It will also help in controlling soil erosion.

Acknowledgements

The data received from the Director Ground Water Department Andhra Pradesh in respect of the basic inputs is duly acknowledged. The information on existing Artificial Recharge Structures have been taken from the EMUSTER, Department of Rural Development, Government of AP.

EXISTING ARTIFICIAL RECHARGE STRUCTURES
RAMACHANDRAPURAM MANDAL, CHITTOOR DISTRICT, AP

S.no	Gram Panchayat	Habitation	Structure Type	Longitude	Latitude	Scheme
1	Rayal cheruvu	Rayal Cheruvu	Check Dam	79.3855	13.4987	NREGS
2	Rayal cheruvu	Rayal Cheruvu	Check Dam	79.3831	13.4938	NREGS
3	Rayal cheruvu	Rayal Cheruvu	Check Dam	79.3826	13.4910	NREGS
4	Rayal cheruvu	Rayal Cheruvu	Check Dam	79.3797	13.4853	NREGS
5	Rayal cheruvu	Rayal Cheruvu	Check Dam	79.3770	13.4822	NREGS
6	Pathakandalavari palli	Pathakandalavari Pal	Check Dam	79.4286	13.5530	NREGS
7	Pullamanaidu kandriga	Pillari Kona	Check Dam	79.3372	13.4848	NREGS
8	Gangireddi palle	Gangireddi Palle	Check Dam	79.3916	13.5331	NREGS
9	Nadavaluru	Nadavaluru	Check Dam	79.4232	13.5415	NREGS
10	Nadavaluru	Nadavaluru	Check Dam	79.4192	13.5395	NREGS
11	Nadavaluru	Nadavaluru	Check Dam	79.4176	13.5375	NREGS
12	Nadavaluru	Nadavaluru	Check Dam	79.4095	13.5370	NREGS
13	Nadavaluru	Nadavaluru	Check Dam	79.4139	13.5394	NREGS
14	Nennuru	Nennuru	Check Dam	79.4277	13.5499	NREGS
15	Kothavepa kuppam	Kothavepa Kuppam	Check Dam	79.3062	13.4930	NREGS
16	Kothavepa kuppam	Kune Palle	Check Dam	79.3047	13.4859	NREGS
17	Kothavepa kuppam	Kune Palle	Check Dam	79.3090	13.4817	NREGS
18	Kothavepa kuppam	Kune Palle	Check Dam	79.3043	13.4892	NREGS
19	Kothavepa kuppam	Kune Palle	Check Dam	79.3027	13.4917	NREGS
20	Kothavepa kuppam	Kune Palle	Check Dam	79.3053	13.4921	NREGS
21	Kothavepa kuppam	Kune Palle H.W	Check Dam	79.3037	13.4930	NREGS
22	K.k. venkata puram	Kattakinda Venkatapu	Check Dam	79.4301	13.5595	NREGS
23	K.k. venkata puram	Kattakinda Venkatapu	Check Dam	79.4286	13.5594	NREGS
24	K.k. venkata puram	Kattakinda Venkatapu	Check Dam	79.4273	13.5596	NREGS
25	N.r.kammapalle	Padamara Madigapalle	Check Dam	79.3509	13.4977	NREGS
26	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3439	13.5159	NREGS
27	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3439	13.5139	NREGS
28	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3444	13.5115	NREGS
29	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3437	13.5089	NREGS
30	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3444	13.5061	NREGS
31	Mitta kandriga	Mitta Kandriga	Check Dam	79.4195	13.4948	NREGS
32	Mitta kandriga	Mitta Kandriga	Check Dam	79.4194	13.4944	NREGS
33	Mitta kandriga	Mitta Kandriga	Check Dam	79.4184	13.4980	NREGS
34	Mitta kandriga	Mitta Kandriga	Check Dam	79.4176	13.5003	NREGS
35	Mitta kandriga	Mitta Kandriga	Check Dam	79.4160	13.5018	NREGS
36	Mitta kandriga	Motavari Kandriga	Check Dam	79.4191	13.4961	NREGS
37	Netha kuppam	Lothattu Venkata Pur	Check Dam	79.3206	13.5164	NREGS
38	Netha kuppam	Lothattu Venkata Pur	Check Dam	79.3188	13.5193	NREGS
39	Netha kuppam	Netha Kuppam	Check Dam	79.3325	13.4899	NREGS

40	Netha kuppam	Netha Kuppam	Check Dam	79.3325	13.4877	NREGS
41	Netha kuppam	Netha Kuppam	Check Dam	79.3328	13.4968	NREGS
42	Netha kuppam	Netha Kuppam	Check Dam	79.3308	13.4991	NREGS
43	Netha kuppam	Netha Kuppam	Check Dam	79.3309	13.5010	NREGS
44	Netha kuppam	Netha Kuppam	Check Dam	79.3306	13.5020	NREGS
45	Netha kuppam	Netha Kuppam	Check Dam	79.3221	13.5146	NREGS
46	Netha kuppam	Netha Kuppam	Check Dam	79.3237	13.5085	NREGS
47	Netha kuppam	Netha Kuppam	Check Dam	79.3251	13.5048	NREGS
48	Netha kuppam	Netha Kuppam H.W	Check Dam	79.3294	13.5005	NREGS
49	Netha kuppam	Netha Kuppam H.W	Check Dam	79.3273	13.5017	NREGS
50	Netha kuppam	Netha Kuppam H.W	Check Dam	79.3263	13.5031	NREGS
51	Netha kuppam	Palamakulapalli	Check Dam	79.3242	13.5076	NREGS
52	Netha kuppam	Palamakulapalli	Check Dam	79.3233	13.5097	NREGS
53	Netha kuppam	Parvathipuram	Check Dam	79.3317	13.5042	NREGS
54	P.venkateswar puram	Baliya Palli	Check Dam	79.3680	13.5249	NREGS
55	P.venkateswar puram	Baliya Palli	Check Dam	79.3701	13.5239	NREGS
56	P.venkateswar puram	Baliya Palli	Check Dam	79.3694	13.5223	NREGS
57	P.venkateswar puram	Baliya Palli	Check Dam	79.3763	13.5206	NREGS
58	P.venkateswar puram	Baliya Palli	Check Dam	79.3805	13.5182	NREGS
59	P.venkateswar puram	Baliya Palli	Check Dam	79.3730	13.5238	NREGS
60	P.venkateswar puram	P.Venkateshwara Pura	Check Dam	79.3819	13.5314	NREGS
61	P.venkateswar puram	P.Venkateshwara Pura	Check Dam	79.3843	13.5315	NREGS
62	P.venkateswar puram	Sanjeeva Raya Puram	Check Dam	79.3826	13.5203	NREGS
63	P.venkateswar puram	Sanjeeva Raya Puram	Check Dam	79.3861	13.5237	NREGS
64	Kothakandriga	Sriramapuram	Check Dam	79.4174	13.5107	NREGS
65	Kothakandriga	T.Vandla Sapparlu	Check Dam	79.4068	13.5040	NREGS
66	Kothakandriga	T.Vandla Sapparlu	Check Dam	79.4159	13.5024	NREGS
67	Kothakandriga	T.Vandla Sapparlu	Check Dam	79.4184	13.5056	NREGS
68	Kothakandriga	Thatithopu Kandriga	Check Dam	79.4167	13.5112	NREGS
69	Kothakandriga	Thatithopu Kandriga	Check Dam	79.4094	13.5113	NREGS
70	Kammakandriga	Kammakandriga	Check Dam	79.3997	13.5550	NREGS
71	Kammakandriga	Kammakandriga	Check Dam	79.4003	13.5560	NREGS
72	Kammakandriga	Kammakandriga	Check Dam	79.3976	13.5297	NREGS
73	Anupalle	Nemallagunta Palle	Check Dam	79.2842	13.4994	NREGS
74	Anupalle	Nemallagunta Palle	Check Dam	79.2967	13.4893	NREGS
75	Anupalle	Nuthuguntla Palle	Check Dam	79.3009	13.5011	NREGS
76	Anupalle	Nuthuguntla Palle	Check Dam	79.3067	13.5030	NREGS
77	Anupalle	Nuthuguntla Palle	Check Dam	79.3014	13.5017	NREGS
78	Anupalle	Rekulachenu	Check Dam	79.2879	13.4954	NREGS
79	Anupalle	Uppala Vanka	Check Dam	79.2605	13.4885	NREGS
80	Chitathur kale palle	Kale Palle	Check Dam	79.3648	13.4958	NREGS
81	Chitathur kale palle	Kale Palle	Check Dam	79.3589	13.5014	NREGS

82	Chitathur kale palle	Suravari Palli	Check Dam	79.3564	13.5101	NREGS
83	Kammapalli	Desuri Kandriga	Check Dam	79.4504	13.5500	NREGS
84	Kammapalli	Gaddamidakandriga H.	Check Dam	79.4512	13.5502	NREGS
85	Kammapalli	Kamma Palle	Check Dam	79.4499	13.5502	NREGS
86	Royal cheruvu	Royal Cheruvu	Check Dam	79.3855	13.4987	IWMP
87	Royal cheruvu	Royal Cheruvu	Check Dam	79.3831	13.4938	IWMP
88	Royal cheruvu	Royal Cheruvu	Check Dam	79.3826	13.4910	IWMP
89	Royal cheruvu	Royal Cheruvu	Check Dam	79.3797	13.4853	IWMP
90	Royal cheruvu	Royal Cheruvu	Check Dam	79.3770	13.4822	IWMP
91	Pathakandalavari palli	Pathakandalavari Pal	Check Dam	79.4286	13.5530	IWMP
92	Pullamanaidu kandriga	Pillari Kona	Check Dam	79.3372	13.4848	IWMP
93	Gangireddi palle	Gangireddi Palle	Check Dam	79.3916	13.5331	IWMP
94	Nadavaluru	Nadavaluru	Check Dam	79.4232	13.5415	IWMP
95	Nadavaluru	Nadavaluru	Check Dam	79.4192	13.5395	IWMP
96	Nadavaluru	Nadavaluru	Check Dam	79.4176	13.5375	IWMP
97	Nadavaluru	Nadavaluru	Check Dam	79.4095	13.5370	IWMP
98	Nadavaluru	Nadavaluru	Check Dam	79.4139	13.5394	IWMP
99	Nennuru	Nennuru	Check Dam	79.4277	13.5499	IWMP
100	Kothavepa kuppam	Kothavepa Kuppam	Check Dam	79.3062	13.4930	IWMP
101	Kothavepa kuppam	Kune Palle	Check Dam	79.3047	13.4859	IWMP
102	Kothavepa kuppam	Kune Palle	Check Dam	79.3090	13.4817	IWMP
103	Kothavepa kuppam	Kune Palle	Check Dam	79.3043	13.4892	IWMP
104	Kothavepa kuppam	Kune Palle	Check Dam	79.3027	13.4917	IWMP
105	Kothavepa kuppam	Kune Palle	Check Dam	79.3053	13.4921	IWMP
106	Kothavepa kuppam	Kune Palle H.W	Check Dam	79.3037	13.4930	IWMP
107	K.k. venkata puram	Kattakinda Venkatapu	Check Dam	79.4301	13.5595	IWMP
108	K.k. venkata puram	Kattakinda Venkatapu	Check Dam	79.4286	13.5594	IWMP
109	K.k. venkata puram	Kattakinda Venkatapu	Check Dam	79.4273	13.5596	IWMP
110	N.r.kammapalle	Padamara Madigapalle	Check Dam	79.3509	13.4977	IWMP
111	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3439	13.5159	IWMP
112	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3439	13.5139	IWMP
113	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3444	13.5115	IWMP
114	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3437	13.5089	IWMP
115	N.r.kammapalle	Thimmarajupalle	Check Dam	79.3444	13.5061	IWMP
116	Netha kuppam	Lothattu Venkata Pur	Check Dam	79.3206	13.5164	IWMP
117	Netha kuppam	Lothattu Venkata Pur	Check Dam	79.3188	13.5193	IWMP
118	Netha kuppam	Netha Kuppam	Check Dam	79.3325	13.4899	IWMP
119	Netha kuppam	Netha Kuppam	Check Dam	79.3325	13.4877	IWMP
120	Netha kuppam	Netha Kuppam	Check Dam	79.3328	13.4968	IWMP
121	Netha kuppam	Netha Kuppam	Check Dam	79.3308	13.4991	IWMP
122	Netha kuppam	Netha Kuppam	Check Dam	79.3309	13.5010	IWMP
123	Netha kuppam	Netha Kuppam	Check Dam	79.3306	13.5020	IWMP

124	Netha kuppam	Netha Kuppam	Check Dam	79.3221	13.5146	IWMP
125	Netha kuppam	Netha Kuppam	Check Dam	79.3237	13.5085	IWMP
126	Netha kuppam	Netha Kuppam	Check Dam	79.3251	13.5048	IWMP
127	Netha kuppam	Netha Kuppam H.W	Check Dam	79.3294	13.5005	IWMP
128	Netha kuppam	Netha Kuppam H.W	Check Dam	79.3273	13.5017	IWMP
129	Netha kuppam	Netha Kuppam H.W	Check Dam	79.3263	13.5031	IWMP
130	Netha kuppam	Palamakulapalli	Check Dam	79.3242	13.5076	IWMP
131	Netha kuppam	Palamakulapalli	Check Dam	79.3233	13.5097	IWMP
132	Netha kuppam	Parvathipuram	Check Dam	79.3317	13.5042	IWMP
133	P.venkateswar puram	Baliya Palli	Check Dam	79.3680	13.5249	IWMP
134	P.venkateswar puram	Baliya Palli	Check Dam	79.3701	13.5239	IWMP
135	P.venkateswar puram	Baliya Palli	Check Dam	79.3694	13.5223	IWMP
136	P.venkateswar puram	Baliya Palli	Check Dam	79.3763	13.5206	IWMP
137	P.venkateswar puram	Baliya Palli	Check Dam	79.3805	13.5182	IWMP
138	P.venkateswar puram	Baliya Palli	Check Dam	79.3730	13.5238	IWMP
139	P.venkateswar puram	P.Venkateshwara Pura	Check Dam	79.3819	13.5314	IWMP
140	P.venkateswar puram	P.Venkateshwara Pura	Check Dam	79.3843	13.5315	IWMP
141	P.venkateswar puram	Sanjeeva Raya Puram	Check Dam	79.3826	13.5203	IWMP
142	P.venkateswar puram	Sanjeeva Raya Puram	Check Dam	79.3861	13.5237	IWMP
143	Kammakandriga	Kammakandriga	Check Dam	79.3997	13.5550	IWMP
144	Kammakandriga	Kammakandriga	Check Dam	79.4003	13.5560	IWMP
145	Kammakandriga	Kammakandriga	Check Dam	79.3976	13.5297	IWMP
146	Anupalle	Nemallagunta Palle	Check Dam	79.2842	13.4994	IWMP
147	Anupalle	Nemallagunta Palle	Check Dam	79.2967	13.4893	IWMP
148	Anupalle	Nuthuguntla Palle	Check Dam	79.3009	13.5011	IWMP
149	Anupalle	Nuthuguntla Palle	Check Dam	79.3067	13.5030	IWMP
150	Anupalle	Nuthuguntla Palle	Check Dam	79.3014	13.5017	IWMP
151	Anupalle	Rekulachenu	Check Dam	79.2879	13.4954	IWMP
152	Anupalle	Uppala Vanka	Check Dam	79.2605	13.4885	IWMP
153	Chitathur kale palle	Kale Palle	Check Dam	79.3648	13.4958	IWMP
154	Chitathur kale palle	Kale Palle	Check Dam	79.3589	13.5014	IWMP
155	Chitathur kale palle	Suravari Palli	Check Dam	79.3564	13.5101	IWMP
156	Kammapalli	Desuri Kandriga	Check Dam	79.4504	13.5500	IWMP
157	Kammapalli	Gaddamidakandriga H.	Check Dam	79.4512	13.5502	IWMP
158	Kammapalli	Kamma Palle	Check Dam	79.4499	13.5502	IWMP
159	Nadavaluru	Nadavaluru	Check Wall	79.4152	13.5403	NREGS
160	Netha kuppam	Lothattu Venkata Pur	Check Wall	79.3183	13.5207	NREGS
161	Netha kuppam	Lothattu Venkata Pur	Check Wall	79.3188	13.5211	NREGS
162	Nadavaluru	Nadavaluru	Check Wall	79.4152	13.5403	IWMP
163	Netha kuppam	Lothattu Venkata Pur	Check Wall	79.3183	13.5207	IWMP
164	Netha kuppam	Lothattu Venkata Pur	Check Wall	79.3188	13.5211	IWMP
165	P.venkateswar puram	Baliya Palli	MPT	79.3679	13.5218	NREGS

166	P.venkateswar puram	Balija Palli	MPT	79.3752	13.5199	NREGS
167	P.venkateswar puram	P.Venkateshwara Pura	MPT	79.3810	13.5209	NREGS
168	Anupalle	Anupalle	MPT	79.2870	13.4772	NREGS
169	Anupalle	Uppala Vanka	MPT	79.2493	13.4825	NREGS
170	P.venkateswar puram	Balija Palli	MPT	79.3679	13.5218	IWMP
171	P.venkateswar puram	Balija Palli	MPT	79.3752	13.5199	IWMP
172	P.venkateswar puram	P.Venkateshwara Pura	MPT	79.3810	13.5209	IWMP
173	Anupalle	Anupalle	MPT	79.2870	13.4772	IWMP
174	Anupalle	Uppala Vanka	MPT	79.2493	13.4825	IWMP
175	Royal cheruvu	Royal Cheruvu	PT	79.3834	13.5053	NREGS
176	Royal cheruvu	Royal Cheruvu	PT	79.3866	13.4968	NREGS
177	Royal cheruvu	Royal Cheruvu	PT	79.3775	13.4834	NREGS
178	Royal cheruvu	Royal Cheruvu	PT	79.3806	13.4877	NREGS
179	Royal cheruvu	Royal Cheruvu	PT	79.3799	13.4879	NREGS
180	Royal cheruvu	Royal Cheruvu	PT	79.3786	13.4878	NREGS
181	Royal cheruvu	Royal Cheruvu	PT	79.3832	13.4954	NREGS
182	Royal cheruvu	Royal Cheruvu	PT	79.3842	13.4969	NREGS
183	Royal cheruvu	Royal Cheruvu	PT	79.3860	13.5069	NREGS
184	Royal cheruvu	Royal Cheruvu	PT	79.3888	13.5036	NREGS
185	Royal cheruvu	Royal Cheruvu	PT	79.3757	13.4835	NREGS
186	Royal cheruvu	Royal Cheruvu	PT	79.3747	13.4848	NREGS
187	Royal cheruvu	Royal Cheruvu	PT	79.3863	13.4953	NREGS
188	Royal cheruvu	Royal Cheruvu	PT	79.3759	13.4843	NREGS
189	Venkatrama puram	Venkatrama Puram	PT	79.4357	13.5683	NREGS
190	Pathakandalavari palli	Pathakandalavari Pal	PT	79.4252	13.5419	NREGS
191	Pathakandalavari palli	Pathakandalavari Pal	PT	79.4284	13.5522	NREGS
192	Pathakandalavari palli	Pathakandalavari Pal	PT	79.4262	13.5452	NREGS
193	Ravillavari palli	Ravillavari Palle	PT	79.4485	13.5391	NREGS
194	Pullamanaidu kandriga	Pillari Kona	PT	79.3303	13.4844	NREGS
195	Gangireddi palle	Gangireddi Palle	PT	79.3935	13.5417	NREGS
196	Gangireddi palle	Gangireddi Palle	PT	79.3926	13.5412	NREGS
197	Gangireddi palle	Gangireddi Palle	PT	79.3949	13.5419	NREGS
198	Gangireddi palle	Gangireddi Palle	PT	79.3877	13.5378	NREGS
199	Gangireddi palle	Gangireddi Palle	PT	79.3982	13.5438	NREGS
200	Gangireddi palle	Padmavalli Puram	PT	79.3980	13.5278	NREGS
201	Kuppambaduru	Kuppambaduru	PT	79.3934	13.5089	NREGS
202	Kuppambaduru	Kuppambaduru	PT	79.3939	13.5090	NREGS
203	Kuppambaduru	Kuppambaduru	PT	79.3951	13.5089	NREGS
204	Kuppambaduru	Kuppambaduru	PT	79.3957	13.5089	NREGS
205	Kuppambaduru	Kuppambaduru	PT	79.3963	13.5090	NREGS
206	Kuppambaduru	Kuppambaduru	PT	79.3976	13.5092	NREGS
207	Kuppambaduru	Kuppambaduru	PT	79.3987	13.5091	NREGS

208	Kuppambaduru	Kuppambaduru	PT	79.4012	13.5100	NREGS
209	Kuppambaduru	Vaddikalva H.W	PT	79.3910	13.5099	NREGS
210	Nadavaluru	Nadavaluru	PT	79.4174	13.5337	NREGS
211	Nadavaluru	Nadavaluru	PT	79.4154	13.5518	NREGS
212	Nennuru	Kotha Nennuru	PT	79.4229	13.5283	NREGS
213	Nennuru	Kotha Nennuru	PT	79.4223	13.5292	NREGS
214	Nennuru	Kotha Nennuru	PT	79.4272	13.5474	NREGS
215	Nennuru	Kotha Nennuru	PT	79.4252	13.5422	NREGS
216	Nennuru	Kotha Nennuru	PT	79.4245	13.5398	NREGS
217	Nennuru	Kotha Nennuru	PT	79.4242	13.5367	NREGS
218	Nennuru	Kotha Nennuru	PT	79.4231	13.5337	NREGS
219	Nennuru	Kotha Nennuru	PT	79.4218	13.5315	NREGS
220	Nennuru	Nennuru	PT	79.4265	13.5454	NREGS
221	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3084	13.4933	NREGS
222	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3119	13.4945	NREGS
223	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3147	13.4958	NREGS
224	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3144	13.4996	NREGS
225	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3154	13.5009	NREGS
226	Kothavepa kuppam	Kune Palle	PT	79.3038	13.4870	NREGS
227	Kothavepa kuppam	Kune Palle	PT	79.2997	13.4812	NREGS
228	Kothavepa kuppam	Kune Palle	PT	79.3013	13.4821	NREGS
229	Kothavepa kuppam	Kune Palle	PT	79.3031	13.4828	NREGS
230	Kothavepa kuppam	Kune Palle	PT	79.3026	13.4840	NREGS
231	Kothavepa kuppam	Kune Palle	PT	79.3063	13.4845	NREGS
232	Kothavepa kuppam	Kune Palle	PT	79.3074	13.4832	NREGS
233	Kothavepa kuppam	Kune Palle H.W	PT	79.3029	13.4855	NREGS
234	Kothavepa kuppam	Pathavepa Kuppam	PT	79.3260	13.4975	NREGS
235	K.k. venkata puram	Kattakinda Venkatapu	PT	79.4294	13.5559	NREGS
236	N.r.kammapalle	Muppala Malapalli	PT	79.3437	13.4912	NREGS
237	N.r.kammapalle	N.R.Kammapalle	PT	79.3439	13.5149	NREGS
238	N.r.kammapalle	Padamara Madigapalle	PT	79.3457	13.4932	NREGS
239	N.r.kammapalle	Padamara Madigapalle	PT	79.3449	13.4922	NREGS
240	N.r.kammapalle	Thimmarajupalle	PT	79.3445	13.5162	NREGS
241	N.r.kammapalle	Thimmarajupalle	PT	79.3437	13.5155	NREGS
242	N.r.kammapalle	Thimmarajupalle	PT	79.3432	13.5156	NREGS
243	N.r.kammapalle	Thimmarajupalle	PT	79.3427	13.5162	NREGS
244	Ganeswara puram	Kannika Puram H.W	PT	79.4332	13.5351	NREGS
245	Ganeswara puram	Kannika Puram H.W	PT	79.4282	13.5277	NREGS
246	Mitta kandriga	Mitta Kandriga	PT	79.4189	13.4988	NREGS
247	Mitta kandriga	Mitta Kandriga	PT	79.4194	13.4985	NREGS
248	Mitta kandriga	Mitta Kandriga	PT	79.4199	13.4990	NREGS
249	Mitta kandriga	Mitta Kandriga	PT	79.4207	13.4991	NREGS

250	Mitta kandriga	Motavari Kandriga	PT	79.4322	13.5135	NREGS
251	Mitta kandriga	Motavari Kandriga	PT	79.4353	13.5149	NREGS
252	Mitta kandriga	Paramala	PT	79.4318	13.5075	NREGS
253	Mitta kandriga	Paramala	PT	79.4296	13.5068	NREGS
254	Mitta kandriga	Paramala H.W	PT	79.4268	13.5070	NREGS
255	Mitta kandriga	Paramala H.W	PT	79.4327	13.5065	NREGS
256	Netha kuppam	Lothattu Venkata Pur	PT	79.3190	13.5215	NREGS
257	Netha kuppam	Lothattu Venkata Pur	PT	79.3191	13.5219	NREGS
258	Netha kuppam	Netha Kuppam	PT	79.3320	13.4916	NREGS
259	Netha kuppam	Netha Kuppam	PT	79.3328	13.4914	NREGS
260	Netha kuppam	Palamakulapalli	PT	79.3231	13.5107	NREGS
261	Netha kuppam	Palamakulapalli	PT	79.3226	13.5139	NREGS
262	Netha kuppam	Palamakulapalli	PT	79.3213	13.5150	NREGS
263	Netha kuppam	Parvathipuram	PT	79.3314	13.5050	NREGS
264	P.venkateswar puram	Baliya Palli	PT	79.3671	13.5272	NREGS
265	P.venkateswar puram	Baliya Palli	PT	79.3716	13.5236	NREGS
266	P.venkateswar puram	Baliya Palli	PT	79.3703	13.5226	NREGS
267	P.venkateswar puram	Baliya Palli	PT	79.3660	13.5218	NREGS
268	P.venkateswar puram	Baliya Palli	PT	79.3755	13.5227	NREGS
269	P.venkateswar puram	Baliya Palli	PT	79.3766	13.5220	NREGS
270	P.venkateswar puram	P.Venkateshwara Pura	PT	79.3865	13.5235	NREGS
271	P.venkateswar puram	P.Venkateshwara Pura	PT	79.3863	13.5243	NREGS
272	P.venkateswar puram	P.Venkateshwara Pura	PT	79.3832	13.5297	NREGS
273	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3845	13.5233	NREGS
274	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3832	13.5188	NREGS
275	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3834	13.5181	NREGS
276	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3830	13.5174	NREGS
277	Kothakandriga	Anicheruvu H.W	PT	79.4137	13.5028	NREGS
278	Kothakandriga	T.Vandla Sapparlu	PT	79.4111	13.5030	NREGS
279	Kothakandriga	T.Vandla Sapparlu	PT	79.4121	13.5113	NREGS
280	Kothakandriga	Yagapareddi Kandriga	PT	79.4159	13.5011	NREGS
281	Kammakandriga	Kammakandriga	PT	79.3881	13.5519	NREGS
282	Kammakandriga	Kammakandriga	PT	79.3899	13.5507	NREGS
283	Kammakandriga	Kammakandriga	PT	79.3916	13.5507	NREGS
284	Kammakandriga	Kammakandriga	PT	79.3979	13.5278	NREGS
285	Kammakandriga	Kammakandriga	PT	79.3982	13.5284	NREGS
286	Kammakandriga	Mittur	PT	79.3882	13.5508	NREGS
287	Chuttagunta ramapuram	Chuttagunta Ramapura	PT	79.4051	13.5668	NREGS
288	Anupalle	Anupalle	PT	79.2873	13.4791	NREGS
289	Anupalle	Anupalle	PT	79.2959	13.4803	NREGS
290	Anupalle	Anupalle	PT	79.2949	13.4803	NREGS
291	Anupalle	Anupalle H.W	PT	79.2821	13.4791	NREGS

292	Anupalle	Bopparaju Paplle	PT	79.2928	13.5000	NREGS
293	Anupalle	Bopparaju Paplle	PT	79.2939	13.5024	NREGS
294	Anupalle	Bopparaju Paplle	PT	79.2704	13.5053	NREGS
295	Anupalle	Gokula Puram	PT	79.2808	13.4816	NREGS
296	Anupalle	Nemallagunta Palle	PT	79.2827	13.4991	NREGS
297	Anupalle	Nemallagunta Palle	PT	79.2806	13.4992	NREGS
298	Anupalle	Nemallagunta Palle	PT	79.2763	13.5056	NREGS
299	Anupalle	Nemallagunta Palle	PT	79.2706	13.5038	NREGS
300	Anupalle	Nuthuguntla Palle	PT	79.2988	13.4969	NREGS
301	Anupalle	Nuthuguntla Palle	PT	79.3024	13.5010	NREGS
302	Anupalle	Nuthuguntla Palle	PT	79.3055	13.5022	NREGS
303	Anupalle	Nuthuguntla Palle H.	PT	79.2952	13.4981	NREGS
304	Anupalle	Rekulachenu	PT	79.2835	13.4931	NREGS
305	Anupalle	Rekulachenu	PT	79.2869	13.4844	NREGS
306	Anupalle	Rekulachenu	PT	79.2767	13.4911	NREGS
307	Anupalle	Rekulachenu	PT	79.2810	13.4932	NREGS
308	Anupalle	Rekulachenu	PT	79.2857	13.4964	NREGS
309	Anupalle	Rekulachenu	PT	79.2716	13.4904	NREGS
310	Anupalle	Uppala Vanka	PT	79.2483	13.4938	NREGS
311	Anupalle	Uppala Vanka	PT	79.2477	13.4830	NREGS
312	Anupalle	Uppala Vanka	PT	79.2512	13.4936	NREGS
313	Chitathur kale palle	Golla Palli	PT	79.3564	13.5120	NREGS
314	Chitathur kale palle	Golla Palli	PT	79.3569	13.5136	NREGS
315	Chitathur kale palle	Golla Palli	PT	79.3571	13.5143	NREGS
316	Chitathur kale palle	Golla Palli	PT	79.3576	13.5147	NREGS
317	Chitathur kale palle	Golla Palli	PT	79.3557	13.5110	NREGS
318	Chitathur kale palle	Golla Palli	PT	79.3546	13.5108	NREGS
319	Chitathur kale palle	Golla Palli	PT	79.3536	13.5101	NREGS
320	Chitathur kale palle	Golla Palli	PT	79.3612	13.5096	NREGS
321	Chitathur kale palle	Golla Palli	PT	79.3685	13.5115	NREGS
322	Chitathur kale palle	Kale Palle	PT	79.3608	13.4923	NREGS
323	Chitathur kale palle	Kale Palle	PT	79.3592	13.4944	NREGS
324	Chitathur kale palle	Kale Palle	PT	79.3595	13.4962	NREGS
325	Chitathur kale palle	Kale Palle	PT	79.3606	13.4982	NREGS
326	Chitathur kale palle	Kale Palle	PT	79.3625	13.4971	NREGS
327	Kammapalli	Kamma Palle	PT	79.4493	13.5503	NREGS
328	Kammapalli	Kamma Palle	PT	79.4481	13.5504	NREGS
329	Kammapalli	Kamma Palle	PT	79.4469	13.5502	NREGS
330	Kammapalli	Kamma Palle	PT	79.4435	13.5498	NREGS
331	Kammapalli	Kamma Palle	PT	79.4399	13.5460	NREGS
332	Kammapalli	Siddeswara S.T.Colon	PT	79.4459	13.5381	NREGS
333	Kammapalli	Siddeswara S.T.Colon	PT	79.4461	13.5374	NREGS

334	Kammappalli	Siddeswara S.T.Colon	PT	79.4475	13.5388	NREGS
335	Royal cheruvu	Royal Cheruvu	PT	79.3834	13.5053	IWMP
336	Royal cheruvu	Royal Cheruvu	PT	79.3866	13.4968	IWMP
337	Royal cheruvu	Royal Cheruvu	PT	79.3775	13.4834	IWMP
338	Royal cheruvu	Royal Cheruvu	PT	79.3806	13.4877	IWMP
339	Royal cheruvu	Royal Cheruvu	PT	79.3799	13.4879	IWMP
340	Royal cheruvu	Royal Cheruvu	PT	79.3786	13.4878	IWMP
341	Royal cheruvu	Royal Cheruvu	PT	79.3832	13.4954	IWMP
342	Royal cheruvu	Royal Cheruvu	PT	79.3842	13.4969	IWMP
343	Royal cheruvu	Royal Cheruvu	PT	79.3860	13.5069	IWMP
344	Royal cheruvu	Royal Cheruvu	PT	79.3888	13.5036	IWMP
345	Royal cheruvu	Royal Cheruvu	PT	79.3757	13.4835	IWMP
346	Royal cheruvu	Royal Cheruvu	PT	79.3747	13.4848	IWMP
347	Royal cheruvu	Royal Cheruvu	PT	79.3863	13.4953	IWMP
348	Royal cheruvu	Royal Cheruvu	PT	79.3759	13.4843	IWMP
349	Pathakandalavari palli	Pathakandalavari Pal	PT	79.4252	13.5419	IWMP
350	Pathakandalavari palli	Pathakandalavari Pal	PT	79.4284	13.5522	IWMP
351	Pathakandalavari palli	Pathakandalavari Pal	PT	79.4262	13.5452	IWMP
352	Ravillavari palli	Ravillavari Palle	PT	79.4485	13.5391	IWMP
353	Pullamanaidu kandriga	Pillari Kona	PT	79.3303	13.4844	IWMP
354	Gangireddi palle	Gangireddi Palle	PT	79.3935	13.5417	IWMP
355	Gangireddi palle	Gangireddi Palle	PT	79.3926	13.5412	IWMP
356	Gangireddi palle	Gangireddi Palle	PT	79.3949	13.5419	IWMP
357	Gangireddi palle	Gangireddi Palle	PT	79.3877	13.5378	IWMP
358	Gangireddi palle	Gangireddi Palle	PT	79.3982	13.5438	IWMP
359	Gangireddi palle	Padmavalli Puram	PT	79.3980	13.5278	IWMP
360	Kuppambaduru	Kuppambaduru	PT	79.3934	13.5089	IWMP
361	Kuppambaduru	Kuppambaduru	PT	79.3939	13.5090	IWMP
362	Kuppambaduru	Kuppambaduru	PT	79.3951	13.5089	IWMP
363	Kuppambaduru	Kuppambaduru	PT	79.3957	13.5089	IWMP
364	Kuppambaduru	Kuppambaduru	PT	79.3963	13.5090	IWMP
365	Kuppambaduru	Kuppambaduru	PT	79.3976	13.5092	IWMP
366	Kuppambaduru	Kuppambaduru	PT	79.3987	13.5091	IWMP
367	Kuppambaduru	Kuppambaduru	PT	79.4012	13.5100	IWMP
368	Kuppambaduru	Vaddikalva H.W	PT	79.3910	13.5099	IWMP
369	Nadavaluru	Nadavaluru	PT	79.4174	13.5337	IWMP
370	Nadavaluru	Nadavaluru	PT	79.4154	13.5518	IWMP
371	Nennuru	Kotha Nennuru	PT	79.4229	13.5283	IWMP
372	Nennuru	Kotha Nennuru	PT	79.4223	13.5292	IWMP
373	Nennuru	Kotha Nennuru	PT	79.4272	13.5474	IWMP
374	Nennuru	Kotha Nennuru	PT	79.4252	13.5422	IWMP
375	Nennuru	Kotha Nennuru	PT	79.4245	13.5398	IWMP

376	Nennuru	Kotha Nennuru	PT	79.4242	13.5367	IWMP
377	Nennuru	Kotha Nennuru	PT	79.4231	13.5337	IWMP
378	Nennuru	Kotha Nennuru	PT	79.4218	13.5315	IWMP
379	Nennuru	Nennuru	PT	79.4265	13.5454	IWMP
380	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3084	13.4933	IWMP
381	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3119	13.4945	IWMP
382	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3147	13.4958	IWMP
383	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3144	13.4996	IWMP
384	Kothavepa kuppam	Kothavepa Kuppam	PT	79.3154	13.5009	IWMP
385	Kothavepa kuppam	Kune Palle	PT	79.3038	13.4870	IWMP
386	Kothavepa kuppam	Kune Palle	PT	79.2997	13.4812	IWMP
387	Kothavepa kuppam	Kune Palle	PT	79.3013	13.4821	IWMP
388	Kothavepa kuppam	Kune Palle	PT	79.3031	13.4828	IWMP
389	Kothavepa kuppam	Kune Palle	PT	79.3026	13.4840	IWMP
390	Kothavepa kuppam	Kune Palle	PT	79.3063	13.4845	IWMP
391	Kothavepa kuppam	Kune Palle	PT	79.3074	13.4832	IWMP
392	Kothavepa kuppam	Kune Palle H.W	PT	79.3029	13.4855	IWMP
393	Kothavepa kuppam	Pathavepa Kuppam	PT	79.3260	13.4975	IWMP
394	K.k. venkata puram	Kattakinda Venkatapu	PT	79.4294	13.5559	IWMP
395	N.r.kammapalle	Muppala Malapalli	PT	79.3437	13.4912	IWMP
396	N.r.kammapalle	N.R.Kammapalle	PT	79.3439	13.5149	IWMP
397	N.r.kammapalle	Padamara Madigapalle	PT	79.3457	13.4932	IWMP
398	N.r.kammapalle	Padamara Madigapalle	PT	79.3449	13.4922	IWMP
399	N.r.kammapalle	Thimmarajupalle	PT	79.3445	13.5162	IWMP
400	N.r.kammapalle	Thimmarajupalle	PT	79.3437	13.5155	IWMP
401	N.r.kammapalle	Thimmarajupalle	PT	79.3432	13.5156	IWMP
402	N.r.kammapalle	Thimmarajupalle	PT	79.3427	13.5162	IWMP
403	Ganeswara puram	Kannika Puram H.W	PT	79.4332	13.5351	IWMP
404	Ganeswara puram	Kannika Puram H.W	PT	79.4282	13.5277	IWMP
405	Netha kuppam	Lothattu Venkata Pur	PT	79.3190	13.5215	IWMP
406	Netha kuppam	Lothattu Venkata Pur	PT	79.3191	13.5219	IWMP
407	Netha kuppam	Netha Kuppam	PT	79.3320	13.4916	IWMP
408	Netha kuppam	Netha Kuppam	PT	79.3328	13.4914	IWMP
409	Netha kuppam	Palamakulapalli	PT	79.3231	13.5107	IWMP
410	Netha kuppam	Palamakulapalli	PT	79.3226	13.5139	IWMP
411	Netha kuppam	Palamakulapalli	PT	79.3213	13.5150	IWMP
412	Netha kuppam	Parvathipuram	PT	79.3314	13.5050	IWMP
413	P.venkateswar puram	Baliya Palli	PT	79.3671	13.5272	IWMP
414	P.venkateswar puram	Baliya Palli	PT	79.3716	13.5236	IWMP
415	P.venkateswar puram	Baliya Palli	PT	79.3703	13.5226	IWMP
416	P.venkateswar puram	Baliya Palli	PT	79.3660	13.5218	IWMP
417	P.venkateswar puram	Baliya Palli	PT	79.3755	13.5227	IWMP

418	P.venkateswar puram	Baliya Palli	PT	79.3766	13.5220	IWMP
419	P.venkateswar puram	P.Venkateshwara Pura	PT	79.3865	13.5235	IWMP
420	P.venkateswar puram	P.Venkateshwara Pura	PT	79.3863	13.5243	IWMP
421	P.venkateswar puram	P.Venkateshwara Pura	PT	79.3832	13.5297	IWMP
422	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3845	13.5233	IWMP
423	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3832	13.5188	IWMP
424	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3834	13.5181	IWMP
425	P.venkateswar puram	Sanjeeva Raya Puram	PT	79.3830	13.5174	IWMP
426	Kammakandriga	Kammakandriga	PT	79.3881	13.5519	IWMP
427	Kammakandriga	Kammakandriga	PT	79.3899	13.5507	IWMP
428	Kammakandriga	Kammakandriga	PT	79.3916	13.5507	IWMP
429	Kammakandriga	Kammakandriga	PT	79.3979	13.5278	IWMP
430	Kammakandriga	Kammakandriga	PT	79.3982	13.5284	IWMP
431	Kammakandriga	Mittur	PT	79.3882	13.5508	IWMP
432	Anupalle	Anupalle	PT	79.2873	13.4791	IWMP
433	Anupalle	Anupalle	PT	79.2959	13.4803	IWMP
434	Anupalle	Anupalle	PT	79.2949	13.4803	IWMP
435	Anupalle	Anupalle H.W	PT	79.2821	13.4791	IWMP
436	Anupalle	Bopparaju Paplle	PT	79.2928	13.5000	IWMP
437	Anupalle	Bopparaju Paplle	PT	79.2939	13.5024	IWMP
438	Anupalle	Bopparaju Paplle	PT	79.2704	13.5053	IWMP
439	Anupalle	Gokula Puram	PT	79.2808	13.4816	IWMP
440	Anupalle	Nemallagunta Palle	PT	79.2827	13.4991	IWMP
441	Anupalle	Nemallagunta Palle	PT	79.2806	13.4992	IWMP
442	Anupalle	Nemallagunta Palle	PT	79.2763	13.5056	IWMP
443	Anupalle	Nemallagunta Palle	PT	79.2706	13.5038	IWMP
444	Anupalle	Nuthuguntla Palle	PT	79.2988	13.4969	IWMP
445	Anupalle	Nuthuguntla Palle	PT	79.3024	13.5010	IWMP
446	Anupalle	Nuthuguntla Palle	PT	79.3055	13.5022	IWMP
447	Anupalle	Nuthuguntla Palle H.	PT	79.2952	13.4981	IWMP
448	Anupalle	Rekulachenu	PT	79.2835	13.4931	IWMP
449	Anupalle	Rekulachenu	PT	79.2869	13.4844	IWMP
450	Anupalle	Rekulachenu	PT	79.2767	13.4911	IWMP
451	Anupalle	Rekulachenu	PT	79.2810	13.4932	IWMP
452	Anupalle	Rekulachenu	PT	79.2857	13.4964	IWMP
453	Anupalle	Rekulachenu	PT	79.2716	13.4904	IWMP
454	Anupalle	Uppala Vanka	PT	79.2483	13.4938	IWMP
455	Anupalle	Uppala Vanka	PT	79.2477	13.4830	IWMP
456	Anupalle	Uppala Vanka	PT	79.2512	13.4936	IWMP
457	Chitathur kale palle	Golla Palli	PT	79.3564	13.5120	IWMP
458	Chitathur kale palle	Golla Palli	PT	79.3569	13.5136	IWMP
459	Chitathur kale palle	Golla Palli	PT	79.3571	13.5143	IWMP

460	Chitathur kale palle	Golla Palli	PT	79.3576	13.5147	IWMP
461	Chitathur kale palle	Golla Palli	PT	79.3557	13.5110	IWMP
462	Chitathur kale palle	Golla Palli	PT	79.3546	13.5108	IWMP
463	Chitathur kale palle	Golla Palli	PT	79.3536	13.5101	IWMP
464	Chitathur kale palle	Golla Palli	PT	79.3612	13.5096	IWMP
465	Chitathur kale palle	Golla Palli	PT	79.3685	13.5115	IWMP
466	Chitathur kale palle	Kale Palle	PT	79.3608	13.4923	IWMP
467	Chitathur kale palle	Kale Palle	PT	79.3592	13.4944	IWMP
468	Chitathur kale palle	Kale Palle	PT	79.3595	13.4962	IWMP
469	Chitathur kale palle	Kale Palle	PT	79.3606	13.4982	IWMP
470	Chitathur kale palle	Kale Palle	PT	79.3625	13.4971	IWMP
471	Kammapalli	Kamma Palle	PT	79.4493	13.5503	IWMP
472	Kammapalli	Kamma Palle	PT	79.4481	13.5504	IWMP
473	Kammapalli	Kamma Palle	PT	79.4469	13.5502	IWMP
474	Kammapalli	Kamma Palle	PT	79.4435	13.5498	IWMP
475	Kammapalli	Kamma Palle	PT	79.4399	13.5460	IWMP
476	Kammapalli	Siddeswara S.T.Colon	PT	79.4459	13.5381	IWMP
477	Kammapalli	Siddeswara S.T.Colon	PT	79.4461	13.5374	IWMP
478	Kammapalli	Siddeswara S.T.Colon	PT	79.4475	13.5388	IWMP

PROPOSED ARTIFICIAL RECHARGE STRUCTURES
RAMACHANDRAPURAM MANDAL, CHITTOOR DISTRICT, AP.

S.No.	Mandal	Lattitude	Longitude	Structure_Type
1	RC Puram	13.5095	79.2877	Check Dam
2	RC Puram	13.5124	79.2881	Check Dam
3	RC Puram	13.5100	79.2752	Check Dam
4	RC Puram	13.5084	79.2497	Check Dam
5	RC Puram	13.5089	79.2535	Check Dam
6	RC Puram	13.4994	79.2481	Check Dam
7	RC Puram	13.5002	79.2532	Check Dam
8	RC Puram	13.4899	79.2567	Check Dam
9	RC Puram	13.4985	79.2703	Check Dam
10	RC Puram	13.5026	79.2773	Check Dam
11	RC Puram	13.5043	79.2657	Check Dam
12	RC Puram	13.5136	79.2632	Check Dam
13	RC Puram	13.4850	79.2726	Check Dam
14	RC Puram	13.4834	79.2653	Check Dam
15	RC Puram	13.4877	79.2812	Check Dam
16	RC Puram	13.4908	79.2896	Check Dam
17	RC Puram	13.4988	79.2902	Check Dam
18	RC Puram	13.5048	79.2877	Check Dam
19	RC Puram	13.5045	79.3002	Check Dam
20	RC Puram	13.5086	79.2999	Check Dam
21	RC Puram	13.5143	79.3115	Check Dam
22	RC Puram	13.5050	79.3173	Check Dam
23	RC Puram	13.5009	79.3231	Check Dam
24	RC Puram	13.4976	79.3286	Check Dam
25	RC Puram	13.4908	79.3231	Check Dam
26	RC Puram	13.4928	79.3282	Check Dam
27	RC Puram	13.4920	79.3127	Check Dam
28	RC Puram	13.5084	79.2928	Check Dam
29	RC Puram	13.5050	79.2826	Check Dam
30	RC Puram	13.4791	79.2771	Check Dam
31	RC Puram	13.5035	79.3469	Check Dam
32	RC Puram	13.5009	79.3562	Check Dam
33	RC Puram	13.5028	79.3606	Check Dam
34	RC Puram	13.4946	79.3518	Check Dam
35	RC Puram	13.4973	79.3363	Check Dam
36	RC Puram	13.4916	79.3162	Check Dam
37	RC Puram	13.5096	79.4207	Check Dam
38	RC Puram	13.5264	79.4297	Check Dam
39	RC Puram	13.5345	79.4363	Check Dam
40	RC Puram	13.5355	79.4464	Check Dam

41	RC Puram	13.5396	79.4371	Check Dam
42	RC Puram	13.5338	79.4108	Check Dam
43	RC Puram	13.5423	79.4036	Check Dam
44	RC Puram	13.5319	79.3703	Check Dam
45	RC Puram	13.5367	79.3701	Check Dam
46	RC Puram	13.5358	79.3645	Check Dam
47	RC Puram	13.5367	79.3527	Check Dam
48	RC Puram	13.5353	79.3335	Check Dam
49	RC Puram	13.5336	79.3178	Check Dam
50	RC Puram	13.5468	79.3180	Check Dam
51	RC Puram	13.5475	79.3205	Check Dam
52	RC Puram	13.5533	79.3213	Check Dam
53	RC Puram	13.5564	79.3294	Check Dam
54	RC Puram	13.5596	79.3383	Check Dam
55	RC Puram	13.5543	79.3428	Check Dam
56	RC Puram	13.5262	79.3266	Check Dam
57	RC Puram	13.5288	79.3155	Check Dam
58	RC Puram	13.5463	79.3761	Check Dam
59	RC Puram	13.5511	79.3846	Check Dam
60	RC Puram	13.5528	79.4041	Check Dam
61	RC Puram	13.5009	79.4268	Check Dam
62	RC Puram	13.5319	79.4043	Check Dam
63	RC Puram	13.5417	79.4450	Check Dam
64	RC Puram	13.5386	79.4284	Check Dam
65	RC Puram	13.5471	79.4122	Check Dam
66	RC Puram	13.5382	79.3710	Check Dam
67	RC Puram	13.5425	79.3657	Check Dam
68	RC Puram	13.5298	79.3497	Check Dam
69	RC Puram	13.5334	79.3573	Check Dam
70	RC Puram	13.5228	79.3360	Check Dam
71	RC Puram	13.5153	79.3340	Check Dam
72	RC Puram	13.5053	79.3379	Check Dam
73	RC Puram	13.5302	79.3113	Check Dam
74	RC Puram	13.5382	79.3106	Check Dam
75	RC Puram	13.5012	79.3927	Check Dam
76	RC Puram	13.5244	79.4194	Check Dam
77	RC Puram	13.5350	79.3282	Percolation Tank
78	RC Puram	13.5334	79.3220	Percolation Tank
79	RC Puram	13.5423	79.3539	Percolation Tank
80	RC Puram	13.5098	79.4050	Percolation Tank
81	RC Puram	13.5074	79.4244	Percolation Tank
82	RC Puram	13.5535	79.3298	Percolation Tank
83	RC Puram	13.5605	79.3617	Percolation Tank
84	RC Puram	13.5617	79.3657	Percolation Tank

85	RC Puram	13.5386	79.3347	Percolation Tank
86	RC Puram	13.5273	79.4404	Percolation Tank
87	RC Puram	13.5610	79.4082	Percolation Tank
88	RC Puram	13.5588	79.4048	Percolation Tank
89	RC Puram	13.5620	79.3469	Percolation Tank
90	RC Puram	13.5245	79.3913	Percolation Tank
91	RC Puram	13.5083	79.4383	Percolation Tank
92	RC Puram	13.5172	79.3490	Percolation Tank
93	RC Puram	13.5199	79.3622	Percolation Tank
94	RC Puram	13.5218	79.3733	Percolation Tank
95	RC Puram	13.5184	79.3254	Percolation Tank
96	RC Puram	13.5673	79.4106	Percolation Tank
97	RC Puram	13.5723	79.4112	Percolation Tank
98	RC Puram	13.5636	79.3751	Percolation Tank
99	RC Puram	13.5000	79.3488	Percolation Tank
100	RC Puram	13.4759	79.2731	Percolation Tank
101	RC Puram	13.4889	79.3412	Percolation Tank
102	RC Puram	13.5175	79.4326	Percolation Tank
103	RC Puram	13.5172	79.4113	Percolation Tank
104	RC Puram	13.5411	79.4538	Percolation Tank
105	RC Puram	13.5672	79.3659	Percolation Tank

Fig.1

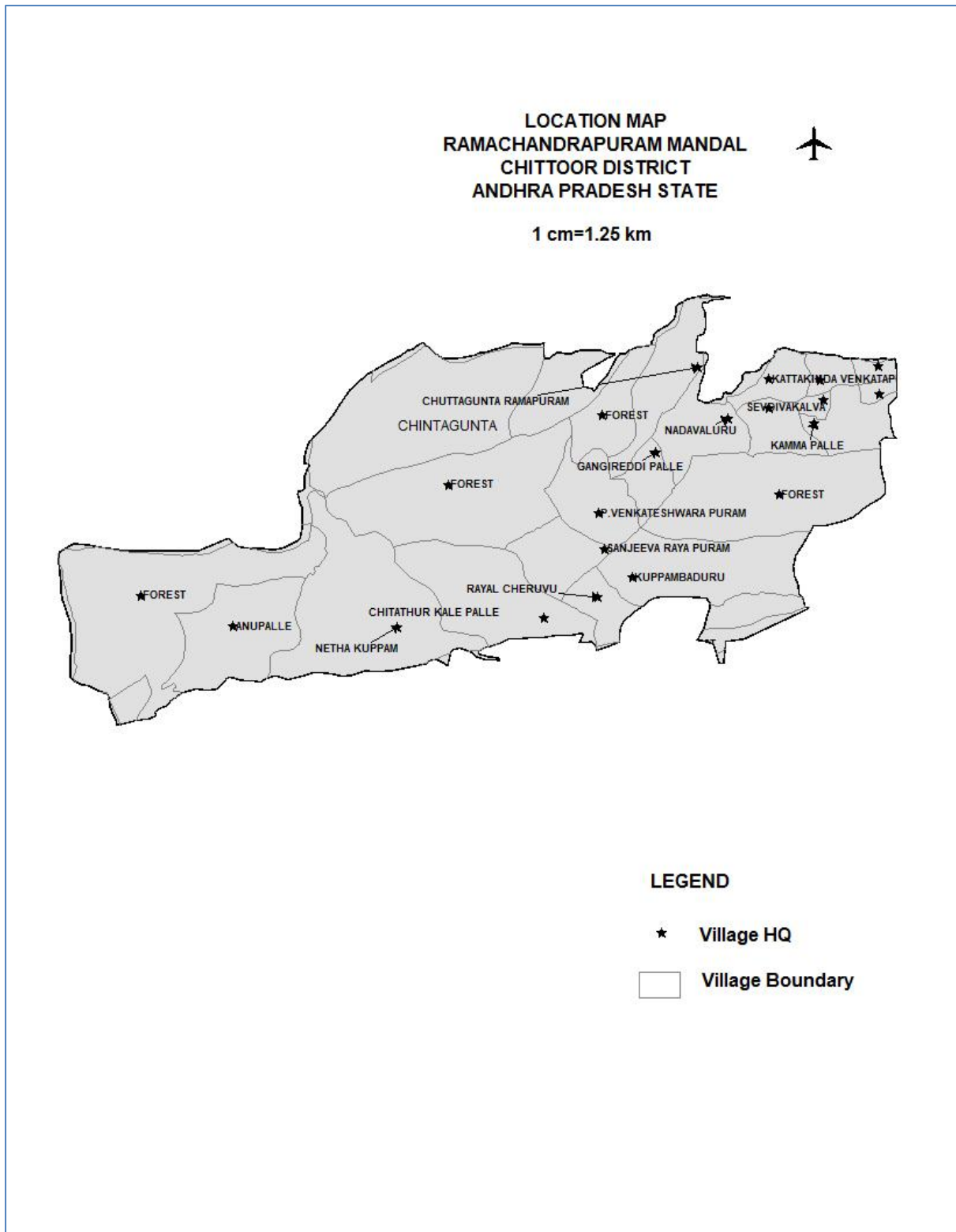


Fig.2

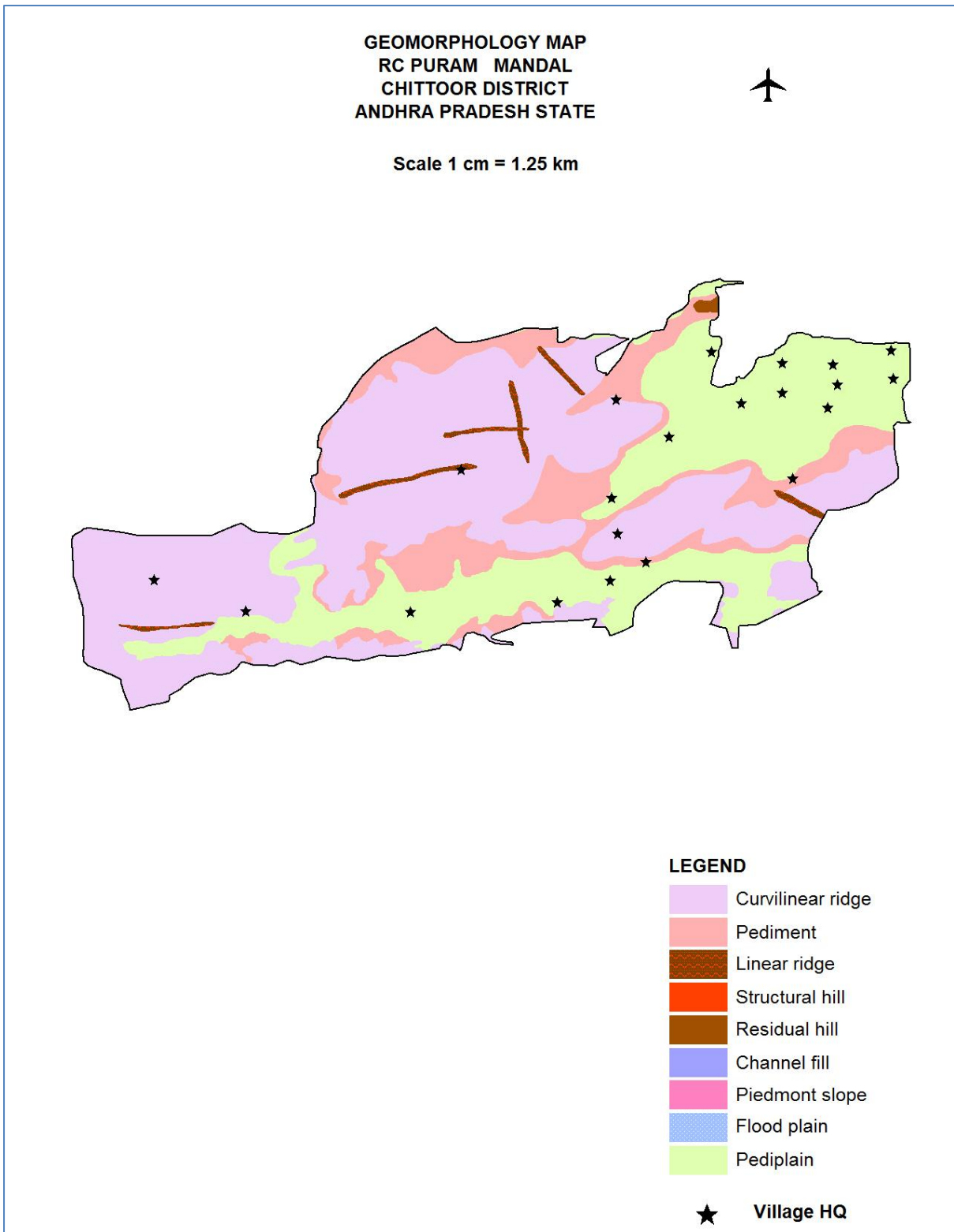


Fig.3

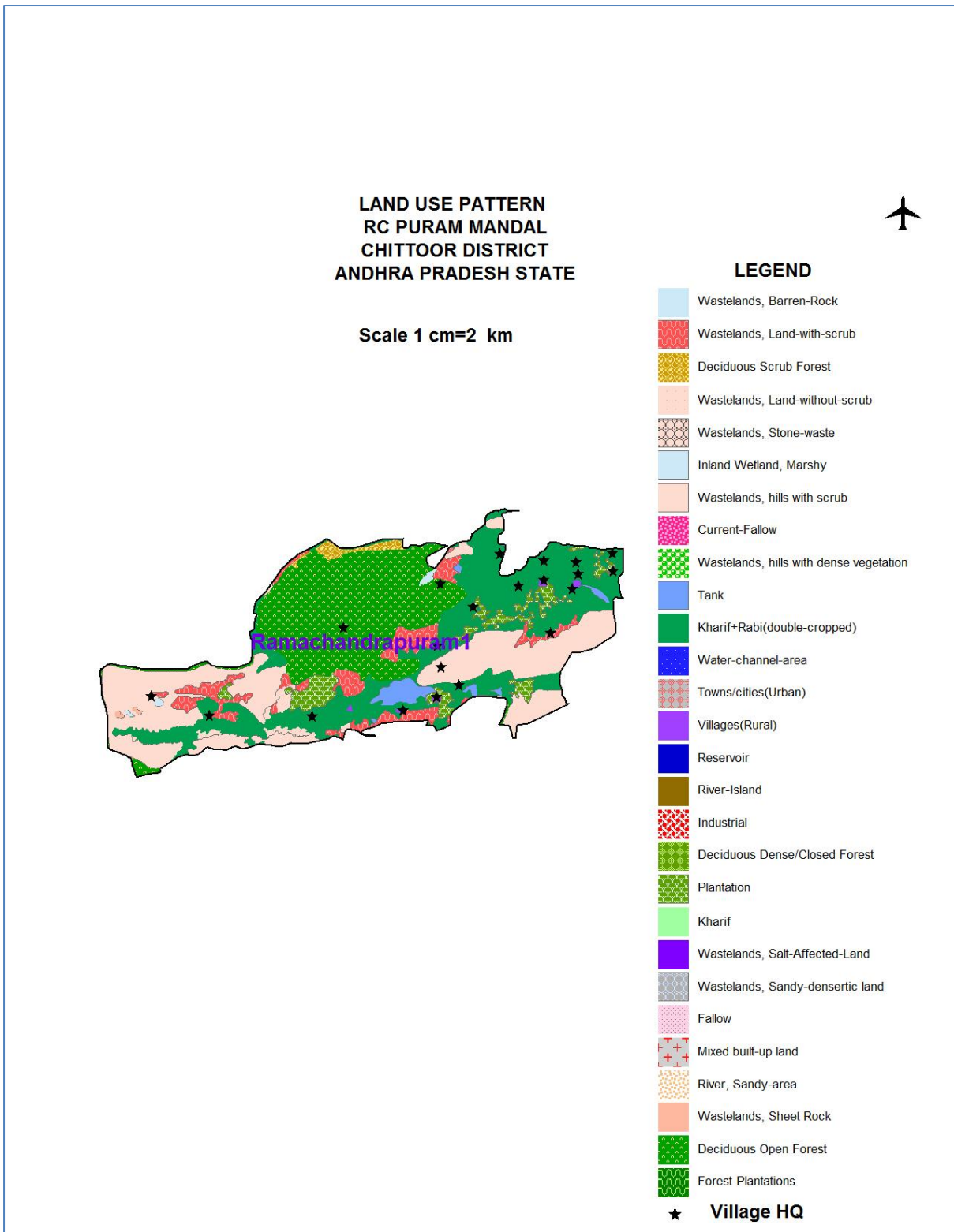


Fig.4

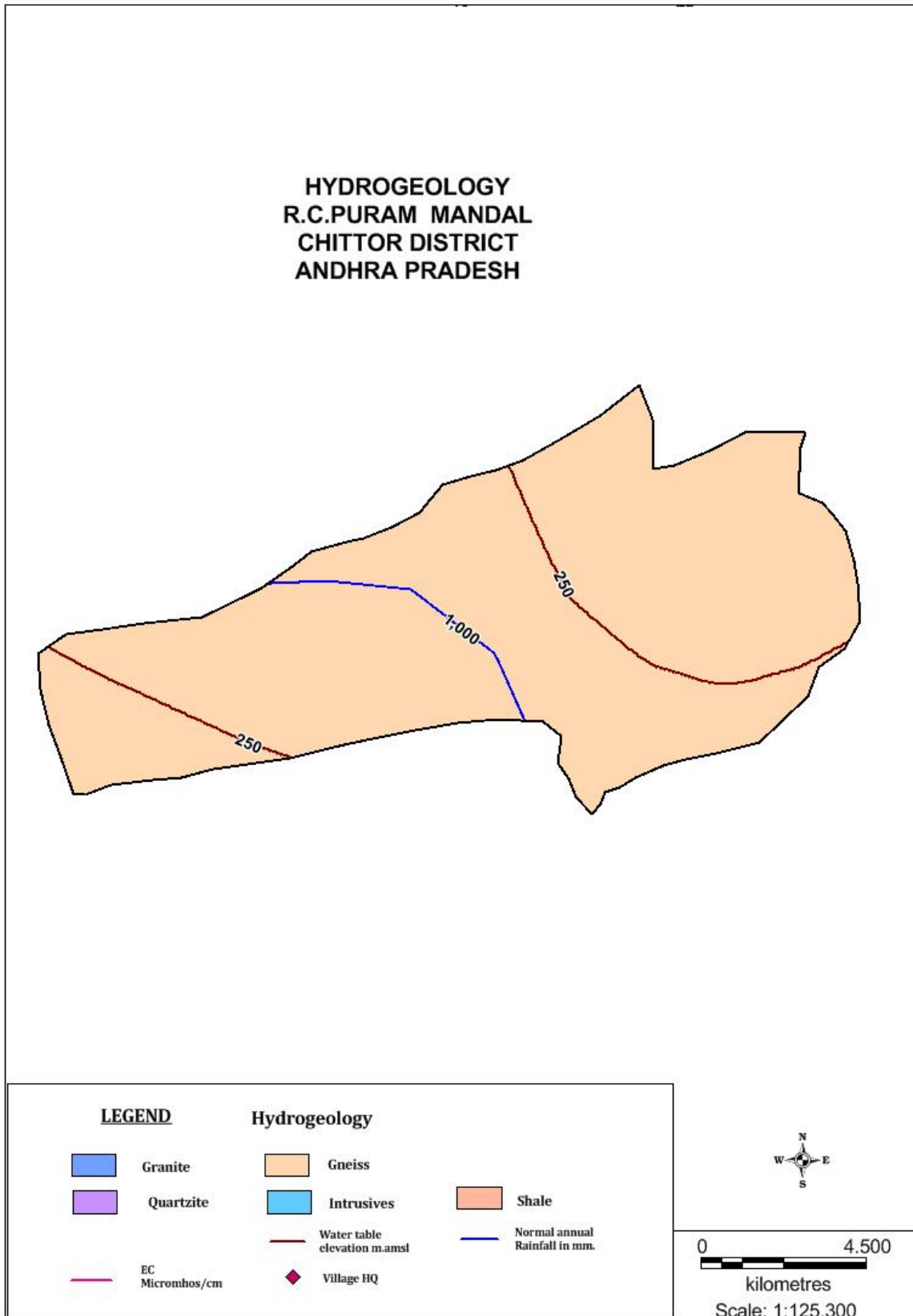


Fig.5

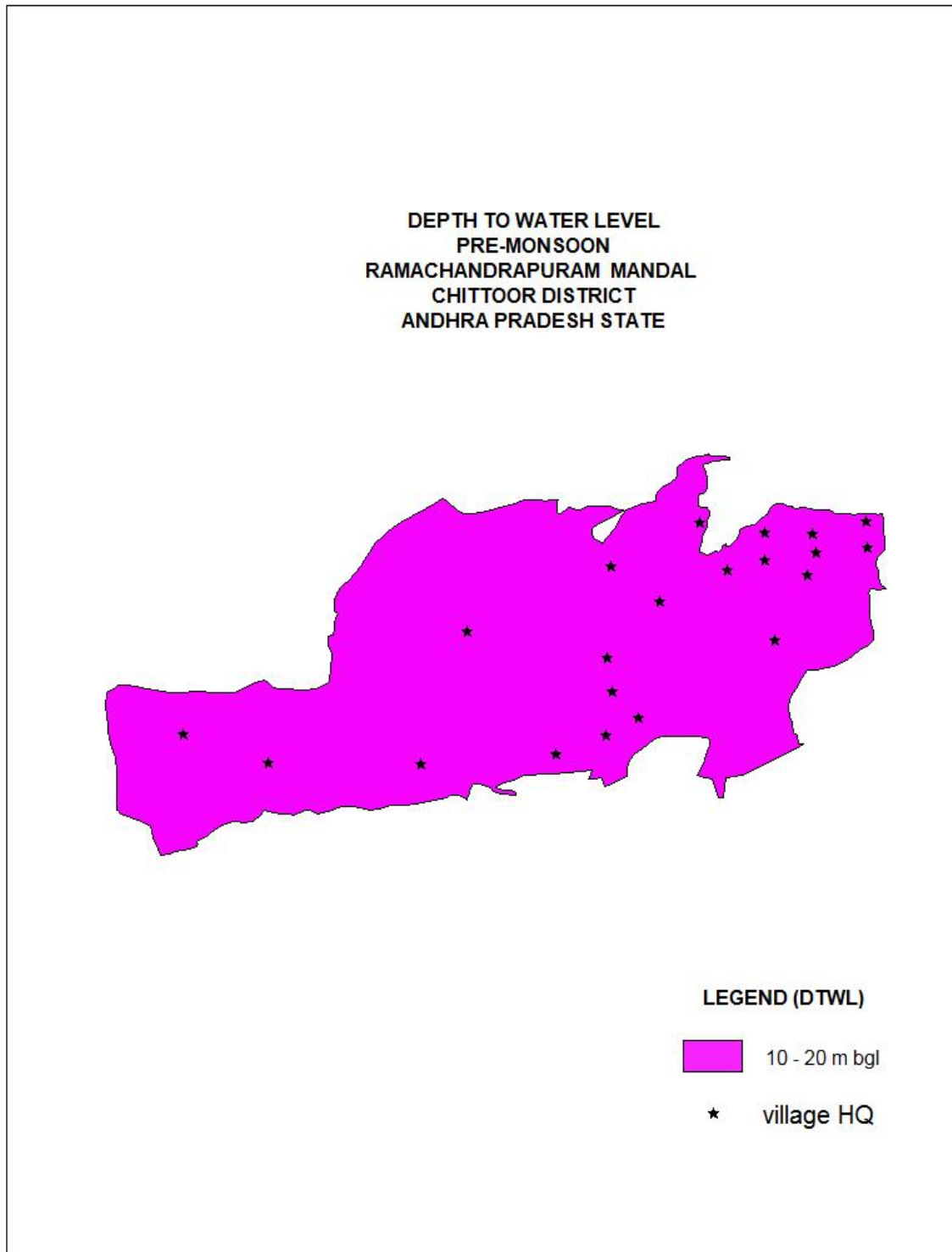
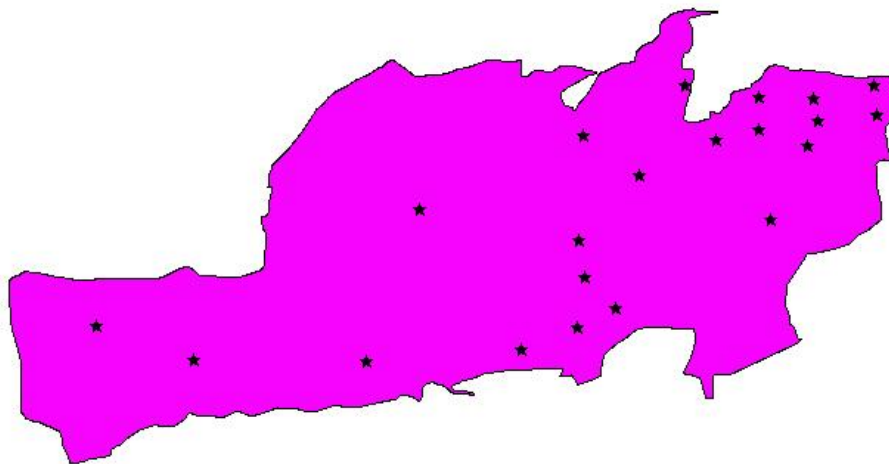


Fig.6

DEPTH TO WATER LEVEL
NOVEMBER 2014
RAMACHANDRAPURAM MANDAL
CHITTOOR DISTRICT
ANDHRA PRADESH STATE

1 cm=1.5 km

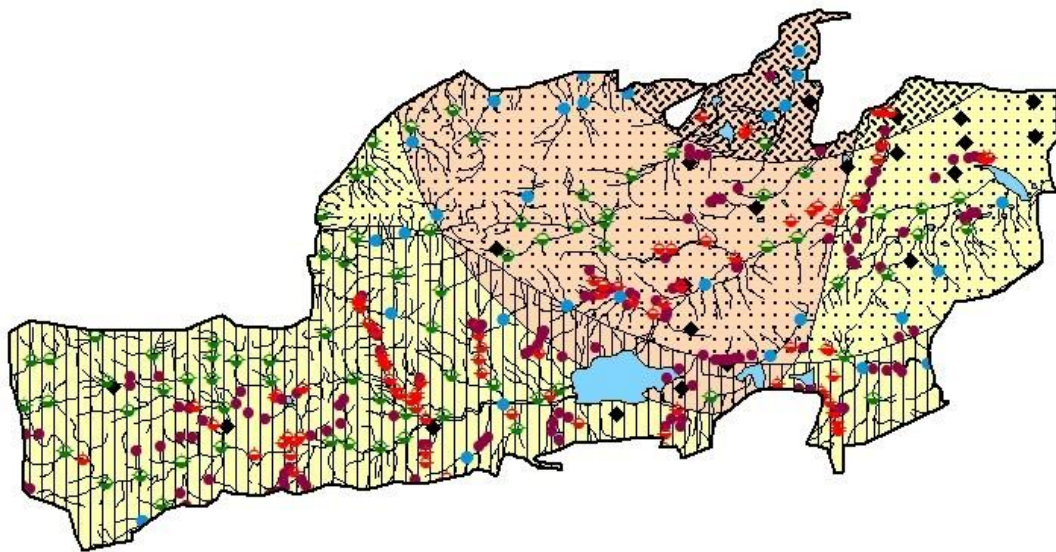


LEGEND

-  10 - 20 m bgl
-  Village HQ

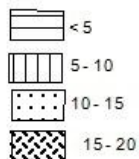
Fig.7

Post Monsoon Water Level and Trend (Decadal Mean) along with Existing and Proposed Artificial Recharge Structures in Ramachandrapuram Mandal, Chittoor District, Andhra Pradesh



LEGEND

Post Monsoon Water Level (m)
(Decadal Mean)



Post Monsoon
Water Level Trend (m/yr)

