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GOVERNMENT OF TELANGANA GROUND WATER DEPARTMENT

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LET'S SAVE WATER TOGETHER



GROUND WATER ATLAS

Prepared by

Government of Telangana Ground Water Department Hyderbad under National Hydrology Project









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FOREWORD

Prior to formation of the state, there had been lot of stress on groundwater resource in Telangana due to limited development of assured surface water irrigation. After the state was formed in June 2014, Government initiated many proactive measures for harnessing water resources by completing large irrigation projects like Kaleshwaram, restoration of more than 26700 tanks under "*Mission Kakatiya*" programme, construction of 1375 check dams, linking of MI tanks with major and medium projects by construction of 3000 offtakes, construction of 161 recharge shafts in existing waterbodies in water stressed mandals, providing protected surface water supply through "*Mission Bhagiratha"*etc. All these measures led to an increase in average groundwater levels by more than 4.26 m during pre-monsoon season of 2022 as compared to 2015 season. The total extractable ground water availability stands at 680 TMC which is more than twice the water allocation to Telangana state in Krishna basin. It is further seen that groundwater extraction in the state has been reduced by 8 % during 2022 as compared to 2020 assessment and contributes 4.8% to National's annual extractable groundwater resources.

Though the groundwater use has brought amazing benefits to people at large, the unplanned development of this vital resource has resulted in adverse effects on groundwater regime in certain parts. In order to address this problem in a more integrated way and by involving suitable technological and institutional measures, a sound scientific data base is to be generated based on scientific studies as it helps to disseminate information to stake holders and also to take suitable management interventions by the planners for its long-term sustainability.

The "Ground Water Atlas, Telangana State" is a major step towards dissemination of scientific data and taking effective managerial decisions for ultimate goal of groundwater management in Telangana state.

I congratulate the Ground Water Department for their efforts in bringing out this valuable document consisting of more than 38 thematic maps for the first time by the state. I hope this document will be of immense helpful to administrators, planners, researchers and various stake holders involved in groundwater sector.



(Dr. Rajat Kumar)



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PREFACE

The compendium of various thematic maps as "*Ground Water Atlas of Telangana state*" is the culmination of scientific data generated & compiled by Ground Water Department and other line departments over a period of time. Prior to this, few attempts were made to present the data, based on specific inputs and no comprehensive document dealing with all aspects of groundwater was available.

The Ground Water Department, is the multidisciplinary department engaged mainly in monitoring of water levels, generation and dissemination of data, periodic estimation of groundwater resources, groundwater regulation under TS-WALTA-Act, construction of bore wells/tube wells under Scheduled Caste and Scheduled Tribe Special Development Fund (SCSDF & STSDF), feasibility of groundwater availability under land purchase scheme (Bhoopampini) to SC landless families and Girivikasam to ST beneficiaries. It is the Nodal Department for all groundwater related activities in the state and is part of I & CAD Department, under the leadership of Dr. Rajat Kumar, IAS, the Spl. Chief Secretary, Govt of Telangana.

The Department has generated wealth of scientific data over a period of time, and in order to synthesize this voluminous data, the Department has endeavoured to bring it out in the form of a compendium of various thematic maps, named as **"Ground Water Atlas of Telangana state"**.

Total 38 thematic maps (Plates) depicting various groundwater related aspects are prepared on 1:2,000000 scale along with detailed tables. Plate-1 to 4 depicts administrative divisions, DEM, land use & land cover, soils distribution. Plate 5 to 6 depicts major river basins & sub basins and major & minor irrigation projects. In Plate-7 to 10, information on distribution of rain gauge stations, mandal-wise normal annual rainfall, isohyets distribution and geomorphology are given. Plates11 to 18 are the backbone of the Atlas and depict about principal aquifer systems (hard rocks and soft rocks) and their hydrogeologic characteristics in the state. In Plate 19 to 23, groundwater monitoring network stations are depicted along with average groundwater levels during pre-& post monsoon seasons and long-term water level trends. Plates 24 to 33, cover groundwater quality with respect to areal distribution of TDS, F and NO₃ in general as well as in major canal command areas. In plate 34 to 35, dynamic groundwater resources and categorization of mandals are depicted. In Plate 36, 37 and 38, districtwise distribution of ARS, Impact of Mission KakatiyaProgramme on groundwater regime in pilot basins and groundwater management-way forward are covered.

I congratulate the authors, technical supervisors and technical expert, of the Ground Water Department for their efforts in bringing out this valuable document for the first time by the state.

I sincerely hope this document will be of immense helpful to administrators, planners, researchers and various stake holders in comprehensive understanding of groundwater occurrence and distribution in Telangana state.

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