GROUND WATER YEAR BOOK

(2020-2021)

TELANGANA STATE

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1. INTRODUCTION

Central Ground Water Board has taken up the task of ground water development, augmentation, management, protection and regime monitoring both in terms of quality and quantity. In order to arrive at proper parametric indices of evaluation and judicious development of ground water resources, the Board is monitoring National Hydrograph Stations (NHS) on long term basis since 1969 through a network of wells (Dug wells and Piezometers) for studying its long term behaviour due to influence of rainfall and ground water development. A historical database on the ground water levels and water quality has been developed over a period of time since 1969.

The ground water regime monitoring mainly comprises measurement of water levels and temperature, four times in a year viz., in the months of May (pre-monsoon), August (mid-monsoon), November (post-monsoon) and January and collection of water samples during May every year, for chemical analysis. As on 31-03-2020, there were 748 operational Ground Water Monitoring Wells (GWMS) (306 dug wells and 442 piezometers). During the year (2020-21), 11 (Dug wells) Ground water monitoring wells were abandoned. As on March 2021, the status of monitoring stations is 737 wells, out of which, 295 are Dug wells and 442 Piezometers (***Annexure- I to II***).

The dug wells tapping unconfined aquifers are mostly confined to village limits, which are used for domestic purpose. Some of these are community wells and the rest belongs to private individuals.The piezometers tapping unconfined and confined aquifers are constructed under various projects and exploration programmes by the department and are monitored manually four times a year.The location of network of monitoring wells is presented in the **Fig.1.1.**

1.1 Location and Extent

Telangana State is the 29th State (Act, 2014) formed in India covering geographical area of 1,12,077 Km^2 (after transferring 107 villages from Khammam district to residual Andhra Pradesh). It lies between NL 15° 48’ and 19° 54’and EL 77° 12’ and 81° 50’. The state is bordered by the states of Maharashtra, Chattisgarh in the north, Karnataka in the west and Andhra Pradesh in the south, east and north-east.

Administratively, the State comprises 33 districts covering an area of 1,12,077 sq. km (44,273 sq. mi). The largest district is Bhadradri Kothagudem whereas Hyderabad is the smallest

and governed by 585 revenue mandals (blocks/tahsils) with 10,434 revenue villages. Total population of the state is ~3.5 Crores with sex ratio of 988 (2011 census), of which 61 % lives in rural area and 39% in urban area. The density of population is 312 per Sq. Km. The decadal growth in population is ~13.6 % (2001 to 2011 census).

The present ground water year book (2020-2021) depicts the ground water level scenario in the state and describes the behaviour of water levels during the period. Piezometer data of State Ground Water Department is also integrated with CGWB data in order to have holistic Ground water scenario in the state.

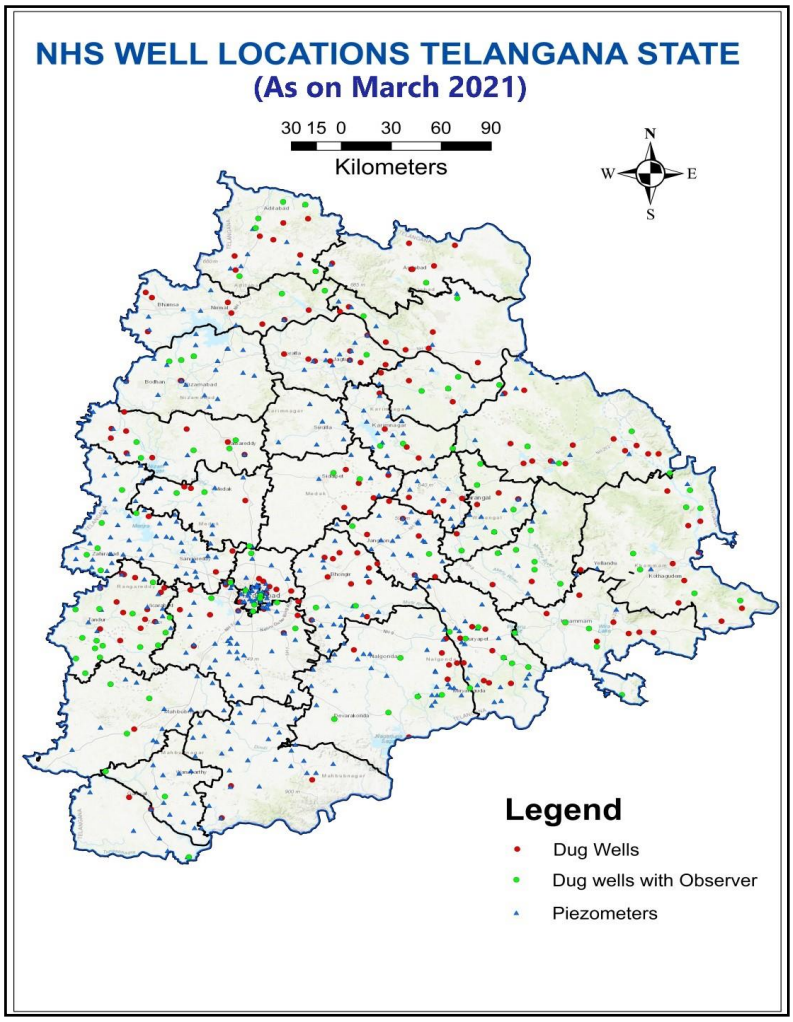

Fig.1.1: Location of GWMS in Telangana State (as on March, 2021).

2. PHYSIOGRAPHY, DRAINAGE AND SOILS

2.1 Physiography

Physiographically, Telangana state is occupied by western pediplains except a fringe of Eastern Ghats in the northeastern part of Khammam district.The pediplains depict rolling topography with flat to undulating tracts. The state extends largely between elevations of 150 to 600 m amsl except at places where it is overlain by basaltic lava flows, the elevation of which ranges from 600 to 900 m amsl.

2.2 Drainage

The state is drained by two major rivers namely, Godavari and Krishna and their tributaries before entering into the state of Andhra Pradesh and finally to Bay of Bengal. There are 2 major basins and 13 sub basins in the state.

The major river basins are Godavari basin with 8 sub-basins namely, lower Godavari, Maneru, Manjira, middle Godavari, Penganga, Pranhita, Sabari and Wardha and Krishna basin with 5 sub basins namely, lower Bhima, lower Krishna, Munneru, Musi and Paleru (**Fig.2.1**). Apart from these, there are 2 other basins namely Tammileru and Yerrakalva lying between Godavari and Krishna covering very small area. The River Godavari with its tributaries viz., Pranahita, Pedda Vagu, Manjira, Maner, Kinnerasani, Sileru and Pamuleru drain whole of northern Telangana. The Tungabhadra, Musi, Paleru and Maneru rivers drain southern part of the state.

The pattern of drainage is generally dendritic with wide valleys in western pediplain. Drainage of the Eastern Ghat is coarse and dendritic with steep and narrow valleys. Most of the smaller streams feed innumerable tanks.

2.3 Soils

The state has a wide variety of soils viz., red soil, lateritic soils and black cotton soils. ~60% of the state is occupied by red soils with loamy sub-soils covering entire Nalgonda district, a major part of Mahabubnagar, Waranagal, Karimnagar and Nizamabad districts. Black cotton soil commonly occurs in Adilabad and Nizamabad districts. Laterite soil occurs in western part of Ranga Reddy and Medak districts.

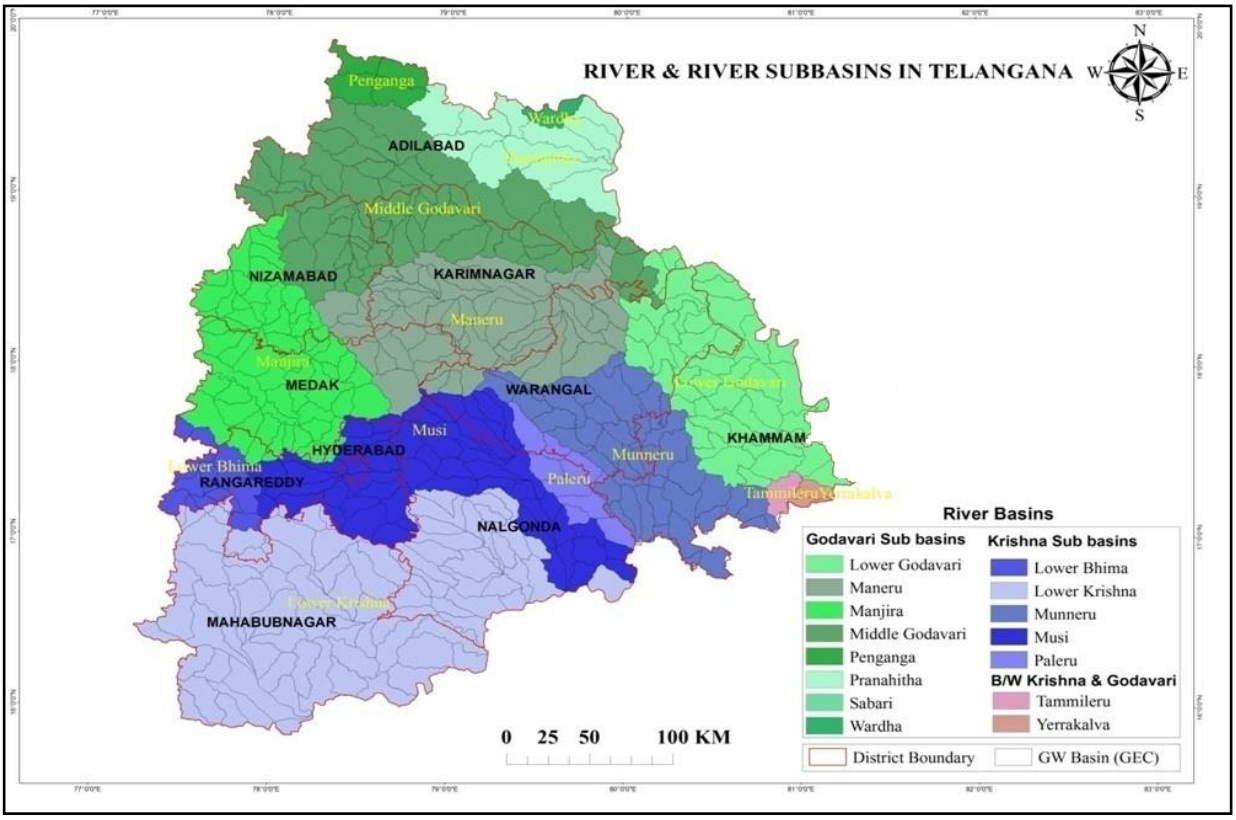

Fig.2.1: Drainage and River sub-basin map of Telangana state.