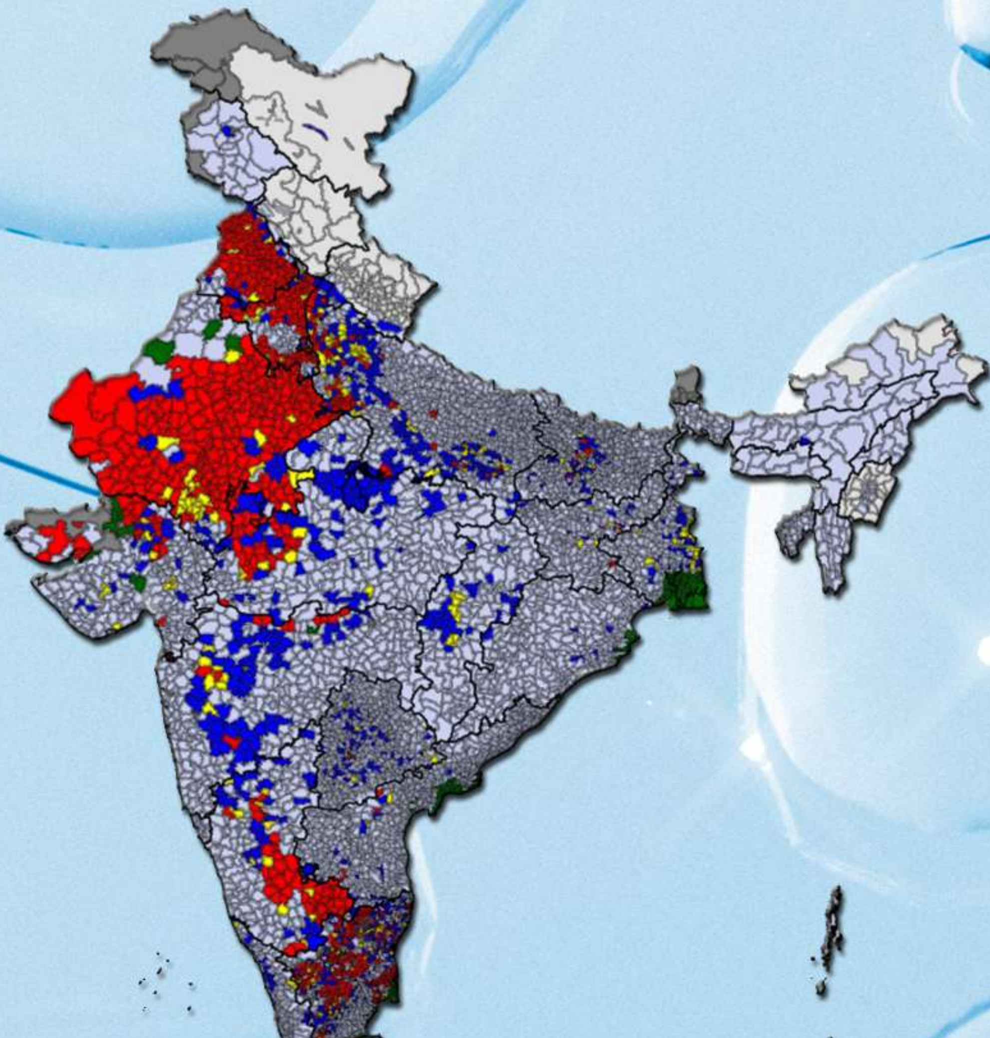
सत्यमेव जयते

National Compilation on
DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022



Central Ground Water Board
Department of Water Resources,
River Development and Ganga Rejuvenation
Ministry of Jal Shakti,
Government of India
Faridabad

National Compilation on

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022

Central Ground Water Board
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River Development & Ganga Rejuvenation
Ministry of Jal Shakti
Government of India

Faridabad
October, 2022

गजेन्द्र सिंह शेखावत

Gajendra Singh Shekhawat

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

जल शक्ति मंत्री

भारत सरकार

Minister for Jal Shakti

Government of India

12 OCT 2022

MESSAGE

A scarce natural resource, water is fundamental to life, livelihood, food security and sustainable development, Ground water has emerged as the backbone of India's agriculture and drinking water security. Ground water levels are declining in some regions/areas due to excessive withdrawal. This situation calls for a prudent management of ground water resources of the country to ensure its sustainability. Management of ground water resources requires a structured scientific approach starting from monitoring of water level and quality, assessing the resources, uses, analysis of hazards to ground water regime and developing management strategies for their control.

Periodic assessment of dynamic ground water resources is a significant step in this direction. Central Ground Water Board and State Ground Water Departments jointly carry out assessment of ground water resources of the entire country. This assessment form the basis for planning ground water management interventions inter-alia artificial recharge, regulation of ground water use etc. The assessment report "Dynamic Ground Water Resources of India for the year 2022" is the latest version of the State-wise resources.

I laud the efforts of CGWB and State Ground Water Departments in bringing out the report. I firmly believe that the report would serve as an excellent source material for all stakeholders involved in ground water management.

(Gajendra Singh Shekhawat)

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सत्यमेव जयते

खाद्य प्रसंस्करण उद्योग एवं
जल शक्ति राज्य मंत्री
भारत सरकार
MINISTER OF STATE FOR
FOOD PROCESSING INDUSTRIES
AND JAL SHAKTI
GOVERNMENT OF INDIA

MESSAGE

Ground Water is considered to be a dependable source for meeting the requirement of irrigation, drinking water in the country. Over the years, increasing dependence on ground water has created imbalance in availability vis-à-vis its recharge potential leading to over-exploitation of the resources. Major chunk of rural water supply and a significant part of the agricultural needs of the country is met from ground water sector. This makes it imperative that sustainability of the ground water resources is ensured through proper assessment of resources supported by strong data base.

The assessment of ground water resources is being carried out periodically & jointly by Central Ground Water Board and State Ground Water Nodal Departments. Based on the availability of dynamic ground water resources and its utilization; the ground water assessment units in the country are categorized as safe, semi-critical, critical, over-exploited etc. The management and regulation of ground water resources is dependent on this categorization. Thus, the report on Dynamic Ground Water Resources of the country assumes added significance.

I am sure the report will go a long way in proper management of the ground water resources, and empowering the general public and all the stakeholders by providing information and data on the ground water resources.

प्रहलाद सिं...

(Prahlad Singh Patel)

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जल शक्ति एवं
जनजातीय कार्य राज्य मंत्री
भारत सरकार
नई दिल्ली-110001
MINISTER OF STATE FOR
JAL SHAKTI & TRIBAL AFFAIRS
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आज़ादी का अमृत महोत्सव

Message

Ground water resources play a vital role in sustaining the livelihood of many countries in the world. Its ubiquitous occurrences, reliability and availability in all seasons have made is the primary buffer against drought playing a pivotal role in ensuring the food security at all levels. The importance of ground water as a precious natural resource is evident from its contribution in meeting the water requirements of agriculture and domestic sectors in India. Increasing dependence on ground water as a reliable source of water has resulted in its large scale and often indiscriminate development in various parts of the country without due regard to the recharging of aquifers and other environmental factors.

The periodic ground water resource assessment carried out jointly by Central Ground Water Board and State Ground Water Nodal Departments brings out level of stress on ground water resources in various parts of the country. The assessment of ground water resources involves processing of huge amount of data generated by the Ground Water Departments at State and Center. On the basis of ground water assessment, various administrative units are categorized as safe, semi-critical, critical and over-exploited.

The efforts made by the Central Ground Water Board and State Departments in bringing out "Ground Water Resources Assessment Report- 2022" are highly commendable. I am confident that this Report will provide benefit to all the stakeholders and general public.

10/10/2022

(Bishweswar Tudu)

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MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
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सत्यमेव जयते

17th October, 2022

MESSAGE

Groundwater is an important resource to meet water requirements of our country. The spatial distribution of groundwater resources in the country, however, is uneven as it depends on climate, physiography and hydrogeological set up of the regions. The ground water over-exploited assessment units are mostly concentrated in the north western part of the country, western arid region and southern part of peninsular India due to inherent characteristics of crystalline aquifers and imbalance between ground water availability and its utilization. There are areas/regions where ground water resources are depleting. Periodic and realistic assessment through scientific method is, therefore, a prerequisite for sustainable management of this vital resource.

The dynamic ground water resources for the year 2022 for each State/UTs have been assessed jointly by Central Ground Water Board (CGWB) and State Ground Water Nodal Departments under the guidance of State Level Committees and overall supervision of Central Level Expert Group. This report marks an important milestone in groundwater assessment; beginning from this year, such assessments shall be carried out annually, instead of once every few years earlier. Annual assessments will deepen our understanding of relative significance of various factors impacting groundwater resources and help fine-tune our response to changes in the groundwater scenario.

I would like to place on record my appreciation of the work done by CGWB and State Governments in bringing out this report presenting a comprehensive status of groundwater resources in the country. A special mention needs to be made of Shri Sunil Kumar, Chairman, CGWB and Shri Subodh Yadav, Joint Secretary (A, IC & GW), DoWR who have led the initiative for time bound annual groundwater assessment in the country.

I am sure this report would be of considerable significance to planners, administrators and managers for efficient utilization and management of our groundwater resources.

Pankaj Kumar

(Pankaj Kumar)

आज़ादी का अमृत महोत्सव

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जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल बोर्ड

Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development and Ganga Rejuvenation
Central Ground Water Board

FOREWORD

Ground water is the largest fresh water resources on the earth. It is vital for the growth of economy and a critical component of ecology. The ever-increasing water demands have led to extraction of ground water in excess of its annual replenishment in several parts of India. Realistic assessment of this resources helps in formulating strategies for scientific management of ground water resources. The assessment of ground water resources has been planned to carry out annually to determine the ground water scenario in the country.

The dynamic groundwater resources of India are assessed as per the Groundwater Estimation Methodology, 2015 (GEC–2015), which takes into account all the relevant parameters contributing to ground water recharge and extraction. Ground Water Resource Assessment, 2022 (GWRA-2022) of all the States and UTs is being carried out jointly by State/UT Ground Water Department and Central Ground Water Board using INDIA-Ground Water Resource Estimation System (IN-GRES) Software. The Ministry of Jal Shakti constituted a Central Level Expert Group (CLEG) for over-all supervision of reassessment of ground water resources of the country. Dynamic Ground Water Resources of each State/UT has been estimated at the state level under the guidance of State Level Committees (SLC). The report titled 'National Compilation on Dynamic Ground Water Resources of India 2022' summarizes the results of the assessments, primarily in terms of resource availability, utilization and categorization of assessment units.

I appreciate the efforts of the officers of CGWB, CHQ who were involved in the work of national compilation and the officers of CGWB and State Ground Water Nodal Departments, who had carried out the assessment for the respective States and UTs. The contribution of members of the Central Expert Group and State Level Committees in bringing out refinements in the National Report is thankfully acknowledged. I have no doubt that the national compilation will be beneficial in planning and management of ground water for various upcoming projects in the country.

(Sunil Kumar)

Faridabad
October 17, 2022

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सत्यमेव जयते

आज़ादी का अमृत महोत्सव

PREFACE

India is the largest user of ground water. With growing domestic, industrial and agricultural demand, the stress on ground water resources is ever increasing and sustainability of ground water resources has become a matter of concern. Ground water availability and reliability are linked closely to food security, as ground water played a critical role in increasing agricultural production over recent decades. The timely assessment of this crucial resource will guide the sustainable development of ground water resources vis-a-vis the agricultural production.

The report titled 'National Compilation on Dynamic Groundwater Resources of India, 2022' is a compilation of State/UT – wise assessments, carried out jointly by CGWB and State/UT Ground water Departments under the supervision of respective State/UT Level Committees (SLC); under overall guidance of Central Level Expert Group (CLEG). The dynamic groundwater resources of India are assessed as per the Groundwater Estimation Methodology, 2015 (GEC–2015), which takes into account all the relevant parameters contributing to ground water recharge and extraction. The assessment of ground water resources forms the basis for categorization of assessment units in the country as Safe, Semi-Critical, Critical or Over Exploited depending upon the Stage of Ground water Extraction. All computations for the assessment of ground water resources have been automated and done in a GIS environment through a web based application namely *"INDIA GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES)"* developed in collaboration with IIT Hyderabad.

I wish to place on record my appreciation for the untiring efforts of Dr. Ratikanta Nayak, Scientist-E and the team of officers of Central Ground Water Board for completing the challenging task of compiling this informative report. The team led by Dr.K.B.V.N. Phanindra, Asst. Professor, IIT Hyderabad and the software professionals of M/s Vassar Labs IT Solutions, Hyderabad, deserve praise for customizing the IN-GRES web portal for the assessment as per requirements of Central Ground Water Board. We are thankful for the support extended by the State/U.T ground water organizations by providing necessary inputs and approvals in time. I truly believe that stakeholders at various levels will find this report informative and helpful for managing our precious ground water resources judiciously and for ensuring their sustainability for years to come.

(Dr. A.Subburaj)

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Dynamic Ground Water Resources Estimation of India-2022

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4.	Stage of Ground Water Extraction	:	60.08 %

CATEGORIZATION OF ASSESSMENT UNITS

(Blocks/ Mandals/ Firkas/ Taluks etc.)

Sl.No	Category	Number of Assessment Units		Recharge worthy Area		Annual Extractable Ground Water Resource	
		Number	%	in lakh sq. km	%	(in bcm)	%
1	Safe	4780	67	16.18	66	291.88	73
2	Semi Critical	885	12	3.03	12	47	12
3	Critical	260	4	0.77	3	13.02	3
4	Over-Exploited	1006	14	4.30	17	46.05	12
5	Saline	158	2	0.4	2	NA	NA
	TOTAL	**7089**		**24.69**		**398.08**	

EXECUTIVE SUMMARY

Ground Water Resources Assessment is carried out at periodical intervals jointly by State Ground Water Departments and Central Ground Water Board under the guidance of the respective State Level Committee on Ground Water Assessment at State Levels and under the overall supervision of the Central Level Expert Group. Such joint exercises have been taken up earlier in 1980, 1995, 2004, 2009, 2011, 2013, 2017 and 2020.

The assessment involves computation of dynamic ground water resources or Annual Extractable Ground Water Resource, Total Current Annual Ground Water Extraction (utilization) and the percentage of utilization with respect to annual extractable resources (stage of Ground Water Extraction). The assessment units (Talukas/blocks/mandals/firkas) are categorized based on Stage of Ground Water Extraction, which are then validated with long-term water level trends. The assessment prior to that of year 2017 were carried out following Ground Water Estimation Committee (GEC) 97 Methodology, whereas from 2017 onwards assessment are based on norms and guidelines of the GEC 2015 Methodology.

The main source of replenishable ground water resources is recharge from rainfall, which contributes to nearly 61 % of the total annual ground water recharge. India receives about 119 cm. of rain annually on average, with high spatial variation. A major part of the country receives rainfall mainly during SW Monsoon season, spread over the months of June to September, except in Tamil Nadu, where the major contribution is from NE monsoon during the period October– December. There are also States such as Jammu and Kashmir, Himachal Pradesh and Uttarakhand which receive significant rainfall in all seasons.

Over 75% of the annual rainfall is received in the four rainy months for June to September only thereby leading to large variations on temporal scale. The average annual rainfall is 119 cm, but it has great spatial variations. The areas on Western Ghats, Sub-Himalyan areas in North East and Meghalaya Hills receive heavy rainfall over 250 cm annually, whereas the areas of Northern parts of Kashmir and Western Rajasthan receive rainfall less than 40 cm. A major part of the country including Northern, Central and Eastern parts receives annual normal rainfall between 75 and 150 cm. In general, rainfall decreases westwards in the northern part of the country, whereas it decreases eastwards and then increases toward the coast in Peninsular India.

Type of rock formations and their storage and transmission characteristics have a significant influence on ground water recharge. Porous formations such as the alluvial formations in the Indo-Ganga-Brahmaputra basin generally have high specific yields and are good repositories of ground water. Ground water occurrence in the fissured formations occupying nearly two-thirds of the geographical area of the country, on the other hand, is mostly limited to the weathered, jointed and fractured portions of the rocks.

In the present assessment, the total annual ground water recharge has been assessed as 437.60 bcm. Keeping an allocation for natural discharge, the annual extractable ground water resource works out as 398.08 bcm. The total annual ground water extraction (as in 2022) has been assessed as 239.16 bcm. The average stage of ground water extraction for the country as a whole works out to be about 60.08 %. The extraction of ground water for various uses in different parts of the country is not uniform. Out of the total 7089 assessment units (Blocks/ Districts/ Mandals/

Talukas/Firkas) in the country 1006 units in various States (14 %) have been categorized as 'Over-Exploited' indicating ground water extraction exceeding the annually replenishable ground water recharge. A total of 260 (4 %) assessment units have been categorized as 'Critical', where the stage of ground water extraction is between 90-100 % of annual extractable resources available. There are 885 'Semi-Critical' units (12 %), where the stage of ground water extraction is between 70 % and 90 % and 4780 (67 %) assessment units have been categorized as 'Safe' where the stage of Ground water extraction is less than 70 %. Apart from this, there are 158 assessment units (2 %), which have been categorized as 'Saline' as major part of the ground water in phreatic aquifers is brackish or saline. Similarly out of 24.69 lakh sq km recharge worthy area of the country, 4.30 lakh sq km (17 %) are under 'Over-Exploited', 0.77 lakh sq km (3 %) are under 'Critical', 3.03 lakh sq km (12 %) are under 'Semi-Critical', 16.18 lakh sq km (66 %) are under 'Safe' and 0.4 lakh sq km (2 %) are under 'Saline' category assessment units. Out of 398.08 bcm of Total Annual Extractable Resources of the country, 46.05 bcm (12 %) are under 'Over-Exploited', 13.02 bcm (3 %) are under 'Critical', 47 bcm (12 %) are under 'Semi-Critical', 291.88 bcm (73 %) are under 'Safe' category assessment units.

In comparison to 2020 assessment, the total numbers of assessment units in the country have increased from 6965 to 7089 with major contribution (in increase) from the State of West Bengal, Karnataka,Rajasthan, Uttar Pradesh, Telangana, Gujarat and Jharkand. The total annual ground water recharge has increased from 436 to 437.6 bcm, where major increase is noticed in the States of Bihar, Telangana, Andhra Pradesh, Tamilnadu, Arunachal Pradesh, Odisha and Gujarat. The changes are attributed mainly to changes in recharge from 'Other Sources'. Accordingly, the annual extractable resource of GW Resource Assessment, 2022 on comparison GW Resource Assessment, 2022 also shows a increase from 397.6 to 398.08 bcm. The ground water extraction has marginally decreased from 244.92 to 239.16 bcm. The overall stage of groundwater extraction has marginally decreased from 61.6 % to 60.08 %.

The over-exploited assessment units are mostly concentrated in :(i) the north western part of the country including parts of Punjab, Haryana, Delhi and Western Uttar Pradesh where even though the replenishable resources are abundant, there have been indiscriminate withdrawals of ground water leading to over-exploitation; (ii) the western part of the country, particularly in parts of Rajasthan and Gujarat, where due to arid climate, groundwater recharge itself is limited, leading to stress on the resource and (iii) the southern part of peninsular India including parts of Karnataka, Tamil Nadu Telangana and Andhra Pradesh, where due to inherent characteristics of crystalline aquifers, the ground water availability is low. In some areas of the country, good continuous rainfall and management practices like ground water augmentation and conservation measures through government and private initiatives have resulted in improvement in ground water situation. Ground water resources assessment, like other fields of science, requires continuous refinements.

CHAPTER 1

1.0 INTRODUCTION

Water is a fundamental resource for life. Ground water has become an increasingly important natural resource catering to the fresh water requirements of various sectors in India. Sustainable development and efficient management of this scarce resource has become a challenge. Ground water has steadily emerged as the backbone of India's agriculture and drinking water security. Contribution of ground water is nearly 62% in irrigation, 85% in rural water supply and 50% in urban water supply. Ground water is an annually replenishable resource but its availability is non- uniform in space and time. Ground water available in the zone of water level fluctuation is replenished annually with rainfall being the dominant contributor. Hence, the sustainable utilization of ground water resources demands a realistic quantitative assessment of ground water availability in this zone based on reasonably valid scientific principles. National Water Policy, 2012 has laid emphasis on periodic assessment of ground water resources on scientific basis. The trends in water availability due to various factors including climate change must also be assessed and accounted for during water resources planning. To meet the increasing demands of water, it advocates direct use of rainfall, desalination and avoidance of inadvertent evapotranspiration for augmenting utilizable water resources. The National Water Policy 2012 also states that safe water for drinking and sanitation should be considered as pre-emptive needs followed by high priority allocation for other domestic needs (including needs of animals), achieving food security, supporting sustenance agriculture and minimum eco- system needs. Available water, after meeting the above needs should be allocated in a manner to promote its conservation and efficientuse.

1.1 PREVIOUS ASSESSMENTS

Assessment of water resources of the country dates back to 1901 when the First Irrigation Commission assessed the Surface Water Resources as 144 million hectare meters (M.ham) (NABARD, 2006). In 1949, Dr. A. N. Khosla, based on empirical formulae, estimated the total average annual runoff of all the river systems of India including both surface and ground water resources as 167 M.ham (CGWB, 1995). Since then attempts have been made from time to time by various Working Groups/ Committees/Task Forces constituted by Govt. of India to estimate the ground water resources of the country based on available data and in response to developmental needs. In 1976, National Commission of Agriculture assessed the total ground water resources of the country as 67 M.ham and the utilizable ground water as 35 M.ham, out of which 26 M.ham was considered available for irrigation (CGWB, 1995).

The first systematic methodology to assess the ground water resources of the country was evolved by Ground Water Over-Exploitation Committee in 1979. The committee was constituted by Agriculture Refinance and Development Corporation (ARDC) and was headed by Chairman, CGWB with Members from State Ground Water Organizations and Financial Institutions. Based on the norms suggested by the committee, the country's Gross Ground Water Recharge was assessed as 47 M.ham and the Net Recharge as 32 M.ham (CGWB, 1995).

In 1982, Government of India constituted 'Ground Water Estimation Committee' (GEC) drawing Members from various States / Central organizations engaged in hydrogeological studies and groundwater development. The Committee submitted its recommendations in the year 1984 and suggested a methodology for assessment of dynamic groundwater resources, which is commonly referred to as GEC 1984. As per the recommendations of the GEC 1984, State Governments constituted Working Groups for assessment of ground water potential. The Working Groups were headed by Secretaries in-charge of Ground Water Developments and included Heads of Ground Water Departments, State Agriculture Departments, representatives from Agriculture Universities and NABARD as members. Director, CGWB was the convener of the group. The base year for the computation of the resource varied between 1991 and 1993 and a National report on Ground Water Resources of India was brought out in 1995 by compiling the data of all the States and Union Territories. As per the report, the Total Replenishable Ground Water in India was assessed as 432 billion cubic meter (bcm). The ground water resource available for irrigation purpose was about 361 bcm. The Net Ground Water Draft for Irrigation uses was about 115 bcm, thereby arriving at the level of ground water development as 32 %. Utilizable Irrigation Potential from ground water of the country was worked out to be 64 million hectare (CGWB, 1995).

Increasing thrust on ground water and improved techniques for data acquisition led the Government of India to form another Committee in 1995 to review the existing methodology for ground water resource assessment and to suggest revisions, if necessary. The Committee submitted its report in 1997 wherein a revised and elaborate methodology for resource assessment was suggested, which was referred as GEC 1997. In view of the limitations of ground water assessment in hard rock terrain, another Committee on Ground Water Estimation Methodology in Hard Rock Terrain was formed in 2001 to review the existing methodology for resource estimation in such formations. The Committee made certain suggestions on the criteria for categorization of blocks to be adopted for the entire country irrespective of the terrain conditions. Based on GEC 1997, the dynamic ground water resources of India have been estimated for the entire country considering 2004, 2009, 2011 and 2013 as base years. The methodology underwent comprehensive revisions again in 2015 and a revised methodology, namely GEC 2015 methodology has been prescribed for ground water assessment. This methodology is being followed for assessment carried out from 2017 onwards.

In the present assessment, the total annual groundwater recharge in the country has been assessed as 437.60 bcm. Keeping an allocation for natural discharge, the annual extractable ground water resource has been assessed as 398.08 bcm. The annual groundwater extraction (as in 2022) is 239.16 bcm. The average stage of groundwater extraction for the country as a whole works out to be about 60.08 %. Out of the total 7089 assessment units (Blocks/ Mandals/ Talukas/Firkas) in the country, 1006 units in various States (14 %) have been categorized as 'Over-exploited' indicating ground water extraction exceeding the annually replenishable ground water recharge. In, 260 (4 %) assessment units the stage of groundwater extraction is between 90-100% and have been categorized as 'Critical'. There are 885 (12 %) "Semi-critical'' units, where the stage of ground water extraction is between 70 % and 90 % and 4780 (67 %) 'Safe'units, where the stage of Ground water extraction is less than 70 %. Apart from these, there are 158 (2%) assessment units, which have been categorised as 'Saline' as major part of the ground water in phreatic aquifers in these units is brackish or saline. Salient details of status of ground water resources and categorization of assessment units in 2004, 2009, 2011, 2013, 2017, 2020 and 2022 are shown in ***Table-1.1*** and ***Table-1.2*** respectively.

Table-1.1: Ground water Resources assessment 2004 to 2022

S. No.	Ground Water Resources Assessment	2004	2009	2011	2013	2017	2020	2022
1	Annual Ground Water Recharge (bcm)	433	431	433	447	432	436	438
2	Annual Extractable Ground Water Resource (bcm)	399	396	398	411	393	398	398
3	Annual Ground Water Extraction for Irrigation, Domestic & Industrial uses (bcm)	231	243	245	253	249	245	239
4	Stage of Ground Water Extraction (%)	58 %	61 %	62 %	62 %	63 %	62 %	60%

Table-1.2: Categorization of assessment units from 2004 to 2022

S. No.	Categorization of Blocks/ Mandals/ Talukas	2004	2009	2011	2013	2017	2020	2022
1	Total Assessed units	5723	5842	6607	6584	6881	6965	7089
2	Safe	4078	4277	4503	4519	4310	4427	4780
3	Semi-critical	550	523	697	681	972	1057	885
4	Critical	226	169	217	253	313	270	260
5	Over-Exploited	839	802	1071	1034	1186	1114	1006
6	Saline	30	71	92	96	100	97	158

1.2 GROUND WATER ASSESSMENT AND MANAGEMENT INITIATIVES

The inferences drawn from the ground water resources assessment is utilized as an input to the planners and stakeholders for taking appropriate management measures for optimal utilization and sustainable development of the ground water resources. Several measures, primarily based on the findings of the resource assessment, have been taken up by the Government of India to replenish/augment ground water resources.

Initiatives by the Government of India in this regard includes constitution of Central Ground Water Authority for regulation of ground water development in the country and compilation of a conceptual document titled “Master Plan for Artificial Recharge to Ground water in India” by CGWB, whichenvisages implementation of nearly 11 million Rain Water Harvesting and Artificial Recharge structures to augment the ground water resources of the country. Ministry of Jal Shakti has also circulated a Model Bill to all States/UTs to enable them to enact suitable legislation for regulation of ground water development, which includes provision of rainwater harvesting. CGWB has taken up National Aquifer Mapping & Management Programme (NAQUIM), for mapping of major aquifers, their characterization and formulation of Aquifer Management Plans to ensure sustainability of the resources, prioritising Over-exploited, Critical and Semi-critical assessment units. Several State Governments are implementing watershed development programmes, in which, ground water conservation forms an integral part. Water conservation measures are also taken up as a part of the MGNREGA. Ministry of Jal Shakti has launched 'Jal Kranti Abhiyan', aimed at consolidating water conservation and management initiatives in the country through a holistic and integrated approach involving all stakeholders. Atal Bhujal Yojana, being implemented from April 2020, envisages improving ground water management in identified water-stressed areas in parts of seven States in the country with emphasis on demand management and community participation. In addition, schemes of the Government of India such as Pradhan Mantri Krishi Sinchai Yojana (PMKSY)-Har Khet Ko Pani (HKKP)-Ground Water Irrigation(GWI) envisages creation of irrigation potential from groundwater in assessment units where there is sufficient scope for further future ground water development.

1.3 RE-ASSESSMENT OF GROUND WATER RESOURCES, 2022

The assessment of Ground water resources is carried out to determine the prevailing status of ground water resources in the country. It also helps assess the impact of the on-going ground water management practices on the groundwater resources. In 2022, Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti constituted a Central Level Expert Group (CLEG) for over-all supervision of the re-assessment of ground water resources in the entire country as in 2022. The terms of reference of the committee include supervision of assessment of annual replenishable ground water resources and the status of utilization for reference year 2022. A copy of the Government Resolution is in **Appendix A**.

Ground water resources assessment for reference year 2022 at the State/U.T Levels have been carried out jointly by State Ground Water Departments and Central Ground Water Board under the supervision of State Level Committees (**Appendix B**), with technical guidance from Central Level Expert Group. The assessment carried out was approved by the respective State Level Committee (**Appendix D**). For two States (Chhattisgarh and Jammu & Kashmir) the assessments are yet to be approved in State Level Committee. Based on the assessments provided by the respective State Level Committees and joint assessment made in the aforesaid States, the National Level Report titled "Dynamic Ground Water Resources of India-2022" has been compiled. The national compilation report provides summary and analysis of ground water resources in different States. The report was reviewed and deliberated upon during the meeting of CLEG held on 28.09.2022 and was approved as mentioned in **Appendix E.**

CHAPTER 2

2.0 GROUND WATER RESOURCES ESTIMATION METHODOLOGY

Ground water resource as in 2022 have been estimated following the guidelines mentioned in the GEC 2015 methodology using appropriate assumptions depending on data availability. The principal attributes of GEC 2015 methodology is given below:

The methodology recommends aquifer wise ground water resource assessment of both the Groundwater resources components, i.e., Replenishable ground water resources or Dynamic Ground Water Resources and In-storage Resources or Static Resources. Wherever the aquifer geometry has not been firmly established for the unconfined aquifer, the in-storage ground water resources have to be assessed in the alluvial areas down to the depth of bed rock or 300 m, whichever is less. In case of hard rock aquifers, the depth of assessment would be limited to 100 m. In case of confined aquifers, if it is known that groundwater extraction is being done from this aquifer, the dynamic as well as in-storage resources are to be estimated. If it is firmly established that there is no ground water extraction from this confined aquifer, then only in-storage resources of that aquifer has to be estimated. Until aquifer geometry is established on appropriate scale, the existing practice of using watershed in hard rock areas and blocks/mandals/ firkas in soft rock areas may be continued.

It is also pertinent to add that as it is advisable to restrict the groundwater development as far as possible to annual replenishable resources, the categorization also takes into account the relation between the annual replenishment and groundwater development. An area devoid of ground water potential may not be considered for development and may remain safe whereas an area with good groundwater potential may be developed and may become over exploited over a period of time. Thus, water augmentation efforts can be successful in such areas, where the groundwater potential is high and there is scope for augmentation.

2.1. GROUND WATER ASSESSMENT OF UNCONFINED AQUIFER

Though the assessment of ground water resources includes assessment of dynamic and in-storage resources, the development planning should mainly focus on dynamic resource as it gets replenished on an annual basis. Changes in static or in-storage resources normally reflect long-term impacts of ground water mining. Such resources may not be replenishable annually and may be allowed to be extracted only during exigencies with proper planning for augmentation in the succeeding excess rainfall years.

2.1.1. Assessment of Annually Replenishable or Dynamic Ground Water Resources

The methodology for ground water resources estimation is based on the principle of water balance as given below –

$$\boldsymbol{Inflow - Outflow = Change\ in\ Storage\ (of\ an\ aquifer)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(\mathbf{1})$$

Equation (1) can be further elaborated as –

$$\boldsymbol{\Delta S = R_{RF} + R_{STR} + R_C + R_{SWI} + R_{GWI} + R_{TP} + R_{WCS} \pm VF \pm LF - GE - T - E - B} \ldots\ldots..(\mathbf{2})$$

Where,

ΔS - Change is storage
R_{RF} - Rainfall recharge
R_{STR} - Recharge from stream channels
R_C - Recharge from canals
R_{SWI} - Recharge from surface water irrigation
R_{GWI} - Recharge from ground water irrigation
R_{TP} - Recharge from Tanks & Ponds
R_{WCS} - Recharge from water conservation structures
VF - Vertical flow across the aquifer system
LF - Lateral flow along the aquifer system (through flow)
GE - Ground Water Extraction
T - Transpiration
E - Evaporation
B - Base flow

It is preferred that all the components of water balance equation should be estimated in an assessment unit. Due to lack of data for all the components in most of the assessment units, it is proposed that at present the water budget may be restricted to the major components only, taking into consideration certain reasonable assumptions. The estimation is to be carried out using lumped parameter estimation approach keeping in mind that data from many more sources if available may be used for refining the assessment.

2.1.1.1. Rainfall Recharge

It is recommended that ground water recharge should be estimated on ground water level fluctuation and specific yield approach since this method takes into account the response of ground water levels to ground water input and output components. This, however, requires adequately spaced representative water level measurement for a sufficiently long period. It is proposed that there should be at least three spatially well distributed observation wells in the assessment unit, or one observation well per 100 sq. Km. Water level data should also be available for a minimum period of 5 years (preferably 10years), along with corresponding rainfall data. Regarding frequency of water level data, two water level readings, during pre and post monsoon seasons, are the minimum requirement. It would be ideal to have monthly water level measurements to record the peak rise and maximum fall in the ground water levels. In units or subareas where adequate data on ground water level fluctuations are not available as specified above, ground water recharge may be estimated using rainfall infiltration factor method only. The rainfall recharge during non-monsoon season may be estimated using rainfall infiltration factor method only.

2.1.1.1.1. Ground Water Level Fluctuation Method

The ground water level fluctuation method is to be used for assessment of rainfall recharge in the monsoon season. The ground water balance equation in non-command areas is given by

$$\Delta \boldsymbol{S} = \boldsymbol{R_{RF}} + \boldsymbol{R_{STR}} + \boldsymbol{R_{SWI}} + \boldsymbol{R_{GWI}} + \boldsymbol{R_{TP}} + \boldsymbol{R_{WCS}} \pm \boldsymbol{VF} \pm \boldsymbol{LF} - \boldsymbol{GE} - \boldsymbol{T} - \boldsymbol{E} - \boldsymbol{B} \dots\dots\dots\dots\dots\dots\dots..(\mathbf{3})$$

Where,

ΔS - Change is storage
R_{RF} - Rainfall recharge
R_{STR} - Recharge from stream channels
R_{SWI} - Recharge from surface water irrigation
R_{GWI} - Recharge from ground water irrigation
R_{TP} - Recharge from Tanks& Ponds
R_{WCS} - Recharge from water conservation structures
VF - Vertical flow across the aquifer system
LF - Lateral flow along the aquifer system (through flow)
GE - Ground water extraction
T - Transpiration
E - Evaporation
B - Base flow

Whereas the water balance equation in command area will have another term i.e., Recharge due to canals (R_C) and the equation will be as follows:

$$\Delta \boldsymbol{S} = \boldsymbol{R_{RF}} + \boldsymbol{R_{STR}} + \boldsymbol{R_C} + \boldsymbol{R_{SWI}} + \boldsymbol{R_{GWI}} + \boldsymbol{R_{TP}} + \boldsymbol{R_{WCS}} \pm \boldsymbol{VF} \pm \boldsymbol{LF} - \boldsymbol{GE} - \boldsymbol{T} - \boldsymbol{E} - \boldsymbol{B} \ldots\ldots\ldots\ldots (\mathbf{4})$$

A couple of important observations in the context of water level measurement must be followed. It is important to bear in mind that while estimating the quantum of ground water extraction, the depth from which ground water is being extracted should be considered. One should consider only the draft from the same aquifer for which the resource is being estimated.

The change in storage can be estimated using the following equation:

$$\Delta \boldsymbol{S} = \Delta \boldsymbol{h} \times \boldsymbol{A} \times \boldsymbol{S_Y} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (\mathbf{5})$$

Where,

ΔS - Change is storage
Δh - rise in water level in the monsoon season
A - Area for computation of recharge
S_Y - Specific Yield

Substituting the expression in equation (5) for storage increase ΔS in terms of water level fluctuation and specific yield, the equations (3) & (4) becomes (6) & (7) for non-command and command sub-units,

$$\boldsymbol{R_{RF}} = \Delta \boldsymbol{h} \times \boldsymbol{A} \times \boldsymbol{S_Y} - \boldsymbol{R_{STR}} - \boldsymbol{R_{SWI}} - \boldsymbol{R_{GWI}} - \boldsymbol{R_{TP}} - \boldsymbol{R_{WCS}} \pm \boldsymbol{VF} \pm \boldsymbol{LF} + \boldsymbol{GE} + \boldsymbol{T} + \boldsymbol{E} + \boldsymbol{B} \ldots\ldots\ldots\ldots (\mathbf{6})$$

$$\boldsymbol{R_{RF}} = \Delta \boldsymbol{h} \times \boldsymbol{A} \times \boldsymbol{S_Y} - \boldsymbol{R_{STR}} - \boldsymbol{R_C} - \boldsymbol{R_{SWI}} - \boldsymbol{R_{GWI}} - \boldsymbol{R_{TP}} - \boldsymbol{R_{WCS}} \pm \boldsymbol{VF} \pm \boldsymbol{LF} + \boldsymbol{GE} + \boldsymbol{T} + \boldsymbol{E} + \boldsymbol{B} \ldots\ldots\ldots (\mathbf{7})$$

Where base flow/ recharge to/from streams have not been estimated, the same is assumed to be zero. The rainfall recharge obtained by using equation (6) and (7) provides the recharge in any particular monsoon season for the associated monsoon season rainfall. This estimate is to be normalized for the normal monsoon season rainfall as per the procedure indicated below.

Normalization of Rainfall Recharge

Let R_i be the rainfall recharge and r_i be the associated rainfall. The subscript "i" takes values 1 to N where N is the number of years for which data is available. This should be at least 5. The rainfall recharge, R_i is obtained as per equation (6) & equation (7) depending on the sub-unit for which the normalization is being done.

After the pairs of data on R_i and r_i have been obtained as described above, a normalisation procedure is to be carried out for obtaining the rainfall recharge corresponding to the normal monsoon season rainfall. Let r(normal) be the normal monsoon season rainfall obtained as the average of recent 30 to 50 years of monsoon season rainfall. Two methods are possible for the normalisation procedure. The first method is based on a linear relationship between recharge and rainfall of the form

$$\boldsymbol{R = ar} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \boldsymbol{(8)}$$

Where,

R = Rainfall recharge during monsoon season
r = Monsoon season rainfall
a = a constant

The computational procedure to be followed in the first method is as given below:

$$\boldsymbol{R_{RF}(normal) = \frac{\sum_{i=1}^{N}\left[R_i \frac{r(normal)}{r_i}\right]}{N}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \boldsymbol{(9)}$$

Where,

R_{RF}(normal) - Normalized Rainfall Recharge in the monsoon season
R_i - Rainfall Recharge in the monsoon season for the i^{th} year
r(normal) - Normal monsoon season rainfall
r_i - Rainfall in the monsoon season for the i^{th} year
N - No. of years for which data is available

The second method is also based on a linear relation between recharge and rainfall. However, this linear relationship is of the form,

$$\boldsymbol{R_{RF}(normal) = a \times r(normal) + b} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \boldsymbol{(10)}$$

Where,

R_{RF}(normal) - Normalized Rainfall Recharge in the monsoon season
r(normal) - Normal monsoon season rainfall
a and b - Constants.

The two constants 'a' and 'b' in the above equation are obtained through a linear regression analysis. The computational procedure to be followed in the second method is as given below:

$$\boldsymbol{a = \frac{NS_4 - S_1S_2}{NS_3 - S_1^2}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \boldsymbol{(11)}$$

$$b = \frac{S_2 - aS_1}{N} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots. (12)$$

Where,

$$S_1 = \sum_{i=1}^{N} r_i \;,\quad S_2 = \sum_{i=1}^{N} R_i \;,\quad S_3 = \sum_{i=1}^{N} r_i^2 \;,\quad S_4 = \sum_{i=1}^{N} R_i r_i$$

2.1.1.1.2. Rainfall Infiltration Factor Method

The rainfall recharge estimation based on Water level fluctuation method reflects actual field conditions since it takes into account the response of ground water level. However the ground water extraction estimation included in the computation of rainfall recharge using water level fluctuation approach is often subject to uncertainties. Therefore, it is recommended to compare the rainfall recharge obtained from water level fluctuation approach with that estimated using rainfall infiltration factor method. Recharge from rainfall is estimated by using the following relationship –

$$R_{RF} = RFIF \times A \times \frac{(R-a)}{1000} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.. (13)$$

Where,

R_{RF} - Rainfall recharge in ham

A - Area in hectares

RFIF - Rainfall Infiltration Factor

R - Rainfall in mm

a - Minimum threshold value above which rainfall induces ground water recharge in mm

The threshold limit of minimum and maximum rainfall event which can induce recharge to the aquifer is to be considered while estimating ground water recharge using rainfall infiltration factor method. The minimum threshold limit is in accordance with the relation shown in equation (13) and the maximum threshold limit is based on the premise that after a certain limit, the rate of storm rain is too high to contribute to infiltration and they will only contribute to surface runoff. It is suggested that 10% of Normal annual rainfall may be taken as minimum rainfall threshold and 3000 mm as maximum rainfall limit. While computing the rainfall recharge, 10% of the normal annual rainfall is to be deducted from the monsoon rainfall and balance rainfall would be considered for computation of rainfall recharge. The same recharge factor may be used for both monsoon and non-monsoon rainfall, with the condition that the recharge due to non-monsoon rainfall may be taken as zero, if the normal rainfall during the non-monsoon season is less than 10% of normal annual rainfall. In using the method based on the specified norms, recharge due to both monsoon and non-monsoon rainfall may be estimated for normal rainfall, based on recent 30 to 50 years of data.

2.1.1.1.3. Percent Deviation

After computing the rainfall recharge for normal monsoon season rainfall using the ground water level fluctuation method and rainfall infiltration factor method these two estimates have to be compared with each other. A term, Percent Deviation (PD) which is the difference between the two expressed as a percentage of the later is computed as

$$PD = \frac{R_{RF}(normal, wtfm) - R_{RF}(normal, rifm)}{R_{RF}(normal, rifm)} \times 100 \ldots\ldots\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots.(14)$$

Where,

R_{RF} (normal, wlfm) = Rainfall recharge for normal monsoon season rainfall estimated by the ground water level fluctuation method

R_{RF} (normal, rifm) = Rainfall recharge for normal monsoon season rainfall estimated by the rainfall infiltration factor method

The rainfall recharge for normal monsoon season rainfall is finally adopted as per the criteria given below:

- If PD is greater than or equal to -20%, and less than or equal to +20%, R_{RF} (normal) is taken as the value estimated by the ground water level fluctuation method.
- If PD is less than -20%, R_{RF} (normal) is taken as equal to 0.8 times the value estimated by the rainfall infiltration factor method.
- If PD is greater than +20%, R_{RF} (normal) is taken as equal to 1.2 times the value estimated by the rainfall infiltration factor method.

2.1.1.2. Recharge from Other Sources

Recharge from other sources constitutes recharges from canals, surface water irrigation, ground water irrigation, tanks & ponds and water conservation structures in command areas where as in non-command areas it constitutes the recharge due to surface water irrigation, ground water irrigation, tanks & ponds and water conservation structures. The methods of estimation of recharge from different sources are as follows.

Sl. No.	Source	Estimation Formula	Parameters
1	Recharge from Canals	$R_C = WA \times SF \times Days$	R_C = Recharge from Canals WA = Wetted Area SF = Seepage Factor Days = Number of Canal Running Days
2	Recharge from Surface Water Irrigation	$R_{SWI} = AD \times Days \times RFF$	R_{SWI} = Recharge due to applied surface water irrigation AD = Average Discharge Days = Number of days water is discharged to the Fields RFF = Return Flow Factor
3	Recharge from Ground Water Irrigation	$R_{GWI} = GE_{IRR} \times RFF$	R_{GWI} = Recharge due to applied ground water irrigation GE_{IRR} = Ground Water Extraction for Irrigation RFF = Return Flow Factor

Sl. No.	Source	Estimation Formula	Parameters
4	Recharge due to Tanks & Ponds	$R_{TP} = AWSA \times N \times RF$	R_{TP} = Recharge due to Tanks & Ponds AWSA = Average Water Spread Area N = Number of days Water is available in the Tank/Pond RF = Recharge Factor
5	Recharge due to Water Conservation Structures	$R_{WCS} = GS \times RF$	RWCS = Recharge due to Water Conservation Structures GS = Gross Storage = Storage Capacity multiplied by number of fillings. RF = Recharge Factor

2.1.1.3. Lateral Flow Along the Aquifer System (Through Flow)

In equations 6 & 7, if the area under consideration is a watershed, the lateral flow across boundaries can be considered as zero in case such estimates are not available. If there is inflow and outflow across the boundary, theoretically, the net inflow may be calculated using Darcy law, by delineating the inflow and outflow sections of the boundary. Besides such delineation, the calculation also requires estimate of transmissivity and hydraulic gradient across the inflow and outflow sections. These calculations are most conveniently done in a computer model. It is recommended to initiate regional scale modelling with well-defined flow boundaries. Once the modelling is complete, the lateral flows (LF) across boundaries for any assessment unit can be obtained from the model. In case Lateral Flow is calculated using computer model, the same should be included in the water balance equation.

2.1.1.4. Base Flow and Stream Recharge

If stream gauge stations are located in the assessment unit, the base flow and recharge from streams can be computed using Stream Hydrograph Separation method, Numerical Modelling and Analytical solutions. If the assessment unit is a watershed, a single stream monitoring station at the mouth of the watershed can provide the required data for the calculation of base flow. Any other information on local-level base flows such as those collected by research centres, educational institutes or NGOs may also be used to improve the estimates on base flows.

Base flow separation methods can be divided into two main types: non-tracer-based and tracer-based separation methods. Non-tracer methods include Stream hydrograph analysis, water balance method and numerical ground water modelling techniques. Digital filters are available for separating base flow component of the stream hydrograph.

Hydro-chemical tracers and environmental isotope methods also use hydrograph separation techniques based on mass balance approach. Stream recharge can be computed either using modelling techniques or simply by applying the Darcy Law.

Base flow assessment and Stream recharge should be carried out in consultation with Central Water Commission in order to avoid any duplicity in the estimation of total water availability in a river basin.

2.1.1.5. Vertical Inter Aquifer Flow

This can be estimated provided aquifer geometry and aquifer parameters are known. This can be calculated using the Darcy's law if the hydraulic heads in both aquifers and the hydraulic conductivity and thickness of the aquitard separating both the aquifers are known. Ground water flow modelling is an important tool to estimate such flows. As envisaged in this report regional scale modelling studies will help in refining vertical inter aquifer flow estimate.

2.1.1.6. Evaporation and Transpiration

Evaporation can be estimated for the aquifer in the assessment unit if water levels in the aquifer are within the capillary zone. It is recommended to compute the evaporation through field studies. If field studies are not possible, for areas with water levels within 1.0mbgl, evaporation can be estimated using the evaporation rates available for other adjoining areas. If depth to water level is more than 1.0mbgl, the evaporation losses from the aquifer should be taken as zero.

Transpiration through vegetation can be estimated if water levels in the aquifer are within the maximum root zone of the local vegetation. It is recommended to compute the transpiration through field studies. Even though it varies from place to place depending on type of soil &vegetation, in the absence of field studies the following estimation can be followed. If water levels are within 3.5m bgl, transpiration can be estimated using the transpiration rates available for other areas. If it is greater than3.5m bgl, the transpiration should be taken as zero.

For estimating evapotranspiration, field tools like Lysimeters can be used to estimate actual evapotranspiration. Usually agricultural universities and IMD carry out lysimeter experiments and archive the evapotranspiration data. Remote sensing based techniques like SEBAL (Surface Energy Balance Algorithm for Land) can be used for estimation of actual evapotranspiration. Assessing offices may apply available lysimeter data or other techniques for estimation of evapotranspiration. In case where such data is not available, evapotranspiration losses can be empirically estimated from PET data provided by IMD.

2.1.1.7. Recharge During Monsoon Season

The sum of normalized monsoon rainfall recharge and the recharge from other sources and lateral and vertical flows into & out of the sub unit and stream inflows & outflows during monsoon season is the total recharge/ accumulation during monsoon season for the sub unit. Similarly, this is to be computed for all the sub units available in the assessment unit.

2.1.1.8. Recharge During Non-Monsoon Season

The rainfall recharge during non-monsoon season is estimated using rainfall infiltration factor Method only when the non-monsoon season rainfall is more than 10% of normal annual rainfall. The sum of non-monsoon rainfall recharge and the recharge from other sources and lateral and vertical flows into & out of the sub unit and stream inflows & outflows during non-monsoon season is the total recharge/ accumulation during non-monsoon season for the sub unit. Similarly, this is to be computed for all the sub units available in the assessment unit.

2.1.1.9. Total Annual Ground Water Recharge

The sum of the recharge/ accumulations during monsoon and non-monsoon seasons is the total annual ground water recharge/ accumulations for the sub unit. Similarly, this is to be computed for all the sub units available in the assessment unit.

2.1.1.10. Annual Extractable Ground Water Resource (EGR)

The Annual Extractable Ground Water Resource (EGR) is computed by deducting the Total Annual Natural Discharge from Total Annual Ground Water Recharge.

The ground water base flow contribution limited to the ecological flow of the river should be determined which will be deducted from Annual Ground Water Recharge to determine Annual Extractable Ground Water Resources (EGR). The ecological flows of the rivers are to be determined in consultation with Central Water Commission and other concerned river basin agencies. In case base flow contribution to the ecological flow of rivers is not determined then following assumption is to be followed.

In the water level fluctuation method, a significant portion of base flow is already accounted for by taking the post monsoon water level one month after the end of rainfall. The base flow in the remaining non-monsoon period is likely to be small, especially in hard rock areas. In the assessment units, where river stage data are not available and neither the detailed data for quantitative assessment of the natural discharge are available, present practice (GEC 1997) of allocation of unaccountable natural discharges to 5% or 10% of annual recharge may be retained. If the rainfall recharge is assessed using water level fluctuation method this will be 5% of the annual recharge and if it is assessed using rainfall infiltration factor method, it will be 10% of the annual recharge. The balance will account for Annual Extractable Ground Water Resources (EGR).

2.1.1.11. Estimation of Ground Water Extraction

Ground water draft or extraction is to be assessed as follows.

$$\boldsymbol{GE_{ALL} = GE_{IRR} + GE_{DOM} + GE_{IND}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (\mathbf{15})$$

Where,

GE_{ALL} = Ground water extraction for all uses
GE_{IRR} = Ground water extraction for irrigation
GE_{DOM} = Ground water extraction for domestic uses
GE_{IND} = Ground water extraction for industrial uses

2.1.1.11.1. Ground Water Extraction for Irrigation (GE_{IRR})

The methods for estimation of ground water extraction are as follows.

Unit Draft Method: – In this method, season-wise unit draft of each type of well in an assessment unit is estimated. The unit draft of different types (eg. Dug well, Dug cum bore well, shallow tube well, deep tube well, bore well etc.) is multiplied with the number of wells of that particular type to obtain season-wise ground water extraction by that particular structure.

Crop Water Requirement Method: – For each crop, the season-wise net irrigation water requirement is determined. This is then multiplied with the area irrigated by ground water abstraction structures. The database on crop area is obtained from Revenue records in Tehsil office, Agriculture Census and also by using Remote Sensing techniques.

Power Consumption Method: –Ground water extraction for unit power consumption (electric) is determined. Extraction per unit power consumption is then multiplied with number of units of power consumed for agricultural pump sets to obtain total ground water extraction for irrigation.

2.1.1.11.2. Ground Water Extraction for Domestic Use (GE_{DOM})

There are several methods for estimation of extraction for domestic use(GEDOM). Some of the commonly adopted methods are described here.

Unit Draft Method: – In this method, unit draft of each type of well is multiplied by the number of wells used for domestic purpose to obtain the domestic ground water extraction.

Consumptive Use Method: – In this method, population is multiplied with per capita consumption usually expressed in litre per capita per day (lpcd). It can be expressed using following equation.

$$\boldsymbol{GE_{DOM} = Population \times Consumptive\ Requirement \times L_g} \ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots\ldots\ldots\ldots.(\mathbf{16})$$

Where,

L_g = Fractional Load on Ground Water for Domestic Water Supply.

The Load on Ground water can be obtained from the Information based on Civic water supply agencies in urban areas.

2.1.1.11.3. Ground Water Extraction for Industrial Use (GE_{IND})

The commonly adopted methods for estimating the extraction for industrial use are as below:

Unit Draft Method: - In this method, unit draft of each type of well is multiplied by the number of wells used for industrial purpose to obtain the industrial ground water extraction.

Consumptive Use Pattern Method: – In this method, water consumption of different industrial units is determined. Numbers of Industrial units which are dependent on ground water are multiplied with unit water consumption to obtain ground water extraction for industrial use.

$$\boldsymbol{GE_{IND} = Number\ of\ Industrial\ Units \times Unit\ Water\ Consumption \times L_g} \ldots\ldots\ldots..\ldots\ldots\ldots.(\mathbf{17})$$

Where,

L_g = Fractional load on ground water for industrial water supply.

The load on ground water for industrial water supply can be obtained from water supply agencies in the Industrial belt.

Ground water extraction obtained from different methods need to be compared and based on field checks, the seemingly best value may be adopted. At times, ground water extraction obtained by different methods may vary widely. In such cases, the value matching the field situation should be considered. The storage depletion during a season, where other recharges are negligible can be taken as ground water extraction during that particular period.

2.1.1.12. Stage of Ground Water Extraction

The stage of ground water extraction is defined by,

$$\boldsymbol{Stage\ of\ GW\ Extraction} = \frac{\boldsymbol{Existing\ Gross\ GW\ Extraction\ for\ all\ Uses}}{\boldsymbol{Annual\ Extractable\ GW\ Resources}} \times \mathbf{100} \ldots\ldots\ldots..\ldots (\mathbf{18})$$

The existing gross ground water extraction for all uses refers to the total of existing gross ground water extraction for irrigation and all other purposes. The stage of ground water extraction should be obtained separately for command areas, non-command areas and poor ground water quality areas.

2.1.1.13. Validation of Stage of Ground Water Extraction

The assessment based on the stage of ground water extraction has inherent uncertainties. In view of this, it is desirable to validate the 'Stage of Ground Water Extraction' with long term trend of ground water levels.

Long term Water Level trends are prepared for a minimum period of 10 years for both pre-monsoon and post-monsoon period. If the ground water resource assessment and the trend of long term water levels contradict each other, this anomalous situation requires a review of the ground water resource computation, as well as the reliability of water level data. The mismatch conditions are enumerated below.

SOGWE	**Ground Water Level Trend**	**Remarks**
≤ 70%	Significant decline in trend in both pre-monsoon and post-monsoon	Not acceptable and needs reassessment
> 100%	No significant decline in both pre-monsoon and post-monsoon long term trend	Not acceptable and needs reassessment

2.1.1.14. Categorisation of Assessment Unit

As emphasised in the National Water Policy, 2012, a convergence of Quantity and Quality of ground water resources is required while assessing the ground water status in an assessment unit. Therefore, it is recommended to separate estimation of resources where water quality is beyond permissible limits for the parameter salinity.

2.1.1.14.1. Categorisation of Assessment Unit Based on Quantity

The categorisation based on status of ground water quantity is defined by Stage of Ground Water Extraction as given below:

Stage of Ground Water Extraction	**Category**
≤ 70%	Safe
> 70% and ≤90%	Semi-critical
> 90% and ≤100%	Critical
> 100%	Over Exploited

2.1.1.14.2. Categorisation of Assessment Unit Based on Quality

As it is not possible to categorize the assessment units in terms of the extent of quality hazard, based on the available water quality monitoring mechanism and database on ground water quality, the Committee recommends that each assessment unit, in addition to the Quantity based categorization (safe, semi-critical, critical and over-exploited) should bear a quality hazard identifier. If any of the three quality hazards in terms of Arsenic, Fluoride and Salinity are encountered in the assessment sub unit in mappable units, the assessment sub unit may be tagged with the particular Quality hazard.

2.1.1.15. Allocation of Ground Water Resource for Utilisation

The Annual Extractable Ground Water Resources are to be apportioned between domestic, industrial and irrigation uses. Among these, as per the National Water Policy, requirement for domestic water supply is to be accorded priority. This requirement has to be based on population as projected to the year 2025, per capita requirement of water for domestic use, and relative load on ground water for urban and rural water supply. In situations where adequate data is not available to make this estimate, the following empirical relation is recommended.

$$\boldsymbol{Alloc = 22 \times N \times L_g\ mm\ per\ year} \ldots\ldots\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots\ldots\ldots\ldots\ldots.(\mathbf{19})$$

Where,

Alloc = Allocation for domestic water requirement

N = population density in the unit in thousands per sq. km.

L_g = fractional load on ground water for domestic water supply (≤ 1.0)

In deriving equation (19), it is assumed that the requirement of water for domestic use is 60 lpd per head. The equation can be suitably modified in case per capita requirement is different. If by chance, the estimation of projected allocation for future domestic needs is less than the current domestic extraction due to any reason, the allocation must be equal to the present day extraction. It can never be less than the present day extraction as it is unrealistic.

2.1.1.16. Net Annual Ground Water Availability for Future Use

The water available for future use is obtained by deducting the allocation for domestic use and current extraction for Irrigation and Industrial uses from the Annual Extractable Ground Water Recharge. The resulting ground water potential is termed as the net annual ground water availability for future use. The Net annual ground water availability for future use should be calculated separately for non-command areas and command areas. As per the recommendations of the R&D Advisory committee, the ground water available for future use can never be negative. If it becomes negative, the future allocation of Domestic needs can be reduced to current extraction for domestic use. Even then if it is still negative, then the ground water available for future uses will be zero.

2.1.1.17. Additional Potential Resources under Specific Conditions

2.1.1.17.1. Potential Resource Due to Spring Discharge

Spring discharge occurs at the places where ground water level cuts the surface topography. The spring discharge is equal to the ground water recharge minus the outflow through evaporation and evapotranspiration and vertical and lateral sub-surface flow. Thus, Spring Discharge is a form of

'Annual Extractable Ground Water Recharge'. It is a renewable resource, though not to be used for Categorisation. Spring discharge measurement is to be carried out by volumetric measurement of discharge of the springs. Spring discharges multiplied with time in days of each season will give the quantum of spring resources available during that season. The committee recommends that in hilly areas with substantial potential of spring discharges, the discharge measurement should be made at least 4 times a year in parity with the existing water level monitoring schedule.

$$\boldsymbol{Potential\ ground\ water\ resource\ due\ to\ springs} = \boldsymbol{Q} \times \boldsymbol{No.of\ days} \ldots\ldots\ldots\ldots..\ldots\ldots.(\mathbf{20})$$

Where,

Q = Spring Discharge

No of days = No of days spring yields.

2.1.1.17.2. Potential Resource in Waterlogged and Shallow Water Table Areas

In the area where the ground water level is less than 5m below ground level or in waterlogged areas, the resources up to 5m below ground level are potential and would be available for development in addition to the annual recharge in the area. The computation of potential resource to ground water reservoir in shallow water table areas can be done by adopting the following equation:

$$\boldsymbol{Potential\ ground\ water\ resource\ in\ shallow\ water\ table\ areas} = (\mathbf{5} - \boldsymbol{D}) \times \boldsymbol{A} \times \boldsymbol{S_Y} \ldots\ldots\ldots..(\mathbf{21})$$

Where,

D = Depth to water table below ground surface in pre-monsoon period in shallow aquifers.

A = Area of shallow water table zone.

S_Y = Specific Yield

2.1.1.17.3. Potential Resource in Flood Prone Areas

Ground water recharge from a flood plain is mainly the function of the following parameters-

- Areal extent of flood plain
- Retention period of flood
- Type of sub-soil strata and silt charge in the river water which gets deposited and controls seepage

Since collection of data on all these factors is time taking and difficult, in the meantime, the potential resource from flood plain may be estimated on the same norms as for ponds, tanks and lakes. This has to be calculated over the water spread area and only for the retention period using the following formula.

$$\boldsymbol{Potential\ ground\ water\ resource\ in\ Flood\ Prone\ Areas} = \mathbf{1.4} \times \boldsymbol{N} \times \frac{\boldsymbol{A}}{\mathbf{1000}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots...(\mathbf{22})$$

Where,

N = No. of Days Water is Retained in the Area

A = Flood Prone Area

2.1.1.18. Apportioning of Ground Water Assessment from Watershed to Development Unit

Where the assessment unit is a watershed, there is a need to convert the ground water assessment in terms of an administrative unit such as block/ taluka/ mandal/ firka. This may be done as follows.

A block may comprise of one or more watersheds, in part or full. First, the ground water assessment in the subareas, command, non-command and poor ground water quality areas of the watershed may be converted into depth unit (mm), by dividing the annual recharge by the respective area. The contribution of this subarea of the watershed to the block, is now calculated by multiplying this depth with the area in the block occupied by this sub-area. This procedure must be followed to calculate the contribution from the sub-areas of all watersheds occurring in the block, to work out the total ground water resource of the block.

The total ground water resource of the block should be presented separately for each type of sub-area, namely for command areas, non-command areas and poor ground water quality areas, as in the case of the individual watersheds.

2.1.2. Assessment of In-Storage Ground Water Resources or Static Ground Water Resources

The computation of the static or in-storage ground water resources may be done after delineating the aquifer thickness and specific yield of the aquifer material. The computations can be done as follows: -

$$\boldsymbol{SGWR} = \boldsymbol{A} \times (\boldsymbol{Z_2} - \boldsymbol{Z_1}) \times \boldsymbol{S_Y} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (\mathbf{23})$$

Where,

SGWR = Static or in-storage ground water resources

A = Area of the assessment unit

Z_2= Bottom of unconfined aquifer

Z_1 = Pre-monsoon water level

S_Y = Specific yield in the in-storage zone

2.1.3. Assessment of Total Ground Water Availability in Unconfined Aquifer

The sum of Annual Exploitable Ground Water Resource and the In-storage Ground Water Resources of an unconfined aquifer is the Total Ground Water Availability of that aquifer.

2.2. GROUND WATER ASSESSMENT OF CONFINED AQUIFER SYSTEM

The assessment of the ground water resources of the confined aquifers is done by following ground water storage approach. If the areal extent of the confined aquifer is “A” then the total quantity of water added to or released from the entire aquifer is

$$\boldsymbol{Q} = \boldsymbol{S} \times \boldsymbol{A} \times \Delta\boldsymbol{h} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (\mathbf{24})$$

Where,

Q = Quantity of water confined aquifer can release (m^3)

S = Storativity

A = Areal extent of the confined aquifer (m^2)

Δh = Change in Piezometric head (m)

Once the piezometric head reaches below the top confining bed, it behaves like an unconfined aquifer and directly dewaters the aquifer and there is a possibility of damage to the aquifer as well as topography. The quantity of water released in confined aquifer due to change in pressure can be computed between piezometric head (ht) at any given time 't' and the bottom of the top confining layer (ho) by using the following equation.

$$\boldsymbol{Q_P = S \times A \times \Delta h = S \times A \times (h_t - h_0)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (\mathbf{25})$$

Where,

Q_P = Ground Water Potential of Confined Aquifer

S = Storativity

A = Areal extent of the confined aquifer

Δh = Change in Piezometric head

h_t = Piezometric head at any particular time

h_0 = Bottom of the top Confining Layer

If any development activity is started in the confined aquifer, the assessment is done for both the dynamic as well as in-storage resources of the confined aquifer.

2.2.1. Dynamic Ground Water Resources of Confined Aquifer

To assess the dynamic ground water resources of the confined aquifer the following equation can be used with the pre and post monsoon piezometric heads of the particular aquifer.

$$\boldsymbol{Q_D = S \times A \times \Delta h = S \times A \times (h_{POST} - h_{PRE})} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (\mathbf{26})$$

Where,

Q_D = Dynamic Ground Water Resource of Confined Aquifer (m^3)

S = Storativity

A = Areal extent of the confined aquifer (m^2)

Δh = Change in piezometric head (m)

h_{POST} = Piezometric head during post-monsoon period (m amsl)

h_{PRE} = Piezometric head during pre-monsoon period (m amsl)

2.2.2. In-storage Ground Water Resources of Confined Aquifer

For assessing the in- storage ground water potential of a confined aquifer, one has to compute the resources between the pre-monsoon piezometric head and bottom of the top confining layer. That can be assessed using the following formula:

$$\boldsymbol{Q_I = S \times A \times \Delta h = S \times A \times (h_{PRE} - h_0)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (\mathbf{27})$$

Where,

Q_I =In-storage Ground Water Resource of Confined Aquifer (m^3)

S = Storativity

A = Areal extent of the confined aquifer (m^2)

Δh = Change in piezometric head (m)

h_0 = Bottom level of the top confining layer (m amsl)

h_{PRE}= Piezometric head during pre-monsoon period (m amsl)

If the confined aquifer is not being exploited for any purpose, the dynamic and static resources of the confined aquifer need not be estimated separately. Instead the in-storage ground water resource of the aquifer can be computed using the following formula.

$$\boldsymbol{Q_P} = \boldsymbol{S} \times \boldsymbol{A} \times \Delta \boldsymbol{h} = \boldsymbol{S} \times \boldsymbol{A} \times (\boldsymbol{h_{POST}} - \boldsymbol{h_0}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. \textbf{(28)}$$

Where,

Q_P = In-storage Ground Water Resource of Confined Aquifer or the quantity of water under pressure (m^3)
S = Storativity
A = Areal extent of the confined aquifer (m^2)
Δh = Change in piezometric head (m)
h_0 = Bottom level of the top confining layer (m amsl)
h_{POST} = Piezometric head during post-monsoon period (m amsl)

The calculated resource includes small amount of dynamic resource of the confined aquifer also, which replenishes every year. But to make it simpler this was also computed as part of the static or in-storage resource of the confined aquifer.

2.2.3. Assessment of Total Ground Water Availability of Confined Aquifer

If the confined aquifer is being exploited, the Total Ground Water Availability of the confined aquifer is the sum of Dynamic Ground Water Resources and the In-storage Ground Water Resources of that confined aquifer whereas if it is not being exploited, the Total Ground Water Availability of the confined aquifer comprises of only one component i.e. the In-storage Ground Water Resources of that confined aquifer.

2.3. GROUND WATER ASSESSMENT OF SEMI-CONFINED AQUIFER SYSTEM

The Assessment of Ground Water Resources of a semi-confined aquifer has some more complications. Unless and until, it is well studied that the recharge to this is not computed either in the over lying unconfined aquifer or underlying/overlying semi confined aquifers, it should not be assessed separately. If it is assessed separately, there is a possibility of duplication of estimating the same resource by direct computation in one aquifer and as leakage in the other aquifer. As it is advisable to under estimate rather than to overestimate the resources, it is recommended not to assess these resources separately as long as there is no study indicating its non-estimation. If it is found through field studies that the resources are not assessed in any of the aquifers in the area, these resources are to be assessed following the methodology similar to that used in assessing the resources of Confined aquifers.

2.4. TOTAL GROUND WATER AVAILABILITY OF AN AREA

The Total Ground Water Availability in any area is the sum of dynamic and static/in-storage ground water resources in the unconfined aquifer and the dynamic and In-storage ground water resources of the Confined aquifers and semi confined aquifers in the area.

2.5. GROUND WATER ASSESSMENT IN URBAN AREAS

The Assessment of Ground Water Resources in urban areas is similar to that of rural areas. Because of the availability of draft data and slightly different infiltration process and recharge due to other sources, the following few points are to be considered.

- Even though the data on existing ground water abstraction structures are available, accuracy is somewhat doubtful and individuals cannot even enumerate the well census in urban areas. Hence it is recommended to use the difference of the actual demand and the supply by surface water sources as the withdrawal from the ground water resources.

- The urban areas are sometimes concrete jungles and rainfall infiltration is not equal to that of rural areas unless and until special measures are taken in the construction of roads and pavements. Hence, it is proposed to use 30% of the rainfall infiltration factor proposed for urban areas as an adhoc arrangement till field studies in these areas are done and documented field studies are available.

- Because of the water supply schemes, there are many pipelines available in the urban areas and the seepages from these channels or pipes are huge in some areas. Hence this component is also to be included in the other resources and the recharge may be estimated. The percent losses may be collected from the individual water supply agencies, 50% of which can be taken as recharge to the ground water system.

- In the urban areas in India, normally, there is no separate channels either open or sub surface for the drainage and flash floods. These channels also recharge to some extent the ground water reservoir. As on today, there is no documented field study to assess the recharge. The seepages from the sewerages, which normally contaminate the ground water resources with nitrate also contribute to the quantity of resources and hence same percent as in the case of water supply pipes may be taken as norm for the recharge on the quantity of sewerage when there is sub surface drainage system. If estimated flash flood data is available the same percent can be used on the quantum of flash floods to estimate the recharge from the flash floods. Even when the drainage system is open channels, till further documented field studies are done same procedure may be followed.

- It is proposed to have a separate ground water assessment for urban areas with population more than 10 lakhs.

2.6. GROUND WATER ASSESSMENT IN COASTAL AREAS

The assessment of ground water resources in coastal areas is similar to that of other areas. Because of the nature of hydraulic equilibrium of ground water with sea water, care should be taken in assessing the ground water resources of this area. While assessing the resources in these areas, following few points are to be considered.

- The ground water resources assessment in coastal areas includes the areas where the influence of sea water has an effect on the existence of fresh water in the area. It can be demarcated from the Coastal Regulatory zone or the Geomorphological maps or from the maps where sea water influences are demarcated.

- Wherever, the pre monsoon and post monsoon water levels are above mean sea level the dynamic component of the estimation will be same as other areas.
- If both these water levels are below sea level, the dynamic component should be taken as zero.
- Wherever, the post monsoon water table is above sea level and pre monsoon water table is below sea level the pre monsoon water table should be taken as at sea level and fluctuation is to be computed.
- The static or in storage resources are to be restricted to the minimum of 40 times the pre monsoon water table or the bottom of the aquifer.

2.7. GROUND WATER ASSESSMENT IN WATER LEVEL DEPLETION ZONES

There may be areas where ground water level shows a decline even in the monsoon season. The reasons for this may be any one of the following : (a) There is a genuine depletion in the ground water regime, with ground water extraction and natural ground water discharge in the monsoon season(outflow from the region and base flow) exceeding the recharge. (b) There may be an error in water level data due to inadequacy of observation wells.

If it is concluded that the water level data is erroneous, recharge assessment may be made based on rainfall infiltration factor method. If, on the other hand, water level data is assessed as reliable, the ground water level fluctuation method may be applied for recharge estimation. As ΔS in equation 3& 4 is negative, the estimated recharge will be less than the gross ground water extraction in the monsoon season. It must be noted that this recharge is the gross recharge minus the natural discharges in the monsoon season. The immediate conclusion from such an assessment in water depletion zones will be that the area falls under the over-exploited category which requires micro level study.

2.8. NORMS TO BE USED IN THE ASSESSMENT

The committee recommends that the state agencies should be encouraged to conduct field studies and use these computed norms in the assessment. For conducting field studies, it is recommended to follow the field-tested procedures for computing the norms. There is the possibility of error creeping in at various levels in the field study and hence the committee is of the opinion to give a maximum and minimum values for all the norms used in the estimation. The committee can foresee the handicap of the state agencies which are not able to compute the norms by their own field study. In such cases, it suggests an average of the range of norms to be used as the recommended value for the norm.

2.8.1. Specific Yield

Recently under Aquifer Mapping Project, Central Ground Water Board has classified all the aquifers into 16 Principal Aquifers which in turn were divided into 42 Major Aquifers. Hence, it is required to assign Specific Yield values to all these aquifer units. The values recommended in the ***Table-2.1*** may be followed in the future assessments. The Major aquifer map can be obtained from Regional offices of Central Ground Water Board.

The recommended Specific Yield values are to be used for assessment, unless sufficient data based on field studies are available to justify the minimum, maximum or other intermediate values. The Norms suggested below are nothing but the redistribution of norms suggested by GEC-1997 methodology and hence people are encouraged to conduct field studies and strengthen the Norms database.

Table-2.1: Norms Recommended for Specific Yield

Sl. No.	Principal Aquifer	Major Aquifers		Age	Recommended (%)	Minimum (%)	Maximum (%)
		Code	Name				
1	Alluvium	AL01	Younger Alluvium (Clay/Silt/Sand/ Calcareous concretions)	Quaternary	10	8	12
2	Alluvium	AL02	Pebble / Gravel/ Bazada/ Kandi	Quaternary	16	12	20
3	Alluvium	AL03	Older Alluvium (Silt/Sand/Gravel/Lithomargic clay)	Quaternary	6	4	8
4	Alluvium	AL04	Aeolian Alluvium (Silt/ Sand)	Quaternary	16	12	20
5	Alluvium	AL05	Coastal Alluvium (Sand/Silt/Clay)	Quaternary	10	8	12
6	Alluvium	AL06	Valley Fills	Quaternary	16	12	20
7	Alluvium	AL07	Glacial Deposits	Quaternary	16	12	20
8	Laterite	LT01	Laterite / Ferruginous concretions	Quaternary	2.5	2	3
9	Basalt	BS01	Basic Rocks (Basalt) - Weathered, Vesicular or Jointed	Mesozoic to Cenozoic	2	1	3
10	Basalt	BS01	Basic Rocks (Basalt) - Massive Poorly Jointed	Mesozoic to Cenozoic	0.35	0.2	0.5
11	Basalt	BS02	Ultra Basic - Weathered, Vesicular or Jointed	Mesozoic to Cenozoic	2	1	3
12	Basalt	BS02	Ultra Basic - Massive Poorly Jointed	Mesozoic to Cenozoic	0.35	0.2	0.5
13	Sandstone	ST01	Sandstone/Conglomerate	Upper Palaeozoic to Cenozoic	3	1	5
14	Sandstone	ST02	Sandstone with Shale	Upper Palaeozoic to Cenozoic	3	1	5
15	Sandstone	ST03	Sandstone with shale/ coal beds	Upper Palaeozoic to Cenozoic	3	1	5
16	Sandstone	ST04	Sandstone with Clay	Upper Palaeozoic to Cenozoic	3	1	5
17	Sandstone	ST05	Sandstone/Conglomerate	Proterozoic to Cenozoic	3	1	5
18	Sandstone	ST06	Sandstone with Shale	Proterozoic to	3	1	5

Sl. No.	Principal Aquifer	Major Aquifers		Age	Recommended (%)	Minimum (%)	Maximum (%)
		Code	Name				
				Cenozoic			
19	Shale	SH01	Shale with limestone	Upper Palaeozoic to Cenozoic	1.5	1	2
20	Shale	SH02	Shale with Sandstone	Upper Palaeozoic to Cenozoic	1.5	1	2
21	Shale	SH03	Shale, limestone and sandstone	Upper Palaeozoic to Cenozoic	1.5	1	2
22	Shale	SH04	Shale	Upper Palaeozoic to Cenozoic	1.5	1	2
23	Shale	SH05	Shale/Shale with Sandstone	Proterozoic to Cenozoic	1.5	1	2
24	Shale	SH06	Shale with Limestone	Proterozoic to Cenozoic	1.5	1	2
25	Limestone	LS01	Miliolitic Limestone	Quarternary	2	1	3
26	Limestone	LS01	Karstified Miliolitic Limestone	Quarternary	10	5	15
27	Limestone	LS02	Limestone / Dolomite	Upper Palaeozoic to Cenozoic	2	1	3
28	Limestone	LS02	Karstified Limestone / Dolomite	Upper Palaeozoic to Cenozoic	10	5	15
29	Limestone	LS03	Limestone/Dolomite	Proterozoic	2	1	3
30	Limestone	LS03	Karstified Limestone/Dolomite	Proterozoic	10	5	15
31	Limestone	LS04	Limestone with Shale	Proterozoic	2	1	3
32	Limestone	LS04	Karstified Limestone with Shale	Proterozoic	10	5	15
33	Limestone	LS05	Marble	Azoic to Proterozoic	2	1	3
34	Limestone	LS05	Karstified Marble	Azoic to Proterozoic	10	5	15
35	Granite	GR01	Acidic Rocks (Granite,Syenite, Rhyolite etc.) - Weathered , Jointed	Mesozoic to Cenozoic	1.5	1	2
36	Granite	GR01	Acidic Rocks (Granite,Syenite, Rhyolite etc.)-Massive or Poorly Fractured	Mesozoic to Cenozoic	0.35	0.2	0.5
37	Granite	GR02	Acidic Rocks (Pegmatite, Granite, Syenite, Rhyolite etc.) - Weathered, Jointed	Proterozoic to Cenozoic	3	2	4
38	Granite	GR02	Acidic Rocks (Pegmatite, Granite, Syenite, Rhyolite etc.) - Massive, Poorly Fractured	Proterozoic to Cenozoic	0.35	0.2	0.5
39	Schist	SC01	Schist - Weathered, Jointed	Azoic to Proterozoic	1.5	1	2
40	Schist	SC01	Schist - Massive, Poorly Fractured	Azoic to Proterozoic	0.35	0.2	0.5
41	Schist	SC02	Phyllite	Azoic to Proterozoic	1.5	1	2
42	Schist	SC03	Slate	Azoic to Proterozoic	1.5	1	2
43	Quartzite	QZ01	Quartzite - Weathered, Jointed	Proterozoic to Cenozoic	1.5	1	2

Sl. No.	Principal Aquifer	Major Aquifers		Age	Recommended (%)	Minimum (%)	Maximum (%)
		Code	Name				
44	Quartzite	QZ01	Quartzite - Massive, Poorly Fractured	Proterozoic to Cenozoic	0.3	0.2	0.4
45	Quartzite	QZ02	Quartzite - Weathered, Jointed	Azoic to Proterozoic	1.5	1	2
46	Quartzite	QZ02	Quartzite- Massive, Poorly Fractured	Azoic to Proterozoic	0.3	0.2	0.4
47	Charnockite	CK01	Charnockite - Weathered, Jointed	Azoic	3	2	4
48	Charnockite	CK01	Charnockite - Massive, Poorly Fractured	Azoic	0.3	0.2	0.4
49	Khondalite	KH01	Khondalites, Granulites - Weathered, Jointed	Azoic	1.5	1	2
50	Khondalite	KH01	Khondalites, Granulites - Mssive, Poorly Fractured	Azoic	0.3	0.2	0.4
51	Banded Gneissic Complex	BG01	Banded Gneissic Complex - Weathered, Jointed	Azoic	1.5	1	2
52	Banded Gneissic Complex	BG01	Banded Gneissic Complex - Massive, Poorly Fractured	Azoic	0.3	0.2	0.4
53	Gneiss	GN01	Undifferentiated metasedimentaries/ Undifferentiated metamorphic - Weathered, Jointed	Azoic to Proterozoic	1.5	1	2
54	Gneiss	GN01	Undifferentiated metasedimentaries/ Undifferentiated metamorphic - Massive, Poorly Fractured	Azoic to Proterozoic	0.3	0.2	0.4
55	Gneiss	GN02	Gneiss -Weathered, Jointed	Azoic to Proterozoic	3	2	4
56	Gneiss	GN02	Gneiss-Massive, Poorly Fractured	Azoic to Proterozoic	0.3	0.2	0.4
57	Gneiss	GN03	Migmatitic Gneiss - Weathered, Jointed	Azoic	1.5	1	2
58	Gneiss	GN03	Migmatitic Gneiss - Massive, Poorly Fractured	Azoic	0.3	0.2	0.4
59	Intrusive	IN01	Basic Rocks (Dolerite, Anorthosite etc.) - Weathered, Jointed	Proterozoic to Cenozoic	2	1	3
60	Intrusive	IN01	Basic Rocks (Dolerite, Anorthosite etc.) - Massive, Poorly Fractured	Proterozoic to Cenozoic	0.35	0.2	0.5
61	Intrusive	IN02	Ultrabasics (Epidiorite, Granophyre etc.) - Weathered, Jointed	Proterozoic to Cenozoic	2	1	3
62	Intrusive	IN02	Ultrabasics (Epidiorite, Granophyre etc.) - Massive, Poorly Fractured	Proterozoic to Cenozoic	0.35	0.2	0.5

2.8.2. Rainfall Infiltration Factor

It is recommended that to assign Rainfall Infiltration Factor values to all the aquifer units recently classified by the Central Ground Water Board. The values recommended in ***Table-2.2*** may be followed in the future assessments. The recommended Rainfall Infiltration Factor values are to be used for assessment, unless sufficient data based on field studies are available to justify the minimum, maximum or other intermediate values.

An additional 2% of rainfall recharge factor may be used in such areas or parts of the areas where watershed development with associated soil conservation measures are implemented. This additional factor is subjective and is separate from the contribution due to the water conservation structures such as check dams, nalla bunds, percolation tanks etc. The norms for the estimation of recharge due to these structures are provided separately. This additional factor of 2% is at this stage, only provisional, and will need revision based on pilot studies.

The Norms suggested below are nothing but the redistribution of norms suggested by GEC-1997 methodology and hence people are encouraged to conduct field studies and strengthen the Norms database.

Table-2.2: Norms Recommended for Rainfall Infiltration Factor

Sl. No.	Principal Aquifer	Major Aquifers		Age	Recommended (%)	Minimum (%)	Maximum (%)
		Code	Name				
1	Alluvium	AL01	Younger Alluvium (Clay/Silt/Sand/ Calcareous concretions)	Quaternary	22	20	24
2	Alluvium	AL02	Pebble / Gravel/ Bazada/ Kandi	Quaternary	22	20	24
3	Alluvium	AL03	Older Alluvium (Silt/Sand/Gravel/Lithomargic clay)	Quaternary	22	20	24
4	Alluvium	AL04	Aeolian Alluvium (Silt/ Sand)	Quaternary	22	20	24
5	Alluvium	AL05	Coastal Alluvium (Sand/Silt/Clay) -East Coast	Quaternary	16	14	18
5	Alluvium	AL05	Coastal Alluvium (Sand/Silt/Clay) - West Coast	Quaternary	10	8	12
6	Alluvium	AL06	Valley Fills	Quaternary	22	20	24
7	Alluvium	AL07	Glacial Deposits	Quaternary	22	20	24
8	Laterite	LT01	Laterite / Ferruginous concretions	Quaternary	7	6	8
9	Basalt	BS01	Basic Rocks (Basalt) - Vesicular or Jointed	Mesozoic to Cenozoic	13	12	14
9	Basalt	BS01	Basic Rocks (Basalt) - Weathered	Mesozoic to Cenozoic	7	6	8
10	Basalt	BS01	Basic Rocks (Basalt) - Massive Poorly Jointed	Mesozoic to Cenozoic	2	1	3
11	Basalt	BS02	Ultra Basic - Vesicular or Jointed	Mesozoic to Cenozoic	13	12	14
11	Basalt	BS02	Ultra Basic - Weathered	Mesozoic to Cenozoic	7	6	8
12	Basalt	BS02	Ultra Basic - Massive Poorly	Mesozoic to	2	1	3

Sl. No.	Principal Aquifer	Major Aquifers Code	Major Aquifers Name	Age	Recommended (%)	Minimum (%)	Maximum (%)
			Jointed	Cenozoic			
13	Sandstone	ST01	Sandstone/Conglomerate	Upper Palaeozoic to Cenozoic	12	10	14
14	Sandstone	ST02	Sandstone with Shale	Upper Palaeozoic to Cenozoic	12	10	14
15	Sandstone	ST03	Sandstone with shale/ coal beds	Upper Palaeozoic to Cenozoic	12	10	14
16	Sandstone	ST04	Sandstone with Clay	Upper Palaeozoic to Cenozoic	12	10	14
17	Sandstone	ST05	Sandstone/Conglomerate	Proterozoic to Cenozoic	6	5	7
18	Sandstone	ST06	Sandstone with Shale	Proterozoic to Cenozoic	6	5	7
19	Shale	SH01	Shale with limestone	Upper Palaeozoic to Cenozoic	4	3	5
20	Shale	SH02	Shale with Sandstone	Upper Palaeozoic to Cenozoic	4	3	5
21	Shale	SH03	Shale, limestone and sandstone	Upper Palaeozoic to Cenozoic	4	3	5
22	Shale	SH04	Shale	Upper Palaeozoic to Cenozoic	4	3	5
23	Shale	SH05	Shale/Shale with Sandstone	Proterozoic to Cenozoic	4	3	5
24	Shale	SH06	Shale with Limestone	Proterozoic to Cenozoic	4	3	5
25	Limestone	LS01	Miliolitic Limestone	Quarternary	6	5	7
27	Limestone	LS02	Limestone / Dolomite	Upper Palaeozoic to Cenozoic	6	5	7
29	Limestone	LS03	Limestone/Dolomite	Proterozoic	6	5	7
31	Limestone	LS04	Limestone with Shale	Proterozoic	6	5	7
33	Limestone	LS05	Marble	Azoic to Proterozoic	6	5	7
35	Granite	GR01	Acidic Rocks (Granite,Syenite, Rhyolite etc.) - Weathered , Jointed	Mesozoic to Cenozoic	7	5	9
36	Granite	GR01	Acidic Rocks (Granite,Syenite, Rhyolite etc.)-Massive or Poorly Fractured	Mesozoic to Cenozoic	2	1	3
37	Granite	GR02	Acidic Rocks (Pegmatite, Granite, Syenite, Rhyolite etc.) - Weathered, Jointed	Proterozoic to Cenozoic	11	10	12
38	Granite	GR02	Acidic Rocks (Pegmatite, Granite, Syenite, Rhyolite etc.) - Massive, Poorly Fractured	Proterozoic to Cenozoic	2	1	3
39	Schist	SC01	Schist - Weathered, Jointed	Azoic to Proterozoic	7	5	9
40	Schist	SC01	Schist - Massive, Poorly Fractured	Azoic to Proterozoic	2	1	3
41	Schist	SC02	Phyllite	Azoic to Proterozoic	4	3	5
42	Schist	SC03	Slate	Azoic to Proterozoic	4	3	5
43	Quartzite	QZ01	Quartzite - Weathered, Jointed	Proterozoic to Cenozoic	6	5	7
44	Quartzite	QZ01	Quartzite - Massive, Poorly	Proterozoic to	2	1	3

Sl. No.	Principal Aquifer	Major Aquifers		Age	Recommended (%)	Minimum (%)	Maximum (%)
		Code	Name				
			Fractured	Cenozoic			
45	Quartzite	QZ02	Quartzite - Weathered, Jointed	Azoic to Proterozoic	6	5	7
46	Quartzite	QZ02	Quartzite- Massive, Poorly Fractured	Azoic to Proterozoic	2	1	3
47	Charnockite	CK01	Charnockite - Weathered, Jointed	Azoic	5	4	6
48	Charnockite	CK01	Charnockite - Massive, Poorly Fractured	Azoic	2	1	3
49	Khondalite	KH01	Khondalites, Granulites - Weathered, Jointed	Azoic	7	5	9
50	Khondalite	KH01	Khondalites, Granulites - Mssive, Poorly Fractured	Azoic	2	1	3
51	Banded Gneissic Complex	BG01	Banded Gneissic Complex - Weathered, Jointed	Azoic	7	5	9
52	Banded Gneissic Complex	BG01	Banded Gneissic Complex - Massive, Poorly Fractured	Azoic	2	1	3
53	Gneiss	GN01	Undifferentiated metasedimentaries/ Undifferentiated metamorphic - Weathered, Jointed	Azoic to Proterozoic	7	5	9
54	Gneiss	GN01	Undifferentiated metasedimentaries/ Undifferentiated metamorphic - Massive, Poorly Fractured	Azoic to Proterozoic	2	1	3
55	Gneiss	GN02	Gneiss -Weathered, Jointed	Azoic to Proterozoic	11	10	12
56	Gneiss	GN02	Gneiss-Massive, Poorly Fractured	Azoic to Proterozoic	2	1	3
57	Gneiss	GN03	Migmatitic Gneiss - Weathered, Jointed	Azoic	7	5	9
58	Gneiss	GN03	Migmatitic Gneiss - Massive, Poorly Fractured	Azoic	2	1	3
59	Intrusive	IN01	Basic Rocks (Dolerite, Anorthosite etc.) - Weathered, Jointed	Proterozoic to Cenozoic	7	6	8
60	Intrusive	IN01	Basic Rocks (Dolerite, Anorthosite etc.) - Massive, Poorly Fractured	Proterozoic to Cenozoic	2	1	3
61	Intrusive	IN02	Ulrta Basics (Epidiorite, Granophyre etc.) - Weathered, Jointed	Proterozoic to Cenozoic	7	6	8
62	Intrusive	IN02	Ulrta Basics (Epidiorite, Granophyre etc.) - Massive, Poorly Fractured	Proterozoic to Cenozoic	2	1	3

2.8.3. Norms for Canal Recharge

Unlike other norms, the Recharge factor for calculating recharge due to canals is given in two units viz. ham/million m^2 of wetted area/day and cumecs per million m^2 of wetted area. As all other norms are in ham, the committee recommends the norm in ham/million m^2 of wetted area for computing the recharge due to canals.

There is a wide variation in the values of the recharge norms proposed by GEC 1997.The Canal seepage norm is approximately 150 times the other recharge norms. In the absence of any field studies to refine the norms it is decided by the committee to continue with the same norms. The committee strongly recommends that each state agency must conduct one filed study at least one in each district before completing the first assessment using this methodology. The committee also suggests a recommended value and minimum and maximum values as in the case of other norms. Where specific results are available from case studies in some states, the adhoc norms are to be replaced by norms evolved from these results.

The Norms suggested in ***Table-2.3*** below are nothing but the rationalization and redistribution of norms suggested by GEC-1997 methodology and hence people are encouraged to conduct field studies and strengthen the Norms database.

Table-2.3: Norms Recommended for Recharge due to Canals

Formation	**Canal Seepage factor ham/day/million square meters of wetted area**		
	Recommended	**Minimum**	**Maximum**
Unlined canals in normal soils with some clay content along with sand	17.5	15	20
Unlined canals in sandy soil with some silt content	27.5	25	30
Lined canals in normal soils with some clay content along with sand	3.5	3	4
Lined canals in sandy soil with some silt content	5.5	5	6
All canals in hard rock area	3.5	3	4

2.8.4. Norms for Recharge Due to Irrigation

The Norms Suggested by GEC-1997 gives for only three ranges of water levels and it creates a problem in the boundary conditions. For instance, as a result of the variation in water level from 24.9 to 25.1m bgl in the adjoining blocks, change occurs in the return flow from irrigation in the range of 10% to 15%. Hence to reduce the discrepancy it is recommended to have linear relationship of the norms in between 10m bgl water level and 25m bgl water level. It is proposed to have the same norm of 10m bgl zone for all the water levels less than 10m. Similarly, the norm recommended for 25m may be used for the water levels more than 25m as well. The Recommended Norms are presented in ***Table-2.4***.

For surface water, the recharge is to be estimated based on water released at the outlet. For ground water, the recharge is to be estimated based on gross draft. Where continuous supply is used instead of rotational supply, an additional recharge of 5% of application may be used.

Where specific results are available from case studies in some states, the adhoc norms are to be replaced by norms evolved from these results.

Table-2.4: Norms Recommended for Recharge from Irrigation

DTW m bgl	Ground Water		Surface Water	
	Paddy	Non-paddy	Paddy	Non-paddy
≤ 10	45.0	25.0	50.0	30.0
11	43.3	23.7	48.3	28.7
12	40.4	22.1	45.1	26.8
13	37.7	20.6	42.1	25.0
14	35.2	19.2	39.3	23.3
15	32.9	17.9	36.7	21.7
16	30.7	16.7	34.3	20.3
17	28.7	15.6	32.0	18.9
18	26.8	14.6	29.9	17.6
19	25.0	13.6	27.9	16.4
20	23.3	12.7	26.0	15.3
21	21.7	11.9	24.3	14.3
22	20.3	11.1	22.7	13.3
23	18.9	10.4	21.2	12.4
24	17.6	9.7	19.8	11.6
≥ 25	20.0	5.0	25.0	10.0

2.8.5. Norms for Recharge due to Tanks & Ponds

As the data on the field studies for computing recharge from Tanks & Ponds are very limited, it is recommended to follow the same norm as followed in GEC 1997 in future assessments also. Hence the norm recommended by GEC-2015 for Seepage from Tanks & Ponds is 1.4 mm / day.

2.8.6. Norms for Recharge due to Water Conservation Structures

Even though the data on the field studies for computing recharge from Water Conservation Structures are very limited, it is recommended that the Recharge from the water conservation structures is 40% of the Gross Storage based on the field studies by Non-Government Organizations. Hence, the norm recommended by GEC-2015 for the seepage from Water Conservation Structures is 40% of gross storage during a year which means 20% during monsoon season and 20% during non-monsoon Season.

2.8.7. Norm for Per Capita Requirement

As the option is given to use the actual requirement for domestic needs, the Requirement Norm recommended by the committee is 60 lpcd for domestic needs. This can be modified if the actual requirement is known.

2.8.8. Norm for Natural Discharges

The Discharge Norm used in computing Unaccounted Natural Discharge is 5% if water table fluctuation method is used or 10% if rainfall infiltration factor method is used for assessing the Rainfall recharge. This committee recommends to compute the base flow for each assessment unit. Wherever, there is no assessment of base flow, earlier norms recommended by GEC 1997 i.e. 5% or 10% of the Total Annual Ground Water Recharge as the Natural Discharges may be continued.

2.8.9. Unit Draft

GEC-1997 methodology recommends to use well census method for computing the ground water draft. The norm used for computing ground water draft is the unit draft. The unit draft can be computed by field studies. This method involves selecting representative abstraction structure and calculating the discharge from that particular type of structure and collecting the information on how many hours of pumping is being done in various seasons and number of such days during each season. The Unit Draft during a particular season can be computed using the following equation:

$$\boldsymbol{Unit\ Draft = Discharge\ in\ m^3/hr \times No.of\ pumping\ hours\ in\ a\ day \times No.of\ days} \dots\dots\dots(\mathbf{29})$$

One basic drawback in the methodology of computing unit draft is that there is no normalization procedure for the same. As per GEC-1997 guidelines, the recharge from rainfall is normalized for a normal rainfall. It means that even though the resources are estimated in a surplus rainfall year or in a deficit rainfall year, the assessment is normalised for a normal rainfall which is required for planning. For recharge from other sources, average figures/ values are taken. If the average figures are not available for any reason, 60% of the design figures are taken. This procedure is very much essential as the planning should be for average resources rather than for the recharge due to excess rainfall or deficit rainfall. But the procedure that is being followed for computing unit draft does not have any normalization procedure. Normally, if the year in which one collects the draft data in the field is an excess rainfall year, the abstraction from ground water will be less. Similarly, if the year of the computation of unit draft is a drought year the unit draft will be high. Hence, there is a requirement to devise a methodology that can be used for the normalization of unit draft figures. The following are the two simple techniques, which can be followed. If the unit draft values for one rainfall cycle are available for at least 10 years second method shown in equation 31 is to be followed or else the first method shown in equation 30 may be used.

$$\boldsymbol{Normalised\ Unit\ Draft = \frac{Unit\ Draft \times Rainfall\ for\ the\ year}{Normal\ Rainfall}} \dots\dots\dots\dots\dots\dots(\mathbf{30})$$

$$\boldsymbol{Normalised\ Unit\ Draft = \frac{\sum_{i=1}^{n} Unit\ Draft_i}{Number\ of\ Years}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(\mathbf{31})$$

Although GEC-1997 methodology recommends a default value for the unit drafts, each State is using its own values, generally after conducting field studies, even though without a documentation. Hence, it is felt that this norm may be computed by the state agency, which is going to assess the norms before commencement of the assessment. But it is strongly recommended that the field studies should be documented and submitted along with the results of the assessment.

2.9. INDIA -GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES)

"INDIA-GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES) is a Software/Web-based Application developed by CGWB in collaboration with IIT-Hyderabad. It provides common and standardized platform for Ground Water Resource Estimation for the entire country and its pan-India operationalization (Central and State Governments). The system take 'Data Input' through Excel as well as Forms, compute various ground water components (recharge, extraction etc.) and classify assessment units into appropriate categories (safe, semi-critical, critical and over-exploited). The Software uses GEC 2015 Methodology for estimation and calculation of Ground water resources. It allows for unique and homogeneous representation of ground water fluxes as well as categories for all the assessment units (AU) of the country.

URL of IN-GRES →http://ingres.iith.ac.in

The detailed description about IN-GRES Software is given in **Appendix-C**.

CHAPTER 3

3.0 RAINFALL OF INDIA

Rainfall is the main source of ground water recharge in the country. However, distribution of rainfall has a wide variation both in space and time. Rain gauge stations are established and maintained by different departments and Undertakings of Central and State governments and also by private parties as per their specific data requirements. Though the period of seasons varies from place to place, for climatological purposes especially for rainfall, a year is divided into 4 seasons: Winter (January and February), Pre monsoon (March to May), South West Monsoon (June to September) and Post Monsoon (October to December). Most part of India receives rainfall mainly during SW Monsoon season.

Rainfall is highly variable in time and space. Over 75% of the annual rainfall is received in the four rainy months from June to September only there by leading to large variations on temporal scale. The average annual rainfall is 119 cm, but it has great spatial variations. The areas on the Western Ghats and the Sub-Himalayan areas in North East and Meghalaya Hills receive heavy rainfall of over 250 cm annually, whereas the Areas of Northern parts of Kashmir and Western Rajasthan receive rainfall less than 40 cm. Rainfall Normals have been computed using rainfall records of 50 years (1961-2010) of a network of 3200 Stations all over the India. The two significant features of India's Monsoon rainfall are that, in the north India, rainfall decreases westwards and in the Peninsular India, it decreases eastwards and then increases in the coastal region.

In 2020, the annual rainfall received by the country was 110% (128.9cm) of its normal rainfall of 118.7 cm. All India rainfall for SW monsoon season 2020 was 109% (96.1 cm) of its normal rainfall of 89 cm. The country received actual SW Monsoon season (June to September) rainfall of 961.4 mm which was 109% of its long period average (LPA). The rainfall for the country as whole during Pre-monsoon, Post-monsoon and winter season was 159.3 mm, 125.1 mm & 40.4 mm which was 21%, 1% & -1% of LPA respectively. The rainfall deficiency for the country as a whole was maximum (1%) during winter season. Annually, Met sub-division-wise, Coastal Karnataka received highest rainfall of 4185.9 mm and West Rajasthan received lowest annual rainfall of 399.0 mm.[*Source: Rainfall Statistics of India-2020 of India Meteorological Department(Ministry of Earth Sciences), Report No.-ESSO/IMD/HS/ Rainfall Report/*]

State wise seasonal and annual observed rainfalls for the states are given in ***Table-3.1***. It may be observed that during 2020, annual highest area weighted rainfall of **5649.1** mm was received at Meghalaya and the lowest rainfall of 24.2 mm was received at Ladakh (UT). However, on comparing with Normals, it may be seen that Gujarat has the highest positive departure of 55% where as Ladakh (UT) remained with highest negative departure (-77%) from their respective normals.

State wise monthly observed rainfall (mm) for the states are given in ***Table-3.2***. During SW Monsoon season, monthly highest rainfall of **1470.9** mm occurred over the state of Dadra & Nagar Haveli (UT) in the month of August and minimum rainfall of 0.2 mm occurred over the Ladakh (UT) in the month of September.

Table-3.1 : State-wise Seasonal and Annual Rainfall (mm) - Year 2020						
S. NO.	**STATES**	**Winter**	**Pre-Monsoon**	**SW-Monsoon**	**Post-Monsoon**	**Annual**
EAST & NORTH EAST INDIA						
1	**ARUNACHAL PRADESH**	98.2	599.9	1972.0	247.2	2992.9
2	**ASSAM**	30.5	490.0	1654.6	189.2	2372.9
3	**MEGHALAYA**	51.4	1291.4	3995.5	310.8	5649.1
4	**NAGALAND**	44.1	276.7	850.4	201.5	1372.7
5	**MANIPUR**	43.2	216.2	748.5	188.9	1196.9
6	**MIZORAM**	52.8	263.3	1112.8	236.3	1665.2
7	**TRIPURA**	28.1	580.7	1301.9	258.4	2169.1
8	**SIKKIM**	86.4	664.0	2416.3	183.4	3350.1
9	**WEST BENGAL**	38.7	389.8	1487.0	87.2	2012.6
10	**JHARKHAND**	41.3	216.5	898.3	66.6	1222.7
11	**BIHAR**	36.3	182.6	1272.4	30.1	1521.4
NORTH WEST INDIA						
1	**UTTAR PRADESH**	42.4	94.2	649.7	7.7	792.8
2	**UTTARAKHAND**	170.8	241.3	943.1	17.8	1373.0
3	**HARYANA**	29.8	118.5	376.1	8.8	533.2
4	**CHANDIGARH (UT)**	53.1	170.1	791.1	32.2	1046.5
5	**DELHI**	26.0	102.1	467.7	0.8	678.5
6	**PUNJAB**	53.0	124.7	387.5	20.3	585.5
7	**HIMACHAL PRADESH**	137.1	270.9	567.0	77.2	1052.2
8	**JAMMU & KASHMIR(UT)**	164.3	330.5	422.4	108.1	1016.3
9	**LADAKH(UT)**	0.2	5.6	12.6	4.0	24.2
10	**RAJASTHAN**	5.8	48.8	450.2	6.2	511.0
CENTRAL INDIA						
1	**ODISHA**	63.1	265.4	1140.9	166.6	1635.9
2	**MADHYA PRADESH**	30.5	51.4	991.7	28.5	1102.2
3	**GUJARAT**	0.1	2.6	1091.7	31.1	1125.4
4	**DADRA & NAGAR HAVELI (UT)**	0.0	0.0	2379.6	34.2	2413.8
5	**DAMAN & DIU (UT)**	0.0	0.0	1686.2	35.5	1721.7
6	**GOA**	0.0	15.4	4158.6	231.9	4406.0
7	**MAHARASHTRA**	8.9	33.5	1166.1	127.5	1387.4
8	**CHHATISGARH**	69.0	119.6	1234.3	92.6	1515.5
SOUTH PENINSULA						
1	**A & N ISLAND (UT)**	6.0	266.1	1712.4	858.5	2842.9
2	**ANDHRA PRADESH**	19.8	75.2	738.2	387.3	1220.5
3	**TELANGANA**	13.9	61.1	1095.8	179.5	1350.3
4	**TAMILNADU**	9.9	76.0	425.8	474.5	986.2
5	**PUDUCHERRY (UT)**	16.5	56.5	442.1	1178.9	1693.9
6	**KARNATAKA**	0.6	148.7	1063.9	205.9	1419.1
7	**KERALA**	9.6	387.4	2227.6	365.2	2989.7
8	**LAKSHADWEEP (UT)**	8.1	237.3	1345.4	294.0	1884.7
COUNTRY AS A WHOLE		40.4	159.3	961.4	125.1	1289.6

Table-3.2: State-wise Monthly Rainfall (mm) - Year 2020													
S.No	**STATES**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
EAST & NORTH EAST INDIA													
1	**ARUNACHAL PRADESH**	61.8	36.3	49.7	183.7	361.6	522.7	625.1	318.1	506.1	172.4	58.0	16.8
2	**ASSAM**	15.7	14.8	21.9	116.4	352.2	526.2	505.0	249.5	373.8	167.4	21.0	0.9
3	**MEGHALAYA**	24.0	27.4	55.9	351.5	884.0	1047.5	1363	425.0	1160.0	291.3	18.2	1.3
4	**NAGALAND**	27.7	16.4	18.8	119.8	138.0	251.3	232.6	202.5	164.0	156.1	44.3	1.1
5	**MANIPUR**	33.5	9.7	13.4	93.7	109.1	216.0	214.9	157.2	160.4	148.7	40.2	0.0
6	**MIZORAM**	42.9	9.9	1.0	95.4	166.9	198.3	390.0	336.4	188.2	199.0	37.4	0.0
7	**TRIPURA**	26.7	1.4	5.3	232.2	343.2	468.9	351.5	182.2	299.3	239.1	19.3	0.0
8	**SIKKIM**	60.6	25.8	122.1	250.7	291.2	763.8	749.8	459.7	442.9	154.4	14.0	15.0
9	**WEST BENGAL**	28.1	10.6	48.9	88.5	254.3	371.1	433.1	355.7	327.2	82.9	4.0	0.3
10	**JHARKHAND**	26.7	14.6	88.7	56.2	71.7	205.7	244.4	301.8	146.4	59.6	6.8	0.2
11	**BIHAR**	10.8	25.6	45.9	55.0	81.7	305.8	443.5	202.6	320.5	29.1	0.8	0.1
NORTH WEST INDIA													
1	**UTTAR PRADESH**	30.4	12.0	42.4	14.2	37.6	140.8	230.4	194.1	84.4	0.7	5.9	1.1
2	**UTTARAKHAN D**	131.9	38.9	117.8	51.8	71.8	145.5	367.3	370.1	60.2	0.1	9.6	8.0
3	**HARYANA**	23.0	6.8	69.1	7.7	41.7	47.7	166.1	137.4	24.8	0.0	6.6	2.1
4	**CHANDIGARH (UT)**	47.7	5.5	72.5	43.1	54.5	131.1	277.1	373.2	9.8	0.0	22.7	9.5
5	**DELHI**	23.8	2.2	69.4	14.6	15.5	30.5	166.2	233.1	37.9	0.0	0.6	0.2
6	**PUNJAB**	45.7	7.3	80.0	16.9	27.9	46.1	185.2	134.1	22.1	0.0	11.9	8.4
7	**HIMACHAL PRADESH**	124.5	12.6	159.7	53.1	58.0	68.1	203.5	265.4	29.9	0.5	42.4	34.3
8	**JAMMU & KASHMIR(UT)**	143.3	21.0	201.2	66.4	63.6	48.3	96.0	204.3	30.8	0.1	49.7	58.3
9	**LADAKH(UT)**	0.0	1.0	2.2	3.5	1.9	4.8	2.9	4.8	0.2	0.0	1.5	2.5
10	**RAJASTHAN**	5.8	0.1	22.3	5.6	20.9	53.0	99.9	223.8	73.5	3.5	2.3	0.3
CENTRAL INDIA													
1	**ODISHA**	16.3	46.8	62.1	111.3	92.0	251.1	224.8	511.2	153.8	162.1	4.6	0.0
2	**MADHYA PRADESH**	21.2	9.3	26.2	8.3	16.9	201.0	181.6	479.1	130.0	16.8	4.5	7.2
3	**GUJARAT**	0.1	0.0	2.0	0.1	0.4	114.6	242.4	625.6	109.1	24.0	0.0	7.1
4	**DADRA & NAGAR HAVELI (UT)**	0.0	0.0	0.0	0.0	0.0	226.0	464.3	1470.9	218.4	34.2	0.0	0.0
5	**DAMAN & DIU (UT)**	0.0	0.0	0.0	0.0	0.0	128.2	511.1	871.3	175.6	22.4	0.0	13.1
6	**GOA**	0.0	0.0	0.0	9.8	5.6	1014.9	1230.2	1169.2	744.4	210.0	0.4	21.6
7	**MAHARASHTRA**	6.9	2.0	14.8	7.8	10.9	252.7	313.0	396.6	203.8	119.7	2.2	3.9
8	**CHHATISGARH**	29.6	39.4	50.7	29.1	39.9	277.9	269.7	519.2	167.4	87.5	4.4	0.8

Table-3.2: State-wise Monthly Rainfall (mm) - Year 2020													
S.No	**STATES**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
SOUTH PENINSULA													
1	**A & N ISLAND (UT)**	3.7	2.3	0.1	35.9	230.1	498.3	362.8	370.0	481.3	480.9	190.3	187.3
2	**ANDHRA PRADESH**	12.6	7.2	14.4	39.2	21.7	120.0	228.1	148.7	241.4	182.4	170.3	34.5
3	**TELANGANA**	6.2	7.7	15.9	20.9	24.3	169.9	272.6	403.0	250.2	168.5	11.0	0.0
4	**TAMILNADU**	8.9	1.0	3.9	33.9	38.2	59.7	130.2	95.0	140.9	100.9	202.5	171.2
5	**PUDUCHERRY (UT)**	9.7	6.8	0.0	24.7	31.8	73.4	134.5	86.5	147.6	173.3	421.4	584.2
6	**KARNATAKA**	0.2	0.3	9.9	47.3	91.6	205.3	280.2	297.5	280.9	175.5	21.8	8.6
7	**KERALA**	5.9	3.6	44.2	110.9	232.3	535.5	514.9	575.3	601.9	222.8	99.3	43.1
8	**LAKSHADWEEP (UT)**	7.9	0.1	13.8	8.8	214.7	265.4	476.2	269.6	334.3	70.4	71.5	152.1

3.1 METEROLOGICAL SUBDIVISION-WISE ANNUAL & SEASONAL RAINFALL MAPS

The rainfall statistics is computed based on the receipt of rainfall data from about 4500 stations spread over the entire country. Based on daily rainfall data of these stations, the rainfall of all the districts is computed and using the rainfall of the districts, rainfall statistics for the Meteorological (Met.) Subdivisions, states, the four broad regions and for the whole country have been computed. The present publication includes the updated rainfall statistics for the country as a whole, for all the four broad regions of India, 36 Met.Subdivisions, all States and UTs (37) and 690 Districts of India (+7 From 2019). The statistics is provided on monthly, seasonal (Winter (Jan-Feb), Pre-Monsoon (Mar-May), Southwest (SW) Monsoon (Jun-Sep) and Post-Monsoon (Oct-Dec)) and on annual basis. The Rainfall Normals used in this report are based on the rainfall records for the period from 1961-2010. Percentage departure of rainfall from Rainfall Normals has been color coded as per their categories. The list of categories, their corresponding ranges and color codes is given in ***Table-3.3***.

Met.Subdivision-wise rainfall maps for the year 2020 and for the four seasons depicting the observed and normal rainfall values along with their percentage departure from normals with defined colors for different categories are given below at ***Fig-3.1 to Fig-3.5***. The normal rainfall values are shown in Bold figures on the map where as the actual rainfall are shown in small figures. Percentage departures of rainfall are shown within the brackets.

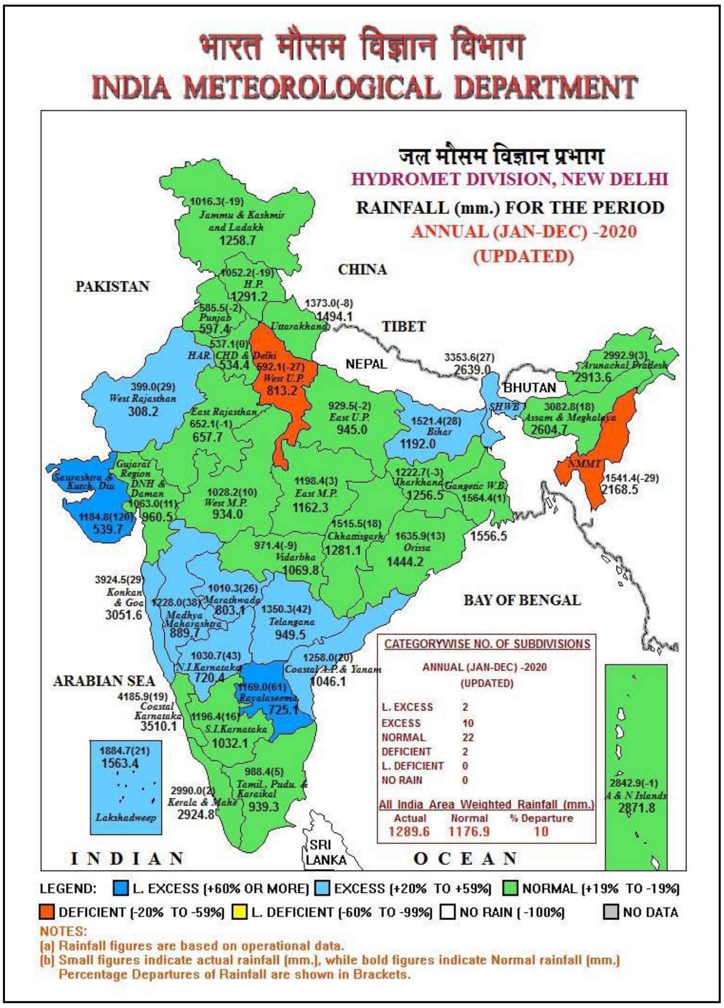
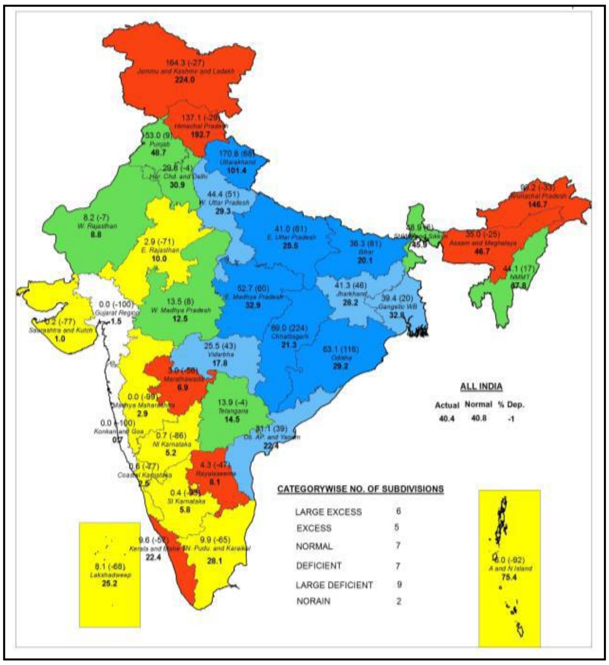


Figure-3.1 : Annual Rainfall Map-2020



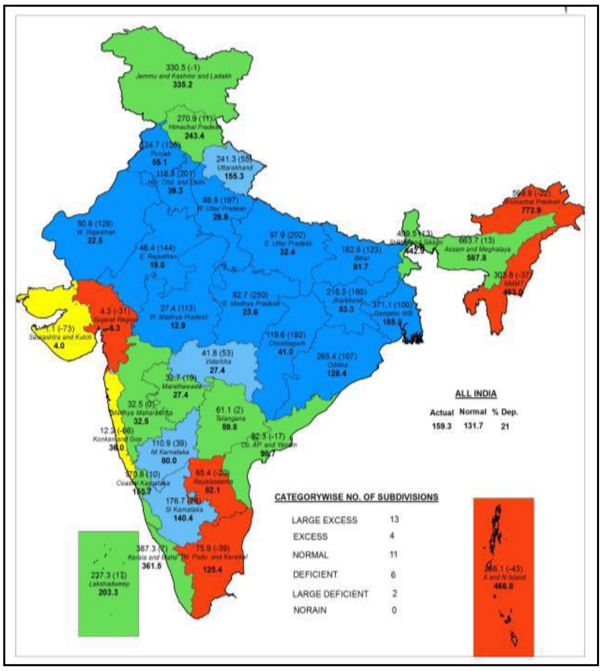


Figure-3.2 : Winter Rainfall Map

Figure-3.3 : Pre-Monsoon Rainfall Map

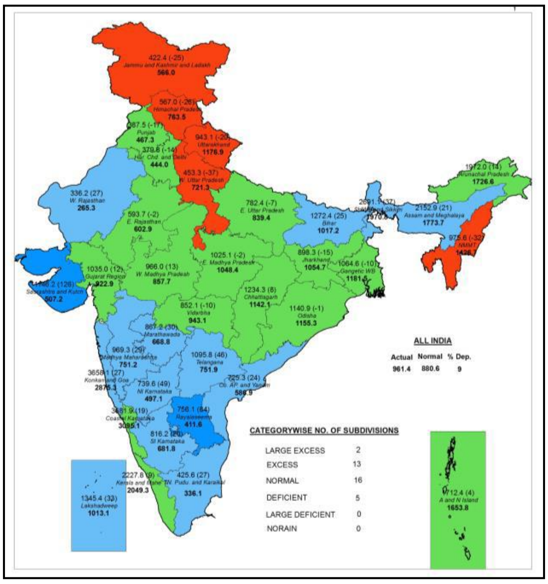


Figure-3.4 : SW Monsoon Rainfall Map

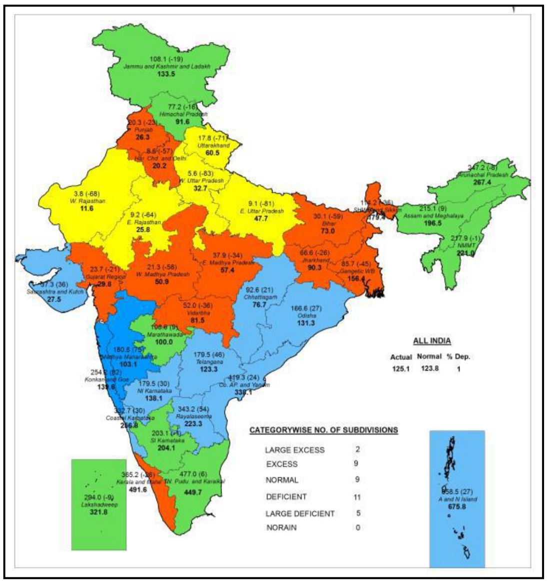


Figure-3.5 : Post-Monsoon Rainfall Map

Large Excess [60% or more] | Excess [20% to 59%] | Normal [-19% to 19%] | Deficient [-59% to -20%] | Large Deficient [-99% to -60%] | No Rain [-100%] | No Data

NOTES :
a) RainFall figures are based on operation data.
b) Small figures indicate actual rainfal (mm), while bold figures indicate Normal rainfall (mm).
c) Percentage Departures of rainfall are shown in brackets.

Table-3: The list of categories, their corresponding ranges and color codes

Category	Departure from Normals	Colour Code
Large Excess (LE)	60% or more	
Excess (E)	20% to 59%	
Normal (N)	-19% to +19%	
Deficient (D)	-20% to -59%	
Large Deficient (LD)	-60% to -99%	
No Rain	-100%	
No Data	Data Not Available	

CHAPTER 4

4.0 HYDROGEOLOGICAL SETUP OF INDIA

India is occupied by a variety of hard and fissured formations, including crystalline, trappean basalt and consolidated sedimentaries (including carbonate rocks), with patches of semi- consolidated sediments in narrow intra-cratonic basins. Apart from this, the northern part of the country and south of Himalayan terrain is occupied by alluvial formation stretching from Rajasthan in the west to Brahmaputra valley in the east. Rugged topography, compact and fissured nature of the rock formations combine to give rise to discontinuous aquifers, with moderate to poor yield potentials. The near surface weathered mantle coupled with deeper fractures form an important aquifer in case of hard rocks. In hard rock terrains, deep weathered pediments, lowlands, valley fills and abandoned river channels, generally have adequate thickness of porous material, to act as repositories of groundwater.

4.1 AQUIFER SYSTEMS OF INDIA

Various rock formations with different hydrogeological characteristics act as distinct aquifer systems of varying dimensions. The aquifer systems of India can be broadly categorized in to 14 Principal Groups. A brief description of the Principal Aquifer Systems (***Fig- 4.1***), as identified by CGWB (CGWB 2012) is given below.

4.1.1 Alluvial Aquifers

The Quaternary sediments comprising Recent Alluvium, Older Alluvium, Aeolian Alluvium (Silt/ Sand) and Coastal Alluvium of Bay of Bengal are by and large important unconsolidated formations constituting major alluvial aquifers. These sediments are essentially composed of clays, silts, sands, pebbles, Kankar etc. These are by far the most significant ground water reservoirs for large scale and extensive development. The hydrogeological environment and ground water regime in the Indo-Ganga-Brahmaputra basin indicate the existence of potential aquifers having enormous fresh ground water reserves. Bestowed with high incidence of rainfall and covered by a thick pile of porous sediments, these ground water reservoirs get replenished every year and are being used heavily. In these areas, in addition to the Annual Replenishable Ground Water Resources available in the zone of Water Level Fluctuation (Dynamic Ground Water Resource), there exists a huge ground water reserve in the deeper part below the zone of fluctuation as well as in the deeper confined aquifers. The coastal aquifers show wide variation in water quality, both laterally and vertically, thus imposing quality constraints for groundwater development.

4.1.2 Laterite

Laterites are formed from the leaching (chemical weathering) of parent sedimentary rocks (sandstones, clays, limestones); metamorphic rocks (schists, gneisses, migmatites) and igneous rocks (granites, basalts, gabbros, peridotites). It is rich in iron and aluminium, formed in hot and wet tropical areas. Laterites are the most wide spread and extensively developed aquifer especially in the peninsular states of India. Laterite forms potential aquifers along valleys and topographic lows where the thickness of the saturated zone is more and can sustain large diameter open wells for domestic and irrigation use.

4.1.3 Sandstone, Shale Aquifers

The sandstone and shale aquifers generally belong to the group of rocks ranging in age from Carboniferous to Mio-Pliocene. The terrestrial freshwater deposits belonging to Gondwana System and the Tertiary deposits along the west and east coast of the peninsular region are included under this category. The Gondwana sandstones form highly potential aquifers, locally. Elsewhere, they have moderate potential and in places they yield meager supplies. The Gondwanas, Lathis, Tipams, Cuddalore sandstones and their equivalents are the most extensive productive aquifers in this category.

4.1.4 Limestone Aquifers

The consolidated sedimentary rocks include carbonate rocks such as limestones, dolomite and marble. Among the carbonate rocks, limestones occupy the largest area. In the carbonate rocks, the principal water bearing zones are the fractures and solution cavities. Consolidated sedimentary rocks of Cuddapah and Vindhyan subgroups and their equivalents consist of limestones/dolomites apart from other major litho-units such as conglomerates, sandstones, shales, slates and quartzites.

4.1.5 Basalt Aquifers

Basalt is a basic volcanic rock which forms alternate layers of compact and vesicular beds of lava flows as seen in the Deccan trap area. The ground water occurrence in basalts are controlled by nature and extent of weathering, presence of vesicles and lava tubes, thickness of flows, number of flows and the nature of inter-trappean layers. Basaltic aquifers have usually medium to low permeability. Ground water occurrence in the Deccan Traps is controlled by the contrasting water bearing properties of different flow units, thus, resulting in multiple aquifer system, at places. The water bearing zones are the weathered and fractured zones.

4.1.6 Crystalline Aquifers

The crystalline hard rock aquifers such as granite, gneisses and high grade metamorphic rocks such as charnockites and khondalites constitute good repository of ground water. Most of the results of groundwater exploration projects have proven that hard rocks neither receive nor transmit water, unless they are weathered and/or fractured. The aquifers are the weathered zone or the fracture system. The fracture system includes fractures, joints, bedding planes, and solution holes. These openings do not have an even distribution and are rather localized. The weathered zone is underlain by semi-weathered rock, fractured rock followed by bedrock. The depth of the bed rock varies from 30-100 m.

In hard rock terrains, ground water occurs under phreatic condition in the mantle of weathered rock, overlying the hard rock, while within the fissures, fractures, cracks, joints within the hard rock, ground water is mostly under semi-confined or in the confined state. Compared to the volume of water stored under semi-confined condition within the body of the hardrock, the storage in the overlying phreatic aquifer is often much greater. In such cases, the network of fissures and fractures serves as a permeable conduit feeding this water to the well. Ground water flow rarely occurs across the topographical water divides and each basin or sub-basin can be treated as a separate hydrogeological unit for planning the development of ground water resources.

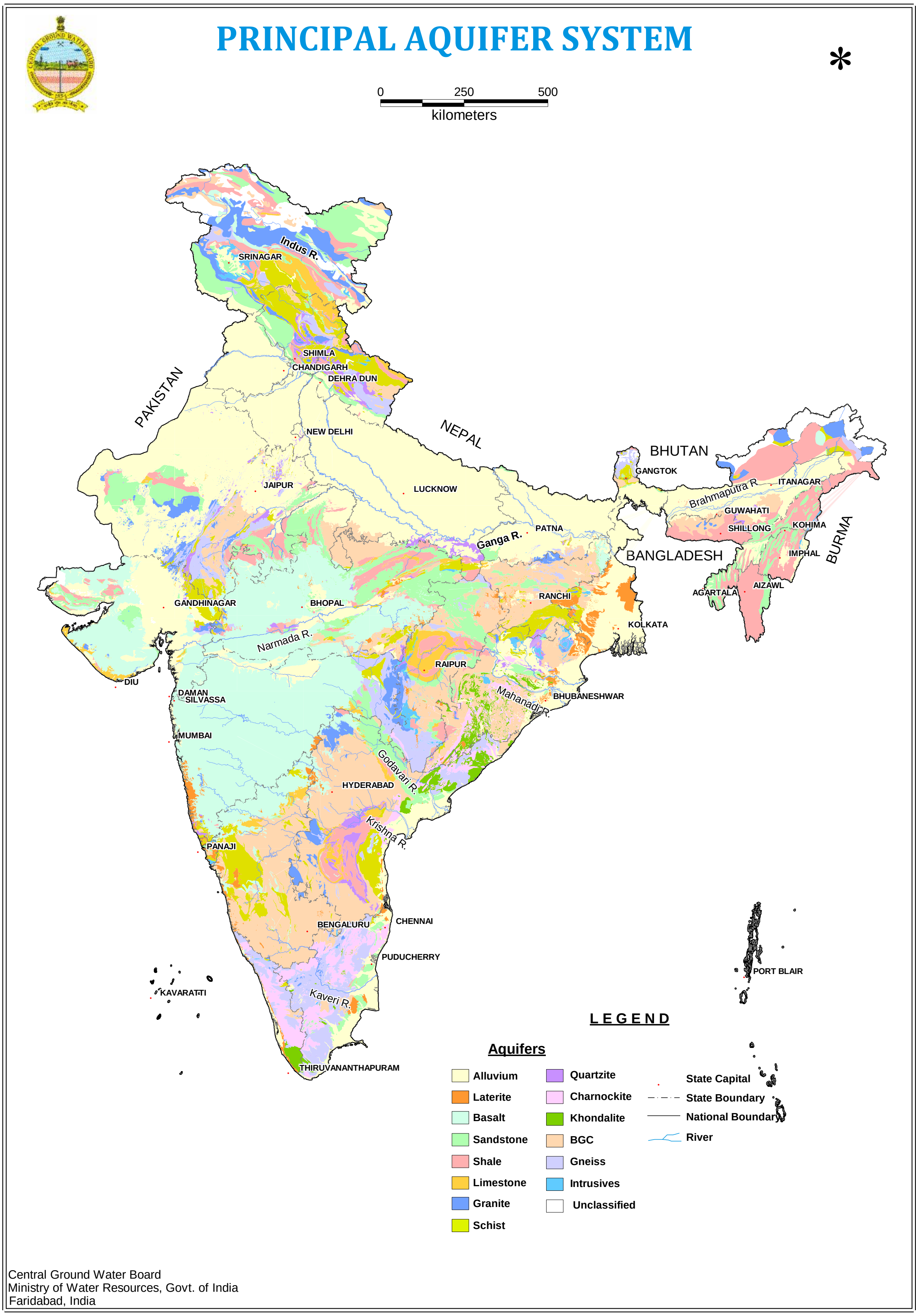


Fig-4.1: Principal Aquifer Systems of India

CHAPTER-5

5.0 GROUND WATER LEVEL SCENARIO IN THE COUNTRY

Ground water level is one of the basic data elements, which reflects the ground water regime in an area. Central Ground Water Board (CGWB) monitors ground water levels four times a year during January, April/ May, August and November through a network of 23209 observation wells spreading throughout the country. The periodicity of ground water level monitoring by the State Governments varies from State to State. The primary objective of monitoring the ground water level is to record the response of ground water regime to the natural and anthropogenic stresses on recharge and discharge components which are governed by geology, climate, physiography, land use pattern and hydrologic characteristics. Natural conditions affecting the regime include climatic parameters like rainfall, evapotranspiration etc. Anthropogenic influences include pumpage from the aquifer, recharge due to irrigation systems and other practices like waste disposal etc. Water level data generated and archived by CGWB along with data from State Government departments have been used for assessment of ground water resources. An outline of groundwater scenario during the period of assessment is given below.

5.1 GROUND WATER LEVEL SCENARIO (2021)

In the years 2020 and 2021, due to the outbreak of Covid-19 throughout the country, the field activities of CGWB including monitoring of water levels have been severely affected. The water levels could not be monitored for consecutively two pre-monsoon (April/May) seasons in the years 2020 and 2021. Also water levels could not be monitored in some states during November-2020 for the same reason. **Due to the unavailability of water level data for Pre-monsoon 2021, the analysis of pre-monsoon water levels has been done taking the 2022 water level data**.

Ground water level data of **Pre-monsoon 2022** for the country (***Fig-5.1***) reveals that the general depth to water level of the country ranges from 5 to 10 m bgl. Very shallow water levels of less than 2 m bgl is observed in few states, such as Assam, Andhra Pradesh, Meghalaya, Karnataka, Kerala, Jharkhand and Tamil Nadu in small patches. Ground Water level in the range of 2-5 m bgl is seen in Assam, northern parts of Uttar Pradesh and Bihar, Coastal parts of Odisha, few pockets in Andhra Pradesh, Telangana, Karnataka, Kerala, Tamilnadu, Gujarat and Maharashtra. Major part of the country shows water level in the range 5-10 m bgl, especially in the states of Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Chhattisgarh, Maharashtra, Gujarat, Tamil Nadu, Telangana and Karnataka. In major parts of north-western and western states, especially in the states of Delhi, Haryana, Punjab and Rajasthan, depth to water level is generally deeper and ranges from about 20 to more than 40 m bgl. The peninsular part of the country recorded water level in the range of 5 to 20 m bgl. The deepest depth to water level of 130.77 m bgl is observed at Khara in Jodhpur district of Rajasthan.

The ground water level data for **November 2021** indicates that out of the total 14470 wells analysed, 4191 (29%) wells are showing water level less than 2 m bgl (metres below ground level), 5755 (40%) wells are showing water level in the depth range of 2-5 m bgl, 2923 (20 %) wells are showing water level in the depth range of 5-10 m bgl, 1011 (7%) wells are showing water level in the depth range of 10-20 m bgl, 384 (3%) wells are showing water level in the depth range of 20-40 m bgl and the remaining 206 (1%) wells are showing water level more than 40 m bgl. The general depth to water level of the country ranges from 0 to 5 m bgl as almost 70% of the wells fall in this range. Very shallow water level of less than 2 m bgl is observed in all the states, except Chandigarh and Nagaland. Ground Water level in the range of 2-5 m bgl is also predominant in the entire country. Deeper water level is observed in parts of north-western and western states, especially in the states/UTs of Chandigarh, Delhi, Haryana, Punjab and Rajasthan, depth to water level is generally deeper and ranges from about 10 m bgl to more than 40 m bgl. The deepest depth to water level of 116.98 m bgl is observed at Deshnokh in Bikaner district of Rajasthan. The depth to water level map of the country is shown in ***Fig-5.2***.

5.1.1 Fluctuation of Ground Water level: Pre-monsoon 2022 compared to Pre-monsoon 2019

A comparison of depth to water level of Premonsoon 2022 with Premonsoon 2019 (***Fig-5.3***) indicates that 69.7% of the analysed wells (11744 No) show rise in water level whereas almost 29% wells show decline in water level. 1.1% wells show no change. Rise and decline in water level is primarily in the 0-2 m range. Decline of water level is quite prominent in the states/ UTs of Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Odisha, Punjab, Rajasthan, Tripura and West Bengal. Decline of more than 4 m water level is observed in small pockets in the states of Chhatisgarh, Gujarat, Haryana, Madhya Pradesh, Punjab, Rajasthan and West Bengal.

5.1.2 Fluctuation of Ground Water level: November 2021 compared to November 2019

A comparison of depth to water level of November 2021 with November 2019 (***Fig-5.4***) indicates that 54.8% of the analysed wells (12862 No) show rise in water level whereas 44.1% wells show decline in water level. 1.1% wells show no change. Rise and decline in water level is primarily in the 0-2 m range. Rise in water level is prominently seen in the states/ UTs of Andaman & Nicobar, Andhra Pradesh, Chandigarh, Delhi, Daman & Diu, Karnataka, Kerala, Madhya Pradesh, Pondicherry, Tamil Nadu, Uttaranchal, Uttar Pradesh and West Bengal. Similarly states where decline in water level is observed in significant parts are Arunachal Pradesh, Assam, Chhatisgarh, Dadra & Nagar Haveli, Goa, Gujarat, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Odisha, Punjab, Rajasthan and Tripura. Water levels deeper than 4m are observed in small packets in Chandigarh, Gujarat and Rajasthan.

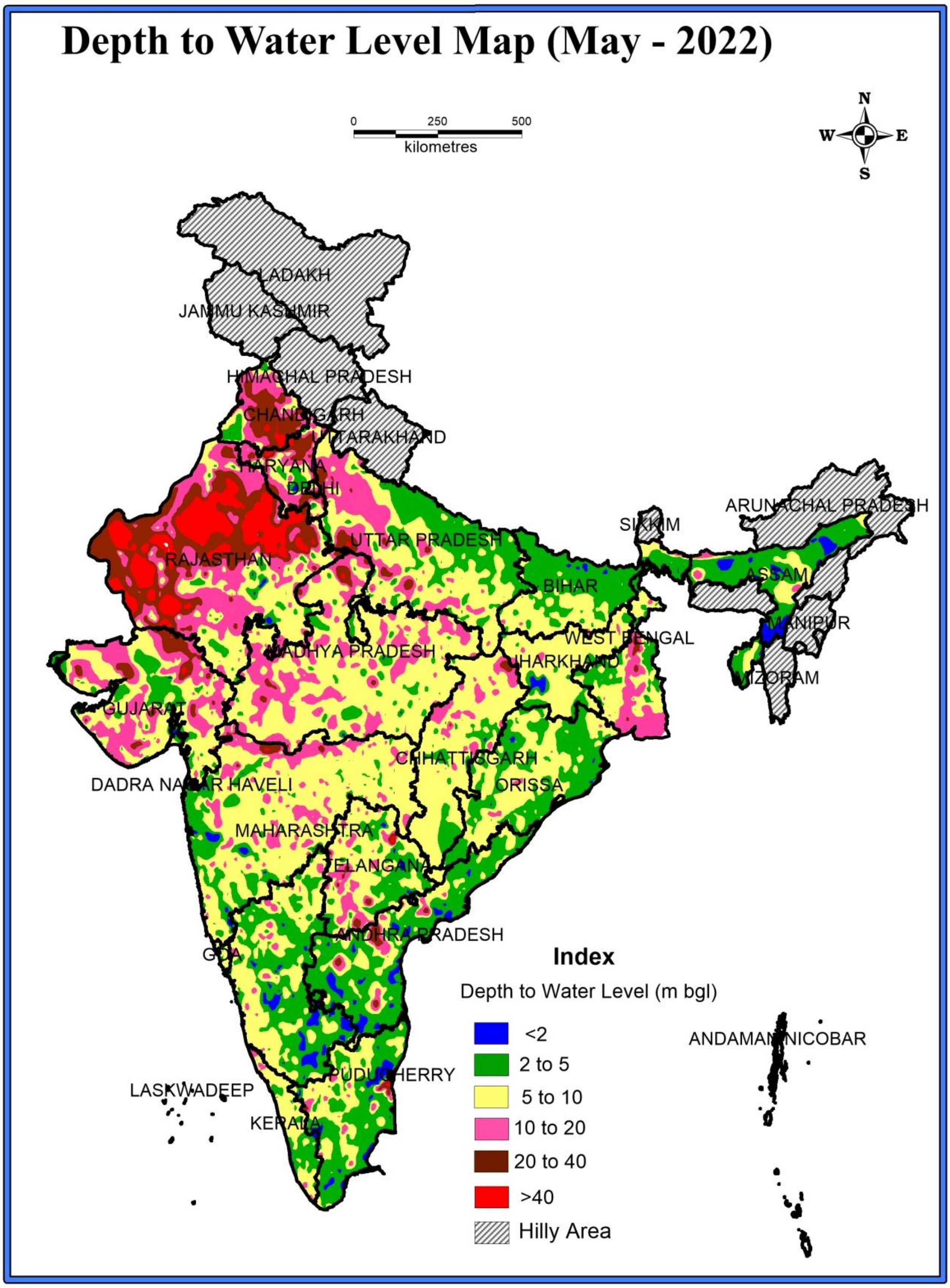


Fig-5.1: Pre-monsoon Depth to Water Level Map (2022)

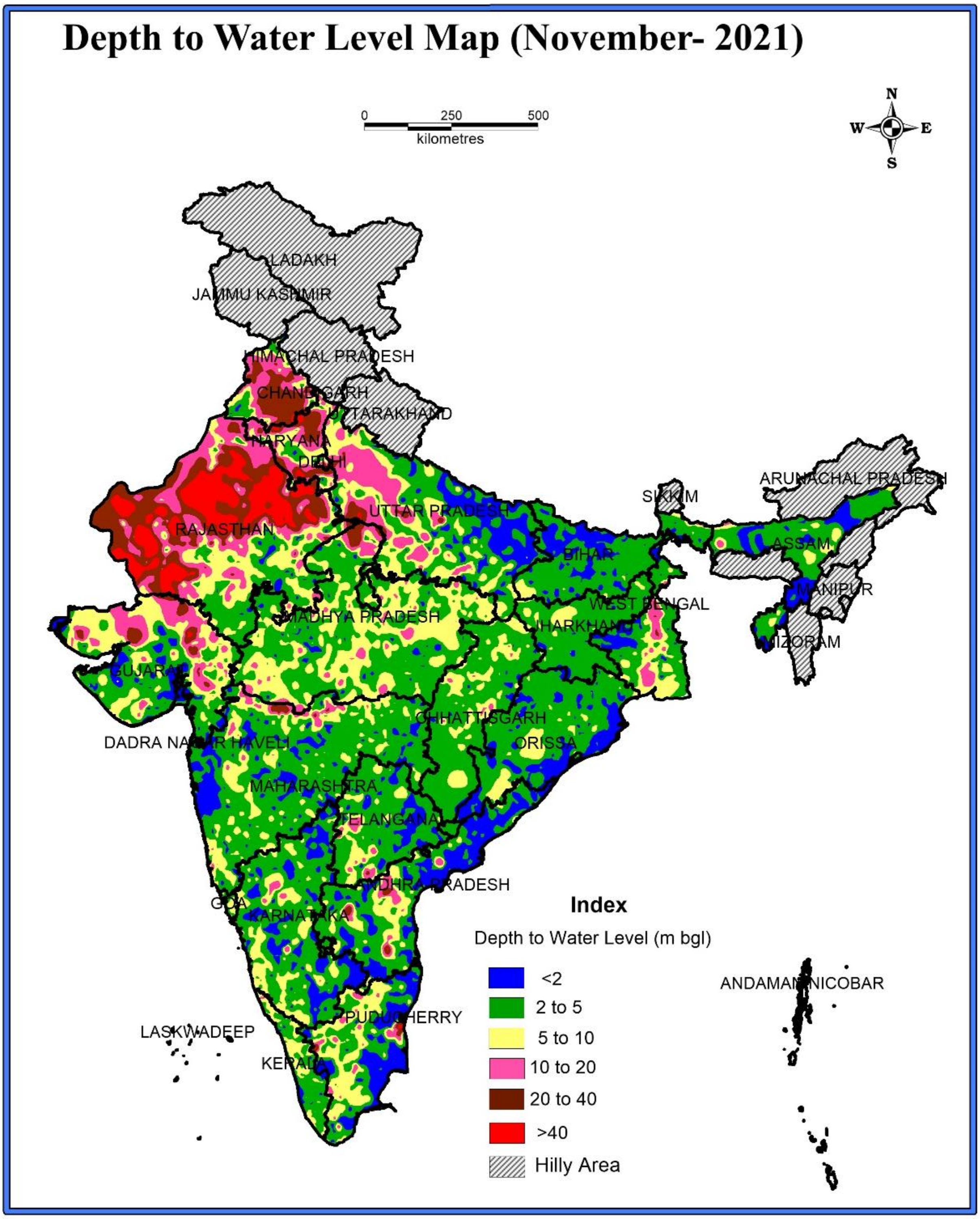


Fig-5.2: Post-monsoon Depth to Water Level Map (2019)

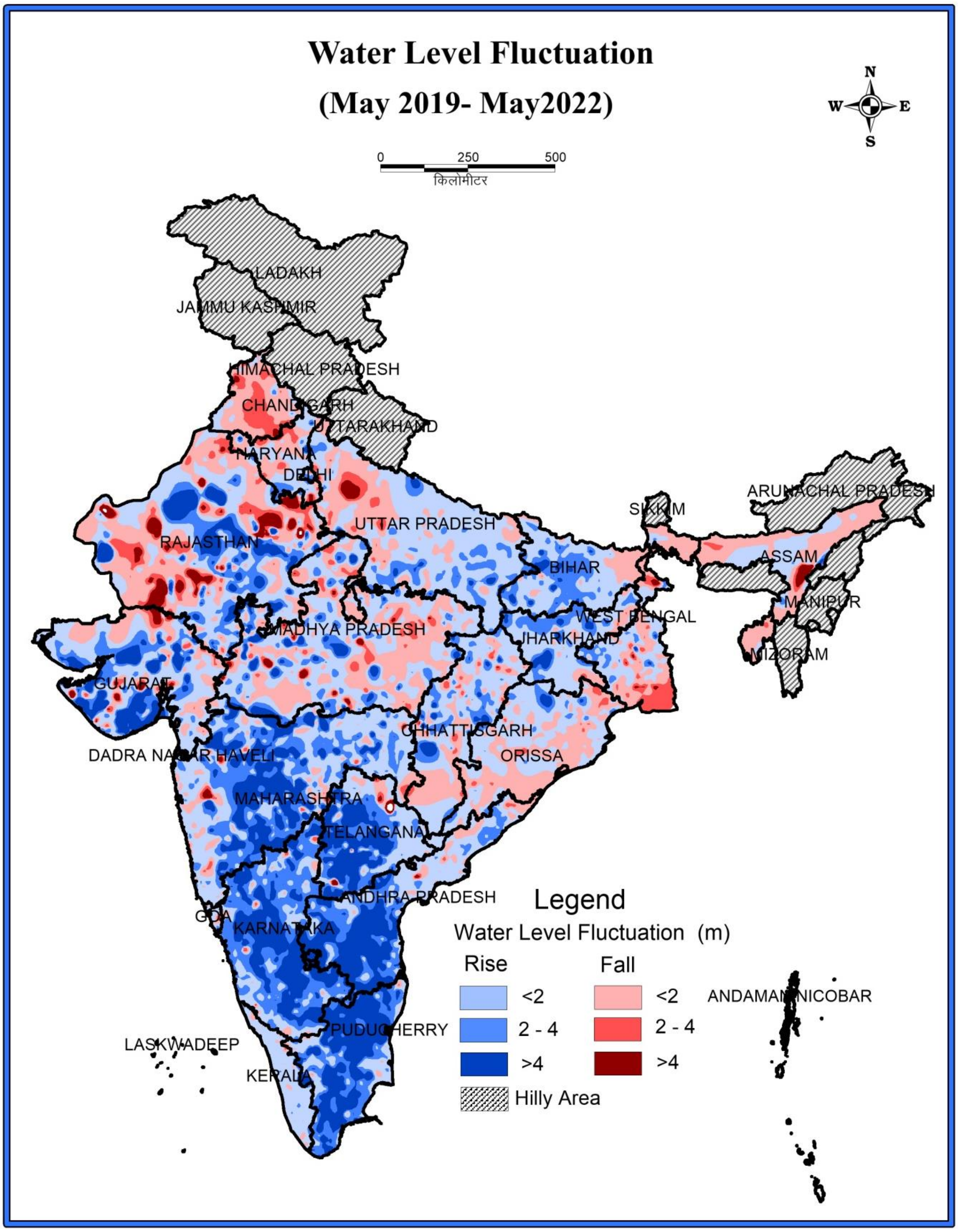


Fig-5.3: Ground Water Level Fluctuation: Pre-monsoon 2019 compared to Pre-monsoon 2022

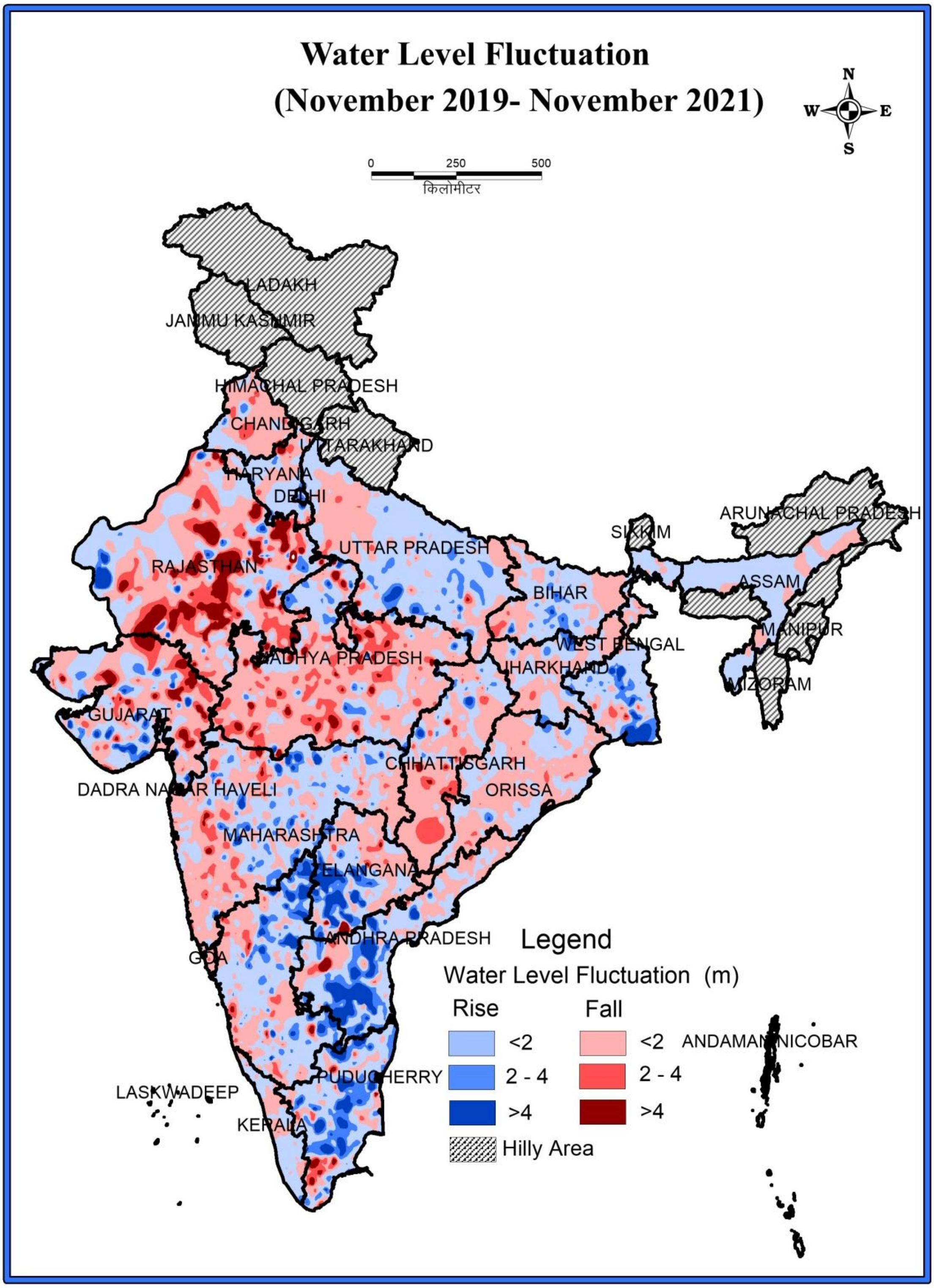


Fig-5.4: Ground Water Level Fluctuation: November 2019 compared to November 2021

CHAPTER 6

6.0 GROUND WATER RESOURCES OF INDIA

The Dynamic ground water resources (as in 2022) of the entire country have been assessed jointly by CGWB and State Ground Water Departments under the supervision of the State level Committees. The dynamic ground water resources are also known as Annual Ground Water Recharge, since it gets recharged every year from rainfall and other sources (secondary sources) such as applied irrigation water, surface water bodies, water conservation structures, etc. Methodology adopted for the assessment has been outlined in Chapter-2 of this report. This section provides a summary of the Ground water Resources Assessment 2022 (GWRA-2022) made for the country.

6.1 DYNAMIC FRESH GROUND WATER RESOURCES

As per the 2022 assessment of Dynamic Ground Water Resources, the Total Annual Ground Water Recharge for the entire country has been assessed as 437.60 billion cubic meter (bcm) and Total natural discharges works out to be 36.85 bcm. Hence, Annual Extractable Ground Water Resources for the entire country is 398.08 bcm.

Major source of ground water recharge is the monsoon rainfall, which is 241.35 bcm and about 55 % of the total annual ground water recharge (***Fig-6.1***). The contribution in Annual Ground Water Recharge from rainfall during monsoon season is more than 70% in the states/UT of Goa, Gujarat, Jharkhand, Kerala, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Rajasthan and Daman & Diu (***Fig- 6.2***). The overall contribution of rainfall (both monsoon & non-monsoon) recharge to country's total annual ground water recharge is 61 % and the share of recharge from 'Other sources' viz. canal seepage, return flow from irrigation, recharge from tanks, ponds and water conservation structures taken together is 39 %.

State-wise Ground Water Resources of India (as in 2022) are given in **Annexure-I** and the district-wise figures for each State are given in **Annexure-II**. The over-all scenario of ground water resource and extraction in the country is given in ***Fig-6.1, 6.2, 6.3, 6.4 & 6.5*****.**

Volumetric estimates are dependent on the areal extent of the assessment units. In order to compare the ground water resource of different assessment units, the volumetric estimates of annual ground water recharge have been converted to depth units (m) by dividing the annual ground water recharge by the area of the respective assessment units (km^2). Spatial variation in annual ground water recharge (m) is shown in **Fig-6.3.** Annual Ground Water Recharge is significantly high in the Indus-Ganga-Brahmaputra alluvial belt in the North, East and North East India covering the states of Punjab, Haryana, Uttar Pradesh, Bihar, West Bengal and valley areas of North Eastern States, where rainfall is plenty and thick piles of unconsolidated alluvial formations are conducive for recharge. Annual Ground Water Recharge in these regions varies from 0.25 to more than 0.5 m. The coastal alluvial belt particularly Eastern Coast also has relatively high annual ground water recharge, in the range 0.25 to more than 0.5 m. In western India, particularly Rajasthan and parts of northern Gujarat that have arid climate, the annual ground water recharge is scanty, mostly up to 0.025 m. Similarly, in major parts of the southern peninsula covered with hard rock terrains, annual ground water recharge mostly ranges from 0.10 to 0.15 m. This is primarily because of comparatively low infiltration and storage capacity of the rock formations prevailing in the region. The remaining part of Central India is mostly characterized by moderate recharge in the range of 0.10 to 0.25 m.

The overall estimate of Annual Ground Water Recharge for the entire country shows an increase of 1.45 bcm in the present assessment as compared to the last assessment i.e. 2020. The Annual Extractable Ground Water Resources shows an increase of 0.46 bcm. The Annual Ground Water Extraction for irrigation, domestic and Industrial uses has also decreased by 5.76 bcm. The main reasons for these variations is attributed to refinement of parameters, refinement in well census data and changing ground water regime.

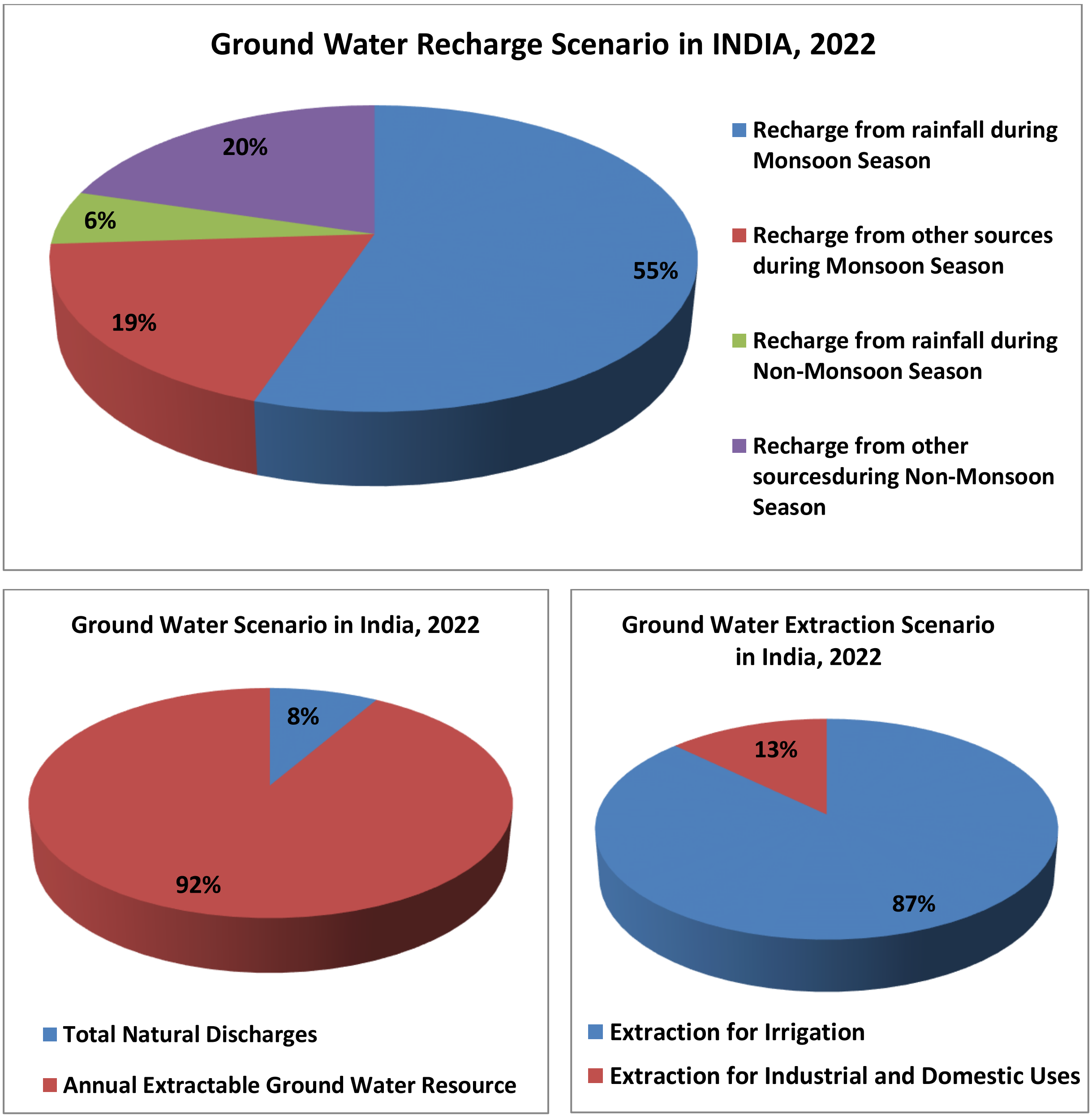


Fig-6.1: Ground Water Resources and Extraction Scenario in India, 2022

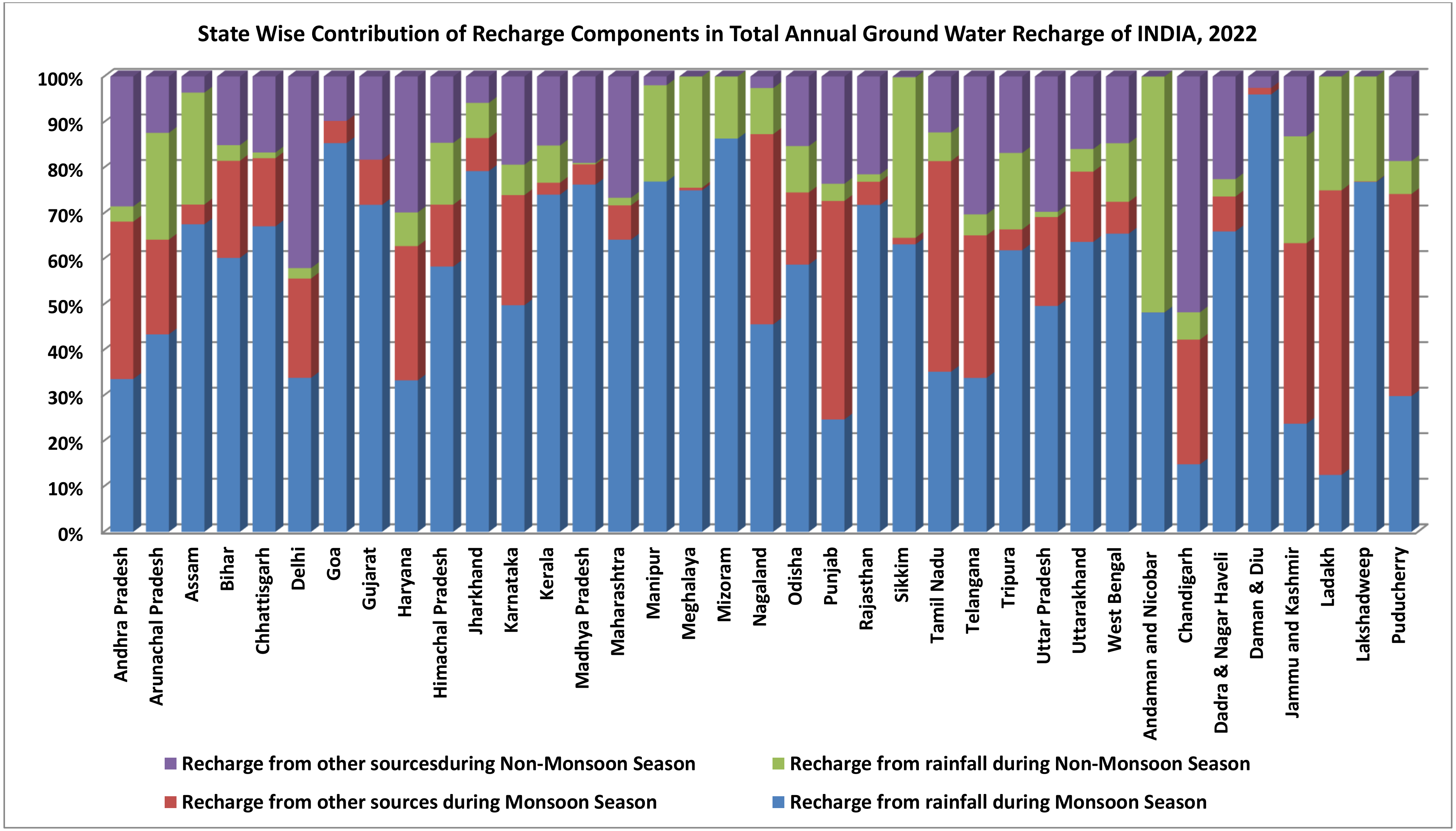


Fig-6.2: State wise contribution of recharge components in Total Annual Ground Water Recharge of India, 2022

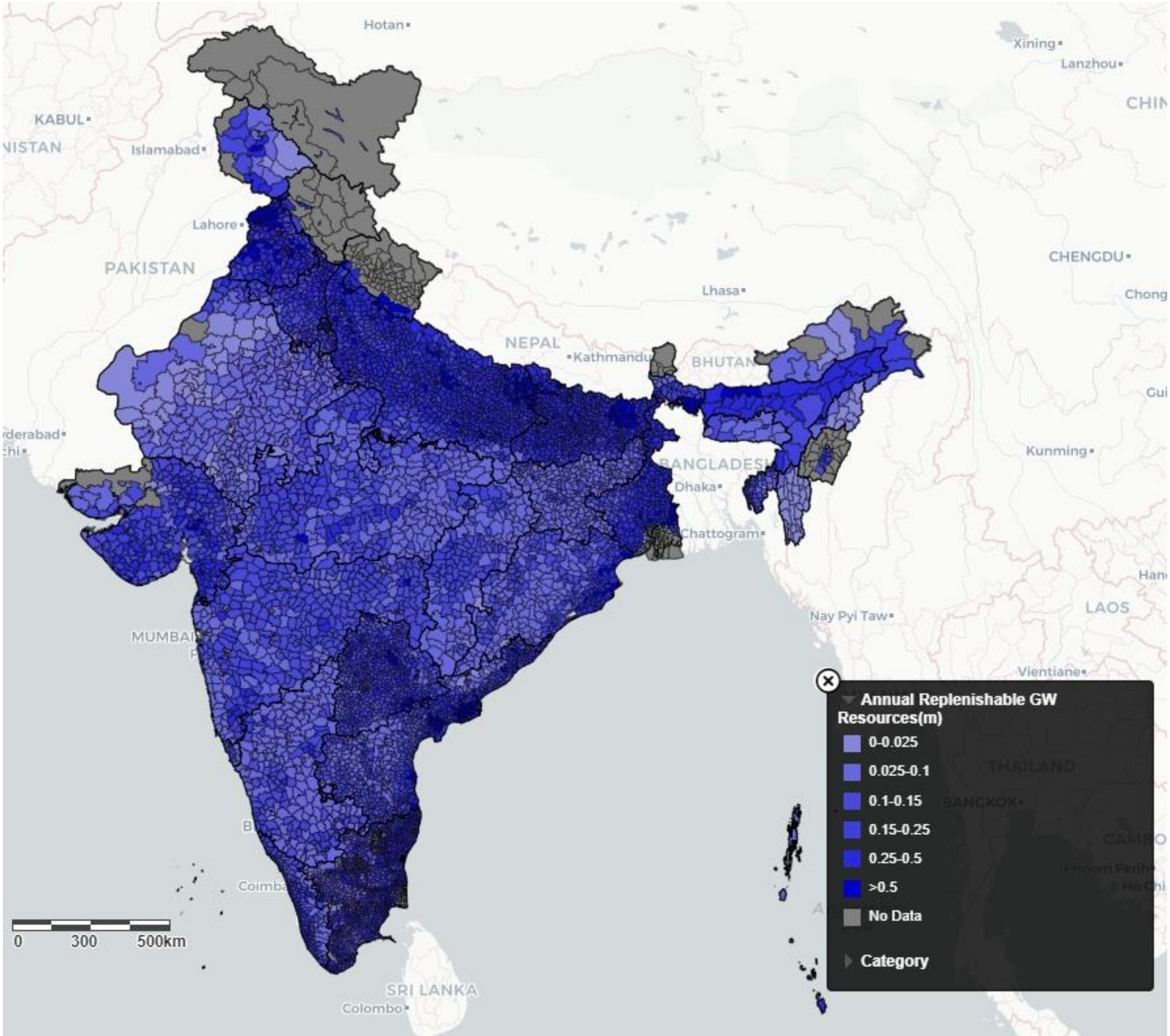


Fig. 6.3: Spatial variation in annual ground water recharge, 2022

6.2 GROUND WATER EXTRACTION

The assessment of ground water extraction is carried out considering the Minor Irrigation Census data and sample surveys carried out by the State Ground Water Departments. The Total Annual Ground Water Extraction of the entire country for the year 2022 has been estimated as 239.16 bcm. Agriculture sector is the predominant consumer of ground water resources. About 87 % of total annual ground water extraction i.e. 208.49 bcm is for irrigation use. Only 30.69 bcm is for Domestic & Industrial use, which is about 13 % of the total extraction. In the states of, Delhi, Goa, Kerala, Jammu & Kashmir, Ladakh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Andaman & Nicobar Island and Chandigarh the ground water extraction for domestic uses is more than 40 % **(*Fig-6.4*).**

6.3 STAGE OF GROUND WATER EXTRACTION

The overall stage of groundwater extraction in the country is 60.08 %. The stage of ground water extraction is very high in the states of Haryana, Punjab, Rajasthan, Dadra & Nagar Haveli and Daman & Diu where it is more than 100%, which implies that in these states the annual ground water consumption is more than annual extractable ground water resources. In the states of Delhi, Tamil Nadu, Uttar Pradesh, Karnataka and UTs of Chandigarh, Lakshadweep and Puducherry, the stage of ground water extraction is between 60-100%. In rest of the states, the stage of ground water extraction is below 60 %.

6.4 CATEGORIZATION OF ASSESSMENT UNITS

Out of the total 7089 assessment units (Blocks/ Taluks/ Mandals/ Districts/Firkas/Valleys), 1006 has been categorized as 'Over-exploited', 260 as 'Critical', 885 as 'Semi-critical', and 4780 units as 'Safe'. There are 158 assessment units, which are completely saline. 124 new assessments are included in the current assessment of 2022. The State-wise and District-wise numbers of assessment units under different categories are given in **Annexure III (A) and Annexure III (B)** respectively. The percentage of Over-exploited and Critical administrative units more than 25% of the total units are in Delhi, Haryana, Karnataka, Punjab, Rajasthan, Tamil Nadu, Dadra & Nagar Haveli and Daman & Diu (***Fig-6.5***). The State-wise name of the assessment units under Over-exploited, Critical and Semi-critical categories and Quality problems in assessment units are given in **Annexure IV (A) and Annexure IV (B)** respectively. Similarly out of 24.69 lakh sq km recharge worthy area of the country, 4.30 lakh sq km (17 %) are under 'Over-Exploited', 0.77 lakh sq km (3 %) are under 'Critical', 3.03 lakh sq km (12 %) are under 'Semi-Critical', 16.18 lakh sq km (66 %) are under 'Safe' and 0.4 lakh sq km (2 %) are under 'Saline' category assessment units. State-wise and District-wise details are given in **Annexure III (E) and Annexure III (F)** respectively. Out of 398.08 bcm of Total Annual Extractable Resources of the country, 46.05 bcm (12%) are under 'Over-Exploited', 13.02 bcm (3%) are under 'Critical', 47 bcm (12 %) are under 'Semi-Critical', 291.88 bcm (73 %) are under 'Safe' category assessment units. State-wise and District-wise details are given in **Annexure III (C) and Annexure III (D)** respectively.

The state wise summary of assessment units improved or deteriorated from 2020 to 2022 assessment and detailed comparison of categorization of assessment units from 2020 and 2022 are given in **Annexure V (A) and Annexure V(B)** respectively**.**

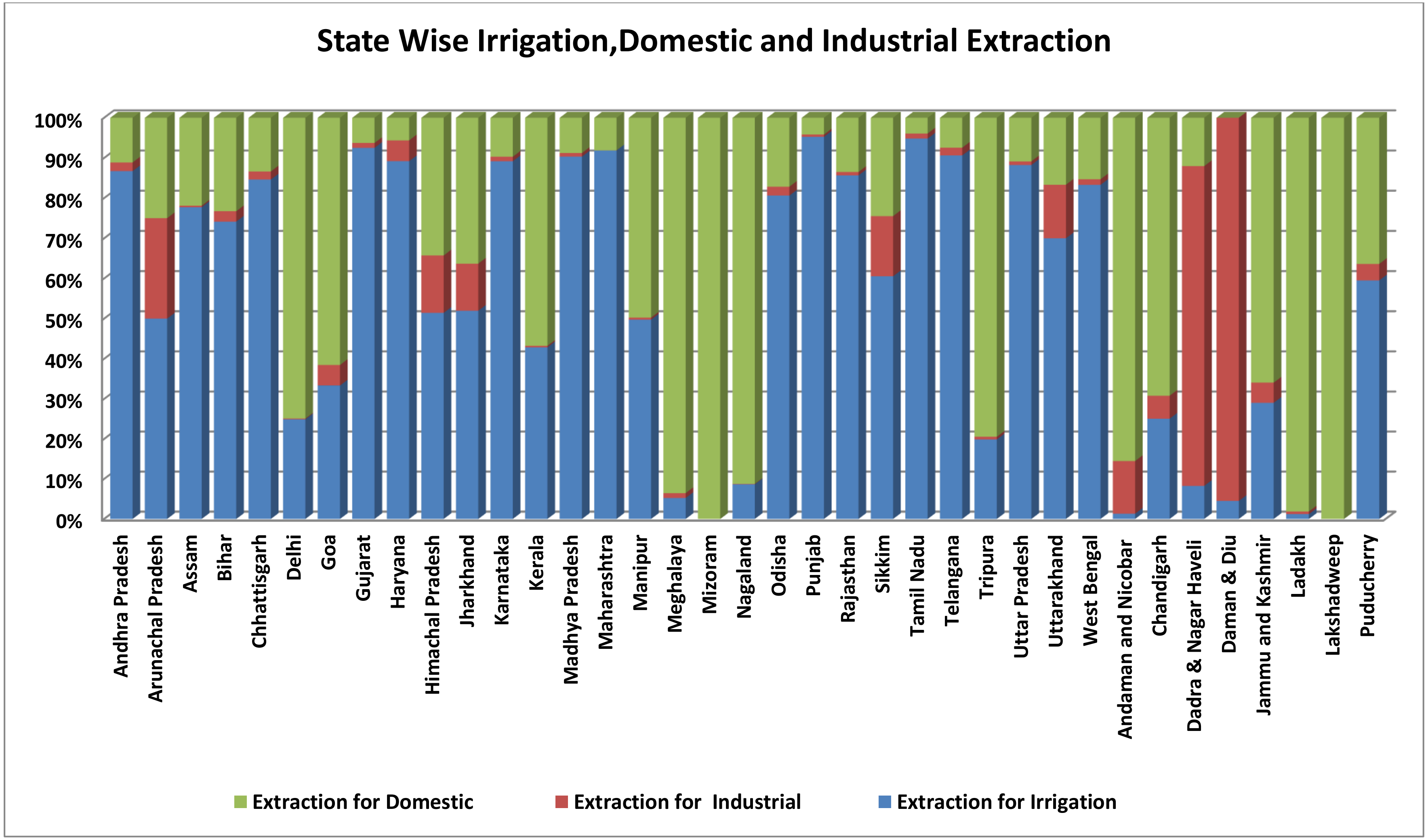


Fig-6.4: State wise Irrigation Draft *Vs* Domestic & Industrial

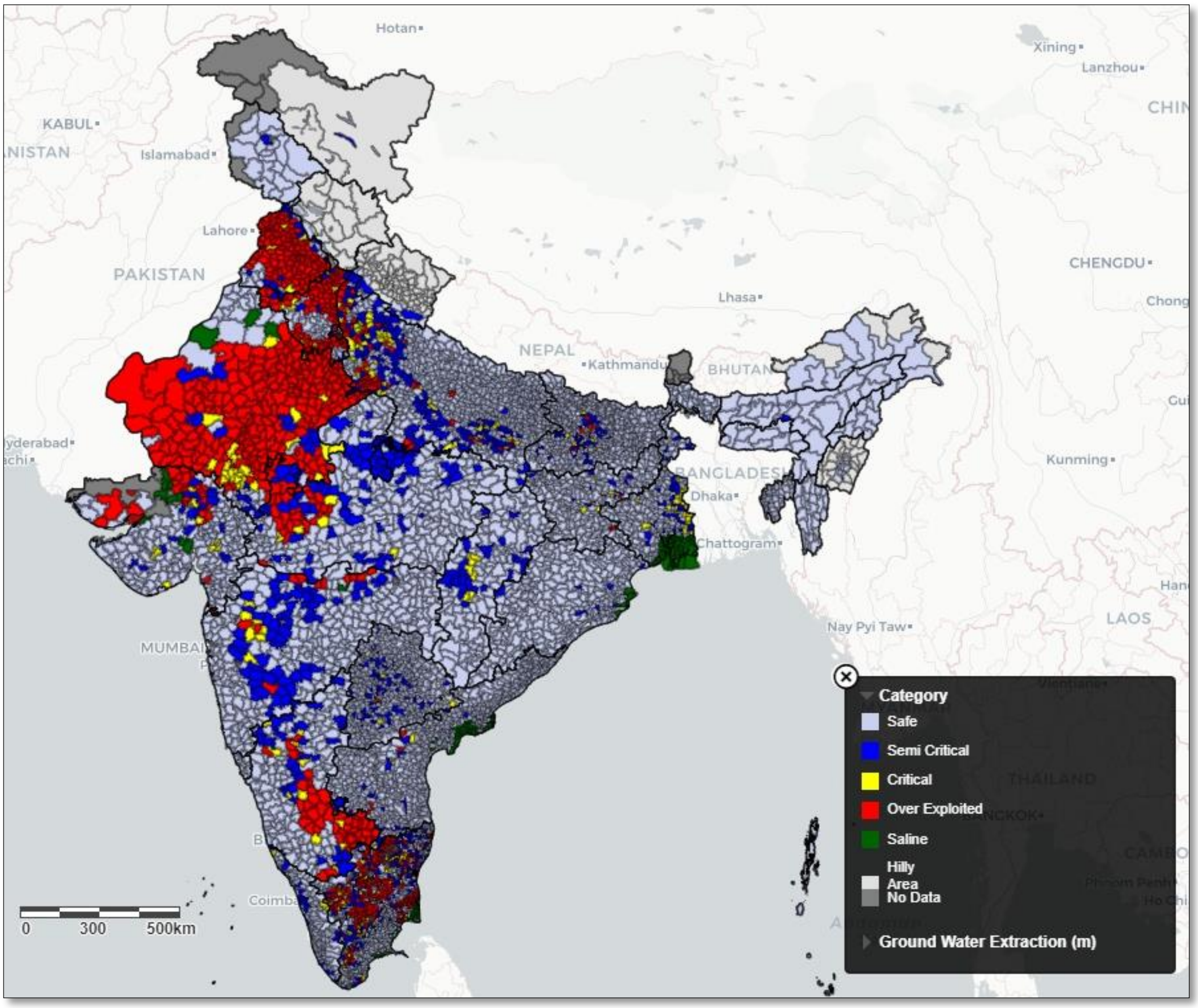


Fig-6.5: Categorization of Assessment Units

6.5 INTEGRATION OF GROUND WATER AND SURFACE WATER DATA WITH A VIEW TO FACILITATE PLANNING FOR CONJUNCTIVE USE OF WATER RESOURCES

Assessment of ground water resources is based on the principle of water balance using the equation 'Inflow – Outflow = Change in Storage (of an aquifer)'. Major inflow components include recharge due to rainfall and recharge from other sources. Major outflow component is ground water extraction for domestic, irrigation and industrial uses. Vertical flow across the aquifer system, lateral flow along the aquifer system (through flow), transpiration, evaporation and base flow are other important components.

The area of each assessment unit (block/taluk/mandal/tehsil/firka etc.) is divided into command area and non-command area for the purpose of assessment. If an assessment unit is having more than 100 ha area under major and medium irrigation projects then that much area will be considered as command area. For the command area, along with other data/information pertaining to ground water resource assessment, data/information related to canal flows is collected from the relevant agencies for assessing the recharge from canal seepage. Similarly, data related to irrigation water applied in the assessment area from surface and ground water sources in different seasons are estimated for assessing the return flow from irrigation (return flow factor depends upon depth to water level, paddy/non-paddy crops etc.). Recharge from water bodies/tanks/lakes are assessed in the area based on average water spread area and recharge factor. Recharge from water conservation structures in the area are assessed based on the storage capacity, number fillings and recharge factor. All these data/information are collected/compiled for assessment of ground water resource of the assessment units. Based the ground water resources assessed and surface water sources availability, integrated water resource management plan and planning for conjunctive management of surface and ground water can be devised at block/assessment level by the planners. This data/information collected/compiled for assessment will be very useful for local administrators for managing water resources in a holistic and sustainable manner.

CHAPTER 7

7.0 STATE WISE GROUND WATER RESOURCE SCENARIO

The ground water conditions, its availability and utilization scenario and categorization of assessment units in different states are given in Annexure I, II, III & IV. State wise summaries are given below.

7.1 ANDHRA PRADESH

The State is divided into 667 assessment units (Mandals) as the State is predominantly covered by hardrocks. The Ground water resources of these watersheds were estimated separately for Command, Non-Command and Poor ground Water Quality areas for the reference year 2022. The state is underlain by diverse rock types of different geological ages from Pre-Cambrian to Recent. As much as 80% of the State is underlain by hard rock formations like Archaeans, Pre- Cambrians, Cuddapahs, Kurnools and Deccan traps. The remaining 20% is underlain by soft rocks including Gondwanas, Rajahmundry sandstone and Recent Alluvium.

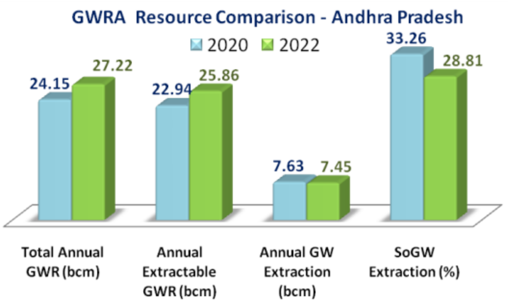
The Ground water resources have been assessed watershed wise and are apportioned to mandals. The Total Annual Ground Water Recharge of the State has been estimated as 27.22bcm and Annual Extractable Resource is 25.86bcm. The current Annual Ground Water Extraction for all uses is 7.45 bcm and Stage of Ground Water Extraction is 28.81 %.

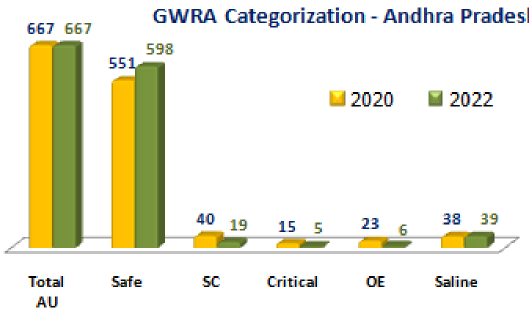
Out of 667 assessment units (mandals), 06 (0.90%) units have been categorized, as 'Over-exploited', 05units (0.75%) as 'Critical', 19units (2.85%) as 'Semi-Critical', 598 units (89.7 %) as 'Safe' and 39 units categorized as 'Saline' (5.85%).

Similarly, out of 140719.5 sq km recharge worthy area of the State, 1380.65 sq km (0.98 %) area are under 'Over-Exploited', 1114.2 sq km (0.79 %) under 'Critical', 4206.4 sq km (2.99 %) under 'Semi-critical', 127921.85 sq km (90.9 %) under 'Safe' category of assessment units. 6096.33sq km (4.33%) area is under 'Saline' category of assessment units.

Out of total 25863.17 mcm annual extractable ground water resources of the State, 168.51 mcm (0.65%) are under 'Over-exploited', 118.07 mcm (0.46 %) under 'Critical', 492.37 mcm (1.9 %) under 'Semi-critical' and 25084.22 mcm (96.11 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, the total Annual Ground Water Recharge for the State has increased from 24.1bcm to 27.22bcm, which is attributed to excess rainfall, increase in surface water impoundments, reduction in ground water draft, government interventions, e.g. water conservation activities and emphasis on Micro Irrigation. The number of over-exploited mandals has also decreased from 23 to 6 due to the above reasons.



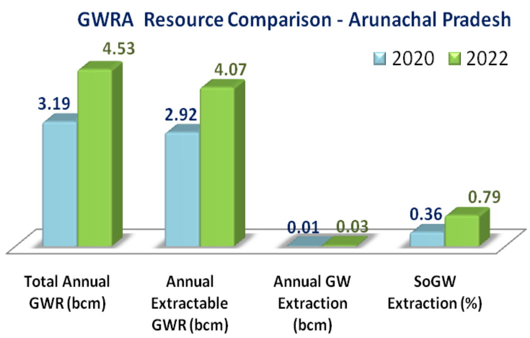


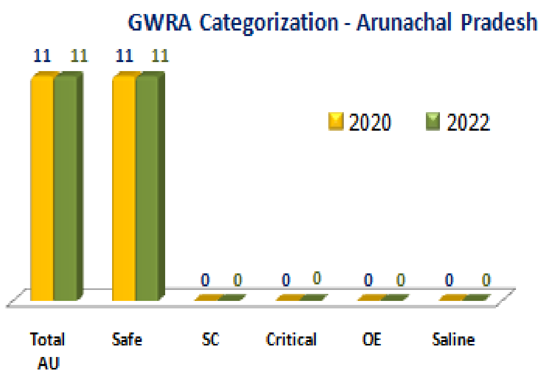
7.2 ARUNACHAL PRADESH

The state of Arunachal Pradesh is underlain by diverse rock types of different geological ages from Pre-Cambrian to Recent. Major part of the state is covered with consolidated crystalline rocks and meta-sediments of Precambrian and Palaeozoic age, while Tertiary sediments consisting of semi-consolidated argillaceous assemblage, represented by the Disang, Barail, Tipam, Siwalik and Dihing groups of rock, occupy periphery areas bordering Assam and behave as run-off and in select patches functions as infiltration zone. In consolidated formations, ground water potential appears to be limited. Semi-consolidated Tertiary formations are likely to give moderate or poor yield and expected to be controlled by aquifer geometry and structural features. Ground water in both consolidated and semi-consolidated formations also manifests as springs and in all geological formations springs occur as both seasonal and perennial in nature.

Unconsolidated Quaternary sediments comprising the terrace deposits of Pleistocene (Bhabar zone) and also the terrace and alluvial fan deposits of Holocene age prevail in the fringe valley areas and as thin carpet in isolated structural valley sand with considerable thickness in open and wide valleys joining Brahmaputra Alluvial plains. The unconsolidated alluvial sediments in the valley areas act as good repositories for ground water development. Valleys adjoining Assam are most promising where good thickness of granular zones is distributed. Discharge of the deep tube wells, tapping mostly unconsolidated Quaternary sediments & at places Upper Tertiary formations, varies from $1.4m^3/hr$ to $54m^3/hr$, while transmissivity ranges from 1 to $661m^2/day$. Storativity ranges from 0.35x10-3 to 6.65x10-3.

The ground water resource estimation of the state has been done district-wise. Ground water resources of five districts namely Upper Siang, Anjaw, Dibang Valley, KurungKumey and Tawang could not be estimated as they are hilly areas. The Annual Ground Water Recharge of the State has been estimated as 4.53 bcm and Annual Extractable Ground Water Resources is 4.07 bcm. The Current Annual Ground Water Extraction is 0.032 bcm and Stage of Ground Water Extraction is 0.79 %. All the assessment, the Total Annual Ground Water Recharge has increased from 3.19 bcm to 4.53 bcm. There is no significant change in the current annual ground water extraction.



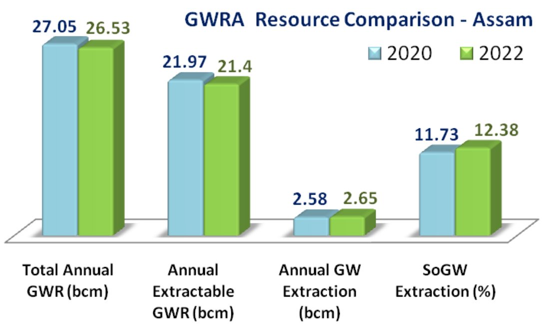


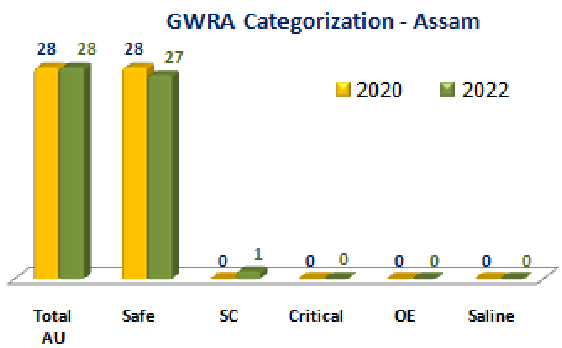
7.3 ASSAM

The State is underlain mainly by unconsolidated Quaternary formation in Brahmaputra valley and potential aquifers lie at shallow as well as deeper zone. The semi-consolidated Tertiary formations are found to occur in the southern part of KarbiAnglong, Cachar, Karimganj and Hailakandi districts and in Upper Assam covering southern fringe of Dibrugarh, Tinsukia, Sibsagar, Jorhat, Golaghatdistricts.The consolidated Precambrian rocks occur mainly in N.C. Hills, Karbi-Anglong, Kamrup, Goalpara, Dhubri, and Nagaon.

Ground water resources have been assessed district-wise due to paucity of block wise data. The Total Annual Groundwater Recharge of the State has been estimated as 26.53bcm and Annual Extractable Groundwater Resources is 21.40bcm. The Current Annual Ground Water Extraction for all uses is 2.65bcm and Stage of Ground Water Extraction is 12.38 %. Out of 28 assessment units, 27 have been categorized as ‘Safe’ and one assessment unit of Kamrup (Metro) Urban is in semi critical condition. There is no saline area in the state.

As compared to 2020 assessment, the Total Annual Ground Water Recharge for the State has decreased from 27.05bcm in 2020 to 26.52bcm in 2022, Annual Extractable Ground Water Resources decreased from 21.97bcm in 2020 to 21.40bcm in 2022 and Total Ground Water Extraction increased from 2.58bcm in 2020 to 2.65bcm in 2022. These changes can be attributed due to refinement of data. Stage of Ground Water Extraction increases from 11.73 % to 12.38 % due to decrease in annual extractable resource, increase in gross extraction and consideration of 40% of recharge worthy area as paved in case of Kamrup (Metro) Urban assessment unit.



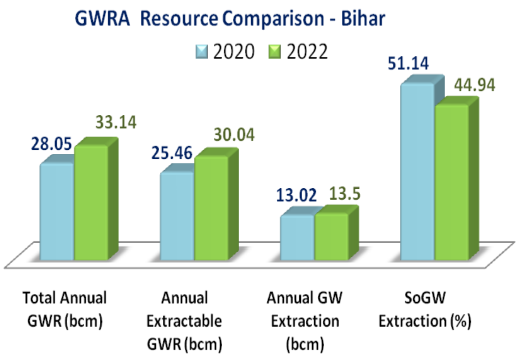


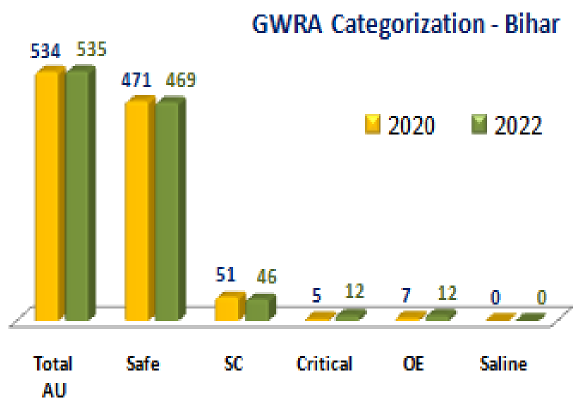
7.4 BIHAR

The State is covered with Gangetic alluvium in more than 89 % of its geographical area. The consolidated formations occupy fringes in the southern parts of the state. Dug wells and shallow tube wells tapping the phreatic zone are the common ground water abstraction structures. The assessment of dynamic ground water resources has been carried out in 535 Assessment Units (534 blocks + Patna Urban) of the State. The Total Annual Ground Water Recharge has been worked out as 33.14 bcm with the Annual Extractable Ground Water Resources as 30.04 bcm. The Current Annual Ground Water Extraction for all uses has been estimated as 13.5 bcm and the Stage of Ground Water Extraction of the State is 44.94 %.

Out of the total 535 assessment units (blocks + Patna Urban), 8 units (1.50 %) are 'Over-exploited', 12 units (2.24 %) are 'Critical', 46 units (8.60 %) are 'Semi-Critical', 469 units (87.66 %) units are 'Safe' category. There is no 'Saline' block in the State. Similarly out of 90348.70 sq km recharge worthy area of the State, 867.8 sq km (0.96 %) area are under 'Over-Exploited', 1354.24 sq km (1.5 %) under 'Critical', 6200.44 sq km (6.86 %) under 'Semi-critical', 81926.22 sq km (90.68 %) under 'Safe' categories of assessment units. Out of total 30042.2 mcm annual extractable ground water resources of the State, 276.78 mcm (0.92 %) are under 'Over-exploited', 401.65 mcm (1.34 %) under 'Critical', 1860.34 mcm (6.19 %) under 'Semi-critical' and 27503.42 mcm (91.55 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, the Total Annual Ground Water Recharge and Annual Extractable Ground Water Resources for the State have increased from 28.05 to 33.14 bcm and 25.46 to 30.04 bcm respectively. The Annual Ground Water Extraction has increased from 13.02 to 13.5 bcm. This assessment is done by calculation of dynamic ground water resources for canal command and non command areas separately. The changes in the parameters are due to applying recharge from canal seepage, change in rainfall recharge. Recharge from surface water bodies and applied surface water irrigation increased due to Jal Jeevan Hariyali Mission (By Govt. of Bihar) in which tanks & water bodies have been revived and renovated.





7.5 CHHATTISGARH

The State is underlain by diverse rock types of different geological ages from Pre-Cambrian to Recent. 87% area of the State is underlain by hard rock and the ground water in these areas is being tapped mostly by dug wells constructed in the weathered zone and bore wells tapping the deeper aquifers. The yield of open (dug) wells varies from 1 to 2 lps and the yield of the bore wells ranges from < 1 to 5 lps. About 13 % area of the State is occupied by Semi-consolidated sedimentary rocks where Dug wells & tube wells have yield range of 1 to 10 lps.

The assessment of ground water resources has been carried out block-wise. The Total Annual Ground Water Recharge of the State has been assessed as 12.05 bcm and Annual Extractable Ground Water Resource is 11.01 bcm. The Total Current Annual Ground Water Extraction is 5.46 bcm and Stage of Ground Water Extraction is 49.58 %.

Out of 146 assessment units (blocks), 6 units (4.11 %) as 'Critical', 24 units (16.44 %) have been categorized as 'Semi-critical' and 116 units (79.45 %) as 'Safe' categories of assessment units. There are no 'Over-exploited' and 'Saline' categories of assessment units. Out of 106078.71 sq km recharge worthy area of the State, 3797.89 sq km (3.58 %) area are under 'Critical', 14832.17 sq km (13.98 %) under 'Semi-critical', 87448.65 sq km (82.44 %) under 'Safe' categories of assessment units. Out of total11010.29 mcm annual extractable ground water resources of the State, 577.90 mcm (5.25 %) under 'Critical', 2005.86 mcm (18.22 %) under 'Semi-critical' and 8426.53 mcm (76.53 %) are under 'Safe' categories of assessment units.

In Chhattisgarh, the ground water development concentrates in the central part of the state (Chhattisgarh basin) more as compared to the other parts of the State. Therefore, most of the 'Semi-critical' and 'Critical' blocks are falling in the central part of the State. As compared to 2020 assessment, there is an increase in ground water extraction from 5.35 to 5.46 bcm. Stage of ground water extraction has changed from 46.34 % to 49.58 %. Increase in number of irrigation wells resulted in the increase of total extraction.

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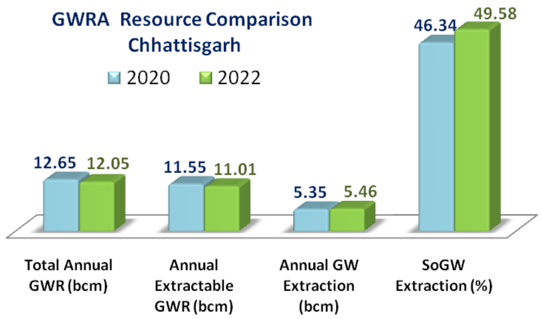
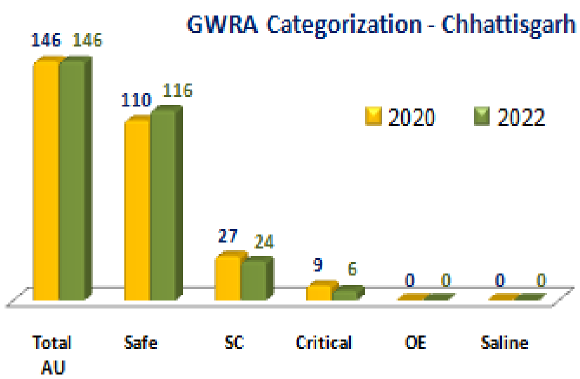




7.6 DELHI

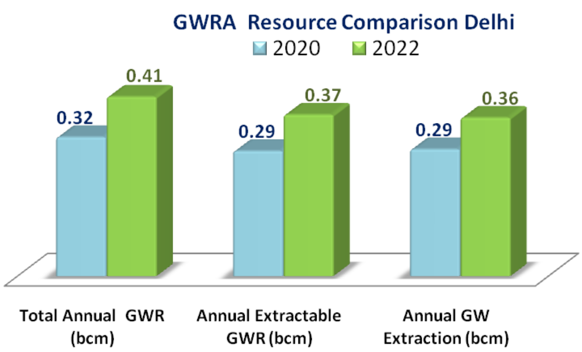
The State is covered by diverse rock types of different geological ages from Pre-Cambrian to Recent. As much as 89% of the State is occupied by alluvium and ground water is being tapped mostly through tube wells. Yields of tube wells vary from 4 to 10 lps in older alluvial deposits and from 25 to 55 lps in newer alluvium. About 11 % of the State is occupied by quartzitic hard rock where bore wells have yield of 0.6 to 5 lps.

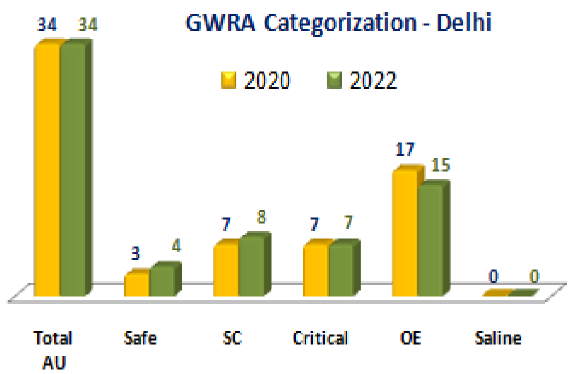
The ground water resources assessment has been carried out tehsil-wise. The Total Annual Ground Water Recharge of the State has been assessed as 0.41 bcm and Annual Extractable Ground Water Resources is 0.37 bcm. The Total Current Annual Ground Water Extraction is 0.36 bcm and Stage of Ground Water Extraction is 98.16 %.

Out of 34 assessment units (tehsils), 15 units (44.12 %) have been categorized as 'Over-exploited', 7 units (20.59 %) as 'Critical', 8 units (23.53 %) as 'Semi-critical', and 4 units (11.76 %) as 'Safe' categories of assessment units. Similarly, out of 1487.6 sq km recharge worthy area of the State, 709.81 sq km (47.71 %) area are under 'Over-Exploited', 179.37 sq km (12.06 %) under 'Critical', 396.73sq km (26.67 %) under 'Semi-critical', 201.57 sq km (13.56 %) under 'Safe' categories of assessment units. Out of total 369.46 mcm annual extractable ground water resources of the State, 167.13 mcm (45.23 %) are under 'Over-exploited', 60.37 mcm (16.34 %) under 'Critical', 89.96 mcm (24.35 %) under 'Semi-critical' and 52.01 mcm (14.08 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, the Total Annual Ground Water Recharge increased from 0.32 bcm to 0.41 bcm and Annual Extractable Ground Water Resources increased from 0.29 bcm to 0.37 bcm. There is an increase in the Annual Ground Water Extraction for the state from 0.29 bcm to 0.36 bcm and the Stage of Ground Water Extraction has decreased from 101.4 % to 98.16 %. The State is Critical in terms of ground water extraction.

The increase in the groundwater extraction can be attributed to refinement in database extraction data of about 12000 private tube wells which have been registered with DJB has been incorporated in this estimation and refinement of data on piped water supply and increased piped water supply by Delhi Jal Board in many areas of NCT Delhi which led to increase in recharge due to return seepages from piped water supply.

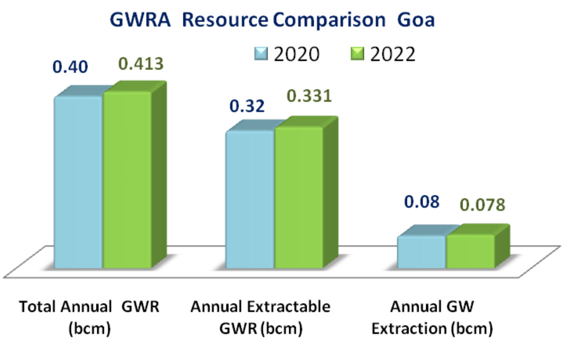


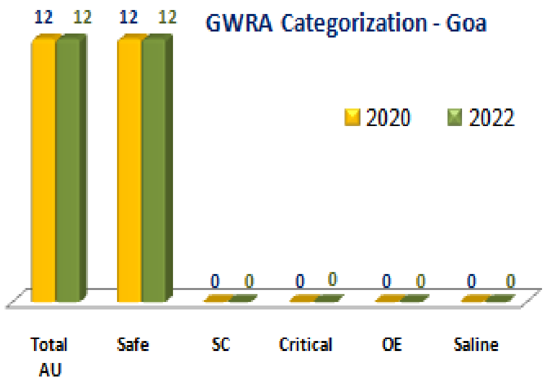


7.7 GOA

Major part of Goa State is covered by consolidated formations of Dharwar Super Group. Ground water occurs under unconfined to semi-confined conditions in beach sands, laterites and weathered and fractured crystalline rocks. The development of ground water from phreatic zone is mostly through dug wells and shallow bore wells. The Ground Water Resources has been assessed taluk-wise. Total Annual Ground Water Recharge has been assessed as 0.41bcm and Annual Extractable Ground Water Resources as 0.33bcm. The Annual Ground Water Extraction is 0.078bcm and Stage of Ground Water Extraction is 23.63 %. All 12 taluks in the State have been categorized as 'Safe'.

As compared to 2020 assessment, the Total Annual Ground Water Recharge has increased due to increase in recharge due to rainfall and recharge from other sources. The Annual Ground Water Extraction have marginally increased. The Stage of Ground Water Extraction has marginally increased from 23.48 % to 23.63 %.



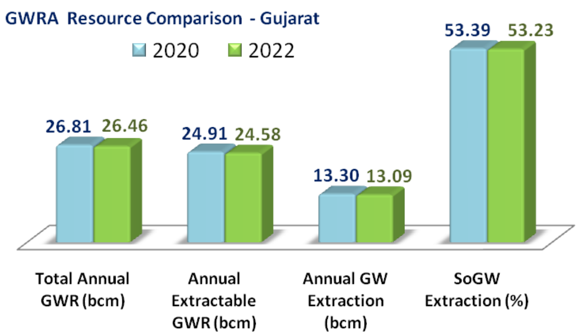


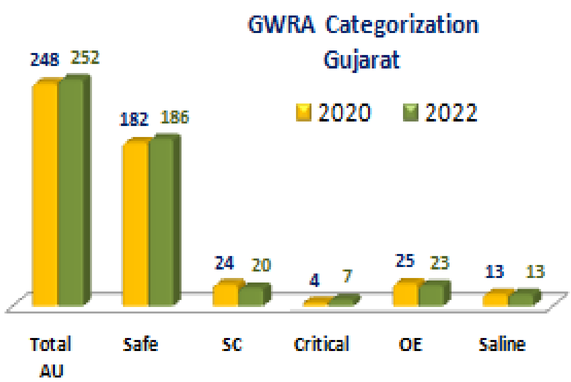
7.8 GUJARAT

The State is underlain by diverse rock types of different geological ages from Pre-Cambrian to Recent. As much as 60% of the State is underlain by hard rock and rest by soft rock/alluvium formations. In hard rock areas, the ground water is tapped mostly through dug wells constructed in the weathered zone. Dug cum bore wells and deep bore wells are common for irrigation. In alluvium/ soft rock areas, deep tube wells are common for both irrigation and domestic usage. The yield of open (dug) wells varies from 2 to 10 m^3/day, whereas that of tube wells ranges from less than 10 to 100 m^3/day. The assessment of groundwater resources has been carried out Taluka-wise. Total Annual Ground Water Recharge of the State has been assessed as 26.46 bcm and Annual Extractable Ground Water Resources as 24.58 bcm. The Annual Ground Water Extraction has been assessed as 13.09 bcm and Stage of Ground Water Extraction as 53.23 %.

Out of 252 assessment units (talukas), 23 units (9.13 %) have been categorized as 'Over- exploited', 7 units (2.78 %) as 'Critical', 20 units (7.94 %) as 'Semi-critical', 189 units (75.00 %) as 'Safe' and there are 13 units (5.16 %) as 'Saline' categories of assessment units. Similarly out of 162778.15 sq km recharge worthy area of the State, 19707.17 sq km (12.11 %) area are under 'Over-Exploited', 4138.03 sq km (2.54 %) under 'Critical', 10408.88 sq km (6.39 %) under 'Semi-critical', 119415.23 sq km (73.36 %) under 'Safe' and 9108.84 sq km (5.6 %) area under 'Saline' categories of assessment units. Out of total 24584.11 mcm annual extractable ground water resources of the State, 2019.87 mcm (8.2 %) are under 'Over-exploited', 702.29 mcm (2.9 %) under 'Critical', 1878.92 mcm (7.6 %) under 'Semi-critical' and 19980.03 mcm (81.3 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, Total Annual Ground Water Recharge has decreased from 26.8 bcm to 26.46 bcm and Annual Extractable Ground Water Resource has decreased from 24.91 to 24.58 bcm. The Annual Ground Water Extraction has decreased from 13.3 to 13.09 bcm. As compared to 2020 assessment, there are not any significant changes in Annual Ground Water Recharge and Annual Extractable Ground Water Resources whereas the Annual Ground Water Extraction is decreased marginally. Hence, the Stage of Ground Water Extraction has improved marginally from 53.39 % to 53.23 %.





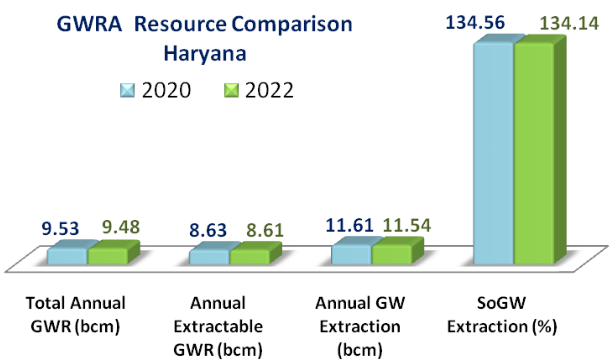
7.9 HARYANA

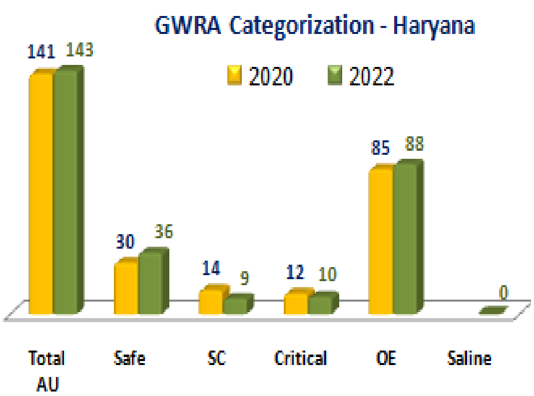
Haryana State is mainly occupied by the alluvial deposits, which cover around 98 % of the State while hardrock covers around 2 %. Alluvial deposits are of Older and Newer types and consist chiefly of clay, silt and fine to medium sand. Other deposits are piedmont deposits, which are confined to a narrow zone, about 2 to 4 km wide, between Siwalik Hills and Alluvial Plains. Sand-dunes are found in the districts of Bhiwani, Mahendragarh, Hissar and Sirsa. Coarse sand, gravels and boulders are found to occur in piedmont areas and in the adjacent alluvial tracts. The hard rock formations belong to the formation of Delhi systems of Pre- Cambrian age and occupy the southern part of the state, while Shivalik system of Tertiary age are occupying the northern most part of the state.

Total Annual Ground Water Recharge of the State has been assessed as 9.48 bcm and Annual Extractable Ground Water Resource is 8.61bcm. The Total Current Annual Ground Water extraction is 12.42bcm and Stage of Ground Water extraction is 134.14 %.

Out of total 143 assessment units (blocks/Urban), 88 units (61.53 %) have been categorized as 'Over-exploited', 10 units (6.99 %) as 'Critical', 09 units (6.29 %) as 'Semi Critical' and 36 units (25.17 %) as 'Safe' categories of assessment units. Similarly out of 40391.05 sq km recharge worthy area of the State, 24772.68 sq km (61.33 %) area are under 'Over-Exploited', 2359.3 sq km (5.84 %) under 'Critical', 2398.44 sq km (5.94%) under 'Semi-critical', 10860.63 sq km (26.89 %) under 'Safe' categories of assessment units. Out of total 8606.22 mcm annual extractable ground water resources of the State, 5393.49mcm (62.67 %) are under 'Over-exploited', 547.31mcm (6.36 %) under 'Critical', 713.03mcm (8.28 %) under 'Semi-critical' and 1952.40mcm (22.69 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, the Total Annual Ground Water Recharge have decreased from 9.53 to 9.48 bcm in 2022, Annual Extractable Resources have decreased from 8.63 to 8.61bcm and the Annual Ground Water Extraction from 11.61 to 11.54 bcm. The Stage of Ground Water Extraction has decreased from 134.56 % to 134.14 %. The reduction in draft is due to reduction in yield of wells.





7.10 HIMACHAL PRADESH

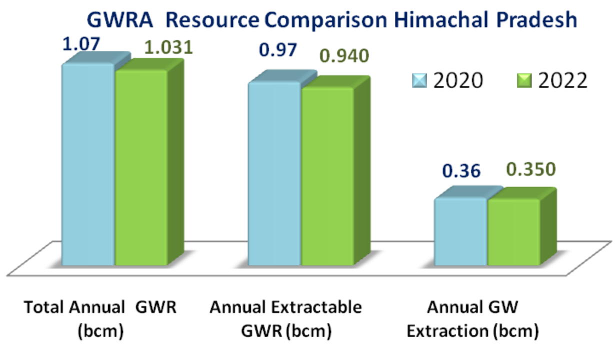
The diverse physiographic, climatic, topographic and geologic conditions have given rise to diversified groundwater situation in different parts of the state. The rock formations ranging in age from Archean to Recent occupy the State and control the occurrence and movement of ground water depending upon aquifer composition, structure and deposition. Hilly and mountainous parts with steep slopes mainly constitute the run off areas and have low ground water potential. In valley and low-lying areas, unconsolidated / semi-consolidated formations form potential aquifers.

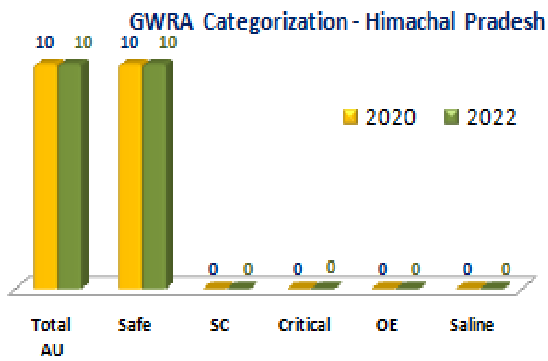
In consolidated formations the water availability is restricted to weathered mantle, joints/fractures, weak planes, bedding planes and limestone caverns. The limestone associated with phyllite and quartzite forms potential aquifers. In granites, potentiality of the aquifer is highly dependable on the fracture intensity. In granitic aquifers the discharge ranges between 1-3 lps. Ground water in hard rock areas is either developed though bore wells or natural springs are tapped for both drinking and irrigation purposes.

In the unconsolidated formations the occurrence and movement of ground water is highly dependent on lithology particularly the presence of clay content. The unconsolidated formations are confined to valley areas, having good yield prospects that can sustain moderate to high capacity deep tube wells. The yield of the tube wells depends on the thickness of the total granular zones available within the aquifers tapped which ranges from 5-40 lps in different valleys. The Ground water resources have been assessed valley-wise.

Total Annual Ground Water Recharge of the State has been assessed as 1.03 bcm and Annual Extractable Groundwater Resources is 0.94 bcm. The Current Annual Ground Water Extraction for all uses is 0.352 bcm and Stage of Ground Water Extraction is 37.56 %. Out of the 10 assessment units, all the ten assessment units have been categorized as ‘Safe’ and there is no saline assessment unit in the State.

As compared to 2020 assessment, there is no significant change in the Total Annual Ground Water Recharge and Annual Extractable Ground Water resources. However, the Ground Water Extraction has decreased from 0.357 to 0.352 bcm in 2022. This is due to refinement in the number of abstraction structures as per well census data. Hence, Stage of extraction has changed slightly.





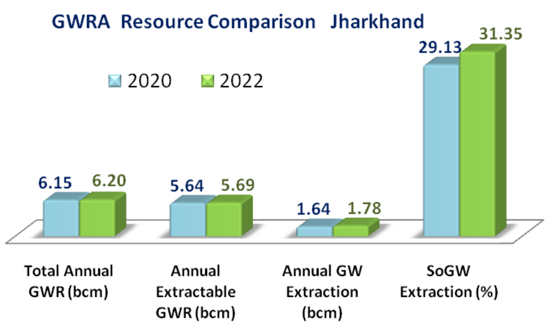
7.11 JHARKHAND

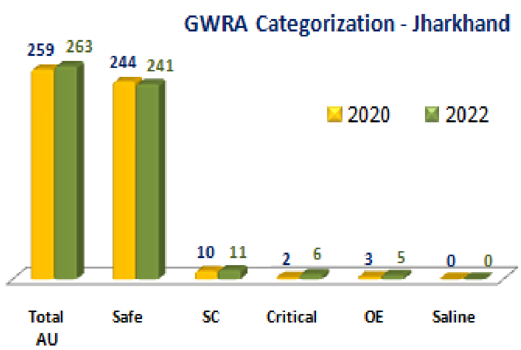
The State is underlain by diverse rock types of different geological ages ranging from Archaean to Recent. The major rock types are igneous and metamorphic rocks covering nearly 85 percent of the geographical area of the state. The weathered zone ranging between 10-30 m acts as a good repository of ground water. However, the secondary porosities in the form of fracture zones below the weathered zones also form potential aquifers. The yield of the exploratory wells ranges from negligible to 151m^3/hr. The yield of the dugwells ranges from 0.5 to 0.75m^3/hr. The dug wells tapping the weathered mantle have an average yield of 0.5 to 1.2 m^3/hr. In Gondwana Super group, bore well discharge ranges between 7 to 15m^3/hr and in Tertiary formations, yield ranges from 18 to 78 m^3/hr. The Younger Alluvium deposits are confined to patches. The depth of dug wells in general ranges between 10 to 15m bgl and that of shallow tube wells varies between 25 to 50mbgl.

Ground Water Resource of the State has been assessed block-wise and identified urban area. The Total Annual Ground Water Recharge of the State has been assessed as 6.20 bcm and Annual Extractable Ground Water Resources is 5.69 bcm. The Annual Ground Water Extraction is 1.78 bcm and Stage of Extraction is 31.35 %.

Out of 263 assessment units (blocks-259, Urban area-04), 5 units (1.90 %) have been categorized as 'Over-exploited', 6 units (2.28 %) as 'Critical', 11 units (4.18 %) as 'Semi-critical' and rest 241 units (91.63 %) are under 'Safe' category and there is no saline assessment unit in the State. Similarly out of 60646.73 sq km recharge worthy area of the State, 463.92 sq km (0.76 %) area are under 'Over-Exploited', 1068.48 sq km (1.76 %) under 'Critical', 2169.13 sq km (3.58 %) under 'Semi-critical' and 56945.20 sq km (93.90 %) under 'Safe' categories of assessment units. Out of total 5692.32 mcm annual extractable ground water resources of the State, 61.64 mcm (1.08 %) are under 'Over-exploited', 129.67 mcm (2.28 %) under 'Critical', 215.09 mcm (3.78 %) under 'Semi-critical' and 5285.92 mcm (92.86 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, Total Annual Ground Water Recharge and Annual Extractable Ground Water Resources have increased from 6.15 to 6.20 bcm and 5.64 to 5.69 bcm respectively. The Annual Ground Water Extraction for the State has increased from 1.64 to 1.78 bcm and the Stage of Ground Water Extraction has increased from 29.13 % to 31.35%. The increase in stage of extraction is due to urbanisation and industrialization.





7.12 KARNATAKA

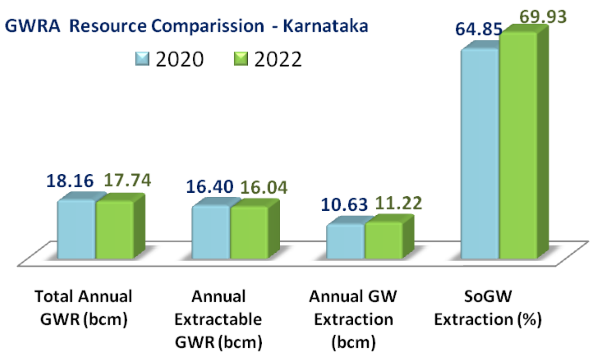
Karnataka State is underlain by rock types ranging in age from Archaean to Recent. Major portion of the State is covered by Peninsular Gneisses, Granites and Dharwar Schists of Archaean age.Substantial area in the northern part of Karnataka is underlain by basalts, which form a continuation of the Deccan Traps occurring in Maharashtra. The sedimentary formations comprising Bhima and Kaladgis occupy a small area in the northern districts. The recent alluvium is restricted to a narrow belt in the coastal area and along streamcourses.

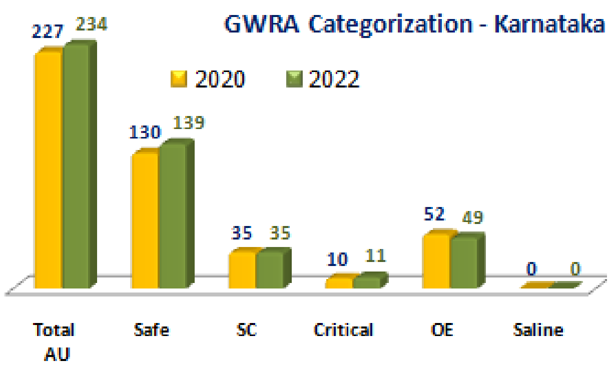
The aquifer systems are classified into nine major groups depending upon their characteristics and are Banded Gneissic Complex (BGC), Basalt, Schists, Granites, Charnockites, Limestones, Laterites, Sandstones and alluvium.

The Annual Ground Water Recharge has been assessed as 17.74BCM and the Annual Extractable Ground Water resource is 16.04BCM. The Current Annual Ground Water Extraction is 11.22BCM and the Stage of Ground Water Extraction is 69.93%.

Out of the 234 assessment units (taluks), 49 units (20.94 %) have been categorized as 'Over exploited', 11 units (4.70 %) as 'Critical', 35 units (14.96 %) as 'Semi critical' and 139 units (59.40 %) have been categorized as 'Safe'. There is no taluk under "Saline" category. Similarly, out of 1,70,647.10 sq km recharge worthy area of the State, 39352.66 sq km (23.06 %) area are under 'Over-Exploited', 6580.96 sq km (3.86 %) under 'Critical', 26593.23 sq km (15.58 %) under 'Semi-critical' and 98120.25 sq km (57.50 %) under 'Safe' categories of assessment units. Out of total16043.89mcm annual extractable ground water resources of the State, 2935.09mcm (18.29 %) are under 'Over-exploited', 680.03mcm (4.24 %) under 'Critical', 2481.16mcm (15.46%) under 'Semi-critical' and 9947.61mcm (62.00%) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, there is decrease in Annual Ground Water Recharge from 18.16BCM to 17.74BCM, Annual Extractable Ground Water Resources from 16.40BCM to 16.04BCM. This is mainly due to decrease in recharge due to surface water irrigation and ground water irrigation. There is marginal increase in the Current Annual Ground Water Extraction for all uses from 10.63 to 11.22BCM during this period. Hence overall, the Stage of Ground Water Extraction has increased from 64.85% in 2020 to 69.93 % in 2022.





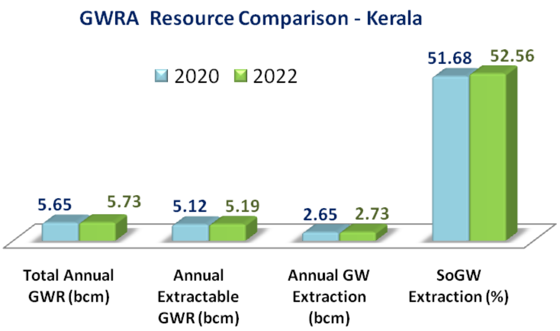
7.13 KERALA

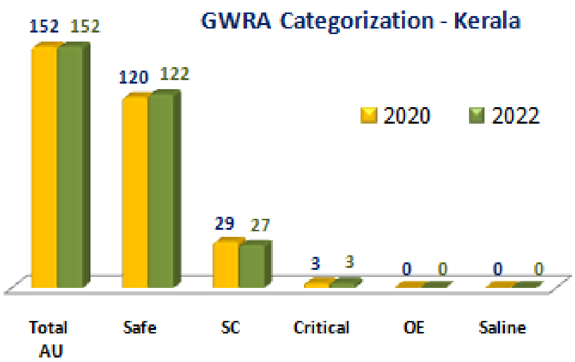
The State of Kerala is underlain by diverse rock types of different geological ages from Pre- Cambrian to Recent. Nearly, 88% of the State is underlain by crystalline rocks of Archaean age comprising Schistose formations, Charnockites, Khondalites and Gneisses. All these formations are intruded by dykes of younger age. The sedimentary formations of Tertiary age occurring along the western parts of the State comprise four distinct beds viz. Alleppey, Vaikom, Quilon and Warkali. The crystalline and the Tertiary formations are lateritized along the midland area. Yields of open (dug) wells in these areas vary from 2 to 10 m^3/day, whereas that of bore wells ranges from less than 1 to 35 lps. About 12% of the State is underlain by Semi-consolidated and unconsolidated sedimentary formations where dug wells and filter points have yields of 1 to 35 m^3/day, whereas deep tube wells have yields in the range of 1 to 57 lps. Laterites, which cover most of the geological formations in the major part of the state also forms an important aquifer in the state with dug wells having yields in the range of 0.5 to 6 m^3/day.

The ground water resources for the state have been assessed block-wise. Total Annual Ground Water Recharge has been estimated as 5.73 bcm and Annual Extractable Ground Water Resource is 5.19 bcm. The Annual Ground Water Extraction is 2.73 bcm and Stage of Ground Water Extraction is 52.56 **%**.

Out of total 152 assessment units (blocks), 3 units (1.97 %) have been categorized as 'Critical', 27 units (17.76 %) as 'Semi-Critical' and 122 units (80.27 %) as 'Safe' categories of assessment units. There is no 'Over- exploited' and 'Saline' assessment unit in the State. Similarly out of 27047.54 sq km recharge worthy area of the State, 777.38 sq km (2.87 %) area are under 'Critical', 3817.64 sq km (14.11 %) under 'Semi-critical' and 22452.5 sq km (83.01 %) area are under 'Safe' categories of assessment units. Out of total 5192.76 mcm annual extractable ground water resources of the State, 143.09mcm (2.75 %) are under 'Critical', 714.83 mcm (13.77%) under 'Semi-critical' and 4334.83 mcm (83.48%) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, Total Annual Ground Water Recharge of the State has increased from 5.65 to 5.73 bcm and Annual Extractable Ground Water Resources from 5.12 to 5.19 bcm. The Annual Ground Water Extraction has increased from 2.65 to 2.73 bcm and the Stage of Ground Water Extraction has increased from 51.68 % to 52.56 %. The number of Semi-critical blocks has decreased from 29 to 27. Two Semi- critical blocks i.e. Kanhangad and Karadka has improved to 'Safe' Category mainly due to increase in precipitation, increase in recharge from other sources and Increase in SW supply Schemes implemented in the state by line departments.





7.14 MADHYA PRADESH

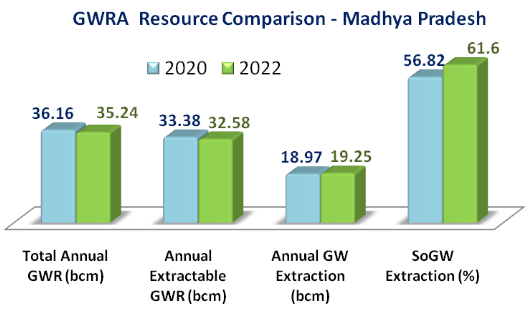
The State of Madhya Pradesh has varied hydrogeological characteristics due to which ground water potential differs from place to place. The State is underlain by various Geological formations ranging in age from the Archaean to the Recent. Hard rock areas cover more than 80% of total land area of the State. These hard-rock areas show wide variations and complexities in nature and composition of rocks, geological structures, geomorphological set up and hydro meteorological conditions. The crystalline rocks of Archaean age like granite, gneiss, granulites, schist, quartzite and granitoids occupy about 15% of geographical area of the State. The basaltic rocks of Deccan lava flows are the predominant formations and occupy nearly 45% of total geographical area. The consolidated sedimentary rocks of Vindhyan Super Group and Mahakoshal (Cuddapah) Super Group of Proterozoic age occupy about 19% of total geographical area and the semi consolidated (Gondwana Formation) occupies about 7%. Recent unconsolidated alluvial sediments occupy about 14% of total geographical area.

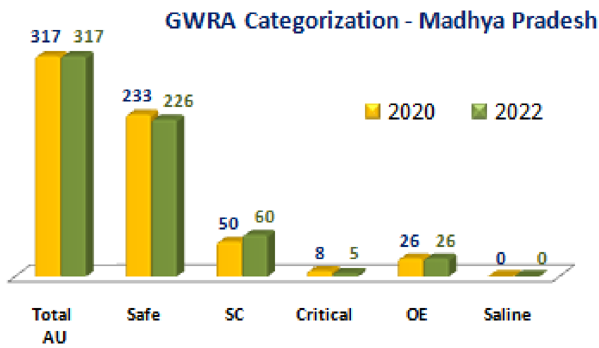
Total Annual Ground Water Recharge of the State has been assessed as 35.24 bcm and Annual Extractable Ground Water Resources is 32.58 bcm. The Annual Ground Water Extraction is 19.25 bcm and Stage of Ground Water Extraction is 59.10 %.

Out of 317 assessment units (313 blocks and 4 urban areas), 26 units (8%) has been categorized as 'Over Exploited', 5 units (2%) as 'Critical', 60 units (19%) as 'Semi-Critical' and 226 units (71%) as 'Safe' categories of assessment units and there are no saline assessment unit. Similarly out of 269361 sq km recharge worthy area of the State, 22579 sq km (8.4%) area are under 'Over-Exploited', 4249 sq km (1.6%) under 'Critical', 51807 sq km (19.2%) under 'Semi-critical' and 190725 sq km (70.8 %) under 'Safe' categories of assessment units.

Out of total 32579.6 mcm annual extractable ground water resources of the State, 3417.7 mcm (10.5%) are under 'Over-exploited', 536.4 mcm (1.7%) under 'Critical', 6068 mcm (18.6%) under 'Semi-critical' and 22557.5 mcm (69.2%) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, there is a marginal decrease in the recharge and increase in the ground water extraction. The revision of well census data, increase in population and addition of industrial extraction data can be attributed to the increase in ground water extraction, while decrease in rainfall recharge can be attributed to marginal decrease in recharge.





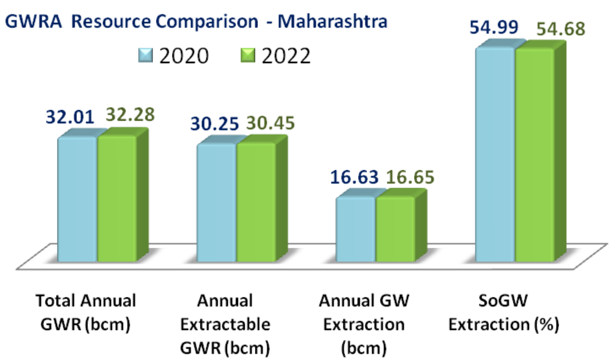
7.15 MAHARASTRA

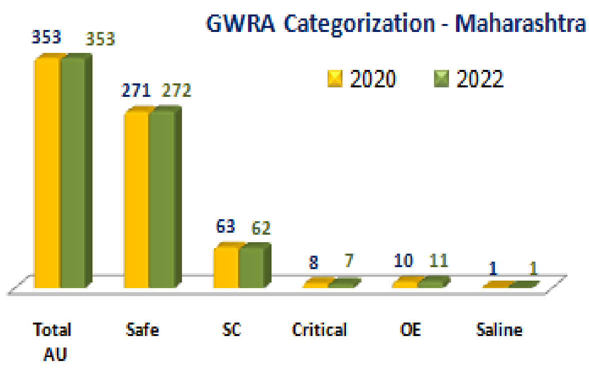
The State is underlain by diverse rock types of different geological ages from Pre-Cambrian to Recent. The state is mostly covered by Deccan Traps. The other geological formations, older and younger than Deccan Traps, occur in the northeast and as isolated patches in the Sindhudurg and Ratnagiri districts. Large part of the State is underlain by Basaltic hard rocks where dug wells are predominant. They mostly tap the weathered zone and fractures/joints. The yield of dug wells varies from 3 to 5 lps. A small part of the State is occupied by Semi- consolidated sedimentary rocks where tubewells have an yield of 5 to 45 lps. The central part of Maharashtra which is a drought prone area, receives very less rainfall i.e. from 400 to 700 mm, but the geology is favorable for the ground water recharge. Hence, in this area the dependency on groundwater is very high. Two-third of irrigation wells are from this area only. This primarily includes parts from Dhule, Nashik, Jalgaon, Ahmednagar, Pune, Satara, Sangli, Solapur, Osmanabad, Beed and Aurangabad districts.

The Ground water resources have been assessed for 1534 watersheds in the state and subsequently apportioned to taluk level. Total Annual Ground water Recharge of the State has been estimated as 32.28bcm and Annual Extractable Ground Water Resources is 30.45bcm. The Annual Ground Water Extraction is 16.65bcm and Stage of Ground Water Extraction is 54.68 %.

Out of 353 assessment units (taluks), 11 units (12%) have been categorized as 'Over-exploited', 7 units (1.98 %) as 'Critical', 62 units (17.56 %) as 'Semi-critical' and remaining 272 units (77.05 %) as 'Safe' and 1 unit (0.28 %) as 'Saline' categories of assessment units. Similarly out of 259914.03sq km recharge worthy area of the State,8940 sq km(3.44 %)area are under 'Over-Exploited', 6951sq km(2.67 %)under 'Critical',60673 sq km(23.34 %) under 'Semi-critical', 182571sq km(70.24 %) under 'Safe' and 776 sq km (0.3 %) area under 'Saline' categories of assessment units. Out of total 30447.65 mcm annual extractable ground water resources of the State, 1047.83 mcm (3.44 %) are under 'Over-exploited', 795.24 mcm (2.61 %) under 'Critical',6717.16 mcm (22.06 %) under 'Semi-critical' and21887.42 mcm (71.89 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, the Annual Ground Water Recharge in 2022 has increased from 32.01 to 32.28bcm,Annual Extractable Ground Water Recharge from 30.25 to 30.45bcm and Annual Ground Water Extraction from 16.63 to 16.65bcm.There is a marginal decrease in the Stage of Ground Water Extraction from 54.90 % to 54.68 %.The marginal increase in recharge due to the State government intervention of water conservation activities and the marginal increase in draft/extraction is due to revision of well census data on the basis of functional wells.

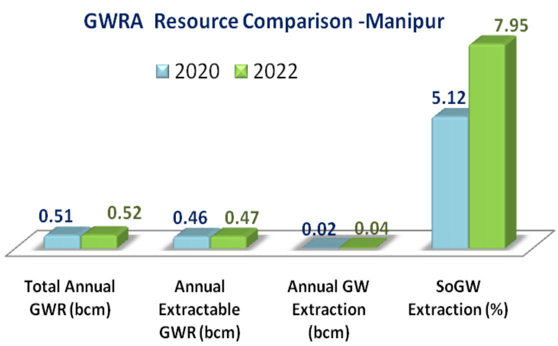


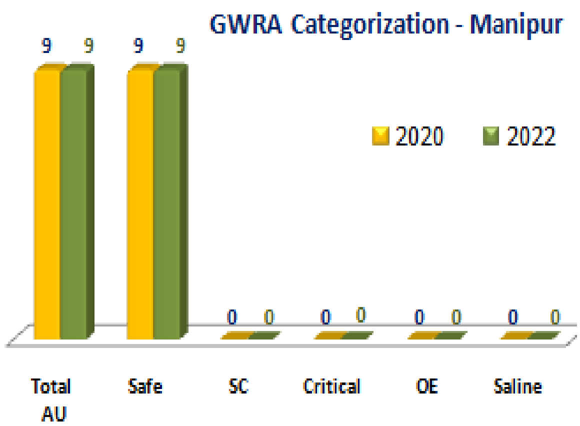


7.16 MANIPUR

The State of Manipur is occupied by mostly North South parallel hill ranges made up of consolidated and semi-consolidated rocks ranging in age from pre-Mesozoic to Miocene. The consolidated rocks confined to the eastern part of the state along the Myanmar border. The semi-consolidated formations, which cover almost the entire state, comprise shale, siltstone, sandstone and conglomerate. These formations belong to Disang, Barail, Surma and Tipam group of rocks. In the western and central part of the State, unconsolidated alluvium of quaternary age occurs in the valleys and topographical lows. Ground water is restricted to secondary porosity in joints, fissures, fractures and weathered residuum of consolidated and semi-consolidated rocks and inter-granular pore spaces of alluvial deposits. In the valley, ground water is utilized through tube wells, tapping granular zones with 10 to 20 m thickness, and the yield of the tube well varies from 10 to 30 m^3/hr.

The Ground water resources for the state have been assessed block-wise for the recharge worthy area. Total Annual Ground Water Recharge of the State has been assessed as 0.52 bcm and Annual Extractable Ground Water Resources as 0.47 bcm. The Annual Ground Water Extraction is 0.04 bcm and Stage of Ground Water extraction is 7.95 %. All the assessment units and districts have been categorized as 'Safe' and there is no saline area in the state. The comparison with previous assessment shows there is increase in the total ground water recharge from 0.51 bcm in 2020 to 0.52 bcm in 2022 while annual extractable resource has increased from 0.46 bcm in 2020 to 0.47 bcm in 2022. This increase can be attributed to refinement of data. Increase in ground water extraction from 0.024 bcm in 2020 to 0.04 bcm in 2022 is due to estimation of groundwater irrigation schemes under PMKSY-HKKP-GW in Manipur.



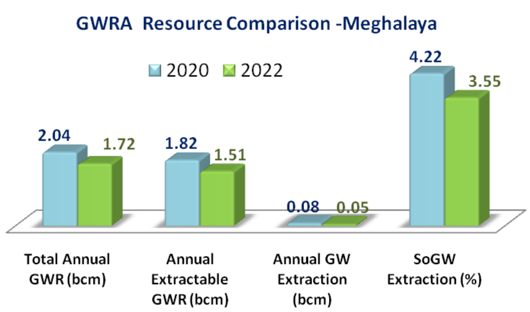


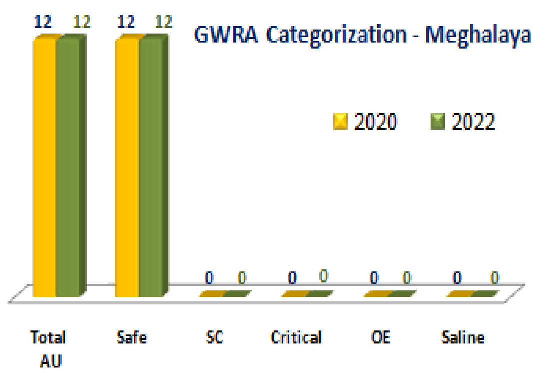
7.17 MEGHALAYA

The Meghalaya State is essentially occupied by hard rocks belonging to the Archean gneissic complex with acidic and basic intrusives and Precambrian Shillong Group of para metamorphites. Ground water occurs under unconfined condition in the weathered residuum and fractured rocks and restricted to about 150 m depth. The development of ground water is mostly by dug wells which are restricted to the weathered zone and through bore wells including hand pumps which mainly tap the semi-weathered and fractured zones in the hard rock. The south-western, southern and south-eastern parts of the state is covered by semi- consolidated formations comprising sandstones, shales, conglomerates, limestones etc. belonging to Cretaceous – Tertiary age. The aquifers are formed by rock strata that are granular/porous, fissured/fractured or cavernous. These aquifers are thick and discontinuous in nature. The unconsolidated sediments comprising sand, gravel, silt, clay, etc. are found to occur as thin veneer along rivulets and as valley-fills.

The Ground water resources have been assessed district-wise due to paucity of block wise/ watershed wise data. Ground water resources of Greater Shillong (State capital) have been assessed separately. Total Annual Ground Water Recharge of the State has been assessed as 1.72 bcm and Annual Extractable Ground Water Resources as 1.51 bcm. The Annual Ground Water Extraction is 0.053 bcm and Stage of Ground Water Extraction is 3.55 %. All the 12 assessment units have been categorized as 'Safe'.

As compared to 2020 assessment, the Annual Ground Water Recharge and Annual Extractable Ground Water Resources have decreased from 2.04 to 1.72 bcm and 1.82 to 1.51 bcm respectively. The reasons can be attributed to changes in rainfall and during 2022 assessment, normal rainfall was calculated using 50 years rainfall data of IMD. The Annual Ground Water Extraction has also decreased from 0.077 to 0.053 bcm due to refinement in data as well as changes in ground water extraction for irrigation use. Therefore, Stage of ground water extraction has consequently decreased from 4.22 % to 3.55%.

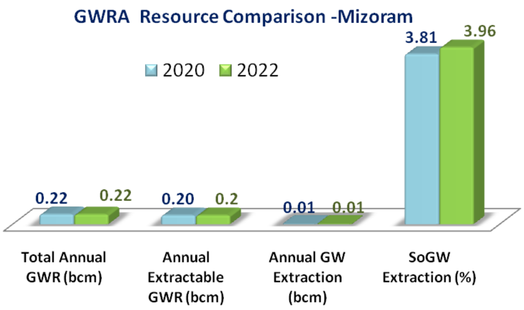


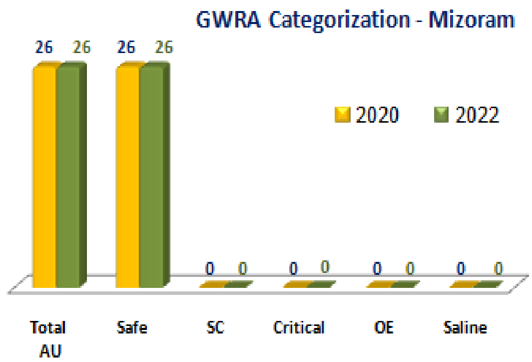


7.18 MIZORAM

The State is occupied mainly by the rocks of the Tertiary formation ranging in age from Oligocene to Miocene to Recent. The Barail form the lowermost rock units comprising siltstone and bands of soft and hard fine grained sandstone with strings of carbonaceous material and occur in the north eastern part of the state. The Surma is divided into two formations, Bhuban and Bokabil. The Bhuban is made up of grey sandstone and shale and occupies the major part of the State all along the length of the state. The Bokabil, predominantly argillaceous, mostly occurs along the western part of the State. The Tipam sandstone is of semi- consolidated nature comprising medium to coarse grained sandstone with subordinate shale and occurs in limited extent in the north western part of the state. The alluvial deposits comprising silt, clay and sands occur in the valley fill area with very limited thickness. Ground water is confined only to valley filled areas and secondary porosities of semi-consolidated rocks. These aquifers are the main source for springs. Ground water stored in the hill slopes emanates in the form of springs, which are being used as a source for water supply. In the valley area, the yield potential of tube wells within the depth range of 200 m tapping Tertiary sandstone ranges from 120 to 330 liters per minute for drawdown of 13 to 20m. The transmissivity and Storativity are to the tune of 11 to 46 m^2/day and 4.28 x 10^{-4} respectively.

The ground water resources for the state have been assessed block-wise. Total Annual Ground Water Recharge has been assessed as 0.222 bcm and Annual Extractable Ground Water Resource is 0.200 bcm. The Annual Ground Water Extraction is 0.008 bcm and Stage of Ground Water Extraction is 3.96 %. All the 26 assessed blocks have been categorized as ‘Safe’. There are no saline areas in the state. As compared to 2020 assessment, there is an increase in annual extractable ground water resources by 0.01 BCM in the 2022 estimate. Stage of GW Extraction has increased from 3.81 % in 2020 to 3.96 % 2022.



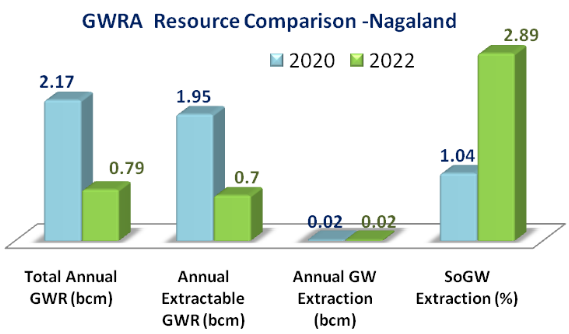


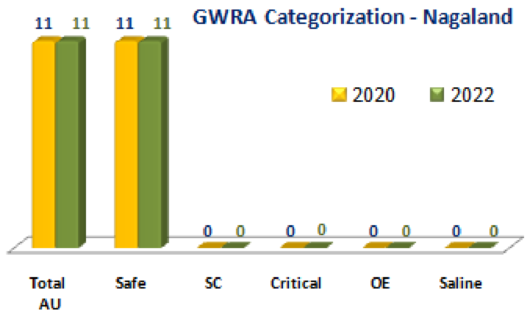
7.19 NAGALAND

The State is covered by rocks ranging in age from Pre-Cretaceous to Recent. The rock sequences comprise the geosynclinals facies, represented by Disang Group, Barail Group, Surma Group, Tipam Group, Namsang formation and Dihing Group. While the Disang and Surma Group of rocks are mainly argillaceous, the Barail and Tipam groups are Arenacious. The Girujan clay formation overlying the Tipam sandstones is characterized by typical blue, mottled clay and argillaceous sandstone beds. Older rocks occupy southern parts of the State, where as younger rocks are exposed in the northern parts. The unconsolidated alluvial plains, comprising clay, sand pebble, cobble and boulder assemblages, occupy the narrow, intermountain and open valleys in the northern part of the state bordering upper reaches of Brahmaputra flood plains of Assam. The consolidated formations are confined to the south eastern part of the State along the Burma (Myanmar) border.

Ground water development potentiality in valley fill and alluvial deposits are restricted to construction of open wells having depth of 15 to 20 meters and deep tube well down to 100 m depth which yield to the tune of 10 to 45m^3/day with more than 5m drawdown. Water bearing formations pertaining to Tertiary deposits are found to have moderate potentials which can sustain deep tube wells having yield prospects varying from 10 to 20m^3/hr. The valleys underlain by Tipam sandstones form good aquifers with yield prospects varying from 30 to 80m^3/hr. In the consolidated formations, ground water abstraction structures can be constructed in structurally weak zones. Ground water emerges as perennial springs which are the main source of water supply for domestic needs in the state.

The ground water resources for the state have been assessed district-wise due to paucity of block-wise data. . Recharge worthy area of Nagaland has been reassessed and hilly areas are demarcated where the slope is more than 20% using Shuttle Radar Topographic Mission (SRTM) Digital Elevation Model (DEM) with 30m resolution data and geomorphological maps. After reassessment the rechargeable area of Nagaland has changed from 14091.47 sq Km (as per assessment, 2020) to 3855.07 sq km .The total Annual Ground Water Recharge of the State has been assessed as 0.79 bcm and Annual Extractable Ground Water Resource as 0.71 bcm. Annual Ground Water Extraction is 0.02 bcm and Stage of Ground Water Development is 2.89%. All the 11 districts have been categorized as 'Safe'. There is no saline area in the state. As compared to 2020 assessment, Annual Ground Water Recharge of the State has decreased from 2.17 bcm to 0.79 bcm. The Annual Extractable Ground Water Resource has decreased from 1.95 bcm to 0.71 bcm and there is no significant change in annual ground water extraction.



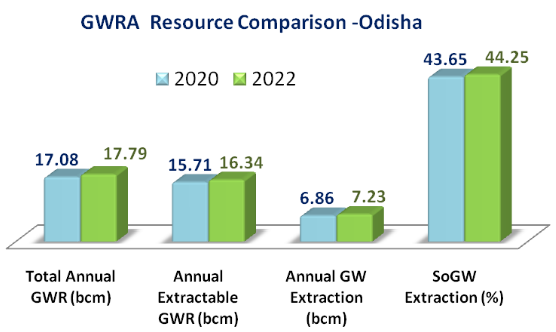


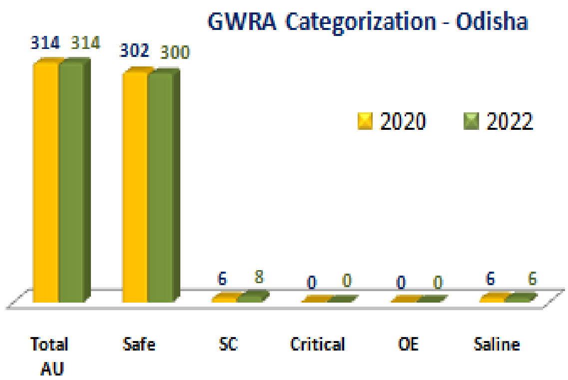
7.20 ODISHA

The State is underlain by diverse rock types, which range in age from Precambrian to Cenozoic era. The Precambrians occupy nearly 80 % of the total geographical area of the State. The Tertiary and the Quaternary Alluvial formations are restricted mainly to the narrow coastal tracts. The Gondwana group of rocks belonging to Paleozoic and Mesozoic era occurs in isolated patches in different parts of the State. These formations occur in Talcher area of Angul district and in river valley area of Sambalpur and Sundargarh districts. Ground water abstraction in the state is mostly done by dug wells constructed in the weathered zone in hard rock areas and in shallow phreatic aquifers in alluvial areas. The yield of open (dug) wells varies from 1 to 5 lps. However, at present, bore wells, shallow to medium deep tube wells, filter point tube wells are also in use for ground water abstraction both for domestic and irrigational purpose. The yield of bore wells varies from 2 to 5 lps in general depending on the occurrence of saturated fractures at depths. The yield from shallow and medium deep tube wells may vary from 6 to 10 lps in general depending on the aquifer disposition.

The Ground water resources in the state have been assessed block-wise. Total Annual Ground Water Recharge of the State has been assessed as 17.79 bcm and Annual Extractable Ground Water Resource as 16.34 bcm. The Annual Ground Water Extraction is 7.23 bcm and Stage of Ground Water Extraction is 44.25 %.

Out of the total of 314 assessment units (blocks), 8 units (2.55 %) have been categorized as 'Semi-critical', 300 units (95.54 %) as 'Safe' and 6 units (1.91 %) as 'Saline' categories of assessment units. Similarly out of 121593.15 sq km recharge worthy area of the State, 2748.93 sq km (2.26 %) area are under 'Semi-critical', 116662.9 sq km (95.95 %) under 'Safe' and 2181.33 sq km (1.79 %) area under 'Saline' categories of assessment units. Out of total 16344.68 mcm annual extractable ground water resources of the State, 463.39 mcm (2.84 %) are under 'Semi-critical' and 15881.29 mcm (97.16 %) are under 'Safe' categories of assessment units.





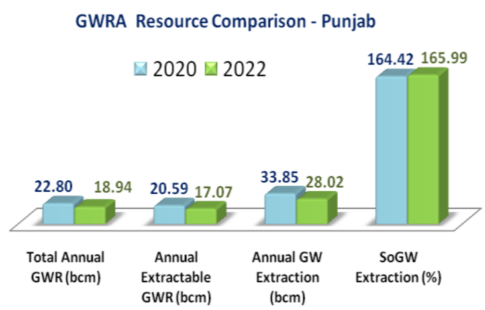
7.21 PUNJAB

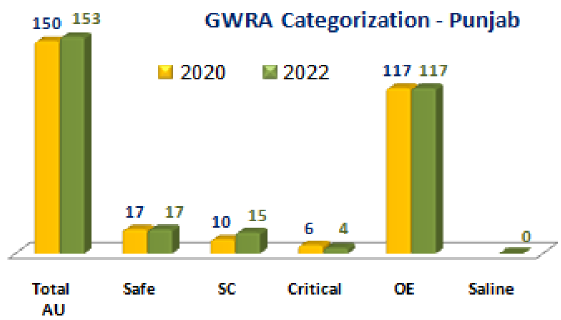
Punjab is one of the smallest states of India having 3 perennial rivers namely Sutlej, Beas and Ravi and one non- perennial river Ghaggar. The Punjab State is a flat alluvial plain having a thin belt of mountains along north eastern border and stable sand dunes are seen dotting the landscape in the south western parts. The alluvial deposits in the State comprise sand, silt and clays often mixed with kankar. Sandy zones of varying grade constitute abundant ground water resources & act as a reservoir. The alluvial plain towards the hills is bordered by the piedmont deposits comprising Kandi and Sirowal. Immediately south-west of the hills, Kandi belt is 10 to 15 km wide followed by Sirowal which imperceptibly merges with the alluvial plain. Kandi deposit explored up to 450 m depth show gradation from boulders to clays and at places an admixture of various grades in different proportions. The Sirowal deposit is essentially composed of finer sediments but occasional gravel beds are also encountered in them.

The ground water resources for the state have been assessed block-wise. Total Annual Ground Water Recharge of the State has been assessed as 18.94 bcm and Annual Extractable Ground Water Resource as 17.07 bcm. The Annual Ground Water Extraction is 28.02 bcm and Stage of Ground Water Extraction is 165.99 %.

Out of total 150 assessed blocks and 03 Urban area taken for study, 114blocks and 03 Urban Areas have been categorized as ‘Over-exploited’, 04 blocks as ‘Critical’, 15 blocks as ‘Semi Critical’ and 17blocks as ‘Safe’. Similarly out of 50344.68 sq. km recharge worthy area of the State, 36939.63 sq km (73.37 %) area are under ‘Over-Exploited’, 1742.88 sq. km (3.46 %) under ‘Critical’, 4599.2 sq km 9.14 %) under ‘Semi-critical’ and 7062.97sq km (14.03 %) under ‘Safe’. Out of total 17072.71 mcm annual extractable ground water resources of the State, 13034.92 mcm (76.35 %) are under ‘Over-exploited’, 672.65 mcm (3.94 %) under ‘Critical’, 1327.68 mcm (7.78 %) under ‘Semi-critical’ and 2037.46 mcm (11.93 %) are under ‘Safe’ categories of assessment units.

As compared to 2020 estimates, the Annual Ground Water Recharge has decreased from 22.79 to 18.94 bcm and similarly, Annual Extractable Ground Water Resource decreased from 20.59 to 17.07 bcm and total current annual ground water extraction decreased 33.85 to 28.02 bcm (excluding Poor Quality 1.23 bcm). The stage of ground water extraction has increased from 164.42% to 165.99 %. The reduction in recharge is due to less rainfall, lining of unlined canals, reduced recharge from ponds & tanks and decreased extraction is due to decrease in irrigation draft and poor quality areas are not being calculated by INGRES for extraction.





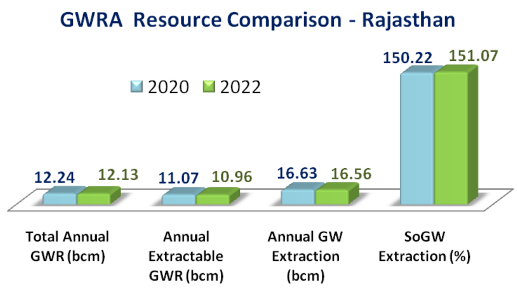
7.22 RAJASTHAN

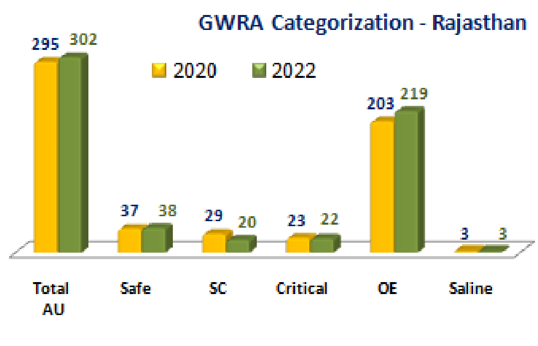
The State of Rajasthan has diversified geology, ranging from Archean metamorphic to recent alluvial sediments. Based upon geological diversities, geomorphological setup and ground water potentialities, the state of Rajasthan can be divided into three broad hydrogeological units. (i) Unconsolidated formation (ii) Semi-consolidated formation (iii) Consolidated (Fissured formation). Large part of the State is underlain by Quaternary sediments (Thar Desert) consisting of clay, silt, sand and gravel of various grades. Exploratory drilling data reveals that the yield vary from meager to 10 m^3/day, transmissivity ranges between 80 to 300 m^2/day and storage co-efficient vary from 1.1x 10^{-5} to 3.9x 10^{-6} in the state. Ground Water occurs within the weathered residue and in the secondary porosity in Sandstone belonging to the Vindhyan formation .Yield potential is limited due to compact nature of the formation. The limestone is also having low ground water potential. The yields of dug wells vary from 0.25 to 0.75 m^3/day. The yield of the wells drilled in Vindhayan formation has been observed to be 15 m^3/day, tapping fractures between 50-75 m bgl. In consolidated formation (Fissured) the thickness of the weathered zone varies from 5 to 50 m. Ground Water occurs under unconfined condition within the weathered zone. The results of the exploratory drilling carried out by CGWB in hard rock are as indicate presence of productive fractures down to the depth of 100 m and yield varies from 3 to 15 m^3/day, whereas transmissivity varies from 3 to 30 m^2/day.

The dynamic ground water resources for the state have been assessed block-wise. Total Annual Ground water Recharge of the State has been assessed as 12.13 bcm and Annual Extractable Ground Water Resource as 10.96 bcm. The Annual Ground Water Extraction is 16.56 bcm and the Stage of ground water extraction in the state is 151.07 %.

This year 07 (seven) new urban assessment units have been added apart from 295 assessment units. Out of the 302 assessment units (blocks), 219 units (72.51 %) have been categorized as ‘Over Exploited’, 22 units (7.3 %) as ‘Critical’, 20 units (6.6 %) as ‘Semi-Critical’, 38 units (12.58 %) blocks as ‘Safe’ and 3 units (0.99 %) as ‘Saline’. Similarly out of 317058.36 sq km recharge worthy area of the State, 226126.61 sq km (71.32 %) area are under ‘Over-Exploited’, 16651.50 sq km (5.25 %) under ‘Critical’, 18676.47 sq km (5.89 %) under ‘Semi-critical’, 46667.88sq km (14.72 %) under ‘Safe’ and 8935.89 sq km (2.82 %) area under ‘Saline’ categories of assessment units. Out of total 10959.54 mcm annual extractable ground water resources of the State, 8203.74 mcm (74.85 %) are under ‘Over-exploited’, 721.08 mcm (6.58 %) under ‘Critical’, 850.48 mcm (7.76 %) under ‘Semi-critical’ and 1184.24 mcm (10.80 %) are under ‘Safe’ categories of assessment units.

As compared to 2020 assessment, the Annual Ground Water Recharge and Annual Extractable Ground Water Resource have decreased from 12.24 bcm to 12.13 bcm and from 11.07 bcm to 10.96 bcm respectively. Annual ground water extraction has decreased from 16.63 bcm to 16.55 bcm. The stage of ground water extraction has increased from 150.2 % to 151.07 %. The change in Annual Ground Water recharge is because of change in rainfall data for recharge and area under irrigation (both by surface water and ground water). The marginal change in annual ground water extraction is due to revision of well census data and change in irrigated land area.





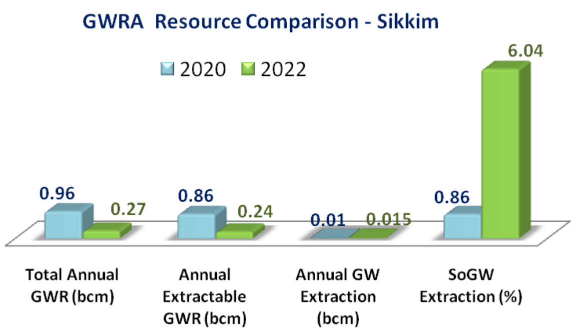
7.23 SIKKIM

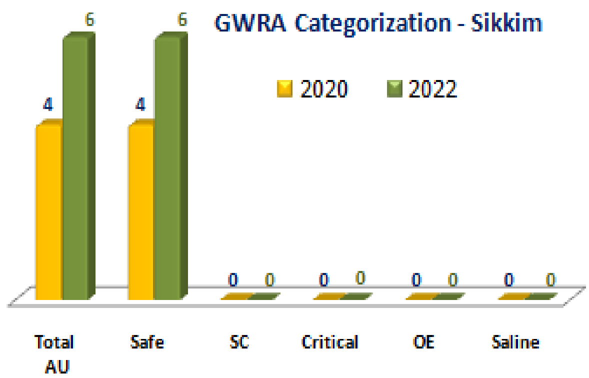
Sikkim is a small mountainous State characterized by rugged undulating topography with series of ridges and valleys. The various rock types prevalent in the state are pelitic and carbonate rocks and gondwanas over a gneissic basement and occasional colluviums and valley fill deposits, as well as alluvial terraces along higher order streams and river courses. The formations reveal an intense tectonic-structurally complex deformational history. Ground water occurs largely in disconnected localized pockets and in deeper fractures zones. Springs are the main source and conduits of water.

The ground water resource assessment (in 2022) for the State of Sikkim has been carried out as per GEC 2015 guidelines through 'IN-GRES', with Districts as primary assessment units. Total Annual Ground Water Recharge has been estimated at 0.27 bcm and Annual Extractable Ground Water Resource has been estimated at 0.24 bcm. Current Annual Ground Water Extraction for all uses has been estimated at 0.014 bcm, which translates into a Stage of Ground Water Extraction at 3.0 %, and as per the present assessment all the six assessment units (Six Districts – Gangtok, Gyalshing, Mangan, Namchi, Pakyong, Soreng) are in 'SAFE' category.

Due to redistribution and reorganization of districts (from earlier four to six at present), present estimation is not directly comparable with earlier estimate. However, as a whole for the State compared to 2020 assessment, Annual Extractable Ground Water Resource reduced from 0.86 bcm to 0.24bcm. The Annual Ground Water Extraction from all sources though marginally increased from 0.007 bcm to 0.015 bcm. Stage of Ground Water Extraction increased from 0.86 % to 6.04 %.

Decrease in annual rainfall resulted in decrease in recharge, which is reflected in marginal decrease in Annual Extractable Resource. The marginal increase in Annual Ground Water Extraction is attributed to the growth of industries in the districts, utilizing ground water for industrial use, resulting in marginal increase in the Stage of Ground Water Extraction.





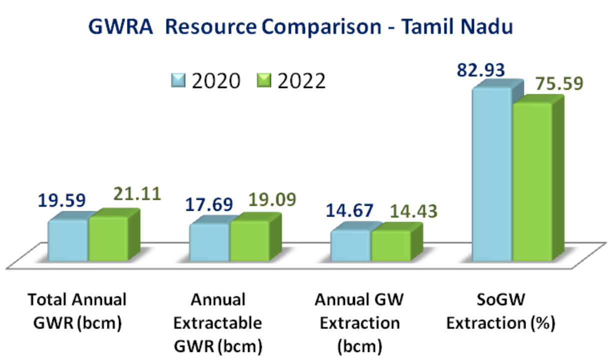
7.24 TAMIL NADU

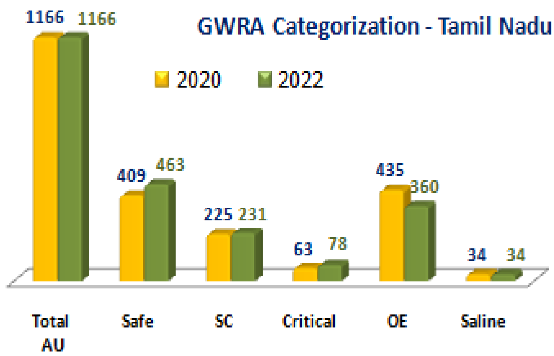
Tamil Nadu state is underlain by diverse hydrogeological formations. Nearly 73 % of the state is occupied by hard rocks, semi-consolidated and consolidated formations which are mainly confined to the eastern part including the coastal tract. In the hard rock areas, groundwater is developed through dug wells tapping the weathered zone and dug cum bore wells and bore wells tap the deeper fractures down to a depth of 300 m. In semi consolidated and unconsolidated formation, shallow zones are tapped by filter points and shallow tube wells and deeper zones through deeper tube wells. The yield of open wells vary from 1 to 3 lps, where as in dug wells tapping soft rocks including sedimentary formations, the yield is up to 10 lps. The yield from unconsolidated and semi consolidated formations are in general 10 to 20 lps and also as high as 40 lps are also noticed at select places.

The ground water resources for the State have been assessed firka-wise. Total Annual Ground Water Recharge of the State has been assessed as 21.11bcm and Annual Extractable Ground Water resources as 19.09bcm. The Annual Ground Water Extraction is 14.43bcm and Stage of Ground Water Extraction as 75.59 %.

Out of 1166 assessment units (firkas), 360 units (30.87 %) have been categorized as 'Over Exploited', 78 units (6.69 %) as 'Critical', 231 units (19.81 %) as 'Semi-Critical', 463 units (39.71 %) as 'Safe' and 34 units (2.92 %) have been categorized as 'Saline'. Similarly out of 108719 sq km recharge worthy area of the State, 32401.7 sq km (29.8 %) area are under 'Over-Exploited', 7488.67 sq km (6.89 %) under 'Critical', 21987.14 sq km (20.22 %) under 'Semi-critical', 43635.44 sq km (40.14 %) under 'Safe' and 3206.73 sq km (2.95 %) area under 'Saline' categories of assessment units. Out of total 19090.2 mcm annual extractable ground water resources of the State, 5220.13 mcm (27.34 %) are under 'Over-exploited', 1399.73 mcm (7.33 %) under 'Critical', 3949.34 mcm (20.69 %) under 'Semi-critical' and 8521.00 mcm (44.64 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, Total Annual Ground Water Recharge has increased from 19.59 to 21.11bcm. The Annual Extractable Ground Water Resources has increased from 17.7 to 19.09bcm and the annual ground water extraction has decreased from 14.67 to 14.43bcm. Consequently, there is a decrease in the stage of ground water extraction from 82.93 % to 75.59 %. The increase in ground water recharge is due to changes in rainfall pattern and decreased extraction is due to decrease in the load on ground water resources in irrigation and domestic sector.





7.25 TELENGANA

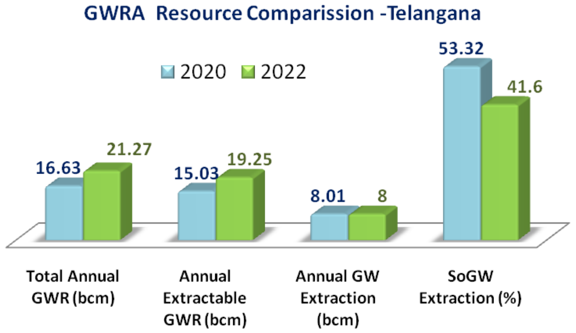
The State of Telangana shares its boundaries with Andhra Pradesh, Chattisgarh, Maharashtra and Karnataka. The state has 2 major rivers, the Godavari and the Krishna. The River Godavari with its tributaries Pranahita, Manjeera, Maneru, Indravati, and Kinnerasani drains through the northern parts of the State. The River Krishna with its tributaries Tungabhadra, Bheema, Musi, Paleru and Munneru flows through the Southern parts of the State.

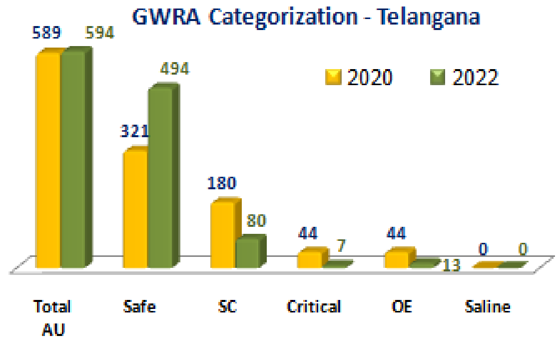
Telangana state is characterized by wide range of geological formations from Archaean to Recent age. Nearly 85% of the state is underlain by hardrocks (consolidated formations) belonging to the Peninsular Gneissic Complex, Dharwar and Eastern Ghats of Archaean to Middle Proterozoic age, Pakhal Group of rocks belonging to Middle to Upper Proterozoic age and Deccan Traps. In hardrocks average well yields are around 50 to 125 lpm. The rest of the state is underlain by semi consolidated sedimentary formations encompassing Gondwanas, Tertiary group of formations and Sub-Recent to Recent unconsolidated sediments. Transmissivity of these aquifers varies between 28 and 950m^2/day. The unconsolidated formations are represented by inland river alluvium.

The Ground water resources for the state have been assessed watershed-wise and apportioned to mandal-wise. Total Annual Groundwater recharge of the State has been assessed as 21.27 bcm and Annual extractable Ground Water resource as 19.25bcm. The Annual Ground Water Extraction is 8.0 bcm and Stage of Ground Water Extraction is 41.6 %.

Out of 594 assessment units (mandals), 13 units (2 %) have been categorized as 'Over Exploited', 7 units (1 %) as 'Critical', 80units (13 %) as 'Semi-Critical' and 494 units (83 %) as 'Safe'. There is no 'Saline' category of assessment unit in the state. Similarly out of 106308.5sq km recharge worthy area of the State, 201.14sq km (0.2 %) area are under 'Over-Exploited', 1322.36sq km (1 %) under 'Critical', 11392.5sq km (11 %) under 'Semi-critical', 93392.52sq km (88 %) under 'Safe' categories of assessment units. Out of total 19250.75 mcm annual extractable ground water resources of the State, 35.56 mcm (0.18 %) are under 'Over-exploited', 211.72 mcm (1.1 %) under 'Critical', 1578.24 mcm (8.2 %) under 'Semi-critical' and 17425.22 mcm (90.52 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, Total Annual Ground Water Recharge of the State has increased from 16.63 to 21.11bcm. This is mainly due increase in recharge from 'Other sources'. The Annual Extractable Ground Water Resources has increased from 15.03 to 19.09bcm.The overall Stage of Ground Water Extraction decreased from 53.32% to 41.6%. This can be attributed to government interventions like water conservation activities under Mission Kakatiya, improvement in surface water irrigation and drinking water supply under Mission Bhagiratha etc.



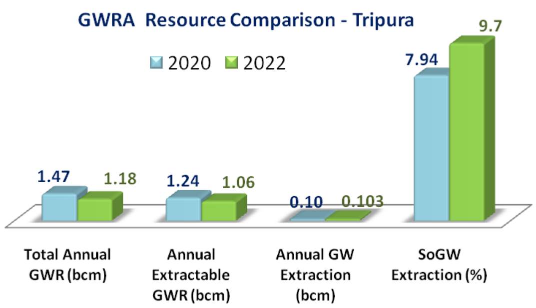


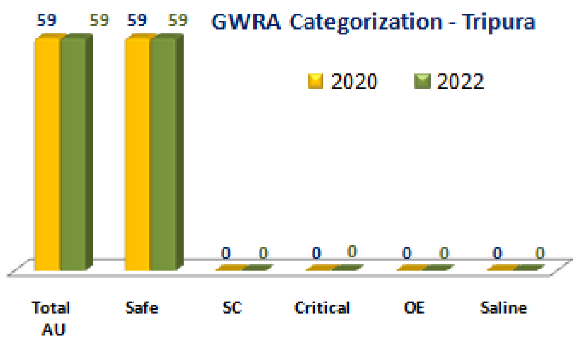
7.26 TRIPURA

The State of Tripura is occupied by the rocks ranging in age from Upper Tertiary to Quaternary. Mobile trough geosynclinal deposition of Barail group followed by flysch type of Surma&Tipam sediments, overlain by Dupitila formation, is noticed in the State. Most of the longitudinal synclinal valleys of the state are the basins of deposition of recent formation. Recent alluvium occurs along the streams and the flood plains of major rivers.

Ground water occurs under unconfined condition in Dupitila, Recent &Tipam formations. Besides, it also occurs under confined to semi-confined conditions in Tipam formation at considerable depth. Recharge areas for the deeper aquifer lies in the adjacent anticlinal hills. Wherever a good thickness of impermeable clay beds underlie & overlie the saturated granular zones, auto flow artesian conditions have been found in the valleys, which are the discharge area. The artesian flowing conditions occur in patches both at shallow depth and at deeper depth. The auto discharge of the flowing wells in the State ranges from 100 to 6000 lph, the maximum auto discharge from deep tube well to the extent of 54000 lph has been found in Khowai valley near Khowai town, where the piezometric head rose up to 7 m above ground level.

Ground water resources have been assessed block-wise for recharge worthy area. Total Annual Ground Water Recharge of the State has been assessed as 1.31bcm and Annual Extractable Ground Water Resource as 1.06bcm. The Annual Ground Water Extraction is 0.103bcm and Stage of Ground Water Extraction is 9.7 %. All the 59 assessment units have been categorized as 'Safe'. As compared to 2020 assessment, there is no significant change in ground water recharge and ground water extraction in the State.





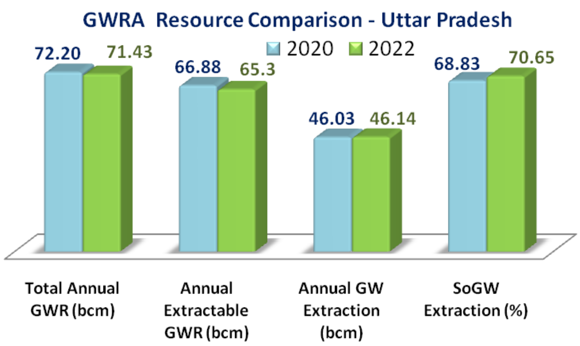
7.27 UTTAR PRADESH

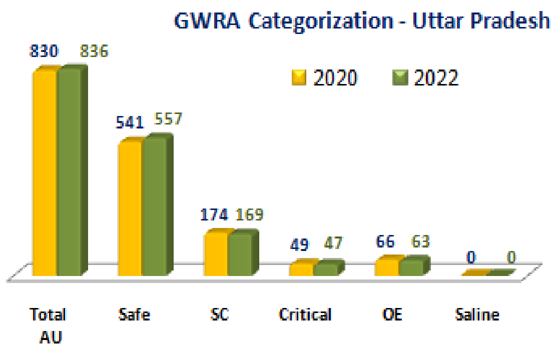
The State of Uttar Pradesh is categorized with five distinct hydrogeological units – Bhabar, Terai, Central Ganga Plains, Marginal Alluvial Plain, Southern Hardrock area. Bhabar is mainly the recharge zone having deeper water levels. Ground water extraction in phreatic aquifer is through hand pumps, dug wells, dug cum bore wells and shallow tube wells. The yield from these wells has been generally found to be in the range of 40 to 60lps. Terai zone lies between Bhabar in the North and Central Ganga Plain in the South. It is characterized by fine grained sediments with occasional pebbles and boulders. The average yield of tube wells constructed in this zone varies from 30 to 60 lps with moderate drawdown. Central Ganga Plain constitutes the most promising ground water repository characterized by multi-layered aquifer systems. The yield of the open wells and hand pumps constructed in the phreatic aquifer vary from 5 to 10 lps. The tube wells in the phreatic aquifer yield between 20 to 28 lps at 6 to 8 m drawdown. Marginal alluvial plain consists of kankar mixed clay-silt beds intercalated with sand and gravel lenses. The aquifer in this area is capable of yielding 15 to 40 lps at moderate drawdown. Southern part mainly occupied by Hard rocks comprising of Granite/ Granitic Gneiss and Marginal Alluvium in Bundelkhand Region and Vindyan Sedimentary formations in Mirzapur and Sonebhadra Districts. The wells tapping these formations generally recorded yield between 2 to 8 lps.The Ground water resources of the State have been assessed block-wise.

Total Annual Ground Water Recharge of the state has been assessed as 71.45 bcm and Annual Extractable Ground Water Resource as 65.30bcm. The Annual Ground Water Extraction is 46.14bcm and average Stage of Ground Water Extraction of the State is 70.66%.

Out of the 836 assessment units consisting 826 blocks and 10 cities, 63 units (7.5 %) have been categorized as 'Over- exploited', 47 units (5.6 %) as 'Critical', 169 units (20.2 %) as 'Semi-critical' and 557 units (66.6 %) as 'Safe'. Similarly out of 229593.13 sq km recharge worthy area of the State, 15263.27 sq km (6.5 %) area are under 'Over-Exploited', 12743.67 sq km (5.55 %) under 'Critical', 51239.41 sq km (23.32 %) under 'Semi-critical', 150346.77 km (65.48 %) under 'Safe' categories of assessment units. Out of total 65303.43 mcm annual extractable ground water resources of the State, 3952.6 mcm (6.05 %) are under 'Over-exploited', 3446.56 mcm (5.28 %) under 'Critical', 12632.64 mcm (19.34 %) under 'Semi-critical' and 45271.63 mcm (69.33 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, ground water extraction figure increased minutely. The stage of ground water extraction has also marginally increased from 68.9 % to 70.66%. Decreasing recharge values due to considering updated normal rainfall (1971-2020) may results minute increase in average stage of ground water extraction of the State.





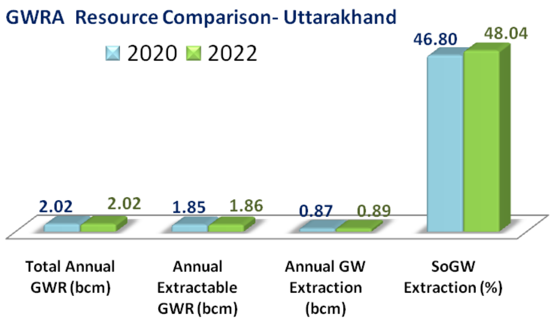
7.28 UTTARAKHAND

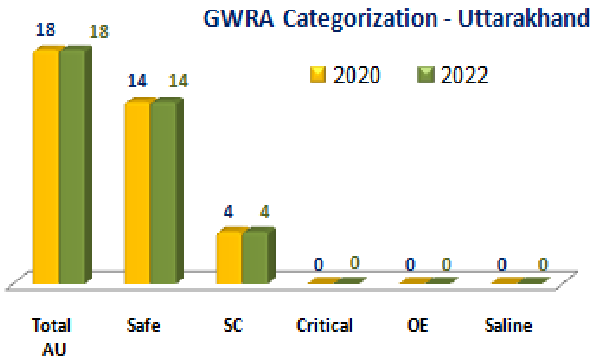
Uttarakhand State has a distinct geological attribute with wide variety of rock units ranging in age from Archean to Quaternary. About 85 % of the geographical area of the state is mountainous and underlain by hard rocks. Ground water in the hard rock area is harnessed through the springs and hand pump tapping the weathered zone. Discharge of springs in the Lesser Himalaya and Central Himalaya is variable and ranges from 60 to 600 lpm. About 15 % of the geographical area is underlain by semi-consolidated and unconsolidated formations known as Tarai and Bhabhar. Ground water in this area is developed by open wells, shallow and deep tubewells.

The ground water resources of Uttarakhand State have been assessed block-wise. Total Annual Ground Water Recharge of the State has been assessed as 2.02 bcm. The Annual Extractable Ground Water Resources is 1.86 bcm. The Annual Ground Water Extraction is 0.89 bcm. The Stage of Ground Water Extraction is 48.04 %.

Out of the 18 assessment units, 4 units (22.22 %) lie under 'Semi-Critical' category and 14 units (77.78 %) under 'Safe' category. There are no 'Over-exploited', 'Critical' and 'Saline' units in the state. Similarly out of 4993.04 sq km recharge worthy area of the State, 950.94 sq km (19.05 %) area are under 'Semi-critical', 4042.1 sq km (80.95 %) under 'Safe' categories of assessment units. Out of total 1861.13 mcm annual extractable ground water resources of the State, 357.72 mcm (19.22 %) are under 'Semi-critical' and 1503.41 mcm (80.78 %) are under 'Safe' categories of assessment units.

As compared to 2020 assessment, there is negligible decrease in the Total Annual Ground Water Recharge. The Annual Ground Water Extraction has increased from 0.87bcm (2020) to 0.89 bcm (2022). The Stage of Ground Water extraction has increased from 46.80 % to 48.04%. The increase in Annual Ground Water Extraction can be attributed to the refinement of the industrial extraction data. Marginal decrease in recharge and increase in groundwater extraction has led to the increase in Stage of Ground Water Extraction for the State.





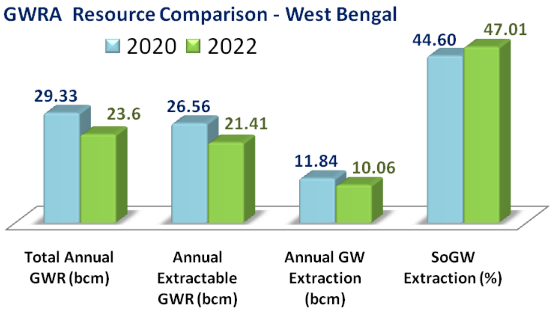
7.29 WEST BENGAL

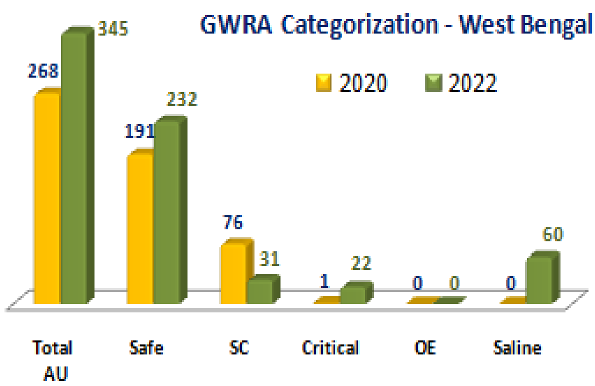
Nearly two third area of the state is occupied by unconsolidated sediments; the western part of the state is partly occupied by the hard rocks. Phreatic aquifer is generally developed through dug well, dug cum bore well and shallow tube well. Yield potential of these wells varies from 1 to 5 lps.

The ground water resource assessment (in 2022) for the State of West Bengal has been carried out as per GEC 2015 guidelines through 'IN-GRES', with blocks as primary assessment units. All 344 blocks of the State of West Bengal and one (01) urban area as Kolkata Municipal Corporation is assessed. Total Annual Ground Water Recharge has been estimated at 23.61 bcm and Annual Extractable Ground Water Resource has been estimated at 21.42 bcm. Current Annual Ground Water Extraction for all uses has been estimated at 10.07 bcm, which translates into a Stage of Ground Water Extraction at 47.01 %. As per present assessment categorization scheme,out of 345 assessed units, 232 AUs are Safe, 31 AUs are Semi-Critical,22 AUs are Critical and 60 AUs are of poor groundwater quality. There is no Over-Exploited Blocks in the State.

During 2020, Ground Water Resource Assessment could not be completed as State Level Committee has not approved the assessment results. Hence, Central Level Expert Group recommended that the results of previous assessment in respect of West Bengal may be used in place of GWRA-2020 for national compilation on Dynamic Ground Water Resources of India, 2020.

Due to redistribution and reorganization of blocks, present estimation is not directly comparable with earlier estimate. Estimation for confined aquifer covered areas, hilly areas and poor groundwater quality areas are taken up for the first time during the present exercise. Earlier estimation was carried out for 268 assessment units where as in present estimation is carried out for 345 assessment units. However, as a whole for the State compared to earlier assessment, Stage of Ground Water Extraction is increased from 44.60 % to 47.01%. This is mostly due to growth of domestic draft.



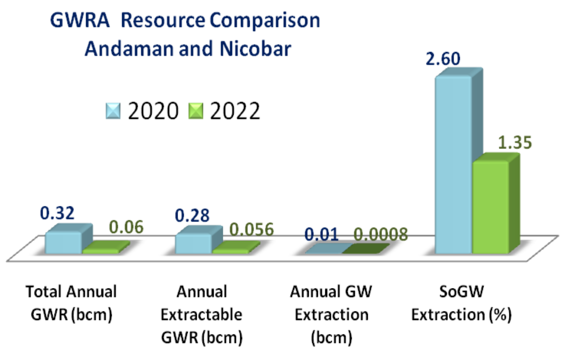


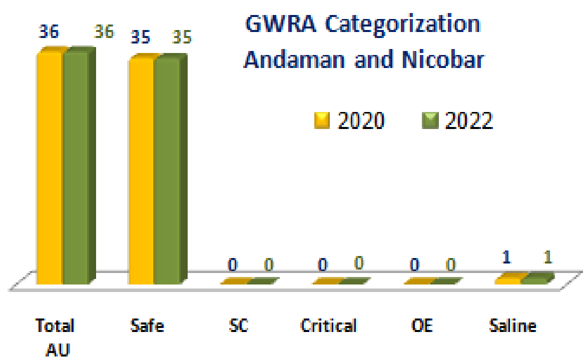
7.30 ANDAMAN AND NICOBAR ISLANDS

Andaman & Nicobar Islands comprise an arc-shaped chain of islands in the Bay of Bengal and are characterized by rugged topography, steep slope, low infiltration capacity and close proximity of hills to the sea. Marine sedimentary group of rocks comprising shale, sandstone, grit and conglomerate; extrusive and intrusive igneous rocks (volcanics and ultramafics) and limestone occupy the entire geographical area. Amongst these, the Sedimentary Group is most pervasive and occupy nearly 70% of the entire area of the islands while the igneous group covers nearly 15% while the rest of 15% goes to the coralline and limestone formations. All these rock formations have been subjected to many tectonic activities, evident from the occurrence of shallow and deep focus earthquakes in the islands.

Marine sedimentary rocks are developed only through dug wells having meager yield of 0.1 to 0.5 lps. The igneous Ophiolite suite of rocks in the area although restricted in occurrence, are observed to yield moderate to high both in shallow and deeper locales and they are developed by dug wells and bore wells with yield ranging from 1 to 10 lps. Area covered by Coralline Limestone contains appreciable quantity of groundwater with yield ranging from 5 to25 lps.

The Ground Water Resources (in 2022), following GEC 2015 guidelines, have been assessed island-wise. Total Annual Ground Water Recharge of the A&N Islands have been assessed as 0.6184 bcm and Annual Extractable Ground Water Recharge is assessed as 0.5566 bcm. The Annual Ground Water extraction is 0.0075 bcm which translates to a Stage of Ground Water Extraction of 1.35 %. Out of 37 assessment units (Islands), 1 is Hilly, 35 are 'Safe' and one is 'Saline'. There is no significant change with respect to 2020 assessment.

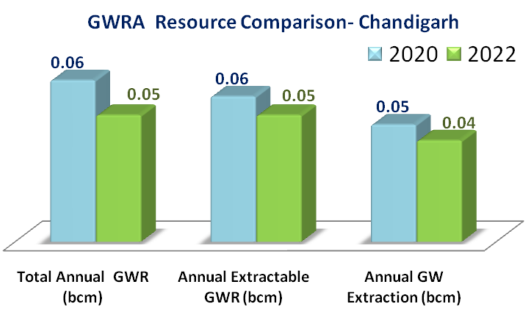


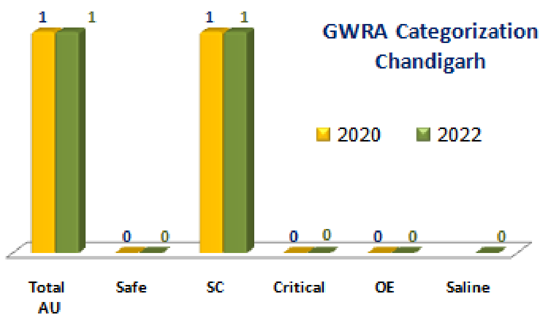


7.31 CHANDIGARH

Chandigarh is underlain by the Quaternary alluvial deposits and comprises layers of fine sand and clay. Coarser sediments occur along the Sukhna Choe and Patialiki Rao, whereas relatively finer sediments underlie the area between these two streams. Fair to good aquifer horizons occur in most part of Chandigarh comprising medium to coarse sand, to a depth of 180 m bgl below which they become finer. Ground water in the area occurs under confined as well as semi-confined conditions. In Manimajra, ground water occurs under unconfined conditions down to about 80 m. In other areas, the semi-confined conditions prevail below 20 to 30 m. The depth of the shallow aquifer system is less than 30 m bgl, where as the depth of the deeper aquifer system ranges from 40 to 450 m bgl of explored depth. The transmissivity values for the deeper aquifer system ranges between 74 and 590 m^2/day. The transmissivity values of shallow aquifers up to 100 m depth ranges from 70 to 466 m^2/day. Ground water is found to be fresh and suitable for drinking as well as irrigation purposes.

UT of Chandigarh has very small area and whole UT has been taken as an assessment unit. Total Annual Ground Water Recharge has been assessed as 0.05 bcm and Annual Extractable Ground Water Resources as 0.046bcm. The UT of Chandigarh has been categorized as 'Semi Critical' with stage of ground water extraction at 80.99 %. In comparison to 2020 assessment, Total annual recharge has decreased from 0.063 bcm to 0.05 bcm. The current ground water extraction also decreased from 0.046 bcm to 0.037 bcm. The groundwater extraction in Chandigarh is completely governed by Government and only Government extracts groundwater for public water supply.



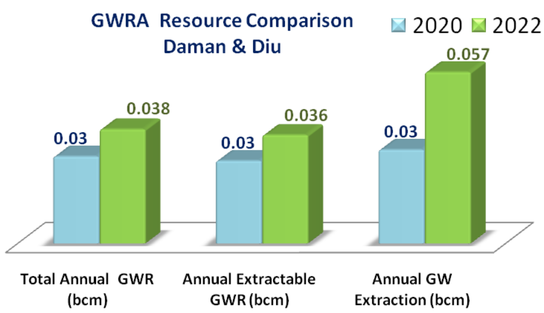


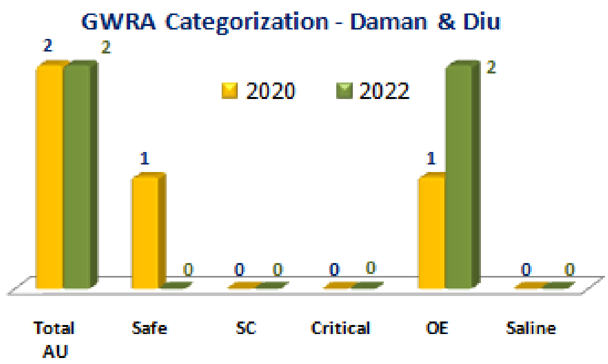
7.32 DAMAN & DIU AND DADRA & NAGAR HAVELI

Daman & Diu

The entire island area of Diu is about 40 sq. km and is underlain by Alluvium and Milliolite soft rock formation. The Daman has about 72 sq km area out of which 30 % is covered by alluvium and the rest is underlain by Basalt rocks. In UT of Daman & Diu, dug well as well as dug cum bore wells are common for irrigation and domestic use. The yields of open dug wells varies from less than1 to 5 m^3/day, where as that of Dug cum Bore wells ranges from less than 2 to 10 m^3/day.

The ground water resources have been assessed district-wise. The total Annual Ground Water Recharge has been assessed as 0.038 bcm and Annual Extractable Ground water Resources as 0.036 bcm. The total current Annual Ground Water Extraction has been assessed as 0.0571257 bcm and Stage of Ground Water Extraction as 157.93 %. Both Daman and Diu districts are categorized as 'Over Exploited'. As compared to 2020 assessment, there is significant increase in total annual ground water extraction from 0.031 bcm to 0.057 bcm, whereas the ground water recharge has marginally increased from 0.029 bcm in 2020 to 0.038 bcm in 2022. Consequently, the stage of groundwater extraction has increased from 113.38 % to 157.93 %.



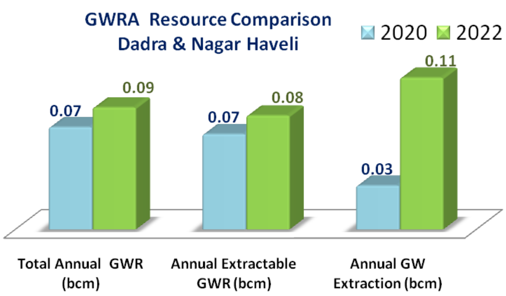


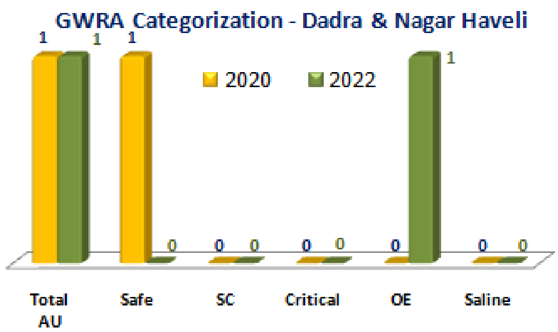
Dadra & Nagar Haveli

The entire area of UT of Dadra and Nagar Haveli is underlain by hard rock terrain (Deccan basalts). The thickness of vesicular units, ranges from 2 to 8 m. Ground water is developed by means of dug wells and dug cum bore wells. The sustainable yield of dug wells for 3 to 4 hours of pumping is 30 m^3/day. The transmissivity of shallow aquifer ranges from 5.5 to 305 m^2/day.

The entire D & NH has been considered as a single assessment unit. Total Annual Ground Water Recharge of the UT of DNH has been assessed as 0.09 bcm and Annual Extractable Ground Water Resources as 0.0806809 bcm. The Current Annual Ground Water Extraction for all uses is 0.10747 bcm and Stage of Ground Water Extraction is 133.2 %. The entire UT of D&NH has been categorized as 'Over Exploited'.

As compared to 2020 estimate, there is a negligible change in total annual ground water recharge from 0.072 to 0.09 bcm. However, there is a significant change in ground water extraction component due to the estimation of industrial draft for the first time due to which the current annual ground water extraction from all uses has increased from 0.031 bcm to 0.1 bcm. This change in draft has resulted in increase in stage of extraction from 45.99 % to 133.2 %.





7.33 JAMMU & KASHMIR

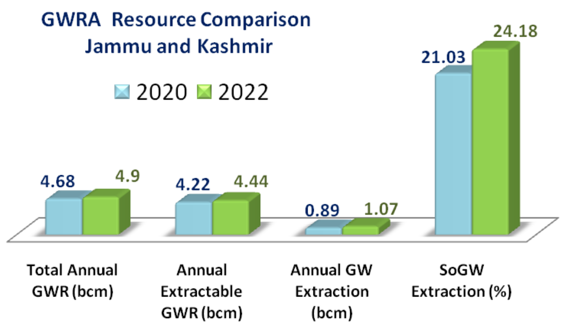
Jammu & Kashmir Union Territory comprises two regions viz-Jammu, Kashmir with 10 districts each, representing different ground water regimes. In Jammu Region, the ground water occurs in the outer plains extending between Munawar Tawi in the north-west to River Ravi in the south-east. The ground water occurs in piedmont deposits belonging to upper Pleistocene to Recent age, comprising unconsolidated sediments in the form of terraces and coalescent alluvial fans developed by the streams debauching out of Siwalik Hills. There are several isolated valleys in the middle Himalayas where ground water occurs in valley fill deposits under unconfined conditions.

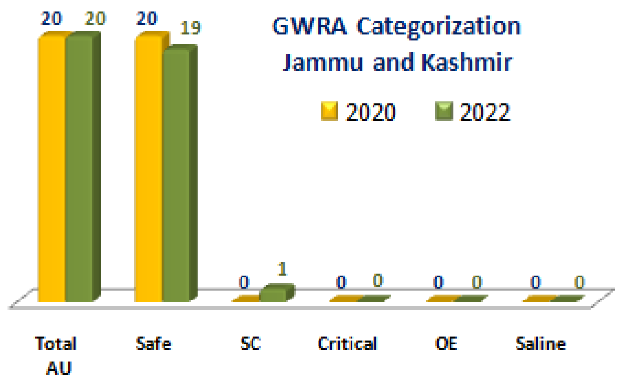
Kashmir valley covers an area of 5600 sq km and is occupied by Karewas which consist of a huge pile of alternating bands of sand, silt, and clay interspersed by glacial boulder beds. The sands are mostly fine to very fine-grained and there is considerable lateral facies variation of sediments with an aggregate thickness of 2500-3000 m. Ground water in the Karewas of Kashmir valley occurs under both confined as well as unconfined conditions.

The Ground water resources of the J&K UT have been assessed for ground water worthy areas and outer plains in 20 districts. These 20 assessment unitsinclude the Srinagar urban area (with a population of more than 10 Lakhs). Srinagar Urban Area comprises ground water worthy area of Srinagar district as well as parts of Ganderbal, Baramulla, Budgam, Pulwama and Bandipora districts.

The total recharge of ground water involves several components and rainfall is the major one. The other components are seepage from the canal and return flow from surface water and ground water irrigation. The total Annual Groundwater Recharge of the State has been estimated as 4.9 bcm and Annual Extractable Ground Water Resources is 4.44 bcm. TheTotal Current Annual Ground Water Extraction is 1.07 bcm and the Stage of Ground Water Extraction is 24.18 %.Out of 20 assessment units, 19 assessment units have been categorized as 'Safe'whereas1 assessment unit i.e. Srinagar Urban Area comes under the Semi-critical category.

As compared to the 2020 assessment, the Total Annual Groundwater Recharge and Annual Extractable Ground Water Resources have increased from 4.68bcm to 4.9 bcm and 4.22 bcm to 4.44 respectively. The Annual Ground Water Extraction has also increased from 0.89 bcm to 1.07 bcm. The Stage of Ground Water Extraction has Increased from 21.03 % to 24.18 %, which is due to an increase in annual ground water extraction and the incorporation of one assessment unit i.e. Srinagar Urban Area which comes under the semi-critical category.





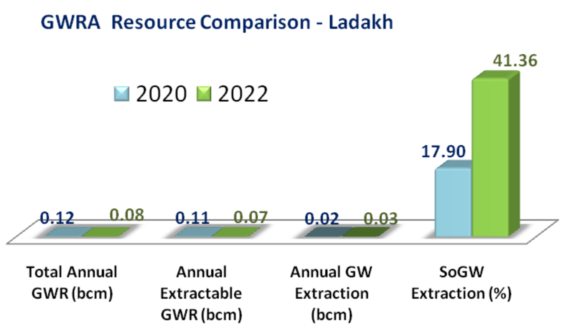
7.34 LADAKH

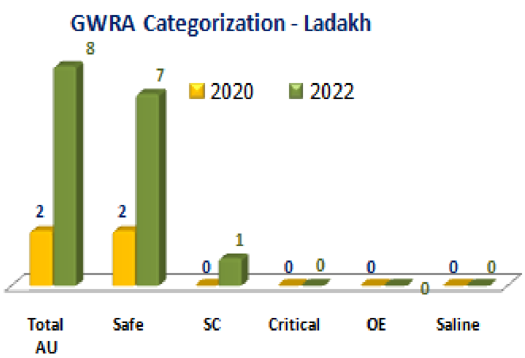
Ladakh Union Territory comprises of two districts viz-Leh and Kargil. The Topography of the region is extremely rugged, mountainous and highly inaccessible. The altitude of the area varies from 3000-8000 m amsl. In Leh district, the Indus and Shyok are the main valleys and the Leh plain, More plain, Hanle Plain, Depsang plain and soda plain are some important plains. Leh plain is underlain by morainic deposits consisting of boulders, cobbles, pebbles embedded in an arenaceous matrix and the lake deposits comprising predominantly of clays, sandy- Clays and silt. The sediments are overlain by varved clays and silts of lacustrine origin again succeeded by morainic boulders and cobbles in disintegrated loose sandy matrix and alluvial deposits. Ground water in the valleys occurs in porous formations. This includes moraines and fluvio-glacial deposits of Ladakh. The major assessment areas are Phyang, Nubra and Chusul valleys.

Kargil District comprises of the Suru, Zanskar, DrassShamkerChikar, Waknaand Laws valley's. The valley parts viz., Kargil Town Shankoo, Drass, Chanigound Olding Marol, Khachay Shargole and Zansakrare taken as assessment units. Ground water occurs mainly in the porous formations of morainic deposits comprising of Talus and Scree formations.

The Ground Water Resources of the Ladakh UT have been assessed for valley areas in 2 districts. The total recharge of ground water involves several components like rainfall but snowfall being the major one. The other components are seepage from canal, koohl and return flow from surface water and ground water irrigation. Total Annual Ground Water Recharge of the UT has been estimated as 0.08 bcm and Annual Extractable Ground Water Resources is 0.07 bcm. The Total Current Annual Ground Water Extraction is 0.030bcm. The Stage of Ground Water extraction in Ladakh is 41.36 %. All the assessment units have been categorized as 'Safe' except Phyang of Leh District as 'Semi-critical.

As compared to the 2020 assessment, the Total Annual Ground Water Recharge and Annual Extractable Ground Water Resources have decreased from 0.12 bcm to 0.081 bcm and 0.11bcm to 0.07 bcm respectively. The Annual Ground Water Extraction is increased from 0.019 bcm to 0.030bcm. The Stage of Ground Water Extraction has increased from 17.9 % to 41.36 %. The decrease in ground water recharge is mainly due to changing pattern of surface water irrigation.

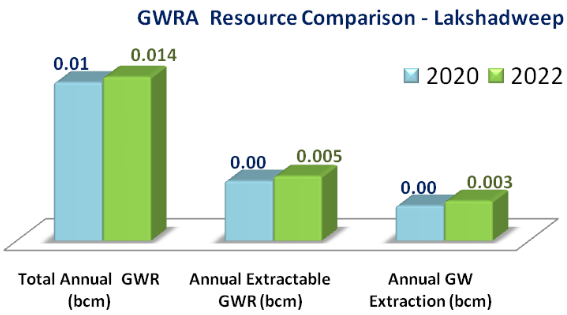


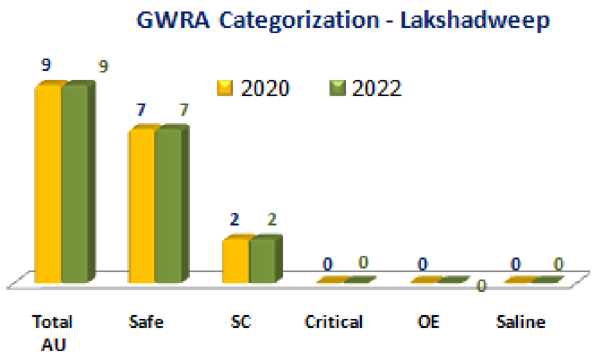


7.35 LAKSHADWEEP

Lakshadweep islands are composed of calcareous sand and materials derived from coral atolls. Alternate layers of loose sand, moderately cemented calc-arenites and well cemented, hard and compact limestone underlie the islands. In these islands, fresh ground water occurs under phreatic conditions as lens floating over the saline water and is in hydraulic continuity with sea water. Water levels in wells are strongly influenced by tides. Dug wells are the common ground water abstraction structures in the islands. The major draft component of these islands is for the domestic consumption. Irrigation draft is negligible in the islands as almost all the crops are rainfed.

Dynamic ground water resources have been assessed for individual islands. The total Annual Ground Water Recharge in the islands has been estimated as 0.01 bcm and Annual Extractable Ground Water Resources works out as 0.01bcm. The total current Annual Ground Water Extraction has been assessed as 0.0033 bcm and the Stage of Ground Water Extraction as 61.6%. Out of the 9 islands, 2 have been categorized as 'Semi-Critical' and 7 as 'Safe'.

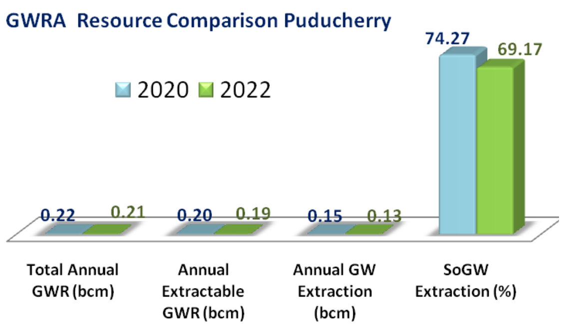


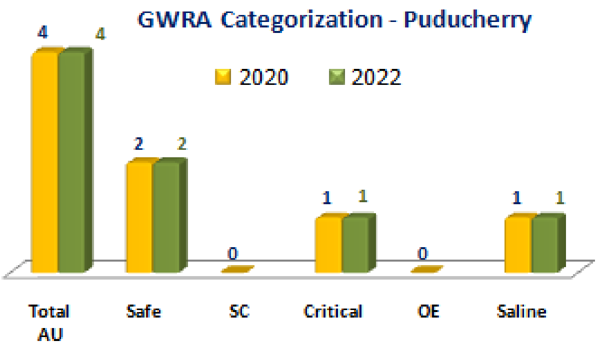


7.36 PUDUCHERRY

The UT of Puducherry is underlain by the semi-consolidated and unconsolidated sedimentary formations which mainly sustain dug wells, shallow and deep tube wells. The yield of the wells generally varies between 3 to 15 lps. High yielding wells in the range of 10 to 40 lps exists in the Tertiary sandstones.

The Dynamic ground water resources for UT of Puducherry have been assessed Region wise i.e Karaikal, Mahe, Puducherry & Yanam. The Annual Ground Water Recharge of the UT of Puducherry has been assessed as 0.21bcm, Annual Extractable Ground Water Resources is 0.19bcm and the Annual Ground Water Extraction is 0.13bcm. The overall Stage of Ground Water Extraction of UT of Puducherry is 69.17 %. Out of 4 regions, 1 region (Puducherry) has been categorized as 'Critical', 2 Regions (Karaikal &Mahe) as 'Safe' and 1 Region (Yanam) as 'Saline'. As compared to 2020 assessment, there is no significant change in Annual Ground Water Recharge & Ground Water Extraction. Only Puducherry Region has marginally improved from 98% to 95% within 'Critical' Category. Refinement in database and groundwater augmentation measures taken up by the Government of U.T of Puducherry under various schemes and changes in rainfall pattern are the reasons for the improvement. However, there is no significant change in overall ground water resources of U.T. of Puducherry.





CHAPTER 8

8.0 CONCLUSIONS

Total Annual Ground Water Recharge in the country (2022) has been assessed as 437.60 billion cubic meters (bcm). Ground water resources are replenished through rainfall and other sources like return flow from irrigation, canal seepage, recharge from water bodies, water conservation structures etc. The main source of annual ground water recharge is rainfall, which contributes nearly 61 % of the Total Annual Ground Water Recharge. The Total Annual Extractable Ground Water Resource of the country has been assessed as 398 bcm, after keeping a provision for natural discharge. The Annual Ground Water Extraction of the country (2022) is 239 bcm, the largest user being irrigation sector. The Stage of ground water extraction for the entire country, which is the percentage of ground water extraction with respect to Annual Extractable Ground Water Recharge, has been computed as 60 %. The extraction pattern of ground water is not uniform across the country, resulting in ground water stressed conditions in some parts of the country while in some other areas; ground water extraction has been sub- optimal. Out of the total 7089 assessment units (Blocks/ Districts/ Mandals/ Talukas/Firkas) in the country, 1006 units (14%) have been categorized as 'Over-Exploited', 260 units (4%) have been categorized as 'Critical', 885 units (12%) have been categorized as 'Semi-Critical' and 4780 units (67%) have been categorized as 'Safe'. Apart from this, there are 158 assessment units (2%), which have been categorized as 'Saline' as major part of the ground water in phreatic aquifers is brackish or saline. Similarly out of 24.71 lakh sq km recharge worthy area of the country, 4.31 lakh sq km (17 %) are under 'Over-Exploited', 0.77 lakh sq km (3%) are under 'Critical', 3.03 lakh sq km (12%) are under 'Semi-Critical', 16.19 lakh sq km (66%) are under 'Safe' and 0.4 lakh sq km (2%) are under 'Saline' category assessment units. Out of 398.08 bcm of Total Annual Extractable Resources of the country, 46.05 bcm (12 %) are under 'Over-Exploited', 13.02 bcm (3 %) are under 'Critical', 47 bcm (12 %) are under 'Semi-Critical', 291.88 bcm (73 %) are under 'Safe' category assessment units.

Over-exploitation of ground water resources could be due to various region-specific reasons. Assessment units located in the north-western part of the country (particularly in the states of Punjab, Haryana, Delhi and Uttar Pradesh) have plenty of replenishable ground water resources but because of the over extraction beyond the annual ground water recharge, many of these units have become Over-exploited. Over-exploited units are also common in the western part of the country, particularly in Rajasthan and Gujarat where the prevailing arid climate results in low recharge of ground water and hence stress on these source. In peninsular India, over-exploited units are wide spread in the states of Karnataka, Tamil Nadu and parts of Andhra Pradesh and Telangana which could be attributed mainly to the low storage and transmission capacities of aquifers of the hard rock terrains, which results in reduced availability of the resource.

The total Annual Ground Water Recharge for the entire country, as in 2022 has increased by 1.29 bcm as compared to the last assessment (2020). The total Annual Extractable GW Resources has also increased by 0.56 bcm. The Annual Ground Water Extraction for irrigation, domestic and Industrial uses has also decreased by 5.76 bcm during this period. These variations are attributed mainly to refinement of parameters, refinement in well census data and changing ground water regime.

It is also pertinent to add that as it is advisable to restrict the ground water extraction as far as possible to annual replenishable resources, the categorization also reflects the relation between the annual replenishment and ground water extraction. An area with low groundwater potential may not be considered for ground water extraction and may remain safe and an area with good ground water potential may be heavily used for ground water extraction and may become over exploited over a period of time. Thus, water augmentation efforts can be successful in such areas, where the groundwater potential is high and there is scope for augmentation.

GEC-2015 methodology has been developed for prevalent Indian conditions, on the basis of terrain characteristics and data availability. INDIA-GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES) is a Software/Web-based Application developed by CGWB in collaboration with IIT-Hyderabad for assessment of ground water resources using GEC 2015 Methodology. Constraints in data availability have been overcome through realistic assumptions based on experience in many States. A conscious effort is required on the parts of the State/ Central agencies to acquire the requisite realistic data to map the changing groundwater scenario in the country.

An analysis of assessment results leads us to the following inferences as the way forward in the assessment of Ground water resources.

8.1 WATER BALANCE STUDIES

Ground water is one of the several components of the Hydrologic Cycle, other important components being rainfall, surface water, soil moisture and evapotranspiration. Holistic water resources management interventions require proper understanding of the interactions between the different components of the hydrosphere. Studies for determining the Base flow and lateral flow components in the Water Balance equation need to be taken up to bring more accuracy to the Ground water Resources Assessment. Initially, the number of such studies can be taken up in areas representing different hydrogeological set up of India (Southern hard rock terrain, Deccan Basaltic terrain, Indo-Gangetic and Brahmaputra alluvial plains, Coastal alluvium, Desert terrain and Himalayan terrain etc.)

8.2 AQUIFER CHARACTERIZATION AND PARAMETER ESTIMATION

One of the key elements that determine the accuracy of ground water resources assessment is the realistic estimation of the recharge and discharge parameters. It is recommended that more experimental studies be taken up for refining the norms of RIF, return flow from irrigation based on soil types and agro-climatic zone, recharge from water conservation and water bodies and more field studies for evaluation of specific yield values as well as its variation with depth.

8.3 CASE STUDIES LINKING ASSESSMENT WITH MANAGEMENT

It is recommended to take up case studies in various assessment units wherein quantitative evaluation of the ground water management interventions and consequent changes in the assessment results could be analysed. Such studies would help bring out the efficacy of various management interventions on the ground water regime.

8.4 TEMPORAL AVAILABILITY OF GROUND WATER RESOURCES

Even though the GEC 2015 methodology advocates season-wise resource assessment, the estimation of recharge during monsoon and non-monsoon seasons may not be sufficient. Temporal variations in groundwater availability, particularly in hard rock terrain are not reflected in present practices. Hence, the assessment of temporal availability of ground water resources on the basis of available water columns can be attempted by considering the water levels measured frequently using Digital Water Level Recorders (DWLRs).

8.5 CREATION OF DATABASE FOR GROUND WATER RESOURCES ASSESSMENT AND ITS REGULAR UPDATING

GEC 2015 has devised the data structure of all the data elements (like water level, rainfall etc) and norms (like Specific Yield, Rainfall Infiltration Factor etc.) with its name, type of data and its precision. The templates (excel sheets) for data collection/compilation for assessment through IN-GRES using GEC 2015 has also been devised. However, major challenges are lack of dedicated manpower as well as presence of State GW/Nodal Departments (in majority of States) at District level for understanding/analysis of data/information to be collected/compiled from different State Departments (like Agriculture, Irrigation, Water Supply, Industries, Water Conservation etc.). Of particular importance in this regard are data/information related to recharge from water bodies, water conservation/harvesting structures, return flow from applied irrigation and details of ground water extraction structures in use for irrigation, domestic and industrial purpose. These need to be collected/compiled and regularly updated at district/block level so that more realistic assessment of ground water resources could be accomplished.

8.6 AQUIFER-WISE ASSESSMENT WITHIN THE PRESENT ADMINISTRATIVE UNITS (ASSESSMENT UNITS) IN AREAS OTHER THAN HARD ROCK TERRAIN

Areas occupied by unconsolidated sediments (alluvial deposits, aeolian deposits, coastal deposits etc.) usually have flat topography and assessment of ground water resources has been carried out taking administrative units (block/mandal/taluk etc.) as assessment units to facilitate the local administration in planning the ground water management programmes (both supply and demand side). However, if more than one hydrogeological/aquifer units (with distinctive characteristics, sustainability and ground water extraction patterns) exist within these administrative units, then the assessment units could be further divided into smaller units based on hydrogeological/aquifer characteristics. This will lead to more accurate assessment (aquifer wise) of resources and micro-level/area-specific interventions/management measures could be implemented.

8.7 GROUND WATER ASSESSMENT OF DEEPER AQUIFER SYSTEMS IN INDO-GANGETIC, BRAHMAPUTRA AND COASTAL ALLUVIAL TERRAIN

The dynamic ground water resources mainly comprises ground water resources available within the zone of water table fluctuation which are being regularly replenished every year through rainfall and other sources of recharge. This assessment has been carried out and categorization done based on utilization with respect to annual availability of dynamic ground water resources. However, in Indo-Gangetic, Brahmaputra and Coastal Alluvial areas multiple aquifer systems exist (on a regional scale) with sustainable and high yield characteristics. For assessment of deeper aquifers, more studies on individual aquifer potential/sustainable yield along with facilities for monitoring of piezometric heads (by establishing piezometers tapping different aquifer zones) have to be carried out. The resources of deeper aquifer systems could be considered for extraction during exigencies as well as for drinking water purpose for nearby regions.

8.8 AQUIFER-STREAM INTERACTIONS

Additional studies on aquifer-stream interactions are required to understand the contribution of ground water to streams and the requirement of environmental flows for sustainability of water resources and surrounding ecosystem.

8.9 GROUND WATER MODELLING AND PREDICTIVE SIMULATION

Besides the assessment of the dynamic ground water resources using norms prescribed in GEC 2015 methodology through automation, the concept of Ground water modelling must be included where predictive simulation can also be done. This would give an idea of the future availability of Ground water resources with respect to the changing climate and extraction patterns.

ANNEXURE - I

State-wise Ground Water Resources Availability, Utilization and Stage of Extraction

(as in 2022)

STATE-WISE GROUND WATER RESOURCES OF INDIA, 2022															
															(in bcm)
S. No.	States / Union Territories	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Andhra Pradesh**	9.14	9.41	0.91	7.77	27.23	1.36	25.86	6.46	0.16	0.83	7.45	**1.09**	18.54	28.81
2	**Arunachal Pradesh**	1.96	0.94	1.06	0.56	4.52	0.41	4.07	0.02	0.01	0.01	0.03	0.01	4.03	0.79
3	**Assam**	17.92	1.15	6.52	0.94	26.53	2.56	21.4	2.06	0.01	0.58	2.65	0.62	18.71	12.38
4	**Bihar**	19.94	7.07	1.14	5	33.15	3.1	30.04	10.01	0.35	3.14	13.5	3.41	16.76	44.94
5	**Chhattisgarh**	8.08	1.8	0.15	2.01	12.04	1.04	11.01	4.62	0.11	0.73	5.46	0.83	5.56	49.58
6	**Delhi**	0.1388	0.0895	0.0094	0.1728	0.4105	0.0411	0.3695	0.0904	0.0007	0.2716	0.3627	0.2878	0.0288	98.1612
7	**Goa**	0.35	0.02	0	0.04	0.41	0.08	0.33	0.026	0.004	0.048	0.078	0.05	0.25	23.63
8	**Gujarat**	19	2.63	0	4.83	26.46	1.88	24.58	12.1	0.16	0.82	13.09	1.04	12.18	53.23
9	**Haryana**	3.15	2.79	0.70	2.83	9.48	0.87	8.61	10.30	0.60	0.65	11.54	0.66	1.04	134.14
10	**Himachal Pradesh**	0.6	0.14	0.14	0.15	1.03	0.09	0.94	0.18	0.05	0.12	0.35	0.12	0.59	37.56
11	**Jharkhand**	4.92	0.45	0.48	0.36	6.21	0.51	5.69	0.93	0.21	0.65	1.78	0.65	3.92	31.35
12	**Karnataka**	8.83	4.29	1.19	3.43	17.74	1.70	16.04	10.01	0.13	1.09	11.22	1.17	6.34	69.93
13	**Kerala**	4.25	0.15	0.47	0.87	5.74	0.54	5.19	1.17	0.01	1.55	2.73	2.2	2.18	52.56
14	**Madhya Pradesh**	26.87	1.56	0.11	6.69	35.23	2.66	32.58	17.39	0.17	1.69	19.25	1.88	14.21	59.1
15	**Maharashtra**	20.72	2.43	0.54	8.6	32.29	1.84	30.45	15.29	0.003	1.35	16.65	1.35	14.38	54.68
16	**Manipur**	0.4	0	0.11	0.01	0.52	0.05	0.47	0.02	0.0002	0.02	0.04	0.02	0.43	7.95
17	**Meghalaya**	1.29	0.01	0.42	0	1.72	0.17	1.51	0.003	0.0007	0.05	0.05	0.06	1.45	3.55
18	**Mizoram**	0.19	0	0.03	0	0.22	0.02	0.2	0.000	0.00	0.01	0.01	0.01	0.19	3.96
19	**Nagaland**	0.36	0.33	0.08	0.02	0.79	0.08	0.71	0.002	0.000020	0.02	0.02	0.02	0.69	2.89
20	**Odisha**	10.44	2.82	1.81	2.72	17.79	1.44	16.34	5.83	0.16	1.24	7.23	1.37	9.03	44.25
21	**Punjab**	4.67	9.09	0.72	4.46	18.94	1.87	17.07	26.69	0.16	1.17	28.02	1.19	1.57	165.99
22	**Rajasthan**	8.71	0.62	0.20	2.61	12.13	1.17	10.96	14.18	0.14	2.23	16.56	2.28	0.87	151.07
23	**Sikkim**	0.1712	0.0039	0.0956	0.0005	0.2712	0.0271	0.2441	0.0089	0.0022	0.0036	0.0147	0.0038	0.2291	6.04
24	**Tamil Nadu**	7.42	9.76	1.33	2.59	21.11	2.04	19.09	13.68	0.18	0.57	14.43	1.36	6.42	75.59
25	**Telangana**	7.19	6.66	0.98	6.44	21.27	2.02	19.25	7.257	0.154	0.596	8	3.82	11.23	41.6
26	**Tripura**	0.81	0.06	0.22	0.22	1.31	0.25	1.06	0.02	0.0007	0.08	0.10	0.09	0.96	9.70
27	**Uttar Pradesh**	35.44	13.96	0.82	21.23	71.45	6.13	65.3	40.72	0.41	5.01	46.14	5.48	19.99	70.66
28	**Uttarakhand**	1.28	0.31	0.1	0.32	2.01	0.16	1.86	0.63	0.12	0.15	0.89	0.15	0.96	48.04
29	**West Bengal**	15.46	1.65	3.04	3.46	23.61	2.19	21.42	8.38	0.14	1.54	10.07	1.76	11.29	47.01
30	**Andaman and Nicobar**	0.2979	0.0002	0.3203	0.0001	0.6185	0.0618	0.5566	0.0001	0.001	0.0065	0.0075	0.0069	0.5486	1.35
31	**Chandigarh**	0.01	0.01	0.00	0.03	0.05	0.01	0.05	0.01	0.002	0.03	0.04	0.03	0.01	80.99
32	**Dadra & Nagar Haveli**	0.06	0.01	0.003	0.02	0.09	0.01	0.08	0.01	0.09	0.01	0.11	0.02	0.01	133.2
	Daman & Diu	0.037	0.001	0.000	0.001	0.038	0.002	0.036	0.003	0.055	0.000	0.057	0.016	0.000	157.927
33	**Jammu and Kashmir**	1.16	1.94	1.15	0.64	4.90	0.46	4.44	0.31	0.05	0.71	1.07	0.73	3.35	24.18
34	**Ladakh**	0.01	0.05	0.02	0	0.08	0.01	0.07	0.00037	0.000200	0.03	0.03	0.03	0.04	41.36
35	**Lakshadweep**	0.01	0	0	0	0.01	0.01	0.01	0	0.00	0	0	0	0	61.6
36	**Puducherry**	0.06	0.09	0.01	0.04	0.21	0.02	0.19	0.08	0.01	0.05	0.13	0.05	0.05	69.17
	Grand Total	241.35	82.30	24.88	89.07	437.60	36.85	398.08	208.49	3.64	27.05	239.16	33.86	188.03	60.08

ANNEXURE - II

District-wise Ground Water Resources Availability, Utilization and Stage of extraction

(as in 2022)

S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
ANDHRA PRADESH															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Alluri Sitharama Raju	44076.97	2842.25	2447.08	1636.68	51002.98	2550.30	48452.68	577.94	0.00	1598.26	2177.11	1810.56	46338.22	4.49
2	Anakapalli	22997.99	33061.70	14559.25	5273.24	75892.18	3794.63	72097.55	14237.26	464.89	4929.07	19631.11	5954.20	51894.32	27.23
3	Ananthapuramu	41743.24	39515.48	641.38	33387.20	115287.30	5764.52	109522.78	34830.83	515.59	6236.99	41583.46	6986.16	67963.91	37.97
4	Annamayya	47144.30	22250.64	719.88	21791.36	91906.18	4595.64	87310.53	41720.26	36.24	3053.05	44809.42	4331.39	41403.27	51.32
5	Bapatla	23970.87	32498.88	1344.36	7687.30	65501.41	3275.18	62226.23	10960.28	55.24	2655.77	13671.35	3000.36	48560.72	21.97
6	Chittoor	59271.04	14579.71	1211.80	19372.94	94435.49	4722.15	89713.34	45217.17	1346.62	4121.11	50684.80	5909.58	39055.95	56.50
7	East Godavari	24161.86	42405.43	2496.24	33864.58	102928.11	5146.29	97781.81	26532.51	967.19	1986.17	29485.86	2109.58	69651.40	30.15
8	Eluru	52220.75	69381.79	1707.37	38825.36	162135.27	8106.99	154028.28	42852.65	466.56	3783.43	47102.83	5046.38	106771.54	30.58
9	Guntur	10294.18	21206.25	4199.13	19511.03	55210.59	2760.56	52450.03	7850.96	169.65	2462.65	10483.26	2729.74	41708.49	19.99
10	Kakinada	12329.14	41153.45	7745.48	31614.72	92842.79	4642.19	88200.53	10371.24	2812.98	1995.14	15179.26	2201.50	73507.65	17.21
11	Konaseema	11995.32	44970.75	7801.55	43872.25	108639.87	5432.03	103207.84	12942.70	2942.54	1250.01	17135.22	1327.73	86094.29	16.60
12	Krishna	27071.18	97362.09	743.62	38705.18	163882.07	8194.28	155687.79	39779.82	1272.60	2070.05	43122.36	2736.31	111998.30	27.70
13	Kurnool	36558.19	26324.39	566.53	28172.23	91621.34	4581.84	87039.48	11927.95	57.00	5156.73	17141.82	5364.50	69721.54	19.69
14	Nandyal	22654.95	42602.08	62.49	15613.65	80933.17	4046.85	76886.32	13696.97	128.40	498.64	14323.30	499.07	62563.02	18.63
15	NTR	19961.84	38818.52	1215.84	30526.02	90522.22	4526.09	85996.13	15814.64	1137.84	1800.91	18753.26	1882.08	67367.78	21.81
16	Palnadu	18073.52	55369.44	9543.11	19126.43	102112.50	5105.58	97006.92	24978.42	79.65	4232.03	29290.26	4574.55	69213.03	30.19
17	Parvathipuram Manyam	31413.15	37502.76	3651.14	23990.88	96557.93	4828.14	91729.79	17402.26	12.96	1672.25	19087.29	3145.60	72973.79	20.81
18	Prakasam	67408.26	19178.09	1104.74	12539.28	100230.37	5011.95	95218.42	25936.28	509.48	4377.45	30823.48	4940.58	67121.35	32.37
19	Sri Potti Sriramulu Nellore	72639.53	43404.77	20354.39	121117.34	257516.03	12876.12	244639.87	65784.19	827.90	3653.42	70265.68	4588.84	175236.10	28.72
20	Sri Sathya Sai	43345.19	30656.90	595.26	43071.32	117668.67	5883.72	111784.93	54446.16	121.32	8856.86	63424.26	11119.93	55820.51	56.74
21	Srikakulam	41428.72	38229.14	3124.30	15499.73	98281.89	4914.55	93367.31	12636.44	224.64	4764.84	17625.92	9982.86	75129.08	18.88
22	Tirupati	80508.54	25141.93	87.94	66778.35	172516.76	8626.38	163890.38	39846.88	1387.35	3775.62	45010.85	8649.07	118478.95	27.46
23	Visakhapatnam	7216.11	2969.61	264.29	3089.69	13539.70	677.10	12862.60	2590.85	39.18	3281.00	5911.12	4184.20	6227.45	45.96
24	Vizianagaram	27391.64	68458.35	2797.95	48754.78	147402.72	7370.48	140032.09	30437.04	137.56	2226.21	32800.76	3228.36	108617.97	23.42
25	West Godavari	11535.06	23343.56	1479.04	23968.25	60325.91	3016.24	57309.67	5659.94	101.52	445.07	6206.39	1118.06	50430.30	10.83
26	Y.S.R Kadapa	56319.44	27534.56	532.65	29165.39	113552.04	5677.88	107874.13	36549.37	354.53	2461.99	39365.98	2462.01	69773.57	36.49
	Total(Ham)	**913730.98**	**940762.52**	**90996.81**	**776955.18**	**2722445.49**	**136127.68**	**2586317.43**	**645581.01**	**16169.43**	**83344.72**	**745096.4**	**109883.20**	**1853622.50**	**28.81**
	Total (Bcm)	**9.14**	**9.41**	**0.91**	**7.77**	**27.22**	**1.36**	**25.86**	**6.46**	**0.16**	**0.83**	**7.45**	**1.10**	**18.54**	**28.81**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
ARUNACHAL PRADESH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge									
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources				Irrigation	Industrial	Domestic	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Changlang**	16679.05	33274.06	7569.09	19817.01	77339.21	7733.92	68187.63	257.15	0.00	191.10	448.26	205.88	67724.59	0.66
2	**East Kameng**	8567.56	3469.31	3180.99	2083.46	17301.32	1730.14	15571.18	379.26	0.00	29.94	409.20	35.68	15156.24	2.63
3	**East Siang**	53854.98	6461.92	14046.82	3873.84	78237.56	3911.88	73735.52	579.28	1.04	69.89	650.20	73.76	73081.45	0.88
4	**Lohit**	51031.20	4965.57	41934.20	2972.49	100903.46	10090.35	88520.95	361.88	48.96	237.79	648.63	254.34	87855.77	0.73
5	**Lower Dibang Valley**	41521.92	8752.73	32545.92	5220.42	88040.99	8804.10	79236.89	225.76	0.00	33.31	259.07	34.28	78976.85	0.33
6	**Lower Subansiri**	1895.44	1213.39	1442.42	726.57	5277.82	527.78	4584.38	85.00	0.00	22.00	107.00	28.05	4471.33	2.33
7	**Papum Pare**	8131.71	7756.73	2332.98	4623.58	22845.00	2284.50	20438.03	141.54	17.15	103.51	262.20	128.60	20150.74	1.28
8	**Tirap**	7142.72	264.64	1658.41	161.88	9227.65	922.77	8304.88	77.40	0.00	68.03	145.43	71.23	8156.25	1.75
9	**Upper Subansiri**	141.52	9365.56	73.65	5577.68	15158.41	1515.84	13642.57	62.15	0.00	20.45	82.60	26.37	13554.05	0.61
10	**West Kameng**	2342.95	10125.54	397.31	6027.37	18893.17	1889.32	17003.85	6.24	0.00	11.65	17.89	12.25	16985.36	0.11
11	**West Siang**	4445.29	8745.97	916.73	5213.55	19321.54	1932.16	17389.38	154.62	1.78	22.32	178.72	23.04	17209.94	1.03
	Total(Ham)	**195754.34**	**94395.42**	**106098.52**	**56297.85**	**452546.13**	**41342.76**	**406615.26**	**2330.28**	**68.92**	**809.98**	**3209.20**	**893.48**	**403322.57**	**0.79**
	Total (Bcm)	**1.96**	**0.94**	**1.06**	**0.56**	**4.53**	**0.41**	**4.07**	**0.02**	**0.00**	**0.01**	**0.03**	**0.01**	**4.03**	**0.79**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
ASSAM															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Baksa**	113860.75	4866.23	27266.80	3717.32	149711.10	14971.11	129549.48	2563.68	3.01	1957.70	4524.40	2042.59	124940.19	3.49
2	**Barpeta**	69097.51	2829.28	22901.04	6891.16	101718.99	5501.43	95236.46	24383.52	13.25	3868.95	28265.72	4232.22	66607.47	29.68
3	**Bongaigaon**	33285.82	2651.55	12847.54	2813.09	51598.00	5159.80	45778.20	10155.60	1.53	1634.40	11791.52	1780.70	33840.38	25.76
4	**Cachar**	63729.92	2998.94	23182.18	718.81	90629.85	9062.99	46849.10	1.68	10.58	1529.42	1541.68	1663.17	45173.67	3.29
5	**Chirang**	67874.58	3737.47	25347.61	4206.30	101165.96	10116.60	90755.25	1523.76	3.55	969.95	2497.26	1014.46	88213.48	2.75
6	**Darrang**	32063.47	4914.32	14212.76	4572.96	55763.51	5576.36	41397.00	15529.92	10.02	2140.66	17680.61	2350.27	23506.78	42.71
7	**Dhemaji**	96472.88	8650.20	38006.99	2413.16	145543.23	14554.33	112789.64	3094.56	6.15	1462.23	4562.95	1588.46	108100.46	4.05
8	**Dhubri**	68603.11	8041.40	18117.50	5538.71	100300.72	10030.07	90270.65	23612.40	1.80	3212.57	26826.77	3566.45	63090.00	29.72
9	**Dibrugarh**	94793.93	3855.52	37792.03	775.85	137217.33	13721.73	108978.67	5641.44	53.62	2622.73	8317.78	2749.61	100534.01	7.63
10	**Dima Hasao**	43723.75	113.78	19071.65	17.30	62926.48	6292.65	56633.83	339.36	1.19	230.83	571.38	243.95	56049.33	1.01
11	**Goalpara**	47091.92	3527.65	19326.00	3055.96	73001.53	7300.16	59522.88	9979.20	63.48	2348.67	12391.35	2584.30	46895.90	20.82
12	**Golaghat**	92913.52	2334.29	29903.35	1038.99	126190.15	12619.01	108694.20	3842.16	97.82	1951.22	5891.20	2052.65	102701.57	5.42
13	**Hailakandi**	15273.17	1653.01	9513.42	426.01	26865.61	2686.56	14464.34	5.04	0.00	518.23	523.27	566.94	13892.36	3.62
14	**Jorhat**	63405.81	4340.89	32140.69	2015.89	101903.28	10190.33	73231.10	5730.48	17.19	1100.54	6848.21	1141.79	66341.64	9.35
15	**Kamrup**	52253.74	6824.13	22462.14	3805.93	85345.94	8534.60	70201.86	20244.00	158.60	3404.82	23807.41	3653.45	46145.82	33.91
16	**Kamrup Metro**	9751.93	650.71	4887.87	188.75	15479.26	1547.92	11384.44	1537.20	121.46	348.80	2007.46	352.35	9373.43	17.63
17	**Kamrup Metro Urban**	3681.43	107.61	1537.67	24.84	5351.55	535.15	4713.70	0.00	121.46	3382.43	3503.89	3415.44	1176.80	74.33
18	**Karbi Anglong**	102594.00	2415.12	26988.70	4326.15	136323.97	13632.40	120037.97	1066.80	2.40	1909.09	2978.29	2051.09	116917.68	2.48
19	**Karimganj**	41004.02	1775.65	19365.36	439.35	62584.38	6258.44	46760.76	92.40	3.00	1280.73	1376.13	1404.16	45261.20	2.94
20	**Kokrajhar**	109438.03	5429.73	42129.05	2039.82	159036.63	15903.65	142984.44	6338.64	0.00	1713.36	8052.00	1750.73	134895.07	5.63
21	**Lakhimpur**	79502.75	1927.95	30085.15	1451.65	112967.50	11296.75	65056.63	4487.28	3.00	2182.19	6672.47	2340.69	58225.66	10.26
22	**Morigaon**	40981.25	2934.09	8474.76	3108.60	55498.70	2774.94	51854.53	10829.28	4.98	2237.35	13071.61	2470.28	38549.99	25.21
23	**Nagaon**	85908.46	9996.23	21452.74	9941.94	127299.37	12729.94	108901.85	27157.20	43.36	4227.78	31428.33	4637.48	77063.82	28.86
24	**Nalbari**	29289.27	2245.26	8849.96	2251.57	42636.06	2131.81	37988.53	7482.72	7.66	1666.79	9157.18	1747.92	28750.22	24.11
25	**Sivasagar**	96275.09	1655.23	32055.39	1090.95	131076.66	13107.66	106980.32	2728.32	22.07	1728.65	4479.04	1794.35	102435.58	4.19
26	**Sonitpur**	110084.73	8503.93	42220.17	3083.01	163891.84	16389.19	123730.29	8954.40	84.56	3873.22	12912.18	4123.76	110567.57	10.44
27	**Tinsukia**	89464.01	5199.09	40135.93	1636.62	136435.65	13643.57	106830.67	4339.44	28.54	2757.72	7125.70	2935.08	99527.61	6.67
28	**Udalguri**	39155.55	10874.56	22147.17	22323.32	94500.60	9450.06	68480.53	4578.00	11.61	1504.40	6094.01	1562.61	62328.31	8.90
	Total(Ham)	**1791574.40**	**115053.82**	**652421.62**	**93914.01**	**2652963.85**	**255719.21**	**2140057.32**	**206238.48**	**895.88**	**57765.43**	**264899.8**	**61816.95**	**1871106.00**	**12.38**
	Total (Bcm)	**17.92**	**1.15**	**6.52**	**0.94**	**26.53**	**5.09**	**21.40**	**2.06**	**0.01**	**0.58**	**2.65**	**0.62**	**18.71**	**12.38**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
BIHAR															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Araria	74581.54	38758.75	7725.34	26334.08	147399.71	13922.12	133477.58	26373.62	87.00	9139.72	35600.33	9930.12	98307.48	26.67
2	Arwal	11348.17	5890.82	0.00	3289.55	20528.54	1750.28	18778.26	5561.32	1.40	2492.02	8054.73	2707.53	10626.53	42.89
3	Aurangabad	58671.78	42391.01	1210.95	25469.21	127742.95	11131.39	116611.55	19194.17	1550.96	7866.70	28611.84	8547.01	87477.10	24.54
4	Banka	45938.41	15953.31	915.09	10635.98	73442.79	7344.33	66098.47	11331.27	118.10	6501.33	17950.72	7063.57	48317.95	27.16
5	Begusarai	47918.04	3625.31	2951.91	5596.28	60091.54	6009.17	54082.36	24643.27	118.80	8975.74	33737.77	9751.95	19688.18	62.38
6	Bhagalpur	57260.31	7268.23	6287.29	4425.00	75240.83	7032.83	68207.99	16837.56	195.00	6556.67	23589.22	7123.72	44442.91	34.58
7	Bhojpur	46257.36	19751.06	1098.76	13010.55	80117.73	7251.83	72865.90	28673.57	766.50	8394.87	37834.89	9120.84	37015.25	51.92
8	Buxar	32183.57	15168.91	626.77	10199.53	58178.78	5817.91	52360.87	19216.98	1214.00	5069.81	25500.78	5508.25	26454.91	48.70
9	Darbhanga	53214.34	7804.26	4990.37	6081.26	72090.23	7018.05	65072.18	20772.90	787.60	12640.00	34200.48	13733.09	30958.74	52.56
10	East Champaran	85167.65	52965.49	5352.07	33086.04	176571.25	15848.72	160722.53	51570.31	8547.30	13931.09	74048.67	15135.83	87359.72	46.07
11	Gaya	90349.83	23344.09	2497.40	15870.05	132061.37	12769.71	119291.66	35054.17	354.25	13887.42	49295.82	15088.38	69987.89	41.32
12	Gopalganj	41579.82	30010.69	1423.67	19888.63	92902.81	8838.55	84064.25	37288.91	360.10	8096.64	45745.67	8796.84	41696.17	54.42
13	Jamui	35318.41	8003.19	1686.34	6041.63	51049.57	4827.48	46222.09	8200.81	52.20	5484.18	13737.24	5958.43	33475.61	29.72
14	Jehanabad	17298.54	7282.07	462.46	6050.60	31093.67	2901.50	28192.17	20029.64	0.00	3422.70	23452.34	3718.69	5910.37	83.19
15	Kaimur	47296.41	21245.20	900.77	14970.53	84412.91	8196.11	76216.80	21478.80	206.25	5215.59	26900.64	5666.63	48865.12	35.29
16	Katihar	83974.42	20886.94	7209.24	14718.85	126789.45	12071.07	114718.38	51714.19	125.20	8341.53	60180.93	9062.91	54026.86	52.46
17	Khagaria	39977.95	2071.58	1883.05	4630.15	48562.73	4856.29	43706.44	20747.50	27.70	5205.11	25980.29	5655.24	17276.02	59.44
18	Kishanganj	74865.48	3165.34	5300.16	3545.92	86876.90	6555.29	80321.61	19352.99	471.50	5232.21	25056.72	5684.67	54812.42	31.20
19	Lakhisarai	22406.00	9267.58	1279.31	5724.60	38677.49	3810.09	34867.40	10036.38	16.50	2879.02	12931.90	3127.99	22053.51	37.09
20	Madhepura	41344.33	32397.55	3931.72	23938.01	101611.61	9848.59	91763.02	32722.51	156.30	6436.65	39315.44	6993.29	58963.39	42.84
21	Madhubani	79467.38	26987.83	8011.77	19373.88	133840.86	11811.71	122029.15	28520.58	9180.60	14037.44	51738.60	15251.40	74548.72	42.40
22	Munger	26391.07	8546.88	1545.83	4026.80	40510.58	3916.27	36594.31	5205.60	735.00	4194.54	10135.14	4557.26	26254.15	27.70
23	Muzaffarpur	64505.09	21749.64	3879.23	17100.83	107234.79	9534.97	97699.83	53393.87	1281.80	14996.99	69672.65	16293.90	28445.38	71.31
24	Nalanda	46488.35	9812.46	1283.23	9143.04	66727.08	6187.42	60539.65	33425.17	2570.40	8605.10	44600.66	9349.29	19265.77	73.67
25	Nawada	46696.96	11346.95	2056.28	8363.96	68464.15	6757.09	61707.06	24934.50	25.50	5641.09	30601.07	6128.91	30916.65	49.59
26	Patna	75844.44	14487.69	1985.75	11687.32	104005.20	9900.67	94104.53	42193.50	420.00	15629.54	58243.08	16981.15	35460.54	61.89
27	Purnea	92121.96	42342.40	8812.19	28614.99	171891.54	17189.17	154702.37	40342.46	307.50	9884.09	50534.07	10738.84	105679.48	32.67
28	Rohtas	69323.59	31974.05	1554.07	22612.48	125464.19	12546.37	112917.80	36019.61	24.00	9114.08	45157.68	9902.25	68557.44	39.99
29	Saharsa	53107.55	11656.35	4221.66	8360.77	77346.33	7360.52	69985.81	18586.21	0.00	5687.54	24273.76	6179.39	45220.21	34.68
30	Samastipur	67085.79	9546.11	3001.88	7419.52	87053.30	7993.91	79059.39	41222.25	264.30	13314.20	54800.74	14465.58	23949.81	69.32
31	Saran	52530.89	28237.14	2193.70	18051.58	101013.31	9608.73	91404.57	29988.09	120.40	12305.35	42413.84	13369.51	50886.01	46.40
32	Sheikhpura	13153.00	2713.36	610.19	2336.08	18812.63	1841.33	16971.29	6732.45	0.00	1990.86	8723.28	2163.02	8486.10	51.40
33	Sheohar	12091.74	3854.95	844.06	1767.30	18558.05	1812.99	16745.06	7958.25	7.00	2108.19	10073.44	2290.50	6489.31	60.16
34	Sitamarhi	52188.32	4354.25	4163.59	3583.53	64289.69	5108.99	59180.70	20928.82	88.00	10677.18	31694.03	11600.50	26563.34	53.55
35	Siwan	46302.43	27226.90	863.71	22037.04	96430.08	8653.23	87776.84	41764.77	19.20	10283.43	52067.43	11172.74	34820.10	59.32
36	Supaul	48671.70	26368.17	4815.78	22373.32	102228.97	9368.90	92860.07	26411.81	71.30	6938.51	33421.62	7538.55	58838.40	35.99
37	Vaishali	50074.73	14854.31	1783.69	10160.20	76872.93	6812.90	70060.03	36883.13	2263.29	10022.82	49169.24	10889.57	23911.17	70.18
38	West Champaran	90685.45	43474.75	4241.96	29432.25	167834.41	15594.73	152239.67	26003.18	2440.40	12694.33	41137.89	13792.10	110113.00	27.02
	Total(Ham)	**1993682.80**	**706785.57**	**113601.24**	**499951.34**	**3314020.95**	**309801.21**	**3004219.64**	**1001315.12**	**34975.35**	**313894.29**	**1350185**	**341039.44**	**1676121.71**	**44.94**
	Total (Bcm)	**19.94**	**7.07**	**1.14**	**5.00**	**33.14**	**3.10**	**30.04**	**10.01**	**0.35**	**3.14**	**13.50**	**3.41**	**16.76**	**44.94**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
CHHATISGARH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Balod**	15674.05	9416.22	0.00	12630.07	37720.34	3235.23	34485.11	22390.68	156.53	2196.09	24743.30	2356.22	9646.95	71.75
2	**Baloda Bazar**	30723.54	17527.70	466.32	7052.11	55769.67	5473.18	50296.48	19454.95	1256.92	4941.31	25653.18	6482.56	23635.52	51.00
3	**Balrampur**	39755.94	1217.60	284.83	1971.04	43229.41	3862.35	39367.06	7861.56	4.04	2003.82	9869.43	2200.65	29300.80	25.07
4	**Bastar**	21473.75	482.11	1752.02	1381.62	25089.50	2191.94	22897.56	5001.44	462.52	2233.38	7697.34	2400.33	15033.27	33.62
5	**Bemetara**	16047.69	13451.23	0.00	18704.76	48203.68	4178.86	44024.82	38913.30	67.64	2327.49	41308.42	2889.52	7761.68	93.83
6	**Bijapur**	49859.36	85.13	214.88	597.92	50757.29	5075.74	45681.55	1936.38	1.25	663.20	2600.85	711.88	43032.02	5.69
7	**Bilaspur**	18736.80	8510.94	414.06	8749.60	36411.40	3494.22	32917.18	16867.73	467.64	5404.51	22739.91	6529.12	9767.00	69.08
8	**Dantewada**	25082.97	178.14	342.85	1197.27	26801.23	2453.79	24347.44	2838.73	152.05	758.31	3749.09	820.00	20536.66	15.40
9	**Dhamtari**	19625.76	10967.99	0.00	16548.16	47141.91	4281.22	42860.69	32298.86	13.94	2068.02	34380.81	2180.05	10199.85	80.22
10	**Durg**	14807.50	8963.38	0.00	11265.01	35035.89	3013.83	32022.06	21880.79	110.98	4841.24	26833.01	5135.19	6143.18	83.80
11	**Gariaband**	20976.06	5660.40	0.00	6340.16	32976.62	3153.67	29822.95	18582.67	21.07	1666.41	20270.12	1877.55	9393.54	67.97
12	**Gourela-Pendra-Marwahi**	11462.80	995.40	545.15	975.53	13978.88	1218.42	12760.47	3720.68	1.01	1086.46	4808.13	1324.53	7714.27	37.68
13	**Janjgir-Champa**	17697.23	14878.92	537.27	11473.74	44587.16	3918.25	40668.90	18401.54	135.98	4622.07	23159.59	5146.64	17039.09	56.95
14	**Jashpur**	26963.04	1779.68	883.67	3437.39	33063.78	2754.25	30309.52	10846.65	1.42	2190.08	13038.15	2320.47	17140.99	43.02
15	**Kabirdham**	31633.99	17711.74	1408.77	10452.67	61207.17	5172.58	56034.59	31784.78	27.28	2461.91	34274.00	2837.22	21385.27	61.17
16	**Kanker**	58270.55	2476.42	2224.16	7755.35	70726.48	6571.37	64155.12	19413.75	73.14	1997.25	21484.14	2150.07	42518.15	33.49
17	**Kondagaon**	27298.24	685.49	2064.15	2097.03	32144.91	1615.96	30528.95	10777.12	4.12	1541.51	12322.75	1658.78	18844.58	40.36
18	**Korba**	29950.35	3725.48	635.62	3815.32	38126.77	3523.24	34603.53	9175.17	2670.57	3516.68	15362.41	3879.21	18878.59	44.40
19	**Korea**	55327.42	4409.87	289.29	3740.50	63767.08	5452.31	58314.77	11348.93	6.55	1726.69	13082.17	1819.79	45139.50	22.43
20	**Mahasamund**	41364.48	11016.35	325.68	13221.88	65928.39	4560.72	61367.67	36223.17	64.01	2823.42	39110.58	3077.95	22002.55	63.73
21	**Mungeli**	8457.22	5202.78	0.00	4505.92	18165.92	1816.59	16349.32	7652.85	32.50	1816.62	9501.97	2236.98	6426.98	58.12
22	**Narayanpur**	24792.42	258.98	772.79	447.36	26271.55	2627.16	23644.39	630.20	10.13	380.64	1020.99	412.02	22592.02	4.32
23	**Raigarh**	36368.48	4295.87	582.13	5561.05	46807.53	3041.84	43765.69	15847.53	1865.43	4113.63	21826.56	4491.91	21560.85	49.87
24	**Raipur**	19506.50	14254.43	42.18	12908.78	46711.89	4378.55	42333.34	20776.86	2718.57	5886.12	29381.57	6815.31	12354.96	69.41
25	**Rajnandgaon**	40313.87	17246.36	478.96	19423.45	77462.64	6325.28	71137.36	41254.10	351.30	4806.29	46411.69	6010.03	23521.95	65.24
26	**Sukma**	44273.29	323.97	0.00	457.55	45054.81	4505.47	40549.34	949.48	0.18	611.67	1561.33	636.60	38963.08	3.85
27	**Surajpur**	27753.95	2774.89	187.47	10072.90	40789.21	3027.98	37761.24	21995.88	24.42	2120.64	24140.96	2298.05	13442.86	63.93
28	**Surguja**	34075.09	1923.21	854.71	4610.16	41463.17	3441.53	38021.64	12958.14	334.49	2263.01	15555.66	2436.01	22292.99	40.91
	Total(Ham)	**808272.34**	**180420.68**	**15306.96**	**201394.30**	**1205394.28**	**104365.53**	**1101028.74**	**461783.91**	**11035.67**	**73068.46**	**545888.1**	**83134.64**	**556269.15**	**49.58**
	Total (Bcm)	**8.08**	**1.80**	**0.15**	**2.01**	**12.05**	**1.04**	**11.01**	**4.62**	**0.11**	**0.73**	**5.46**	**0.83**	**5.56**	**49.58**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
DELHI															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Central	525.12	716.85	35.36	1418.30	2695.63	269.56	2426.07	244.79	0.00	1560.79	1805.57	2153.44	639.43	74.42
2	East	167.20	510.45	11.26	1007.06	1695.97	169.61	1526.36	110.55	0.20	1299.50	1410.24	1456.01	116.12	92.39
3	Nazul Land	444.95	75.24	29.97	125.99	676.15	67.62	608.53	301.60	0.00	114.60	416.20	114.60	192.33	68.39
4	New Delhi	1246.96	713.78	83.98	1353.34	3398.06	339.80	3058.26	714.92	2.20	2996.02	3713.14	2996.02	0.00	121.41
5	North	2620.60	746.28	176.50	1441.87	4985.25	498.53	4486.72	489.77	50.31	4000.51	4540.58	4016.70	217.38	101.20
6	North East	216.90	557.06	16.38	1107.67	1898.01	189.80	1708.21	176.76	0.00	1506.88	1683.63	1506.87	142.01	98.56
7	North West	1477.20	782.45	99.49	1547.87	3907.01	390.70	3516.31	501.80	0.56	1870.97	2373.33	2279.27	1094.98	67.49
8	Shahdara	189.00	635.58	12.73	1248.46	2085.77	208.57	1877.20	404.35	0.50	1633.32	2038.17	1633.32	4.52	108.58
9	South	1348.96	1161.01	90.86	2275.53	4876.36	487.64	4388.72	756.84	0.00	4344.97	5101.82	4344.98	0.00	116.25
10	South East	738.84	726.06	49.76	1428.81	2943.47	294.36	2649.11	229.51	12.74	2373.64	2615.89	2373.64	33.22	98.75
11	South West	3327.09	1477.39	224.09	2661.94	7690.51	769.04	6921.47	4373.41	0.00	2614.33	6987.74	3057.25	139.82	100.96
12	West	1581.26	851.36	106.51	1660.32	4199.45	419.95	3779.50	731.98	0.60	2848.46	3581.03	2848.45	296.34	94.75
	Total(Ham)	**13884.08**	**8953.51**	**936.89**	**17277.16**	**41051.64**	**4105.18**	**36946.46**	**9036.29**	**67.11**	**27163.97**	**36267.34**	**28780.55**	**2876.15**	**98.16**
	Total (Bcm)	**0.14**	**0.09**	**0.01**	**0.17**	**0.41**	**0.04**	**0.37**	**0.09**	**0.00**	**0.27**	**0.36**	**0.29**	**0.03**	**98.16**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
GOA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Goa North**	14114.73	1206.96	53.52	2867.03	18242.24	3648.45	14593.79	1523.88	91.83	2055.16	3670.89	2181.80	10796.26	25.15
2	**South Goa**	20735.00	512.06	287.17	1561.86	23096.09	4619.20	18476.89	1074.87	313.42	2755.82	4144.10	2925.64	14162.97	22.43
	Total (Ham)	**34849.73**	**1719.02**	**340.69**	**4428.89**	**41338.33**	**8267.65**	**33070.68**	**2598.75**	**405.25**	**4810.98**	**7814.99**	**5107.44**	**24959.23**	**23.63**
	Total (Bcm)	**0.35**	**0.02**	**0.00**	**0.04**	**0.41**	**0.08**	**0.33**	**0.03**	**0.00**	**0.05**	**0.08**	**0.05**	**0.25**	**23.63**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
GUJARAT															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Ahmedabad	25027.78	8169.57	0.00	13736.33	46933.68	3632.52	43301.16	32678.10	3350.95	1003.03	37032.07	3225.83	12976.88	85.52
2	Amreli	134394.35	6893.14	0.00	10529.44	151816.93	7590.87	144226.06	73577.70	54.77	1188.96	74821.42	1267.96	69363.47	51.88
3	Anand	30261.47	37179.88	0.00	47598.47	115039.82	9593.65	105446.17	20627.00	375.33	3509.71	24512.03	4217.83	80753.99	23.25
4	Arvalli	80250.41	3393.73	0.00	7191.68	90835.82	4541.80	86294.02	33871.90	25.39	2004.70	35901.98	2144.33	50252.41	41.60
5	Banaskantha	89392.81	14866.25	0.00	16376.19	120635.25	12063.55	108571.71	130515.10	143.90	4106.05	134765	5420.39	12856.82	124.13
6	Bharuch	36801.22	8553.15	0.00	15369.92	60724.29	5219.02	55505.27	16951.20	668.92	1795.60	19415.76	2527.48	35993.41	34.98
7	Bhavnagar	91083.49	7625.10	0.00	13331.91	112040.50	5602.02	106438.48	42332.10	31.05	3107.27	45470.45	4067.44	60753.09	42.72
8	Botad	40196.17	2293.68	0.00	3695.71	46185.56	2309.26	43876.29	21423.80	16.67	882.78	22323.25	1060.45	21491.98	50.88
9	Chhota Udepur	39770.34	4226.92	0.00	7695.33	51692.59	4662.93	47029.66	19679.50	0.18	2184.32	21864.01	2312.02	25037.94	46.49
10	Dahod	18967.23	7050.35	0.00	10682.22	36699.80	3351.02	33348.78	10029.60	1.89	2211.09	12242.54	2524.79	20792.54	36.71
11	Dang	31939.56	892.19	0.00	1021.62	33853.37	3385.34	30468.03	2189.60	62.76	478.01	2730.37	522.81	27692.86	8.96
12	Devbhumi Dwarka	36954.84	2529.29	0.00	4249.60	43733.73	2186.69	41547.04	23978.50	107.72	1545.96	25632.17	1733.05	15830.05	61.69
13	Gandhinagar	45951.85	4825.75	0.00	7885.03	58662.63	4893.47	53769.16	50911.80	798.54	1365.00	53075.34	1807.11	7729.57	98.71
14	Gir Somnath	59887.41	2759.69	0.00	6209.24	68856.34	5440.16	63416.18	28708.60	400.56	2938.74	32047.91	3111.29	31225.10	50.54
15	Jamnagar	126015.89	7000.88	0.00	12389.09	145405.86	7270.31	138135.55	48804.00	43.08	2370.50	51217.58	2598.07	86787.92	37.08
16	Junagadh	133207.15	4780.88	0.00	9106.24	147094.27	7354.70	139739.57	61887.10	70.48	3098.64	65056.22	3550.67	74369.54	46.56
17	Kachchh	55352.90	16051.80	0.00	20115.70	91520.40	8559.75	82960.65	47619.50	1049.83	1033.70	49703.02	3836.29	38532.95	59.91
18	Kheda	43059.73	10996.28	0.00	22388.59	76444.60	7043.29	69401.31	26939.00	401.08	2824.77	30164.83	3326.93	39089.00	43.46
19	Mahesana	48478.77	10278.39	0.00	19603.08	78360.24	7836.02	70524.22	71914.00	722.90	1410.52	74047.44	1950.14	4672.66	105.00
20	Mahisagar	17238.53	5139.55	0.00	10741.71	33119.79	3311.99	29807.80	12580.90	17.24	881.30	13479.45	941.60	16268.04	45.22
21	Morbi	39505.30	9480.38	0.00	20260.95	69246.63	4502.87	64743.77	30045.30	126.43	1420.32	31592.06	1663.84	33034.01	48.80
22	Narmada	27021.36	4320.11	0.00	6929.81	38271.28	2733.10	35538.18	20534.00	37.09	532.35	21103.42	564.93	14402.17	59.38
23	Navsari	61462.72	5052.04	0.00	15814.23	82328.99	4974.14	77354.85	17732.20	140.24	2651.97	20524.41	2739.64	56742.77	26.53
24	Panchmahal	20995.54	11958.33	0.00	18285.41	51239.28	3675.28	47564.00	9869.80	96.42	1496.59	11462.84	1610.27	35987.47	24.10
25	Patan	21212.76	5757.97	0.00	9394.38	36365.11	2452.72	33912.39	34975.28	51.85	906.24	35933.35	1435.88	1499.03	105.96
26	Porbandar	19079.72	1096.57	0.00	1953.06	22129.35	1465.85	20663.51	10037.50	108.80	514.28	10660.59	904.72	9983.87	51.59
27	Rajkot	144526.87	13946.61	0.00	23456.00	181929.48	9096.48	172832.99	105382.80	75.98	2475.06	107933.8	2687.82	64686.41	62.45
28	Sabarkantha	53393.76	9027.13	0.00	17968.11	80389.00	8038.88	72350.12	50497.16	283.06	1999.61	52779.85	2345.15	20572.07	72.95
29	Surat	91722.15	9940.29	0.00	38374.66	140037.10	11027.06	129010.04	29698.90	4539.06	18059.54	52297.47	22266.66	78019.81	40.54
30	Surendranagar	61212.51	6964.81	0.00	11709.91	79887.23	4684.29	75202.93	35473.20	255.28	1242.10	36970.57	2931.14	38149.97	49.16
31	Tapi	53519.34	4908.74	0.00	16606.63	75034.71	5766.53	69268.18	20404.40	29.99	494.26	20928.66	864.08	47969.70	30.21
32	Vadodara	69034.08	10153.21	0.00	27990.61	107177.90	6554.11	100623.79	54410.10	2095.01	6443.17	62948.27	6819.85	37298.85	62.56
33	Valsad	52605.31	5312.36	0.00	14570.65	72488.32	7248.84	65239.48	13538.90	307.81	4227.71	18074.39	4608.56	46784.22	27.70
	Total(Ham)	**1899523.32**	**263425.02**	**0.00**	**483231.51**	**2646179.85**	**188068.51**	**2458111.34**	**1209818.54**	**16490.26**	**82403.84**	**1308713**	**103589.02**	**1217600.57**	**53.23**
	Total (Bcm)	**19.00**	**2.63**	**0.00**	**4.83**	**26.46**	**1.88**	**24.58**	**12.10**	**0.16**	**0.82**	**13.09**	**1.04**	**12.18**	**53.23**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
HARYANA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Ambala	25133.77	7742.30	5751.10	6270.60	44897.77	4489.77	40408.00	31289.30	7575.00	6938.35	45802.65	6938.35	3004.62	113.35
2	Bhiwani	16203.00	12338.16	1917.12	11491.16	41949.44	3729.02	38220.42	36509.30	144.00	2612.00	39265.30	2612.00	8730.36	102.73
3	Charkhi Dadri	9601.99	5156.68	1581.13	4410.24	20750.04	2075.01	18675.03	23372.41	28.00	1246.79	24647.22	1246.79	4747.61	131.98
4	Faridabad	5390.76	2873.18	1003.90	2992.24	12260.08	1226.01	11034.07	12842.00	4992.00	4317.60	22151.60	4350.20	0.00	200.76
5	Fatehabad	13188.31	29692.82	924.85	22305.74	66111.72	6245.37	59866.35	106108.30	98.20	1859.58	108066	1859.58	122.19	180.51
6	Gurgaon	9717.56	5080.19	3206.15	4317.30	22321.20	2232.12	20089.08	20620.75	17117.17	5080.66	42818.57	5080.66	0.00	213.14
7	Hisar	20464.74	15628.16	13132.70	21534.25	70759.85	5926.24	64833.61	52871.82	230.22	366.20	53468.24	366.20	18952.40	82.47
8	Jhajjar	9869.56	10265.80	2757.67	10821.82	33714.85	3371.48	30343.37	14716.70	86.00	313.97	15116.67	318.51	15222.16	49.82
9	Jind	22887.06	31453.44	5067.85	29141.33	88549.68	8854.98	79694.70	83174.71	462.70	1965.64	85603.05	2486.54	7101.89	107.41
10	Kaithal	16046.93	17246.48	2786.69	12651.71	48731.81	4649.85	44081.96	79598.55	573.77	4809.02	84981.34	4809.02	0.00	192.78
11	Karnal	24059.02	24848.91	3846.67	28506.02	81260.62	7632.12	73628.50	111256.67	7504.00	8180.99	126942	8181.00	384.43	172.41
12	Kurukshetra	15879.50	12502.13	2636.87	10175.99	41194.49	3768.34	37426.15	67780.88	12575.88	5035.00	85391.76	5035.00	0.00	228.16
13	Mahendragarh	7062.54	3884.44	2350.06	7544.18	20841.22	2084.14	18757.08	24762.24	31.08	2692.00	27485.32	2726.74	73.62	146.53
14	Mewat	7243.84	4445.54	2301.14	4952.04	18942.56	1542.79	17399.77	12220.03	19.91	1696.35	13936.29	1696.35	4345.40	80.09
15	Palwal	9421.83	12710.08	1119.44	15745.08	38996.43	3153.64	35842.79	30876.55	680.60	2201.68	33758.83	2201.68	6874.34	94.19
16	Panchkula	11287.89	1369.60	1650.97	1072.42	15380.88	769.06	14611.82	7459.01	90.00	1143.18	8692.19	1143.18	5919.63	59.49
17	Panipat	9093.39	9589.93	1664.64	12334.42	32682.38	2843.74	29838.64	52897.24	2440.00	2249.80	57587.04	2249.80	0.00	192.99
18	Rewari	10347.05	5592.84	3485.23	9887.71	29312.83	2591.47	26721.36	31922.61	1452.00	1969.53	35344.14	1969.53	265.07	132.27
19	Rohtak	7772.50	9607.65	3476.06	8584.24	29440.45	2944.06	26496.39	14166.66	166.06	435.65	14768.37	446.18	11717.49	55.74
20	Sirsa	20237.43	18917.30	1280.52	22551.11	62986.36	5849.34	57137.02	84771.76	170.14	2456.13	87398.03	2456.13	2388.91	152.96
21	Sonipat	23469.35	22437.04	2918.92	20407.09	69232.40	5920.02	63312.38	62012.69	939.29	2516.63	65468.59	2516.63	11568.55	103.41
22	Yamuna Nagar	20843.31	16024.62	5197.82	15239.66	57305.41	5101.73	52203.68	68446.96	2340.00	4929.52	75716.48	4929.51	2761.95	145.04
	Total(Ham)	**315221.33**	**279407.29**	**70057.50**	**282936.35**	**947622.47**	**87000.30**	**860622.17**	**1029677.15**	**59716.02**	**65016.27**	**1154409**	**65619.58**	**104180.62**	**134.14**
	Total (Bcm)	**3.15**	**2.79**	**0.70**	**2.83**	**9.48**	**0.87**	**8.61**	**10.30**	**0.60**	**0.65**	**11.54**	**0.66**	**1.04**	**134.14**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
HIMACHAL PRADESH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Mandi**	2600.98	38.90	1232.06	44.12	3916.06	391.60	3524.46	262.92	0.00	849.91	1112.83	849.91	2411.62	31.57
2	**Kangra**	31620.79	7172.68	7168.78	8690.56	54652.81	5465.28	49187.53	5653.21	40.71	5669.52	11363.44	5669.52	37824.09	23.10
3	**Una**	12092.39	1959.78	2887.97	2284.49	19224.63	1007.88	18216.75	8785.67	178.15	3041.56	12005.38	3041.56	6211.37	65.90
4	**Sirmour**	8076.66	102.81	736.77	121.77	9038.01	830.02	8207.99	730.64	287.60	962.05	1980.29	962.05	6227.70	24.13
5	**Solan**	6071.09	4256.62	1661.15	4303.49	16292.35	1629.23	14663.12	2651.37	4917.46	1197.20	8766.03	1197.20	5897.09	59.78
	Total(Ham)	**60461.91**	**13530.79**	**13686.73**	**15444.43**	**103123.86**	**9324.01**	**93799.85**	**18083.81**	**5423.92**	**11720.23**	**35227.97**	**11720.24**	**58571.87**	**37.56**
	Total (Bcm)	**0.60**	**0.14**	**0.14**	**0.15**	**1.03**	**0.09**	**0.94**	**0.18**	**0.05**	**0.12**	**0.35**	**0.12**	**0.59**	**37.56**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
JHARKHAND															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge									
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources				Irrigation	Industrial	Domestic	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Bokaro**	26492.83	1458.23	2491.48	1064.96	31507.50	2552.12	28955.38	2393.00	2057.92	4383.14	8834.06	4406.13	20653.26	30.51
2	**Chatra**	23924.07	2121.11	615.62	1932.44	28593.24	2492.33	26100.91	6112.00	869.94	1930.34	8912.29	1940.46	17178.49	34.15
3	**Deoghar**	11905.05	1352.72	1453.81	1354.58	16066.16	1083.07	14983.09	4861.25	0.00	2872.61	7733.85	2887.67	7234.17	51.62
4	**Dhanbad**	18474.67	3133.05	1675.71	3116.58	26400.01	1934.22	24465.80	2598.00	9882.08	5889.85	18369.94	5920.74	6259.39	75.08
5	**Dumka**	18072.79	2852.28	3381.78	1619.30	25926.15	2295.38	23630.77	3749.75	23.62	2452.79	6226.16	2465.65	17391.75	26.35
6	**East Singhbhum**	23683.53	1469.56	2836.78	1350.14	29340.01	2624.34	26715.67	1860.00	758.04	4994.22	7612.30	5020.41	19912.21	28.49
7	**Garhwa**	25245.76	2399.02	1051.99	2343.56	31040.33	2485.74	28554.59	7531.88	60.53	2327.61	9920.02	2339.79	18622.39	34.74
8	**Giridih**	33815.68	3009.81	2291.70	2546.32	41663.51	3179.96	38483.55	9022.88	955.96	4566.26	14545.08	4590.20	23914.52	37.80
9	**Godda**	16061.81	1757.05	1899.42	1032.54	20750.82	1817.95	18932.86	1869.00	258.60	2421.71	4549.30	2434.43	14370.85	24.03
10	**Gumla**	29607.86	707.35	3257.62	998.65	34571.48	2878.74	31692.74	3789.50	12.54	1800.64	5602.65	1810.09	26080.63	17.68
11	**Hazaribagh**	25540.27	2124.46	2488.63	2478.76	32632.12	3029.74	29602.38	7851.38	470.25	3322.84	11644.48	3340.24	17940.51	39.34
12	**Jamtara**	5908.03	1368.34	827.22	947.70	9051.29	723.21	8328.08	2280.25	10.16	1482.62	3773.01	1490.39	4547.30	45.30
13	**Khunti**	9644.48	658.81	1201.58	738.68	12243.55	975.87	11267.68	2385.00	12.59	992.98	3390.57	998.18	7871.90	30.09
14	**Koderma**	4911.11	374.86	444.05	623.10	6353.12	438.78	5914.34	2468.88	50.31	1390.32	3909.50	1397.61	1997.54	66.10
15	**Latehar**	18657.39	2498.15	1522.63	1915.24	24593.41	1758.10	22835.31	5109.00	105.74	1350.86	6565.59	1357.96	16262.61	28.75
16	**Lohardaga**	16179.86	505.26	1478.73	590.30	18754.15	1536.50	17217.65	1833.50	8.17	874.21	2715.87	878.78	14497.20	15.77
17	**Pakur**	17618.97	1425.70	2956.84	908.50	22910.01	1859.12	21050.89	1911.50	28.46	1525.24	3465.22	1533.24	17577.67	16.46
18	**Palamau**	26639.99	6359.20	1100.21	2515.88	36615.28	2931.45	33683.83	7094.50	217.36	3662.34	10974.22	3681.55	22690.40	32.58
19	**Ramgarh**	8451.39	1055.57	836.24	1121.48	11464.68	610.68	10854.00	1428.25	2958.23	1995.57	6382.07	2006.04	4475.02	58.80
20	**Ranchi**	29606.56	2608.08	3327.75	3302.63	38845.02	2852.86	35992.16	9584.63	1694.99	6106.30	17385.90	6138.30	18574.24	48.30
21	**Sahebganj**	21717.52	2920.80	2398.89	1390.49	28427.70	2586.50	25841.20	2207.00	50.29	2189.06	4446.34	2200.55	21383.37	17.21
22	**Saraikela Kharsawan**	14533.06	791.54	1675.59	525.20	17525.39	1752.55	15772.83	1099.50	527.18	2099.43	3726.10	2110.44	12035.73	23.62
23	**Simdega**	21826.05	569.18	837.59	626.96	23859.78	1856.46	22003.32	2034.00	0.00	1114.24	3148.24	1120.10	18849.21	14.31
24	**West Singhbhum**	42995.44	1443.17	5742.08	914.79	51095.48	4742.87	46352.61	1707.50	29.84	2864.63	4601.97	2879.66	41735.60	9.93
	Total(Ham)	**491514.17**	**44963.30**	**47793.94**	**35958.78**	**620230.19**	**50998.54**	**569231.64**	**92782.13**	**21042.79**	**64609.80**	**178434.7**	**64948.61**	**392055.96**	**31.35**
	Total (Bcm)	**4.92**	**0.45**	**0.48**	**0.36**	**6.20**	**0.51**	**5.69**	**0.93**	**0.21**	**0.65**	**1.78**	**0.65**	**3.92**	**31.35**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022

KARNATAKA

S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Bagalkot	20815.70	20716.07	2491.11	25458.96	69481.84	6878.51	62603.33	48128.09	28.29	4341.51	52497.89	4601.51	19587.32	83.86
2	Ballari	14602.34	22225.01	2106.68	15325.90	54259.93	5425.99	48833.94	13813.00	370.43	1901.23	16084.66	2108.96	32755.75	32.94
3	Belagavi	49274.92	28640.44	15178.09	38789.67	131883.12	11621.39	120261.73	64409.15	532.84	11400.43	76342.47	13217.96	48185.44	63.48
4	Bengaluru (Rural)	8766.09	2507.73	5310.55	5047.09	21631.46	2163.15	19468.31	25567.50	779.89	2370.77	28718.14	2572.12	0.00	147.51
5	Bengaluru (Urban)	10129.05	4108.95	3571.37	5627.53	23436.90	2218.54	21218.36	20607.30	7825.80	3486.32	31919.40	3659.66	0.00	150.43
6	Bidar	29205.64	3212.38	421.07	3625.47	36464.56	3646.48	32818.08	15451.96	49.30	4291.20	19792.45	4487.09	13090.40	60.31
7	Chamarajanagara	19547.63	3721.54	5574.73	8926.72	37770.62	3017.46	34753.15	33874.78	0.00	2622.74	36497.51	3173.32	2697.38	105.02
8	Chikkaballapura	18477.23	5064.36	3408.39	9170.21	36120.19	3612.03	32508.16	44523.62	95.52	2959.38	47578.52	3150.21	0.00	146.36
9	Chikkamagaluru	34312.73	12107.95	3294.74	8473.14	58188.56	5414.21	52774.35	30795.46	0.15	2446.21	33241.82	2625.54	23839.70	62.99
10	Chitradurga	25224.24	4888.02	5842.36	7129.94	43084.56	4308.46	38776.10	50626.11	77.43	3827.57	54531.13	4073.87	1696.01	140.63
11	Dakshina Kannada	50741.81	3490.44	9919.39	5997.11	70148.75	5954.46	64194.29	23217.05	40.16	5062.72	28319.93	5501.60	35435.48	44.12
12	Davanagere	15635.07	24891.25	3176.25	13568.05	57270.62	5727.06	51543.56	46059.55	228.05	3589.92	49877.52	3732.26	14745.93	96.77
13	Dharwad	15491.88	6299.56	3932.80	6577.08	32301.32	3138.89	29162.43	14554.25	68.86	2967.56	17590.68	3099.47	11439.85	60.32
14	Gadag	12164.49	8027.82	4837.47	5299.20	30328.98	3032.86	27296.11	23143.30	26.52	649.95	23819.77	733.62	6265.61	87.26
15	Hassan	31984.14	25574.57	1862.08	21713.12	81133.91	7996.83	73137.08	47882.71	42.97	3014.68	50940.36	3142.70	26078.22	69.65
16	Haveri	18103.19	22194.34	6383.89	7116.35	53797.77	5379.78	48417.98	31582.72	73.02	1908.91	33564.62	2184.68	16345.36	69.32
17	Kalburgi	55729.26	5484.76	1066.01	7712.05	69992.08	6324.94	63667.13	19401.89	45.00	7031.39	26478.31	7653.22	37036.50	41.59
18	Kodagu	23258.13	3980.99	25.46	2935.12	30199.70	3019.99	27179.71	8668.35	233.15	915.53	9817.03	956.23	17321.98	36.12
19	Kolara	17117.20	5127.59	4241.57	16467.01	42953.37	4295.35	38658.02	66184.83	64.61	4051.17	70300.60	4297.60	0.00	181.85
20	Koppal	17246.09	37974.36	2302.21	14542.74	72065.40	6965.56	65099.83	32420.93	50.76	2713.89	35185.58	2926.84	29862.17	54.05
21	Mandya	21109.73	23742.68	2384.58	23957.94	71194.93	6595.39	64599.53	36219.99	66.85	3906.96	40193.83	4003.43	27007.40	62.22
22	Mysuru	28455.85	18468.62	3173.10	9882.01	59979.58	5685.99	54293.59	28649.29	37.37	3934.15	32620.84	4230.42	21376.48	60.08
23	Raichur	28479.91	35839.60	3760.45	5127.14	73207.10	7163.10	66043.99	27550.24	64.08	3075.74	30690.07	3478.95	37277.80	46.47
24	Ramanagara	15725.37	13939.94	6360.56	8329.13	44355.00	4435.48	39919.51	34752.43	541.08	3080.53	38374.02	3348.15	3638.53	96.13
25	Shivamogga	65601.33	20583.08	1291.51	12334.00	99809.92	9210.17	90599.76	35933.72	257.25	2660.77	38851.74	2749.97	51658.82	42.88
26	Tumakuru	42974.00	13295.16	9353.24	14474.02	80096.42	7669.51	72426.91	62344.17	59.09	6111.28	68514.54	6472.48	14643.80	94.60
27	Udupi	43394.11	2224.12	627.89	3449.35	49695.47	4969.55	44725.92	13556.32	35.92	2081.47	15673.71	2144.62	28989.06	35.04
28	Uttara Kannada	80799.67	3866.01	1196.29	4586.19	90448.16	8737.58	81710.58	23568.76	31.91	3106.64	26707.26	3194.97	54914.98	32.69
29	Vijayanagara	20455.72	6609.46	3441.07	7052.82	37559.07	3600.14	33958.93	28373.26	22.31	2180.17	30575.74	2326.63	7193.59	90.04
30	Vijayapura	38403.99	15441.22	640.86	12732.42	67218.49	6515.24	60703.25	33213.72	15.51	4952.40	38181.59	5237.48	26976.99	62.90
31	Yadgir	9490.64	24797.72	1490.02	12039.07	47817.45	4781.73	43035.73	15570.05	799.32	2127.37	18496.74	2318.99	24347.37	42.98
	Total(Ham)	**882717.15**	**429045.74**	**118665.79**	**343466.55**	**1773895.23**	**169505.82**	**1604389.35**	**1000644.50**	**12563.44**	**108770.56**	**1121978**	**117404.55**	**634407.92**	**69.93**
	Total (Bcm)	**8.83**	**4.29**	**1.19**	**3.43**	**17.74**	**1.70**	**16.04**	**10.01**	**0.13**	**1.09**	**11.22**	**1.17**	**6.34**	69.93

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
KERALA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Alappuzha**	30659.33	428.56	4253.60	6806.01	42147.50	3187.59	38959.91	3859.51	261.04	10097.11	14217.67	10454.89	24384.45	36.49
2	**Ernakulam**	36372.97	1330.04	6210.85	7020.53	50934.39	4985.10	45949.29	8156.49	185.98	14295.39	22637.83	19055.84	18551.02	49.27
3	**Idukki**	18159.66	325.44	651.66	1870.20	21006.96	2100.69	18906.27	6066.22	13.26	4236.32	10315.81	4236.33	8590.46	54.56
4	**Kannur**	39421.13	967.64	1346.60	3933.76	45669.13	4566.93	41102.20	8410.38	31.47	11272.53	19714.37	14322.08	18508.14	47.96
5	**Kasargod**	30515.96	1404.58	538.99	4564.95	37024.48	3702.44	33322.04	16921.26	22.76	7099.77	24043.78	11314.57	6042.36	72.16
6	**Kollam**	26822.18	807.87	6931.05	2741.75	37302.85	3496.98	33805.87	5098.50	18.84	11756.77	16874.12	12609.60	16078.92	49.91
7	**Kottayam**	30404.51	801.79	4267.28	5631.29	41104.87	3816.47	37288.40	5049.87	3.03	8705.07	13758.00	9194.25	23041.22	36.90
8	**Kozhikkode**	31458.55	412.39	1320.68	1474.70	34666.32	3466.62	31199.70	4864.69	7.09	13994.68	18866.48	20923.94	6943.58	60.47
9	**Malappuram**	39837.53	1175.49	4366.39	7950.73	53330.14	5049.86	48280.28	9441.88	4.19	24142.76	33588.85	55023.80	14691.43	69.57
10	**Palakkad**	31253.32	4197.20	3947.42	24787.04	64184.98	5203.20	58981.78	18443.00	605.54	14886.89	33935.44	22382.17	20011.82	57.54
11	**Pathanamthitta**	18427.02	563.84	5570.63	2008.87	26570.36	2657.03	23913.33	3866.07	0.04	4275.73	8141.82	4275.73	15771.51	34.05
12	**Thiruvananthapuram**	20160.09	611.13	6055.32	2717.80	29544.34	2855.30	26689.04	5068.10	6.36	12339.65	17414.13	13568.35	8046.20	65.25
13	**Thrissur**	47993.95	1063.61	1440.02	14465.15	64962.73	6315.36	58647.37	20148.86	39.02	13696.87	33884.72	17127.38	21332.16	57.78
14	**Wayanad**	23568.61	442.26	6.18	684.42	24701.47	2470.16	22231.31	1355.68	158.66	4031.59	5545.93	5047.47	15669.49	24.95
	Total(Ham)	**425054.81**	**14531.84**	**46906.67**	**86657.20**	**573150.52**	**53873.73**	**519276.79**	**116750.53**	**1357.27**	**154831.13**	**272939.0**	**219536.40**	**217662.76**	**52.56**
	Total (Bcm)	**4.25**	**0.15**	**0.47**	**0.87**	**5.73**	**0.54**	**5.19**	**1.17**	**0.01**	**1.55**	**2.73**	**2.20**	**2.18**	**52.56**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
MADHYA PRADESH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Agar Malwa**	31776.82	2422.56	0.00	9006.29	43205.67	3120.00	40085.67	34666.65	1.95	1642.32	36310.90	1766.32	6452.45	90.58
2	**Alirajpur**	17686.87	653.24	0.00	1724.58	20064.69	1481.88	18582.81	6722.33	0.00	1880.47	8602.79	2049.42	9811.08	46.29
3	**Anuppur**	27355.50	112.58	2107.10	313.19	29888.37	1883.83	28004.54	1483.55	3024.63	1545.72	6053.90	1623.03	21873.33	21.62
4	**Ashoknagar**	29505.48	2117.15	0.00	7988.11	39610.74	3206.13	36404.61	21381.39	1.39	1798.37	23181.16	1927.85	13093.97	63.68
5	**Balaghat**	69939.69	3740.36	224.20	2938.53	76842.78	6056.86	70785.92	12657.22	241.32	3806.15	16704.73	4018.37	53868.98	23.60
6	**Barwani**	33850.42	3477.79	0.00	19163.66	56491.87	4177.27	52314.59	33377.29	37.99	3650.65	37065.94	4139.91	19653.95	70.85
7	**Betul**	89403.25	3393.80	1011.00	13368.09	107176.14	7931.53	99244.60	44632.80	162.06	3680.45	48475.30	3917.52	50532.22	48.84
8	**Bhind**	80016.45	1911.58	0.00	17968.21	99896.24	8601.90	91294.34	25560.23	99.48	3513.13	29172.84	3758.17	61876.46	31.95
9	**Bhopal**	32718.14	2401.70	0.00	6591.06	41710.90	2848.89	38862.01	23916.38	679.14	5011.46	29606.96	5584.57	8681.94	76.18
10	**Burhanpur**	27520.45	2499.47	264.63	7100.11	37384.66	2778.96	34605.71	21940.49	35.07	1699.23	23674.78	1859.14	10771.02	68.41
11	**Chhatarpur**	66519.26	4966.39	0.00	17202.70	88688.35	7222.70	81465.66	49738.65	79.68	3054.48	52872.80	3324.12	28467.72	64.90
12	**Chhindwara**	87998.93	4149.61	604.31	13311.65	106064.50	6990.72	99073.78	55777.43	556.56	5331.68	61665.69	5674.98	37064.80	62.24
13	**Damoh**	27821.98	1994.76	0.00	8999.24	38815.98	2738.83	36077.15	18559.59	298.68	2298.40	21156.64	2735.18	14483.71	58.64
14	**Datia**	35693.41	775.09	0.00	7149.88	43618.38	3314.09	40304.29	12811.18	29.56	1737.15	14577.93	1894.54	25568.97	36.17
15	**Dewas**	65335.06	5260.95	0.00	15701.57	86297.58	5592.73	80704.84	60357.41	88.94	4235.37	64681.73	4579.59	18107.71	80.15
16	**Dhar**	86011.31	6889.43	0.00	45143.46	138044.20	9402.42	128641.78	77091.59	611.86	5959.37	83662.84	6648.40	55506.34	65.04
17	**Dindori**	33408.08	137.49	288.23	488.57	34322.37	1716.11	32606.26	2316.18	0.00	1817.05	4133.23	1986.42	28303.68	12.68
18	**Guna**	62986.72	4265.53	0.00	14776.40	82028.65	5371.44	76657.21	47608.79	75.79	2491.29	50175.90	2715.98	26256.62	65.45
19	**Gwalior**	55528.25	7726.72	0.00	18023.66	81278.63	6407.79	74870.84	18052.15	463.04	5380.65	23895.85	6003.22	50352.41	31.92
20	**Harda**	28135.61	2912.01	0.00	15854.95	46902.57	3989.89	42912.68	14405.04	16.17	1223.77	15644.99	1330.85	27160.61	36.46
21	**Hoshangabad**	127456.41	7473.28	0.00	41150.61	176080.30	14464.56	161615.74	40065.19	9.12	2223.77	42298.05	2355.80	119185.67	26.17
22	**Indore**	41531.29	4325.20	0.00	12416.40	58272.89	5272.94	52999.95	54421.57	1639.60	7692.68	63753.84	8966.30	2391.77	120.29
23	**Jabalpur**	52553.45	3137.80	0.00	8649.18	64340.43	4613.64	59726.79	25147.29	375.90	5721.46	31244.65	6466.18	28300.73	52.31
24	**Jhabua**	19325.56	1138.49	0.00	4607.66	25071.71	1722.79	23348.92	8063.29	1.85	2748.67	10813.80	3147.85	12135.94	46.31
25	**Katni**	33540.81	1637.48	0.00	4560.65	39738.94	2502.20	37236.74	14014.73	782.62	2739.34	17536.65	2996.11	19443.33	47.10
26	**Khandwa**	57457.18	4169.68	0.00	52628.34	114255.20	8884.35	105370.85	40541.57	53.99	2977.29	43572.82	3243.92	61531.41	41.35
27	**Khargone**	54615.20	5667.27	0.00	36845.16	97127.63	5028.26	92099.37	37725.95	162.74	4247.83	42136.50	4648.28	49562.40	45.75
28	**Mandla**	40583.29	881.38	865.06	4000.27	46330.00	2739.31	43590.69	7008.26	0.80	2500.57	9509.63	2690.49	33891.15	21.82
29	**Mandsaur**	47747.59	6768.52	0.00	17841.42	72357.53	7235.74	65121.79	63718.33	27.99	3423.61	67169.93	3617.52	7104.73	103.15
30	**Morena**	50113.45	1178.17	0.00	17666.63	68958.25	5762.03	63196.22	19963.18	691.53	5781.16	26435.82	6348.42	36193.14	41.83

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
MADHYA PRADESH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
31	Narsinghpur	100963.90	3189.41	0.00	15963.13	120116.44	9312.82	110803.62	72947.95	0.00	2319.45	75267.39	2452.96	35402.71	67.93
32	Neemuch	28918.55	2208.63	0.00	7870.98	38998.16	3899.81	35098.35	34072.98	29.85	1748.39	35851.23	1846.20	2431.96	102.15
33	Niwari	14439.98	1238.22	0.00	3836.99	19515.19	1514.17	18001.02	11520.12	5.79	1099.21	12625.12	1339.31	5135.80	70.14
34	Panna	47301.36	1304.77	0.00	6086.81	54692.94	5091.49	49601.45	15770.99	97.86	2439.88	18308.74	2635.57	31097.02	36.91
35	Raisen	78466.31	3449.94	0.00	10280.27	92196.52	7045.91	85150.61	42627.95	532.64	3354.24	46514.82	3727.52	38262.51	54.63
36	Rajgarh	71600.81	4461.36	0.00	15643.07	91705.24	4585.26	87119.98	73778.17	0.81	4038.24	77817.23	4534.90	9806.02	89.32
37	Ratlam	54340.50	7111.07	0.00	22676.75	84128.32	8047.49	76080.83	99438.31	41.35	4304.82	103784.5	6066.10	1949.00	136.41
38	Rewa	44896.83	1840.38	283.37	7162.94	54183.52	4697.22	49486.30	21403.04	185.73	5561.24	27149.99	6185.05	21712.50	54.86
39	Sagar	93233.55	3913.18	0.00	14488.99	111635.72	8451.49	103184.22	56806.95	80.78	3753.90	60641.65	4089.76	42206.71	58.77
40	Satna	54387.41	2327.90	1151.73	13900.15	71767.19	5254.69	66512.51	37758.15	108.38	4692.90	42559.47	5077.31	25653.71	63.99
41	Sehore	55667.23	3541.16	0.00	14219.47	73427.86	6243.10	67184.76	38894.50	117.47	2484.78	41496.74	2714.97	25502.91	61.77
42	Seoni	64628.13	2002.30	2284.48	6369.10	75284.01	5658.51	69625.50	24964.82	3.08	3278.80	28246.69	3532.72	41124.89	40.57
43	Shahdol	52740.68	308.23	1305.53	1114.55	55468.99	3079.42	52389.57	3124.57	1485.11	2274.39	6884.07	2440.47	45339.41	13.14
44	Shajapur	41656.19	3173.45	0.00	10898.85	55728.49	4233.15	51495.34	52782.83	54.55	2154.29	54991.68	2288.53	2296.98	106.79
45	Sheopur	32266.67	1132.80	0.00	11512.19	44911.66	3560.13	41351.53	16743.16	44.79	1784.97	18572.93	1968.51	22595.05	44.91
46	Shivpuri	66972.23	3699.46	0.00	14908.13	85579.82	7104.52	78475.30	48288.67	40.59	4585.16	52914.40	5048.85	25097.21	67.43
47	Sidhi	29499.26	763.78	392.30	2801.76	33457.10	2545.01	30912.09	7552.41	806.57	2854.72	11213.69	3157.52	19395.60	36.28
48	Singrauli	31486.31	705.09	0.00	2386.89	34578.29	1728.91	32849.38	8979.76	2714.60	2601.11	14295.48	2945.75	18209.26	43.52
49	Tikamgarh	28852.25	2536.53	0.00	8216.17	39604.95	3481.57	36123.38	26734.19	0.00	2984.52	29718.71	3746.52	5642.67	82.27
50	Ujjain	72670.78	5764.40	0.00	21493.06	99928.24	8326.69	91601.55	95485.93	32.92	3842.94	99361.77	4104.22	9318.59	108.47
51	Umaria	33759.58	392.98	659.44	1008.87	35820.87	3582.10	32238.77	4294.94	539.84	1541.24	6376.02	1714.96	25689.02	19.78
52	Vidisha	74532.36	2896.03	0.00	13418.94	90847.33	5977.00	84870.33	51046.00	0.15	3906.85	54952.98	4260.54	29563.66	64.75
	Total(Ham)	**2687416.78**	**156146.55**	**11441.38**	**669438.29**	**3524443.00**	**266480.25**	**3257962.74**	**1738742.09**	**17172.30**	**169419.59**	**1925334**	**187896.69**	**1421061.43**	**59.10**
	Total (Bcm)	**26.87**	**1.56**	**0.11**	**6.69**	**35.24**	**2.66**	**32.58**	**17.39**	**0.17**	**1.69**	**19.25**	**1.88**	**14.21**	**59.10**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
MAHARASHTRA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Ahmednagar	86451.73	13325.98	14393.47	45925.63	160096.81	8266.85	151829.96	114588.35	0.00	6196.74	120785.1	6196.76	42101.62	79.55
2	Akola	28337.67	1473.19	207.45	8693.07	38711.38	2511.19	36200.20	21544.03	0.00	2254.58	23798.61	2254.58	12479.84	65.74
3	Amravati	53890.99	4699.72	1225.09	26887.84	86703.65	6271.13	80432.52	71104.72	0.00	4461.69	75566.49	4461.71	17898.63	93.95
4	Aurangabad	67626.40	7120.07	334.37	31424.64	106505.48	5386.69	101118.79	69352.38	0.00	3462.54	72814.94	3462.48	28303.88	72.01
5	Beed	81948.94	8241.62	6208.58	32928.78	129327.92	6466.44	122861.48	68222.20	0.00	4774.52	72996.83	4774.45	49864.65	59.41
6	Bhandara	32094.50	45169.99	417.80	15965.57	93647.86	7209.50	86438.36	22414.31	37.89	3649.06	26101.27	3649.06	60337.09	30.20
7	Buldhana	64815.73	5249.79	263.73	21736.06	92065.32	5587.80	86477.52	65197.36	0.00	3254.40	68451.82	3254.42	21021.39	79.16
8	Chandrapur	99008.21	4999.20	1471.98	11686.46	117165.85	6321.14	110844.71	14925.01	0.00	17223.27	32148.34	17223.28	78696.36	29.00
9	Dhule	45031.00	7105.95	493.86	20785.34	73416.15	4141.72	69274.43	33653.89	3.25	1754.56	35411.69	1754.55	33862.74	51.12
10	Gadchiroli	94296.65	3316.89	0.00	10239.42	107852.97	6121.67	101731.30	21046.00	0.00	3714.93	24761.01	3714.92	76970.29	24.34
11	Gondia	42819.38	6703.14	645.57	16408.51	66576.60	4260.87	62315.73	10153.58	297.06	5909.95	16360.58	5909.92	45955.15	26.25
12	Hingoli	49540.95	2968.56	1357.87	48217.51	102084.89	5120.79	96964.10	36287.09	2.53	2159.14	38448.77	2159.14	58515.33	39.65
13	Jalgaon	89678.79	6694.80	574.12	46109.78	143057.49	7522.48	135535.01	101162.32	0.00	4887.81	106050.1	4887.79	35831.35	78.25
14	Jalna	58054.49	2918.66	115.46	22359.31	83447.92	4449.91	78998.01	41634.48	0.00	1397.04	43031.55	1397.01	35966.45	54.47
15	Kolhapur	54090.32	10023.37	780.56	71556.22	136450.47	8661.49	127788.98	52140.35	0.00	2075.22	54215.60	2075.22	73573.38	42.43
16	Latur	45502.97	6913.21	0.00	15902.77	68318.95	3510.18	64808.77	33580.73	0.00	2142.34	35723.04	2142.33	29770.07	55.12
17	Nagpur	66613.36	7557.73	2574.93	20024.40	96770.42	5292.77	91477.65	35711.68	0.00	10292.77	46004.41	10292.79	45473.22	50.29
18	Nanded	102210.24	974.83	3719.98	17520.68	124425.73	6221.34	118204.39	34865.24	1.21	3344.05	38210.49	3344.07	80017.12	32.33
19	Nandurbar	40052.91	2794.74	338.32	8900.68	52086.65	3208.06	48878.59	17098.31	0.00	2991.79	20090.11	2991.79	28806.70	41.10
20	Nashik	133903.68	13445.03	0.00	48126.87	195475.58	11106.36	184369.22	104646.41	0.00	3593.64	108240.0	3593.61	83126.59	58.71
21	Osmanabad	61109.36	6445.35	2583.65	15716.20	85854.56	4292.80	81561.76	48272.70	0.00	2315.87	50588.61	2315.85	31142.92	62.02
22	Palghar	18306.25	280.34	0.00	3346.47	21933.06	1397.27	20535.79	3866.25	0.00	967.97	4834.22	967.99	15701.57	23.54
23	Parbhani	57932.33	1785.50	645.43	26071.85	86435.11	4730.54	81704.57	36212.33	0.00	1950.18	38162.49	1950.17	43542.11	46.71
24	Pune	93292.27	19431.62	1186.25	67959.96	181870.10	10683.24	171186.86	112066.91	0.00	8174.04	120240.9	8174.07	59685.60	70.24
25	Raigad	31665.74	408.28	0.00	5510.32	37584.34	1917.42	35666.92	4352.55	0.00	2014.90	6367.45	2014.89	29299.47	17.85
26	Ratnagiri	38638.43	169.31	18.49	2171.15	40997.38	2283.14	38714.24	5349.37	0.00	1305.71	6655.07	1305.73	32059.17	17.19
27	Sangli	53213.50	21435.03	128.40	65619.72	140396.65	10253.51	130143.14	69312.18	0.00	3301.99	72614.19	3301.96	58410.31	55.80
28	Satara	53532.08	12810.88	3744.03	34605.20	104692.19	6504.42	98187.77	58292.50	0.00	4849.88	63142.47	4849.90	35045.27	64.31
29	Sindhudurg	20759.03	188.35	3.83	2203.03	23154.24	1165.37	21988.87	7264.73	0.00	2218.30	9483.01	2218.29	12505.86	43.13
30	Solapur	92165.43	10918.97	2954.03	40097.90	146136.33	7306.88	138829.45	102903.47	0.00	4853.01	107756.5	4853.01	38061.07	77.62
31	Thane	14820.55	285.66	0.00	2228.47	17334.68	965.10	16369.58	2397.66	0.00	713.64	3111.28	713.64	13258.30	19.01
32	Wardha	60174.95	1438.93	1439.84	21868.73	84922.45	4697.50	80224.95	42164.61	0.00	3409.80	45574.47	3409.83	34650.46	56.81
33	Washim	42821.35	2830.28	68.85	12839.17	58559.65	3052.50	55507.15	31347.01	0.00	2026.09	33373.10	2026.12	22134.05	60.12
34	Yawatmal	97298.70	2941.89	5825.78	18245.56	124311.93	6717.20	117594.73	36131.06	0.00	7535.24	43666.28	7535.24	73928.76	37.13
	Total(Ham)	**2071698.88**	**243066.87**	**53721.73**	**859883.27**	**3228370.75**	**183605.26**	**3044765.49**	**1529261.77**	**341.94**	**135176.64**	**1664781**	**135176.57**	**1437996.77**	**54.68**
	Total (Bcm)	**20.72**	**2.43**	**0.54**	**8.60**	**32.28**	**1.84**	**30.45**	**15.29**	**0.00**	**1.35**	**16.65**	**1.35**	**14.38**	**54.68**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
MANIPUR															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Bishnupur**	9572.60	0.06	2257.53	83.68	11913.87	1191.38	10722.49	327.00	0.00	281.04	608.05	290.93	10104.55	5.67
2	**Churachanpur**	6707.10	0.00	1510.99	69.00	8287.09	828.71	7458.38	270.00	0.00	191.07	461.07	192.05	6996.33	6.18
3	**Imphal East**	11895.89	63.52	2713.54	269.66	14942.61	1494.26	13448.35	555.00	18.00	500.25	1073.25	502.75	12372.60	7.98
4	**Imphal West**	6297.13	0.01	2327.91	74.33	8699.38	869.93	7829.45	285.00	6.00	568.19	859.19	571.06	6967.39	10.97
5	**Thoubal**	5799.77	0.02	2075.40	62.27	7937.46	793.75	7143.71	240.00	0.00	463.06	703.05	465.39	6438.33	9.84
	Total (Ham)	**40272.49**	**63.61**	**10885.37**	**558.94**	**51780.41**	**5178.03**	**46602.38**	**1677.00**	**24.00**	**2003.61**	**3704.61**	**2022.18**	**42879.20**	**7.95**
	Total (Bcm)	**0.40**	**0.00**	**0.11**	**0.01**	**0.52**	**0.05**	**0.47**	**0.02**	**0.00**	**0.02**	**0.04**	**0.02**	**0.43**	**7.95**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
MEGHALAYA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	East Garo Hills	5179.45	177.94	1564.51	1.15	6923.05	692.31	6230.74	0.00	0.00	431.87	431.87	481.84	5748.90	6.93
2	East Jaintia Hills	7091.21	0.22	3048.81	0.63	10140.87	1014.08	9126.79	0.00	27.90	179.76	207.65	208.68	8890.22	2.28
3	East Khasi Hills	13362.95	23.82	4528.55	2.96	17918.28	1791.83	16126.45	0.00	0.00	416.09	416.10	452.81	15673.63	2.58
4	Greater Shillong	2120.01	0.00	578.68	2.59	2701.28	135.06	2566.22	0.00	9.91	306.72	316.63	353.80	2202.51	12.34
5	North Garo Hills	13499.28	3.08	2478.78	3.35	15984.49	1598.45	14131.19	51.00	0.00	455.64	506.63	508.68	13571.52	3.59
6	Ri-Bhoi	5198.50	73.51	1371.34	9.41	6652.76	665.28	5987.48	0.00	16.70	352.76	369.46	455.25	5515.53	6.17
7	South Garo Hills	13916.32	38.27	5862.89	15.45	19832.93	1983.29	17849.64	1.50	0.00	281.68	283.17	327.47	17520.68	1.59
8	South West Garo Hillls	3473.81	98.86	1101.96	106.86	4781.49	478.15	2696.05	197.51	0.00	278.39	475.89	312.55	2186.00	17.65
9	South West Khasi Hills	6943.64	6.23	1986.65	0.44	8936.96	893.70	8043.26	0.00	0.00	137.73	137.73	158.23	7885.03	1.71
10	West Garo Hills	23974.52	505.39	7970.25	27.68	32477.84	3247.78	27032.82	0.00	0.60	1121.63	1122.22	1260.45	25771.78	4.15
11	West Jaintia Hills	10675.48	3.26	4589.84	7.51	15276.09	1527.61	13748.48	8.50	10.00	595.31	613.81	679.77	13050.21	4.46
12	West Khasi Hills	24023.87	38.36	6780.07	1.53	30843.83	3084.38	27759.45	0.00	0.00	484.05	484.05	550.86	27208.59	1.74
	Total(Ham)	**129459.04**	**968.94**	**41862.33**	**179.56**	**172469.87**	**17111.92**	**151298.57**	**258.51**	**65.11**	**5041.61**	**5365.21**	**5750.39**	**145224.60**	**3.55**
	Total (Bcm)	**1.29**	**0.01**	**0.42**	**0.00**	**1.72**	**0.22**	**1.51**	**0.00**	**0.00**	**0.05**	**0.05**	**0.06**	**1.45**	**3.55**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
MIZORAM															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Aizawl**	1295.18	0.00	340.61	0.00	1635.79	163.58	1472.21	0.00	0.00	206.95	206.95	229.32	1242.89	14.06
2	**Champhai**	1448.21	0.00	261.16	0.00	1709.37	170.92	1538.45	0.00	0.00	46.70	46.69	49.88	1488.58	3.03
3	**Kolasib**	2276.22	0.00	504.37	0.00	2780.59	278.05	2502.54	0.00	0.00	32.54	32.54	36.39	2466.14	1.30
4	**Lawngtlai**	2958.07	0.00	289.74	0.00	3247.81	324.79	2923.02	0.00	0.00	105.87	105.87	123.67	2799.35	3.62
5	**Lunglei**	5011.78	0.00	468.08	0.00	5479.86	547.99	4931.87	0.00	0.00	202.31	202.32	212.41	4719.44	4.10
6	**Mamit**	4367.49	0.00	1241.52	0.00	5609.01	560.89	5048.12	0.00	0.00	103.97	103.97	123.16	4924.95	2.06
7	**Saiha**	723.99	0.00	84.81	0.00	808.80	80.88	727.92	0.00	0.00	42.07	42.08	45.65	682.27	5.78
8	**Serchhip**	785.47	0.00	116.21	0.00	901.68	90.18	811.50	0.00	0.00	50.24	50.24	54.36	757.14	6.19
	Total(Ham)	**18866.41**	**0.00**	**3306.50**	**0.00**	**22172.91**	**2217.28**	**19955.63**	**0.00**	**0.00**	**790.65**	**790.66**	**874.84**	**19080.76**	**3.96**
	Total (Bcm)	**0.19**	**0.00**	**0.03**	**0.00**	**0.22**	**0.02**	**0.20**	**0.00**	**0.00**	**0.01**	**0.01**	**0.01**	**0.19**	**3.96**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
NAGALAND															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Dimapur	13602.63	12484.44	2358.74	800.61	29246.42	2924.65	26321.77	199.76	1.44	847.00	1048.20	933.25	25187.32	3.98
2	Kiphire	127.82	0.00	56.56	0.00	184.38	18.44	165.94	0.00	0.00	10.67	10.67	10.67	155.27	6.43
3	Kohima	2073.08	0.00	340.81	0.00	2413.89	241.39	2172.50	0.00	0.60	227.81	228.40	249.54	1922.37	10.51
4	Longleng	1021.28	0.00	141.57	0.00	1162.85	116.29	1046.56	0.00	0.00	13.96	13.96	16.91	1029.65	1.33
5	Mokokchung	4294.87	6511.14	1201.68	480.60	12488.29	1248.83	11239.46	0.00	0.00	69.62	69.62	69.62	11169.84	0.62
6	Mon	3564.12	0.00	773.54	0.00	4337.66	433.76	3903.90	0.00	0.00	199.60	199.60	199.60	3704.30	5.11
7	Peren	3354.89	6352.62	917.28	565.44	11190.23	1119.02	10071.21	0.00	0.00	90.69	90.68	92.57	9978.65	0.90
8	Phek	539.16	0.00	163.86	0.00	703.02	70.31	632.71	0.00	0.00	40.67	40.67	42.35	590.36	6.43
9	Tuensang	789.96	0.00	220.52	0.00	1010.48	101.05	909.43	0.00	0.00	91.74	91.73	93.90	815.54	10.09
10	Wokha	5560.00	7516.68	1400.05	437.40	14914.13	1491.42	13422.71	0.00	0.00	185.58	185.58	188.31	13234.40	1.38
11	Zunheboto	701.11	0.00	196.17	0.00	897.28	89.73	807.55	0.00	0.00	65.08	65.08	65.08	742.47	8.06
	Total(Ham)	**35628.92**	**32864.88**	**7770.78**	**2284.05**	**78548.63**	**7854.89**	**70693.74**	**199.76**	**2.04**	**1842.40**	**2044.19**	**1961.80**	**68530.17**	**2.89**
	Total (Bcm)	**0.36**	**0.33**	**0.08**	**0.02**	**0.79**	**0.08**	**0.71**	**0.00**	**0.00**	**0.02**	**0.02**	**0.02**	**0.69**	**2.89**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
ODISHA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Angul	38459.51	8494.30	4866.69	5576.61	57397.11	3264.88	54132.23	21439.41	1078.48	4420.35	26938.24	4916.11	26698.24	49.76
2	Balasore	59442.56	31951.13	19821.61	30747.26	141962.56	11635.52	130327.03	65516.47	956.93	6335.48	72808.89	6734.34	57119.28	55.87
3	Bargarh	41559.21	11869.10	480.42	12280.73	66189.46	4675.65	61513.82	27255.48	331.50	4617.88	32204.85	4861.23	29579.61	52.35
4	Bhadrak	18675.00	16207.73	5176.87	20305.16	60364.76	5192.61	55172.15	30705.76	333.71	2722.00	33761.48	2883.62	21249.05	61.19
5	Bolangir	44980.30	6880.66	1564.75	7859.65	61285.36	4760.60	56524.76	21295.34	234.26	5531.44	27061.03	6244.53	28750.64	47.87
6	Boudh	18408.57	3023.65	640.49	4204.29	26277.00	2150.39	24126.61	9179.48	50.83	1408.42	10638.74	1516.93	13379.35	44.10
7	Cuttack	40755.44	15111.92	10657.11	10831.70	77356.17	7206.79	70149.38	22478.42	788.97	7346.06	30613.43	7758.06	39123.96	43.64
8	Deogarh	20722.33	5539.46	1634.07	6300.26	34196.12	3011.13	31184.98	15764.61	251.94	955.56	16972.11	1009.97	14158.46	54.42
9	Dhenkanal	29393.67	9627.29	6440.95	3697.34	49159.25	3679.34	45479.90	12989.61	324.87	3726.94	17041.42	3895.50	28269.93	37.47
10	Gajapati	13544.73	1966.07	5650.24	2270.93	23431.97	2343.20	21088.76	5108.48	119.34	1700.33	6928.17	1771.04	14089.88	32.85
11	Ganjam	46416.37	26821.60	19764.38	14211.34	107213.69	9347.39	97866.28	25226.42	1502.80	11080.96	37810.20	12092.84	59044.19	38.63
12	Jagatsinghpur	16870.62	16049.03	5090.48	11946.94	49957.07	4789.32	45167.74	22794.51	499.46	2398.25	25692.22	2461.26	19412.52	56.88
13	Jajpur	32476.13	10315.28	8472.56	7652.78	58916.75	4464.05	54452.69	29605.84	457.47	4790.20	34853.48	5010.44	19378.95	64.01
14	Jharsuguda	16788.49	1456.59	489.80	1918.14	20653.02	1547.66	19105.36	6120.15	839.80	2442.56	9402.51	2717.15	9428.26	49.21
15	Kalahandi	46019.07	9950.11	2782.46	9167.17	67918.81	5381.58	62537.23	19614.31	718.25	4948.78	25281.33	5323.94	36880.75	40.43
16	Kandhamal	27285.66	2211.89	5322.38	3018.85	37838.78	3057.39	34781.39	7487.10	172.38	2288.11	9947.58	2396.49	24725.43	28.60
17	Kendrapara	7013.53	10040.50	2006.63	8888.37	27949.03	2668.03	25281.00	9496.03	152.49	1160.18	10808.69	1213.74	14418.75	42.75
18	Keonjhar	56963.13	12810.61	13577.17	10593.51	93944.42	8292.77	85651.65	30107.37	567.97	6157.73	36833.06	6604.91	48371.41	43.00
19	Khurda	24198.99	8130.62	6996.15	9400.89	48726.65	4075.78	44650.87	16748.99	1975.74	7055.61	25780.33	7983.59	18805.22	57.74
20	Koraput	43067.79	4017.45	5196.41	5973.60	58255.25	4768.89	53486.36	6594.32	596.70	4472.26	11663.27	4827.20	41468.16	21.81
21	Malkangiri	26391.42	4252.76	1621.07	4259.88	36525.13	3329.86	33195.27	3391.19	0.00	2063.21	5454.42	2256.78	27547.28	16.43
22	Mayurbhanj	88377.77	19444.14	21545.78	24461.96	153829.65	10981.55	142848.09	50215.09	223.21	7828.73	58267.04	8297.08	84112.71	40.79
23	Nabarangapur	50927.84	3213.68	5010.38	4129.22	63281.12	5379.31	57901.81	15989.39	159.12	3849.97	19998.48	4141.86	37611.43	34.54
24	Nayagarh	22965.38	4764.36	6109.51	6348.61	40187.86	2904.15	37283.71	11921.79	44.20	3331.82	15297.82	8151.34	21728.48	41.03
25	Nuapada	23241.57	4887.36	1062.91	4608.71	33800.55	2736.40	31064.15	16533.09	101.66	1910.87	18545.63	2030.79	12398.59	59.70
26	Puri	30965.08	11060.31	8334.42	16885.43	67245.24	5377.09	61868.15	26380.25	0.00	4977.99	31358.27	5336.40	30151.48	50.69
27	Rayagada	24640.57	3588.97	5413.37	2818.03	36460.94	2849.32	33611.62	6991.27	693.94	3008.09	10693.29	3199.55	22726.87	31.81
28	Sambalpur	46061.25	6906.14	879.69	10955.55	64802.63	5534.82	59267.81	12921.61	1034.28	3207.51	17163.41	3356.47	41955.44	28.96
29	Subarnapur	19150.54	3494.09	397.34	4457.73	27499.70	2195.12	25304.58	10078.30	59.67	1893.78	12031.76	1988.05	13208.55	47.55
30	Sundargarh	68256.56	7790.21	3681.42	6583.18	86311.37	6868.28	79443.09	23137.12	2152.54	6139.77	31429.43	6671.02	47482.40	39.56
	Total (Ham)	**1044019.08**	**281877.01**	**180687.51**	**272353.82**	**1778937.42**	**144468.87**	**1634468.47**	**583087.20**	**16422.51**	**123770.84**	**723280.6**	**137652.23**	**903275.27**	**44.25**
	Total (Bcm)	**10.44**	**2.82**	**1.81**	**2.72**	**17.79**	**1.44**	**16.34**	**5.83**	**0.16**	**1.24**	**7.23**	**1.38**	**9.03**	**44.25**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
PUNJAB															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Amritsar**	29515.80	81945.51	5345.17	32121.57	148928.05	14892.80	134035.25	233296.81	398.12	6360.00	240054.9	6453.16	0.00	179.10
2	**Barnala**	12217.41	25792.04	1268.74	15836.24	55114.43	5511.44	49602.99	106690.63	43.94	2502.94	109237.5	2539.61	0.00	220.22
3	**Bathinda**	19385.22	68071.65	3376.47	38062.27	128895.61	11959.88	116935.73	129804.84	217.28	5829.60	135851.7	5915.00	14368.03	116.18
4	**Faridkot**	10967.74	42939.14	1224.40	19426.54	74557.82	7455.79	67102.03	96187.46	58.79	2594.08	98840.32	2632.09	0.00	147.30
5	**Fatehgarh Sahib**	14087.15	14779.76	1670.85	8248.94	38786.70	3605.52	35181.18	68841.35	1500.89	2517.72	72859.97	2554.59	0.00	207.10
6	**Fazilka**	7125.66	45265.25	918.47	23218.28	76527.66	7652.77	68874.89	48465.92	44.13	5044.29	53554.35	5118.19	30418.11	77.76
7	**Firozpur**	19238.34	87216.71	2576.72	42879.40	151911.17	15191.12	136720.05	183088.66	39.36	3463.31	186591.3	3514.05	229.32	136.48
8	**Gurdaspur**	35358.06	88947.85	6344.47	35539.47	166189.85	16480.41	149709.44	199684.85	59.39	7035.43	206779.7	7138.49	1915.31	138.12
9	**Hoshiarpur**	44796.07	21335.58	7725.46	10658.63	84515.74	8073.65	76442.09	79264.64	91.68	6643.76	86000.08	6741.10	11050.47	112.50
10	**Jalandhar**	28762.31	30618.08	4285.85	15483.10	79149.34	7914.95	71234.39	166646.11	870.91	13445.17	180962.2	13642.14	0.00	254.04
11	**Kapurthala**	18016.20	33863.85	2772.39	13878.42	68530.86	6853.09	61677.77	135983.37	98.61	3432.15	139514.1	3482.43	0.00	226.20
12	**Ludhiana**	37582.37	75106.08	5679.53	37499.00	155866.98	15586.68	140280.30	279969.95	7104.15	14938.81	302012.9	15157.64	0.00	215.29
13	**Malerkotla**	7710.33	8276.86	1054.35	4564.43	21605.97	2160.60	19445.37	56410.97	541.98	1988.26	58941.20	2017.39	0.00	303.11
14	**Mansa**	9225.24	38122.96	1171.86	21431.43	69951.49	6995.15	62956.34	75136.07	33.31	3227.06	78396.44	3274.33	6238.11	124.53
15	**Moga**	18490.45	45098.80	2427.44	18254.90	84271.59	8427.18	75844.41	174619.74	73.23	4136.68	178829.7	4197.28	0.00	235.78
16	**Muktsar**	3088.11	50594.15	550.32	33999.40	88231.98	8823.20	79408.78	15971.76	12.54	3789.09	19773.39	3844.59	59579.89	24.90
17	**Pathankot**	14265.30	19906.12	3572.63	10860.51	48604.56	4787.48	43817.08	18638.21	41.66	2831.82	21511.72	2873.30	22263.87	49.09
18	**Patiala**	39261.40	30226.92	5223.56	18720.88	93432.76	9343.28	84089.48	173819.31	677.87	7942.84	182440.1	8059.22	0.00	216.96
19	**Rupnagar**	19951.71	12184.73	3087.20	7885.52	43109.16	3948.14	39161.02	35687.76	112.12	2868.35	38668.25	2910.36	6775.79	98.74
20	**SAS Nagar**	13808.96	4579.72	2030.85	2732.17	23151.70	2315.18	20836.52	19831.39	2098.50	4139.34	26069.25	4199.99	1500.48	125.11
21	**SBS Nagar**	16098.09	27235.90	2216.48	9291.83	54842.30	4898.27	49944.03	57857.93	61.20	2578.78	60497.91	2616.56	2232.28	121.13
22	**Sangrur**	25256.50	28676.20	3091.36	12795.10	69819.16	6981.90	62837.26	189954.49	1541.62	4955.89	196452.0	5028.49	0.00	312.64
23	**Tarn Taran**	23147.50	28113.42	3901.00	12766.48	67928.40	6792.85	61135.55	123226.08	68.04	4701.52	127995.7	4770.39	0.00	209.36
	Total(Ham)	**467355.92**	**908897.28**	**71515.57**	**446154.51**	**1893923.28**	**186651.33**	**1707271.95**	**2669078.30**	**15789.32**	**116966.90**	**2801835**	**118680.39**	**156571.66**	**164.11**
	Total (Bcm)	**4.67**	**9.09**	**0.72**	**4.46**	**18.94**	**1.87**	**17.07**	**26.69**	**0.16**	**1.17**	**28.02**	**1.19**	**1.57**	**164.11**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
RAJASTHAN															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Ajmer	27997.62	1524.70	84.52	13364.71	42971.55	3998.46	38973.09	61951.44	176.00	6323.08	68450.52	6323.08	0.00	175.64
2	Alwar	58530.10	1102.43	3169.85	5993.01	68795.39	6879.54	61915.85	112405.59	3413.35	13728.50	129547.4	13728.50	0.00	209.23
3	Banswara	9985.20	276.91	0.00	12242.34	22504.45	2250.47	20253.98	11073.30	16.10	2044.77	13134.17	2044.77	7252.44	64.85
4	Baran	38541.90	5060.38	0.00	19688.09	63290.37	5923.20	57367.17	65655.94	102.56	7085.14	72843.64	7085.14	3459.44	126.98
5	Barmer	34993.88	684.47	123.51	2095.79	37897.65	3789.77	34107.87	38211.42	438.00	6881.08	45530.52	8184.55	1407.92	133.49
6	Bharatpur	24374.96	1441.47	898.71	5707.27	32422.41	2277.72	30144.69	36823.56	71.85	5947.39	42842.81	7173.83	0.00	142.12
7	Bhilwara	31680.88	99.77	0.00	16705.00	48485.65	4848.61	43637.04	60213.29	735.87	5443.26	66392.43	5443.27	679.00	152.15
8	Bikaner	23867.44	649.81	3159.38	1535.61	29212.24	2918.80	26293.43	27889.22	71.00	8493.28	36453.51	8493.28	5126.30	138.64
9	Bundi	17463.29	1245.42	0.00	13251.23	31959.94	2652.24	29307.70	27292.16	66.00	3596.99	30955.17	3596.98	4701.03	105.62
10	Chittaurgarh	23463.94	1680.77	0.00	9494.33	34639.04	3463.91	31175.13	47423.42	698.00	1610.82	49732.25	1610.81	34.43	159.53
11	Churu	12567.71	20.16	1332.61	458.40	14378.88	1173.35	13205.53	13836.57	17.00	2980.63	16834.20	2980.64	1754.89	127.48
12	Dausa	24245.91	253.24	129.13	2491.85	27120.13	2711.99	24408.14	40167.68	3.19	10666.03	50836.87	10666.02	0.00	208.28
13	Dhaulpur	19892.45	1376.15	604.23	4973.64	26846.47	2435.82	24410.64	29164.02	19.15	4129.41	33312.54	4129.41	325.72	136.47
14	Dungarpur	8808.45	1356.68	0.00	11638.21	21803.34	2180.34	19623.00	10653.10	53.00	843.84	11549.93	843.84	8073.07	58.86
15	Ganganagar	4755.37	16234.13	986.94	25813.85	47790.29	4649.53	43140.75	16989.18	39.00	38.57	17066.75	72.70	26074.00	39.56
16	Hanumangarh	5398.42	7240.81	997.04	7738.35	21374.62	2137.47	19237.15	11247.76	200.00	914.90	12362.66	1168.65	6874.49	64.26
17	Jaipur	65004.12	2226.68	834.46	7420.55	75485.81	7548.59	67937.22	109776.52	1662.05	38927.03	150365.6	38927.03	0.00	221.33
18	Jaisalmer	7877.91	319.74	541.75	959.56	9698.96	969.90	8729.06	25586.02	7.00	2681.42	28274.45	3166.76	0.00	323.91
19	Jalor	37662.38	1172.06	0.00	8127.64	46962.08	4359.09	42602.99	74330.21	2.58	4276.80	78609.61	4388.52	0.00	184.52
20	Jhalawar	39794.58	2653.84	0.00	12256.67	54705.09	5249.31	49455.78	52448.61	0.41	3725.42	56174.44	3725.41	5325.90	113.59
21	Jhunjhunun	21029.96	296.58	1564.72	1482.88	24374.14	2437.44	21936.70	35589.20	564.23	11028.71	47182.13	11088.51	0.00	215.08
22	Jodhpur	34757.47	955.03	861.86	2928.38	39502.74	3950.31	35552.43	76401.34	677.58	14668.60	91747.55	14887.52	492.49	258.06
23	Karauli	28685.65	490.83	177.78	4851.11	34205.37	3315.58	30889.79	43466.39	0.07	4836.85	48303.32	4836.86	1259.28	156.37
24	Kota	28313.51	2803.52	0.00	18118.17	49235.20	4923.53	44311.67	36212.04	277.51	8551.94	45041.49	8551.94	6456.52	101.65
25	Nagaur	52668.19	1049.52	1800.82	3273.27	58791.80	5208.40	53583.41	86455.94	1147.65	13604.42	101208.0	14270.02	0.00	188.88
26	Pali	29048.73	465.50	0.00	3852.53	33366.76	3336.70	30030.06	42179.22	472.00	3420.50	46071.73	3504.02	1493.20	153.42
27	Pratapgarh	15289.70	169.69	0.00	6785.81	22245.20	2223.99	20021.21	24890.63	19.00	545.90	25455.51	545.89	1003.39	127.14
28	Rajsamand	7706.68	162.73	625.25	2881.42	11376.08	1137.62	10238.46	9916.66	391.64	2138.37	12446.70	2138.37	361.40	121.57
29	Sawai Madhopur	32247.17	1942.60	0.00	8890.04	43079.81	4307.99	38771.82	56358.79	80.97	7836.38	64276.18	7836.38	0.00	165.78
30	Sikar	28236.98	1744.66	1758.94	2014.83	33755.41	3156.23	30599.18	50681.33	217.69	10882.25	61781.26	10882.25	0.00	201.90
31	Sirohi	25988.64	794.84	0.00	2117.82	28901.30	2890.13	26011.17	29160.36	340.77	1687.04	31188.17	1687.04	454.47	119.90
32	Tonk	28425.24	3828.73	0.00	10955.56	43209.53	4121.18	39088.33	29549.36	36.00	10549.65	40135.01	10549.65	2671.06	102.68
33	Udaipur	21248.48	548.71	0.00	10419.87	32217.06	3221.72	28995.34	24219.33	2021.85	3270.31	29511.49	3270.30	1694.18	101.78
	Total(Ham)	**870552.91**	**61872.56**	**19651.50**	**260527.79**	**1212604.76**	**116648.93**	**1095955.78**	**1418219.60**	**14039.07**	**223359.26**	**1655618**	**227801.94**	**86974.62**	**151.07**
	Total (Bcm)	**8.71**	**0.62**	**0.20**	**2.61**	**12.13**	**1.17**	**10.96**	**14.18**	**0.14**	**2.23**	**16.56**	**2.28**	**0.87**	**151.07**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
SIKKIM															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Gangtok	4401.43	114.05	2015.34	22.79	6553.61	655.36	5898.25	285.10	69.08	193.75	547.93	206.42	5337.65	9.29
2	Gyalshing	3259.00	99.35	2311.88	2.96	5673.19	567.32	5105.87	206.10	0.00	30.06	236.16	31.36	4868.41	4.63
3	Mangan	2534.42	37.60	1797.88	3.36	4373.26	437.32	3935.94	83.60	0.00	18.00	101.60	18.48	3833.86	2.58
4	Namchi	2631.63	61.35	1204.98	5.50	3903.46	390.35	3513.11	136.45	142.10	64.87	343.42	67.94	3166.62	9.78
5	Pakyong	3235.98	48.15	1481.70	9.72	4775.55	477.55	4298.00	120.60	5.40	28.71	154.71	30.59	4141.41	3.60
6	Soreng	1057.56	28.15	750.21	2.60	1838.52	183.85	1654.67	62.80	0.00	26.67	89.47	27.82	1564.05	5.41
	Total(Ham)	**17120.02**	**388.65**	**9561.99**	**46.93**	**27117.59**	**2711.75**	**24405.84**	**894.65**	**216.58**	**362.06**	**1473.29**	**382.61**	**22912.00**	**6.04**
	Total (Bcm)	**0.17**	**0.00**	**0.10**	**0.00**	**0.27**	**0.03**	**0.24**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.23**	**6.04**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
TAMIL NADU															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Ariyalur	15991.53	18507.79	2253.06	1715.07	38467.45	3537.10	34930.35	15543.80	48.80	787.55	16380.15	1089.71	18297.15	46.89
2	Chengalpattu	18729.64	37016.89	6.05	2540.14	58292.72	5657.80	52634.92	34539.94	315.50	873.86	35729.30	1583.64	16543.60	67.88
3	Chennai	8624.40	1099.76	0.00	862.01	10586.17	1058.67	9668.10	258.50	1189.50	11410.14	12858.12	13715.11	968.88	133.00
4	Coimbatore	21472.12	21842.95	3350.15	9493.68	56158.90	5416.38	50742.52	39216.22	1477.17	2160.92	42854.29	5872.87	12373.82	84.45
5	Cuddalore	35697.12	31725.27	19219.50	12167.88	98809.77	9567.69	89242.08	64061.82	2040.69	1594.12	67696.64	3350.72	25450.59	75.86
6	Dharmapuri	18290.64	10462.89	2650.47	15648.57	47052.57	4505.26	42547.31	45406.08	33.90	2116.61	47556.59	2844.97	4086.02	111.77
7	Dindigul	15204.10	26194.79	2556.12	10722.90	54677.91	5467.80	49210.10	63041.67	308.15	1384.04	64733.83	3951.82	7382.38	131.55
8	Erode	14457.15	43799.58	3603.41	9797.29	71657.43	6945.72	64711.72	51949.80	696.99	650.69	53297.51	18345.24	11696.07	82.36
9	Kallakkurichi	29045.14	27189.26	12186.08	9057.16	77477.64	7747.81	69729.82	49053.15	36.80	694.52	49784.49	1483.91	19860.72	71.40
10	Kancheepuram	17169.22	27451.58	0.00	6606.98	51227.78	5006.93	46220.85	22771.29	630.94	616.26	24018.49	1045.60	22137.70	51.96
11	Kanniyakumari	6514.65	20188.14	1922.43	4688.04	33313.26	3261.98	30051.29	3684.10	222.40	1173.36	5079.87	1207.82	25402.33	16.90
12	Karur	11572.89	22028.63	1543.66	3189.91	38335.09	3742.69	34592.40	32482.04	214.56	419.46	33116.06	1088.95	9554.94	95.73
13	Krishnagiri	18293.09	15404.69	2887.68	11250.50	47835.96	4252.19	43583.78	39881.19	1037.33	1665.56	42584.07	2588.29	7761.85	97.71
14	Madurai	22864.48	29906.83	3160.80	16640.81	72572.92	6742.34	67414.94	41770.23	3969.52	2801.85	48541.63	4247.19	19818.55	72.00
15	Nagapattinam	7011.65	28228.61	137.65	690.03	36067.94	3606.78	32461.16	43726.76	0.00	673.60	44400.37	1566.86	1622.10	136.78
16	Namakkal	20377.37	26230.71	4628.72	7337.48	58574.28	5792.97	52781.31	57716.73	88.50	3501.97	61307.20	4212.61	7876.01	116.15
17	Perambalur	9005.58	12695.95	766.27	3216.72	25684.52	2568.47	23116.05	25801.20	32.90	377.92	26212.01	775.47	7478.33	113.39
18	Pudukkottai	35911.24	52075.76	4381.91	3479.07	95847.98	9300.76	86547.22	37447.02	306.40	945.09	38698.49	1919.74	46899.05	44.71
19	Ramanathapuram	25840.20	40086.62	4004.34	6664.60	76595.76	7659.57	68936.19	5582.64	0.00	249.86	5832.53	1255.95	62097.57	8.46
20	Ranipet	16397.84	5439.38	2626.17	3919.12	28382.51	2838.30	25544.21	20068.70	943.65	2210.16	23222.50	2501.55	3898.54	90.91
21	Salem	21584.77	28644.25	3963.44	6016.95	60209.41	6021.02	54188.40	67655.57	34.20	507.84	68197.60	2684.83	10441.97	125.85
22	Sivaganga	28193.57	35233.47	2800.34	1237.89	67465.27	6306.97	61158.30	15096.27	227.70	1412.48	16736.46	7195.80	38638.52	27.37
23	Tenkasi	10031.69	35915.06	3620.27	5316.71	54883.73	5441.87	49441.84	38634.63	180.20	748.60	39563.44	2170.55	29213.16	80.02
24	Thanjavur	64706.03	35599.83	3231.72	6965.95	110503.53	10809.53	99694.01	96020.49	132.60	3506.24	99659.33	5039.01	12746.47	99.97
25	The Nilgiris	8528.00	363.56	1279.14	161.74	10332.44	1033.25	9299.19	629.00	52.40	183.05	864.44	2762.58	7345.79	9.30
26	Theni	7189.79	13612.59	4269.81	3426.08	28498.27	2760.57	25737.70	18949.60	90.52	663.95	19704.06	876.84	6304.68	76.56
27	Thiruvallur	53878.02	23890.50	31.14	7037.62	84837.28	7972.90	76864.38	39022.24	1510.96	1893.97	42427.17	6684.12	30239.23	55.20
28	Thiruvarur	9332.33	5867.87	387.30	1582.33	17169.83	1717.00	15452.83	10459.10	19.95	1981.08	12460.13	3867.89	4759.85	80.63
29	Thoothukkudi	20286.98	29222.51	3504.12	7491.96	60505.57	5925.32	54580.27	18782.28	331.50	430.72	19544.50	1501.34	35389.88	35.81
30	Tiruchirappalli	19721.63	49902.63	1780.69	4857.25	76262.20	7487.36	68774.83	51064.06	42.98	2796.77	53903.81	11655.51	26208.69	78.38
31	Tirunelveli	29901.35	34873.07	6575.94	8370.04	79720.40	7867.40	71853.00	32164.60	32.00	706.15	32902.78	1201.21	39965.04	45.79
32	Tirupathur	4249.81	5957.06	439.07	1286.18	11932.12	1193.22	10738.90	14842.73	100.22	880.02	15822.99	1934.81	1198.23	147.34
33	Tiruppur	16966.53	24782.96	3973.39	9131.96	54854.84	5387.38	49467.46	41350.30	573.72	544.28	42468.20	3104.66	8315.84	85.85
34	Tiruvannamalai	27794.27	66325.38	735.79	31976.19	126831.63	10888.19	115943.44	93948.56	707.10	854.98	95510.64	3403.16	20980.79	82.38
35	Vellore	9209.86	9815.40	1973.51	314.09	21312.86	1914.34	19398.52	20769.67	324.00	1226.73	22320.41	2490.62	1579.22	115.06
36	Viluppuram	25415.10	46556.59	17513.53	13532.27	103017.49	10189.52	92827.97	81582.54	19.93	1493.54	83096.03	3327.99	12754.50	89.52
37	Virudhunagar	16951.04	32126.15	5311.94	10647.67	65036.80	6104.51	58932.29	33310.71	115.49	493.12	33919.37	1714.69	24689.82	57.56
	Total(Ham)	**742410.82**	**976264.96**	**133275.61**	**259040.84**	**2110992.23**	**203697.56**	**1909019.65**	**1368285.25**	**18089.17**	**56631.07**	**1443006**	**136263.63**	**641977.88**	**75.59**
	Total (Bcm)	**7.42**	**9.76**	**1.33**	**2.59**	**21.11**	**2.04**	**19.09**	**13.68**	**0.18**	**0.57**	**14.43**	**1.36**	**6.42**	**75.79**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
TELANGANA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Adilabad	23747.33	23903.17	2035.44	23979.15	73665.09	7179.91	66485.25	15127.11	131.40	2832.91	18091.30	3450.56	48234.60	27.21
2	Bhadradri Kothagudem	55661.41	17701.81	8979.75	10891.19	93234.16	8064.99	85169.08	20374.97	2939.40	4020.03	27334.45	4054.54	61203.33	32.09
3	Hanumakonda	13542.00	17815.81	0.00	18105.33	49463.14	4709.21	44753.89	23694.70	263.34	1345.60	25303.65	1345.59	20337.31	56.54
4	Hyderabad	996.30	2042.12	258.57	4039.08	7336.07	688.65	6647.43	0.00	0.00	6380.79	6380.81	7096.33	308.53	95.99
5	Jagtial	18138.38	18188.03	1982.24	16392.35	54701.00	5222.59	49478.39	20178.56	0.90	488.66	20668.31	1611.17	27687.60	41.77
6	Jangaon	15053.04	12774.37	2594.49	9091.22	39513.12	3745.79	35767.33	18482.07	383.04	2503.07	21368.28	2707.19	14494.79	59.74
7	Jayashankar Bhupalapally	21556.15	8134.52	1123.33	10537.20	41351.19	3566.96	37784.21	13752.68	0.00	604.94	14357.70	632.53	23831.17	38.00
8	Jogulamba Gadwal	8762.15	21832.62	2592.47	12232.25	45419.49	4446.32	40973.21	10307.55	75.78	210.22	10593.44	731.60	29878.44	25.85
9	Kamareddy	30700.46	16153.29	3430.50	18238.94	68523.19	6481.03	62042.04	31234.04	154.38	2027.11	33415.52	2633.56	28158.68	53.86
10	Karimnagar	14871.44	33835.33	2037.38	36344.60	87088.75	8437.50	78651.24	25115.31	187.56	914.22	26217.16	1059.10	52499.59	33.33
11	Khammam	30338.38	56522.90	6251.83	33131.41	126244.52	12205.48	114039.05	35785.51	51.85	3895.76	39733.05	4298.10	75152.04	34.84
12	Komarambheem Asifabad	31600.69	14692.70	2051.66	6678.63	55023.68	4709.96	50313.67	5720.74	12.09	1705.60	7438.35	1977.54	42716.30	14.78
13	Mahabubabad	31643.14	14134.85	19.67	16963.20	62760.86	6276.11	56484.75	26448.59	894.64	1355.34	28698.56	1718.01	27680.89	50.81
14	Mahabubnagar	13431.15	6168.10	2431.09	9192.97	31425.62	2980.10	28445.49	18789.90	59.76	193.44	19043.19	1747.82	9065.34	66.95
15	Mancherial	33691.38	27305.28	0.00	27652.97	88649.63	8553.48	80096.09	17019.04	1626.84	2095.27	20741.15	2095.27	59735.53	25.90
16	Medak	20759.54	11615.81	2348.20	16779.29	51502.84	5051.42	46451.40	22157.09	125.21	680.16	22962.09	1378.09	23245.39	49.43
17	Medchal Malkajgiri	5703.41	2431.51	715.45	1900.16	10750.53	1002.84	9747.67	3005.54	1296.71	1253.00	5555.33	4300.05	4494.61	56.99
18	Mulug	28687.38	6273.64	2078.94	11036.93	48076.89	4357.31	43719.63	12048.38	0.00	517.64	12566.06	574.49	31534.23	28.74
19	Nagarkurnool	27299.29	20346.54	7535.70	24694.81	79876.34	7527.36	72349.01	32836.99	119.65	885.73	33842.48	1745.85	39212.50	46.78
20	Nalgonda	34167.94	47613.96	8788.74	52077.08	142647.72	13673.55	128974.18	47083.96	3766.46	5756.59	56607.07	308025.92	73734.19	43.89
21	Narayanpet	9365.61	10380.56	2065.48	9216.67	31028.32	2666.16	28362.12	11481.79	380.07	127.63	11989.46	590.35	16075.87	42.27
22	Nirmal	27283.68	12240.95	2166.60	12828.40	54519.63	5234.01	49285.58	16078.17	0.00	1843.16	17921.38	2019.49	31248.30	36.36
23	Nizamabad	36105.49	22568.80	3515.83	34883.66	97073.78	8670.13	88403.65	49140.20	151.68	2913.02	52204.92	3516.58	39172.76	59.05
24	Peddapalle	16117.91	32872.94	1156.15	22051.34	72198.34	7099.45	65098.92	17545.43	316.80	1226.10	19088.32	1815.92	45434.79	29.32
25	Rajanna Siricilla	13243.42	16552.64	2014.16	14000.05	45810.27	4181.49	41628.77	26874.73	142.56	57.79	27075.11	226.58	14419.02	65.04
26	Rangareddy	25296.14	10333.01	6516.52	22257.14	64402.81	6023.26	58379.54	31825.78	72.04	3253.01	35151.89	5005.21	23417.95	60.21
27	Sangareddy	30120.96	4784.87	4603.03	5541.29	45050.15	4362.02	40688.18	15784.46	445.86	2120.32	18350.68	2789.63	22619.44	45.10
28	Siddipet	21209.15	14673.61	3793.52	22761.36	62437.64	5690.42	56747.22	37494.24	52.27	1733.77	39280.47	1974.02	17589.73	69.22
29	Suryapet	19992.94	67477.46	1487.60	55884.52	144842.52	14414.79	130427.75	22789.42	39.84	1935.31	24764.60	2266.33	105648.25	18.99
30	Vikarabad	19266.53	12604.03	5283.38	16300.34	53454.28	5345.66	48108.68	17467.58	8.40	452.30	17928.39	1683.50	29800.63	37.27
31	Wanaparthy	8718.94	26931.34	2002.95	20419.24	58072.47	5763.85	52308.53	20740.80	7.70	232.73	20981.20	1173.11	30495.70	40.11
32	Warangal	11658.59	23561.90	1663.92	14993.06	51877.47	5043.31	46834.16	24828.96	322.56	885.42	26036.94	1410.81	20952.04	55.59
33	Yadadri Bhuvanagiri	20399.43	31159.98	4488.13	33084.47	89132.01	8703.54	80428.47	34566.66	1412.78	3235.37	39214.77	3529.33	42496.99	48.76
	Total (Ham)	**719129.75**	**665628.45**	**98012.72**	**644180.30**	**2127153.53**	**202078.65**	**1925074.58**	**725780.93**	**15441.57**	**59682.02**	**800906**	**381184.16**	**1132576.54**	**41.60**
	Total (Bcm)	**7.19**	**6.66**	**0.98**	**6.44**	**21.27**	**2.02**	**19.25**	**7.26**	**0.15**	**0.60**	**8.01**	**3.81**	**11.33**	**41.60**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
TRIPURA															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Dhalai**	13452.26	641.26	3951.79	1489.45	19535	3899	15635.72	125.22	2.61	923.67	1051.51	1012.20	14495.68	6.73
2	**Gomati**	14626.64	1017.32	2686.43	3892.35	22223	3789	18433.54	116.76	1.06	882.17	1000.00	935.36	17380.36	5.42
3	**Khowai**	7209.81	678.78	2118.59	2348.35	12356	1336	11019.09	306.60	2.38	646.34	955.31	679.51	10030.61	8.67
4	**North Tripura**	6932.27	547.36	2404.29	1283.56	11167	3542	7625.83	32.40	1.81	977.10	1011.31	1049.12	6542.49	13.26
5	**Sepahijala**	10089.78	868.40	3077.02	4052.94	18088	3725	14363.58	703.80	2.11	1004.51	1710.43	1056.06	12601.60	11.91
6	**South Tripura**	14202.01	860.01	3011.55	4223.64	22297	4714	17582.82	199.95	1.84	932.64	1134.42	988.86	16392.19	6.45
7	**Unakoti**	5419.44	531.75	1821.05	1545.60	9318	1460	7857.53	4.80	1.45	651.49	657.75	699.51	7151.76	8.37
8	**West Tripura**	9232.18	838.67	2723.47	3572.95	16367	2529	13838.60	624.00	55.46	2115.44	2794.90	2242.98	10916.15	20.20
	Total(Ham)	**81164.39**	**5983.55**	**21794.19**	**22408.84**	131351	**24994.00**	**106356.71**	**2113.53**	**68.73**	**8133.36**	**10315.63**	**8663.60**	**95510.84**	**9.70**
	Total (Bcm)	**0.81**	**0.06**	**0.22**	**0.22**	**1.31**	**0.25**	**1.06**	**0.02**	**0.00**	**0.08**	**0.10**	**0.09**	**0.96**	**9.70**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
UTTAR PRADESH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Agra	38699.37	16080.81	546.74	34752.79	90079.71	8771.85	81307.86	83169.14	135.64	10727.48	94032.24	11665.86	4522.05	115.65
2	Aligarh	47413.45	15843.40	1597.97	33068.52	97923.34	8167.31	89756.03	58795.07	489.50	11472.18	70756.77	12631.49	21074.50	78.83
3	Ambedkar Nagar	51850.39	12025.94	387.87	15356.11	79620.31	7323.29	72297.02	39547.88	0.00	6214.03	45761.92	6670.83	26078.31	63.30
4	Amethi	38510.24	20624.26	891.90	26273.07	86299.47	8052.09	78247.38	44175.57	92.69	4871.25	49139.50	5243.71	28735.40	62.80
5	Amroha	39286.96	5869.43	1075.15	9442.06	55673.60	5218.50	50455.10	41928.99	731.32	4729.73	47390.04	5188.02	5241.93	93.93
6	Auraiya	27295.04	12563.11	286.67	26283.36	66428.18	6642.82	59785.36	30632.69	8.14	2878.97	33519.81	3041.69	26102.83	56.07
7	Ayodhya	49329.22	15749.94	447.72	29455.29	94982.17	9215.04	85767.13	47398.35	0.00	6975.50	54373.86	7822.51	30546.26	63.40
8	Azamgarh	70103.92	24631.24	136.21	36650.35	131521.72	9620.46	121901.26	61649.02	7.10	13310.72	74966.83	14836.82	45408.32	61.50
9	Bagpat	15776.95	8161.08	945.23	12264.75	37148.01	3714.80	33433.21	32002.25	30.02	2501.37	34533.64	2605.64	2585.93	103.29
10	Bahraich	78277.57	20530.87	2945.77	35272.16	137026.37	10730.49	126295.88	64756.76	131.40	9520.93	74409.09	10470.83	50936.90	58.92
11	Ballia	49482.45	15085.73	1799.39	23644.60	90012.17	6452.55	83559.62	45364.22	9.02	7983.02	53356.27	8772.29	29414.07	63.85
12	Balrampur	57878.89	10491.79	1398.21	18615.61	88384.50	6764.53	81619.97	43513.40	204.20	6037.14	49754.76	6750.02	31152.32	60.96
13	Banda	49537.68	8546.95	519.80	13914.39	72518.82	6796.28	65722.54	39960.02	0.00	3895.92	43855.94	4256.96	21505.56	66.73
14	Barabanki	67918.06	45543.09	1121.58	85860.49	200443.22	17013.72	183429.50	107620.14	0.00	8816.19	116436.3	9670.51	66138.87	63.48
15	Bareilly	70860.89	20045.71	1401.51	31841.31	124149.42	11501.74	112647.68	68709.18	397.23	13576.77	82683.17	14695.65	31520.46	73.40
16	Basti	66906.52	5438.04	662.66	8876.17	81883.39	7142.57	74740.82	41488.62	182.47	6393.62	48064.71	6902.14	26167.58	64.31
17	Bijnor	95152.54	18474.98	3865.88	32498.16	149991.56	12140.41	137851.15	87449.15	657.00	7787.39	95893.54	8345.53	41399.47	69.56
18	Budaun	67470.27	6078.08	1631.21	10031.77	85211.33	8014.86	77196.47	52995.43	39.60	8368.06	61403.12	9105.51	16259.93	79.54
19	Bulandshahar	44216.48	44207.76	1160.65	68930.23	158515.12	13924.15	144590.97	132659.59	0.00	6601.95	139261.6	6972.13	14932.83	96.31
20	Chandauli	30823.78	16117.56	279.81	9295.33	56516.48	5531.12	50985.36	24073.69	365.00	4568.12	29006.81	4896.29	21650.37	56.89
21	Chitrakoot	30322.06	5551.80	305.36	7695.22	43874.44	3956.18	39918.26	30568.83	0.00	2528.36	33097.18	2834.09	6515.35	82.91
22	Deoria	45641.68	45971.27	1580.82	46833.53	140027.30	10994.76	129032.54	70862.66	0.00	7041.79	77904.43	7468.53	50701.38	60.38
23	Etah	26304.29	16480.78	530.17	38347.54	81662.78	7277.54	74385.24	50452.98	16.43	4546.79	55016.21	4840.12	19075.71	73.96
24	Etawah	27088.80	15189.59	313.59	28330.49	70922.47	5799.73	65122.74	29623.03	13.49	3187.42	32823.94	3431.04	32055.18	50.40
25	Farrukhabad	32742.55	4637.21	492.27	12504.51	50376.54	4275.11	46101.43	30820.87	0.00	3911.10	34731.97	4244.47	11036.09	75.34
26	Fatehpur	64258.26	22441.50	276.01	33073.98	120049.75	10327.22	109722.53	70964.33	2.02	7208.21	78174.57	7940.09	33201.90	71.25
27	Firozabad	30658.83	16069.75	449.69	32702.03	79880.30	7451.74	72428.56	69234.60	0.01	6611.47	75846.08	7151.21	9029.09	104.72
28	G.B.Nagar	14904.99	14188.32	401.54	21944.93	51439.78	3778.68	47661.10	47888.36	0.00	1545.77	49434.12	1608.94	3022.33	103.72
29	Ghaziabad	14593.53	10290.09	539.46	16148.13	41571.21	3696.33	37874.88	36881.78	2246.10	7362.54	46490.40	8834.97	2191.48	122.75
30	Ghazipur	58979.35	18022.82	445.32	29126.32	106573.81	10657.39	95916.42	49945.74	57.15	8907.10	58910.00	9653.26	36260.26	61.42
31	Gonda	72295.63	15587.17	1186.83	24086.89	113156.52	6752.03	106404.49	53044.14	316.45	9567.08	62927.64	10644.32	42399.61	59.14
32	Gorakhpur	73053.24	66379.21	2046.40	32115.30	173594.15	14191.74	159402.41	89583.31	556.10	9285.78	99425.23	9998.11	59264.84	62.37
33	Hamirpur	37130.88	5721.75	98.05	7809.96	50760.64	4329.14	46431.50	28967.60	343.47	2174.23	31485.29	2268.15	14852.29	67.81
34	Hapur	15236.08	11880.31	563.64	18724.78	46404.81	2713.07	43691.74	40324.20	755.27	2378.83	43458.32	2521.11	1741.67	99.47
35	Hardoi	94992.45	29597.77	2042.14	52077.34	178709.70	16193.97	162515.73	92892.99	412.45	8482.50	101787.9	9183.18	60027.12	62.63
36	Hathras	20325.67	16424.17	442.05	25215.56	62407.45	6240.77	56166.68	50635.64	16.38	4086.18	54738.21	4390.96	7116.12	97.46
37	Jalaun	61794.94	12136.90	513.55	26419.08	100864.47	9565.07	91299.40	47851.11	7.30	4264.79	52123.20	4509.25	38931.74	57.09
38	Jaunpur	70364.75	20455.32	214.94	37148.35	128183.36	10243.71	117939.65	70520.18	0.00	13347.62	83867.78	14572.66	32846.82	71.11
39	Jhansi	28416.61	18195.25	0.00	24487.36	71099.22	6786.00	64313.22	40953.06	40.15	3136.31	44129.52	3439.34	19880.67	68.62
40	Kannauj	26062.35	10464.77	675.64	24347.34	61550.10	5429.17	56120.93	39610.47	15.79	4328.05	43954.34	4685.36	17573.75	78.32
41	Kanpur Dehat	41647.36	12569.61	684.40	25788.12	80689.49	7368.44	73321.05	49901.84	332.92	4008.33	54243.08	4202.93	18883.37	73.98
42	Kanpur Nagar	41794.84	13990.10	918.52	29910.55	86614.01	7392.37	79221.64	53988.75	346.27	7912.55	62247.55	8284.77	16601.87	78.57
43	Kasganj	25655.88	13272.00	557.66	32316.37	71801.91	4891.77	66910.14	41340.29	3.65	3928.99	45272.93	4325.08	21241.11	67.66
44	Kaushambi	31495.86	7861.49	271.18	12334.29	51962.82	5196.29	46766.53	33960.29	0.00	4449.10	38409.39	4995.90	9235.27	82.13
45	Kushi Nagar	49804.95	68696.80	2263.39	54717.16	175482.30	17548.25	157934.05	70507.42	60.00	8550.58	79117.98	9459.80	77906.86	50.10
46	Lakhimpur Kheri	126762.21	27333.86	4730.12	55837.09	214663.28	16942.37	197720.91	108613.88	529.25	11862.83	121005.9	13690.09	74887.72	61.20
47	Lalitpur	16090.63	6359.82	0.00	18865.58	41316.03	4131.59	37184.44	28306.81	0.00	3389.58	31696.37	3775.90	5101.74	85.24

S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
48	Lucknow	40809.52	16046.01	829.93	24726.33	82411.79	7321.91	75089.88	29902.46	6121.05	12202.15	48225.68	13872.83	26417.16	64.22
49	Mahoba	9398.63	9202.15	0.00	11988.24	30589.02	2788.90	27800.12	24406.70	1.83	1142.94	25551.46	1212.54	3189.15	91.91
50	Mahrajganj	68252.29	19677.89	1967.16	22628.00	112525.34	9849.32	102676.02	55375.26	0.00	6973.94	62349.21	7698.58	39602.16	60.72
51	Mainpuri	35696.25	20090.05	420.64	36143.77	92350.71	8005.30	84345.41	55711.52	0.47	4905.08	60617.06	5240.74	25054.13	71.87
52	Mathura	34255.20	34003.62	792.68	68348.39	137399.89	12434.18	124965.71	83684.14	0.00	6390.83	90074.95	6972.00	36277.36	72.08
53	Maunath Bhanjan	30985.59	8780.57	458.89	10926.58	51151.63	4597.72	46553.91	23859.05	5.69	6249.68	30114.40	7033.82	15655.37	64.69
54	Meerut	42334.67	15791.95	1783.44	24164.06	84074.12	7083.46	76990.66	48205.80	1089.70	9849.87	59145.36	10375.53	19824.59	76.82
55	Mirzapur	26358.14	15264.83	16.12	18824.40	60463.49	5121.05	55342.44	28096.28	25.55	6698.59	34820.44	7319.87	20068.82	62.92
56	Moradabad	39447.99	11864.55	1106.96	17654.53	70074.03	5600.83	64473.20	46325.63	157.98	10472.50	56956.11	11804.71	10475.39	88.34
57	Muzaffarnagar	43281.98	23794.42	7663.99	40386.88	115127.27	7467.09	107660.18	72947.72	739.10	6482.62	80169.41	7121.13	28207.75	74.47
58	Pilibhit	71698.64	15578.18	1250.07	28160.07	116686.96	10935.58	105751.38	60442.50	90.67	5327.41	65860.59	5768.94	39449.27	62.28
59	Pratapgarh	59455.49	31496.22	203.23	45803.59	136958.53	9290.59	127667.94	91159.96	32.50	8091.85	99284.31	8699.65	27810.55	77.77
60	Prayagraj	72160.94	28873.14	0.00	39540.66	140574.74	11907.70	128667.04	76359.33	1371.53	16783.64	94514.51	18139.56	34918.88	73.46
61	Raibareli	56785.60	25996.85	225.36	41048.98	124056.79	12405.68	111651.11	58802.15	0.00	6976.37	65778.54	7673.42	45175.51	58.91
62	Rampur	36952.53	16463.79	1571.07	24120.51	79107.90	7006.19	72101.71	46685.34	254.49	5105.66	52045.49	5579.04	19582.84	72.18
63	Saharanpur	77077.20	21794.58	5463.56	37172.11	141507.45	9806.88	131700.57	123970.56	702.95	7179.57	131853.1	7702.09	16095.43	100.12
64	Sambhal	38518.34	3484.50	929.60	5702.66	48635.10	4297.94	44337.16	32977.25	168.16	5622.07	38767.49	6263.01	5079.81	87.44
65	Sant Kabir Nagar	42374.93	4120.81	764.46	7080.18	54340.38	5119.28	49221.10	26840.86	158.27	4252.06	31251.18	4631.67	17590.30	63.49
66	Sant Ravidas Nagar	17015.08	22120.07	184.70	46984.92	86304.77	8630.47	77674.30	58470.09	80.30	3435.04	61985.40	3648.85	15475.09	79.80
67	Shahjahanpur	89594.91	17662.71	2802.84	25356.09	135416.55	9304.73	126111.82	69252.60	1503.03	8362.11	79117.77	9322.62	46033.55	62.74
68	Shamli	21763.91	9074.94	1544.69	13931.15	46314.69	3678.36	42636.33	42109.92	164.65	3025.91	45300.48	3066.96	954.54	106.25
69	Shrawasti	39781.62	4093.26	1187.29	6848.47	51910.64	3095.65	48814.99	24333.89	0.00	3164.17	27498.07	3632.46	20848.64	56.33
70	Siddharth Nagar	66698.83	10445.92	1324.31	15731.11	94200.17	7313.11	86887.06	47747.17	0.27	7221.29	54968.72	8079.37	31060.26	63.26
71	Sitapur	96382.30	39913.66	2012.06	63980.78	202288.80	20228.91	182059.89	83149.70	17352.10	11049.53	111551.3	12255.85	69302.22	61.27
72	Sonbhadra	14789.31	28970.99	129.25	10768.36	54657.91	5252.85	49405.06	21308.19	442.49	4230.13	25980.79	4730.88	22923.53	52.59
73	Sultanpur	47978.94	18598.21	174.63	26193.31	92945.09	8814.64	84130.45	45165.92	5.81	6035.18	51206.89	6496.70	32462.03	60.87
74	Unnao	62655.39	44697.74	966.14	61403.94	169723.21	14902.84	154820.37	86278.64	1030.17	8466.20	95775.03	9372.65	58138.91	61.86
75	Varanasi	26098.42	9962.52	123.08	15774.78	51958.80	4249.69	47709.11	31898.97	88.11	10508.94	42496.04	10946.31	8418.19	89.07
	Total(Ham)	**3543811.98**	**1395743.33**	**81540.82**	**2122627.17**	**7143723.30**	**613379.86**	**6530343.44**	**4071601.94**	**41137.81**	**501439.49**	**4614179**	**548159.84**	**1999046.66**	**70.66**
	Total (Bcm)	**35.44**	**13.96**	**0.82**	**21.23**	**71.44**	**6.13**	**65.30**	**40.72**	**0.41**	**5.01**	**46.14**	**5.48**	**19.99**	**70.66**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
UTTARAKHAND															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Dehradun**	53753.15	2292.58	2937.08	1569.95	60552.76	4268.86	56283.90	5889.71	639.84	5460.81	11990.35	5460.81	44293.55	21.30
2	**Haridwar**	26977.37	6505.63	3519.38	9229.31	46231.69	3404.53	42827.16	20371.08	3447.60	3006.45	26825.13	3287.61	15720.88	62.64
3	**Nainital**	6044.18	5155.38	1601.95	6199.83	19001.34	1900.14	17101.20	5352.69	1591.74	3316.11	10260.53	3316.11	6840.67	60.00
4	**Udhamsingh Nagar**	41702.49	17143.78	2439.48	15145.37	76431.12	6530.21	69900.91	31268.56	6118.67	2945.02	40332.27	3419.78	29093.88	57.70
	Total(Ham)	**128477.19**	**31097.37**	**10497.89**	**32144.46**	**202216.91**	**16103.74**	**186113.17**	**62882.04**	**11797.84**	**14728.40**	**89408.28**	**15484.31**	**95948.98**	**48.04**
	Total (Bcm)	**1.28**	**0.31**	**0.10**	**0.32**	**2.02**	**0.16**	**1.86**	**0.63**	**0.12**	**0.15**	**0.89**	**0.15**	**0.96**	**48.04**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
WEST BENGAL															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Alipurduar**	39176.38	675.98	8101.02	1907.21	49860.59	4986.05	44874.54	7791.10	163.25	3353.74	11308.09	3688.97	33231.22	25.20
2	**Bankura**	105843.00	14120.29	17741.41	21130.80	158835.50	13074.97	145760.53	48584.50	238.01	8546.17	57368.72	8999.24	91450.93	39.36
3	**Birbhum**	78984.21	7807.33	14659.50	79430.82	180881.86	15857.62	165024.24	23619.50	1217.18	8342.68	33179.37	8967.97	131219.58	20.11
4	**Dakshin Dinajpur**	65491.50	6641.06	13206.67	15885.35	101224.58	10122.46	91102.12	50867.80	168.13	3887.66	54923.58	4075.12	35991.08	60.29
5	**Darjiling**	34592.39	595.82	6834.32	950.80	42973.33	4297.34	38675.99	2132.70	371.85	3335.13	5839.72	3746.83	32424.57	15.10
6	**Haora**	17102.59	993.64	3589.81	1681.48	23367.52	1945.84	21421.68	4536.00	387.50	2627.92	7551.42	3101.44	13548.25	35.25
7	**Hugli**	80580.07	35790.08	16644.65	19490.23	152505.03	15151.62	137353.41	47638.60	2067.41	10298.35	60004.35	11034.87	77395.45	43.69
8	**Jalpaiguri**	58708.42	1208.46	10709.27	2872.78	73498.93	7349.90	66149.03	9650.50	794.42	6112.41	16557.33	8777.43	46926.67	25.03
9	**Jhargram**	70843.49	3456.44	15977.14	6797.39	97074.46	9707.46	87367.01	20429.60	241.52	2760.99	23432.11	2909.92	64992.00	26.82
10	**Kalimpong**	3207.91	189.21	515.35	163.95	4076.42	407.64	3668.78	0.00	2.45	62.24	64.68	62.82	3603.52	1.76
11	**Koch Bihar**	145710.25	5899.12	30343.86	18817.39	200770.62	20077.06	180693.56	78238.80	90.28	6803.36	85132.41	7285.72	95078.78	47.11
12	**Malda**	78721.96	5954.21	11447.82	12486.80	108610.79	9447.37	99163.42	26905.50	38.41	9989.09	36933.02	11251.12	60968.37	37.24
13	**Murshidabad**	121846.03	13494.58	27520.69	22521.09	185382.39	14898.91	170483.48	83787.60	123.51	17628.82	101540	25470.77	66200.29	59.56
14	**Nadia**	99124.52	11939.68	22470.15	26189.24	159723.59	15704.69	144018.90	116768.00	452.87	11249.59	128470	12202.95	14664.65	89.20
15	**North 24 Parganas**	78984.12	16800.34	19096.05	38767.30	153647.81	13429.73	140218.08	78903.20	837.97	12365.21	92106.38	13828.69	46698.19	65.69
16	**Paschim Barddhaman**	18258.86	1528.06	3681.30	2384.53	25852.75	2585.29	23267.46	852.84	4321.86	4737.50	9912.18	5184.87	13088.74	42.60
17	**Paschim Medinipur**	160309.67	9804.94	28382.86	22747.63	221245.10	20540.63	200704.47	100936.40	1041.88	11570.64	113549	12307.79	88367.71	56.58
18	**Purba Barddhaman**	123334.55	10961.51	25331.09	20456.46	180083.61	15982.16	164101.45	78180.20	630.02	11150.94	89961.16	11788.78	76024.52	54.82
19	**Purba Medinipur**	49237.70	4064.81	9789.26	7998.63	71090.40	7109.06	63981.33	17103.20	7.40	4751.40	21862.03	5247.87	41622.83	34.17
20	**Puruliya**	41466.10	8707.62	6429.08	11181.52	67784.32	6778.45	61005.87	2001.20	85.44	7053.92	9140.60	7635.53	51283.63	14.98
21	**Uttar Dinajpur**	74423.03	4583.94	11262.64	11852.45	102122.06	9400.57	92721.49	39375.10	708.33	7846.50	47929.92	8742.16	43895.92	51.69
	Total(Ham)	**1545946.75**	**165217.12**	**303733.94**	**345713.85**	**2360611.66**	**218854.82**	**2141756.84**	**838302.34**	**13989.69**	**154474.25**	**1006766**	**176310.86**	**1128676.90**	**47.01**
	Total (Bcm)	**15.46**	**1.65**	**3.04**	**3.46**	**23.61**	**2.19**	**21.42**	**8.38**	**0.14**	**1.54**	**10.07**	**1.76**	**11.29**	**47.01**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
ANDAMAN & NICOBAR ISLANDS															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge									
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources				Irrigation	Industrial	Domestic	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	N & M Andaman	8894.86	10.11	7481.50	2.52	16388.99	1638.90	14750.09	0.80	83.04	251.33	335.17	269.19	14397.06	2.27
2	Nicobar	14917.07	0.80	19746.09	0.20	34663.16	3466.41	31197.75	0.25	0.94	87.70	88.87	93.92	31419.46	0.28
3	South Andaman	5974.52	10.01	4802.74	2.50	10789.77	1078.97	9710.80	10.65	13.54	309.63	333.80	331.62	9355.02	3.44
	Total(Ham)	**29786.45**	**20.92**	**32030.33**	**5.22**	**61841.92**	**6184.28**	**55658.64**	**11.70**	**97.52**	**648.66**	**757.84**	**694.73**	**55171.54**	**1.35**
	Total (Bcm)	**0.30**	**0.00**	**0.32**	**0.00**	**0.62**	**0.06**	**0.56**	**0.00**	**0.00**	**0.01**	**0.01**	**0.01**	**0.55**	**1.35**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
CHANDIGARH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00
1	Chandigarh	772.06	1424.78	313.00	2695.13	5204.97	520.50	4684.47	950.70	217.35	2625.71	3793.76	2625.72	890.72	80.99
	Total(Ham)	**772.06**	**1424.78**	**313.00**	**2695.13**	**5204.97**	**520.50**	**4684.47**	**950.70**	**217.35**	**2625.71**	**3793.76**	**2625.72**	**890.72**	**80.99**
	Total (Bcm)	**0.01**	**0.01**	**0.00**	**0.03**	**0.05**	**0.01**	**0.05**	**0.01**	**0.00**	**0.03**	**0.04**	**0.03**	**0.01**	**80.99**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
DADRA & NAGAR HAVELI															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Dadra Nagar Haveli	5702.39	661.93	329.73	1948.12	8642.17	574.08	8068.09	888.62	8565.98	1292.40	10747.00	1798.23	629.28	133.20
	Total(Ham)	**5702.39**	**661.93**	**329.73**	**1948.12**	**8642.17**	**574.08**	**8068.09**	**888.62**	**8565.98**	**1292.40**	**10747.00**	**1798.23**	**629.28**	**133.20**
	Total (Bcm)	**0.06**	**0.01**	**0.00**	**0.02**	**0.09**	**0.01**	**0.08**	**0.01**	**0.09**	**0.01**	**0.11**	**0.02**	**0.01**	**133.20**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
DAMAN & DIU															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Daman	3109.41	41.21	0.00	71.91	3222.53	161.13	3061.40	215.10	4215.38	0.00	4430.48	1412.67	0.00	144.72
2	Diu	547.86	14.13	0.00	23.09	585.08	29.25	555.83	42.20	1239.89	0.00	1282.09	175.69	0.00	230.66
	Total(Ham)	**3657.27**	**55.34**	**0.00**	**95.00**	**3807.61**	**190.38**	**3617.23**	**257.30**	**5455.27**	**0.00**	**5712.57**	**1588.36**	**0.00**	**157.93**
	Total (Bcm)	**0.04**	**0.00**	**0.00**	**0.00**	**0.04**	**0.00**	**0.04**	**0.00**	**0.05**	**0.00**	**0.06**	**0.02**	**0.00**	**157.93**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
JAMMU & KASHMIR															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Anantnag**	4892.06	7761.42	12963.08	2013.10	27629.66	2762.96	24866.70	420.80	34.83	5098.32	5553.95	5098.32	19312.75	22.33
2	**Bandipora**	184.65	516.14	598.10	9.30	1308.19	130.82	1177.37	21.02	3.50	341.17	365.69	428.61	724.24	31.06
3	**Baramulla**	10989.00	19690.90	28836.22	6688.11	66204.23	6620.42	59583.81	714.82	20.90	7295.33	8031.05	7295.33	51552.76	13.48
4	**Budgam**	2604.32	18610.80	6605.85	3618.81	31439.78	3143.98	28295.80	188.96	29.30	5686.99	5905.25	5686.99	22390.55	20.87
5	**Doda**	96.31	661.15	187.19	161.07	1105.72	110.58	995.14	157.65	17.60	292.66	467.91	364.66	455.23	47.02
6	**Ganderbal**	69.65	528.90	235.23	287.82	1121.60	112.15	1009.45	420.48	10.43	126.14	557.06	553.82	24.71	55.18
7	**Jammu**	37576.77	41281.30	12172.41	7990.22	99020.70	8254.90	90765.80	19123.40	2848.21	10449.43	32421.04	10903.31	57890.88	35.72
8	**Kathua**	18799.31	13411.33	5710.04	10059.18	47979.86	3279.96	44699.90	4576.46	1292.98	7268.28	13137.72	7350.27	31480.19	29.39
9	**Kishtwar**	188.76	745.00	366.87	390.00	1690.63	169.07	1521.56	31.50	14.00	184.23	229.73	184.23	1291.83	15.10
10	**Kulgam**	1072.05	7787.40	2840.75	2121.38	13821.58	1382.16	12439.42	147.28	29.16	2365.20	2541.64	2365.20	9897.78	20.43
11	**Kupwara**	3329.04	17403.20	10783.08	5467.41	36982.73	3698.27	33284.46	31.54	35.00	5939.28	6005.81	5939.28	27278.65	18.04
12	**Poonch**	3980.98	10246.40	3802.16	2659.02	20688.56	2068.86	18619.70	717.50	17.50	1924.28	2659.28	1924.28	15960.42	14.28
13	**Pulwama**	3098.24	15025.20	6548.90	3376.43	28048.77	2804.87	25243.90	1854.45	17.28	4867.06	6738.79	4867.06	18505.11	26.69
14	**Rajouri**	7283.42	14807.30	3449.97	7557.19	33097.88	3309.79	29788.09	304.50	17.50	2822.59	3144.60	2885.93	26580.16	10.56
15	**Ramban**	120.08	665.55	423.81	349.63	1559.07	155.90	1403.17	59.50	17.50	376.88	453.88	409.66	916.51	32.35
16	**Reasi**	2315.80	2596.28	980.67	1117.29	7010.04	701.01	6309.03	178.70	73.58	1132.90	1385.19	1190.47	4866.27	21.96
17	**Samba**	8363.41	8264.01	3299.96	3476.67	23404.05	2340.40	21063.65	1147.57	126.12	2217.97	3491.67	2241.26	17548.68	16.58
18	**Shopian**	1742.08	8140.40	4616.21	3575.33	18074.02	1807.40	16266.62	129.60	27.00	2267.06	2423.66	2267.06	13842.96	14.90
19	**Srinagar Urban**	3559.61	472.42	7524.12	631.48	12187.63	1218.76	10968.87	87.28	662.13	7350.65	8100.08	8049.81	2169.63	73.85
20	**Udhampur**	6123.53	5708.02	3060.67	2850.41	17742.63	1643.30	16099.33	872.50	120.31	2844.24	3837.05	2923.74	12182.78	23.83
	Total(Ham)	**116389.07**	**194323.12**	**115005.29**	**64399.85**	**490117.33**	**45715.56**	**444401.77**	**31185.52**	**5414.82**	**70850.66**	**107451.1**	**72929.29**	**334872.09**	**24.18**
	Total (Bcm)	**1.16**	**1.94**	**1.15**	**0.64**	**4.90**	**0.46**	**4.44**	**0.31**	**0.05**	**0.71**	**1.07**	**0.73**	**3.35**	**24.18**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
LADAKH															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Kargil**	419.78	1051.80	1255.27	0.00	2726.85	272.69	2454.16	8.05	3.45	732.55	744.05	732.55	1710.11	30.32
2	**Leh**	531.41	4190.01	683.77	0.00	5405.19	540.52	4864.67	29.90	17.25	2235.60	2282.75	2235.60	2581.92	46.93
	Total(Ham)	**951.19**	**5241.81**	**1939.04**	**0.00**	**8132.04**	**813.21**	**7318.83**	**37.95**	**20.70**	**2968.15**	**3026.80**	**2968.15**	**4292.03**	**41.36**
	Total (Bcm)	**0.01**	**0.05**	**0.02**	**0.00**	**0.08**	**0.01**	**0.07**	**0.00**	**0.00**	**0.03**	**0.03**	**0.03**	**0.04**	**41.36**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
LAKSHADWEEP															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Agatti	109.49	0.28	27.41		137.18	54.87	54.45	0.00	0.00	36.67	36.66	36.83	17.63	67.33
2	Amini	109.12	0.12	27.28		136.52	54.61	53.83	0.00	0.00	40.50	40.50	40.68	13.15	75.24
3	Androth	218.90	0.05	54.72		273.67	109.47	111.93	0.00	0.00	59.23	59.23	59.50	52.43	52.92
4	Chetlat	43.81	0.04	10.95		54.80	21.92	21.65	0.00	0.00	12.02	12.02	12.08	9.57	55.52
5	Kadmat	131.44	0.07	32.86		164.37	65.74	64.93	0.00	0.00	27.58	27.58	27.70	37.23	42.48
6	Kalpeni	92.31	0.05	23.08		115.44	46.17	44.65	0.00	0.00	22.76	22.77	22.87	21.77	51.00
7	Kavaratti	152.93	0.31	38.23		191.47	76.58	75.57	0.00	0.00	58.59	58.59	58.86	16.71	77.53
8	Kiltan	68.67	0.06	17.17		85.90	34.36	33.83	0.00	0.00	21.38	21.37	21.47	12.37	63.17
9	Minicoy	168.89	0.22	42.22		211.33	84.53	79.50	0.00	0.00	54.12	54.12	54.37	25.13	68.08
	Total(Ham)	**1095.56**	**1.20**	**273.92**		**1370.68**	**548.25**	**540.34**	**0.00**	**0.00**	**332.85**	**332.84**	**334.36**	**205.99**	**61.60**
	Total (Bcm)	**0.01**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**61.60**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
PUDUCHERRY															
S. No.	Name of District	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic Use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	**Karaikal**	1565.09	3936.85	34.17	1481.15	7017.26	701.72	6315.54	733.89	17.58	544.48	1295.95	973.37	4980.05	20.52
2	**Mahe**	218.70	0.00	2.46	0.00	221.16	22.12	199.04	0.00	0.00	138.88	138.88	145.35	53.68	69.78
3	**Puducherry**	4347.46	5192.50	1457.03	2337.06	13334.05	1333.41	12000.64	6888.50	507.60	3976.57	11372.67	4338.92	265.62	94.77
	Total(Ham)	**6131.25**	**9129.35**	**1493.66**	**3818.21**	**20572.47**	**2057.25**	**18515.22**	**7622.39**	**525.18**	**4659.93**	**12807.50**	**5457.64**	**5299.35**	**69.17**
	Total (Bcm)	**0.06**	**0.09**	**0.01**	**0.04**	**0.21**	**0.02**	**0.19**	**0.08**	**0.01**	**0.05**	**0.13**	**0.05**	**0.05**	**69.17**

Annexure - III(A)

State-Wise Categorization of Blocks/ Mandals/ Taluks in India (as in 2022)

CATEGORIZATION OF BLOCKS/ MANDALS/ TALUKAS IN INDIA (2022)

S.No.	State/Union Territories	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
	States		Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
1	Andhra Pradesh	667	598	89.7	19	2.8	5	0.7	6	0.9	39	5.85
2	Arunachal Pradesh	11	11	100.00								
3	Assam	28	27	96.43	1	3.57						
4	Bihar	535	469	87.66	46	8.60	12	2.24	8	1.50		
5	Chhattisgarh	146	116	79.45	24	16.44	6	4.11				
6	Delhi	34	4	11.76	8	23.53	7	20.59	15	44.12		
7	Goa	12	12	100.00								
8	Gujarat	252	189	75.00	20	7.94	7	2.78	23	9.13	13	5.16
9	Haryana	143	36	25.17	9	6.29	10	6.99	88	61.54		
10	Himachal Pradesh	10	10	100.00								
11	Jharkhand	263	241	91.63	11	4.18	6	2.28	5	1.90		
12	Karnataka	234	139	59.40	35	14.96	11	4.70	49	20.94		
13	Kerala	152	122	80.26	27	17.76	3	1.97				
14	Madhya Pradesh	317	226	71.29	60	18.93	5	1.58	26	8.20		
15	Maharashtra	353	272	77.05	62	17.56	7	1.98	11	3.12	1	0.28
16	Manipur	9	9	100.00								
17	Meghalaya	12	12	100.00								
18	Mizoram	26	26	100.00								
19	Nagaland	11	11	100.00								
20	Odisha	314	300	95.54	8	2.55					6	1.91
21	Punjab	153	17	11.11	15	9.80	4	2.61	117	76.47		
22	Rajasthan	302	38	12.58	20	6.62	22	7.28	219	72.52	3	0.99
23	Sikkim	6	6	100.00								
24	Tamil Nadu	1166	463	39.71	231	19.81	78	6.69	360	30.87	34	2.92
25	Telangana	594	494	83.00	80	13.60	7	1.20	13	2.20		
26	Tripura	59	59	100.00								
27	Uttar Pradesh	836	557	66.63	169	20.22	47	5.62	63	7.54		
28	Uttarakhand	18	14	77.78	4	22.22						
29	West Bengal	345	232	67.25	31	8.99	22	6.38			60	17.39
30	Andaman and Nicobar	36	35	97.22							1	2.78
31	Chandigarh	1			1	100.00						
32	Dadra & Nagar Haveli	1							1	100.00		
	Daman & Diu	2							2	100.00		
33	Jammu and Kashmir	20	19	95.00	1	5.00						
34	Ladakh	8	7	87.50	1	12.50						
35	Lakshadweep	9	7	77.78	2	22.22						
36	Puducherry	4	2	50.00			1	25.00			1	25.00
	Grand Total	**7089**	**4780**	**67.43**	**885**	**12.48**	**260**	**3.67**	**1006**	**14.19**	**158**	**2.23**

Note-

Blocks- Bihar, Chhatisgarh, Haryana, Jharkhand, Kerala, Madhya Pradesh, Manipur, Mizoram, Odisha, Punjab, Rajasthan, Tripura, Uttar Pradesh, Uttarakhand, West Bengal

Taluks- Goa, Gujarat, Karnataka, Maharashtra

Mandals- Andhra Pradesh, Telangana

District- Arunachal Pradesh, Assam, Meghalaya, Nagaland, Sikkim, Dadra & Nagar Haveli, Daman & Diu, Jammu & Kashmir

Valley- Himachal Pradesh, Ladakh

Islands- Andaman & Nicobar, Lakshadweep

Firka- Tamil Nadu

Region- Puducherry

UT- Chandigarh

Tehsil- Delhi

Annexure - III(B)

District-Wise Categorization of Blocks/ Mandals/ Taluks in India (as in 2022)

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
ANDHRA PRADESH												
S.No	Name of District	Total No. of Assessed Units	Safe		SemiCritical		Critical		OverExploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Alluri Sitharama Raju	22	22	100.00	0	0.00	0	0.00	0	0.00	0	0.00
2	Anakapalli	24	24	100.00	0	0.00	0	0.00	0	0.00	0	0.00
3	Ananthapuramu	31	30	96.77	1	3.23	0	0.00	0	0.00	0	0.00
4	Annamayya	30	27	90.00	3	10.00	0	0.00	0	0.00	0	0.00
5	Bapatla	25	24	96.00	0	0.00	0	0.00	0	0.00	1	4.00
6	Chittoor	31	22	70.97	7	22.58	2	6.45	0	0.00	0	0.00
7	East Godavari	19	18	94.74	1	5.26	0	0.00	0	0.00	0	0.00
8	Eluru	28	22	78.57	0	0.00	0	0.00	0	0.00	6	21.43
9	Guntur	17	15	88.24	0	0.00	0	0.00	0	0.00	2	11.76
10	Kakinada	21	19	90.48	0	0.00	0	0.00	0	0.00	2	9.52
11	Konaseema	22	15	68.18	0	0.00	0	0.00	0	0.00	7	31.82
12	Krishna	25	16	64.00	0	0.00	0	0.00	0	0.00	9	36.00
13	Kurnool	25	25	100.00	0	0.00	0	0.00	0	0.00	0	0.00
14	Nandyal	29	29	100.00	0	0.00	0	0.00	0	0.00	0	0.00
15	NTR	17	17	100.00	0	0.00	0	0.00	0	0.00	0	0.00
16	Palnadu	28	26	92.86	0	0.00	1	3.57	1	3.57	0	0.00
17	Parvathipuram Manyam	15	15	100.00	0	0.00	0	0.00	0	0.00	0	0.00
18	Prakasam	38	33	86.84	3	7.89	1	2.63	1	2.63	0	0.00
19	Sri Potti Sriramulu Nellore	37	37	100.00	0	0.00	0	0.00	0	0.00	0	0.00
20	Sri Sathya Sai	32	25	78.13	2	6.25	1	3.13	4	12.50	0	0.00
21	Srikakulam	30	30	100.00	0	0.00	0	0.00	0	0.00	0	0.00
22	Tirupati	34	34	100.00	0	0.00	0	0.00	0	0.00	0	0.00
23	Visakhapatnam	5	5	100.00	0	0.00	0	0.00	0	0.00	0	0.00
24	Vizianagaram	27	27	100.00	0	0.00	0	0.00	0	0.00	0	0.00
25	West Godavari	19	7	36.84	0	0.00	0	0.00	0	0.00	12	63.16
26	Y.S.R Kadapa	36	34	94.44	2	5.56	0	0.00	0	0.00	0	0.00
	Total	**667**	**598**	**89.66**	**19**	**2.85**	**5**	**0.75**	**6**	**0.90**	**39**	**5.85**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
ARUNACHAL PRADESH												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Tirap	1	1	100.00								
2	Changlang	1	1	100.00								
3	Lohit	1	1	100.00								
4	Lower Dibang Valley	1	1	100.00								
5	East Siang	1	1	100.00								
6	West Siang	1	1	100.00								
7	East Kameng	1	1	100.00								
8	West Kameng	1	1	100.00								
9	Lower Subansiri	1	1	100.00								
10	Upper Subansiri	1	1	100.00								
11	Papum Pare	1	1	100.00								
	Total	**11**	**11**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
ASSAM												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Baksa	1	1	100.00								
2	Barpeta	1	1	100.00								
3	Bongaigaon	1	1	100.00								
4	Cachar	1	1	100.00								
5	Chirang	1	1	100.00								
6	Darrang	1	1	100.00								
7	Dhemaji	1	1	100.00								
8	Dhubri	1	1	100.00								
9	Dibrugarh	1	1	100.00								
10	Dima Hasao	1	1	100.00								
11	Goalpara	1	1	100.00								
12	Golaghat	1	1	100.00								
13	Hailakandi	1	1	100.00								
14	Jorhat	1	1	100.00								
15	Kamrup	1	1	100.00								
16	Kamrup Metro Rural	1	1	100.00								
17	Kamrup Metro Urban	1	0	0.00	1	100.00						
18	Karbi Anglong	1	1	100.00								
19	Karimganj	1	1	100.00								
20	Kokrajhar	1	1	100.00								
21	Lakhimpur	1	1	100.00								
22	Morigaon	1	1	100.00								
23	Nagaon	1	1	100.00								
24	Nalbari	1	1	100.00								
25	Sivasagar	1	1	100.00								
26	Sonitpur	1	1	100.00								
27	Tinsukia	1	1	100.00								
28	Udalguri	1	1	100.00								
	Total	28	27	96.43	1	3.57						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
BIHAR													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	**Araria**	9	9	100.00	-	-	-	-	-	-		
2	**Arwal**	5	5	100.00	-	-	-	-	-	-		
3	**Aurangabad**	11	11	100.00	-	-	-	-	-	-		
4	**Banka**	11	11	100.00	-	-	-	-	-	-		
5	**Begusarai**	18	14	77.78	4	22.22	-	-	-	-		
6	**Bhagalpur**	16	16	100.00	-	-	-	-	-	-		
7	**Bhojpur**	14	10	71.43	3	21.43	1	7.14	-	-		
8	**Buxar**	11	11	100.00	-	-	-	-	-	-		
9	**Darbhanga**	18	18	100.00	-	-	-	-	-	-		
10	**East Champaran**	27	27	100.00	-	-	-	-	-	-		
11	**Gaya**	24	23	95.83	1	4.17	-	-	-	-		
12	**Gopalganj**	14	14	100.00	-	-	-	-	-	-		
13	**Jamui**	10	10	100.00	-	-	-	-	-	-		
14	**Jehanabad**	7	2	28.57	3	42.86	-	-	2	28.57		
15	**Kaimur**	11	10	90.91	1	9.09	-	-	-	-		
16	**Katihar**	16	16	100.00	-	-	-	-	-	-		
17	**Khagaria**	7	7	100.00								
18	**Kishanganj**	7	7	100.00								
19	**Lakhisarai**	7	7	100.00								
20	**Madhepura**	13	13	100.00								
21	**Madhubani**	21	21	100.00								
22	**Munger**	9	9	100.00								
23	**Muzaffarpur**	16	7	43.75	7	43.75	1	6.25	1	6.25		
24	**Nalanda**	20	10	50.00	6	30.00	3	15.00	1	5.00		
25	**Nawada**	14	9	64.29	5	35.71	-	-	-	-		
26	**Patna**	24	15	62.50	5	20.83	3	12.50	1	4.17		
27	**Purnea**	14	14	100.00	-	-	-	-	-	-		
28	**Rohtas**	19	17	89.47	2	10.53	-	-	-	-		
29	**Saharsa**	10	10	100.00	-	-	-	-	-	-		
30	**Samastipur**	20	13	65.00	5	25.00	1	5.00	1	5.00		
31	**Saran**	20	20	100.00	-	-	-	-	-	-		
32	**Sheikhpura**	6	5	83.33	-	-	1	16.67	-	-		
33	**Sheohar**	5	5	100.00	-	-	-	-	-	-		
34	**Sitamarhi**	17	17	100.00	-	-	-	-	-	-		
35	**Siwan**	19	19	100.00	-	-	-	-	-	-		
36	**Supaul**	11	11	100.00	-	-	-	-	-	-		
37	**Vaishali**	16	8	50.00	4	25.00	2	12.50	2	12.50		
38	**West Champaran**	18	18	100.00	-	-	-	-	-	-		
	Total	**535**	**469**	**87.66**	**46**	**8.60**	**12**	**2.24**	**8**	**1.50**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
CHHATISGARH												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Balod	5	2	40.00	2	40.00	1	20.00				
2	Baloda Bazar	6	6	100.00	-	-	-	-				
3	Balrampur	6	6	100.00	-	-	-	-				
4	Bastar	7	7	100.00	-	-	-	-				
5	Bemetara	4	-	-	1	25.00	3	75.00				
6	Bijapur	4	4	100.00	-	-	-	-				
7	Bilaspur	4	2	50.00	2	50.00	-	-				
8	Dantewada	4	4	100.00	-	-	-	-				
9	Dhamtari	4	2	50.00	1	25.00	1	25.00				
10	Durg	3	-	-	3	100.00	-	-				
11	Gariaband	5	4	80.00	1	20.00	-	-				
12	Gourela-Pendra-Marwahi	3	3	100.00	-	-	-	-				
13	Janjgir-Champa	9	7	77.78	2	22.22	-	-				
14	Jashpur	8	8	100.00	-	-	-	-				
15	Kabirdham	4	3	75.00	1	25.00	-	-				
16	Kanker	7	6	85.71	1	14.29	-	-				
17	Kondagaon	5	5	100.00	-	-	-	-				
18	Korba	5	4	80.00	1	20.00	-	-				
19	Korea	5	5	100.00	-	-	-	-				
20	Mahasamund	5	4	80.00	1	20.00	-	-				
21	Mungeli	3	3	100.00	-	-	-	-				
22	Narayanpur	2	2	100.00	-	-	-	-				
23	Raigarh	9	6	66.67	3	33.33	-	-				
24	Raipur	4	3	75.00	-	-	1	25.00				
25	Rajnandgaon	9	5	55.56	4	44.44	-	-				
26	Sukma	3	3	100.00	-	-	-	-				
27	Surajpur	6	5	83.33	1	16.67	-	-				
28	Surguja	7	7	100.00	-	-	-	-				
	Total	146	116	79.45	24	16.44	6	4.11				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
DELHI												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	North	3	-	-	1	33.33	1	33.33	1	33.33		
2	South East	3	-	-	-	-	3	100.00	-	-		
3	South West	3	-	-	1	33.33	-	-	2	66.67		
4	East	3	-	-	2	66.67	1	33.33	-	-		
5	Nazul Land	1	1	100.00	-	-	-	-	-	-		
6	South	3	-	-	-	-	-	-	3	100.00		
7	Central	3	1	33.33	1	33.33	-	-	1	33.33		
8	New Delhi	3	-	-	-	-	-	-	3	100.00		
9	North West	3	2	66.67	1	33.33	-	-	-	-		
10	West	3	-	-	1	33.33	1	33.33	1	33.33		
11	North East	3	-	-	1	33.33	-	-	2	66.67		
12	Shahdara	3	-	-	-	-	1	33.33	2	66.67		
	Total	34	4	11.76	8	23.53	7	20.59	15	44.12		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
GOA													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%	
1	**Goa North**	5	5	100.00									
2	**South Goa**	7	7	100.00									
	Total	**12**	**12**	**100.00**									

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
GUJARAT												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	**Ahmedabad**	10	4	40.00	2	20.00	1	10.00	1	10.00	2	20.00
2	**Amreli**	11	10	90.91	-	-	1	9.09	-	-	-	-
3	**Anand**	8	8	100.00	-	-	-	-	-	-	-	-
4	**Arvalli**	6	6	100.00	-	-	-	-	-	-	-	-
5	**Banaskantha**	14	2	14.29	1	7.14	-	-	8	57.14	3	21.43
6	**Bharuch**	9	9	100.00	-	-	-	-	-	-	-	-
7	**Bhavnagar**	10	10	100.00	-	-	-	-	-	-	-	-
8	**Botad**	4	4	100.00	-	-	-	-	-	-	-	-
9	**Chhota Udepur**	6	6	100.00	-	-	-	-	-	-	-	-
10	**Dahod**	9	9	100.00	-	-	-	-	-	-	-	-
11	**Dang**	3	3	100.00	-	-	-	-	-	-	-	-
12	**Devbhumi Dwarka**	4	4	100.00	-	-	-	-	-	-	-	-
13	**Gandhinagar**	4	-	-	2	50.00	-	-	2	50.00	-	-
14	**Gir Somnath**	6	6	100.00	-	-	-	-	-	-	-	-
15	**Jamnagar**	6	6	100.00	-	-	-	-	-	-	-	-
16	**Junagadh**	9	8	88.89	1	11.11	-	-	-	-	-	-
17	**Kachchh**	10	6	60.00	-	-	-	-	3	30.00	1	10.00
18	**Kheda**	10	9	90.00	1	10.00	-	-	-	-	-	-
19	**Mahesana**	10			3	30.00	1	10.00	5	50.00	1	10.00
20	**Mahisagar**	6	6	100.00	-	-	-	-	-	-	-	-
21	**Morbi**	5	4	80.00	-	-	-	-	-	-	1	20.00
22	**Narmada**	5	4	80.00	1	20.00	-	-	-	-	-	-
23	**Navsari**	6	6	100.00	-	-	-	-	-	-	-	-
24	**Panchmahal**	7	7	100.00	-	-	-	-	-	-	-	-
25	**Patan**	9	-	-	1	11.11	1	11.11	2	22.22	5	55.56
26	**Porbandar**	3	3	100.00	-	-	-	-	-	-	-	-
27	**Rajkot**	12	9	75.00	2	16.67	1	8.33	-	-	-	-
28	**Sabarkantha**	8	4	50.00	3	37.50	-	-	1	12.50	-	-
29	**Surat**	10	9	90.00	-	-	-	-	1	10.00	-	-
30	**Surendranagar**	10	9	90.00	1	10.00	-	-	-	-	-	-
31	**Tapi**	7	7	100.00	-	-	-	-	-	-	-	-
32	**Vadodara**	9	5	55.56	2	22.22	2	22.22	-	-	-	-
33	**Valsad**	6	6	100.00	-	-	-	-	-	-	-	-
	Total	**252**	**189**	**75.00**	**20**	**7.94**	**7**	**2.78**	**23**	**9.13**	**13**	**5.16**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
HARYANA												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Ambala	6	-	-	2	33.33	1	16.67	3	50.00		
2	Bhiwani	7	3	42.86	-	-	-	-	4	57.14		
3	Charkhi Dadri	4	2	50.00	-	-	-	-	2	50.00		
4	Faridabad	4	-	-	-	-	-	-	4	100.00		
5	Fatehabad	7	-	-	-	-	2	28.57	5	71.43		
6	Gurgaon	5	-	-	-	-	-	-	5	100.00		
7	Hisar	9	6	66.67	1	11.11	1	11.11	1	11.11		
8	Jhajjar	7	7	100.00	-	-	-	-	-	-		
9	Jind	8	2	25.00	1	12.50	-	-	5	62.50		
10	Kaithal	7	-	-	-	-	-	-	7	100.00		
11	Karnal	8	-	-	-	-	1	12.50	7	87.50		
12	Kurukshetra	7	-	-	-	-	-	-	7	100.00		
13	Mahendragarh	8	-	-	-	-	2	25.00	6	75.00		
14	Mewat	7	4	57.14	1	14.29	-	-	2	28.57		
15	Palwal	6	2	33.33	1	16.67	1	16.67	2	33.33		
16	Panchkula	3	2	66.67	-	-	1	33.33	-	-		
17	Panipat	6	-	-	-	-	-	-	6	100.00		
18	Rohtak	5	5	100.00	-	-	-	-	-	-		
19	Rewari	7	-	-	-	-	1	14.29	6	85.71		
20	Sirsa	7	-	-	1	14.29	-	-	6	85.71		
21	Sonipat	8	3	37.50	-	-	-	-	5	62.50		
22	Yamuna Nagar	7	-	-	2	28.57	-	-	5	71.43		
	Total	**143**	**36**	**25.17**	**9**	**6.29**	**10**	**6.99**	**88**	**61.54**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
HIMACHAL PRADESH													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Kangra	2	2	100.00								
2	Mandi	2	2	100.00								
3	Sirmour	2	2	100.00								
4	Solan	1	1	100.00								
5	Una	3	3	100.00								
	Total	**10**	**10**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
JHARKHAND													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Bokaro	9	8	88.89	-	-	-	-	1	11.11		
2	Chatra	12	12	100.00	-	-	-	-	-	-		
3	Deoghar	10	7	70.00	3	30.00	-	-	-	-		
4	Dhanbad	9	4	44.44	2	22.22	2	22.22	1	11.11		
5	Dumka	10	10	100.00	-	-	-	-	-	-		
6	East Singhbhum	12	10	83.33	-	-	-	-	2	16.67		
7	Garhwa	19	18	94.74	1	5.26	-	-	-	-		
8	Giridih	13	12	92.31	1	7.69	-	-	-	-		
9	Godda	9	9	100.00	-	-	-	-	-	-		
10	Gumla	12	12	100.00	-	-	-	-	-	-		
11	Hazaribagh	16	15	93.75	1	6.25	-	-	-	-		
12	Jamtara	6	6	100.00	-	-	-	-	-	-		
13	Khunti	6	6	100.00	-	-	-	-	-	-		
14	Koderma	6	4	66.67	1	16.67	1	16.67	-	-		
15	Latehar	9	9	100.00	-	-	-	-	-	-		
16	Lohardaga	7	7	100.00	-	-	-	-	-	-		
17	Pakur	6	6	100.00	-	-	-	-	-	-		
18	Palamau	21	21	100.00	-	-	-	-	-	-		
19	Ramgarh	6	4	66.67	-	-	1	16.67	1	16.67		
20	Ranchi	19	15	78.95	2	10.53	2	10.53	-	-		
21	Sahebganj	9	9	100.00	-	-	-	-	-	-		
22	Saraikela Kharsawan	9	9	100.00	-	-	-	-	-	-		
23	Simdega	10	10	100.00	-	-	-	-	-	-		
24	West Singhbhum	18	18	100.00	-	-	-	-	-	-		
	Total	**263**	**241**	**91.63**	**11**	**4.18**	**6**	**2.28**	**5**	**1.90**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
KARNATAKA												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Bagalkot	9	3	33.33	3	33.33	1	11.11	2	22.22	-	-
2	Ballari	5	5	100.00		0.00		0.00		0.00	-	-
3	Belagavi	15	7	46.67	5	33.33	2	13.33	1	6.67	-	-
4	Bengaluru (Rural)	4		0.00		0.00		0.00	4	100.00	-	-
5	Bengaluru (Urban)	6		0.00		0.00		0.00	6	100.00	-	-
6	Bidar	8	6	75.00	2	25.00		0.00		0.00	-	-
7	Chamarajanagara	5		0.00	2	40.00	1	20.00	2	40.00	-	-
8	Chikkaballapura	6		0.00		0.00		0.00	6	100.00	-	-
9	Chikkamagaluru	9	7	77.78		0.00		0.00	2	22.22	-	-
10	Chitradurga	6	1	16.67		0.00		0.00	5	83.33	-	-
11	Dakshina Kannada	7	7	100.00		0.00		0.00		0.00	-	-
12	Davanagere	6	2	33.33	1	16.67	1	16.67	2	33.33	-	-
13	Dharwad	8	8	100.00		0.00		0.00		0.00	-	-
14	Gadag	7	2	28.57	3	42.86		0.00	2	28.57	-	-
15	Hassan	8	6	75.00		0.00	1	12.50	1	12.50	-	-
16	Haveri	8	4	50.00	3	37.50	1	12.50		0.00	-	-
17	Kalburgi	11	10	90.91	1	9.09		0.00		0.00	-	-
18	Kodagu	5	5	100.00		0.00		0.00		0.00	-	-
19	Kolara	6		0.00		0.00		0.00	6	100.00	-	-
20	Koppal	7	4	57.14	2	28.57	1	14.29		0.00	-	-
21	Mandya	7	6	85.71	1	14.29		0.00		0.00	-	-
22	Mysuru	8	7	87.50	1	12.50		0.00		0.00	-	-
23	Raichur	7	6	85.71	1	14.29		0.00		0.00	-	-
24	Ramanagara	5		0.00	2	40.00	1	20.00	2	40.00	-	-
25	Shivamogga	7	7	100.00		0.00		0.00		0.00	-	-
26	Tumakuru	10	3	30.00	1	10.00	1	10.00	5	50.00	-	-
27	Udupi	7	7	100.00		0.00		0.00		0.00	-	-
28	Uttara Kannada	12	12	100.00		0.00		0.00		0.00	-	-
29	Vijayanagara	6	2	33.33	1	16.67		0.00	3	50.00	-	-
30	Vijayapura	13	8	61.54	4	30.77	1	7.69		0.00	-	-
31	Yadgir	6	4	66.67	2	33.33		0.00		0.00	-	-
	Total	**234**	**139**	**59.40**	**35**	**14.96**	**11**	**4.70**	**49**	**20.94**	**-**	**-**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
KERALA													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%	
1	Alappuzha	12	12	100.00	-	-	-	-					
2	Ernakulam	14	14	100.00	-	-	-	-					
3	Idukki	8	6	75.00	2	25.00	-	-					
4	Kannur	11	8	72.73	3	27.27	-	-					
5	Kasargod	6	4	66.67	1	16.67	1	16.67					
6	Kollam	11	10	90.91	1	9.09	-	-					
7	Kottayam	11	11	100.00	-	-	-	-					
8	Kozhikkode	12	10	83.33	2	16.67	-	-					
9	Malappuram	15	7	46.67	8	53.33	-	-					
10	Palakkad	13	9	69.23	2	15.38	2	15.38					
11	Pathanamthitta	8	8	100.00	-	-	-	-					
12	Thiruvananthapuram	11	6	54.55	5	45.45	-	-					
13	Thrissur	16	13	81.25	3	18.75	-	-					
14	Wayanad	4	4	100.00	-	-	-	-					
	Total	**152**	**122**	**80.26**	**27**	**17.76**	**3**	**1.97**					

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
MADHYA PRADESH												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Barwani	7	5	71.43	1	14.29	-	-	1	14.29		
2	Sheopur	3	2	66.67	1	33.33	-	-	-	-		
3	Satna	8	4	50.00	4	50.00	-	-	-	-		
4	Ujjain	6	-	-	3	50.00	-	-	3	50.00		
5	Neemuch	3	-	-	1	33.33	-	-	2	66.67		
6	Rajgarh	6	-	-	4	66.67	1	16.67	1	16.67		
7	Dhar	13	9	69.23	-	-	1	7.69	3	23.08		
8	Guna	5	5	100.00	-	-	-	-	-	-		
9	Dewas	6	3	50.00	1	16.67	-	-	2	33.33		
10	Burhanpur	2	1	50.00	1	50.00	-	-	-	-		
11	Ashoknagar	4	2	50.00	2	50.00	-	-	-	-		
12	Anuppur	4	3	75.00	1	25.00	-	-	-	-		
13	Balaghat	10	10	100.00	-	-	-	-	-	-		
14	Alirajpur	6	6	100.00	-	-	-	-	-	-		
15	Agar Malwa	4	1	25.00	1	25.00	-	-	2	50.00		
16	Betul	10	8	80.00	2	20.00	-	-	-	-		
17	Chhindwara	11	8	72.73	2	18.18	1	9.09	-	-		
18	Damoh	7	6	85.71	1	14.29	-	-	-	-		
19	Datia	3	3	100.00	-	-	-	-	-	-		
20	Dindori	7	7	100.00	-	-	-	-	-	-		
21	Gwalior	5	4	80.00	1	20.00	-	-	-	-		
22	Umaria	3	3	100.00	-	-	-	-	-	-		
23	Vidisha	7	5	71.43	2	28.57	-	-	-	-		
24	Niwari	2	1	50.00	1	50.00	-	-	-	-		
25	Bhind	6	6	100.00	-	-	-	-	-	-		
26	Bhopal	3	-	-	3	100.00	-	-	-	-		
27	Chhatarpur	8	4	50.00	4	50.00	-	-	-	-		
28	Harda	3	3	100.00	-	-	-	-	-	-		
29	Hoshangabad	7	6	85.71	1	14.29	-	-	-	-		
30	Indore	5	-	-	1	20.00	1	20.00	3	60.00		
31	Jabalpur	8	7	87.50	1	12.50	-	-	-	-		
32	Jhabua	6	5	83.33	1	16.67	-	-	-	-		
33	Katni	6	6	100.00	-	-	-	-	-	-		
34	Khandwa	7	6	85.71	1	14.29	-	-	-	-		
35	Khargone	9	8	88.89	1	11.11	-	-	-	-		
36	Mandla	9	9	100.00	-	-	-	-	-	-		
37	Mandsaur	5	-	-	3	60.00	-	-	2	40.00		
38	Morena	7	7	100.00	-	-	-	-	-	-		
39	Narsinghpur	6	5	83.33	1	16.67	-	-	-	-		
40	Panna	5	5	100.00	-	-	-	-	-	-		
41	Shajapur	4	-	-	1	25.00	-	-	3	75.00		
42	Shivpuri	8	3	37.50	5	62.50	-	-	-	-		
43	Sidhi	5	5	100.00	-	-	-	-	-	-		
44	Raisen	7	6	85.71	1	14.29	-	-	-	-		
45	Ratlam	6	-	-	2	33.33	-	-	4	66.67		
46	Rewa	9	8	88.89	1	11.11	-	-	-	-		
47	Sagar	11	11	100.00	-	-	-	-	-	-		
48	Sehore	5	4	80.00	-	-	1	20.00	-	-		
49	Seoni	8	8	100.00	-	-	-	-	-	-		
50	Shahdol	5	5	100.00	-	-	-	-	-	-		
51	Singrauli	3	3	100.00	-	-	-	-	-	-		
52	Tikamgarh	4	-	-	4	100.00	-	-	-	-		
	Total	**317**	**226**	**71.29**	**60**	**18.93**	**5**	**1.58**	**26**	**8.20**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
MAHARASHTRA												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Ahmednagar	14	4	28.57	5	35.71	4	28.57	1	7.14	-	-
2	Akola	7	6	85.71	1	14.29	-	-	-	-	-	-
3	Amravati	14	5	35.71	4	28.57	-	-	4	28.57	1	7.14
4	Aurangabad	9	2	22.22	7	77.78	-	-	-	-	-	-
5	Beed	11	11	100.00	-	-	-	-	-	-	-	-
6	Bhandara	7	7	100.00	-	-	-	-	-	-	-	-
7	Buldhana	13	2	15.38	9	69.23	-	-	2	15.38	-	-
8	Chandrapur	15	15	100.00	-	-	-	-	-	-	-	-
9	Dhule	4	4	100.00	-	-	-	-	-	-	-	-
10	Gadchiroli	12	12	100.00	-	-	-	-	-	-	-	-
11	Gondia	8	8	100.00	-	-	-	-	-	-	-	-
12	Hingoli	5	5	100.00	-	-	-	-	-	-	-	-
13	Jalgaon	15	4	26.67	9	60.00	-	-	2	13.33	-	-
14	Jalna	8	8	100.00	-	-	-	-	-	-	-	-
15	Kolhapur	12	12	100.00	-	-	-	-	-	-	-	-
16	Latur	10	9	90.00	1	10.00	-	-	-	-	-	-
17	Nagpur	13	11	84.62	2	15.38	-	-	-	-	-	-
18	Nanded	16	16	100.00	-	-	-	-	-	-	-	-
19	Nandurbar	6	6	100.00	-	-	-	-	-	-	-	-
20	Nashik	15	9	60.00	3	20.00	2	13.33	1	6.67	-	-
21	Osmanabad	8	6	75.00	2	25.00	-	-	-	-	-	-
22	Palghar	8	8	100.00	-	-	-	-	-	-	-	-
23	Parbhani	9	9	100.00	-	-	-	-	-	-	-	-
24	Pune	13	5	38.46	7	53.85	1	7.69	-	-	-	-
25	Raigad	15	15	100.00	-	-	-	-	-	-	-	-
26	Ratnagiri	9	9	100.00	-	-	-	-	-	-	-	-
27	Sangli	10	9	90.00	1	10.00	-	-	-	-	-	-
28	Satara	11	8	72.73	3	27.27	-	-	-	-	-	-
29	Sindhudurg	8	8	100.00	-	-	-	-	-	-	-	-
30	Solapur	11	3	27.27	7	63.64	-	-	1	9.09	-	-
31	Thane	7	7	100.00	-	-	-	-	-	-	-	-
32	Wardha	8	7	87.50	1	12.50	-	-	-	-	-	-
33	Washim	6	6	100.00	-	-	-	-	-	-	-	-
34	Yawatmal	16	16	100.00	-	-	-	-	-	-	-	-
	Total	**353**	**272**	**77.05**	**62**	**17.56**	**7**	**1.98**	**11**	**3.12**	**1**	**0.28**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
MANIPUR													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%	
1	**Bishnupur**	2	2	100.00									
2	**Churachandpur**	1	1	100.00									
3	**Imphal East**	2	2	100.00									
4	**Imphal West**	2	2	100.00									
5	**Thoubal**	2	2	100.00									
	Total	**9**	**9**	**100.00**									

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022														
MEGHALAYA														
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline			
			No.	%	No.	%	No.	%	No.	%	No.	%		
1	East Garo Hills	1	1	100.00										
2	East Jaintia Hills	1	1	100.00										
3	East Khasi Hills	1	1	100.00										
4	Greater Shillong	1	1	100.00										
5	North Garo Hills	1	1	100.00										
6	Ri-Bhoi	1	1	100.00										
7	South Garo Hills	1	1	100.00										
8	South West Garo Hills	1	1	100.00										
9	South West Khasi Hills	1	1	100.00										
10	West Garo Hills	1	1	100.00										
11	West Jaintia Hills	1	1	100.00										
12	West Khasi Hills	1	1	100.00										
	Total	12	12	100.00										

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
MIZORAM													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%
1	**Aizawl**	5	5	100.00								
2	**Champhai**	4	4	100.00								
3	**Kolasib**	2	2	100.00								
4	**Lawngtlai**	4	4	100.00								
5	**Lunglei**	4	4	100.00								
6	**Mamit**	3	3	100.00								
7	**Saiha**	2	2	100.00								
8	**Serchhip**	2	2	100.00								
	Total	**26**	**26**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
NAGALAND													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%	
1	Dimapur	1	1	100.00									
2	Kiphire	1	1	100.00									
3	Kohima	1	1	100.00									
4	Longleng	1	1	100.00									
5	Mokokchung	1	1	100.00									
6	Mon	1	1	100.00									
7	Peren	1	1	100.00									
8	Phek	1	1	100.00									
9	Tuensang	1	1	100.00									
10	Wokha	1	1	100.00									
11	Zunheboto	1	1	100.00									
	Total	11	11	100.00									

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
ODISHA													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%	
1	Angul	8	7	87.50	1	12.50	0	0.00	0	0.00	0	0.00	
2	Balasore	12	11	91.67	1	8.33	0	0.00	0	0.00	0	0.00	
3	Bargarh	12	12	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
4	Bhadrak	7	6	85.71	0	0.00	0	0.00	0	0.00	1	14.29	
5	Bolangir	14	14	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
6	Boudh	3	3	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
7	Cuttack	14	14	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
8	Deogarh	3	3	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
9	Dhenkanal	8	8	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
10	Gajapati	7	7	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
11	Ganjam	22	22	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
12	Jagatsinghpur	8	7	87.50	0	0.00	0	0.00	0	0.00	1	12.50	
13	Jajpur	10	9	90.00	1	10.00	0	0.00	0	0.00	0	0.00	
14	Jharsuguda	5	5	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
15	Kalahandi	13	13	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
16	Kandhamal	12	12	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
17	Kendrapara	9	4	44.44	1	11.11	0	0.00	0	0.00	4	44.44	
18	Keonjhar	13	13	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
19	Khurda	10	8	80.00	2	20.00	0	0.00	0	0.00	0	0.00	
20	Koraput	14	14	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
21	Malkangiri	7	7	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
22	Mayurbhanj	26	26	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
23	Nabarangapur	10	10	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
24	Nayagarh	8	7	87.50	1	12.50	0	0.00	0	0.00	0	0.00	
25	Nuapada	5	4	80.00	1	20.00	0	0.00	0	0.00	0	0.00	
26	Puri	11	11	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
27	Rayagada	11	11	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
28	Sambalpur	9	9	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
29	Subarnapur	6	6	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
30	Sundargarh	17	17	100.00	0	0.00	0	0.00	0	0.00	0	0.00	
	Total	**314**	**300**	**95.54**	**8**	**2.55**					**6**	**1.91**	

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
PUNJAB												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Amritsar	10	-	-	-	-	-	-	10	100.00		
2	Barnala	3	-	-	-	-	-	-	3	100.00		
3	Bathinda	9	-	-	3	33.33	-	-	6	66.67		
4	Faridkot	3	-	-	-	-	-	-	3	100.00		
5	Fatehgarh Sahib	5	-	-	-	-	-	-	5	100.00		
6	Fazilka	5	3	60.00	1	20.00	-	-	1	20.00		
7	Firozpur	6	-	-	-	-	1	16.67	5	83.33		
8	Gurdaspur	11	-	-	2	18.18	1	9.09	8	72.73		
9	Hoshiarpur	10	2	20.00	3	30.00	1	10.00	4	40.00		
10	Jalandhar	12	-	-	-	-	-	-	12	100.00		
11	Kapurthala	5	-	-	-	-	-	-	5	100.00		
12	Ludhiana	14	-	-	-	-	-	-	14	100.00		
13	Malerkotla	2	-	-	-	-	-	-	2	100.00		
14	Mansa	5	1	20.00	1	20.00	1	20.00	2	40.00		
15	Moga	5	-	-	-	-	-	-	5	100.00		
16	Muktsar	4	4	100.00	-	-	-	-	-	-		
17	Pathankot	6	3	50.00	3	50.00	-	-	-	-		
18	Patiala	9	-	-	-	-	-	-	9	100.00		
19	Rupnagar	5	2	40.00	1	20.00	-	-	2	40.00		
20	Sas Nagar	3	1	33.33	-	-	-	-	2	66.67		
21	Sbs Nagar	5	1	20.00	1	20.00	-	-	3	60.00		
22	Sangrur	8	-	-	-	-	-	-	8	100.00		
23	Tarn Taran	8	-	-	-	-	-	-	8	100.00		
	Total	153	17	11.11	15	9.80	4	2.61	117	76.47		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
RAJASTHAN												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Ajmer	10	-	-	-	-	-	-	10	100.00	-	-
2	Alwar	14	-	-	-	-	-	-	14	100.00	-	-
3	Banswara	11	6	54.55	5	45.45	-	-	-	-	-	-
4	Baran	7	-	-	1	14.29	2	28.57	4	57.14	-	-
5	Barmer	17	1	5.88	2	11.76	-	-	14	82.35	-	-
6	Bharatpur	10	-	-	-	-	-	-	10	100.00	-	-
7	Bhilwara	12	-	-	-	-	-	-	12	100.00	-	-
8	Bikaner	8	3	37.50	1	12.50	-	-	3	37.50	1	12.50
9	Bundi	5	1	20.00	1	20.00	1	20.00	2	40.00	-	-
10	Chittaurgarh	11	-	-	-	-	-	-	11	100.00	-	-
11	Churu	7	1	14.29	-	-	1	14.29	4	57.14	1	14.29
12	Dausa	6	-	-	-	-	-	-	6	100.00	-	-
13	Dhaulpur	5	-	-	-	-	-	-	5	100.00	-	-
14	Dungarpur	10	8	80.00	2	20.00	-	-	-	-	-	-
15	Ganganagar	9	9	100.00	-	-	-	-	-	-	-	-
16	Hanumangarh	7	6	85.71	-	-	-	-	-	-	1	14.29
17	Jaipur	16	-	-	-	-	-	-	16	100.00	-	-
18	Jaisalmer	4	-	-	-	-	-	-	4	100.00	-	-
19	Jalor	8	-	-	-	-	-	-	8	100.00	-	-
20	Jhalawar	8	1	12.50	1	12.50	1	12.50	5	62.50	-	-
21	Jhunjhunun	8	-	-	-	-	-	-	8	100.00	-	-
22	Jodhpur	17	-	-	1	5.88	1	5.88	15	88.24	-	-
23	Karauli	6	-	-	-	-	1	16.67	5	83.33	-	-
24	Kota	6	-	-	2	33.33	-	-	4	66.67	-	-
25	Nagaur	14	-	-	-	-	-	-	14	100.00	-	-
26	Pali	10	1	10.00	1	10.00	-	-	8	80.00	-	-
27	Pratapgarh	5	1	20.00	-	-	1	20.00	3	60.00	-	-
28	Rajsamand	7	-	-	-	-	2	28.57	5	71.43	-	-
29	Sawai Madhopur	6	-	-	-	-	-	-	6	100.00	-	-
30	Sikar	9	-	-	-	-	-	-	9	100.00	-	-
31	Sirohi	5	-	-	-	-	1	20.00	4	80.00	-	-
32	Tonk	6	-	-	2	33.33	1	16.67	3	50.00	-	-
33	Udaipur	18	-	-	1	5.56	10	55.56	7	38.89	-	-
	Total	**302**	**38**	**12.58**	**20**	**6.62**	**22**	**7.28**	**219**	**72.52**	**3**	**0.99**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
SIKKIM													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Soreng	1	1	100.00								
2	Pakyong	1	1	100.00								
3	Gangtok	1	1	100.00								
4	Gyalshing	1	1	100.00								
5	Namchi	1	1	100.00								
6	Mangan	1	1	100.00								
	Total	**6**	**6**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
TAMIL NADU												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Ariyalur	15	14	93.33	1	6.67	0	0.00	0	0.00	0	0.00
2	Chengalpattu	40	20	50.00	15	37.50	2	5.00	3	7.50	0	0.00
3	Chennai	30	1	3.33	3	10.00	0	0.00	26	86.67	0	0.00
4	Coimbatore	38	6	15.79	5	13.16	4	10.53	23	60.53	0	0.00
5	Cuddalore	32	11	34.38	11	34.38	4	12.50	6	18.75	0	0.00
6	Dharmapuri	23	3	13.04	6	26.09	1	4.35	13	56.52	0	0.00
7	Dindigul	40	6	15.00	4	10.00	3	7.50	27	67.50	0	0.00
8	Erode	34	10	29.41	11	32.35	2	5.88	11	32.35	0	0.00
9	Kallakkurichi	23	10	43.48	6	26.09	4	17.39	3	13.04	0	0.00
10	Kancheepuram	25	16	64.00	6	24.00	1	4.00	2	8.00	0	0.00
11	Kanniyakumari	18	17	94.44	1	5.56	0	0.00	0	0.00	0	0.00
12	Karur	20	4	20.00	2	10.00	0	0.00	14	70.00	0	0.00
13	Krishnagiri	29	10	34.48	8	27.59	1	3.45	10	34.48	0	0.00
14	Madurai	51	21	41.18	19	37.25	7	13.73	4	7.84	0	0.00
15	Nagapattinam	31	1	3.23	0	0.00	0	0.00	13	41.94	17	54.84
16	Namakkal	30	5	16.67	2	6.67	2	6.67	21	70.00	0	0.00
17	Perambalur	11	3	27.27	1	9.09	0	0.00	7	63.64	0	0.00
18	Pudukkottai	45	36	80.00	6	13.33	0	0.00	0	0.00	3	6.67
19	Ramanathapuram	38	29	76.32	0	0.00	0	0.00	0	0.00	9	23.68
20	Ranipet	18	3	16.67	11	61.11	0	0.00	4	22.22	0	0.00
21	Salem	44	5	11.36	4	9.09	3	6.82	32	72.73	0	0.00
22	Sivaganga	39	39	100.00	0	0.00	0	0.00	0	0.00	0	0.00
23	Tenkasi	30	10	33.33	4	13.33	5	16.67	11	36.67	0	0.00
24	Thanjavur	50	4	8.00	8	16.00	4	8.00	34	68.00	0	0.00
25	The Nilgiris	15	15	100.00	0	0.00	0	0.00	0	0.00	0	0.00
26	Theni	17	6	35.29	7	41.18	2	11.76	2	11.76	0	0.00
27	Thiruvallur	47	24	51.06	16	34.04	4	8.51	2	4.26	1	2.13
28	Thiruvarur	27	9	33.33	3	11.11	1	3.70	10	37.04	4	14.81
29	Thoothukkudi	41	35	85.37	3	7.32	2	4.88	1	2.44	0	0.00
30	Tiruchirappalli	43	20	46.51	5	11.63	1	2.33	17	39.53	0	0.00
31	Tirunelveli	30	22	73.33	6	20.00	1	3.33	1	3.33	0	0.00
32	Tirupathur	15	0	0.00	3	20.00	0	0.00	12	80.00	0	0.00
33	Tiruppur	33	7	21.21	7	21.21	9	27.27	10	30.30	0	0.00
34	Tiruvannamalai	52	12	23.08	19	36.54	8	15.38	13	25.00	0	0.00
35	Vellore	19	1	5.26	5	26.32	1	5.26	12	63.16	0	0.00
36	Viluppuram	34	6	17.65	11	32.35	5	14.71	12	35.29	0	0.00
37	Virudhunagar	39	22	56.41	12	30.77	1	2.56	4	10.26	0	0.00
	Total	1166	463	39.71	231	19.81	78	6.69	360	30.87	34	2.92

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
TELANGANA												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Adilabad	18	16	88.89	1	5.56		0.00	1	5.56		
2	Bhadradri Kothagudem	23	19	82.61	2	8.70	2	8.70				
3	Hanumakonda	14	10	71.43	4	28.57						
4	Hyderabad	16	4	25.00	4	25.00			8	50.00		
5	Jagtial	18	17	94.44	1	5.56						
6	Jangaon	12	11	91.67	1	8.33						
7	Jayashankar Bhupalapally	11	11	100.00								
8	Jogulamba Gadwal	12	11	91.67	1	8.33						
9	Kamareddy	22	17	77.27	5	22.73						
10	Karimnagar	16	14	87.50	2	12.50						
11	Khammam	21	17	80.95	4	19.05						
12	Komarambheem Asifabad	15	15	100.00								
13	Mahabubabad	16	15	93.75	1	6.25						
14	Mahabubnagar	16	10	62.50	6	37.50						
15	Mancherial	18	18	100.00								
16	Medak	21	17	80.95	4	19.05						
17	Medchal Malkajgiri	15	9	60.00	4	26.67			2	13.33		
18	Mulug	9	9	100.00								
19	Nagarkurnool	20	17	85.00	2	10.00	1	5.00				
20	Nalgonda	31	25	80.65	6	19.35						
21	Narayanpet	11	10	90.91	1	9.09						
22	Nirmal	19	18	94.74	1	5.26						
23	Nizamabad	29	19	65.52	7	24.14	2	6.90	1	3.45		
24	Peddapalle	14	14	100.00								
25	Rajanna Siricilla	13	12	92.31	1	7.69				0.00		
26	Rangareddy	27	18	66.67	7	25.93	1	3.70	1	3.70		
27	Sangareddy	27	23	85.19	4	14.81						
28	Siddipet	24	14	58.33	9	37.50	1	4.17				
29	Suryapet	23	21	91.30	2	8.70						
30	Vikarabad	19	19	100.00								
31	Wanaparthy	14	14	100.00								
32	Warangal	13	13	100.00								
33	Yadadri Bhuvanagiri	17	17	100.00								
	Total	594	494	83.16	80	13.47	7	1.20	13	2.19	0	0.00

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
TRIPURA													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	**Dhalai**	8	8	100.00								
2	**Gomati**	8	8	100.00								
3	**Khowai**	6	6	100.00								
4	**North Tripura**	8	8	100.00								
5	**Sephahijala**	7	7	100.00								
6	**South Tripura**	8	8	100.00								
7	**Unakoti**	4	4	100.00								
8	**West Tripura**	10	10	100.00								
	Total	**59**	**59**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
UTTAR PRADESH												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Agra	16	-	-	4	25.00	2	12.50	10	62.50	-	-
2	Aligarh	13	6	46.15	5	38.46	1	7.69	1	7.69	-	-
3	Ambedkar Nagar	9	8	88.89	1	11.11	-	-	-	-	-	-
4	Amethi	13	12	92.31	1	7.69	-	-	-	-	-	-
5	Amroha	6	-	-	3	50.00	2	33.33	1	16.67	-	-
6	Auraiya	7	7	100.00	-	-	-	-	-	-	-	-
7	Ayodhya	11	11	100.00	-	-	-	-	-	-	-	-
8	Azamgarh	22	22	100.00	-	-	-	-	-	-	-	-
9	Bagpat	6	-	-	2	33.33	1	16.67	3	50.00	-	-
10	Bahraich	14	14	100.00	-	-	-	-	-	-	-	-
11	Ballia	17	17	100.00	-	-	-	-	-	-	-	-
12	Balrampur	9	9	100.00	-	-	-	-	-	-	-	-
13	Banda	8	4	50.00	4	50.00	-	-	-	-	-	-
14	Barabanki	15	15	100.00	-	-	-	-	-	-	-	-
15	Bareilly	16	11	68.75	4	25.00	-	-	1	6.25	-	-
16	Basti	14	14	100.00	-	-	-	-	-	-	-	-
17	Bijnor	11	6	54.55	4	36.36	1	9.09	-	-	-	-
18	Budaun	15	5	33.33	6	40.00	2	13.33	2	13.33	-	-
19	Bulandshahar	16	1	6.25	5	31.25	4	25.00	6	37.50	-	-
20	Chandauli	9	9	100.00	-	-	-	-	-	-	-	-
21	Chitrakoot	5	1	20.00	3	60.00	1	20.00	-	-	-	-
22	Deoria	16	16	100.00	-	-	-	-	-	-	-	-
23	Etah	8	3	37.50	4	50.00	1	12.50	-	-	-	-
24	Etawah	8	8	100.00	-	-	-	-	-	-	-	-
25	Farrukhabad	7	3	42.86	4	57.14	-	-	-	-	-	-
26	Fatehpur	13	7	53.85	5	38.46	-	-	1	7.69	-	-
27	Firozabad	9	-	-	3	33.33	1	11.11	5	55.56	-	-
28	G.B.Nagar	3	-	-	1	33.33	1	33.33	1	33.33	-	-
29	Ghaziabad	5	-	-	1	20.00	-	-	4	80.00	-	-
30	Ghazipur	16	15	93.75	1	6.25	-	-	-	-	-	-
31	Gonda	16	16	100.00	-	-	-	-	-	-	-	-
32	Gorakhpur	20	20	100.00	-	-	-	-	-	-	-	-
33	Hamirpur	7	3	42.86	4	57.14	-	-	-	-	-	-
34	Hapur	4	-	-	1	25.00	2	50.00	1	25.00	-	-
35	Hardoi	19	19	100.00	-	-	-	-	-	-	-	-
36	Hathras	7	1	14.29	1	14.29	2	28.57	3	42.86	-	-
37	Jalaun	9	9	100.00	-	-	-	-	-	-	-	-
38	Jaunpur	21	11	52.38	8	38.10	2	9.52	-	-	-	-
39	Jhansi	8	4	50.00	4	50.00	-	-	-	-	-	-
40	Kannauj	8	3	37.50	2	25.00	1	12.50	2	25.00	-	-
41	Kanpur Dehat	10	3	30.00	7	70.00	-	-	-	-	-	-
42	Kanpur Nagar	11	3	27.27	6	54.55	2	18.18	-	-	-	-
43	Kasganj	7	4	57.14	3	42.86	-	-	-	-	-	-
44	Kaushambi	8	2	25.00	4	50.00	-	-	2	25.00	-	-
45	Kushi Nagar	14	14	100.00	-	-	-	-	-	-	-	-
46	Lakhimpur Kheri	15	15	100.00	-	-	-	-	-	-	-	-
47	Lalitpur	6	-	-	6	100.00	-	-	-	-	-	-
48	Lucknow	9	8	88.89	-	-	-	-	1	11.11	-	-
49	Mahoba	4	-	-	2	50.00	-	-	2	50.00	-	-
50	Mahrajganj	12	12	100.00	-	-	-	-	-	-	-	-
51	Mainpuri	9	6	66.67	2	22.22	-	-	1	11.11	-	-
52	Mathura	10	7	70.00	-	-	2	20.00	1	10.00	-	-
53	Maunath Bhanjan	9	9	100.00	-	-	-	-	-	-	-	-

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
UTTAR PRADESH													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%	
54	**Meerut**	13	5	38.46	5	38.46	2	15.38	1	7.69	-	-	
55	**Mirzapur**	12	7	58.33	3	25.00	1	8.33	1	8.33	-	-	
56	**Moradabad**	9	1	11.11	6	66.67	1	11.11	1	11.11	-	-	
57	**Muzaffarnagar**	9	4	44.44	2	22.22	2	22.22	1	11.11	-	-	
58	**Pilibhit**	7	7	100.00	-	-	-	-	-	-	-	-	
59	**Pratapgarh**	17	4	23.53	9	52.94	4	23.53	-	-	-	-	
60	**Prayagraj**	24	12	50.00	9	37.50	2	8.33	1	4.17	-	-	
61	**Raibareli**	18	18	100.00	-	-	-	-	-	-	-	-	
62	**Rampur**	6	2	33.33	4	66.67	-	-	-	-	-	-	
63	**Saharanpur**	11	1	9.09	6	54.55	-	-	4	36.36	-	-	
64	**Sambhal**	8	1	12.50	3	37.50	4	50.00	-	-	-	-	
65	**Sant Kabir Nagar**	9	9	100.00	-	-	-	-	-	-	-	-	
66	**Sant Ravidas Nagar**	6	-	-	6	100.00	-	-	-	-	-	-	
67	**Shahjahanpur**	15	15	100.00	-	-	-	-	-	-	-	-	
68	**Shamli**	5	-	-	1	20.00	1	20.00	3	60.00	-	-	
69	**Shrawasti**	5	5	100.00	-	-	-	-	-	-	-	-	
70	**Siddharth Nagar**	14	14	100.00	-	-	-	-	-	-	-	-	
71	**Sitapur**	19	19	100.00	-	-	-	-	-	-	-	-	
72	**Sonbhadra**	10	8	80.00	2	20.00	-	-	-	-	-	-	
73	**Sultanpur**	14	14	100.00	-	-	-	-	-	-	-	-	
74	**Unnao**	16	16	100.00	-	-	-	-	-	-	-	-	
75	**Varanasi**	9	2	22.22	2	22.22	2	22.22	3	33.33	-	-	
	Total	**836**	**557**	**66.63**	**169**	**20.22**	**47**	**5.62**	**63**	**7.54**	**-**	**-**	

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
UTTARAKHAND												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Dehradun	3	3	100.00								
2	Haridwar	6	4	66.66	2	33.34						
3	Udham Singh Nagar	7	6	85.71	1	14.29						
4	Nainital	2	1	50.00	1	50.00						
	Total	18	14	77.78	4	22.22						

S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
DYNAMIC GROUND WATER RESOURCES OF INDIA, 2013												
WEST BENGAL												
1	Alipurduar	6	6	100.00	-	-	-	-	-	-	-	-
2	Bankura	22	22	100.00	-	-	-	-	-	-	-	-
3	Birbhum	19	18	94.74	1	5.26	-	-	-	-	-	-
4	Dakshin Dinajpur	8	5	62.50	2	25.00	1	12.50	-	-	-	-
5	Darjiling	9	9	100.00	-	-	-	-	-	-	-	-
6	Haora	14	4	28.57	1	7.14	-	-	-	-	9	64.29
7	Hugli	18	15	83.33	3	16.67	-	-	-	-	-	-
8	Jalpaiguri	9	9	100.00	-	-	-	-	-	-	-	-
9	Jhargram	8	8	100.00	-	-	-	-	-	-	-	-
10	Kalimpong	3	3	100.00	-	-	-	-	-	-	-	-
11	Koch Bihar	12	12	100.00	-	-	-	-	-	-	-	-
12	Kolkatta	1	-	-	-	-	-	-	-	-	1	100.00
13	Malda	15	13	86.67	2	13.33	-	-	-	-	-	-
14	Murshidabad	26	19	73.08	6	23.08	1	3.85	-	-	-	-
15	Nadia	18	2	11.11	6	33.33	10	55.56	-	-	-	-
16	North 24 Parganas	22	8	36.36	3	13.64	6	27.27	-	-	5	22.73
17	Paschim Barddhaman	8	7	87.50	-	-	1	12.50	-	-	-	-
18	Paschim Medinipur	21	17	80.95	2	9.52	2	9.52	-	-	-	-
19	Purba Barddhaman	23	17	73.91	5	21.74	1	4.35	-	-	-	-
20	Purba Medinipur	25	9	36.00	-	-	-	-	-	-	16	64.00
21	Puruliya	20	20	100.00	-	-	-	-	-	-	-	-
22	South 24 Parganas	29	-	-	-	-	-	-	-	-	29	100.00
23	Uttar Dinajpur	9	9	100.00	-	-	-	-	-	-	-	-
	Total	**345**	**232**	**67.25**	**31**	**8.99**	**22**	**6.38**	**-**	**-**	**60**	**17.39**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
ANDAMAN & NICOBAR ISLANDS													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	N & M Andaman	13	13	100.0	-	-	-	-	-	-	-	-
2	Nicobar	13	12	92.31	-	-	-	-	-	-	1	7.69
3	South Andaman	10	10	100.0	-	-	-	-	-	-	-	-
	Total	36	35	97.22	-	-	-	-	-	-	1	2.78

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
CHANDIGARH													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Chandigarh	1			1	100.00						
	Total	**1**			**1**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
DADRA & NAGAR HAVELI													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	**Dadra & Nagar Haveli**	1	-	-	-	-	-	-	1	100.0		
	Total	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**100.0**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
DAMAN & DIU													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%
1	**Daman**	1		-	-	-	-	-	1	100.00		
2	**Diu**	1	-	-	-	-	-	-	1	100.00		
	Total	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**100.00**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
JAMMU & KASHMIR													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Anantnag	1	1	100.00								
2	Bandipora	1	1	100.00								
3	Baramulla	1	1	100.00								
4	Budgam	1	1	100.00								
5	Doda	1	1	100.00								
6	Ganderbal	1	1	100.00								
7	Jammu	1	1	100.00								
8	Kathua	1	1	100.00								
9	Kishtwar	1	1	100.00								
10	Kulgam	1	1	100.00								
11	Kupwara	1	1	100.00								
12	Poonch	1	1	100.00								
13	Pulwama	1	1	100.00								
14	Rajouri	1	1	100.00								
15	Ramban	1	1	100.00								
16	Reasi	1	1	100.00								
17	Samba	1	1	100.00								
18	Shopian	1	1	100.00								
19	Srinagar Urban	1	-	-	1	100.00						
20	Udhampur	1	1	100.00	-	-						
	Total	20	19	95.00	1	5.00						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
LADAKH													
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			No.	%	No.	%	No.	%	No.	%	No.	%	
1	**Kargil**	3	2	66.67	1	33.33							
2	**Leh**	5	5	100.0	-	-							
	Total	**8**	**7**	**87.5**	**1**	**12.5**							

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
LAKSHADWEEP												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	Agatti	1	1	100.00								
2	Amini	1			1	100.00						
3	Androth	1	1	100.00								
4	Chetlat	1	1	100.00								
5	Kadmat	1	1	100.00								
6	Kalpeni	1	1	100.00								
7	Kavaratti	1			1	100.00						
8	Kiltan	1	1	100.00								
9	Minicoy	1	1	100.00								
	Total	**9**	**7**	**77.78**	**2**	**22.22**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
PUDUCHERRY												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
1	**Karaikal**	1	1	100.00								
2	**Mahe**	1	1	100.00								
3	**Puducherry**	1					1	100.00				
4	**Yanam**	1									1	100.00
	Total	**4**	**2**	**50.00**			**1**	**25.00**			**1**	**25.00**

Annexure - III(C)

State-Wise Annual Extractable Ground Water Resource of Assessment Units under Different Category in India (as in 2022)

ANNUAL EXTRACTABLE RESOURCE OF ASSESSMENT UNITS UNDER DIFFERENT CATEGORIES IN INDIA(2022)

S.No.	State/Union Territories	Total Annual Extractable Resource of Assessed Units (in mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Total Annual Extractable Resource (in mcm)	%	Total Annual Extractable Resource (in mcm)	%	Total Annual Extractable Resource (in mcm)	%	Total Annual Extractable Resource (in mcm)	%
1	Andhra Pradesh	25863.17	25084.22	96.99	492.37	1.90	118.07	0.46	168.51	0.65
2	Arunachal Pradesh	4066.15	4066.15	100.00						
3	Assam	21400.57	21353.44	99.78	47.14	0.22				
4	Bihar	30042.20	27503.42	91.55	1860.34	6.19	401.65	1.34	276.78	0.92
5	Chhattisgarh	11010.29	8426.53	76.53	2005.86	18.22	577.90	5.25		
6	Delhi	369.46	52.01	14.08	89.96	24.35	60.37	16.34	167.13	45.23
7	Goa	330.71	330.71	100.00						
8	Gujarat	24581.11	19980.03	81.28	1878.92	7.64	702.29	2.86	2019.87	8.22
9	Haryana	8606.22	1952.40	22.69	713.03	8.28	547.31	6.36	5393.49	62.67
10	Himachal Pradesh	938.00	938.00	100.00						
11	Jharkhand	5692.32	5285.92	92.86	215.09	3.78	129.67	2.28	61.64	1.08
12	Karnataka	16043.89	9947.61	62.00	2481.16	15.46	680.03	4.24	2935.09	18.29
13	Kerala	5192.77	4334.83	83.48	714.84	13.77	143.10	2.76		
14	Madhya Pradesh	32579.63	22557.50	69.24	6068.00	18.63	536.36	1.65	3417.77	10.49
15	Maharashtra	30447.65	21887.42	71.89	6717.16	22.06	795.24	2.61	1047.83	3.44
16	Manipur	466.02	466.02	100.00						
17	Meghalaya	1512.99	1512.99	100.00						
18	Mizoram	199.56	199.56	100.00						
19	Nagaland	706.94	706.94	100.00						
20	Odisha	16344.68	15881.29	97.16	463.39	2.84	0.00	0.00	0.00	0.00
21	Punjab	17072.72	2037.46	11.93	1327.68	7.78	672.65	3.94	13034.92	76.35
22	Rajasthan	10959.54	1184.24	10.81	850.48	7.76	721.08	6.58	8203.74	74.85
23	Sikkim	244.06	244.06	100.00						
24	Tamil Nadu	19090.20	8521.00	44.64	3949.34	20.69	1399.73	7.33	5220.13	27.34
25	Telangana	19250.75	17425.22	90.52	1578.24	8.20	211.72	1.10	35.56	0.18
26	Tripura	1063.57	1063.57	100.00						
27	Uttar Pradesh	65303.43	45271.63	69.33	12632.64	19.34	3446.56	5.28	3952.60	6.05
28	Uttarakhand	1861.13	1503.41	80.78	357.72	19.22				
29	West Bengal	21417.57	17152.23	80.08	2381.70	11.12	1763.33	8.23		
30	Andaman and Nicobar	556.59	556.59	99.44						
31	Chandigarh	46.84			46.84	100.00				
32	Dadra & Nagar Haveli	80.68							80.68	100.00
	Daman & Diu	36.17							36.17	100.00
33	Jammu and Kashmir	4444.02	4334.33	97.53	109.69	2.47				
34	Ladakh	73.19	50.63	69.18	22.55	30.82				
35	Lakshadweep	5.40	4.11	76.05	1.29	23.95				
36	Puducherry	185.15	65.15	35.18			120.01	64.82		
	Grand Total	**398085.34**	**291880.62**	**73.32**	**47005.43**	**11.81**	**13027.07**	**3.27**	**46051.91**	**11.57**

Annexure - III(D)

District-Wise Annual Extractable Ground Water Resource of Assessment Units under Different Category in India (as in 2022)

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
ANDHRA PRADESH											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Alluri Sitharama Raju**	484.53	484.53	100.00	-	-	-	-	-	-
2	**Anakapalli**	720.98	720.98	100.00	-	-	-	-	-	-
3	**Ananthapuramu**	1095.23	1067.16	97.44	28.07	2.56	-	-	-	-
4	**Annamayya**	873.11	799.90	91.61	73.21	8.39	-	-	-	-
5	**Bapatla**	622.26	622.26	100.00	-	-	-	-	-	-
6	**Chittoor**	897.13	655.97	73.12	190.27	21.21	50.90	5.67	-	-
7	**East Godavari**	977.82	924.67	94.56	53.15	5.44	-	-	-	-
8	**Eluru**	1540.28	1540.28	100.00	-	-	-	-	-	-
9	**Guntur**	524.50	524.50	100.00	-	-	-	-	-	-
10	**Kakinada**	882.01	882.01	100.00	-	-	-	-	-	-
11	**Konaseema**	1032.08	1032.08	100.00	-	-	-	-	-	-
12	**Krishna**	1556.88	1556.88	100.00	-	-	-	-	-	-
13	**Kurnool**	870.39	870.39	100.00	-	-	-	-	-	-
14	**N.TR**	859.96	859.96	100.00	-	-	-	-	-	-
15	**Nandyal**	768.86	768.86	100.00	-	-	-	-	-	-
16	**Palnadu**	970.07	922.13	95.06	-	-	30.75	3.17	17.19	1.77
17	**Parvathipuram Manyam**	917.30	917.30	100.00	-	-	-	-	-	-
18	**Prakasam**	952.18	851.88	89.47	69.28	7.28	14.93	1.57	16.09	1.69
19	**Sri Potti Sriramulu Nellore**	2446.40	2446.40	100.00	-	-	-	-	-	-
20	**Sri Sathya Sai**	1117.85	910.44	81.45	50.68	4.53	21.49	1.92	135.24	12.10
21	**Srikakulam**	933.67	933.67	100.00	-	-	-	-	-	-
22	**Tirupati**	1638.90	1638.90	100.00	-	-	-	-	-	-
23	**Visakhapatnam**	128.63	128.63	100.00	-	-	-	-	-	-
24	**Vizianagaram**	1400.32	1400.32	100.00	-	-	-	-	-	-
25	**West Godavari**	573.10	573.10	100.00	-	-	-	-	-	-
26	**Y.S.R Kadapa**	1078.74	1051.03	97.43	27.71	2.57	-	-	-	-
	Total States	**25863.17**	**25084.22**	**96.99**	**492.37**	**1.90**	**118.07**	**0.46**	**168.51**	**0.65**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
ARUNACHAL PRADESH										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Changlang**	681.88	681.88	100.00						
2	**East Kameng**	155.71	155.71	100.00						
3	**East Siang**	737.36	737.36	100.00						
4	**Lohit**	885.21	885.21	100.00						
5	**Lower Dibang Valley**	792.37	792.37	100.00						
6	**Lower Subansiri**	45.84	45.84	100.00						
7	**Papum Pare**	204.38	204.38	100.00						
8	**Tirap**	83.05	83.05	100.00						
9	**Upper Subansiri**	136.43	136.43	100.00						
10	**West Kameng**	170.04	170.04	100.00						
11	**West Siang**	173.89	173.89	100.00						
	Total	**4066.15**	**4066.15**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
ASSAM										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Baksa**	1295.49	1295.49	100.00						
2	**Barpeta**	952.36	952.36	100.00						
3	**Bongaigaon**	457.78	457.78	100.00						
4	**Cachar**	468.49	468.49	100.00						
5	**Chirang**	907.55	907.55	100.00						
6	**Darrang**	413.97	413.97	100.00						
7	**Dhemaji**	1127.90	1127.90	100.00						
8	**Dhubri**	902.71	902.71	100.00						
9	**Dibrugarh**	1089.79	1089.79	100.00						
10	**Dima Hasao**	566.34	566.34	100.00						
11	**Goalpara**	595.23	595.23	100.00						
12	**Golaghat**	1086.94	1086.94	100.00						
13	**Hailakandi**	144.64	144.64	100.00						
14	**Jorhat**	732.31	732.31	100.00						
15	**Kamrup**	702.02	702.02	100.00						
16	**Kamrup Metro Rural**	113.84	113.84	100.00						
17	**Kamrup Metro Urban**	47.14			47.14	100.00				
18	**Karbi Anglong**	1200.38	1200.38	100.00						
19	**Karimganj**	467.61	467.61	100.00						
20	**Kokrajhar**	1429.84	1429.84	100.00						
21	**Lakhimpur**	650.57	650.57	100.00						
22	**Morigaon**	518.55	518.55	100.00						
23	**Nagaon**	1089.02	1089.02	100.00						
24	**Nalbari**	379.89	379.89	100.00						
25	**Sivasagar**	1069.80	1069.80	100.00						
26	**Sonitpur**	1237.30	1237.30	100.00						
27	**Tinsukia**	1068.31	1068.31	100.00						
28	**Udalguri**	684.81	684.81	100.00						
	Total	**21400.57**	**20882.03**	**97.58**	**518.55**	**2.42**				

S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
BIHAR										
1	Araria	1334.78	1334.78	100.00	-	-	-	-	-	-
2	Arwal	187.78	187.78	100.00	-	-	-	-	-	-
3	Aurangabad	1166.12	1166.12	100.00	-	-	-	-	-	-
4	Banka	660.98	660.98	100.00	-	-	-	-	-	-
5	Begusarai	540.82	454.12	83.97	86.71	16.03	-	-	-	-
6	Bhagalpur	682.08	682.08	100.00	-	-	-	-	-	-
7	Bhojpur	728.66	578.21	79.35	120.35	16.52	30.10	4.13	-	-
8	Buxar	523.61	523.61	100.00	-	-	-	-	-	-
9	Darbhanga	650.72	650.72	100.00	-	-	-	-	-	-
10	East Champaran	1607.23	1607.23	100.00	-	-	-	-	-	-
11	Gaya	1192.92	1137.10	95.32	55.82	4.68	-	-	-	-
12	Gopalganj	840.64	840.64	100.00	-	-	-	-	-	-
13	Jamui	462.22	462.22	100.00	-	-	-	-	-	-
14	Jehanabad	281.92	101.96	36.17	105.78	37.52	-	-	74.18	26.31
15	Kaimur	762.17	687.09	90.15	75.08	9.85	-	-	-	-
16	Katihar	1147.18	1147.18	100.00	-	-	-	-	-	-
17	Khagaria	437.06	437.06	100.00	-	-	-	-	-	-
18	Kishanganj	803.22	803.22	100.00	-	-	-	-	-	-
19	Lakhisarai	348.67	348.67	100.00	-	-	-	-	-	-
20	Madhepura	917.63	917.63	100.00	-	-	-	-	-	-
21	Madhubani	1220.29	1220.29	100.00	-	-	-	-	-	-
22	Munger	365.94	365.94	100.00	-	-	-	-	-	-
23	Muzaffarpur	977.00	510.31	52.23	361.92	37.04	67.30	6.89	37.47	3.83
24	Nalanda	605.40	312.91	51.69	184.96	30.55	85.36	14.10	22.16	3.66
25	Nawada	617.07	469.68	76.11	147.39	23.89	-	-	-	-
26	Patna	941.05	643.12	68.34	185.51	19.71	90.05	9.57	22.37	2.38
27	Purnea	1547.02	1547.02	100.00	-	-	-	-	-	-
28	Rohtas	1129.18	997.39	88.33	131.79	11.67	-	-	-	-
29	Saharsa	699.86	699.86	100.00	-	-	-	-	-	-
30	Samastipur	790.59	470.97	59.57	265.90	33.63	30.75	3.89	22.98	2.91
31	Saran	914.05	914.05	100.00	-	-	-	-	-	-
32	Sheikhpura	169.71	144.91	85.38	-	-	24.80	14.62	-	-
33	Sheohar	167.45	167.45	100.00	-	-	-	-	-	-
34	Sitamarhi	591.81	591.81	100.00	-	-	-	-	-	-
35	Siwan	877.77	877.77	100.00	-	-	-	-	-	-
36	Supaul	928.60	928.60	100.00	-	-	-	-	-	-
37	Vaishali	700.60	390.56	55.75	139.12	19.86	73.29	10.46	97.63	13.94
38	West Champaran	1522.40	1522.40	100.00	-	-	-	-	-	-
	Total States	**30042.20**	**27503.42**	**91.55**	**1860.34**	**6.19**	**401.65**	**1.34**	**276.78**	**0.92**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
CHHATISGARH										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Balod**	344.85	151.87	44.04	127.11	36.86	65.87	19.10		
2	**Baloda Bazar**	502.96	502.96	100.00		0.00		0.00		
3	**Balrampur**	393.67	393.67	100.00		0.00		0.00		
4	**Bastar**	228.98	228.98	100.00		0.00		0.00		
5	**Bemetara**	440.25		0.00	138.67	31.50	301.58	68.50		
6	**Bijapur**	456.82	456.82	100.00		0.00		0.00		
7	**Bilaspur**	329.17	137.76	41.85	191.41	58.15		0.00		
8	**Dantewada**	243.47	243.47	100.00		0.00		0.00		
9	**Dhamtari**	428.61	199.52	46.55	103.15	24.07	125.94	29.38		
10	**Durg**	320.22		0.00	320.22	100.00		0.00		
11	**Gariaband**	298.23	210.79	70.68	87.44	29.32		0.00		
12	**Gourela-Pendra-Marwahi**	127.60	127.60	100.00		0.00		0.00		
13	**Janjgir-Champa**	406.69	312.08	76.74	94.61	23.26		0.00		
14	**Jashpur**	303.10	303.10	100.00		0.00		0.00		
15	**Kabirdham**	560.35	437.65	78.10	122.69	21.90		0.00		
16	**Kanker**	641.55	569.05	88.70	72.50	11.30		0.00		
17	**Kondagaon**	305.29	305.29	100.00		0.00		0.00		
18	**Korba**	346.04	287.79	83.17	58.25	16.83		0.00		
19	**Korea**	583.15	583.15	100.00		0.00		0.00		
20	**Mahasamund**	613.68	513.98	83.75	99.69	16.25		0.00		
21	**Mungeli**	163.49	163.49	100.00		0.00		0.00		
22	**Narayanpur**	236.44	236.44	100.00		0.00		0.00		
23	**Raigarh**	437.66	303.17	69.27	134.49	30.73		0.00		
24	**Raipur**	423.33	338.82	80.04		0.00	84.51	19.96		
25	**Rajnandgaon**	711.37	351.32	49.39	360.05	50.61		0.00		
26	**Sukma**	405.49	405.49	100.00		0.00		0.00		
27	**Surajpur**	377.61	282.04	74.69	95.57	25.31		0.00		
28	**Surguja**	380.22	380.22	100.00		0.00		0.00		
	Total States	**11010.29**	**8426.53**	**76.53**	**2005.86**	**18.22**	**577.90**	**5.25**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
DELHI										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Central**	24.26	15.96	65.79	6.79	27.99	0.00	0.00	1.51	6.22
2	**East**	15.26	0.00	0.00	7.81	51.17	7.45	48.81	0.00	0.00
3	**Nazul Land**	6.09	6.09	100.00	0.00	0.00	0.00	0.00	0.00	0.00
4	**New Delhi**	30.58	0.00	0.00	0.00	0.00	0.00	0.00	30.58	100.00
5	**North**	44.87	0.00	0.00	18.00	40.12	5.58	12.44	21.30	47.47
6	**North East**	17.08	0.00	0.00	7.55	44.20	0.00	0.00	9.53	55.79
7	**North West**	35.16	29.96	85.20	5.19	14.76	0.00	0.00	0.00	0.00
8	**Shahdara**	18.77	0.00	0.00	0.00	0.00	6.50	34.63	12.28	65.42
9	**South**	43.89	0.00	0.00	0.00	0.00	0.00	0.00	43.89	100.00
10	**South East**	26.49	0.00	0.00	0.00	0.00	26.49	100.00	0.00	0.00
11	**South West**	69.21	0.00	0.00	26.48	38.26	0.00	0.00	42.73	61.74
12	**West**	37.80	0.00	0.00	18.14	48.00	14.35	37.97	5.30	14.02
	Total	**369.46**	**52.01**	**14.08**	**89.96**	**8.34**	**60.37**	**5.60**	**167.12**	**15.49**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
GOA											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	
1	**Goa North**	145.94	145.94	100.00							
2	**South Goa**	184.76	184.76	100.00							
	Total	**330.71**	**330.71**	**100.00**							

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
GUJARAT										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	Ahmedabad	433.01	173.74	40.12	113.56	26.23	18.90	4.36	126.82	29.29
2	Amreli	1442.26	1406.96	97.55	-	-	35.30	2.45	-	-
3	Anand	1054.46	1054.46	100.00	-	-	-	-	-	-
4	Arvalli	862.94	862.94	100.00	-	-	-	-	-	-
5	Banaskantha	**1085.72**	197.78	18.19	143.07	13.16	-	-	744.86	68.51
6	Bharuch	555.05	555.05	100.00	-	-	-	-	-	-
7	Bhavnagar	1064.38	1064.38	100.00	-	-	-	-	-	-
8	Botad	438.76	438.76	100.00	-	-	-	-	-	-
9	Chhota Udepur	470.30	470.30	100.00	-	-	-	-	-	-
10	Dahod	333.49	333.49	100.00	-	-	-	-	-	-
11	Dang	304.68	304.68	100.00	-	-	-	-	-	-
12	Devbhumi Dwarka	415.47	415.47	100.00	-	-	-	-	-	-
13	Gandhinagar	537.69	-	-	291.98	54.30	-	-	245.71	45.70
14	Gir Somnath	634.16	634.16	100.00	-	-	-	-	-	-
15	Jamnagar	1381.36	1381.36	100.00	-	-	-	-	-	-
16	Junagadh	1397.40	1306.37	93.49	91.03	6.51	-	-	-	-
17	Kachchh	829.61	616.36	74.28	-	-	-	-	213.24	25.70
18	Kheda	694.01	680.24	98.02	13.77	1.98	-	-	-	-
19	Mahesana	705.24	-	-	220.78	31.31	115.79	16.42	368.67	52.28
20	Mahisagar	298.08	298.08	100.00	-	-	-	-	-	-
21	Morbi	647.44	647.44	100.00	-	-	-	-	-	-
22	Narmada	355.38	187.59	52.78	167.80	47.22	-	-	-	-
23	Navsari	773.55	773.55	100.00	-	-	-	-	-	-
24	Panchmahal	475.64	475.64	100.00	-	-	-	-	-	-
25	Patan	339.12	-	-	102.97	30.36	116.54	34.37	119.61	35.27
26	Porbandar	206.64	206.64	100.00	-	-	-	-	-	-
27	Rajkot	1728.33	1358.05	78.58	208.46	12.06	161.82	9.36	-	-
28	Sabarkantha	723.50	285.80	39.50	363.56	50.25	-	-	74.14	10.25
29	Surat	1290.10	1163.28	90.17	-	-	-	-	126.82	9.83
30	Surendranagar	752.03	707.25	94.05	44.78	5.95	-	-	-	-
31	Tapi	692.68	692.68	100.00	-	-	-	-	-	-
32	Vadodara	1006.24	635.14	63.12	117.16	11.64	253.94	25.24	-	-
33	Valsad	652.39	652.39	100.00	-	-	-	-	-	-
	Total States	**24581.11**	**19980.03**	**81.28**	**1878.92**	**7.64**	**702.29**	**2.86**	**2019.87**	**8.22**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
HARYANA										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Ambala**	404.08	-	-	122.37	30.28	84.29	20.86	197.43	48.86
2	**Bhiwani**	382.20	213.45	55.85	-	-	-	-	168.76	44.15
3	**Charkhi Dadri**	186.75	84.55	45.27	-	-	-	-	102.20	54.73
4	**Faridabad**	110.34	-	-	-	-	-	-	110.34	100.00
5	**Fatehabad**	598.66	-	-	-	-	110.25	18.42	488.41	81.58
6	**Gurgaon**	200.89	-	-	-	-	-	-	200.89	100.00
7	**Hisar**	648.34	393.81	60.74	129.72	20.01	59.08	9.11	65.74	10.14
8	**Jhajjar**	303.43	303.43	100.00	-	-	-	-	-	-
9	**Jind**	796.95	122.72	15.40	73.67	9.24	-	-	600.55	75.36
10	**Kaithal**	440.82	-	-	-	-	-	-	440.82	100.00
11	**Karnal**	736.28	-	-	-	-	120.84	16.41	615.45	83.59
12	**Kurukshetra**	374.26	-	-	-	-	-	-	374.26	100.00
13	**Mahendragarh**	187.57	-	-	-	-	22.87	12.19	164.70	87.81
14	**Mewat**	174.00	74.76	42.97	36.51	20.98	-	-	62.72	36.05
15	**Palwal**	358.43	158.15	44.12	75.79	21.14	59.91	16.71	64.58	18.02
16	**Panchkula**	146.12	108.27	74.09	-	-	37.85	25.91	-	-
17	**Panipat**	298.39	-	-	-	-	-	-	298.39	100.00
18	**Rohtak**	264.96	264.96	100.00	-	-	-	-	-	-
19	**Rewari**	267.21	-	-	-	-	52.23	19.55	214.98	80.45
20	**Sirsa**	571.37	-	-	110.96	19.42	-	-	460.41	80.58
21	**Sonipat**	633.12	228.30	36.06	-	-	-	-	404.83	63.94
22	**Yamuna Nagar**	522.04	-	-	164.01	31.42	-	-	358.03	68.58
	Total States	**8606.22**	**1952.40**	**22.69**	**713.03**	**8.28**	**547.31**	**6.36**	**5393.49**	**62.67**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
HIMACHAL PRADESH											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	Kangra	491.88	491.88	100.00						
2	Mandi	35.25	35.25	100.00						
3	Sirmour	82.08	82.08	100.00						
4	Solan	146.63	146.63	100.00						
5	Una	182.16	182.16	100.00						
	Total	**938.00**	**938.00**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
JHARKHAND											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Bokaro**	289.55	274.44	94.78	-	-	-	-	15.11	5.22
2	**Chatra**	261.01	261.01	100.00	-	-	-	-	-	-
3	**Deoghar**	149.83	122.69	81.88	27.14	18.12	-	-	-	-
4	**Dhanbad**	244.66	85.99	35.15	89.60	36.62	55.68	22.76	13.39	5.47
5	**Dumka**	236.31	236.31	100.00	-	-	-	-	-	-
6	**East Singhbhum**	267.16	237.70	88.97	-	-	-	-	29.46	11.03
7	**Garhwa**	285.55	256.43	89.80	29.11	10.20	-	-	-	-
8	**Giridih**	384.84	355.16	92.29	29.67	7.71	-	-	-	-
9	**Godda**	189.33	189.33	100.00	-	-	-	-	-	-
10	**Gumla**	316.93	316.93	100.00	-	-	-	-	-	-
11	**Hazaribagh**	296.02	286.68	96.84	9.34	3.16	-	-	-	-
12	**Jamtara**	83.28	83.28	100.00	-	-	-	-	-	-
13	**Khunti**	112.68	112.68	100.00	-	-	-	-	-	-
14	**Koderma**	59.14	42.76	72.30	8.09	13.67	8.30	14.03	-	-
15	**Latehar**	228.35	228.35	100.00	-	-	-	-	-	-
16	**Lohardaga**	172.18	172.18	100.00	-	-	-	-	-	-
17	**Pakur**	210.51	210.51	100.00	-	-	-	-	-	-
18	**Palamau**	336.84	336.84	100.00	-	-	-	-	-	-
19	**Ramgarh**	108.54	97.16	89.52	-	-	7.69	7.09	3.69	3.40
20	**Ranchi**	359.92	279.79	77.74	22.13	6.15	58.00	16.12	-	-
21	**Sahebganj**	258.41	258.41	100.00	-	-	-	-	-	-
22	**Saraikela Kharsawan**	157.73	157.73	100.00	-	-	-	-	-	-
23	**Simdega**	220.03	220.03	100.00	-	-	-	-	-	-
24	**West Singhbhum**	463.53	463.53	100.00	-	-	-	-	-	-
	Total States	**5692.32**	**5285.92**	**92.86**	**215.09**	**3.78**	**129.67**	**2.28**	**61.64**	**1.08**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
KARNATAKA											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	
1	Bagalkot	626.03	153.71	24.55	273.21	43.64	26.43	4.22	172.68	27.58	
2	Ballari	488.34	488.34	100.00	-	-	-	-	-	-	
3	Belagavi	1202.62	600.74	49.95	430.92	35.83	118.67	9.87	52.29	4.35	
4	Bengaluru (Rural)	194.68	-	-	-	-	-	-	194.68	100.00	
5	Bengaluru (Urban)	212.18	-	-	-	-	-	-	212.18	100.00	
6	Bidar	328.18	242.39	73.86	85.79	26.14	-	-	-	-	
7	Chamarajanagara	347.53	-	-	125.38	36.08	33.05	9.51	189.11	54.41	
8	Chikkaballapura	325.08	-	-	-	-	-	-	325.08	100.00	
9	Chikkamagaluru	527.74	410.49	77.78	-	-	-	-	117.25	22.22	
10	Chitradurga	387.76	36.49	9.41	-	-	-	-	351.27	90.59	
11	Dakshina Kannada	641.94	641.94	100.00	-	-	-	-	-	-	
12	Davanagere	515.44	203.38	39.46	67.13	13.02	101.66	19.72	143.26	27.79	
13	Dharwad	291.62	291.62	100.00	-	-	-	-	-	-	
14	Gadag	272.96	44.60	16.34	182.26	66.77	-	-	46.10	16.89	
15	Hassan	731.37	487.96	66.72	-	-	147.99	20.23	95.42	13.05	
16	Haveri	484.18	262.24	54.16	183.81	37.96	38.13	7.87	-	-	
17	Kalburgi	636.67	571.17	89.71	65.50	10.29	-	-	-	-	
18	Kodagu	271.80	271.80	100.00	-	-	-	-	-	-	
19	Kolara	386.58	-	-	-	-	-	-	386.58	100.00	
20	Koppal	651.00	468.85	72.02	128.69	19.77	53.46	8.21	-	-	
21	Mandya	646.00	504.91	78.16	141.09	21.84	-	-	-	-	
22	Mysuru	542.94	483.94	89.13	59.00	10.87	-	-	-	-	
23	Raichur	660.44	555.05	84.04	105.39	15.96	-	-	-	-	
24	Ramanagara	399.20	-	-	191.73	48.03	81.21	20.34	126.26	31.63	
25	Shivamogga	906.00	906.00	100.00	-	-	-	-	-	-	
26	Tumakuru	724.27	242.53	33.49	65.61	9.06	48.39	6.68	367.74	50.77	
27	Udupi	447.26	447.26	100.00	-	-	-	-	-	-	
28	Uttara Kannada	817.11	817.11	100.00	-	-	-	-	-	-	
29	Vijayanagara	339.59	107.54	31.67	76.87	22.64	-	-	155.18	45.70	
30	Vijayapura	607.03	419.85	69.16	156.13	25.72	31.05	5.11	-	-	
31	Yadgir	430.36	287.70	66.85	142.66	33.15	-	-	-	-	
	Total States	**16043.89**	**9947.61**	**62.00**	**2481.16**	**15.46**	**680.03**	**4.24**	**2935.09**	**18.29**	

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
KERALA											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Alappuzha**	389.60	389.60	100.00	-	-	-	-		
2	**Ernakulam**	459.49	459.49	100.00	-	-	-	-		
3	**Idukki**	189.06	145.45	76.93	43.62	23.07	-	-		
4	**Kannur**	411.02	349.75	85.09	61.27	14.91	-	-		
5	**Kasargod**	333.22	219.04	65.73	63.96	19.19	50.22	15.07		
6	**Kollam**	338.06	307.10	90.84	30.96	9.16	-	-		
7	**Kottayam**	372.88	372.88	100.00	-	-	-	-		
8	**Kozhikkode**	312.00	258.08	82.72	53.91	17.28	-	-		
9	**Malappuram**	482.80	257.12	53.26	225.68	46.74	-	-		
10	**Palakkad**	589.82	440.39	74.66	56.56	9.59	92.88	15.75		
11	**Pathanamthitta**	239.13	239.13	100.00	-	-	-	-		
12	**Thiruvananthapuram**	266.89	187.88	70.39	79.01	29.61	-	-		
13	**Thrissur**	586.47	486.61	82.97	99.87	17.03	-	-		
14	**Wayanad**	222.31	222.31	100.00	-	-	-	-		
	Total States	**5192.77**	**4334.83**	**83.48**	**714.84**	**13.77**	**143.10**	**2.76**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
MADHYA PRADESH											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Agar Malwa**	400.86	108.47	27.06	103.77	25.89	-	-	188.62	47.05
2	**Alirajpur**	185.83	185.83	100.00	-	-	-	-	-	-
3	**Anuppur**	280.05	237.29	84.73	42.76	15.27	-	-	-	-
4	**Ashoknagar**	364.05	214.50	58.92	149.55	41.08	-	-	-	-
5	**Balaghat**	707.86	707.86	100.00	-	-	-	-	-	-
6	**Barwani**	523.15	360.53	68.92	102.57	19.61	-	-	60.04	11.48
7	**Betul**	992.45	733.63	73.92	258.81	26.08	-	-	-	-
8	**Bhind**	912.94	912.94	100.00	-	-	-	-	-	-
9	**Bhopal**	388.62	-	-	388.62	100.00	-	-	-	-
10	**Burhanpur**	346.06	166.85	48.22	179.20	51.78	-	-	-	-
11	**Chhatarpur**	814.66	446.01	54.75	368.64	45.25	-	-	-	-
12	**Chhindwara**	990.74	677.07	68.34	212.46	21.44	101.21	10.22	-	-
13	**Damoh**	360.77	308.10	85.40	52.67	14.60	-	-	-	-
14	**Datia**	403.04	403.04	100.00	-	-	-	-	-	-
15	**Dewas**	807.05	437.26	54.18	120.62	14.95	-	-	249.17	30.87
16	**Dhar**	1286.42	834.29	64.85	-	-	79.74	6.20	372.38	28.95
17	**Dindori**	326.06	326.06	100.00	-	-	-	-	-	-
18	**Guna**	766.57	766.57	100.00	-	-	-	-	-	-
19	**Gwalior**	748.71	699.37	93.41	49.34	6.59	-	-	-	-
20	**Harda**	429.13	429.13	100.00	-	-	-	-	-	-
21	**Hoshangabad**	1616.16	1441.67	89.20	174.49	10.80	-	-	-	-
22	**Indore**	530.00	-	-	105.33	19.87	57.58	10.86	367.09	69.26
23	**Jabalpur**	597.27	566.91	94.92	30.36	5.08	-	-	-	-
24	**Jhabua**	233.49	213.47	91.43	20.02	8.57	-	-	-	-
25	**Katni**	372.37	372.37	100.00	-	-	-	-	-	-
26	**Khandwa**	1053.71	933.82	88.62	119.89	11.38	-	-	-	-
27	**Khargone**	920.99	862.49	93.65	58.51	6.35	-	-	-	-
28	**Mandla**	435.91	435.91	100.00	-	-	-	-	-	-
29	**Mandsaur**	651.22	-	-	334.36	51.34	-	-	316.86	48.66
30	**Morena**	631.96	631.96	100.00	-	-	-	-	-	-
31	**Narsinghpur**	1108.04	901.25	81.34	206.79	18.66	-	-	-	-
32	**Neemuch**	350.98	-	-	108.87	31.02	-	-	242.11	68.98
33	**Niwari**	180.01	111.58	61.99	68.43	38.01	-	-	-	-
34	**Panna**	496.01	496.01	100.00	-	-	-	-	-	-
35	**Raisen**	851.51	760.36	89.30	91.15	10.70	-	-	-	-
36	**Rajgarh**	871.20	-	-	561.65	64.47	168.02	19.29	141.53	16.25
37	**Ratlam**	760.81	-	-	111.89	14.71	-	-	648.91	85.29
38	**Rewa**	494.86	458.02	92.56	36.84	7.44	-	-	-	-
39	**Sagar**	1031.84	1031.84	100.00	-	-	-	-	-	-

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
MADHYA PRADESH										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
40	**Satna**	665.13	377.43	56.75	287.70	43.25	-	-	-	-
41	**Sehore**	671.85	542.04	80.68	-	-	129.81	19.32	-	-
42	**Seoni**	696.25	696.25	100.00	-	-	-	-	-	-
43	**Shahdol**	523.90	523.90	100.00	-	-	-	-	-	-
44	**Shajapur**	514.95	-	-	123.64	24.01	-	-	391.31	75.99
45	**Sheopur**	413.52	333.42	80.63	80.10	19.37	-	-	-	-
46	**Shivpuri**	784.75	326.09	41.55	458.66	58.45	-	-	-	-
47	**Sidhi**	309.12	309.12	100.00	-	-	-	-	-	-
48	**Singrauli**	328.49	328.49	100.00	-	-	-	-	-	-
49	**Tikamgarh**	361.23	-	-	361.23	100.00	-	-	-	-
50	**Ujjain**	916.02	-	-	476.27	51.99	-	-	439.75	48.01
51	**Umaria**	322.39	322.39	100.00	-	-	-	-	-	-
52	**Vidisha**	848.70	625.88	73.75	222.82	26.25	-	-	-	-
	Total States	**32579.63**	**22557.50**	**69.24**	**6068.00**	**18.63**	**536.36**	**1.65**	**3417.77**	**10.49**

S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Ahmednagar**	1518.30	459.99	30.30	556.74	36.67	422.14	27.80	79.43	5.23
2	**Akola**	362.00	306.57	84.69	55.43	15.31	-	-	-	-
3	**Amravati**	804.33	172.34	21.43	292.05	36.31	-	-	339.93	42.26
4	**Aurangabad**	1011.19	205.51	20.32	805.68	79.68	-	-	-	-
5	**Beed**	1228.61	1228.61	100.00	-	-	-	-	-	-
6	**Bhandara**	864.38	864.38	100.00	-	-	-	-	-	-
7	**Buldhana**	864.78	139.13	16.09	632.21	73.11	-	-	93.44	10.80
8	**Chandrapur**	1108.45	1108.45	100.00	-	-	-	-	-	-
9	**Dhule**	692.74	692.74	100.00	-	-	-	-	-	-
10	**Gadchiroli**	1017.31	1017.31	100.00	-	-	-	-	-	-
11	**Gondia**	623.16	623.16	100.00	-	-	-	-	-	-
12	**Hingoli**	969.64	969.64	100.00	-	-	-	-	-	-
13	**Jalgaon**	1355.35	294.76	21.75	878.26	64.80	-	-	182.33	13.45
14	**Jalna**	789.98	789.98	100.00	-	-	-	-	-	-
15	**Kolhapur**	1277.89	1277.89	100.00	-	-	-	-	-	-
16	**Latur**	648.09	550.04	84.87	98.04	15.13	-	-	-	-
17	**Nagpur**	914.78	783.27	85.62	131.51	14.38	-	-	-	-
18	**Nanded**	1182.04	1182.04	100.00	-	-	-	-	-	-
19	**Nandurbar**	488.79	488.79	100.00	-	-	-	-	-	-
20	**Nashik**	1843.69	1113.28	60.38	348.86	18.92	224.31	12.17	157.24	8.53
21	**Osmanabad**	815.62	565.69	69.36	249.93	30.64	-	-	-	-
22	**Palghar**	205.36	205.36	100.00	-	-	-	-	-	-
23	**Parbhani**	817.05	817.05	100.00	-	-	-	-	-	-
24	**Pune**	1711.87	373.08	21.79	1189.99	69.51	148.79	8.69	-	-
25	**Raigad**	356.67	356.67	100.00	-	-	-	-	-	-
26	**Ratnagiri**	387.14	387.14	100.00	-	-	-	-	-	-
27	**Sangli**	1301.43	1183.64	90.95	117.79	9.05	-	-	-	-
28	**Satara**	981.88	592.11	60.30	389.77	39.70	-	-	-	-
29	**Sindhudurg**	219.89	219.89	100.00	-	-	-	-	-	-
30	**Solapur**	1388.29	301.02	21.68	891.81	64.24	-	-	195.46	14.08
31	**Thane**	163.70	163.70	100.00	-	-	-	-	-	-
32	**Wardha**	802.25	723.16	90.14	79.09	9.86	-	-	-	-
33	**Washim**	555.07	555.07	100.00	-	-	-	-	-	-
34	**Yawatmal**	1175.95	1175.95	100.00	-	-	-	-	-	-
	Total States	**30447.65**	**21887.42**	**71.89**	**6717.16**	**22.06**	**795.24**	**2.61**	**1047.83**	**3.44**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
MANIPUR										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Bishnupur**	107.22	107.22	100.00						
2	**Churachandpur**	74.58	74.58	100.00						
3	**Imphal East**	134.48	134.48	100.00						
4	**Imphal West**	78.29	78.29	100.00						
5	**Thoubal**	71.44	71.44	100.00						
	Total	**466.02**	**466.02**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
MEGHALAYA											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	East Garo Hills	62.31	62.31	100.00						
2	East Jaintia Hills	91.27	91.27	100.00						
3	East Khasi Hills	161.26	161.26	100.00						
4	Greater Shillong	25.66	25.66	100.00						
5	North Garo Hills	141.31	141.31	100.00						
6	Ri-Bhoi	59.87	59.87	100.00						
7	South Garo Hills	178.50	178.50	100.00						
8	South West Garo Hills	26.96	26.96	100.00						
9	South West Khasi Hills	80.43	80.43	100.00						
10	West Garo Hills	270.33	270.33	100.00						
11	West Jaintia Hills	137.48	137.48	100.00						
12	West Khasi Hills	277.59	277.59	100.00						
	Total	**1512.99**	**1512.99**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
MIZORAM											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	
1	**Aizawl**	14.72	14.72	100.00							
2	**Champhai**	15.38	15.38	100.00							
3	**Kolasib**	25.03	25.03	100.00							
4	**Lawngtlai**	29.23	29.23	100.00							
5	**Lunglei**	49.32	49.32	100.00							
6	**Mamit**	50.48	50.48	100.00							
7	**Saiha**	7.28	7.28	100.00							
8	**Serchhip**	8.12	8.12	100.00							
	Total	**199.56**	**199.56**	**100.00**							

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
NAGALAND											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	
1	**Dimapur**	263.22	263.22	100.00							
2	**Kiphire**	1.66	1.66	100.00							
3	**Kohima**	21.73	21.73	100.00							
4	**Longleng**	10.47	10.47	100.00							
5	**Mokokchung**	112.39	112.39	100.00							
6	**Mon**	39.04	39.04	100.00							
7	**Peren**	100.71	100.71	100.00							
8	**Phek**	6.33	6.33	100.00							
9	**Tuensang**	9.09	9.09	100.00							
10	**Wokha**	134.23	134.23	100.00							
11	**Zunheboto**	8.08	8.08	100.00							
	Total	**706.94**	**706.94**	**100.00**							

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
ODISHA											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	
1	**Angul**	541.32	510.03	94.21	31.30	5.78					
2	**Balasore**	1303.27	1239.75	95.12	63.52	4.87					
3	**Bargarh**	615.14	615.14	100.00		0.00					
4	**Bhadrak**	551.72	551.72	100.00		0.00					
5	**Bolangir**	565.25	565.25	100.00		0.00					
6	**Boudh**	241.27	241.27	100.00		0.00					
7	**Cuttack**	701.49	701.49	100.00		0.00					
8	**Deogarh**	311.85	311.85	100.00		0.00					
9	**Dhenkanal**	454.80	454.80	100.00		0.00					
10	**Gajapati**	210.89	210.89	100.00		0.00					
11	**Ganjam**	978.66	978.66	100.00		0.00					
12	**Jagatsinghpur**	451.67	451.67	100.00		0.00					
13	**Jajpur**	544.52	448.66	82.39	95.86	17.60					
14	**Jharsuguda**	191.05	191.05	100.00		0.00					
15	**Kalahandi**	625.38	625.38	100.00		0.00					
16	**Kandhamal**	347.82	347.82	100.00		0.00					
17	**Kendrapara**	252.81	214.64	84.90	38.16	15.09					
18	**Keonjhar**	856.52	856.52	100.00		0.00					
19	**Khurda**	446.51	340.40	76.23	106.11	23.77					
20	**Koraput**	534.86	534.86	100.00		0.00					
21	**Malkangiri**	331.95	331.95	100.00		0.00					
22	**Mayurbhanj**	1428.48	1428.48	100.00		0.00					
23	**Nabarangapur**	579.02	579.02	100.00		0.00					
24	**Nayagarh**	372.84	332.60	89.20	40.24	10.79					
25	**Nuapada**	310.64	222.44	71.60	88.20	28.39					
26	**Puri**	618.68	618.68	100.00		0.00					
27	**Rayagada**	336.12	336.12	100.00		0.00					
28	**Sambalpur**	592.68	592.68	100.00		0.00					
29	**Subarnapur**	253.05	253.05	100.00		0.00					
30	**Sundargarh**	794.43	794.43	100.00		0.00					
	Total States	**16344.68**	**15881.29**	**97.16**	**463.39**	**2.84**					

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
PUNJAB										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Amritsar**	1340.35		0.00		0.00		0.00	1340.35	100.00
2	**Barnala**	496.03		0.00		0.00		0.00	496.03	100.00
3	**Bathinda**	1169.36		0.00	578.86	49.50		0.00	590.50	50.50
4	**Faridkot**	671.02		0.00		0.00		0.00	671.02	100.00
5	**Fatehgarh Sahib**	351.81		0.00		0.00		0.00	351.81	100.00
6	**Fazilka**	688.75	453.65	65.87	50.39	7.32		0.00	184.70	26.82
7	**Firozpur**	1367.20		0.00		0.00	211.87	15.50	1155.33	84.50
8	**Gurdaspur**	1497.09		0.00	114.30	7.63	185.97	12.42	1196.83	79.94
9	**Hoshiarpur**	764.42	139.33	18.23	227.52	29.76	53.17	6.96	344.40	45.05
10	**Jalandhar**	712.34		0.00		0.00		0.00	712.34	100.00
11	**Kapurthala**	616.78		0.00		0.00		0.00	616.78	100.00
12	**Ludhiana**	1402.80		0.00		0.00		0.00	1402.80	100.00
13	**Malerkotla**	194.45		0.00		0.00		0.00	194.45	100.00
14	**Mansa**	629.56	106.04	16.84	55.75	8.86	221.65	35.21	246.12	39.09
15	**Moga**	758.44		0.00		0.00		0.00	758.44	100.00
16	**Muktsar**	794.09	794.09	100.00		0.00		0.00	-	0.00
17	**Pathankot**	438.17	324.98	74.17	113.19	25.83		0.00	-	0.00
18	**Patiala**	840.89		0.00		0.00		0.00	840.89	100.00
19	**Rupnagar**	391.61	150.10	38.33	76.34	19.49		0.00	165.17	42.18
20	**SAS Nagar**	208.37	42.92	20.60		0.00		0.00	165.44	79.40
21	**SBS Nagar**	499.44	26.35	5.28	111.33	22.29		0.00	361.76	72.43
22	**Sangrur**	628.37		0.00		0.00		0.00	628.37	100.00
23	**Tarn Taran**	611.36		0.00		0.00		0.00	611.36	100.00
	Total	**17072.72**	**2037.46**	**11.93**	**1327.68**	**7.78**	**672.65**	**3.94**	**13034.92**	**76.35**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
RAJASTHAN										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	Ajmer	389.73	0.00	0.00	0.00	-	0.00	-	389.73	100.00
2	Alwar	619.16	0.00	0.00	0.00	-	0.00	-	619.16	100.00
3	Banswara	202.54	124.43	61.43	78.11	38.57	0.00	-	0.00	-
4	Baran	573.67	0.00	0.00	119.15	20.77	183.33	31.96	271.20	47.27
5	Barmer	341.08	27.56	8.08	23.37	6.85	0.00	-	290.15	85.07
6	Bharatpur	301.45	0.00	0.00	0.00	-	0.00	-	301.45	100.00
7	Bhilwara	436.37	0.00	0.00	0.00	-	0.00	-	436.37	100.00
8	Bikaner	262.93	83.55	31.78	30.69	11.67	0.00	-	148.69	56.55
9	Bundi	293.08	42.55	14.52	78.80	26.89	56.47	19.27	115.26	39.33
10	Chittaurgarh	311.75	0.00	0.00	0.00	-	0.00	-	311.75	100.00
11	Churu	132.06	45.00	34.08	0.00	-	10.02	7.58	77.04	58.34
12	Dausa	244.08	-	0.00	0.00	-	0.00	-	244.08	100.00
13	Dhaulpur	244.11	0.00	0.00	0.00	-	0.00	-	244.11	100.00
14	Dungarpur	196.23	137.90	70.27	58.33	29.73	0.00	-	0.00	-
15	Ganganagar	431.41	431.41	100.00	0.00	-	0.00	-	0.00	-
16	Hanumangarh	192.37	192.37	100.00	0.00	-	0.00	-	0.00	-
17	Jaipur	679.37	0.00	0.00	0.00	-	0.00	-	679.37	100.00
18	Jaisalmer	87.29	0.00	0.00	0.00	-	0.00	-	87.29	100.00
19	Jalor	426.03	0.00	0.00	0.00	-	0.00	-	426.03	100.00
20	Jhalawar	494.56	66.65	13.48	48.79	9.87	54.43	11.01	324.69	65.65
21	Jhunjhunun	219.37	0.00	0.00	0.00	-	0.00	-	219.37	100.00
22	Jodhpur	355.52	0.00	0.00	35.25	9.92	18.38	5.17	301.89	84.91
23	Karauli	308.90	0.00	0.00	0.00	-	24.44	7.91	284.46	92.09
24	Kota	443.12	0.00	0.00	229.71	51.84	0.00	-	213.41	48.16
25	Nagaur	535.83	0.00	0.00	0.00	-	0.00	-	535.83	100.00
26	Pali	300.30	3.16	1.05	11.60	3.86	0.00	-	285.53	95.08
27	Pratapgarh	200.21	29.67	14.82	0.00	-	16.98	8.48	153.56	76.70
28	Rajsamand	102.38	0.00	0.00	0.00	-	39.49	38.57	62.89	61.43
29	Sawai Madhopur	387.72	0.00	0.00	0.00	-	0.00	-	387.72	100.00
30	Sikar	305.99	0.00	0.00	0.00	-	0.00	-	305.99	100.00
31	Sirohi	260.11	0.00	0.00	0.00	-	54.72	21.04	205.39	78.96
32	Tonk	390.88	0.00	0.00	118.08	30.21	100.98	25.83	171.82	43.96
33	Udaipur	289.95	0.00	0.00	18.59	6.41	161.86	55.82	109.51	37.77
	Total States	**10959.56**	**1184.24**	**10.81**	**850.49**	**7.76**	**721.09**	**6.58**	**8203.74**	**74.85**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
SIKKIM										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Gangtok**	58.98	58.98	100.00						
2	**Gyalshing**	51.06	51.06	100.00						
3	**Mangan**	39.36	39.36	100.00						
4	**Namchi**	35.13	35.13	100.00						
5	**Pakyong**	42.98	42.98	100.00						
6	**Soreng**	16.55	16.55	100.00						
	Total States	**244.06**	**244.06**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
TAMIL NADU										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Ariyalur**	**349.30**	337.96	96.75	11.35	3.25	0.00	0.00	0.00	0.00
2	**Chengalpattu**	**526.35**	240.46	45.69	219.49	41.70	38.14	7.25	28.25	5.37
3	**Chennai**	**96.68**	6.33	6.55	26.18	27.08	0.00	0.00	64.17	66.37
4	**Coimbatore**	**507.43**	138.40	27.28	91.31	18.00	26.09	5.14	251.62	49.59
5	**Cuddalore**	**892.42**	325.14	36.43	280.76	31.46	136.22	15.26	150.30	16.84
6	**Dharmapuri**	**425.47**	62.92	14.79	121.39	28.53	15.79	3.71	225.38	52.97
7	**Dindigul**	**492.10**	57.16	11.62	46.90	9.53	31.59	6.42	356.45	72.43
8	**Erode**	**647.12**	234.50	36.24	213.49	32.99	55.24	8.54	143.90	22.24
9	**Kallakkurichi**	**697.30**	304.35	43.65	201.04	28.83	96.51	13.84	95.40	13.68
10	**Kancheepuram**	**462.21**	311.09	67.31	96.10	20.79	18.97	4.10	36.05	7.80
11	**Kanniyakumari**	**300.51**	283.88	94.46	16.64	5.54	0.00	0.00	0.00	0.00
12	**Karur**	**345.92**	113.55	32.82	31.31	9.05	0.00	0.00	201.07	58.13
13	**Krishnagiri**	**435.84**	124.12	28.48	92.42	21.20	17.64	4.05	201.66	46.27
14	**Madurai**	**674.15**	265.85	39.44	258.87	38.40	103.83	15.40	45.59	6.76
15	**Nagapattinam**	**324.61**	31.14	9.59	0.00	0.00	0.00	0.00	293.48	90.41
16	**Namakkal**	**527.81**	67.83	12.85	49.85	9.44	41.30	7.83	368.83	69.88
17	**Perambalur**	**231.16**	49.41	21.38	10.52	4.55	0.00	0.00	171.23	74.07
18	**Pudukkottai**	**865.47**	775.88	89.65	89.59	10.35	0.00	0.00	0.00	0.00
19	**Ramanathapuram**	**689.36**	689.36	100.00	0.00	0.00	0.00	0.00	0.00	0.00
20	**Ranipet**	**255.44**	34.54	13.52	156.58	61.30	0.00	0.00	64.33	25.18
21	**Salem**	**541.88**	28.10	5.19	77.18	14.24	41.69	7.69	394.91	72.88
22	**Sivaganga**	**611.58**	611.58	100.00	0.00	0.00	0.00	0.00	0.00	0.00
23	**Tenkasi**	**494.42**	194.82	39.40	79.34	16.05	84.67	17.12	135.59	27.42
24	**Thanjavur**	**996.94**	80.56	8.08	161.94	16.24	89.90	9.02	664.55	66.66
25	**The Nilgiris**	**92.99**	92.99	100.00	0.00	0.00	0.00	0.00	0.00	0.00
26	**Theni**	**257.38**	80.48	31.27	125.35	48.70	26.57	10.32	24.98	9.71
27	**Thiruvallur**	**768.64**	509.37	66.27	218.76	28.46	28.16	3.66	12.36	1.61
28	**Thiruvarur**	**154.53**	72.91	47.18	13.30	8.61	5.88	3.80	62.45	40.41
29	**Thoothukkudi**	**545.80**	458.78	84.06	43.52	7.97	29.52	5.41	13.98	2.56
30	**Tiruchirappalli**	**687.75**	381.52	55.47	63.28	9.20	10.93	1.59	232.02	33.74
31	**Tirunelveli**	**718.53**	551.02	76.69	126.83	17.65	16.35	2.28	24.32	3.39
32	**Tirupathur**	**107.39**	0.00	0.00	10.33	9.62	0.00	0.00	97.06	90.38
33	**Tiruppur**	**494.67**	143.27	28.96	110.08	22.25	135.93	27.48	105.39	21.31
34	**Tiruvannamalai**	**1159.43**	346.61	29.89	374.73	32.32	176.70	15.24	261.40	22.55
35	**Vellore**	**193.99**	17.99	9.28	59.04	30.44	10.90	5.62	106.05	54.67
36	**Viluppuram**	**928.28**	149.14	16.07	301.97	32.53	139.71	15.05	337.46	36.35
37	**Virudhunagar**	**589.32**	347.99	59.05	169.93	28.83	21.49	3.65	49.92	8.47
	Total	**19090.20**	**8521.00**	**44.64**	**3949.34**	**20.69**	**1399.73**	**7.33**	**5220.13**	**27.34**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
TELANGANA										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	Adilabad	664.85	658.89	99.10	3.73	0.56	-	-	2.24	0.34
2	Bhadradri Kothagudem	851.69	753.02	88.41	28.04	3.29	70.63	8.29	-	-
3	Hanumakonda	447.54	351.76	78.60	95.78	21.40	-	-	-	-
4	Hyderabad	66.47	31.71	47.70	9.72	14.63	-	-	25.04	37.67
5	Jagtial	494.78	474.07	95.81	20.71	4.19	-	-	-	-
6	Jangaon	357.67	331.68	92.73	26.00	7.27	-	-	-	-
7	Jayashankar Bhupalapally	377.84	377.84	100.00	-	-	-	-	-	-
8	Jogulamba Gadwal	409.73	395.96	96.64	13.78	3.36	-	-	-	-
9	Kamareddy	620.42	531.70	85.70	88.72	14.30	-	-	-	-
10	Karimnagar	786.51	732.12	93.08	54.39	6.92	-	-	-	-
11	Khammam	1140.39	981.78	86.09	158.61	13.91	-	-	-	-
12	Komarambheem Asifabad	503.14	503.14	100.00	-	-	-	-	-	-
13	Mahabubabad	564.85	546.38	96.73	18.47	3.27	-	-	-	-
14	Mahabubnagar	284.45	181.43	63.78	103.03	36.22	-	-	-	-
15	Mancherial	800.96	800.96	100.00	-	-	-	-	-	-
16	Medak	464.51	391.22	84.22	73.29	15.78	-	-	-	-
17	Medchal Malkajgiri	97.48	62.05	63.65	31.08	31.89	-	-	4.35	4.46
18	Mulug	437.20	437.20	100.00	-	-	-	-	-	-
19	Nagarkurnool	723.49	645.65	89.24	53.97	7.46	23.88	3.30	-	-
20	Nalgonda	1289.74	1119.27	86.78	170.48	13.22	-	-	-	-
21	Narayanpet	283.62	267.61	94.35	16.01	5.65	-	-	-	-
22	Nirmal	492.86	476.54	96.69	16.32	3.31	-	-	-	-
23	Nizamabad	884.04	639.73	72.36	172.99	19.57	70.73	8.00	0.59	0.07
24	Peddapalle	650.99	650.99	100.00	-	-	-	-	-	-
25	Rajanna Siricilla	416.29	372.57	89.50	43.72	10.50	-	-	-	-
26	Rangareddy	583.80	455.52	78.03	114.38	19.59	10.55	1.81	3.35	0.57
27	Sangareddy	406.88	351.24	86.33	55.64	13.67	-	-	-	-
28	Siddipet	567.47	348.79	61.46	182.75	32.20	35.94	6.33	-	-
29	Suryapet	1304.28	1277.62	97.96	26.65	2.04	-	-	-	-
30	Vikarabad	481.09	481.09	100.00	-	-	-	-	-	-
31	Wanaparthy	523.09	523.09	100.00	-	-	-	-	-	-
32	Warangal	468.34	468.34	100.00	-	-	-	-	-	-
33	Yadadri Bhuvanagiri	804.28	804.28	100.00	-	-	-	-	-	-
	Total States	**19250.75**	**17425.22**	**90.52**	**1578.24**	**8.20**	**211.72**	**1.10**	**35.56**	**0.18**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
TRIPURA										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Dhalai**	156.36	156.36	100.00						
2	**Gomati**	184.34	184.34	100.00						
3	**Khowai**	110.19	110.19	100.00						
4	**North Tripura**	76.26	76.26	100.00						
5	**Siphahijala**	143.64	143.64	100.00						
6	**South Tripura**	175.83	175.83	100.00						
7	**Unakoti**	78.58	78.58	100.00						
8	**West Tripura**	138.39	138.39	100.00						
	Total	**1063.57**	**1063.57**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
UTTAR PRADESH											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	Agra	813.08	-	-	253.73	31.21	104.45	12.85	454.89	55.95
2	Aligarh	897.56	465.25	51.83	357.26	39.80	56.83	6.33	18.23	2.03
3	Ambedkar Nagar	722.97	640.12	88.54	82.85	11.46	-	-	-	-
4	Amethi	782.47	748.62	95.67	33.85	4.33	-	-	-	-
5	Amroha	504.55	-	-	267.29	52.98	157.75	31.27	79.52	15.76
6	Auraiya	597.85	597.85	100.00	-	-	-	-	-	-
7	Ayodhya	857.67	857.67	100.00	-	-	-	-	-	-
8	Azamgarh	1219.01	1219.01	100.00	-	-	-	-	-	-
9	Bagpat	334.33	-	-	137.80	41.22	50.29	15.04	146.24	43.74
10	Bahraich	1262.96	1262.96	100.00	-	-	-	-	-	-
11	Ballia	835.60	835.60	100.00	-	-	-	-	-	-
12	Balrampur	816.20	816.20	100.00	-	-	-	-	-	-
13	Banda	657.23	365.69	55.64	291.54	44.36	-	-	-	-
14	Barabanki	1834.30	1834.30	100.00	-	-	-	-	-	-
15	Bareilly	1126.48	904.24	80.27	200.31	17.78	-	-	21.92	1.95
16	Basti	747.41	747.41	100.00	-	-	-	-	-	-
17	Bijnor	1378.51	785.79	57.00	472.11	34.25	120.62	8.75	-	-
18	Budaun	771.96	236.53	30.64	338.92	43.90	94.63	12.26	101.88	13.20
19	Bulandshahar	1445.91	92.95	6.43	566.23	39.16	346.60	23.97	440.13	30.44
20	Chandauli	509.85	509.85	100.00	-	-	-	-	-	-
21	Chitrakoot	399.18	84.16	21.08	208.21	52.16	106.81	26.76	-	-
22	Deoria	1290.33	1290.33	100.00	-	-	-	-	-	-
23	Etah	743.85	277.93	37.36	409.44	55.04	56.48	7.59	-	-
24	Etawah	651.23	651.23	100.00	-	-	-	-	-	-
25	Farrukhabad	461.01	238.90	51.82	222.12	48.18	-	-	-	-
26	Fatehpur	1097.23	579.16	52.78	402.69	36.70	-	-	115.37	10.51
27	Firozabad	724.29	-	-	347.53	47.98	57.75	7.97	319.00	44.04
28	G.B.Nagar	476.61	-	-	100.06	20.99	259.41	54.43	117.15	24.58
29	Ghaziabad	378.75	-	-	124.34	32.83	-	-	254.41	67.17
30	Ghazipur	959.16	896.65	93.48	62.51	6.52	-	-	-	-
31	Gonda	1064.04	1064.04	100.00	-	-	-	-	-	-
32	Gorakhpur	1594.02	1594.02	100.00	-	-	-	-	-	-
33	Hamirpur	464.32	235.08	50.63	229.24	49.37	-	-	-	-
34	Hapur	436.92	-	-	85.85	19.65	190.15	43.52	160.92	36.83
35	Hardoi	1625.16	1625.16	100.00	-	-	-	-	-	-
36	Hathras	561.67	117.99	21.01	88.74	15.80	194.57	34.64	160.37	28.55
37	Jalaun	912.99	912.99	100.00	-	-	-	-	-	-
38	Jaunpur	1179.40	720.92	61.13	364.75	30.93	93.72	7.95	-	-
39	Jhansi	643.13	400.28	62.24	242.85	37.76	-	-	-	-

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
UTTAR PRADESH										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
40	**Kannauj**	561.21	323.45	57.63	113.69	20.26	49.22	8.77	74.84	13.34
41	**Kanpur Dehat**	733.21	184.47	25.16	548.74	74.84	-	-	-	-
42	**Kanpur Nagar**	792.22	208.29	26.29	452.28	57.09	131.65	16.62	-	-
43	**Kasganj**	669.10	434.80	64.98	234.30	35.02	-	-	-	-
44	**Kaushambi**	467.67	138.76	29.67	263.84	56.42	-	-	65.07	13.91
45	**Kushi Nagar**	1579.34	1579.34	100.00	-	-	-	-	-	-
46	**Lakhimpur Kheri**	1977.21	1977.21	100.00	-	-	-	-	-	-
47	**Lalitpur**	371.84	-	-	371.84	100.00	-	-	-	-
48	**Lucknow**	750.90	675.44	89.95	-	-	-	-	75.46	10.05
49	**Mahoba**	278.00	-	-	169.88	61.11	-	-	108.13	38.89
50	**Mahrajganj**	1026.76	1026.76	100.00	-	-	-	-	-	-
51	**Mainpuri**	843.45	619.60	73.46	179.56	21.29	-	-	44.29	5.25
52	**Mathura**	1249.66	895.58	71.67	-	-	222.21	17.78	131.87	10.55
53	**Maunath Bhanjan**	465.54	465.54	100.00	-	-	-	-	-	-
54	**Meerut**	769.91	292.71	38.02	372.99	48.45	82.70	10.74	21.51	2.79
55	**Mirzapur**	553.42	398.26	71.96	111.39	20.13	30.70	5.55	13.08	2.36
56	**Moradabad**	644.73	124.56	19.32	442.64	68.66	60.96	9.45	16.56	2.57
57	**Muzaffarnagar**	1076.60	668.87	62.13	147.76	13.72	168.55	15.66	91.42	8.49
58	**Pilibhit**	1057.51	1057.51	100.00	-	-	-	-	-	-
59	**Pratapgarh**	1276.68	391.26	30.65	579.47	45.39	305.95	23.96	-	-
60	**Prayagraj**	1286.67	719.83	55.94	463.01	35.98	80.66	6.27	23.17	1.80
61	**Raibareli**	1116.51	1116.51	100.00	-	-	-	-	-	-
62	**Rampur**	721.02	305.38	42.35	415.64	57.65	-	-	-	-
63	**Saharanpur**	1317.01	116.25	8.83	700.21	53.17	-	-	500.55	38.01
64	**Sambhal**	443.37	61.26	13.82	158.50	35.75	223.62	50.44	-	-
65	**Sant Kabir Nagar**	492.21	492.21	100.00	-	-	-	-	-	-
66	**Sant Ravidas Nagar**	776.74	-	-	776.74	100.00	-	-	-	-
67	**Shahjahanpur**	1261.12	1261.12	100.00	-	-	-	-	-	-
68	**Shamli**	426.36	-	-	76.80	18.01	86.75	20.35	262.81	61.64
69	**Shrawasti**	488.15	488.15	100.00	-	-	-	-	-	-
70	**Siddharth Nagar**	868.87	868.87	100.00	-	-	-	-	-	-
71	**Sitapur**	1820.60	1820.60	100.00	-	-	-	-	-	-
72	**Sonbhadra**	494.05	432.70	87.58	61.35	12.42	-	-	-	-
73	**Sultanpur**	841.30	841.30	100.00	-	-	-	-	-	-
74	**Unnao**	1548.20	1548.20	100.00	-	-	-	-	-	-
75	**Varanasi**	477.09	127.95	26.82	101.79	21.34	113.54	23.80	133.81	28.05
	Total States	**65303.43**	**45271.63**	**69.33**	**12632.64**	**19.34**	**3446.56**	**5.28**	**3952.60**	**6.05**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
UTTARAKHNAD										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Dehradun**	562.84	562.84	100.00			0.00			
2	**Haridwar**	428.27	244.78	57.16	183.49	42.84				
3	**Nainital**	171.01	89.47	52.32	81.55	47.68				
4	**Udham Singh Nagar**	699.01	606.33	86.74	92.68	13.26				
	Total	**1861.13**	**1503.42**	**80.78**	**357.72**	**19.22**				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
WEST BENGAL											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	
1	**Alipurduar**	448.75	448.75	100.00	-	-	-	-	-	-	
2	**Bankura**	1457.61	1457.61	100.00	-	-	-	-	-	-	
3	**Birbhum**	1650.24	1592.71	96.51	57.53	3.49	-	-	-	-	
4	**Dakshin Dinajpur**	911.02	589.05	64.66	283.28	31.09	38.70	4.25	-	-	
5	**Darjiling**	386.76	386.76	100.00	-	-	-	-	-	-	
6	**Haora**	214.22	164.43	76.76	49.79	23.24	-	-	-	-	
7	**Hugli**	1373.53	1212.32	88.26	161.21	11.74	-	-	-	-	
8	**Jalpaiguri**	661.49	661.49	100.00	-	-	-	-	-	-	
9	**Jhargram**	873.67	873.67	100.00	-	-	-	-	-	-	
10	**Kalimpong**	36.69	36.69	100.00	-	-	-	-	-	-	
11	**Koch Bihar**	1806.94	1806.94	100.00	-	-	-	-	-	-	
12	**Malda**	991.63	919.77	92.75	71.86	7.25	-	-	-	-	
13	**Murshidabad**	1704.83	1187.93	69.68	453.90	26.62	63.00	3.70	-	-	
14	**Nadia**	1440.19	147.82	10.26	441.46	30.65	850.91	59.08	-	-	
15	**North 24 Parganas**	1402.18	455.46	32.48	235.97	16.83	595.26	42.45	-	-	
16	**Paschim Barddhaman**	232.67	217.13	93.32	-	-	15.54	6.68	-	-	
17	**Paschim Medinipur**	2007.04	1600.00	79.72	276.20	13.76	130.84	6.52	-	-	
18	**Purba Barddhaman**	1641.01	1221.45	74.43	350.50	21.36	69.07	4.21	-	-	
19	**Purba Medinipur**	639.81	634.99	99.25	-	-	-	-	-	-	
20	**Puruliya**	610.06	610.06	100.00	-	-	-	-	-	-	
21	**Uttar Dinajpur**	927.21	927.21	100.00	-	-	-	-	-	-	
	Total States	**21417.57**	**17152.23**	**80.08**	**2381.70**	**11.12**	**1763.33**	**8.23**	**-**	**-**	

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
ANDAMAN & NICOBAR ISLAND										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**N & M Andaman**	147.50	147.50	100.00						
2	**Nicobar**	311.98	311.98	100.00						
3	**South Andaman**	97.11	97.11	100.00						
	Total States	**556.59**	**556.59**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
CHANDIGARH											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Chandigarh**	46.84	-	-	46.84	100.00				
	Total	**46.84**	**-**	**-**	**46.84**	**100.00**				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
DADRA & NAGAR HAVELI										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Dadra & Nagar Haveli**	80.68							80.68	100.00
	Total	**80.68**							**80.68**	**100.00**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
DAMAN & DIU										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Daman**	30.61							30.61	100.00
2	**Diu**	5.56							5.56	100.00
	Total	**36.17**							**36.17**	**100.00**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
JAMMU & KASHMIR										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	Anantnag	248.67	248.67	100.00						
2	Bandipora	11.77	11.77	100.00						
3	Baramulla	595.84	595.84	100.00						
4	Budgam	282.96	282.96	100.00						
5	Doda	9.95	9.95	100.00						
6	Ganderbal	10.09	10.09	100.00						
7	Jammu	907.66	907.66	100.00						
8	Kathua	447.00	447.00	100.00						
9	Kishtwar	15.22	15.22	100.00						
10	Kulgam	124.39	124.39	100.00						
11	Kupwara	332.84	332.84	100.00						
12	Poonch	186.20	186.20	100.00						
13	Pulwama	252.44	252.44	100.00						
14	Rajouri	297.88	297.88	100.00						
15	Ramban	14.03	14.03	100.00						
16	Reasi	63.09	63.09	100.00						
17	Samba	210.64	210.64	100.00						
18	Shopian	162.67	162.67	100.00						
19	Srinagar Urban	109.69			109.69	100.00				
20	Udhampur	160.99	160.99	100.00						
	Total States	**4444.02**	**4334.33**	**97.53**	**109.69**	**2.47**				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022											
LADAKH											
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited		
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Kargil**	24.54	24.54	100.0						
2	**Leh**	48.65	26.09	53.64	22.55	46.36				
	Total States	**73.19**	**50.63**	**69.18**	**22.55**	**30.82**				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
LAKSHADWEEP										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	Agatti	0.54	0.54	100.00						
2	Amini	0.54			0.54	100.00				
3	Androth	1.12	1.12	100.00						
4	Chetlat	0.22	0.22	100.00						
5	Kadmat	0.65	0.65	100.00						
6	Kalpeni	0.45	0.45	100.00						
7	Kavaratti	0.76			0.76	100.00				
8	Kiltan	0.34	0.34	100.00						
9	Minicoy	0.80	0.80	100.00						
	Total	**5.40**	**4.11**	**76.05**	**1.29**	**23.95**				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
PUDUCHERRY										
S.No	Name of District	Total Annual Extractable Resource of Assessed Units (in Mcm)	Safe		Semi-Critical		Critical		Over-Exploited	
			Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%	Annual Extractable Resource (in Mcm)	%
1	**Karaikal**	63.16	63.16	**100.00**						
2	**Mahe**	1.99	1.99	**100.00**						
3	**Puducherry**	120.01					120.01	**100.00**		
	Total	**185.15**	**65.15**	**35.18**			**120.01**	**64.82**		

Annexure - III(E)

State-Wise Recharge worthy Area of Assessment Unit under Different Category in India (as in 2022)

AREA OF ASSESSMENT UNITS UNDER DIFFERENT CATEGORIES IN INDIA (2022)												
S.No.	States/Union Territories	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area (in sq.km)	%	Recharge Worthy Area (in sq.km)	%	Recharge Worthy Area (in sq.km)	%	Recharge Worthy Area (in sq.km)	%	Recharge Worthy Area (in sq.km)	%
	States											
1	**Andhra Pradesh**	140719.48	127921.85	90.91	4206.40	2.99	1114.24	0.79	1380.65	0.98	6096.33	4.33
2	**Arunachal Pradesh**	5721.38	5721.38	100.00								
3	**Assam**	68817.93	68617.51	99.71	200.42	0.29						
4	**Bihar**	90348.70	81926.22	90.68	6200.44	6.86	1354.24	1.50	867.80	0.96		
5	**Chhattisgarh**	106078.71	87448.65	82.44	14832.17	13.98	3797.89	3.58				
6	**Delhi**	1487.60	201.70	13.56	396.73	26.67	179.37	12.06	709.81	47.72		
7	**Goa**	2209.59	2209.59	100.00								
8	**Gujarat**	162778.15	119415.23	73.36	10408.88	6.39	4138.03	2.54	19707.17	12.11	9108.84	5.60
9	**Haryana**	40391.05	10860.63	26.89	2398.44	5.94	2359.30	5.84	24772.68	61.33		
10	**Himachal Pradesh**	3468.00	3468.00	100.00								
11	**Jharkhand**	60646.73	56945.20	93.90	2169.13	3.58	1068.48	1.76	463.92	0.76		
12	**Karnataka**	170647.10	98120.25	57.50	26593.23	15.58	6580.96	3.86	39352.66	23.06		
13	**Kerala**	27047.53	22452.51	83.01	3817.64	14.11	777.38	2.87				
14	**Madhya Pradesh**	269361.55	190725.58	70.81	51807.61	19.23	4249.07	1.58	22579.29	8.38		
15	**Maharashtra**	259914.03	182571.52	70.24	60673.43	23.34	6951.48	2.67	8940.70	3.44	776.89	0.30
16	**Manipur**	2559.00	2559.00	100.00								
17	**Meghalaya**	10645.56	10645.56	100.00								
18	**Mizoram**	3149.41	3149.41	100.00								
19	**Nagaland**	3855.07	3855.07	100.00								
20	**Odisha**	121593.15	116662.89	95.95	2748.93	2.26					2181.33	1.79
21	**Punjab**	50344.68	7062.97	14.03	4599.20	9.14	1742.88	3.46	36939.63	73.37		
22	**Rajasthan**	317058.36	46667.88	14.72	18676.54	5.89	16651.50	5.25	226126.62	71.32	8935.89	2.82
23	**Sikkim**	1496.00	1496.00	100.00								
24	**Tamil Nadu**	108719.69	43635.44	40.14	21987.14	20.22	7488.67	6.89	32401.70	29.80	3206.73	2.95
25	**Telangana**	106308.52	93392.52	87.85	11392.50	10.72	1322.36	1.24	201.14	0.19		
26	**Tripura**	6197.84	6197.84	100.00								
27	**Uttar Pradesh**	229593.13	150346.77	65.48	51239.41	22.32	12743.67	5.55	15263.27	6.65		
28	**Uttarakhand**	4993.04	4042.10	80.95	950.94	19.05						
29	**West Bengal**	79765.77	59164.45	74.17	6457.34	8.10	4635.88	5.81			9508.10	11.92
30	**Andaman and Nicobar**	2120.07	2111.79	99.61							8.00	0.38
31	**Chandigarh**	114.00			114.00	100.00						
32	**Dadra & Nagar Haveli**	416.00							416.00	100.00		
	Daman & Diu	110.90							110.90	100.00		
33	**Jammu and Kashmir**	8664.25	7789.25	89.90	875.00	10.10						
34	**Ladakh**	963.00	632.00	65.63	331.00	34.37						
35	**Lakshadweep**	26.21	19.99	76.27	6.22	23.73						
36	**Puducherry**	483.00	170.00	35.20			293.00	60.66			20.00	4.14
	Grand Total	**2468814.18**	**1618206.76**	**65.55**	**303082.74**	**12.28**	**77448.41**	**3.14**	**430233.93**	**17.43**	**39842.12**	**1.61**

Annexure - III(F)

District–Wise Recharge Worthy Area of Assessment Unit under Different Category in India (as in 2022)

S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Alluri Sitharama Raju**	6392.35	6392.35	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	**Anakapalli**	3454.55	3454.55	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	**Ananthapuramu**	9464.79	9191.68	97.11	273.11	2.89	0.00	0.00	0.00	0.00	0.00	0.00
4	**Annamayya**	6654.18	6107.78	91.79	546.40	8.21	0.00	0.00	0.00	0.00	0.00	0.00
5	**Bapatla**	3801.18	3638.93	95.73	0.00	0.00	0.00	0.00	0.00	0.00	162.25	4.27
6	**Chittoor**	6016.69	4573.45	76.01	1222.81	20.32	220.43	3.66	0.00	0.00	0.00	0.00
7	**East Godavari**	2545.53	2300.61	90.38	244.92	9.62	0.00	0.00	0.00	0.00	0.00	0.00
8	**Eluru**	6591.85	5627.11	85.36	0.00	0.00	0.00	0.00	0.00	0.00	964.74	14.64
9	**Guntur**	2423.33	2165.85	89.38	0.00	0.00	0.00	0.00	0.00	0.00	257.48	10.62
10	**Kakinada**	2881.24	2362.46	81.99	0.00	0.00	0.00	0.00	0.00	0.00	518.78	18.01
11	**Konaseema**	2079.95	1320.07	63.47	0.00	0.00	0.00	0.00	0.00	0.00	759.88	36.53
12	**Krishna**	3880.56	1935.06	49.87	0.00	0.00	0.00	0.00	0.00	0.00	1945.50	50.13
13	**Kurnool**	7558.63	7558.63	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	**N.TR**	7061.82	7061.82	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	**Nandyal**	3063.24	3063.24	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	**Palnadu**	6516.56	5641.54	86.57	0.00	0.00	539.10	8.27	335.92	5.15	0.00	0.00
17	**Parvathipuram Manyam**	3298.11	3298.11	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	**Prakasam**	11381.90	9689.91	85.13	1210.38	10.63	231.74	2.04	249.87	2.20	0.00	0.00
19	**Sri Potti Sriramulu Nellore**	9941.78	9941.78	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	**Sri Sathya Sai**	7636.24	6402.56	83.84	315.85	4.14	122.97	1.61	794.86	10.41	0.00	0.00
21	**Srikakulam**	4466.89	4466.89	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	**Tirupati**	7625.27	7625.27	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	**Visakhapatnam**	1001.67	1001.67	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	**Vizianagaram**	4013.38	4013.38	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	**West Godavari**	2178.42	690.71	31.71	0.00	0.00	0.00	0.00	0.00	0.00	1487.71	68.29
26	**Y.S.R Kadapa**	8789.37	8396.44	95.53	392.93	4.47	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**140719.48**	**127921.85**	**90.91**	**4206.40**	**2.99**	**1114.24**	**0.79**	**1380.65**	**0.98**	**6096.33**	**4.33**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
ARUNACHAL PRADESH													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Changlang**	530.00	530.00	100.00								
2	**East Kameng**	312.50	312.50	100.00								
3	**East Siang**	1101.00	1101.00	100.00								
4	**Lohit**	2000.00	2000.00	100.00								
5	**Lower Dibang Valley**	1200.00	1200.00	100.00								
6	**Lower Subansiri**	101.35	101.35	100.00								
7	**Papum Pare**	178.19	178.19	100.00								
8	**Tirap**	125.00	125.00	100.00								
9	**Upper Subansiri**	7.00	7.00	100.00								
10	**West Kameng**	61.75	61.75	100.00								
11	**West Siang**	104.59	104.59	100.00								
	Total	**5721.38**	**5721.38**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
ASSAM													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Baksa**	2448.73	2448.73	100.00								
2	**Barpeta**	2270.55	2270.55	100.00								
3	**Bongaigaon**	997.30	997.30	100.00								
4	**Cachar**	2733.58	2733.58	100.00								
5	**Chirang**	1917.94	1917.94	100.00								
6	**Darrang**	1576.54	1576.54	100.00								
7	**Dhemaji**	3151.56	3151.56	100.00								
8	**Dhubri**	2143.92	2143.92	100.00								
9	**Dibrugarh**	3346.88	3346.88	100.00								
10	**Dima Hasao**	2343.00	2343.00	100.00								
11	**Goalpara**	1719.83	1719.83	100.00								
12	**Golaghat**	3481.40	3481.40	100.00								
13	**Hailakandi**	1049.81	1049.81	100.00								
14	**Jorhat**	2794.08	2794.08	100.00								
15	**Kamrup**	2630.24	2630.24	100.00								
16	**Kamrup Metro Rural**	458.70	458.70	100.00								
17	**Kamrup Metro Urban**	200.42	0.00	0.00	200.42	100.00						
18	**Karbi Anglong**	6560.91	6560.91	100.00								
19	**Karimganj**	1676.48	1676.48	100.00								
20	**Kokrajhar**	3270.30	3270.30	100.00								
21	**Lakhimpur**	2249.30	2249.30	100.00								
22	**Morigaon**	1490.66	1490.66	100.00								
23	**Nagaon**	3773.41	3773.41	100.00								
24	**Nalbari**	1036.30	1036.30	100.00								
25	**Sivasagar**	2644.59	2644.59	100.00								
26	**Sonitpur**	5132.24	5132.24	100.00								
27	**Tinsukia**	3717.57	3717.57	100.00								
28	**Udalguri**	2001.69	2001.69	100.00								
	Total	**68817.93**	**68617.51**	**99.71**	**200.42**	**0.29**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
BIHAR												
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Araria**	2789.37	2789.37	100.00								
2	**Arwal**	636.83	636.83	100.00								
3	**Aurangabad**	3090.54	3090.54	100.00								
4	**Banka**	2673.00	2673.00	100.00								
5	**Begusarai**	1891.31	1595.00	84.33	296.31	15.67						
6	**Bhagalpur**	2602.55	2602.55	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
7	**Bhojpur**	2275.30	1690.43	74.29	476.41	20.94	108.46	4.77	0.00	0.00		
8	**Buxar**	1710.06	1710.06	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
9	**Darbhanga**	2504.29	2504.29	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
10	**East Champaran**	3958.87	3958.87	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
11	**Gaya**	4909.78	4711.83	95.97	197.95	4.03	0.00	0.00	0.00	0.00		
12	**Gopalganj**	2019.13	2019.13	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
13	**Jamui**	2551.14	2551.14	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
14	**Jehanabad**	932.57	340.83	36.55	334.92	35.91	0.00	0.00	256.82	27.54		
15	**Kaimur**	2980.40	2769.86	92.94	210.54	7.06	0.00	0.00	0.00	0.00		
16	**Katihar**	3009.91	3009.91	100.00								
17	**Khagaria**	1485.72	1485.72	100.00								
18	**Kishanganj**	1911.43	1911.43	100.00								
19	**Lakhisarai**	1144.94	1144.94	100.00								
20	**Madhepura**	1788.40	1788.40	100.00								
21	**Madhubani**	3486.45	3486.45	100.00								
22	**Munger**	1331.42	1331.42	100.00								
23	**Muzaffarpur**	3042.77	1538.21	50.55	1148.01	37.73	236.58	7.78	119.97	3.94		
24	**Nalanda**	2316.46	1238.95	53.48	722.09	31.17	280.12	12.09	75.30	3.25		
25	**Nawada**	2456.58	1835.76	74.73	620.82	25.27	0.00	0.00	0.00	0.00		
26	**Patna**	3200.84	2191.02	68.45	592.92	18.52	308.03	9.62	108.87	3.40		
27	**Purnea**	3202.39	3202.39	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
28	**Rohtas**	3751.43	3372.29	89.89	379.14	10.11	0.00	0.00	0.00	0.00		
29	**Saharsa**	1661.28	1661.28	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
30	**Samastipur**	2612.87	1596.96	61.12	852.82	32.64	95.16	3.64	67.93	2.60		
31	**Saran**	2629.57	2629.57	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
32	**Sheikhpura**	662.59	569.13	85.89	0.00	0.00	93.46	14.11	0.00	0.00		
33	**Sheohar**	442.99	442.99	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
34	**Sitamarhi**	2185.20	2185.20	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
35	**Siwan**	2223.07	2223.07	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
36	**Supaul**	2410.26	2410.26	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
37	**Vaishali**	1995.18	1155.33	57.91	368.51	18.47	232.43	11.65	238.91	11.97		
38	**West Champaran**	3871.81	3871.81	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Total	90348.70	81926.22	90.68	6200.44	6.86	1354.24	1.50	867.80	0.96		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
CHHATISGARH													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	Balod	2614.70	1292.95	49.45	984.95	37.67	336.80	12.88				
2	Baloda Bazar	4994.40	4994.40	100.00	0.00	0.00	0.00	0.00				
3	Balrampur	5661.31	5661.31	100.00	0.00	0.00	0.00	0.00				
4	Bastar	3835.33	3835.33	100.00	0.00	0.00	0.00	0.00				
5	Bemetara	2854.81	0.00	0.00	724.86	25.39	2129.95	74.61				
6	Bijapur	4377.29	4377.29	100.00	0.00	0.00	0.00	0.00				
7	Bilaspur	3175.95	1572.65	49.52	1603.30	50.48	0.00	0.00				
8	Dantewada	3118.66	3118.66	100.00	0.00	0.00	0.00	0.00				
9	Dhamtari	2487.06	1215.81	48.89	592.42	23.82	678.83	27.29				
10	Durg	2319.99	0.00	0.00	2319.99	100.00	0.00	0.00				
11	Gariaband	2631.40	2036.10	77.38	595.30	22.62	0.00	0.00				
12	Gourela-Pendra-Marwahi	1651.23	1651.23	100.00	0.00	0.00	0.00	0.00				
13	Janjgir-Champa	3696.47	2935.15	79.40	761.32	20.60	0.00	0.00				
14	Jashpur	4510.05	4510.05	100.00	0.00	0.00	0.00	0.00				
15	Kabirdham	4239.63	3123.17	73.67	1116.46	26.33	0.00	0.00				
16	Kanker	6260.36	5805.01	92.73	455.35	7.27	0.00	0.00				
17	Kondagaon	3722.41	3722.41	100.00	0.00	0.00	0.00	0.00				
18	Korba	4314.30	3843.14	89.08	471.16	10.92	0.00	0.00				
19	Korea	4024.87	4024.87	100.00	0.00	0.00	0.00	0.00				
20	Mahasamund	4597.20	3954.20	86.01	643.00	13.99	0.00	0.00				
21	Mungeli	1639.42	1639.42	100.00	0.00	0.00	0.00	0.00				
22	Narayanpur	3510.43	3510.43	100.00	0.00	0.00	0.00	0.00				
23	Raigarh	5208.65	3860.01	74.11	1348.64	25.89	0.00	0.00				
24	Raipur	2891.98	2239.67	77.44	0.00	0.00	652.31	22.56				
25	Rajnandgaon	5636.52	2985.84	52.97	2650.68	47.03	0.00	0.00				
26	Sukma	5211.99	5211.99	100.00	0.00	0.00	0.00	0.00				
27	Surajpur	2637.88	2073.14	78.59	564.74	21.41	0.00	0.00				
28	Surguja	4254.42	4254.42	100.00	0.00	0.00	0.00	0.00				
	Total	106078.71	87448.65	82.44	14832.17	13.98	3797.89	3.58				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022														
DELHI														
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	Central	79.30	54.50	68.73	19.60	24.72	0.00	0.00	5.10	6.43		
2	East	31.60	0.00	0.00	14.83	46.93	16.80	53.16	0.00	0.00		
3	Nazul Land	25.80	25.80	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
4	New Delhi	158.09	0.00	0.00	0.00	0.00	0.00	0.00	158.10	100.01		
5	North	291.10	0.00	0.00	118.20	40.60	25.40	8.73	147.60	50.70		
6	North East	35.67	0.00	0.00	9.00	25.23	0.00	0.00	26.70	74.85		
7	North West	154.36	121.40	78.65	33.00	21.38	0.00	0.00	0.00	0.00		
8	Shahdara	34.59	0.00	0.00	0.00	0.00	7.25	20.96	27.32	78.98		
9	South	157.90	0.00	0.00	0.00	0.00	0.00	0.00	157.90	100.00		
10	South East	103.50	0.00	0.00	0.00	0.00	103.50	100.00	0.00	0.00		
11	South West	305.10	0.00	0.00	128.50	42.12	0.00	0.00	176.60	57.88		
12	West	110.54	0.00	0.00	73.60	66.58	26.50	23.97	10.50	9.50		
	Total	1487.55	201.70	13.56	396.73	26.67	179.40	12.06	709.80	47.72		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
GOA													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Goa North**	989.87	989.87	100.00								
2	**South Goa**	1219.72	1219.72	100.00								
	Total	**2209.59**	**2209.59**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
GUJARAT												
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	Ahmedabad	7077.26	2993.62	42.30	1266.45	17.89	496.42	7.01	473.59	6.69	1847.17	26.10
2	Amreli	7478.47	6630.87	88.67			847.60	11.33				
3	Anand	3041.19	3041.19	100.00								
4	Arvalli	3103.72	3103.72	100.00								
5	Banaskantha	10501.35	1311.14	12.49	792.79	7.55			6164.31	58.70	2233.12	21.27
6	Bharuch	5462.98	5462.98	100.00								
7	Bhavnagar	7281.48	7281.48	100.00								
8	Botad	2484.80	2484.80	100.00								
9	Chhota Udepur	3264.93	3264.93	100.00								
10	Dahod	3519.71	3519.71	100.00								
11	Dang	1449.22	1449.22	100.00								
12	Devbhumi Dwarka	4206.37	4206.37	100.00								
13	Gandhinagar	2155.21			859.59	39.88			1295.62	60.12		
14	Gir Somnath	3285.88	3285.88	100.00								
15	Jamnagar	6423.48	6423.48	100.00								
16	Junagadh	5471.24	5032.87	91.99	438.37	8.01						
17	Kachchh	20491.36	12264.11	59.85					8008.74	39.08	218.51	1.07
18	Kheda	3437.64	3204.70	93.22	232.94	6.78						
19	Mahesana	4407.47			1598.19	36.26	682.26	15.48	1904.98	43.22	222.04	5.04
20	Mahisagar	2459.01	2459.01	100.00								
21	Morbi	4992.70	4236.59	84.86							756.10	15.14
22	Narmada	2509.95	1950.65	77.72	559.30	22.28						
23	Navsari	2167.82	2167.82	100.00								
24	Panchmahal	3254.74	3254.74	100.00								
25	Patan	5686.52			471.22	8.29	374.78	6.59	1008.62	17.74	3831.90	67.39
26	Porbandar	2305.41	2305.41	100.00								
27	Rajkot	7762.59	5868.46	75.60	1117.36	14.39	776.76	10.01				
28	Sabarkantha	4073.78	1634.11	40.11	2031.58	49.87			408.09	10.02		
29	Surat	4212.40	3769.19	89.48					443.21	10.52		
30	Surendranagar	9276.07	8753.08	94.36	522.99	5.64						
31	Tapi	3085.50	3085.50	100.00								
32	Vadodara	4063.99	2585.68	63.62	518.11	12.75	960.20	23.63				
33	Valsad	2383.88	2383.88	100.00								
	Total	162778.12	119415.19	73.36	10408.89	6.39	4138.02	2.54	19707.16	12.11	9108.84	5.60

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
HARYANA												
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Ambala**	1509.05			552.73	36.63	193.18	12.80	763.14	50.57		
2	**Bhiwani**	2674.95	1394.33	52.13					1280.63	47.87		
3	**Charkhi Dadri**	1343.36	792.25	58.98					551.10	41.02		
4	**Faridabad**	577.25							577.25	100.00		
5	**Fatehabad**	2518.50					742.82	29.49	1775.69	70.51		
6	**Gurgaon**	1211.13							1211.13	100.00		
7	**Hisar**	4068.38	2829.19	69.54	499.44	12.28	329.89	8.11	409.85	10.07		
8	**Jhajjar**	1536.60	1536.60	100.00								
9	**Jind**	2680.27	660.07	24.63	196.18	7.32			1824.03	68.05		
10	**Kaithal**	2228.72							2228.72	100.00		
11	**Karnal**	2468.66					243.01	9.84	2225.65	90.16		
12	**Kurukshetra**	1684.20							1684.20	100.00		
13	**Mahendragarh**	1885.42					389.42	20.65	1495.99	79.35		
14	**Mewat**	1107.02	606.20	54.76	102.66	9.27			398.16	35.97		
15	**Palwal**	1200.20	427.92	35.65	273.03	22.75	154.60	12.88	344.65	28.72		
16	**Panchkula**	506.72	398.44	78.63			108.28	21.37				
17	**Panipat**	1296.37							1296.37	100.00		
18	**Rohtak**	1503.89	1503.89	100.00								
19	**Rewari**	1440.18					198.10	13.76	1242.08	86.24		
20	**Sirsa**	3521.00			496.75	14.11			3024.24	85.89		
21	**Sonipat**	1996.41	711.74	35.65					1284.68	64.35		
22	**Yamuna Nagar**	1432.77			277.65	19.38			1155.12	80.62		
	Total	**40391.05**	**10860.63**	**26.89**	**2398.44**	**5.94**	**2359.30**	**5.84**	**24772.68**	**61.33**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
HIMACHAL PRADESH													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Kangra**	1476.00	1476.00	100.00								
2	**Mandi**	159.00	159.00	100.00								
3	**Sirmour**	358.00	358.00	100.00								
4	**Solan**	336.00	336.00	100.00								
5	**Una**	1139.00	1139.00	100.00								
	Total	**3468.00**	**3468.00**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
JHARKHAND													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Bokaro**	2624.43	2531.73	96.47	0.00	0.00	0.00	0.00	92.70	3.53	0.00	
2	**Chatra**	3260.87	3260.87	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	**Deoghar**	1906.98	1554.72	81.53	352.26	18.47	0.00	0.00	0.00	0.00	0.00	
4	**Dhanbad**	1976.73	838.35	42.41	670.90	33.94	346.31	17.52	121.17	6.13	0.00	
5	**Dumka**	2813.67	2813.67	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	**East Singhbhum**	2509.93	2306.69	91.90	0.00	0.00	0.00	0.00	203.24	8.10	0.00	
7	**Garhwa**	2916.43	2706.62	92.81	209.81	7.19	0.00	0.00	0.00	0.00	0.00	
8	**Giridih**	4400.79	4019.38	91.33	381.41	8.67	0.00	0.00	0.00	0.00	0.00	
9	**Godda**	1664.02	1664.02	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10	**Gumla**	4071.15	4071.15	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	**Hazaribagh**	3526.62	3416.42	96.88	110.20	3.12	0.00	0.00	0.00	0.00	0.00	
12	**Jamtara**	983.46	983.46	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	**Khunti**	1670.05	1670.05	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	**Koderma**	909.02	622.11	68.44	146.34	16.10	140.57	15.46	0.00	0.00	0.00	
15	**Latehar**	2385.13	2385.13	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16	**Lohardaga**	1275.63	1275.63	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	**Pakur**	1277.59	1277.59	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	**Palamau**	3473.44	3473.44	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19	**Ramgarh**	1112.67	985.86	88.60	0.00	0.00	80.00	7.19	46.81	4.21	0.00	
20	**Ranchi**	3743.08	2943.27	78.63	298.21	7.97	501.60	13.40	0.00	0.00	0.00	
21	**Sahebganj**	1144.09	1144.09	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22	**Saraikela Kharsawan**	2028.01	2028.01	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	**Simdega**	3090.60	3090.60	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24	**West Singhbhum**	5882.34	5882.34	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Total	60646.73	56945.20	93.90	2169.13	3.58	1068.48	1.76	463.92	0.76	0.00	

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
KARNATAKA													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Bagalkot**	6283.80	2132.72	33.94	1902.08	30.27	318.73	5.07	1930.27	30.72		
2	**Ballari**	3758.91	3758.91	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
3	**Belagavi**	12956.29	5829.54	44.99	4785.49	36.94	1581.68	12.21	759.58	5.86		
4	**Bengaluru (Rural)**	2236.51	0.00	0.00	0.00	0.00	0.00	0.00	2236.51	100.00		
5	**Bengaluru (Urban)**	2130.26	0.00	0.00	0.00	0.00	0.00	0.00	2130.26	100.00		
6	**Bidar**	5453.14	4116.60	75.49	1336.54	24.51	0.00	0.00	0.00	0.00		
7	**Chamarajanagara**	3609.40	0.00	0.00	1275.43	35.34	139.99	3.88	2193.98	60.79		
8	**Chikkaballapura**	3734.82	0.00	0.00	0.00	0.00	0.00	0.00	3734.82	100.00		
9	**Chikkamagaluru**	4234.94	2537.18	59.91	0.00	0.00	0.00	0.00	1697.76	40.09		
10	**Chitradurga**	8004.61	627.43	7.84	0.00	0.00	0.00	0.00	7377.18	92.16		
11	**Dakshina Kannada**	3308.67	3308.67	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
12	**Davanagere**	4095.52	793.89	19.38	431.98	10.55	947.99	23.15	1921.66	46.92		
13	**Dharwad**	4163.28	4163.28	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
14	**Gadag**	4528.99	865.32	19.11	2374.73	52.43	0.00	0.00	1288.94	28.46		
15	**Hassan**	5962.97	3764.93	63.14	0.00	0.00	1040.78	17.45	1157.26	19.41		
16	**Haveri**	4737.54	2673.48	56.43	1690.70	35.69	373.36	7.88	0.00	0.00		
17	**Kalburgi**	10962.67	9653.24	88.06	1309.43	11.94	0.00	0.00	0.00	0.00		
18	**Kodagu**	2025.83	2025.83	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
19	**Kolara**	3827.63	0.00	0.00	0.00	0.00	0.00	0.00	3827.63	100.00		
20	**Koppal**	5398.66	3435.96	63.64	1305.40	24.18	657.30	12.18	0.00	0.00		
21	**Mandya**	4817.43	4092.71	84.96	724.72	15.04	0.00	0.00	0.00	0.00		
22	**Mysuru**	6116.45	5315.92	86.91	800.53	13.09	0.00	0.00	0.00	0.00		
23	**Raichur**	8386.67	7649.31	91.21	737.36	8.79	0.00	0.00	0.00	0.00		
24	**Ramanagara**	2739.98	0.00	0.00	1174.07	42.85	545.95	19.93	1019.96	37.23		
25	**Shivamogga**	6747.31	6747.31	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
26	**Tumakuru**	9915.97	2823.96	28.48	1203.95	12.14	598.58	6.04	5289.48	53.34		
27	**Udupi**	2869.98	2869.98	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
28	**Uttara Kannada**	6585.48	6585.48	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
29	**Vijayanagara**	5397.53	1697.85	31.46	912.31	16.90	0.00	0.00	2787.37	51.64		
30	**Vijayapura**	10503.04	7097.75	67.58	3028.69	28.84	376.60	3.59	0.00	0.00		
31	**Yadgir**	5152.82	3553.00	68.95	1599.82	31.05	0.00	0.00	0.00	0.00		
	Total	170647.10	98120.25	57.50	26593.23	15.58	6580.96	3.86	39352.66	23.06		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
KERALA													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	
1	**Alappuzha**	1414.03	1414.03	100.00									
2	**Ernakulam**	2269.48	2269.48	100.00									
3	**Idukki**	1088.91	854.63	78.48	234.28	21.52							
4	**Kannur**	2323.96	2002.78	86.18	321.18	13.82							
5	**Kasargod**	1648.30	550.63	33.41	838.91	50.90	258.76	15.70					
6	**Kollam**	2112.00	1964.97	93.04	147.03	6.96							
7	**Kottayam**	1970.88	1970.88	100.00									
8	**Kozhikode**	1661.80	1352.33	81.38	309.47	18.62							
9	**Malappuram**	2541.81	1327.05	52.21	1214.76	47.79							
10	**Palakkad**	2982.28	2084.06	69.88	379.60	12.73	518.62	17.39					
11	**Pathanamthitta**	1296.65	1296.65	100.00									
12	**Thiruvananthapuram**	1942.97	1452.78	74.77	490.19	25.23							
13	**Thrissur**	2366.85	1977.08	83.53	389.77	16.47							
14	**Wayanad**	1427.62	1427.62	100.00									
	Total	**27047.54**	**21944.97**	**81.13**	**4325.19**	**15.99**	**777.38**	**2.87**					

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
MADHYA PRADESH												
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Agar Malwa**	2515.76	654.46	26.01	700.83	27.86	0.00	0.00	1160.47	46.13	0.00	0.00
2	**Alirajpur**	3054.00	3054.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	**Anuppur**	2942.00	2602.00	88.44	340.00	11.56	0.00	0.00	0.00	0.00	0.00	0.00
4	**Ashoknagar**	4622.44	2462.59	53.27	2159.85	46.73	0.00	0.00	0.00	0.00	0.00	0.00
5	**Balaghat**	8917.93	8917.93	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	**Barwani**	3668.31	2646.15	72.14	730.36	19.91	0.00	0.00	291.80	7.95	0.00	0.00
7	**Betul**	8564.50	6663.50	77.80	1901.00	22.20	0.00	0.00	0.00	0.00	0.00	0.00
8	**Bhind**	4459.00	4459.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	**Bhopal**	2648.00	0.00	0.00	2648.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
10	**Burhanpur**	2570.50	1400.50	54.48	1170.00	45.52	0.00	0.00	0.00	0.00	0.00	0.00
11	**Chhatarpur**	7904.34	3938.28	49.82	3966.06	50.18	0.00	0.00	0.00	0.00	0.00	0.00
12	**Chhindwara**	8847.77	6631.89	74.96	1580.72	17.87	635.16	7.18	0.00	0.00	0.00	0.00
13	**Damoh**	4746.19	3842.82	80.97	903.37	19.03	0.00	0.00	0.00	0.00	0.00	0.00
14	**Datia**	2662.00	2662.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	**Dewas**	5770.82	3313.70	57.42	876.31	15.19	0.00	0.00	1580.81	27.39	0.00	0.00
16	**Dhar**	8126.40	5169.00	63.61	0.00	0.00	534.00	6.57	2423.40	29.82	0.00	0.00
17	**Dindori**	4560.00	4560.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	**Guna**	6175.14	6175.14	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	**Gwalior**	4283.00	3859.65	90.12	423.35	9.88	0.00	0.00	0.00	0.00	0.00	0.00
20	**Harda**	2700.90	2700.90	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	**Hoshangabad**	5583.52	4914.52	88.02	669.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00
22	**Indore**	3818.97	0.00	0.00	1020.92	26.73	530.00	13.88	2268.05	59.39	0.00	0.00
23	**Jabalpur**	4438.68	4070.28	91.70	368.40	8.30	0.00	0.00	0.00	0.00	0.00	0.00
24	**Jhabua**	3112.53	2699.53	86.73	413.00	13.27	0.00	0.00	0.00	0.00	0.00	0.00
25	**Katni**	4666.48	4666.48	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	**Khandwa**	5814.46	4953.46	85.19	861.00	14.81	0.00	0.00	0.00	0.00	0.00	0.00
27	**Khargone**	6568.97	6074.57	92.47	494.40	7.53	0.00	0.00	0.00	0.00	0.00	0.00
28	**Mandla**	5739.90	5739.90	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	**Mandsaur**	4984.68	0.00	0.00	2442.68	49.00	0.00	0.00	2542.00	51.00	0.00	0.00
30	**Morena**	4384.89	4384.89	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	**Narsinghpur**	4791.00	3947.00	82.38	844.00	17.62	0.00	0.00	0.00	0.00	0.00	0.00
32	**Neemuch**	3757.44	0.00	0.00	1153.00	30.69	0.00	0.00	2604.44	69.31	0.00	0.00
33	**Niwari**	1525.62	939.62	61.59	586.00	38.41	0.00	0.00	0.00	0.00	0.00	0.00
34	**Panna**	6624.75	6624.75	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	**Raisen**	6609.40	5745.00	86.92	864.40	13.08	0.00	0.00	0.00	0.00	0.00	0.00
36	**Rajgarh**	6154.98	0.00	0.00	3881.98	63.07	1368.00	22.23	905.00	14.70	0.00	0.00
37	**Ratlam**	4616.00	0.00	0.00	973.00	21.08	0.00	0.00	3643.00	78.92	0.00	0.00
38	**Rewa**	5937.60	5490.30	92.47	447.30	7.53	0.00	0.00	0.00	0.00	0.00	0.00
39	**Sagar**	9254.18	9254.18	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
MADHYA PRADESH													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
40	**Satna**	6721.06	3576.89	53.22	3144.17	46.78	0.00	0.00	0.00	0.00	0.00	0.00
41	**Sehore**	4639.72	3457.81	74.53	0.00	0.00	1181.91	25.47	0.00	0.00	0.00	0.00
42	**Seoni**	8050.20	8050.20	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43	**Shahdol**	4978.00	4978.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	**Shajapur**	3406.17	0.00	0.00	883.07	25.93	0.00	0.00	2523.10	74.07	0.00	0.00
45	**Sheopur**	5334.80	3697.80	69.31	1637.00	30.69	0.00	0.00	0.00	0.00	0.00	0.00
46	**Shivpuri**	9770.49	4354.54	44.57	5415.95	55.43	0.00	0.00	0.00	0.00	0.00	0.00
47	**Sidhi**	3604.05	3604.05	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48	**Singrauli**	4512.60	4512.60	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	**Tikamgarh**	3355.38	0.00	0.00	3355.38	100.00	0.00	0.00	0.00	0.00	0.00	0.00
50	**Ujjain**	5939.33	0.00	0.00	3302.11	55.60	0.00	0.00	2637.22	44.40	0.00	0.00
51	**Umaria**	4219.00	4219.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
52	**Vidisha**	6707.70	5056.70	75.39	1651.00	24.61	0.00	0.00	0.00	0.00	0.00	0.00
	Total	269361.55	190725.58	70.81	51807.61	19.23	4249.07	1.58	22579.29	8.38	0.00	0.00

S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Ahmednagar**	15624.75	5172.01	33.10	5972.85	38.23	3825.41	24.48	654.48	4.19	0.00	0.00
2	**Akola**	5141.65	4458.17	86.71	683.47	13.29	0.00	0.00	0.00	0.00	0.00	0.00
3	**Amravati**	8392.39	2280.50	27.17	2644.87	31.52	0.00	0.00	2690.13	32.05	776.89	9.26
4	**Aurangabad**	9501.74	1889.75	19.89	7611.99	80.11	0.00	0.00	0.00	0.00	0.00	0.00
5	**Beed**	10352.05	10352.05	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	**Bhandara**	3964.97	3964.97	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	**Buldhana**	8206.15	1412.64	17.21	5735.06	69.89	0.00	0.00	1058.45	12.90	0.00	0.00
8	**Chandrapur**	10476.57	10476.57	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	**Dhule**	6421.32	6421.32	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	**Gadchiroli**	8866.49	8866.49	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	**Gondia**	4597.05	4597.05	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	**Hingoli**	4662.41	4662.41	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	**Jalgaon**	11378.83	2411.85	21.20	7190.22	63.19	0.00	0.00	1776.76	15.61	0.00	0.00
14	**Jalna**	7718.00	7718.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	**Kolhapur**	5621.76	5621.76	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	**Latur**	6635.48	5724.75	86.27	910.73	13.73	0.00	0.00	0.00	0.00	0.00	0.00
17	**Nagpur**	7990.42	6875.12	86.04	1115.30	13.96	0.00	0.00	0.00	0.00	0.00	0.00
18	**Nanded**	10177.71	10177.71	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	**Nandurbar**	4152.78	4152.78	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	**Nashik**	13488.56	7485.45	55.49	3096.05	22.95	1639.17	12.15	1267.89	9.40	0.00	0.00
21	**Osmanabad**	6716.28	4671.26	69.55	2045.02	30.45	0.00	0.00	0.00	0.00	0.00	0.00
22	**Palghar**	2760.86	2760.86	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	**Parbhani**	6214.00	6214.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	**Pune**	12757.28	3018.35	23.66	8252.02	64.68	1486.91	11.66	0.00	0.00	0.00	0.00
25	**Raigad**	3747.59	3747.59	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	**Ratnagiri**	5113.07	5113.07	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	**Sangli**	8427.58	7678.05	91.11	749.53	8.89	0.00	0.00	0.00	0.00	0.00	0.00
28	**Satara**	8775.07	4977.40	56.72	3797.67	43.28	0.00	0.00	0.00	0.00	0.00	0.00
29	**Sindhudurg**	2793.05	2793.05	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	**Solapur**	14838.90	3080.47	20.76	10265.44	69.18	0.00	0.00	1492.99	10.06	0.00	0.00
31	**Thane**	2334.47	2334.47	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32	**Wardha**	5812.16	5208.96	89.62	603.20	10.38	0.00	0.00	0.00	0.00	0.00	0.00
33	**Washim**	4811.96	4811.96	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	**Yawatmal**	11440.67	11440.67	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	259914.03	182571.52	70.24	60673.43	23.34	6951.48	2.67	8940.70	3.44	776.89	0.30

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
MANIPUR													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Bishnupur**	496.00	496.00	100.00								
2	**Churachandpur**	321.00	321.00	100.00								
3	**Imphal East**	709.00	709.00	100.00								
4	**Imphal West**	519.00	519.00	100.00								
5	**Thoubal**	514.00	514.00	100.00								
	Total	**2559.00**	**2559.00**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
MEGHALAYA													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**East Garo Hills**	661.17	661.17	100.00								
2	**East Jaintia Hills**	1000.87	1000.87	100.00								
3	**East Khasi Hills**	894.50	894.50	100.00								
	Greater Shillong	158.11	158.11	100.00								
4	**North Garo Hills**	505.28	505.28	100.00								
5	**Ri-Bhoi**	909.15	909.15	100.00								
6	**South Garo Hills**	867.71	867.71	100.00								
7	**South West Garo Hills**	560.23	560.23	100.00								
8	**South West Khasi Hills**	608.73	608.73	100.00								
9	**West Garo Hills**	1830.11	1830.11	100.00								
10	**West Jaintia Hills**	997.26	997.26	100.00								
11	**West Khasi Hills**	1652.44	1652.44	100.00								
	Total	**10645.56**	**10645.56**	**100.0**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
MIZORAM													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Aizawl**	217.34	217.34	100.00								
2	**Champhai**	286.73	286.73	100.00								
3	**Kolasib**	395.15	395.15	100.00								
4	**Lawngtlai**	520.75	520.75	100.00								
5	**Lunglei**	744.87	744.87	100.00								
6	**Mamit**	716.31	716.31	100.00								
7	**Saiha**	106.60	106.60	100.00								
8	**Serchhip**	161.66	161.66	100.00								
	Total	**3149.41**	**3149.41**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
NAGALAND													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	Dimapur	630.46	630.46	100.00								
2	Kiphire	35.76	35.76	100.00								
3	Kohima	282.64	282.64	100.00								
4	Longleng	128.90	128.90	100.00								
5	Mokokchung	550.43	550.43	100.00								
6	Mon	615.12	615.12	100.00								
7	Peren	638.38	638.38	100.00								
8	Phek	113.09	113.09	100.00								
9	Tuensang	101.23	101.23	100.00								
10	Wokha	669.21	669.21	100.00								
11	Zunheboto	89.85	89.85	100.00								
	Total	3855.07	3855.07	100.00								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
ODISHA													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Angul**	5085.85	4797.19	94.32	288.66	5.68	0.00	0.00	0.00	0.00	0.00	0.00
2	**Balasore**	3564.77	3299.70	92.56	265.07	7.44	0.00	0.00	0.00	0.00	0.00	0.00
3	**Bargarh**	5251.77	5251.77	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	**Bhadrak**	2522.36	1901.92	75.40	0.00	0.00	0.00	0.00	0.00	0.00	620.44	24.60
5	**Bolangir**	6297.77	6297.77	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	**Boudh**	2140.98	2140.98	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	**Cuttack**	3400.69	3400.69	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	**Deogarh**	2185.29	2185.29	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	**Dhenkanal**	3978.75	3978.75	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	**Gajapati**	1424.58	1424.58	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	**Ganjam**	6104.20	6104.20	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	**Jagatsinghpur**	1889.88	1513.89	80.11	0.00	0.00	0.00	0.00	0.00	0.00	375.99	19.89
13	**Jajpur**	2662.13	2333.95	87.67	328.18	12.33	0.00	0.00	0.00	0.00	0.00	0.00
14	**Jharsuguda**	2118.42	2118.42	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	**Kalahandi**	5581.37	5581.37	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	**Kandhamal**	4473.71	4473.71	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	**Kendrapara**	2263.44	932.66	41.21	145.88	6.45	0.00	0.00	0.00	0.00	1184.90	52.35
18	**Keonjhar**	6847.90	6847.90	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	**Khurda**	2607.17	1924.87	73.83	682.30	26.17	0.00	0.00	0.00	0.00	0.00	0.00
20	**Koraput**	6006.06	6006.06	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	**Malkangiri**	3398.99	3398.99	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	**Mayurbhanj**	8340.16	8340.16	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	**Nabarangapur**	5344.64	5344.64	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	**Nayagarh**	2578.45	2381.27	92.35	197.18	7.65	0.00	0.00	0.00	0.00	0.00	0.00
25	**Nuapada**	3083.04	2241.38	72.70	841.66	27.30	0.00	0.00	0.00	0.00	0.00	0.00
26	**Puri**	2586.11	2586.11	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	**Rayagada**	3659.73	3659.73	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	**Sambalpur**	5670.92	5670.92	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	**Subarnapur**	2320.54	2320.54	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	**Sundargarh**	8203.48	8203.48	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**121593.15**	**116662.89**	**95.95**	**2748.93**	**2.26**	**0.00**	**0.00**	**0.00**	**0.00**	**2181.33**	**1.79**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
PUNJAB													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Amritsar**	2676.40	0.00	0.00	0.00	0.00	0.00	0.00	2676.40	100.00		
2	**Barnala**	1413.01	0.00	0.00	0.00	0.00	0.00	0.00	1413.01	100.00		
3	**Bathinda**	3374.24	0.00	0.00	1388.16	41.14	0.00	0.00	1986.08	58.86		
4	**Faridkot**	1475.98	0.00	0.00	0.00	0.00	0.00	0.00	1475.98	100.00		
5	**Fatehgarh Sahib**	1142.46	0.00	0.00	0.00	0.00	0.00	0.00	1142.46	100.00		
6	**Fazilka**	2739.54	1933.01	70.56	328.40	11.99	0.00	0.00	478.04	17.45		
7	**Firozpur**	2519.53	0.00	0.00	0.00	0.00	334.01	13.26	2185.44	86.74		
8	**Gurdaspur**	2614.25	0.00	0.00	306.65	11.73	274.75	10.51	2032.84	77.76		
9	**Hoshiarpur**	3368.71	405.25	12.03	1215.09	36.07	407.95	12.11	1340.40	39.79		
10	**Jalandhar**	2629.99	0.00	0.00	0.00	0.00	0.00	0.00	2629.99	100.00		
11	**Kapurthala**	1628.75	0.00	0.00	0.00	0.00	0.00	0.00	1628.75	100.00		
12	**Ludhiana**	3707.15	0.00	0.00	0.00	0.00	0.00	0.00	3707.15	100.00		
13	**Malerkotla**	745.29	0.00	0.00	0.00	0.00	0.00	0.00	745.29	100.00		
14	**Mansa**	2168.62	325.94	15.03	356.52	16.44	725.83	33.47	760.10	35.05		
15	**Moga**	2230.96	0.00	0.00	0.00	0.00	0.00	0.00	2230.96	100.00		
16	**Muktsar**	2634.28	2634.28	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
17	**Pathankot**	950.77	591.47	62.21	359.29	37.79	0.00	0.00	0.00	0.00		
18	**Patiala**	3318.47	0.00	0.00	0.00	0.00	0.00	0.00	3318.47	100.00		
19	**Rupnagar**	1376.53	724.33	52.62	320.31	23.27	0.00	0.00	331.88	24.11		
20	**Sas Nagar**	1093.83	280.67	25.66	0.00	0.00	0.00	0.00	813.15	74.34		
21	**Sbs Nagar**	1259.61	168.03	13.34	324.60	25.77	0.00	0.00	766.97	60.89		
22	**Sangrur**	2857.96	0.00	0.00	0.00	0.00	0.00	0.00	2857.96	100.00		
23	**Tarn Taran**	2418.35	0.00	0.00	0.00	0.00	0.00	0.00	2418.35	100.00		
	Total	50344.68	7062.98	14.03	4599.02	9.14	1742.54	3.46	36939.67	73.37		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
RAJASTHAN													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	
1	Ajmer	7466.76		0.00		0.00		0.00	7466.76	100.00	0.00	0.00	
2	Alwar	7201.61		0.00		0.00		0.00	7201.61	100.00	0.00	0.00	
3	Banswara	3979.96	2186.91	54.95	1793.05	45.05		0.00		0.00	0.00	0.00	
4	Baran	6892.21		0.00	949.00	13.77	2892.66	41.97	3050.55	44.26	0.00	0.00	
5	Barmer	28578.58	1802.75	6.31	2094.66	7.33		0.00	24681.17	86.36	0.00	0.00	
6	Bharatpur	4751.52		0.00		0.00		0.00	4751.52	100.00	0.00	0.00	
7	Bhilwara	9354.85		0.00		0.00		0.00	9354.85	100.00	0.00	0.00	
8	Bikaner	30381.77	14440.01	47.53	1912.89	6.30		0.00	8575.63	28.23	5453.24	17.95	
9	Bundi	4240.18	462.53	10.91	1152.88	27.19	773.11	18.23	1851.66	43.67	0.00	0.00	
10	Chittaurgarh	5833.89		0.00		0.00		0.00	5833.89	100.00	0.00	0.00	
11	Churu	13793.01	3860.80	27.99		0.00	1606.87	11.65	6514.94	47.23	1810.40	13.13	
12	Dausa	3085.62		0.00		0.00		0.00	3085.62	100.00	0.00	0.00	
13	Dhaulpur	2485.26		0.00		0.00		0.00	2485.26	100.00	0.00	0.00	
14	Dungarpur	2634.13	2026.50	76.93	607.63	23.07		0.00		0.00	0.00	0.00	
15	Ganganagar	11141.59	11141.59	100.00		0.00		0.00		0.00	0.00	0.00	
16	Hanumangarh	9579.60	7907.35	82.54		0.00		0.00		0.00	1672.25	17.46	
17	Jaipur	10334.73		0.00		0.00		0.00	10334.73	100.00	0.00	0.00	
18	Jaisalmer	38145.00		0.00		0.00		0.00	38145.00	100.00	0.00	0.00	
19	Jalor	10251.53		0.00		0.00		0.00	10251.53	100.00	0.00	0.00	
20	Jhalawar	6096.26	978.04	16.04	702.87	11.53	701.65	11.51	3713.77	60.92	0.00	0.00	
21	Jhunjhunun	5393.47		0.00		0.00		0.00	5393.47	100.00	0.00	0.00	
22	Jodhpur	22237.33		0.00	3833.90	17.24	1978.95	8.90	16424.48	73.86	0.00	0.00	
23	Karauli	3902.42		0.00			571.06	14.63	3331.36	85.37	0.00	0.00	
24	Kota	5123.17		0.00	1807.08	35.27	0.00	0.00	3316.09	64.73	0.00	0.00	
25	Nagaur	17718.26		0.00		0.00		0.00	17718.26	100.00	0.00	0.00	
26	Pali	10551.39	1377.90	13.06	1279.91	12.13		0.00	7893.58	74.81	0.00	0.00	
27	Pratapgarh	2950.39	483.50	16.39		0.00	458.56	15.54	2008.33	68.07	0.00	0.00	
28	Rajsamand	3540.09		0.00		0.00	1212.42	34.25	2327.67	65.75	0.00	0.00	
29	Sawai Madhopur	4328.50		0.00		0.00		0.00	4328.50	100.00	0.00	0.00	
30	Sikar	7356.92		0.00		0.00		0.00	7356.92	100.00	0.00	0.00	
31	Sirohi	4075.70		0.00			882.90	21.66	3192.80	78.34	0.00	0.00	
32	Tonk	5881.74		0.00	2153.23	36.61	1378.90	23.44	2349.61	39.95	0.00	0.00	
33	Udaipur	7770.92		0.00	389.44	5.01	4194.42	53.98	3187.06	41.01	0.00	0.00	
	Total	317058.36	46667.88	14.72	18676.54	5.89	16651.50	5.25	226126.62	71.32	8935.89	2.82	

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
SIKKIM													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	Gangtok	355.00	355.00	100.0								
2	Gyalshing	302.00	302.00	100.0								
3	Mangan	200.00	200.00	100.0								
4	Namchi	280.00	280.00	100.0								
5	Pakyong	261.00	261.00	100.0								
6	Soreng	98.00	98.00	100.0								
	Total	1496.00	1496.00	100.0								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
TAMIL NADU												
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Ariyalur**	1926.59	1839.74	95.49	86.85	4.51	0.00	0.00	0.00	0.00	0.00	**0.00**
2	**Chengalpattu**	2424.15	1101.22	45.43	1002.90	41.37	171.38	7.07	148.65	6.13	0.00	**0.00**
3	**Chennai**	533.46	30.09	5.64	113.42	21.26	0.00	0.00	389.94	73.10	0.00	**0.00**
4	**Coimbatore**	3675.31	622.56	16.94	564.82	15.37	286.73	7.80	2201.19	59.89	0.00	**0.00**
5	**Cuddalore**	3636.73	1226.05	33.71	1432.80	39.40	403.01	11.08	574.87	15.81	0.00	**0.00**
6	**Dharmapuri**	2812.87	536.53	19.07	795.80	28.29	117.28	4.17	1363.26	48.47	0.00	**0.00**
7	**Dindigul**	4877.41	785.04	16.10	462.46	9.48	394.77	8.09	3235.14	66.33	0.00	**0.00**
8	**Erode**	3481.10	1111.37	31.93	939.13	26.98	194.68	5.59	1235.93	35.50	0.00	**0.00**
9	**Kallakkurichi**	2529.20	1155.51	45.69	682.81	27.00	344.36	13.62	346.51	13.70	0.00	**0.00**
10	**Kancheepuram**	1667.94	1140.12	68.35	315.83	18.94	91.53	5.49	120.46	7.22	0.00	**0.00**
11	**Kanniyakumari**	1130.45	1064.44	94.16	66.01	5.84	0.00	0.00	0.00	0.00	0.00	**0.00**
12	**Karur**	2833.70	462.17	16.31	412.28	14.55	0.00	0.00	1959.24	69.14	0.00	**0.00**
13	**Krishnagiri**	3103.95	1264.26	40.73	767.09	24.71	100.99	3.25	971.61	31.30	0.00	**0.00**
14	**Madurai**	3256.47	1226.23	37.66	1323.95	40.66	499.74	15.35	206.55	6.34	0.00	**0.00**
15	**Nagapattinam**	2704.81	80.22	2.97	0.00	0.00	0.00	0.00	996.83	36.85	1627.76	**60.18**
16	**Namakkal**	2928.10	497.52	16.99	258.55	8.83	262.38	8.96	1909.65	65.22	0.00	**0.00**
17	**Perambalur**	1594.54	391.74	24.57	115.08	7.22	0.00	0.00	1087.72	68.22	0.00	**0.00**
18	**Pudukkottai**	4427.94	3645.34	82.33	634.73	14.33	0.00	0.00	0.00	0.00	147.87	**3.34**
19	**Ramanathapuram**	4074.87	3122.51	76.63	0.00	0.00	0.00	0.00	0.00	0.00	952.36	**23.37**
20	**Ranipet**	1750.96	284.37	16.24	1080.41	61.70	0.00	0.00	386.18	22.06	0.00	**0.00**
21	**Salem**	3915.35	326.27	8.33	404.71	10.34	272.34	6.96	2912.04	74.38	0.00	**0.00**
22	**Sivaganga**	4032.62	4032.62	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
23	**Tenkasi**	2442.44	726.87	29.76	309.96	12.69	413.48	16.93	992.12	40.62	0.00	**0.00**
24	**Thanjavur**	3362.68	309.61	9.21	569.97	16.95	291.91	8.68	2191.19	65.16	0.00	**0.00**
25	**The Nilgiris**	1119.08	1119.08	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
26	**Theni**	1894.17	569.01	30.04	935.37	49.38	164.01	8.66	225.78	11.92	0.00	**0.00**
27	**Thiruvallur**	3060.29	1810.07	59.15	957.79	31.30	116.63	3.81	94.71	3.09	81.09	**2.65**
28	**Thiruvarur**	2097.09	784.69	37.42	189.24	9.02	72.13	3.44	653.40	31.16	397.64	**18.96**
29	**Thoothukkudi**	4597.12	3834.55	83.41	372.08	8.09	262.09	5.70	128.40	2.79	0.00	**0.00**
30	**Tiruchirappalli**	4036.10	1407.05	34.86	504.20	12.49	69.60	1.72	2055.24	50.92	0.00	**0.00**
31	**Tirunelveli**	3043.87	2063.76	67.80	743.83	24.44	109.63	3.60	126.65	4.16	0.00	**0.00**
32	**Tirupathur**	1208.37	0.00	0.00	170.32	14.10	0.00	0.00	1038.05	85.90	0.00	**0.00**
33	**Tiruppur**	4645.42	827.82	17.82	1236.84	26.63	1318.58	28.38	1262.17	27.17	0.00	**0.00**
34	**Tiruvannamalai**	4783.96	1067.47	22.31	1727.15	36.10	804.83	16.82	1184.51	24.76	0.00	**0.00**
35	**Vellore**	1336.42	86.91	6.50	349.44	26.15	62.74	4.69	837.33	62.65	0.00	**0.00**
36	**Viluppuram**	3772.29	650.54	17.25	1274.21	33.78	577.34	15.30	1270.21	33.67	0.00	**0.00**
37	**Virudhunagar**	4001.89	2432.12	60.77	1187.09	29.66	86.52	2.16	296.17	7.40	0.00	**0.00**
	Total	108719.69	43635.44	40.14	21987.14	20.22	7488.67	6.89	32401.70	29.80	3206.73	**2.95**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
TELANGANA												
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Adilabad**	3809.49	3740.51	98.19	43.10	1.13	0.00		25.88	0.68		
2	**Bhadradri Kothagudem**	7108.43	6243.08	87.83	325.66	4.58	539.69	7.59	0.00			
3	**Hanumakonda**	1604.85	1053.74	65.66	551.11	34.34	0.00		0.00			
4	**Hyderabad**	217.82	103.90	47.70	31.86	14.63	0.00		82.06	37.67		
5	**Jagtial**	2645.51	2501.06	94.54	144.45	5.46	0.00		0.00			
6	**Jangaon**	2107.32	1929.07	91.54	178.25	8.46	0.00		0.00			
7	**Jayashankar Bhupalapally**	2843.20	2843.20	100.00	0.00		0.00		0.00			
8	**Jogulamba Gadwal**	2603.69	2427.45	93.23	176.24	6.77	0.00		0.00			
9	**Kamareddy**	3482.52	2958.19	84.94	524.33	15.06	0.00		0.00			
10	**Karimnagar**	2066.96	1790.28	86.61	276.68	13.39	0.00		0.00			
11	**Khammam**	4281.59	3444.77	80.46	836.81	19.54	0.00		0.00			
12	**Komarambheem Asifabad**	3768.16	3768.16	100.00	0.00		0.00		0.00			
13	**Mahabubabad**	3344.59	3241.63	96.92	102.97	3.08	0.00		0.00			
14	**Mahabubnagar**	2542.63	1647.32	64.79	895.31	35.21	0.00		0.00			
15	**Mancherial**	3983.25	3983.25	100.00		0.00	0.00		0.00			
16	**Medak**	2549.72	2102.49	82.46	447.23	17.54	0.00		0.00			
17	**Medchal Malkajgiri**	1038.07	649.37	62.56	324.29	31.24	0.00		64.41	6.21		
18	**Mulug**	2837.31	2837.31	100.00	0.00		0.00		0.00			
19	**Nagarkurnool**	6172.65	5567.22	90.19	381.32	6.18	224.11	3.63	0.00			
20	**Nalgonda**	7046.73	5486.18	77.85	1560.55	22.15	0.00		0.00			
21	**Narayanpet**	2336.51	2143.60	91.74	192.91	8.26	0.00		0.00			
22	**Nirmal**	3264.37	3147.43	96.42	116.95	3.58	0.00		0.00			
23	**Nizamabad**	4129.91	2762.56	66.89	1096.07	26.54	268.56	6.50	2.72	0.07		
24	**Peddapalle**	1962.28	1962.28	100.00	0.00		0.00		0.00			
25	**Rajanna Siricilla**	1731.39	1558.90	90.04	172.49	9.96	0.00		0.00			
26	**Rangareddy**	4826.98	3715.76	76.98	996.46	20.64	88.69	1.84	26.06	0.54		
27	**Sangareddy**	4112.26	3492.20	84.92	620.06	15.08	0.00		0.00			
28	**Siddipet**	3393.70	2066.22	60.88	1126.17	33.18	201.31	5.93	0.00			
29	**Suryapet**	3607.50	3336.26	92.48	271.24	7.52	0.00		0.00			
30	**Vikarabad**	3654.56	3654.56	100.00	0.00		0.00		0.00			
31	**Wanaparthy**	2081.70	2081.70	100.00	0.00		0.00		0.00			
32	**Warangal**	1713.37	1713.37	100.00	0.00		0.00		0.00			
33	**Yadadri Bhuvanagiri**	3439.49	3439.49	100.00	0.00		0.00		0.00			
	Total	**106308.52**	**93392.52**	87.85	**11392.50**	10.72	**1322.36**	**1.24**	**201.14**	0.19		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
TRIPURA													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Dhalai**	995.81	995.81	100.00								
2	**Gomati**	1098.28	1098.28	100.00								
3	**Khowai**	495.60	495.60	100.00								
4	**North Tripura**	543.82	543.82	100.00								
5	**Siphahijala**	871.70	871.70	100.00								
6	**South Tripura**	981.03	981.03	100.00								
7	**Unakoti**	428.78	428.78	100.00								
8	**West Tripura**	782.82	782.82	100.00								
	Total	**6197.84**	**6197.84**	**100.00**								

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022														
UTTAR PRADESH														
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	Agra	3997.00	0.00	0.00	1126.63	28.19	580.09	14.51	2290.28	57.30		
2	Aligarh	3808.43	1762.31	46.27	1641.78	43.11	246.37	6.47	157.97	4.15		
3	Ambedkar Nagar	2458.98	2158.67	87.79	300.31	12.21	0.00	0.00	0.00	0.00		
4	Amethi	2329.92	2228.16	95.63	101.76	4.37	0.00	0.00	0.00	0.00		
5	Amroha	2149.03	0.00	0.00	1078.66	50.19	720.65	33.53	349.72	16.27		
6	Auraiya	2094.27	2094.27	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
7	Ayodhya	2522.01	2522.01	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	Azamgarh	4171.19	4171.19	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
9	Bagpat	1351.39	0.00	0.00	482.18	35.68	210.63	15.59	658.57	48.73		
10	Bahraich	4387.25	4387.25	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
11	Ballia	2927.00	2927.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
12	Balrampur	3348.57	3348.57	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
13	Banda	4404.60	2159.49	49.03	2245.11	50.97	0.00	0.00	0.00	0.00		
14	Barabanki	3891.32	3891.32	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
15	Bareilly	4120.00	3244.34	78.75	742.83	18.03	0.00	0.00	132.83	3.22		
16	Basti	2938.07	2938.07	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
17	Bijnor	4589.03	2809.11	61.21	1398.84	30.48	381.08	8.30	0.00	0.00		
18	Budaun	4237.88	1341.79	31.66	1885.05	44.48	489.02	11.54	522.02	12.32		
19	Bulandshahar	3609.47	152.46	4.22	1258.17	34.86	1002.49	27.77	1196.35	33.14		
20	Chandauli	1884.69	1884.69	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
21	Chitrakoot	3006.65	1041.84	34.65	1410.80	46.92	554.01	18.43	0.00	0.00		
22	Deoria	2538.00	2538.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
23	Etah	2427.57	869.07	35.80	1318.04	54.29	240.46	9.91	0.00	0.00		
24	Etawah	2403.01	2403.01	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
25	Farrukhabad	2206.23	1063.82	48.22	1142.41	51.78	0.00	0.00	0.00	0.00		
26	Fatehpur	4252.55	2270.83	53.40	1637.54	38.51	0.00	0.00	344.18	8.09		
27	Firozabad	2419.53	0.00	0.00	891.92	36.86	202.61	8.37	1325.00	54.76		
28	G.B.Nagar	1442.73	0.00	0.00	473.82	32.84	636.66	44.13	332.25	23.03		
29	Ghaziabad	1169.14	0.00	0.00	228.16	19.52	0.00	0.00	940.98	80.48		
30	Ghazipur	3300.52	3082.02	93.38	218.50	6.62	0.00	0.00	0.00	0.00		
31	Gonda	3996.09	3996.09	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
32	Gorakhpur	3210.87	3210.87	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
33	Hamirpur	3815.40	1597.48	41.87	2217.92	58.13	0.00	0.00	0.00	0.00		
34	Hapur	1132.93	0.00	0.00	238.71	21.07	551.17	48.65	343.05	30.28		
35	Hardoi	5948.43	5948.43	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
36	Hathras	1837.99	327.40	17.81	290.96	15.83	537.95	29.27	681.68	37.09		
37	Jalaun	4565.83	4565.83	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
38	Jaunpur	3990.94	2342.33	58.69	1252.58	31.39	396.03	9.92	0.00	0.00		
39	Jhansi	4619.37	2644.95	57.26	1974.42	42.74	0.00	0.00	0.00	0.00		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
UTTAR PRADESH													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
40	**Kannauj**	2143.46	996.35	46.48	468.08	21.84	305.17	14.24	373.86	17.44		
41	**Kanpur Dehat**	3237.37	943.68	29.15	2293.69	70.85	0.00	0.00	0.00	0.00		
42	**Kanpur Nagar**	3094.83	695.86	22.48	1905.53	61.57	493.44	15.94	0.00	0.00		
43	**Kasganj**	1993.88	1342.45	67.33	651.43	32.67	0.00	0.00	0.00	0.00		
44	**Kaushambi**	1780.01	484.65	27.23	1015.97	57.08	0.00	0.00	279.39	15.70		
45	**Kushi Nagar**	2873.78	2873.78	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
46	**Lakhimpur Kheri**	6555.05	6555.05	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
47	**Lalitpur**	3819.42	0.00	0.00	3819.42	100.00	0.00	0.00	0.00	0.00		
48	**Lucknow**	2452.86	2142.76	87.36	0.00	0.00	0.00	0.00	310.10	12.64		
49	**Mahoba**	2293.41	0.00	0.00	1417.74	61.82	0.00	0.00	875.67	38.18		
50	**Mahrajganj**	2477.60	2477.60	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
51	**Mainpuri**	2760.72	1944.47	70.43	605.90	21.95	0.00	0.00	210.35	7.62		
52	**Mathura**	3360.78	2345.15	69.78	0.00	0.00	674.24	20.06	341.39	10.16		
53	**Maunath Bhanjan**	1716.24	1716.24	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
54	**Meerut**	2810.49	918.88	32.69	1265.25	45.02	381.47	13.57	244.89	8.71		
55	**Mirzapur**	2954.37	2137.01	72.33	603.47	20.43	117.19	3.97	96.70	3.27		
56	**Moradabad**	2249.44	317.95	14.13	1585.16	70.47	269.08	11.96	77.25	3.43		
57	**Muzaffarnagar**	2756.66	1469.32	53.30	468.39	16.99	580.22	21.05	238.73	8.66		
58	**Pilibhit**	3369.59	3369.59	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
59	**Pratapgarh**	3717.43	976.01	26.25	1782.15	47.94	959.27	25.80	0.00	0.00		
60	**Prayagraj**	4996.30	3011.27	60.27	1499.30	30.01	313.90	6.28	171.83	3.44		
61	**Raibareli**	3924.58	3924.58	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
62	**Rampur**	2297.90	737.29	32.09	1560.61	67.91	0.00	0.00	0.00	0.00		
63	**Saharanpur**	3689.41	260.96	7.07	2067.90	56.05	0.00	0.00	1360.55	36.88		
64	**Sambhal**	2415.20	304.73	12.62	868.27	35.95	1242.20	51.43	0.00	0.00		
65	**Sant Kabir Nagar**	1646.99	1646.99	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
66	**Sant Ravidas Nagar**	983.05	0.00	0.00	983.05	100.00	0.00	0.00	0.00	0.00		
67	**Shahjahanpur**	4581.31	4581.31	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
68	**Shamli**	1361.26	0.00	0.00	234.40	17.22	238.78	17.54	888.08	65.24		
69	**Shrawasti**	1857.82	1857.82	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
70	**Siddharth Nagar**	2895.03	2895.03	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
71	**Sitapur**	5746.95	5746.95	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
72	**Sonbhadra**	2414.59	2140.52	88.65	274.07	11.35	0.00	0.00	0.00	0.00		
73	**Sultanpur**	2653.81	2653.81	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
74	**Unnao**	4602.34	4602.34	100.00	0.00	0.00	0.00	0.00	0.00	0.00		
75	**Varanasi**	1605.32	353.70	22.03	312.53	19.47	419.49	26.13	519.60	32.37		
	Total	**229593.13**	**150346.00**	**65.48**	**51239.00**	**22.32**	**12743.00**	**5.55**	**15263.00**	**6.65**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
UTTARAKHAND													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Dehradun**	1255	1255.00	100.00	0.00	0.00						
2	**Haridwar**	1568	915.00	58.36	653.00	41.64						
3	**Nainital**	236	123.00	52.30	112.00	47.70						
4	**Udham Singh Nagar**	1932	1747.00	90.42	185.00	9.58						
	Total	**4993**	**4042.00**	**80.95**	**950.00**	**19.05**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
WEST BENGAL													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Alipurduar**	2375.97	2375.97	100.00								
2	**Bankura**	6880.01	6880.01	100.00								
3	**Birbhum**	4548.09	4391.50	96.56	156.59	3.44						
4	**Dakshin Dinajpur**	2240.36	1459.43	65.14	690.14	30.80	90.79	4.05	0.00	0.00	0.00	0.00
5	**Darjiling**	1084.72	1084.72	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	**Haora**	1323.55	481.26	36.36	124.80	9.43	0.00	0.00	0.00	0.00	717.49	54.21
7	**Hugli**	3003.71	2566.73	85.45	436.98	14.55	0.00	0.00	0.00	0.00	0.00	0.00
8	**Jalpaiguri**	3402.19	3402.19	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	**Jhargram**	3020.60	3020.60	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	**Kalimpong**	210.71	210.71	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	**Koch Bihar**	3396.37	3396.37	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	**Kolkatta**	187.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	187.00	100.00
13	**Malda**	3238.86	3030.97	93.58	207.89	6.42	0.00	0.00	0.00	0.00	0.00	0.00
14	**Murshidabad**	5133.38	3649.82	71.10	1312.49	25.57	171.07	3.33	0.00	0.00	0.00	0.00
15	**Nadia**	3797.89	405.12	10.67	1164.28	30.66	2228.49	58.68	0.00	0.00	0.00	0.00
16	**North 24 Parganas**	3872.33	1188.48	30.69	508.89	13.14	1244.76	32.14	0.00	0.00	930.20	24.02
17	**Paschim Barddhaman**	1591.65	1508.38	94.77	0.00	0.00	83.27	5.23	0.00	0.00	0.00	0.00
18	**Paschim Medinipur**	6316.77	5055.67	80.04	748.79	11.85	512.31	8.11	0.00	0.00	0.00	0.00
19	**Purba Barddhaman**	5432.69	4021.01	74.02	1106.49	20.37	305.19	5.62	0.00	0.00	0.00	0.00
20	**Purba Medinipur**	3809.95	1649.55	43.30	0.00	0.00	0.00	0.00	0.00	0.00	2160.40	56.70
21	**Puruliya**	6193.13	6193.13	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	**South 24 Parganas**	5513.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5513.01	100.00
23	**Uttar Dinajpur**	3192.83	3192.83	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**79765.77**	**59164.45**	**74.17**	**6457.34**	**8.10**	**4635.88**	**5.81**	**0.00**	**0.00**	**9508.10**	**11.92**

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022														
ANDAMAN & NICOBAR ISLANDS														
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline			
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%		
1	**N & M Andaman**	580.40	580.40	100.00							0.00	0.00		
2	**Nicobar**	1224.43	1216.15	99.32							8.00	0.65		
3	**South Andaman**	315.24	315.24	100.00										
	Total	**2120.07**	**2111.79**	**99.61**							**8.00**	**0.38**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
CHANDIGARH													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Chandigarh**	114.00			114.00	100.00						
	Total	**114.00**			**114.00**	**100.00**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
DADRA & NAGAR HAVELI													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Dadra & Nagar Haveli**	416.00							416.00	100.00		
	Total	416.00							416.00	100.00		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
DAMAN & DIU													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Daman**	70.90							70.90	100.0		
2	**Diu**	40.00							40.00	100.0		
	Total	**110.90**							**110.90**	**100.0**		

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
JAMMU & KASHMIR												
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Anantnag**	657.11	657.11	100.00								
2	**Bandipora**	33.28	33.28	100.00								
3	**Baramulla**	1125.00	1125.00	100.00								
4	**Budgam**	580.00	580.00	100.00								
5	**Doda**	22.45	22.45	100.00								
6	**Ganderbal**	24.00	24.00	100.00								
7	**Jammu**	1652.11	1652.11	100.00								
8	**Kathua**	775.00	775.00	100.00								
9	**Kishtwar**	20.00	20.00	100.00								
10	**Kulgam**	144.00	144.00	100.00								
11	**Kupwara**	600.00	600.00	100.00								
12	**Poonch**	242.63	242.63	100.00								
13	**Pulwama**	575.00	575.00	100.00								
14	**Rajouri**	350.00	350.00	100.00								
15	**Ramban**	18.31	18.31	100.00								
16	**Reasi**	70.00	70.00	100.00								
17	**Samba**	447.89	447.89	100.00								
18	**Shopian**	234.00	234.00	100.00								
19	**Srinagar Urban**	875.00			875.00	100.0						
20	**Udhampur**	218.47	218.47	100.00								
	Total	**8664.25**	**7789.25**	**89.90**	**875.00**	**10.10**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
LADAKH													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Kargil**	249.00	249.00	100.00	0.00	0.00						
2	**Leh**	714.00	383.00	53.64	331.00	46.36						
	Total	**963.00**	**632.00**	**65.63**	**331.00**	**34.37**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
LAKSHADWEEP													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Agatti**	2.71	2.71	100.00								
2	**Amini**	2.59			2.59	100.00						
3	**Androth**	4.84	4.84	100.00								
4	**Chetlat**	1.04	1.04	100.00								
5	**Kadmat**	3.12	3.12	100.00								
6	**Kalpeni**	2.28	2.28	100.00								
7	**Kavaratti**	3.63			3.63	100.00						
8	**Kiltan**	1.63	1.63	100.00								
9	**Minicoy**	4.37	4.37	100.00								
	Total	**26.21**	**19.99**	**76.27**	**6.22**	**23.73**						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022													
PUDUCHERRY													
S.No	Name of District	Total Recharge Worthy Area of Assessed Units (in sq.km)	Safe		Semi-Critical		Critical		Over-Exploited		Saline		
			Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%	Recharge Worthy Area of Assessed Units (in sq.km)	%
1	**Karaikal**	161.00	161.00	100.00								
2	**Mahe**	9.00	9.00	100.00								
3	**Puducherry**	293.00					293.00	100.00				
4	**Yanam**	20.00									20.00	100.00
	Total	**483.00**	**170.00**	**35.20**			**293.00**	**60.66**			**20.00**	**4.14**

Annexure - IV(A)

State-wise Categorization of Blocks/ Mandals/ Taluks in India (as in 2022)

CATEGORIZATION of ASSESSMENT UNITS, 2022							
ANDHRA PRADESH							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Ananthapuramu**	1	Yellanur				
2	**Annamayya**	1	Chitvel				
		2	Ramasamudram				
		3	Chinnamandem				
3	**Chittoor**	1	Pedda Panjani	1	Gudi Palle		
		2	Rama Kuppam	2	Nindra		
		3	Venkatagiri Kota				
		4	Thavanampalle				
		5	Srirangarajapuram				
		6	Penumuru				
		7	Puthalapattu				
4	**East Godavari**	1	Nallajerla				
5	**Palnadu**			1	Bollapalle	1	Veldurthi
6	**Prakasam**	1	Pullalacheruvu	1	Racherla	1	Pedaaraveedu
		2	Markapur				
		3	Giddaluru				
7	**Sri Sathya Sai**	1	Gudibanda	1	Agali	1	Tanakal
		2	Lepakshi			2	Hindupur
						3	Rolla
						4	Gandlapenta
8	**Y.S.R Kadapa**	1	Vemula				
		2	Pulivendla				

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
667	**19**	**5**	**6**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
ASSAM							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Kamrup Metro Urban**	1	Kamrup Metro Urban				

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
28	1	Nil	Nil

CATEGORIZATION of ASSESSMENT UNITS, 2022							
BIHAR							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Begusarai**	1	Navkothi				
		2	Birpur				
		3	Khudabandpur				
		4	Bachwara				
2	**Bhojpur**	1	Bihiya	1	Koilwar		
		2	Shahpur				
		3	Ara Sadar				
3	**Gaya**	1	Belaganj				
4	**Jehanabad**	1	Ghoshi			1	Ratni Faridpur
		2	Modanganj			2	Kako
		3	Jehanabad				
5	**Kaimur**	1	Kudra				
6	**Muzaffarpur**	1	Gaighat	1	Minapur	1	Mushahari
		2	Kurhani				
		3	Bandra				
		4	Muraul (Dholi)				
		5	Bochahan				
		6	Sakra				
		7	Kanti				
7	**Nalanda**	1	Hilsa	1	Ekangarsarai	1	Nagarnausa
		2	Parwalpur	2	Karai Parsarai		
		3	Chandi	3	Giriyak		
		4	Rajgir				
		5	Harnaut				
		6	Bind				
8	**Nawada**	1	Hisua				
		2	Narhat				
		3	Meskaur				
		4	Akbarpur				
		5	Nardiganj				
9	**Patna**	1	Phulwari Sharif	1	Masaurhi	1	Patna Urban
		2	Dhanarua	2	Athmalgola		
		3	Fatuha	3	Sampatchak		
		4	Patna Sadar				
		5	Punpun				
10	**Rohtas**	1	Kochas				
		2	Dehri				
11	**Samastipur**	1	Ujiyarpur	1	Dalsingsarai	1	Tajpur
		2	Sarairanjan				
		3	Bibhutipur				
		4	Vidyapatinagar				
		5	Kalyanpur				
12	**Sheikhpura**			1	Barbigha		
13	**Vaishali**	1	Mahnar	1	Jandaha	1	Patepur
		2	Goraul	2	Raja Pakar	2	Hajipur
		3	Lalganj				
		4	Chehra Kalan				

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
535	46	12	8

CATEGORIZATION of ASSESSMENT UNITS, 2022							
CHHATISGARH							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Balod**	1	Gunderdehi	1	Gurur		
		2	Balod				
2	**Bemetara**	1	Saja	1	Nawagarh		
				2	Bemetara		
				3	Berla		
3	**Bilaspur**	1	Takhatpur				
		2	Belha				
4	**Dhamtari**	1	Kurud	1	Dhamtari		
5	**Durg**	1	Dhamdha				
		2	Patan				
		3	Durg				
6	**Gariaband**	1	Rajim/Fingeshwar				
7	**Janjgir-Champa**	1	Malkharoda				
		2	Dabhara				
8	**Kabirdham**	1	Pandariya				
9	**Kanker**	1	Charama				
10	**Korba**	1	Katghora				
11	**Mahasamund**	1	Basna				
12	**Raigarh**	1	Tamnar				
		2	Pusaur				
		3	Baramkela				
13	**Raipur**			1	Dharsiwa		
14	**Rajnandgaon**	1	Rajnandgaon				
		2	Dongargaon				
		3	Dongargarh				
		4	Khairagarh				
15	**Surajpur**	1	Surajpur				

ABSTRACT			
Total No. of Assessed Units	**Number of Semicritical Assessment Units**	**Number of Critical Assessment Units**	**Number of Over Exploited Assessment Units**
146	**24**	**6**	**Nil**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
DELHI							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Central**	1	Kotwali			1	Karol Bagh
2	**East**	1	Gandhi Nagar	1	Mayur Vihar		
		2	Preet Vihar				
3	**New Delhi**					1	Delhi Cantonment
						2	Chanakyapuri
						3	Vasant Vihar
4	**North**	1	Alipur	1	Model Town	1	Narela
5	**North East**	1	Seelampur			1	Yamuna Vihar
						2	Karawal Nagar
6	**North West**	1	Saraswati Vihar				
7	**Shahdara**			1	Seemapuri	1	Vivek Vihar
						2	Shahdara
8	**South**					1	Hauz Khas
						2	Mehrauli
						3	Saket
9	**South East**			1	Kalkaji		
				2	Defence Colony		
				3	Sarita Vihar		
10	**South West**	1	Najafgarh			1	Kapashera
						2	Dwarka
1 1	**West**	1	Punjabi Bagh	1	Patel Nagar	1	Rajouri Garden

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
34	8	7	15

CATEGORIZATION of ASSESSMENT UNITS, 2022							
GUJARAT							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Ahmedabad**	1	Mandal	1	Ahmedabad Urban	1	Ahmedabad City & Das
		2	Bavla				
2	**Amreli**			1	Rajula		
3	**Banaskantha**	1	Palanpur			1	Dantiwada
						2	Dhanera
						3	Kankrej
						4	Lakhani
						5	Vadgam
						6	Deodar
						7	Deesa
						8	Tharad
4	**Gandhinagar**	1	Kalol			1	Gandhinagar
		2	Mansa			2	Dehgam
5	**Junagadh**	1	Bhesan				
6	**Kachchh**					1	Mandvi
						2	Bhachau
						3	Bhuj
7	**Kheda**	1	Galteshwar				
8	**Mahesana**	1	Unjha	1	Mahesana	1	Vadnagar
		2	Kadi			2	Kheralu
		3	Visnagar			3	Becharaji
						4	Vijapur
						5	Satlasana
9	**Narmada**	1	Nandod				
10	**Patan**	1	Patan	1	Sidhpur	1	Sarsvati(Patan)
						2	Chanasma
11	**Rajkot**	1	Dhoraji	1	Jasdan		
		2	Vinchchiya				
12	**Sabarkantha**	1	Vadali			1	Prantij
		2	Idar				
		3	Himatnagar				
13	**Surat**					1	Surat Urban
14	**Surendranagar**	1	Chuda				
15	**Vadodara**	1	Desar	1	Padra		
		2	Sinor	2	Vadodara		

ABSTRACT			
Total No. of Assessed Units	**Number of Semicritical Assessment Units**	**Number of Critical Assessment Units**	**Number of Over Exploited Assessment Units**
252	**20**	**7**	**23**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
HARYANA							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Ambala**	1	Ambala-Ii	1	Ambala-I	1	Barara
		2	Shahzadpur			2	Naraingarh
						3	Saha
2	**Bhiwani**					1	Loharu
						2	Kairu
						3	Tosham
						4	Behal
3	**Charkhi Dadri**					1	Jhojhu
						2	Badhra
4	**Faridabad**					1	Faridabad
						2	Tigaon
						3	Faridabad_Urban
						4	Ballabgarh
5	**Fatehabad**			1	Bhattu Kalan	1	Fatehabad
				2	Bhuna	2	Ratia
						3	Nagpur
						4	Tohana
						5	Jakhal
6	**Gurgaon**					1	Farrukh Nagar
						2	Gurgaon
						3	Pataudi
						4	Sohna
						5	Gurgaon_Urban
7	**Hisar**	1	Barwala	1	Agroha	1	Narnaund
8	**Jind**	1	Pillukhera			1	Safidon
						2	Jind
						3	Uchana
						4	Ujhana
						5	Alewa
9	**Kaithal**					1	Pundri
						2	Dhand
						3	Kalayat
						4	Guhla
						5	Kaithal
						6	Rajound
						7	Siwan
10	**Karnal**			1	Indri	1	Nissing At Chirao
						2	Nilokheri
						3	Karnal
						4	Munak
						5	Kunjpura
						6	Assandh
						7	Gharaunda (Part)
11	**Kurukshetra**					1	Thanesar
						2	Babain
						3	Ladwa
						4	Ismailabad
						5	Pipli
						6	Shahbad
						7	Pehowa
12	**Mahendragarh**			1	Satnali	1	Kanina
				2	Nizampur	2	Nangal Chaudhry
						3	Sihma
						4	Mahendragarh
						5	Narnaul
						6	Ateli Nangal
13	**Mewat**	1	Punahana			1	Taoru
						2	Ferozepur Jhirka
14	**Palwal**	1	Hodal	1	Hassanpur	1	Prithla
						2	Badoli
15	**Panchkula**			1	Raipur Rani		

CATEGORIZATION of ASSESSMENT UNITS, 2022							
HARYANA							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
16	**Panipat**					1	Israna
						2	Bapoli
						3	Sanauli Khurd
						4	Madlauda
						5	Panipat
						6	Samalkha
17	**Rewari**			1	Dahina	1	Rewari
						2	Dharuhera
						3	Bawal
						4	Nahar
						5	Jatusana
						6	Khol At Rewari
18	**Sirsa**	1	Baragudha			1	Odhan
						2	Nathusari Chopta
						3	Rania
						4	Sirsa
						5	Ellenabad
						6	Dabwali
19	**Sonipat**					1	Rai
						2	Sonipat
						3	Ganaur
						4	Mundlana
						5	Murthal
20	**Yamuna Nagar**	1	Khizrabad			1	Jagadhri
		2	Chhachhrauli			2	Sadaura (Part)
						3	Bilaspur
						4	Radaur
						5	Mustafabad

ABSTRACT			
Total No. of Assessed Units	**Number of Semicritical Assessment Unit**	**Number of Critical Assessment Unit**	**Number of Over Exploited Assessment Unit**
143	**9**	**10**	**88**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
JHARKHAND							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Bokaro**					1	Bermo
2	**Deoghar**	1	Karon				
		2	Sarwan				
		3	Sonaraithadhi				
3	**Dhanbad**	1	Gobindpur	1	Topchanchi	1	Baliapur
		2	Dhanbad	2	Dhanbad Urban		
4	**East Singhbhum**					1	Golmuri Cum Jugsalai
						2	Jamshedpur Urban
5	**Garhwa**	1	Bhawanathpur				
6	**Giridih**	1	Giridih				
7	**Hazaribagh**	1	Daru				
8	**Koderma**	1	Koderma	1	Jainagar		
9	**Ramgarh**			1	Ramgarh	1	Chitarpur
10	**Ranchi**	1	Khelari	1	Silli		
		2	Ormanjhi	2	Ranchi Urban		

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
263	11	6	5

CATEGORIZATION of ASSESSMENT UNITS, 2022							
KARNATAKA							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Bagalkot**	1	Mudhol	1	Guledagudda	1	Badami
		2	Hungund			2	Bagalkote
		3	Rabakavi Banahatti				
2	**Belagavi**	1	Athani	1	Kagavada	1	Bailhongal
		2	Yaragatti	2	Savadatti		
		3	Chikkodi				
		4	Gokak				
		5	Hukkeri				
3	**Bengaluru (Rural)**					1	Nelamangala
						2	Doddaballapura
						3	Devanahalli
						4	Hoskote
4	**Bengaluru (Urban)**					1	Bangalore City
						2	Anekal
						3	Yelahanka
						4	Bangalore-East
						5	Bangalore (North)
						6	Bangalore-South
5	**Bidar**	1	Bhalki				
		2	Hulasuru				
6	**Chamarajanagara**	1	Kollegala	1	Yalandur	1	Chamarajanagara
		2	Kollegala(Hanur)			2	Gundlupet
7	**Chikkaballapura**					1	Shidlagatta
						2	Chinthamani
						3	Bagepalli
						4	Chikballapur
						5	Gudibande
						6	Gauribidanur
8	**Chikkamagaluru**					1	Ajjampura
						2	Kadur
9	**Chitradurga**					1	Challakere
						2	Hosadurga
						3	Chitradurga
						4	Holalkere
						5	Hiriyur
10	**Davanagere**	1	Honnali	1	Davanagere	1	Channagiri
						2	Jagaluru
11	**Gadag**	1	Gadag			1	Gajendragad
		2	Mundargi			2	Rona
		3	Shirahatti				
12	**Hassan**			1	Channarayapatna	1	Arsikere
13	**Haveri**	1	Ranebennur	1	Ratteehalli		
		2	Hirekerur				
		3	Byadagi				
14	**Kalburgi**	1	Afzalpur				
15	**Kolara**					1	Kolar
						2	K.G.F
						3	Malur
						4	Srinivaspura
						5	Bangarpet
						6	Mulabagilu
16	**Koppal**	1	Yelburga	1	Kukanuru		
		2	Kanakagiri				
17	**Mandya**	1	Malavalli				
18	**Mysuru**	1	Mysuru				
19	**Raichur**	1	Sirivara				
20	**Ramanagara**	1	Channapatna	1	Ramanagar	1	Magadi
		2	Kanakpura			2	Harohalli
21	**Tumakuru**	1	Pavagada	1	Koratagere	1	Madhugiri
						2	Sira
						3	Chiknayakanahalli
						4	Tiptur
						5	Tumkur
22	**Vijayanagara**	1	Hadagali			1	Hagaribommanahalli
						2	Kotturu
						3	Harapanahalli

CATEGORIZATION of ASSESSMENT UNITS, 2022							
KARNATAKA							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
23	**Vijayapura**	1	Basavan Bagewadi	1	Nidagundi		
		2	Tikota				
		3	Chadachana				
		4	Kolhara				
24	**Yadgir**	1	Gurumithakala				
		2	Yadgir				

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
234	**35**	**11**	**49**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
KERALA							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Idukki**	1	Kattappana				
		2	Nedumkandam				
2	**Kannur**	1	Thalassery				
		2	Kannur				
		3	Panur				
3	**Kasargod**	1	Manjeswar	1	Kasaragod		
4	**Kollam**	1	Mukhathala				
5	**Kozhikkode**	1	Kunnamangalam				
		2	Ballussery				
6	**Malappuram**	1	Kondotty				
		2	Mankada				
		3	Malappuram				
		4	Tirur				
		5	Thriurangadi				
		6	Kuttippuram				
		7	Thanur				
		8	Vengara				
7	**Palakkad**	1	Pattambi	1	Chittur		
		2	Thrithala	2	Malampuzha		
8	**Thiruvananthapuram**	1	Nedumangad				
		2	Athiyannur				
		3	Pothencode				
		4	Parassala				
		5	Chirayinkil				
9	**Thrissur**	1	Chowannur				
		2	Mathilakom				
		3	Thalikkulam				

ABSTRACT			
Total No. of Assessed Units	**Number of Semicritical Assessment Units**	**Number of Critical Assessment Units**	**Number of Over Exploited Assessment Units**
152	27	3	0

CATEGORIZATION of ASSESSMENT UNITS, 2022							
MADHYA PRADESH							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Agar Malwa**	1	Badod			1	Nalkheda
						2	Susner
2	**Anuppur**	1	Kotma				
3	**Ashoknagar**	1	Isagarh				
		2	Chanderi				
4	**Barwani**	1	Rajpur			1	Pansemal
5	**Betul**	1	Betul				
		2	Multai				
6	**Bhopal**	1	Berasia				
		2	Bhopal Urban				
		3	Phanda				
7	**Burhanpur**	1	Burhanpur				
8	**Chhatarpur**	1	Buxwaha				
		2	Chhatarpur				
		3	Bijawar				
		4	Nowgaon				
9	**Chhindwara**	1	Mohkheda	1	Chhindwara		
		2	Pandhurna				
10	**Damoh**	1	Patharia				
11	**Dewas**	1	Khategaon			1	Sonkutch
						2	Dewas
12	**Dhar**			1	Tirla	1	Nalchha
						2	Dhar
						3	Badnawar
13	**Gwalior**	1	Gwalior Urban				
14	**Hoshangabad**	1	Bankhedi				
15	**Indore**	1	Mhow	1	Indore Urban	1	Depalpur
						2	Indore
						3	Sawer
16	**Jabalpur**	1	Jabalpur Urban				
17	**Jhabua**	1	Jhabua				
18	**Khandwa**	1	Chhegaon Makhan				
19	**Khargone**	1	Khargone				
20	**Mandsaur**	1	Malhargarh			1	Mandsaur
		2	Bhanpura			2	Sitamau
		3	Garoth				
21	**Narsinghpur**	1	Narsinghpur				
22	**Neemuch**	1	Manasa			1	Neemuch
						2	Jawad
23	**Niwari**	1	Niwari				
24	**Raisen**	1	Obedullaganj				
25	**Rajgarh**	1	Rajgarh	1	Narsinghgarh	1	Sarangpur
		2	Biaora				
		3	Jirapur				
		4	Khilchipur				
26	**Ratlam**	1	Sailana			1	Alot
		2	Bajna			2	Ratlam
						3	Piploda
						4	Jaora
27	**Rewa**	1	Mauganj				
28	**Satna**	1	Rampur-Baghelan				
		2	Maiihar				
		3	Amarpatan				
		4	Sohawal				
29	**Sehore**			1	Ashta		
30	**Shajapur**	1	Shajapur			1	Kalapipal
						2	Moman Badodiya
						3	Shujalpur
31	**Sheopur**	1	Vijaypur				
32	**Shivpuri**	1	Badarwas				
		2	Kolaras				
		3	Pichhore				
		4	Khaniyadhana				
		5	Narwar				
33	**Tikamgarh**	1	Palera				
		2	Baldeogarh				
		3	Jatara				
		4	Tikamgarh				
34	**Ujjain**	1	Tarana			1	Ghatia
		2	Mahidpur			2	Badnagar
		3	Khchrod			3	Ujjain
35	**Vidisha**	1	Gyaraspur				
		2	Kurwai				

ABSTRACT			
Total No. of Assessed Units	**Number of Semicritical Assessment Units**	**Number of Critical Assessment Units**	**Number of Over Exploited Assessment Units**
317	60	5	26

CATEGORIZATION of ASSESSMENT UNITS, 2022							
MAHARASHTRA							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	Ahmednagar	1	Akola	1	Kopargaon	1	Rhata
		2	Newasa	2	Rahuri		
		3	Pathardi	3	Sangamner		
		4	Shevgaon	4	Shrirampur		
		5	Shrigonda				
2	Akola	1	Barsi Takli				
3	Amravati	1	Amravati			1	Achlapur
		2	Dhamangaon Railway			2	Chandur Bazar
		3	Nandgaon			3	Morshi
		4	Tiwsa			4	Warud
4	Aurangabad	1	Aurangabad				
		2	Fulambre				
		3	Gangapur				
		4	Khuldabad				
		5	Paithan				
		6	Sillod				
		7	Vaijapur				
5	Buldhana	1	Buldhana			1	Jalgaon
		2	Chikhali			2	Sangrampur
		3	Deulgaon Raja				
		4	Khamgaon				
		5	Lonar				
		6	Malakapur				
		7	Motala				
		8	Nandura				
		9	Sindkhedraja				
6	Jalgaon	1	Amalner			1	Raver
		2	Bhadgaon			2	Yawal
		3	Bhusawal				
		4	Bodwad				
		5	Chalisgaon				
		6	Chopda				
		7	Jamner				
		8	Pachora				
		9	Parola				
7	Latur	1	Latur				
8	Nagpur	1	Katol				
		2	Saoner				
9	Nashik	1	Baglan Satana	1	Deola	1	Sinnar
		2	Chandwad	2	Niphad		
		3	Yeola				
10	Osmanabad	1	Kalamb				
		2	Osmanabad				
11	Pune	1	Ambegaon	1	Shirur		
		2	Baramati				
		3	Daund				
		4	Indapur				
		5	Junnar				
		6	Khed				
		7	Purandhar				
12	Sangli	1	Kavathe Mahankal				
13	Satara	1	Khatav				
		2	Man				
		3	Phaltan				
14	Solapur	1	Barshi			1	Malshiras
		2	Karmala				
		3	Madha				
		4	Mangalwedha				
		5	Mohol				
		6	Pandharpur				
		7	Sangola				
15	Wardha	1	Karanja				

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
353	62	7	11

CATEGORIZATION of ASSESSMENT UNITS, 2022							
ODISHA							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	Angul	1	Talcher				
2	Balasore	1	Baliapal				
3	Jajpur	1	Korei				
4	Kendrapara	1	Garadpur				
5	Khurda	1	Bologarh				
		2	Bhubaneswar				
6	Nayagarh	1	Nayagarh				
7	Nuapada	1	Nuapada				

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
314	8	Nil	Nil

CATEGORIZATION of ASSESSMENT UNITS, 2022							
PUNJAB							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	Amritsar					1	Tarsikka
						2	Attari
						3	Rayya
						4	Majitha
						5	Chogawan
						6	Jandiala Guru
						7	Verka
						8	Amritsar Urban
						9	Harsha Chhina
						10	Ajnala
2	Barnala					1	Sehna
						2	Barnala
						3	Mahal Kalan
3	Bathinda	1	Sangat			1	Goniana Mandi
		2	Talwandi Sabo			2	Maur
		3	Rampura			3	Nathana
						4	Phul
						5	Bhagta Bhai Ka
						6	Bathinda
4	Faridkot					1	Kot Kapura
						2	Faridkot
						3	Jaiton
5	Fatehgarh Sahib					1	Khamanon
						2	Sirhind
						3	Amloh
						4	Khera
						5	Bassi Pathanan
6	Fazilka	1	Arniwala Sheikh Subanpur			1	Jalalabad
7	Firozpur			1	Makhu	1	Guruhar Sahai
						2	Mamdot
						3	Firozpur
						4	Zira
						5	Ghall Khurd
8	Gurdaspur	1	Dina Nagar	1	Sri Hargobindpur	1	Kahnuwan
		2	Dorangala			2	Kalanaur
						3	Dhariwal
						4	Fatehgarh Churian
						5	Gurdaspur
						6	Batala
						7	Dera Baba Nanak
						8	Qadian
9	Hoshiarpur	1	Bhunga	1	Mahilpur	1	Garh Shankar
		2	Hoshiarpur-2			2	Hoshiarpur-1
		3	Mukerian			3	Dasuya
						4	Tanda
10	Jalandhar					1	Lohian
						2	Nur Mahal
						3	Bhogpur
						4	Jalandhar East
						5	Jalandhar West
						6	Rurka Kalan
						7	Jalandhar City
						8	Phillaur
						9	Nakodar
						10	Mehatpur
						11	Adampur
						12	Shahkot
11	Kapurthala					1	Phagwara
						2	Dhilwan
						3	Kapurthala
						4	Nadala
						5	Sultanpur Lodhi
12	Ludhiana					1	Raikot
						2	Pakhowal
						3	Dehlon
						4	Samrala
						5	Machhiwara
						6	Ludhiana-2
						7	Jagraon
						8	Sudhar
						9	Ludhiana-1
						10	Sidhwan Bet
						11	Maloud
						12	Khanna
						13	Ludhiana City
						14	Doraha
13	Malerkotla					1	Malerkotla-1
						2	Malerkotla-2
14	Mansa	1	Sardulgarh	1	Budhlada	1	Bhikhi
						2	Mansa

CATEGORIZATION of ASSESSMENT UNITS, 2022							
PUNJAB							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
15	**Moga**					**1**	Nihal Singh Wala
						2	Moga-1
						3	Kot Ise Khan At Dharamkot
						4	Moga-2
						5	Bagha Purana
16	**Pathankot**	**1**	Narot Jaimal Singh				
		2	Bamial				
		3	Gharota				
17	**Patiala**					**1**	Nabha
						2	Ghanaur
						3	Patiala
						4	Shambu Kalan
						5	Sanaur
						6	Rajpura
						7	Patran
						8	Bhunarheri
						9	Samana
18	**Rupnagar**	**1**	Anandpur Sahib			**1**	Morinda
						2	Chamkaur Sahib
19	**Sas Nagar**					**1**	Derabassi
						2	Kharar
20	**Sbs Nagar**	**1**	Balachaur			**1**	Aur
						2	Banga
						3	Nawan Shahr
21	**Sangrur**					**1**	Sangrur
						2	Lehra Gaga
						3	Andana
						4	Bhawanigarh
						5	Dhuri
						6	Dirba
						7	Sunam
						8	Sher Pur
22	**Tarn Taran**					**1**	Tarn Taran
						2	Gandiwind Tatla
						3	Naushera Pannuan
						4	Chohla Sahib
						5	Khadur Sahib
						6	Valtoha
						7	Bhikhiwind
						8	Patti

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Unit	Number of Critical Assessment Unit	Number of Over Exploited Assessment Unit
153	15	4	117

CATEGORIZATION of ASSESSMENT UNITS, 2022							
RAJASTHAN							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Ajmer**					1	Ajmer Urban
						2	Masooda
						3	Sarwar
						4	Kekri
						5	Shrinagar Rural
						6	Kishangarh
						7	Arain
						8	Jawaja
						9	Peesangan Rural
						10	Bhinay
2	**Alwar**					1	Rajgarh
						2	Tijara
						3	Kathumar
						4	Mandawar
						5	Umren
						6	Bansur
						7	Behror
						8	Laxmangarh
						9	Neemrana
						10	Kishangarh Bas
						11	Kotkasim
						12	Ramgarh
						13	Reni
						14	Thanagazi
3	**Banswara**	1	Anandpuri				
		2	Gangar Talai				
		3	Garhi				
		4	Kushalgarh				
		5	Bagidora				
4	**Baran**	1	Antah	1	Shahbad	1	Baran
				2	Kishanganj	2	Chhipabarod
						3	Chhabra
						4	Atru
5	**Barmer**	1	Patodi			1	Sheo
		2	Kalyanpur			2	Barmer
						3	Gadraroad
						4	Gudhamalani
						5	Samdari
						6	Dhanaoo
						7	Serwa
						8	Baytoo
						9	Siwana
						10	Dhorimanna
						11	Gira
						12	Balotra
						13	Sindhari
						14	Ramsar
6	**Bharatpur**					1	Rupbas
						2	Nadbai
						3	Kaman
						4	Sewar
						5	Deeg
						6	Kumher
						7	Nagar
						8	Pahari
						9	Weir
						10	Bayana
7	**Bhilwara**					1	Banera
						2	Hurda
						3	Bijoliyan
						4	Kotri
						5	Suwana
						6	Asind
						7	Shahpura
						8	Raipur
						9	Mandal
						10	Jahazpur
						11	Mandalgarh
						12	Sahara
8	**Bikaner**	1	Panchoo			1	Dungargarh
						2	Nokha
						3	Bikaner Rural
9	**Bundi**	1	Keshorai Patan	1	Bundi	1	Nainwa
						2	HINDOLI

CATEGORIZATION of ASSESSMENT UNITS, 2022							
RAJASTHAN							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
10	**Chittaurgarh**					1	Bhainsrorgarh
						2	Bhopalsagar
						3	Bhadesar
						4	Gangrar
						5	Begun
						6	Kapasan
						7	Nimbahera
						8	Bari Sadri
						9	Chittaurgarh
						10	Rashmi
						11	Dungla
11	**Churu**			1	Churu	1	Bidasar
						2	Sujangarh
						3	Rajgarh
						4	Ratangarh
12	**Dausa**					1	Sikrai
						2	Lalsot
						3	Lawan
						4	Bandikui
						5	Dausa
						6	Mahwa
13	**Dhaulpur**					1	Saipu
						2	Bari
						3	Rajakhera
						4	Baseri
						5	Dhaulpur
14	**Dungarpur**	1	Sagwara				
		2	Dovra				
15	**Jaipur**					1	Phagi
						2	Jalsoo
						3	Govindgarh
						4	Sanganer Rural
						5	Jhotwara Rural
						6	Kotputli
						7	Amber Rural
						8	Bassi
						9	Jamwa Ramgarh
						10	Sambhar
						11	Chaksu
						12	Viratnagar
						13	Shahpura
						14	Dudu
						15	Jaipur Urban
						16	Paota
16	**Jaisalmer**					1	Sankra
						2	Jaisalmer Urban
						3	Sam
						4	Jaisalmer Rural
17	**Jalor**					1	Sanchore
						2	Sayla
						3	Bhinmal
						4	Raniwara
						5	Ahore
						6	Jaswantpura
						7	Jalore
						8	Chitalwana
18	**Jhalawar**	1	Bhawani Mandi	1	Aklera	1	Manohar Thana
						2	Jhalrapatan
						3	Khanpur
						4	Dag
						5	Bakani
19	**Jhunjhunun**					1	Udaipurwati
						2	Surajgarh
						3	Chirawa
						4	Khetri
						5	Jhunjhunun
						6	Alsisar
						7	Buhana
						8	Nawalgarh

CATEGORIZATION of ASSESSMENT UNITS, 2022							
RAJASTHAN							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
20	**Jodhpur**	1	Bap	1	Luni	1	Shekhala
						2	Tiwari
						3	Balesar
						4	Phalodi
						5	Jodhpur Urban
						6	Shergarh
						7	Dechoo
						8	Osian
						9	Bapini
						10	Bhopalgarh
						11	Lohawat
						12	Mandor Rural
						13	Baori
						14	Bilara
						15	Pipar City
21	**Karauli**			1	Nadoti	1	Mandrail
						2	Sapotra
						3	Todabhim
						4	Karauli
						5	Hindaun
22	**Kota**	1	Itawa			1	Khairabad
		2	Sultanpur			2	Sangod
						3	Kota Urban
						4	Ladpura Rural
23	**Nagaur**					1	Ladnu
						2	Kheenvsar
						3	Molasar
						4	Degana
						5	Makrana
						6	Didwana
						7	Riyan Bari
						8	Merta
						9	Jayal
						10	Nawa
						11	Parbatsar
						12	Nagaur
						13	Kuchaman City
						14	Mundwa
24	**Pali**	1	Pali			1	Rani Station
						2	Sumerpur
						3	Bali
						4	Raipur
						5	Sojat
						6	Kharchi (Marwar Junction)
						7	Desuri
						8	Jaitaran
25	**Pratapgarh**			1	Dhariawad	1	Pratapgarh
						2	Chhoti Sadri
						3	Arnod
26	**Rajsamand**			1	Khamnor	1	Deogarh
				2	Kumbhalgarh	2	Railmagra
						3	Bhim
						4	Rajsamand
						5	Amet

CATEGORIZATION of ASSESSMENT UNITS, 2022							
RAJASTHAN							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
27	**Sawai Madhopur**					1	Gangapur
						2	Sawai Madhopur
						3	Chauth Ka Barwara
						4	Khandar
						5	Bonli
						6	Bamanwas
28	**Sikar**					1	Neem Ka Thana
						2	Dhond
						3	Khandela
						4	Srimadhopur
						5	Lachhmangarh
						6	Patan
						7	Piprali
						8	Danta Ramgarh
						9	Fatehpur
29	**Sirohi**			1	Pindwara	1	Abu Road
						2	Reodar
						3	Sirohi
						4	Sheoganj
30	**Tonk**	1	Todaraisingh	1	Tonk	1	Uniara
		2	Deoli			2	Malpura
						3	Niwai
31	**Udaipur**	1	Jhalara	1	Girwa Rural	1	Kotra
				2	Bhindar	2	Mavli
				3	Phalasiya	3	Kherwara
				4	Salumbar	4	Rishabhdev
				5	Udaipur Urban	5	Bargaon
				6	Gogunda	6	Lasadiya
				7	Kurawar	7	Sayra
				8	Semari		
				9	Jhadol		
				10	Sarada		

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
302	20	22	219

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TAMIL NADU							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	Ariyalur	1	Sendurai(A)				
2	Chengalpattu	1	Acchirupakkam	1	Nerumbur	1	Appur
		2	Chithamur	2	Thirukazhukundram	2	Chengalpattu
		3	Guduvancheri			3	Orathi
		4	Jameenendathur				
		5	Karumbakkam				
		6	Kattankulathur				
		7	Kayapakkam				
		8	Kodur				
		9	L.Endathur				
		10	Mamallapuram				
		11	Onampakkam				
		12	Perumpakkam				
		13	Ponvilayanthakalathur				
		14	Singaperumalkoil				
		15	Vandalur				
3	Chennai	1	Alanthur			1	Ambattur
		2	Madhavaram			2	Egmore - Nungambakkam-I
		3	Pallikaranai			3	Egmore - Nungambakkam-Ii
						4	Egmore - Nungambakkam-Iii
						5	Egmore - Nungambakkam-Iv
						6	Korattur
						7	Kottai - Thondiarpet-I
						8	Kottai - Thondiarpet-Ii
						9	Kottai - Thondiarpet-Iii
						10	Kottai - Thondiarpet-Iv
						11	Maduravoil
						12	Mambalam - Guindy-I
						13	Mambalam - Guindy-Ii
						14	Mambalam - Guindy-Iii
						15	Mambalam - Guindy-Iv
						16	Manali
						17	Mylapore - Tiruvallikeni-I
						18	Mylapore - Tiruvallikeni-Ii
						19	Mylapore - Tiruvallikeni-Iii
						20	Mylapore - Tiruvallikeni-Iv
						21	Porur
						22	Purasawalkam - Perambur-I
						23	Purasawalkam - Perambur-Ii
						24	Purasawalkam - Perambur-Iii
						25	Purasawalkam - Perambur-Iv
						26	Thiruvottiyur
4	Coimbatore	1	Karamadai	1	Alandurai	1	Annur(N)
		2	Kottur	2	Madukkarai	2	Annur(S)
		3	Pollachi(N)	3	Perur	3	Anupparpalayam
		4	Pollachi(S)	4	Thirumalaiampalayam	4	Coimbatore South
		5	Thudialur			5	Ganapathi
						6	Karumathampatti
						7	Kinathukatavu
						8	Kolarpatti
						9	Kovilpalayam
						10	Madampatti
						11	Mettupalayam
						12	Ottakkal Mandabam
						13	Perianegamam
						14	Periyanaickenpalayam
						15	Ramapattinam
						16	Saravanampatti
						17	Sarkar Samakulam
						18	Selakkarichal
						19	Singanallur
						20	Thondamuthur
						21	Vadachittur
						22	Vadavalli
						23	Varapatti

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TAMIL NADU							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
5	Cuddalore	1	Bhuvanagiri	1	Retty Chavadi	1	Kammapuram (E)
		2	Kadampuliyur	2	Thiruvanthipuram	2	Kammapuram(W)
		3	Kattumannarkoil	3	Tittagudi (E)	3	Nellikuppam
		4	Kullanchavadi	4	Virudhachalam (N)	4	Pennadam
		5	Kurinjipadi			5	Thozhudur
		6	Manjakuppam			6	Virudhachalam (S)
		7	Panruti				
		8	Sirupakkam				
		9	Tittagudi (W)				
		10	Udaiyarkudi				
		11	Veppur				
6	Dharmapuri	1	Dharmapuri	1	Papparapatty	1	Bommidi
		2	Harur			2	Indur
		3	Krishnapuram			3	Kadathur
		4	Morappur			4	Kambainallur
		5	Palacode			5	Karimangalam
		6	Pappireddipatty			6	Marandahalli
						7	Palayam(D)
						8	Pennagaram
						9	Perianahalli
						10	Perumbalai
						11	Pulikarai
						12	Thenkaraikottai
						13	Vellichandai
7	Dindigul	1	Korikadavu	1	Dindigul East	1	Athoor
		2	Natham	2	Kambiliampatti	2	Ayakudi
		3	Neikkarapattai	3	Pillaiyarnatham	3	Ayyalur
		4	Reddiapatti			4	Ayyampalayam
						5	Chinnakkampatti
						6	Chinnalpatti
						7	Devathur
						8	Dharmathupatti
						9	Dindigul West
						10	Eriodu
						11	Kallimanthayam
						12	Kottanatham
						13	Kovilur
						14	Nilakottai
						15	Oddanchathram
						16	Oruthattu
						17	Palakkanoothu
						18	Palayam
						19	Puliyurnatham
						20	Reddiarchatram
						21	Shanarpatti
						22	Silvathur
						23	Thoppampatti
						24	Vadamadurai
						25	Vatlagundu
						26	Vedasandur
						27	Viruveedu
8	Erode	1	Ammapettai	1	Arasur(E)	1	Anthiyur
		2	Arachalur	2	Modakurichi	2	Athani(E)
		3	Erode East			3	Bhavanisagar
		4	Erode North			4	Chennimalai
		5	Erode West			5	Elathur(E)
		6	Kasipalayam			6	Nambiyur
		7	Kilampadi			7	Perundurai
		8	Kodumudi			8	Punjaipuliampatti
		9	Poondurai			9	Siruvalur
		10	Sathyamangalam			10	Thingalur
		11	Sivagiri(E)			11	Vellode
9	Kallakkurichi	1	Eraiyur	1	Kalvarayan Malai	1	Chinnaselam
		2	Kalamarudur	2	Nainarpalayam	2	Elavanasurkottai
		3	Kallakurichi	3	Sankarapuram	3	Indili
		4	Nagalur	4	Thiyagadurgam		
		5	Ulundurpettai				
		6	Vadakanandal				
10	Kancheepuram	1	Govindhavadi	1	Walajabad	1	Arumpuliyur
		2	Kollapakkam			2	Thirupulivanam
		3	Mangadu				
		4	Sirukaveripakkam				
		5	Thiruppu Kuzhi				
		6	Uthiramerur				

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TAMIL NADU							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
11	Kanniyakumari	1	Rajakkamangalam				
12	Karur	1	Aravakurichi			1	K.Paramathy
		2	Chinnadharapuram			2	Kadavur
						3	Karur
						4	Kattalai
						5	Mailampatti
						6	Pallapatti(K)
						7	Panjapatti
						8	Pugalur
						9	Thalapatti
						10	Thennilai
						11	Thogaimalai
						12	Thoranakalpatti
						13	Vangal
						14	Velliyanai
13	Krishnagiri	1	Bagalur	1	Palepalli	1	Alapatti
		2	Barur			2	Bargur
		3	Berigai			3	Guruparapalli
		4	Hosur			4	Kallavi
		5	Kelamangalam			5	Mathur
		6	Krishnagiri			6	Nagarasampatti
		7	Periyamuthur			7	Samalpatti
		8	Rayakottai			8	Singarapettai
						9	Uthangarai
						10	Veppanapalli
14	Madurai	1	Alanganallur	1	A.Vellalapatti	1	Madurai West
		2	Athipatti	2	Kokkulam	2	Muduvarpatti
		3	Elumalai	3	Kottampatti	3	Palamedu
		4	Karumathur	4	Madurai East	4	Sindhupatti
		5	Karungalakudi	5	Nagamalali Pudukotta		
		6	Koolapandi	6	Sedapatti		
		7	Melavalavu	7	Valanthur		
		8	Neerathan				
		9	Othakkadai				
		10	Peraiyur				
		11	Sathamangalam				
		12	Solavandhan				
		13	Thanichiam				
		14	Thenkarai(M)				
		15	Thirumangalam				
		16	Usilampatti				
		17	Uthappanaickanur				
		18	Valayankulam				
		19	Vellalur				
15	Nagapattinam					1	Kuttalam
						2	Madhanam
						3	Manganallur
						4	Mayiladuthurai
						5	Melaiyur
						6	Palaiyur
						7	Pattavarthi
						8	Puthur
						9	Sembanarkoil
						10	Sirkali
						11	Thiruvekadu
						12	Thiruvilaiyattam
						13	Vaitheeswaran Koil
16	Namakkal	1	Jedarpalayam	1	Elachipalayam	1	Alanganatham
		2	Tiruchengode	2	Molasi	2	Erumaipatti
						3	Kalappanaikanpatti
						4	Kumarapalayam
						5	Mallasamudram
						6	Mangalapuram
						7	Mohanur
						8	Mullukurichi
						9	Nallipalayam
						10	Nallur
						11	Namagiripettai
						12	Namakkal
						13	Pandamangalam
						14	Paramathi
						15	Puduchatram
						16	Rasipuram
						17	Sellappampatti
						18	Senthamagalam
						19	Vaiyappamalai
						20	Valaiyapatti
						21	Vennandur
17	Perambalur	1	Koothur			1	Chettikulam
						2	Keelapuliyur
						3	Kurumbalur
						4	Pasumbalur
						5	Perambalur
						6	Valikandapuram
						7	Vengalam

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TAMIL NADU							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
18	Pudukkottai	1	Arasamalai				
		2	Keeramangalam				
		3	Kodumbalur				
		4	Ponnamaravathy				
		5	Vallanadu				
		6	Viralimalai				
19	Ranipet	1	Arakonam(South)			1	Arcot
		2	Banavaram			2	Pudupadi
		3	Kalavai			3	Timiri
		4	Kaveripakkam			4	Walajah
		5	Mambakkam				
		6	Nemili(V)				
		7	Panapakkam				
		8	Paranji				
		9	Ranipet				
		10	Sholinghur				
		11	Visharam				
20	Salem	1	Kolathur	1	Karupur	1	Alagapuram
		2	Mettur	2	Panamarathuppatti	2	Attur
		3	Patchamalai	3	Pottaneri	3	Belur
		4	Thevur			4	Edappadi
						5	Ernapuram
						6	Gangavalli
						7	Kadayampatti
						8	Karippatti
						9	Kattukkottai
						10	Kondalampatti
						11	Konganapuram
						12	Malliyakarai
						13	Mecheri
						14	Nangavalli
						15	Omalur
						16	Palamalai
						17	Pethanaickanpalayam
						18	Poolampatti
						19	Salem Town
						20	Sankari East
						21	Sankari West
						22	Semmandappatti
						23	Suramangalam
						24	Thalaivasal
						25	Tharamangalam
						26	Thirumalaigiri
						27	Valasaiyur
						28	Vazhappadi
						29	Veeraganoor
						30	Veerapandi
						31	Vembadithalam
						32	Yethapur
21	Tenkasi	1	Alankulam	1	Ayikudi	1	Karisal Kulam
		2	Kadayanallur	2	Gudalur	2	Karivaklamvandanallur
		3	Nettur	3	Kallurani	3	Karuvantha
		4	Veerakeralampudur	4	Sankarankoil	4	Keezhapavoor
				5	Surandai	5	Kurukkalpatti
						6	Pazhankottai
						7	Puliyankudi
						8	Sernthamangalam
						9	Uthumalai
						10	Veerasigamani
						11	Venkadampatti
22	Thanjavur	1	Budalur	1	Nambivayal	1	Adirampattinam
		2	Kurichi	2	Periyakottai	2	Aduthurai
		3	Orathanad	3	Thambikkottai	3	Agarapettai
		4	Perambur	4	Ulur	4	Ammapet
		5	Peravurani			5	Andikkadu
		6	Saliyamangalam			6	Avanam
		7	Thanjavur			7	Ayyampettai
		8	Thekkur			8	Devanancheri
						9	Kabisthalam
						10	Kandiyur
						11	Kathiramangalam
						12	Kavalipatti
						13	Kumbakonam
						14	Kuruvikarambai
						15	Madukkur
						16	Melattur
						17	Murukkangudi
						18	Nachiyarkoil
						19	Nadukaveri
						20	Nanjikottai
						21	Pandanallur
						22	Papanasam
						23	Pattukkottai
						24	Ramapuram
						25	Sillathur
						26	Thirukkattupalli
						27	Thirumangalakottai

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TAMIL NADU							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
						28	Thiruvaiyaru
						29	Thiruvidamarudur
						30	Thondarampattu
						31	Thuvarankurichi
						32	Tiruchitrambalam
						33	Tiruppanandal
						34	Vallam
23	Theni	1	Andipatti	1	Kandamanur	1	Erasakkanaickanur
		2	Devathanapatti	2	Rajathani	2	Thevaram
		3	Markayankottai				
		4	Mayladumparai				
		5	Theni				
		6	Thenkarai				
		7	Uthamapalayam				
24	Thiruvallur	1	Avadi	1	Poonamallee	1	Tirumullaivayal
		2	Balapuram	2	R.K.Pet	2	Vayanallur
		3	Cherukkanoor	3	Thiruninravur		
		4	Erumbi	4	Vellanur		
		5	Kanagammachattram				
		6	Kannigaipair				
		7	Manavor				
		8	Mappedu				
		9	Morai				
		10	Nemam				
		11	Pallipattu				
		12	Poonimangadu				
		13	Tiruttani				
		14	Uthukkottai				
		15	Velliyur				
		16	Vengathur				
25	Thiruvarur	1	Koothanallur	1	Vadapathimangalam	1	Agarathirumalam
		2	Nannilam			2	Alangudi
		3	Sannanallur			3	Avoor
						4	Kodavasal
						5	Koradacheri
						6	Kulikkarai
						7	Peralam
						8	Thirukkannamangai
						9	Thiruvizhimazhalai
						10	Valangaiman
26	Thoothukkudi	1	Kayathar	1	Ilayarasanendal	1	Pallakurichi
		2	Parivallikottai	2	Udangudi		
		3	Sattankulam				
27	Tiruchirappalli	1	Kattuputhur	1	Uppiliyapuram	1	Eragudi
		2	Musiri			2	Kannanur
		3	Peruvalpur			3	Kariyamanickam
		4	Sirugambur			4	Koppampatti
		5	Valanadu			5	Manapparai
						6	Manikandam
						7	Marungapuri
						8	Pannappatti
						9	Pulivalam
						10	Sengattuppatti
						11	Thathaiyangarpettai
						12	Thumbalam
						13	Thuraiyur
						14	Thuvarangurichi
						15	V.Periyapatti
						16	Vaiyampatti
						17	Valaieduppu
28	Tirunelveli	1	Levinjipuram	1	Pazhavoor	1	Vannikonenthal
		2	Manur				
		3	Radhapuram				
		4	Thalaiyuthu				
		5	Tisayanvilai				
		6	Vijayanarayanapuram				
29	Tirupathur	1	Ambalur			1	Alangayam
		2	Jolarpet			2	Ambur
		3	Pudurnadu			3	Ammanankoil
						4	Andiyappanur
						5	Kandhili
						6	Koratti
						7	Madhanur
						8	Melasannankuppam
						9	Natrampalli
						10	Thuthipattu
						11	Tirupathur
						12	Vaniyambadi

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TAMIL NADU							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
30	**Tiruppur**	**1**	Gudimangalam	**1**	Avinashi(E)	**1**	Avinashipalayam(S)
		2	Kannivadi	**2**	Avinashi(W)	**2**	Kangeyam
		3	Nathakadaiyur	**3**	Cheyur	**3**	Karadivavi
		4	Ponnapuram	**4**	Kundadam	**4**	Kunnathur
		5	Sankarandampalayam	**5**	Perumanallur	**5**	Mulanur
		6	Tiruppur (N)	**6**	Pethappampatti	**6**	Palladam
		7	Vellakoil	**7**	Pongalur	**7**	Periavalavadi
				8	Uthiyur	**8**	Samalapuram
				9	Uthukuli	**9**	Tiruppur (S)
						10	Velampalayam
31	**Tiruvannamalai**	**1**	Anakavoor	**1**	Chengam	**1**	Chennavaram
		2	Devikapuram	**2**	Eraiyur(T)	**2**	Desur
		3	Kadaladi(T)	**3**	Kilpennathur	**3**	Kelur
		4	Kalasapakkam	**4**	Kolappalur	**4**	Kettavarampalayam
		5	Kannamangalam	**5**	Modayur	**5**	Kilkodungalur
		6	Mandakolathur	**6**	Nayadumangalam	**6**	Malaiyur
		7	Osur	**7**	Nedungunam	**7**	Mangalam
		8	Polur	**8**	Thanipadi	**8**	Melpallipattu
		9	Santhavasal			**9**	Mullipattu
		10	Somaspadi			**10**	Pachal
		11	T.V.Malai (North)			**11**	Pudupalayam
		12	T.V.Malai (South)			**12**	Thachambadi
		13	Thandarampat			**13**	Thatchampattu
		14	Thellar				
		15	Thurinjapuram				
		16	Vanapuram				
		17	Vandavasi				
		18	Veraiyur				
		19	Vettavlam				
32	**Vellore**	**1**	Katpadi	**1**	Kaniyambadi	**1**	Agaram
		2	Melpadi			**2**	Anaicut
		3	Pennathur			**3**	Gudiyatham(East)
		4	Pernampattu			**4**	Gudiyatham(West)
		5	Ussoor			**5**	K.V.Kuppam
						6	Melpatti
						7	Odugathur
						8	Pallikonda
						9	Sathuvachari
						10	Vadavellore
						11	Vaduganthangal
						12	Valathur
33	**Viluppuram**	**1**	Avanipur	**1**	Avalurpettai	**1**	Anniyur
		2	Gingee	**2**	Sathampati	**2**	Arasur(V)
		3	Kandamangalam	**3**	Uppuvelur	**3**	Brammadesam
		4	Kiliyanur	**4**	Vadasiruvalur	**4**	Chithalingamadam
		5	Marakanam	**5**	Valavanur	**5**	Kanjanur
		6	Mugaiyur			**6**	Melmalayanur
		7	Olakkur			**7**	Melolakkur
		8	Sithalampattu			**8**	Nemili
		9	Tindivanam			**9**	Sathiyamangalam
		10	Vikkiravandi			**10**	Siruvadi
		11	Villupuram			**11**	T.V.Nallur
						12	Vallam(V)
34	**Virudhunagar**	**1**	Alangulam	**1**	Pillaiyarkulam	**1**	Cholapuram(V)
		2	Amathur			**2**	Keelarajakularaman
		3	Iyankollankondan			**3**	Nathampatti
		4	Mallankinar			**4**	Vembakottai
		5	Mangalam(V)				
		6	Ondipulinaickanur				
		7	Rajapalayam				
		8	Salwarpatti				
		9	Sivakasi				
		10	Srivilliputtur				
		11	Vatchakara-Patti				
		12	Watrap				

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Unit	Number of Critical Assessment Unit	Number of Over Exploited Assessment Unit
1166	231	78	360

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TELANGANA							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Adilabad**	1	Mavala			1	Adilabad Urban
2	**Bhadradri Kothagudem**	1	Sujathanagar	1	Chunchupally		
		2	Manuguru	2	Dammapeta		
3	**Hanumakonda**	1	Velair				
		2	Dharmasagar				
		3	Bheemadevarapalle				
		4	Inole				
4	**Hyderabad**	1	Maredpally			1	Charminar
		2	Nampally			2	Bahadurpura
		3	Ammerpet			3	Golkonda
		4	Himayatnagar			4	Asifnagar
						5	Musheerabad
						6	Saidabad
						7	Khairatabad
						8	Secunderabad
5	**Jagtial**	1	Kathlapur				
6	**Jangaon**	1	Jangaon				
7	**Jogulamba Gadwal**	1	Kaloor_Timmanadoddi				
8	**Kamareddy**	1	Kamareddy				
		2	Bibipet				
		3	Rajampet				
		4	Domakonda				
		5	Bhiknur				
9	**Karimnagar**	1	Gangadhara				
		2	Chigurumamidi				
10	**Khammam**	1	Vemsoor				
		2	Thirumalayapalem				
		3	Raghunadhapalem				
		4	Kusumanchi				
11	**Mahabubabad**	1	Danthalapalle				
12	**Mahabubnagar**	1	Rajapur				
		2	Hanwada				
		3	Balanagar				
		4	Midjil				
		5	Nawabpet				
		6	Musapet				
13	**Medak**	1	Tupran				
		2	Manoharabad				
		3	Narsapur				
		4	Nizampet				
14	**Medchal Malkajgiri**	1	Medchel			1	Balanagar
		2	Kukatpally			2	Quthbullapur
		3	Muduchinthalapally				
		4	Bachpalle				
15	**Nagarkurnool**	1	Urkonda	1	Veldanda		
		2	Vangoor				
16	**Nalgonda**	1	Devarakonda				
		2	Nalgonda				
		3	Chityala				
		4	Munugode				
		5	Marriguda				
		6	Chinthapalle				
17	**Narayanpet**	1	Kosgi				
18	**Nirmal**	1	Nirmal_Rural				
19	**Nizamabad**	1	Sirkonda	1	Rudrur	1	Nizamabad_South
		2	Jakranpalle	2	Armur		
		3	Varni				
		4	Bheemgal				
		5	Mugpal				
		6	Yergatla				
		7	Chandur				
20	**Rajanna Siricilla**	1	Konaraopeta				
21	**Rangareddy**	1	Kadthal	1	Serilingampally	1	Hayathnagar
		2	Chowdergudem				
		3	Kondurg				
		4	Kothur				
		5	Moinabad				
		6	Saroornagar				
		7	Maheshwaram				

CATEGORIZATION of ASSESSMENT UNITS, 2022							
TELANGANA							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
22	**Sangareddy**	1	Kandi				
		2	Sangareddy				
		3	Patancheruvu				
		4	Zahirabad				
23	**Siddipet**	1	Kondapak	1	Dubbak		
		2	Narayanraopet				
		3	Markook				
		4	Komaravelly				
		5	Siddipet Urban				
		6	Koheda				
		7	Mirdoddi				
		8	Wargal				
		9	Maddur				
24	**Suryapet**	1	Thirumalagiri				
		2	Maddirala				

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
594	**80**	**7**	**13**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
UTTAR PRADESH							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Agra**	1	Pinahat	1	Bah	1	Agra City
		2	Achhnera	2	Jaitpur Kalan	2	Etmadpur
		3	Kheragarh			3	Fatehabad
		4	Jagner			4	Bichpuri
						5	Khandauli
						6	Saiyana
						7	Fatehpur Sikri
						8	Barauli Ahir
						9	Akola
						10	Shamsabad
2	**Aligarh**	1	Khair	1	Iglas	1	Aligarh City
		2	Lodha				
		3	Chandaus				
		4	Gangiri				
		5	Jawa Sikandairpur				
3	**Ambedkar Nagar**	1	Jalalpur				
4	**Amethi**	1	Sangrampur				
5	**Amroha**	1	Gangeshwari	1	Dhanaura	1	Joya
		2	Amroha	2	Gajraula		
		3	Hasanpur				
6	**Bagpat**	1	Baraut	1	Baghpat	1	Pilana
		2	Chhaprauli			2	Binauli
						3	Khekra
7	**Banda**	1	Baberu				
		2	Tindwari				
		3	Naraini				
		4	Jaspura				
8	**Bareilly**	1	Alampur Jafarabad			1	Bareilly City
		2	Ramnagar				
		3	Majhgawa				
		4	Fatehganj				
9	**Bijnor**	1	Seohara (Budhanpur)	1	Jaleelpur		
		2	Kotwali				
		3	Nehtaur (Aaku)				
		4	Noorpur				
10	**Budaun**	1	Sahaswan	1	Asafpur	1	Ambiapur
		2	Quadar Chowk	2	Bisauli	2	Islamnagar
		3	Jagat				
		4	Miaon				
		5	Salarpur				
		6	Ujhani				
11	**Bulandshahar**	1	Pahasu	1	Arnia Khurd	1	Sikandrabad
		2	Debai	2	Khurja	2	Bulandshahar
		3	Anup Shahar	3	Shikarpur	3	Siana
		4	Jahangirabad	4	Unchagaon	4	Gulaothi
		5	Lakhaothi			5	Bhawan Bahadur Nagar
						6	Danpur
12	**Chitrakoot**	1	Ramnagar	1	Karwi		
		2	Pahari				
		3	Mau				
13	**Etah**	1	Nidhauli Kalan	1	Jalesar		
		2	Aliganj				
		3	Jaithara				
		4	Shitalpur				
14	**Farrukhabad**	1	Mohamadabad				
		2	Barhpur				
		3	Nawabganj				
		4	Kamalganj				
15	**Fatehpur**	1	Telyani			1	Bhitaura
		2	Khajuha				
		3	Malawan				
		4	Airaya				
		5	Amauli				
16	**Firozabad**	1	Madanpur	1	Aron	1	Firozabad
		2	Eka			2	Shikohabad
		3	Jasrana			3	Khairgarh(Hathwant)
						4	Narkhi
						5	Tundla
17	**G.B.Nagar**	1	Dadri	1	Jewar	1	Bisrakh
18	**Ghaziabad**	1	Muradnagar			1	Gaziabad City
						2	Bhojpur
						3	Razapur
						4	Loni
19	**Ghazipur**	1	Saidpur				
20	**Hamirpur**	1	Rath				
		2	Sarila				
		3	Sumerpur				
		4	Gohand				
21	**Hapur**	1	Dholana	1	Simbholi	1	Garh
				2	Hapur		
22	**Hathras**	1	Sadabad	1	Hathras	1	Sahpau
				2	Sikandra Rao	2	Mursan
						3	Sasni

CATEGORIZATION of ASSESSMENT UNITS, 2022							
UTTAR PRADESH							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
23	**Jaunpur**	1	Kerakat	1	Badlapur		
		2	Sirkoni	2	Maharajganj		
		3	Ramnagar				
		4	Muftiganj				
		5	Karanja Kalan				
		6	Sikrara				
		7	Baksha				
		8	Dharmapur				
24	**Jhansi**	1	Baragaon				
		2	Bangra				
		3	Babina				
		4	Mauranipur				
25	**Kannauj**	1	Gograpur	1	Kannauj	1	Jalalabad
		2	Chhibramau			2	Talgram
26	**Kanpur Dehat**	1	Akbarpur				
		2	Maitha				
		3	Jhinjhak				
		4	Sarwan Khera				
		5	Malsa				
		6	Derapur				
		7	Rasulabad				
27	**Kanpur Nagar**	1	Parara	1	Kanpur City		
		2	Sarsol	2	Chaubepur		
		3	Ghatampur				
		4	Bidhnu				
		5	Bilhaur				
		6	Shivrajapur				
28	**Kasganj**	1	Ganjdundwara				
		2	Patiyali				
		3	Kasganj				
29	**Kaushambi**	1	Manjhanpur			1	Chail
		2	Kara			2	Muratganj
		3	Sirathu				
		4	Newada				
30	**Lalitpur**	1	Talbehat				
		2	Birdha				
		3	Bar				
		4	Jakhora				
		5	Mahroni				
		6	Mandwara				
31	**Lucknow**					1	Lucknow City
32	**Mahoba**	1	Kabrai			1	Panwari
		2	Charkhari			2	Jaitpur
33	**Mainpuri**	1	Jagir			1	Barnahal
		2	Mainpuri				
34	**Mathura**			1	Baldeo	1	Raya
				2	Nohjhil		
35	**Meerut**	1	Rajpura	1	Machhra	1	Meerut City
		2	Meerut	2	Kharkhoda		
		3	Hastinapur				
		4	Parichhatgarh				
		5	Mawana Kalan				
36	**Mirzapur**	1	City	1	Majhawan	1	Kon
		2	Chanbey				
		3	Sikhar				
37	**Moradabad**	1	Dilari	1	Bilari	1	Moradabad City
		2	Moradabad				
		3	Kundarki (Dengapur)				
		4	Bhagatpur				
		5	Mundapandey				
		6	Chhajlet				
38	**Muzaffarnagar**	1	Shahpur	1	Charthawal	1	Bhaghara
		2	Muzaffarnagar	2	Budhana		
39	**Pratapgarh**	1	Lalganj	1	Shivgarh		
		2	Gaura	2	Sadar		
		3	Baba Belkhar Nath	3	Mandhata		
		4	Patti	4	Sandwa Chandika		
		5	Rampur-Sangramgarh				
		6	Lakshamanpur				
		7	Aspur Deosara				
		8	Kunda				
		9	Mangaraura				
40	**Prayagraj**	1	Bahadurpur	1	Chaka	1	Prayagraj City
		2	Baharia	2	Sahson		
		3	Holagarh				
		4	Saidabad				
		5	Mauaima				
		6	Phulpur				
		7	Pratappur				
		8	Shringverpur Dham				
		9	Dhanupur				
41	**Rampur**	1	Chamrauwa				
		2	Shahabad				
		3	Saur				
		4	Milak				

CATEGORIZATION of ASSESSMENT UNITS, 2022							
UTTAR PRADESH							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
42	**Saharanpur**	1	Deoband			1	Nakur
		2	Rampur Maniharan			2	Sarsawa
		3	Sadhauli Kadeem			3	Gangoh
		4	Ballia Kheri			4	Nagal
		5	Nanauta				
		6	Muzaffarabad				
43	**Sambhal**	1	Gunnaur	1	Sambhal		
		2	Janawai	2	Bahjoi		
		3	Asmoli	3	Pawansa		
				4	Baniakhera		
44	**Sant Ravidas Nagar**	1	Gyanpur				
		2	Deegh				
		3	Suriyawan				
		4	Abhauli				
		5	Aurai				
		6	Bhadohi				
45	**Shamli**	1	Thana Bhawan	1	Kairana	1	Kandhala
						2	Shamli
						3	Un
46	**Sonbhadra**	1	Dudhi				
		2	Nagawa				
47	**Varanasi**	1	Sevapuri	1	Chiraigaon	1	Varanasi City
		2	Kashi Vidyapith	2	Pindra	2	Harahua
						3	Araziline

ABSTRACT

Total No. of Assessed Units	**Number of Semicritical Assessment Units**	**Number of Critical Assessment Units**	**Number of Over Exploited Assessment Units**
836	169	47	63

CATEGORIZATION of ASSESSMENT UNITS, 2022							
UTTARAKHAND							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Haridwar**	1	Bhagwanpur				
		2	Bahadrabad				
2	**Udham singh Nagar**	1	Kashipur				
3	**Nainital**	1	Haldwani				

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
18	**4**	**Nil**	**Nil**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
WEST BENGAL							
S. No	**Name of District**	**S. No**	**Name of Semi-Critical Assessment Units**	**S. No**	**Name of Critical Assessment Units**	**S. No**	**Name of Over-Exploited Assessment Units**
1	**Birbhum**	1	Mayureswar-II				
2	**Dakshin Dinajpur**	1	Kushmundi	1	Hilli		
		2	Balurghat				
3	**Haora**	1	Udaynarayanpur				
4	**Hugli**	1	Serampur Uttarpara				
		2	Balagarh				
		3	Goghat-II				
5	**Malda**	1	Ratua-II				
		2	Kaliachak-I				
6	**Murshidabad**	1	Hariharpara	1	Raninagar-I		
		2	Murshidabad Jiaganj				
		3	Bhagawangola-I				
		4	Berhampore				
		5	Beldanga-I				
		6	Nawda				
7	**Nadia**	1	Kaliganj	1	Ranaghat-II		
		2	Hanskhali	2	Nakashipara		
		3	Haringhata	3	Karimpur-I		
		4	Krishnanagar-II	4	Santipur		
		5	Krishnanagar-I	5	Krishnaganj		
		6	Kalyani	6	Tehatta-I		
				7	Nabadwip		
				8	Karimpur-II		
				9	Chapra		
				10	Tehatta-II		
8	**North 24 Parganas**	1	Barasat-I	1	Basirhat-I		
		2	Baduria	2	Bongaon		
		3	Swarupnagar	3	Habra-I		
				4	Gaighata		
				5	Deganga		
				6	Bagda		
9	**Paschim Barddhaman**			1	Raniganj		
10	**Paschim Medinipur**	1	Kharagpur-II	1	Chandrakona-II		
		2	Keshpur	2	Garbeta-I		
11	**Purba Barddhaman**	1	Kalna-II	1	Manteswar		
		2	Burdwan-II				
		3	Mangolkote				
		4	Memari-I				
		5	Purbasthali-II				

ABSTRACT

Total No. of Assessed Units	**Number of Semicritical Assessment Units**	**Number of Critical Assessment Units**	**Number of Over Exploited Assessment Units**
285	**31**	**22**	**Nil**

CATEGORIZATION of ASSESSMENT UNITS, 2022							
CHANDIGARH							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Chandigarh**	1	Chandigarh				

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
1	1	Nil	Nil

<table>
<tr><th colspan="8">CATEGORIZATION of ASSESSMENT UNITS, 2022</th></tr>
<tr><th colspan="8">DAMAN & DIU</th></tr>
<tr><th>S. No</th><th>Name of District</th><th>S. No</th><th>Name of Semi-Critical Assessment Units</th><th>S. No</th><th>Name of Critical Assessment Units</th><th>S. No</th><th>Name of Over-Exploited Assessment Units</th></tr>
<tr><td>1</td><td>Daman</td><td></td><td></td><td></td><td></td><td>1</td><td>Daman</td></tr>
<tr><td>2</td><td>Diu</td><td></td><td></td><td></td><td></td><td>1</td><td>Diu</td></tr>
<tr><th colspan="8">ABSTRACT</th></tr>
<tr><th colspan="2">Total No. of Assessed Units</th><th colspan="2">Number of Semicritical Assessment Units</th><th colspan="2">Number of Critical Assessment Units</th><th colspan="2">Number of Over Exploited Assessment Units</th></tr>
<tr><td colspan="2">2</td><td colspan="2">Nil</td><td colspan="2">Nil</td><td colspan="2">2</td></tr>
</table>

CATEGORISATION OF ASSESSMENT UNIT, 2022							
DADRA AND NAGAR HAVELI							
S.NO	Name of District	S.NO	Name of Semi-Critical Assessment Units	S.NO	Name of Critical Assessment Units	S.NO	Name of Over-Exploited Assessment Units
1	**Dadra Nagar Haveli**					1	Dadra Nagar Haveli

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
1	Nil	Nil	1

CATEGORISATION OF ASSESSMENT UNIT, 2022							
JAMMU AND KASHMIR							
S.NO	Name of District	S.NO	Name of Semi-Critical Assessment Units	S.NO	Name of Critical Assessment Units	S.NO	Name of Over-Exploited Assessment Units
1	**Srinagar Urban**	1	Srinagar Urban				

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
20	1	Nil	Nil

CATEGORISATION OF ASSESSMENT UNIT, 2022							
LADAKH							
S.NO	Name of District	S.NO	Name of Semi-Critical Assessment Units	S.NO	Name of Critical Assessment Units	S.NO	Name of Over-Exploited Assessment Units
1	**Leh**	1	Phyang				

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
8	1	Nil	Nil

CATEGORISATION OF ASSESSMENT UNIT, 2022							
LAKSHADWEEP							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Units	S. No	Name of Critical Assessment Units	S. No	Name of Over-Exploited Assessment Units
1	**Amini**	1	Amini				
2	**Kavratti**	2	Kavratti				

ABSTRACT

Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
9	2	Nil	Nil

CATEGORIZATION of ASSESSMENT UNITS, 2022							
PUDUCHERRY							
S. No	Name of District	S. No	Name of Semi-Critical Assessment Unit	S. No	Name of Critical Assessment Unit	S. No	Name of Over-Exploited Assessment Unit
1	Puducherry			1	Puducherry		

ABSTRACT			
Total No. of Assessed Units	Number of Semicritical Assessment Units	Number of Critical Assessment Units	Number of Over Exploited Assessment Units
4	Nil	1	Nil

ANNEXURE - IV(B)

Quality Problems in Assessment Units (as in 2022)

NOTE:

 # Only Assessment Units where the Quality Tag of As, F & Salinity have been reported are provided against respective districts and states.

 # The Assessment Units with "C", indicates the phreatic aquifer in the assessment unit is almost/ completely brackish /saline

 # The Quality Tag In Respect of As & F indicates Sporadic Occurrences.

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
ANDHRA PRADESH							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Bapatla**					1	Amruthalur
						2	Bapatla
						3	Chinaganjam
						4	Inkollu
						5	Janakavarampangulu
						6	Karamchedu (C)
						7	Karlapalem
						8	Nagaram
						9	Nizampatnam
						10	Parchur
						11	Pittalavanipalem
						12	Repalle
						13	Yeddanapudi
2	**Eluru**					1	Ganapavaram (C)
						2	Kaikalur (C)
						3	Kalidindi (C)
						4	Mandavalli (C)
						5	Mudinapalle (C)
						6	Nidamarru (C)
3	**Guntur**					1	Chebrole
						2	Duggirala
						3	Guntur Mandal
						4	Kakumanu
						5	Medikonduru
						6	Pedakakani
						7	Pedanandipadu (C)
						8	Phirangipuram
						9	Ponnur
						10	Prathipadu
						11	Tadikonda
						12	Thullur
						13	Vatticherukuru (C)
4	**Kakinada**					1	Kajuluru
						2	Karapa (C)
						3	Routhulapudi
						4	Thallarevu (C)
5	**Konaseema**					1	Allavaram (C)
						2	I Polavaram (C)
						3	Katrenikona (C)
						4	Malikipuram (C)
						5	Mamidikuduru (C)
						6	Sakhinetipalle (C)
						7	Uppalaguptam (C)
6	**Krishna**					1	Bantumilli (C)
						2	Gudlavalleru (C)
						3	Gudur (Krishna) (C)
						4	Koduru (C)
						5	Kruthivennu (C)
						6	Machilipatnam (C)
						7	Nagayalanka (C)
						8	Nandivada (C)
						9	Pedana (C)
7	**Palnadu**					1	Amaravathi
						2	Chilakaluripet
						3	Edlapadu
						4	Nadendla
						5	Sattenapalle
						6	Vinukonda

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
ANDHRA PRADESH							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
8	**Prakasam**					1	Darsi
						2	Kothapatnam
						3	Maddipadu
						4	Mundlamuru
						5	Naguluppalapadu
						6	Ongole
						7	Santhanuthlapadu
						8	Tangutur
9	**Tirupati**					1	Chittamur
						2	Sullurpeta
						3	Tada
10	**West Godavari**					1	Akiveedu (C)
						2	Bheemavaram (C)
						3	Kalla (C)
						4	Mogalthur (C)
						5	Narasapuram (C)
						6	Palacole (C)
						7	Palakoderu (C)
						8	Pentapadu (C)
						9	Poduru (C)
						10	Undi (C)
						11	Veeravasaram (C)
						12	Yelamanchili (C)

ABSTRACT			
Total Number of Assessed Units	**Number of Assessment Units affected by Fluoride**	**Number of Assessment Units affected by Arsenic**	**Number of Assessment Units affected by Salinity**
667	**Nil**	**Nil**	**81(39 Completely Saline)**

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
ASSAM							
S. No	**Name of District**	**S. No**	**Name of Assessment Units affected by Fluoride**	**S. No**	**Name of Assessment Units affected by Arsenic**	**S. No**	**Name of Assessment Units affected by Salinity**
1	**Dhemaji**			1	Dhemaji		
2	**Jorhat**			1	Jorhat		
3	**Karbi Anglong**	1	Karbi Anglong				
4	**Nalbari**			1	Nalbari		
5	**Lakhimpur**			1	Lakhimpur		
6	**Nagaon**	1	Nagaon				
7	**Karimganj**			1	Karimganj		
8	**Goalpara**			1	Goalpara		
9	**Cachar**			1	Cachar		
ABSTRACT							
Total Number of Assessed Units		**Number of Assessment Units affected by Fluoride**		**Number of Assessment Units affected by Arsenic**		**Number of Assessment Units affected by Salinity**	
28		**2**		**7**		**Nil**	

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
BIHAR							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Aurangabad**	1	Aurangabad				
		2	Barun				
		3	Deo				
		4	Goh				
		5	Haspura				
		6	Kutumba				
		7	Madanpur				
		8	Nabinagar				
		9	Obra				
		10	Rafiganj				
2	**Banka**	1	Amarpur				
		2	Banka				
		3	Barahat				
		4	Belhar				
		5	Bounsi				
		6	Chandan				
		7	Dhoraiya				
		8	Fullidumar				
		9	Katoriya				
		10	Rajoun				
		11	Shambhuganj				
3	**Begusarai**			1	Bachwara		
				2	Balia		
				3	Barauni		
				4	Begusarai		
				5	Matihani		
				6	Navkothi		
				7	Sahebpur Kamal		
4	**Bhagalpur**	1	Gauradih	1	Jagdishpur		
		2	Kharik	2	Kahalgaon		
		3	Narayanpur	3	Nathnagar		
		4	Naugachhia	4	Pirpainty		
		5	Sanhoula	5	Sabour		
		6	Jagdishpur	6	Sultanganj		
		7	Kahalgaon				
		8	Nathnagar				
		9	Pirpainty				
		10	Sabour				
		11	Sultanganj				
5	**Bhojpur**			1	Ara Sadar		
				2	Barhara		
				3	Bihiya		
				4	Koilwar		
				5	Shahpur		
				6	Udwantnagar		
6	**Buxar**			1	Brahmpur		
				2	Buxar		
				3	Chakki		
				4	Simri		
7	**Darbhanga**			1	Baheri		
				2	Biraul		
8	**Gaya**	1	Amas				
		2	Atri				
		3	Banke Bazar				
		4	Barachatty				
		5	Belaganj				
		6	Bodh Gaya				
		7	Dobhi				
		8	Dumariya				
		9	Fatehpur				
		10	Gaya Sadar				
		11	Guraru				
		12	Gurua				
		13	Imamganj				
		14	Khizar Sarai				
		15	Konch				
		16	Manpur				
		17	Mohanpur				
		18	Muhra				
		19	Neemchak Bathani				
		20	Paraiya				
		21	Sherghati				
		22	Tankuppa				

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
BIHAR							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
		23	Tekari				
		24	Wazirganj				
9	**Jamui**	1	Barhat				
		2	Chakai				
		3	Gidhaur				
		4	Islamnagar Aliganj				
		5	Jamui				
		6	Jhajha				
		7	Khaira				
		8	Laxmipur				
		9	Sikandra				
		10	Sono				
10	**Jehanabad**	1	Hulasgunj				
		2	Jehanabad				
		3	Ratni Faridpur				
11	**Kaimur**	1	Bhabhua				
		2	Bhagwanpur				
		3	Chainpur				
		4	Chand				
		5	Durgawati				
		6	Kudra				
		7	Mohania				
		8	Nuaon				
		9	Ramgarh				
		10	Rampur				
12	**Katihar**			1	Amdabad		
				2	Balrampur		
				3	Kursela		
				4	Manihari		
				5	Mansahi		
				6	Sameli		
13	**Khagaria**			1	Gogri		
				2	Khagaria		
				3	Mansi		
				4	Parbatta		
14	**Kishanganj**			1	Bahadurganj		
				2	Kishanganj		
15	**Lakhisarai**	1	Ramgarh Chowk	1	Barahia		
				2	Lakhisarai		
				3	Piparia		
				4	Surajgarha		
16	**Munger**	1	Asarganj				
		2	Haveli Kharagpur				
		3	Sangrampur				
		4	Tarapura				
		5	Tetiyabambar				
		6	Bariyarpur	1	Bariyarpur		
		7	Dharahara	2	Dharahara		
		8	Jamalpur	3	Jamalpur		
		9	Munger Sadar	4	Munger Sadar		
17	**Nalanda**	1	Asthawan				
		2	Ben				
		3	Biharsharif				
		4	Bind				
		5	Chandi				
		6	Ekangarsarai				
		7	Giriyak				
		8	Harnaut				
		9	Hilsa				
		10	Islampur				
		11	Karai Parsarai				
		12	Katrisarai				
		13	Nagarnausa				
17	**Nalanda**	14	Noorsarai				
		15	Parwalpur				
		16	Rahui				

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
BIHAR							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
		17	Rajgir				
		18	Sarmera				
		19	Silao				
		20	Tharthari				
18	**Nawada**	1	Akbarpur				
		2	Govindpur				
		3	Hisua				
		4	Kashichak				
		5	Kawakole				
		6	Meskaur				
		7	Nardiganj				
		8	Narhat				
		9	Nawada				
		10	Pakaribarawan				
		11	Rajauli				
		12	Roh				
		13	Sirdala				
		14	Warisaliganj				
19	**Patna**			1	Bakhtiyarpur		
				2	Barh		
				3	Danapur		
				4	Maner		
20	**Purnea**			1	Kasba		
				2	Purnea		
21	**Rohtas**	1	Akorhigola				
		2	Bikramganj				
		3	Chenari				
		4	Dawath				
		5	Dehri				
		6	Dinara				
		7	Karakat				
		8	Kargahar				
		9	Nasriganj				
		10	Nokha				
		11	Sanjhauli				
		12	Sheosagar				
22	**Samastipur**			1	Mohanpur		
				2	Mohiuddin Nagar		
				3	Patori		
				4	Vidyapatinagar		
23	**Saran**			1	Chapra Sadar		
				2	Dighwara		
				3	Rivilganj		
				4	Sonepur		
24	**Sheikhpura**	1	Ariyari				
		2	Barbigha				
		3	Chewara				
		4	Ghat Kusumba				
		5	Sheikhopur Sarai				
		6	Sheikhpura				
25	**Vaishali**			1	Bidupur		
				2	Desri		
				3	Hajipur		
				4	Raghopur		
				5	Sahdai		

ABSTRACT

Total No. of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
535	141	64	Nil

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022

CHHATISGARH

S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Rajnandgaon**			1	Ambagarh Chowki	1	
2	**Balada Bazar**	1	Bilaigarh				
		2	Kasdol				
3	**Balrampur**	1	Ramchandrapur				
4	**Dantewada**	1	Dantewada				
5	**Dhamtari**	1	Kurud				
6	**Durg**	1	Dhamdha				
7	**Gourela-Pendra-Marwahi**	1	Marwahi				
8	**Jashpur**	1	Duldula				
		2	Kunkuri				
9	**Kanker**	1	Antagarh				
		2	Kanker				
10	**Kondagaon**	1	Baderajpur				
11	**Korea**	1	Sonhat				
12	**Raigarh**	1	Tamnar				
13	**Raipur**	1	Dharsiwa				
		2	Tilda				
14	**Rajnandgaon**	1	Khairagarh				
15	**Sukma**	1	Sukma				
16	**Surguja**	1	Batauli				

ABSTRACT

Total No. of Assessed Units	Number of Assessment Unit affected by Fluoride	Number of Assessment Unit affected by Arsenic	Number of Assessment Unit affected by Salinity
146	19	1	Nil

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
DELHI							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**North**	1	Alipur			1	Alipur
		2	Narela			2	Narela
						3	Model Town
2	**South East**			1	Defence Colony		
3	**South West**	1	Dwarka			1	Dwarka
		2	Najafgarh			2	Kapashera
						3	Najafgarh
4	**Nazul Land**			1	Nazul Land		
5	**South**	1	Mehrauli				
6	**New Delhi**	1	Chanakya Puri			1	Delhi Cantonment
						2	Vasant Vihar
7	**North West**	1	Kanjhawla			1	Kanjhawla
		2	Rohini			2	Rohini
		3	Saraswati Vihar			3	Saraswati Vihar
8	**West**	1	Patel Nagar			1	Patel Nagar
						2	Punjabi Bagh
						3	Rajouri Garden
9	**North East**			1	Seelampur		

ABSTRACT

Total No. of Assessed Units	Number of Assessment Unit affected by Fluoride	Number of Assessment Unit affected by Arsenic	Number of Assessment Unit affected by Salinity
34	10	3	14

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
GUJARAT							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Ahmedabad**	1	Bavla			1	Dhandhuka(C)
		2	Dholka			2	Dholera(C)
		3	Sanand				
2	**Amreli**	1	Dhari				
		2	Rajula				
3	**Arvalli**	1	Bayad				
		2	Bhiloda				
		3	Dhansura				
		4	Malpur				
		5	Meghraj				
		6	Modasa				
4	**Banaskantha**	1	Bhabhar			1	Bhabhar(C)
		2	Vav			2	Suigam(C)
		3	Amirgadh			3	Vav(C)
		4	Danta				
		5	Dantiwada				
		6	Deesa				
		7	Deodar				
		8	Dhanera				
		9	Kankrej				
		10	Lakhani				
		11	Palanpur				
		12	Tharad				
		13	Vadgam				
5	**Bhavnagar**	1	Mahuva				
		2	Talaja				
		3	Vallabhipur				
6	**Botad**	1	Barwala				
		2	Ranpur				
7	**Devbhumi Dwarka**	1	Kalyanpur				
		2	Okhamandal				
8	**Gandhinagar**	1	Mansa				
		2	Kodinar				
9	**Kachchh**	1	Abdasa			1	Gandhidham(C)
		2	Mundra				
		3	Nakhatrana				
10	**Kheda**	1	Kathlal				
11	**Mahesana**	1	Becharaji			1	Jotana(C)
		2	Kadi				
		3	Kheralu				
		4	Mahesana				
		5	Satlasana				
		6	Unjha				
		7	Vadnagar				
		8	Vijapur				
		9	Visnagar				
12	**Mahisagar**	1	Santrampur				
		2	Virpur				
13	**Morbi**	1	Tankara			1	Maliya(C)
14	**Navsari**	1	Gandevi				
15	**Patan**	1	Harij			1	Harij(C)
		2	Sami			2	Sami(C)
		3	Chanasma			3	Santalpur(C)
		4	Patan			4	Radhanpur(C)
		5	Radhanpur			5	Sankheswar(C)
		6	Sankheswar				
16	**Rajkot**	1	Gondal				
17	**Sabarkantha**	1	Himatnagar				
		2	Idar				
		3	Khedbrahma				
		4	Talod				
		5	Vadali				
18	**Surat**	1	Mandvi				
		2	Palsana				
19	**Surendranagar**	1	Chuda				
		2	Dasada				
		3	Lakhtar				
		4	Limbdi				
		5	Muli				

ABSTRACT

Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
252	69	Nil	13(Completely Saline)

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
HARYANA							
S. No	**Name of District**	**S. No**	**Name of Assessment Units affected by Fluoride**	**S. No**	**Name of Assessment Units affected by Arsenic**	**S. No**	**Name of Assessment Units affected by Salinity**
1	**Bhiwani**	1	Bawani Khera			1	Bawani Khera
		2	Bhiwani			2	Kairu
		3	Siwani			3	Bhiwani
		4	Tosham			4	Siwani
						5	Tosham
2	**Charkhi Dadri**	1	Charkhi Dadri			1	Jhojhu
		2	Tohana			2	Charkhi Dadri
3	**Faridabad**					1	Ballabgarh
						2	Faridabad
4	**Fatehabad**	1	Fatehabad			1	Fatehabad
5	**Gurgaon**					1	Farrukh Nagar
						2	Gurgaon
						3	Pataudi
						4	Sohna
6	**Hisar**	1	Adampur			1	Adampur
		2	Agroha			2	Agroha
		3	Barwala			3	Barwala
		4	Hansi			4	Hansi
		5	Hisar-I			5	Hisar-I
		6	Uklana			6	Uklana
						7	Narnaund
7	**Jhajjar**	1	Bahadurgarh	1	Bahadurgarh	1	Salhawas
		2	Beri			2	Bahadurgarh
		3	Matannail			3	Beri
						4	Matannail
8	**Jind**	1	Julana			1	Jind
		2	Pillukhera			2	Narwana
		3	Safidon			3	Uchana
		4	Narwana				
		5	Uchana				
9	**Kaithal**	1	Rajound			1	Guhla
						2	Kaithal
						3	Kalayat
10	**Karnal**						
11	**Mahendragarh**	1	Mahendergarh			1	Kanina
						2	Mahendragarh
						3	Narnaul
12	**Mewat**					1	Ferozepur Jhirka
						2	Nagina
						3	Nuh
						4	Punahana
13	**Palwal**	1	Hodal			1	Hathin
		2	Badoli			2	Hodal
		3	Hathin			3	Palwal
14	**Panipat**	1	Panipat	1	Israna	1	Israna
		2	Samalkha				
		3	Israna				
15	**Rewari**	1	Rewari	1	Bawal	1	Bawal
				2	Rewari	2	Nahar
						3	Rewari
16	**Rohtak**	1	Kalanaur	1	Sampla	1	Maham
		2	Rohtak	2	Kalanaur	2	Rohtak
				3	Lakahn Majra		
				4	Rohtak		
17	**Sirsa**	1	Dabwali	1		1	Dabwali
		2	Ellenabad	1	Ellenbad	2	Ellenabad
		3	Nathusari Chopta			3	Nathusari Chopta
		4	Sirsa			4	Odhan
		5	Odhan			5	Baragudha
						6	Rania
18	**Sonipat**	1	Kathura	1	Kathura	1	Kathura
		2	Gohana			2	Mundlana
		3	Khakhoda			3	Gohana
						4	Kharkhoda
19	**Yamunanagar**	1	Bilaspur				

ABSTRACT

Total No. of Assessed Units	**Number of Assessment Unit affected by Fluoride**	**Number of Assessment Unit affected by Arsenic**	**Number of Assessment Unit affected by Salinity**
143	**41**	**10**	**57**

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
JHARKHAND							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
ABSTRACT							
1	**Bokaro**	1	Chandan Kiyari				
		2	Chas				
		3	Peterbar				
2	**Dhanbad**	1	Baliapur				
		2	Dhanbad				
3	**Garhwa**	1	Bhandaria				
		2	Bhawanathpur				
		3	Chinia				
		4	Dandai				
		5	Dhurki				
		6	Garhwa				
		7	Kandi				
		8	Majhiaon				
		9	Meral				
		10	Ramkanda				
		11	Ramna				
		12	Ranka				
		13	Untari				
4	**Giridih**	1	Giridih				
		2	Tisri				
5	**Godda**	1	Boarijor				
		2	Godda				
		3	Mahagama				
		4	Pathargama				
		5	Poreyahat				
6	**Gumla**	1	Bishunpur				
		2	Chainpur				
		3	Dumri				
		4	Ghaghra				
		5	Gumla				
		6	Sisai				
7	**Jamtara**	1	Kundahit				
8	**Khunti**	1	Karra				
		2	Murhu				
9	**Koderma**	1	Chandwara				
		2	Jainagar				
		3	Koderma				
		4	Markachho				
		5	Satgawan				
10	**Pakur**	1	Amrapara				
		2	Litipara				
		3	Maheshpur				
		4	Pakuria				
11	**Palamau**	1	Bishrampur				
		2	Chainpur				
		3	Chhatarpur				
		4	Daltonganj				
		5	Haidernagar				
		6	Hariharganj				
		7	Lesliegani				
		8	Manatu				
		9	Pandu				
		10	Panki				
		11	Patan				
		12	Satbarwa				
12	**Ranchi**	1	Namkum				
		2	Ormanjhi				
		3	Silli				
13	**Sahebganj**	1	Barhait	1	Rajmahal		
		2	Borio	2	Sahebganj		
				3	Udhua		
Total Number of Assessed Units		**Number of Assessment Units affected by Fluoride**		**Number of Assessment Units affected by Arsenic**		**Number of Assessment Units affected by Salinity**	
263		**60**		**3**		**Nil**	

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
KARNATAKA							
S. No	**Name of District**	**S. No**	**Name of Assessment Units affected by Fluoride**	**S. No**	**Name of Assessment Units affected by Arsenic**	**S. No**	**Name of Assessment Units affected by Salinity**
ABSTRACT							
1	**Ballari**	1	Ballari				
		2	Ballari				
		3	Siraguppa				
2	**Chitradurga**	1	Molakalmuru			1	Holalkere
3	**Davanagere**	1	Davanagere				
		2	Harihar				
4	**Kalburgi**	1	Chincholi				
5	**Kolara**	1	Mulabagilu				
6	**Koppal**					1	Yelburga
7	**Raichur**	1	Devdurga			1	Manvi
		2	Lingasugur				
		3	Maski			1	Sindhanur
8	**Vijayapura**	1	Muddebihal			1	Muddebihal
		2	Sindagi			2	Sindagi
9	**Yadgir**	1	Shorapur				
Total Number of Assessed Units		**Number of Assessment Units affected by Fluoride**		**Number of Assessment Units affected by Arsenic**		**Number of Assessment Units affected by Salinity**	
234		**14**		**Nil**		**6**	

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022

KERALA

S. No	Name of District	S. No	Name of Assessment Units	S. No	Name of Assessment Units	S. No	Name of Assessment Units
1	**Palakkad**	1	Chittur				
		2	Kollengode				
		3	Kuzhalmannam				
		4	Nenmara				
		5	Palakkad				
2	**Thrissur**					1	Thalikkulam

ABSTRACT

Total No. of Assessed Units	Number of Assessment Unit affected by Fluoride	Number of Assessment Unit affected by Arsenic	Number of Assessment Unit affected by Salinity
152	5	Nil	1

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
MADHYA PRADESH							
S.NO	**Name of District**	**S.NO**	**Name of Assessment Units affected by Fluoride**	**S.NO**	**Name of Assessment Units affected by Arsenic**	**S.NO**	**Name of Assessment Units affected by Salinity**
1	**Bhind**					1	Gohad
						2	Mehgaon
2	**Chhindwara**	1	Amarwara				
		2	Bichhua				
		3	Chaurai				
		4	Chhindwara				
		5	Jamai				
		6	Mohkheda				
		7	Pandhurna				
		8	Parasia				
		9	Sausar				
		10	Tamia				
3	**Dhar**	1	Badnawar				
		2	Bagh				
		3	Dahi				
		4	Dhar				
		5	Dharmpuri				
		6	Gandhwani				
		7	Manawar				
		8	Nalchha				
		9	Nisarpur				
		10	Sardarpur				
		11	Tirla				
		12	Umarvan				
4	**Dindori**	1	Amarpur				
		2	Dindori				
5	**Jhabua**	1	Jhabua				
		2	Petlawad				
		4	Ranapur				
		5	Thandla				
6	**Ratlam**	1	Bajna				
7	**Sehore**	1	Ashta				
		2	Ichhawar				
		3	Nasrullaganj				
		4	Sehore				
8	**Seoni**	1	Barghat				
		2	Chhapara				
		3	Ghansaur				
		4	Keolari				
		5	Kurai				
		6	Seoni				
9	**Shajapur**	1	Kalapipal				
		2	Moman Badodiya				
		3	Shajapur				
		4	Shujalpur				
10	**Ujjain**					1	Badnagar
11	**Vidisha**		Vidisha				

ABSTRACT

Total No. of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
317	**46**	**Nil**	**3**

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
MAHARASHTRA							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	Ahmednagar					1	Nagar
						2	Newasa
						3	Parner
						4	Rahuri
						5	Shrigonda
2	Akola					1	Akola
						2	Akot
						3	Balapur
						4	Mutizapur
						5	Telhara
3	Amravati					1	Achalpur
						2	Amravati
						3	Anjangaon Surji
						4	Bhatkuli
						5	Chandur Bazar
						6	Daryapur (C)
4	Buldhana					1	Jalgaon
						2	Nandura
						3	Sangrampur
						4	Shegaon
5	Pune					1	Baramati
						2	Daund
						3	Indapur
						4	Purandhar
6	Sangli					1	Miraj
						2	Palus
						3	Shirala
						4	Tasgaon
						5	Walwa

ABSTRACT

Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
353	Nil	Nil	29, 1(Completely Saline)

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
ODISHA							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Balasore**					1	Bahanaga
						2	Balasore
						3	Baliapal
						4	Basta
						5	Bhograi
						6	Remuna
2	**Bhadrak**					1	Basudevpur
						2	Chandbali (C)
						3	Dhamnagar
						4	Tihidi
3	**Ganjam**					1	Chhatrapur
						2	Chikiti
						3	Ganjam
						4	Khalikote
						5	Rangeilunda
4	**Jagatsinghpur**					1	Balikuda
						2	Ersama (C)
						3	Kujanga
						4	Naugaon
5	**Jajpur**					1	Bari
						2	Binjharpur
						3	Dasarathpur
6	**Kendrapara**					1	Aul
						2	Derabish
						3	Garadpur
						4	Kendrapara
						5	Mahakalpada (C)
						6	Marshaghai (C)
						7	Pattamundai
						8	Rajkanika (C)
						9	Rajnagar (C)
7	**Puri**					1	Astarang
						2	Brahmagiri
						3	Delang
						4	Gop
						5	Kakatpur
						6	Kanas
						7	Krushnaprasad
						8	Nimapara
						9	Pipili
						10	Puri
						11	Satyabadi

ABSTRACT			
Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
314	Nil	Nil	42, 6 (Completely Saline)

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
PUNJAB							
S. No	**Name of District**	**S. No**	**Name of Assessment Units affected by Fluoride**	**S. No**	**Name of Assessment Units affected by Arsenic**	**S. No**	**Name of Assessment Units affected by Salinity**
1	**Amritsar**			1	Ajnala		
2	**Bathinda**	1	Maur	1	Talwandi Sabo	1	Bathinda
		2	Nathana			2	Sangat
		3	Rampura			3	Talwandi Sabo
		4	Talwandi Sabo				
3	**Faridkot**					1	Faridkot
						2	Kot Kapura
4	**Fazilka**					1	Abohar
						2	Fazilka
						3	Jalalabad
						4	Khuian Sarwar
5	**Firozpur**	1	Firozpur			1	Guruhar Sahai
6	**Gurdaspur**			1	Gurdaspur		
7	**Hoshiarpur**			1	Hoshiarpur-1		
8	**Mansa**	1	Sardulgarh	1	Sardulgarh	1	Budhlada
						2	Jhunir
						3	Mansa
9	**Moga**	1	Moga-2				
10	**Muktsar**	1	Malout			1	Malout
		2	Lambi			2	Lambi
						3	Kot Bhai At Gidderbaha
						4	Muktsar
11	**Patiala**			1	Samana		
12	**Rupnagar**			1	Ropar		
13	**Sangrur**	1	Lehra Gaga				
14	**Taran Taran**	1	Patti				

ABSTRACT

Total No. of Assessed Units	Number of Assessment Unit affected by Fluoride	Number of Assessment Unit affected by Arsenic	Number of Assessment Unit affected by Salinity
153	11	7	17

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
RAJASTHAN							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Alwar**					1	Kathumar
						2	Laxmangarh
2	**Barmer**					1	Balotra
						2	Barmer
						3	Baytoo
						4	Chohtan
						5	Dhorimanna
						6	Gadraroad
						7	Gira
						8	Gudhamalani
						9	Kalyanpur
						10	Patodi
						11	Ramsar
						12	Samdari
						13	Serwa
						14	Sheo
						15	Sindhari
						16	Siwana
3	**Bharatpur**					1	Deeg
						2	Kumher
						3	Nadbai
						4	Nagar
						5	Sewar
						6	Weir
4	**Bikaner**					1	Bikaner
						2	Bikaner_urban
						3	Dungargarh
						4	Khajuwala(C)
						5	Kolayat
						6	Lunkaransar
						7	Panchoo
5	**Churu**					1	Bidasar
						2	Churu
						3	Rajgarh
						4	Ratangarh
						5	Sardarshahar
						6	Sujangarh
						7	Taranagar(C)
6	**Ganganagar**					1	Anupgarh
						2	Ganganagar
						3	Ghadsana
						4	Karanpur
						5	Padampur
						6	Raisinghnagar
						7	Sadulshahar
						8	Sri Vijaynagar
						9	Suratgarh
7	**Hanumangarh**					1	Bhadra
						2	Hanumangarh
						3	Nohar
						4	Pilibanga
						5	Rawatsar(C)
						6	Sangariya
						7	Tibi
8	**Jaipur**					1	Phagi
9	**Jaisalmer**					1	Jaisalmer
						2	Sam
						3	Sankra
10	**Jalor**					1	Ahore
						2	Bhinmal
						3	Chitalwana
						4	Jalore
						5	Sayla
11	**Jhunjhunun**					1	Alsisar
12	**Jodhpur**					1	Balesar
						2	Bap
						3	Bilara
						4	Luni
						5	Mandor
						6	Shergarh

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
RAJASTHAN							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
13	**Nagaur**					1	Degana
						2	Jayal
						3	Ladnu
						4	Makrana
						5	Merta
						6	Nagaur
						7	Nawa
14	**Pali**					1	Jaitaran
						2	Kharchi (Marwar Junc)
						3	Pali
						4	Rani Station
						5	Rohat
						6	Sojat
						7	Sumerpur
15	**Sikar**					1	Fatehpur
						2	Lachhmangarh
						3	Piprali
16	**Tonk**					1	Malpura
						2	Tonk

ABSTRACT

Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
302	Nil	Nil	89, 3 (Completely Saline)

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022

TAMIL NADU

S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Coimbatore**	1	Saravanampatti				
2	**Cuddalore**	1	Thozhudur				
3	**Dharmapuri**	1	Bommidi				
		2	Dharmapuri				
		3	Harur				
		4	Indur				
		5	Karimangalam				
		6	Marandahalli				
		7	Morappur				
		8	Nallampalli				
		9	Palacode				
		10	Pappireddipatty				
		11	Pennagaram				
		12	Pulikarai				
		13	Theerthamalai				
4	**Dindigul**	1	Vatlagundu				
5	**Erode**	1	Ammapettai				
		2	Sathyamangalam				
		3	Vaniputhur				
6	**Kallakkurichi**	1	Thirukoilur				
7	**Karur**	1	Chinnadharapuram				
		2	K.Paramathy				
		3	Pugalur				
8	**Krishnagiri**	1	Bagalur				
		2	Bargur				
		3	Barur				
		4	Hosur				
		5	Kelamangalam				
		6	Krishnagiri				
		7	Mathur				
		8	Pochampalli				
		9	Shoolagiri				
		10	Uthangarai				
		11	Veppanapalli				
9	**Madurai**	1	Melur				
		2	Neerathan				
		3	Othakkadai				
		4	T.Kallupatti				
		5	Thirumangalam				
10	**Namakkal**	1	Nallipalayam				
		2	Namakkal				
		3	Paramathi				
11	**Nagapattinam**					1	Valivalam
						2	Thalainayar
						3	Nagappattinam
						4	Nirmulai
						5	Thillayadi
						6	Thirukannapuram
						7	Thirukkuvalai
						8	Kariyapattinam
						9	Thagatur
						10	Kilvelur
						11	Kangalancheri
						12	Thirumarugal
						13	Keelaiyur
						14	Therkupoigainallur
						15	Thevoor
						16	Vedaranyam
						17	Velanganni
12	**Perambalur**	1	Varagur				
13	**Pudukkottai**	1	Karaiyur			1	Perumaruthur
						2	Kottaipattinam
						3	Sinkavanam
14	**Ranipet**	1	Ranipet				
15	**Ramanathapuram**	1	Keelakkarai			1	Thirupullani
						2	Kadaladi
						3	Sikkal
						4	Mangalakudi
						5	Mudukulathur South
						6	Melachelvanur
						7	Thondi
						8	Sayalkudi
						9	S.Tharaikudi
16	**Salem**	1	Edappadi				
		2	Ernapuram				
		3	Gangavalli				
		4	Kadayampatti				
		5	Karippatti				
		6	Konganapuram				
		7	Mettur				
		8	Salem Town				
		9	Veerapandi				
		10	Vembadithalam				

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
TAMIL NADU							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
17	**Sivaganga**	1	Kallal				
		2	Pallathur				
		3	Sivagangai				
18	**Tenkasi**	1	Alankulam				
19	**Tirupathur**	1	Alangayam				
		2	Andiyappanur				
		3	Tirupathur				
		4	Vaniyambadi				
20	**Theni**	1	Cumbam				
		2	Devathanapatti				
21	**Thiruvallur**					1	Minjur
22	**Thiruvarur**					1	Muthupet
						2	Thiruthuraipoondi
						3	Edaiyur
						4	Alathampadi
23	**Tiruchirappalli**	1	Trichy West Taluk-Tr				
		2	Trichy West Taluk-Tr				
24	**Tiruppur**	1	Avinashipalayam(S)				
		2	Kangeyam				
		3	Mulanur				
		4	Nallur				
		5	Tiruppur (S)				
		6	Vellakoil				
25	**Tiruvannamalai**	1	Melpallipattu				
26	**Viluppuram**	1	Arasur				
		2	Avanipur				

ABSTRACT

Total No. of Assessed Units	Number of Assessment Unit affected by Fluoride	Number of Assessment Unit affected by Arsenic	Number of Assessment Unit affected by Salinity
1166	**77**	**Nil**	**34(Completely Saline)**

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
TELANAGNA							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Bhadradri**	1	Aswapuram				
		2	Burgampadu				
		3	Manuguru				
2	**Jagtial**	1	Kodimial				
		2	Velgatoor				
3	**Jangaon**	1	Bachannapet				
		2	Chilpur				
		3	Devaruppula				
		4	Ganpur Stn				
4	**Jayashankar**	1	Mahadevpur				
		2	Mogullapally				
5	**Jogulamba**	1	Alampur				
6	**Kamareddy**	1	Banswada				
		2	Bichkunda				
		3	Gandhari				
		4	Jukkal				
		5	Kamareddy				
		6	Machareddy				
		7	Madnoor				
		8	Nasrullabad				
		9	Pd Kodapgal				
		10	Ramareddy				
		11	Thadwai				
7	**Karimnagar**	1	Ramadugu				
		2	Shankarapatnam				
		3	Thimmapur				
		4	V.Saidapur				
		5	Veenavanka				
8	**Khammam**	1	Madhira				
		2	Wyra				
9	**Komarambhem**	1	Bejjur				
10	**Mahabubabad**	1	Mahabubabad				
		2	Nellikuduru				
11	**Mahabubnagar**	1	C.C.Kunta				
		2	Dhanwada				
		3	Mahboobnagar(Urban)				
		4	Marikal				
		5	Midjil				
		6	Narayanpet				
		7	Utkoor				
12	**Mancherial**	1	Bellampally				
		2	Chennur				
13	**Medak**	1	Chegunta				
14	**Medchal**	1	Alwal				
		2	Balanagar				
		3	Keesara				
		4	Malkajgiri				
		5	Shamirpet				
15	**Nagarkurnool**	1	Balmoor				
		2	Bijinepally				
		3	Charakonda				
		4	Kalwakurthy				
		5	Nagarkurnool				
		6	Urkonda				
		7	Vangoor				
		8	Veladanda				
16	**Peddapalli**	1	Eligadu				
		2	Julapalle				
		3	Odela				
		4	Peddapalle				
		5	Srirampur				
		6	Sultanabad				
17	**Rangareddy**	1	Abdullapurmet				
		2	Chevella				
		3	Hayathnagar				
		4	Manchal				
		5	Talakondapally				
		6	Yacharam				

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
TELANAGNA							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
18	**Sangareddy**	1	Kandi				
		2	Mogudampally				
		3	Sangareddy				
		4	Zaherabad				
19	**Siddipet**	1	Cherial				
		2	Chinnakodur				
		3	Mulugu				
		4	Raipole				
20	**Warangal_Rural**	1	Atmakur				
		2	Damera				
		3	Narsampet				
21	**Warangal_Urban**	1	Bheemdevarapally				
		2	Elkathurthy				
		3	Hanamkonda				
		4	Inavolu				
22	**Yadadri**	1	Addagudur				
		2	Alair				
		3	Bhunvanagiri				
		4	Bibinagar				
		5	Choutuppal				
		6	Mothkur				
		7	Rajapet				
		8	Ramannapet				
		9	Turkapalle_m				
		10	Yadagirigutta				

ABSTRACT

Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
589	93	Nil	Nil

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
UTTAR PRADESH							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Agra**	1	Jagner			1	Achhnera
		2	Etmadpur			2	Akola
		3	Fatehabad			3	Kheragarh
						4	Etmadpur
						5	Khandauli
2	**Aligarh**	1	Tappal			1	Khair
						2	Gonda
3	**Auraiya**	1	Achhalda				
4	**Azamgarh**	1	Palhana	1	Palhana		
				2	Maharajganj		
5	**Bahraich**			1	Huzurpur		
				2	Mahasi H.Q.		
				3	Shivpur H.Q.		
				4	Fejawapur H.Q.		
6	**Ballia**			1	dubahar		
				2	Reoti		
				3	Bairya		
				4	Sohaon		
				5	Belhari		
7	**Balrampur**			1	Rehra Bazar H.Q.		
				2	Gainsari H.Q.		
				3	Balrampur H.Q.		
8	**Barabanki**			1	Suratganj		
9	**Bareilly**			1	Shergarh		
10	**Basti**			1	Parasurampur H.Q.		
11	**Bijnor**			1	Afzalgarh		
				2	Noorpur		
				3	Mohammadpur Deomal		
12	**Budaun**			1	Salarpur		
13	**Deoria**			1	Bhaluwani		
14	**Fatehpur**	1	Malwan				
		2	Teliyani				
		3	Hathgaon				
		4	Vijayeepur				
15	**Ferrukabad**	1	Rajepur				
16	**Firozabad**	1	Tundla			1	Narkhi
17	**G.B.Nagar**	1	Dankaur				
18	**Ghazipur**	1	Deokali				
		2	Jakhaniya	1	Ghazipur		
19	**Gonda**			1	Haldharmau H.Q.		
				2	Paraspur H.Q.		
				3	Katra Bazar H.Q.		
				4	Padri Kripal H.Q.		
20	**Gorakhpur**			1	Kauriram		
				2	Gagaha		
21	**Hamirpur**	1	Sareela				
		2	Kurara				
		3	Gohand				
		4	Maudaha				
		5	Muskara				
22	**Hardoi**			1	Shahabad		
23	**J.P. Nagar**			1	Joya		
24	**Jalaun**	1	Kadaura				
25	**Jaunpur**	1	Machhali Shahar				
		2	Rampur				
		3	RamNagar				
26	**Kanpur Nagar**	1	Kakwan				
27	**Kushi Nagar**			1	Sewarhi		
				2	Dudhai		
				3	Nebuwa Naurangia		
28	**Lakhimpur Kheri**			1	Nakaha		
				2	Nighasan		
				3	Ishanagasr		
29	**Maharajganj**			1	Ghughuli		
				2	Maharajganj		
30	**Mahoba**	1	Charkhari				
31	**Mahamaya Nagar/Hathras**					1	Mursan
						2	Sadabad
32	**Mainpuri**	1	Kishni				
33	**Mathura**	1	Goverdhan			1	Chaumuhan
		2	Baldeo			2	Goverdhan
		3	Farah			3	Manth
		4	Manth			4	Nandgaon
						5	Naujhil
						6	Raya
34	**Mirzapur**			1	Kon		
35	**Moradabad**			1	Moondha Pandey		
				2	Chhajlet		
				3	Bhagatpur Tanda		
36	**Muzaffarnagar**			1	Purkaji		
37	**Pratapgarh**			1	Sangaipur		
38	**Raibareli**			1	Kheron		
39	**Sant Kabir Nagar**			1	Poli		
				2	Santha		
40	**Shahjahanpur**			1	Dadraul		
				2	Jaitipur		
44	**Siddharth Nagar**			1	Badhni H.Q.		
				2	Jogiya H.Q.		
42	**Unnao**					1	Asoha

ABSTRACT

Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
836	31	52	17

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
WEST BENGAL							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	**Bankura**	1	Bankura-II				
		2	Barjora				
		3	Chhatna				
		4	Gangajalghati				
		5	Hirbandh				
		6	Indpur				
		7	Raipur				
		8	Saltora				
		9	Simlapal				
		10	Taldangra				
2	**Birbhum**	1	Dubrajpur				
		2	Khoyrasol				
		3	Mayureswar-I				
		4	Nalhati-I				
		5	Rajnagar				
		6	Rampurhat-I				
		7	Suri-II				
3	**Dakshin Dinajpur**	1	Bansihari	1	Balurghat		
		2	Gangarampur				
		3	Kumarganj				
		4	Kushmundi				
		5	Tapan				
4	**Haora**			1	Amta-I	1	Bagnan-I
				2	Amta-II	2	Bagnan-II
				3	Bally Jagachha	3	Bally Jagachha
				4	Sankrail	4	Panchla
				5	Uluberia-II	5	Sankrail
						6	Shyampur-I
						7	Shyampur-II
						8	Uluberia-I
						9	Uluberia-II
5	**Hugli**			1	Balagarh		
				2	Chanditala-II		
				3	Dhaniakhali		
				4	Goghat-I		
				5	Haripal		
				6	Khanakul-I		
				7	Khanakul-II		
				8	Pandua		
				9	Polba-Dadpur		
				10	Serampur Uttarpara		
				11	Singur		
6	**Koch Bihar**			1	Coochbehar-I		
7	**Kolkata**					1	Kmc
8	**Malda**	1	Bamangola	1	Chanchal-II		
		2	Ratua-Ii	2	English Bazar		
				3	Kaliachak-I		
				4	Kaliachak-II		
				5	Kaliachak-III		
				6	Manikchak		
				7	Ratua-I		
				8	Ratua-Ii		
9	**Murshidabad**			1	Beldanga-I		
				2	Beldanga-II		
				3	Berhampore		
				4	Bhagawangola-I		
				5	Bhagawangola-II		
				6	Bharatpur-I		
				7	Domkal		
				8	Farakka		
				9	Hariharpara		
				10	Jalangi		
				11	Kandi		
				12	Lalgola		

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
WEST BENGAL							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
				13	Murshidabad Jiaganj		
				14	Nabagram		
				15	Nawda		
				16	Ragunathganj-I		
				17	Ragunathganj-II		
				18	Raninagar-I		
				19	Raninagar-II		
				20	Sagardighi		
				21	Samserganj		
				22	Suti-I		
				23	Suti-II		
10	**Nadia**			1	Chakdah		
				2	Chapra		
				3	Hanskhali		
				4	Haringhata		
				5	Kaliganj		
				6	Karimpur-I		
				7	Karimpur-II		
				8	Krishnaganj		
				9	Krishnanagar-I		
				10	Krishnanagar-II		
				11	Nabadwip		
				12	Nakashipara		
				13	Ranaghat-I		
				14	Ranaghat-II		
				15	Santipur		
				16	Tehatta-I		
				17	Tehatta-II		
11	**North 24 Paraganas**			1	Amdanga	1	Hasnabad
				2	Baduria	2	Hingalganj
				3	Bagda	3	Minakhan
				4	Barasat-I	4	Sandeshkhali-I
				5	Barasat-Ii	5	Sandeshkhali-II
				6	Barrackpur-I		
				7	Barrackpur-II		
				8	Basirhat-I		
				9	Basirhat-Ii		
				10	Bongaon		
				11	Deganga		
				12	Gaighata		
				13	Habra-I		
				14	Habra-Ii		
				15	Haroa		
				16	Hasnabad		
				17	Hingalganj		
				18	Minakhan		
				19	Rajarhat		
				20	Sandeshkhali-I		
				21	Sandeshkhali-II		
				22	Swarupnagar		
12	**Purba Barddhaman**			1	Kalna-I		
				2	Kalna-II		
				3	Katwa-I		
				4	Katwa-II		
				5	Purbasthali-I		
				6	Purbasthali-II		
13	**Purba Medinipur**					1	Contai-I
						2	Contai-III
						3	Contai-III
						4	Haldia
						5	Khejuri-I
						6	Khejuri-II
						7	Mahisadal
						8	Nanda Kumar
						9	Nandigram-I
						10	Nandigram-II
						11	Nandigram-III
						12	Ramnagar-I
						13	Ramnagar-II
						14	Sahid Matangini
						15	Sutahata
						16	Tamluk

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
WEST BENGAL							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
14	**Puruliya**	1	Arsha				
		2	Bagmundi				
		3	Balarampur				
		4	Barabazar				
		5	Hura				
		6	Jaipur				
		7	Jhalda-I				
		8	Kashipur				
		9	Manbazar-I				
		10	Neturia				
		11	Para				
		12	Puncha				
		13	Purulia-I				
		14	Purulia-II				
		15	Raghunathpur-I				
		16	Raghunathpur-II				
		17	Santuri				
15	**South 24 Paraganas**	1	Baruipur	1	Baruipur	1	Baruipur
				2	Bhangar-I	2	Basanti
				3	Bhangar-II	3	Bhangar-I
				4	Bishnupur-I	4	Bhangar-II
				5	Bishnupur-II	5	Bishnupur-I
				6	Budge Budge-II	6	Bishnupur-Ii
				7	Jaynagar-I	7	Budge Budge-I
				8	Magrahat-II	8	Budge Budge-II
				9	Sonarpur	9	Canning-I
						10	Canning-II
						11	Diamond Harbour-I
						12	Diamond Harbour-II
						13	Falta
						14	Gosaba
						15	Jaynagar-I
						16	Jaynagar-II
						17	Kakdwip
						18	Kulpi
						19	Kultali
						20	Magrahat-I
						21	Magrahat-II
						22	Mandirbazar
						23	Mathurapur-I
						24	Mathurapur-I
						25	Namkhana
						26	Patharpratima
						27	Sagar
						28	Sonarpur
						29	Thakurpukur Mahestala
16	**Uttar Dinajpur**	1	Itahar	1	Goalpokhar-II		

ABSTRACT

Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
345	43	104	60

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
ANDAMAN & NICOBAR ISLANDS							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	Nicobar					1	Chowra(C)

ABSTRACT			
Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
36	Nil	Nil	1(Completely Saline)

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
PUDUCHERRY							
S. No	Name of District	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	YANAM					1	YANAM

ABSTRACT			
Total Number of Assessed Units	Number of Assessment Units affected by Fluoride	Number of Assessment Units affected by Arsenic	Number of Assessment Units affected by Salinity
4	Nil	Nil	1(Completely Saline)

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
S. No	Name of State	S. No	Name of Assessment Units affected by Fluoride	S. No	Name of Assessment Units affected by Arsenic	S. No	Name of Assessment Units affected by Salinity
1	Arunachal Pradesh	1	Nil	1	Nil	1	Nil
2	Goa	2	Nil	2	Nil	2	Nil
3	Himachal Pradesh	3	Nil	3	Nil	3	Nil
4	Manipur	4	Nil	4	Nil	4	Nil
5	Meghalaya	5	Nil	5	Nil	5	Nil
6	Mizoram	6	Nil	6	Nil	6	Nil
7	Nagaland	7	Nil	7	Nil	7	Nil
8	Sikkim	8	Nil	8	Nil	8	Nil
9	Tripura	9	Nil	9	Nil	9	Nil
10	Uttarakhand	11	Nil	11	Nil	11	Nil
11	Chandigarh	12	Nil	12	Nil	12	Nil
12	Dadra & Nagar Haveli	13	Nil	13	Nil	13	Nil
13	Daman & Diu	14	Nil	14	Nil	14	Nil
14	Jammu and Kashmir	15	Nil	15	Nil	15	Nil
15	Ladakh	16	Nil	16	Nil	16	Nil
16	Lakshadweep	17	Nil	17	Nil	17	Nil

Annexure - V(A)

State-wise Summary of Assessment units Improved or deteriorated from 2020 to 2022 assessment

State-Wise Summary Of Assessmet Units Improved Or Deteriorated From 2020 To 2022 Assessment					
S. No.	**Name of States / Union Territories**	**Number of Assessment Units Improved**	**Number of Assessment Units Deteriorated**	**Number of Assessment Units With No Change**	**Number of Assessment Units Newly formed or Previous Assessment Units Reorganized**
1	Andhra Pradesh	63	1	603	0
2	Arunachal Pradesh	0	0	11	0
3	Assam	0	1	27	0
4	Bihar	39	46	449	1
5	Chhattisgarh	11	3	132	0
6	Delhi	7	2	25	0
7	Goa	0	0	12	0
8	Gujarat	12	9	227	4
9	Haryana	15	8	118	2
10	Himachal Pradesh	0	0	10	0
11	Jharkhand	4	10	245	4
12	Karnataka	13	3	211	7
13	Kerala	2	0	150	0
14	Madhya Pradesh	4	8	305	0
15	Maharashtra	2	2	349	0
16	Manipur	0	0	9	0
17	Meghalaya	0	0	12	0
18	Mizoram	0	0	26	0
19	Nagaland	0	0	11	0
20	Odisha	0	2	312	0
21	Punjab	8	6	136	3
22	Rajasthan	1	19	275	7
23	Sikkim	0	0	0	6
24	Tamil Nadu	194	41	931	0
25	Telangana	137	7	445	5
26	Tripura	0	0	59	0
27	Uttar Pradesh	31	12	787	6
28	Uttarakhand	0	0	18	0
29	West Bengal	59	43	164	79
30	Andaman and Nicobar	0	0	36	0
31	Chandigarh	0	0	1	0
32	Dadra & Nagar Haveli	0	1	0	0
	Daman & Diu	0	1	1	0
33	Jammu and Kashmir	0	1	19	0
34	Lakshadweep	0	0	9	0
35	Puducherry	0	0	4	0
36	Ladakh	0	0	0	8
	Grand Total	**602**	**226**	**6129**	**132**

Annexure - V(B)

Comparison of Categorization of assessment Units (2020 to 2022)

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
ANDHRA PRADESH									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Ananthapuramu**	Putlur	169.97	Over Exploited	**Ananthapuramu**	Putlur	63.52	Safe	Improved
2	**Ananthapuramu**	Yadiki	239.64	Over Exploited	**Ananthapuramu**	Yadiki	50.25	Safe	Improved
3	**Ananthapuramu**	Yellanur	216.23	Over Exploited	**Ananthapuramu**	Yellanur	75.95	Semi Critical	Improved
4	**Annamayya**	Chitvel	183.44	Over Exploited	**Annamayya**	Chitvel	77.52	Semi Critical	Improved
5	**Annamayya**	Gurramkonda	87.39	Semi Critical	**Annamayya**	Gurramkonda	60.75	Safe	Improved
6	**Annamayya**	Kurabalakota	73.62	Semi Critical	**Annamayya**	Kurabalakota	65.08	Safe	Improved
7	**Annamayya**	Nimmanapalle	78.52	Semi Critical	**Annamayya**	Nimmanapalle	48.91	Safe	Improved
8	**Annamayya**	Obulavaripalle	83.37	Semi Critical	**Annamayya**	Obulavaripalle	45.59	Safe	Improved
9	**Annamayya**	Ramasamudram	91.77	Critical	**Annamayya**	Ramasamudram	75.58	Semi Critical	Improved
10	**Annamayya**	Royachoti	85.38	Semi Critical	**Annamayya**	Royachoti	40.08	Safe	Improved
11	**Annamayya**	Sambepalle	93.81	Critical	**Annamayya**	Sambepalle	55.57	Safe	Improved
12	**Chittoor**	Baireddi Palle	74.26	Semi Critical	**Chittoor**	Baireddi Palle	59.67	Safe	Improved
13	**Chittoor**	Chowdepalle	75.30	Semi Critical	**Chittoor**	Chowdepalle	57.12	Safe	Improved
14	**Chittoor**	Gangavaram	82.60	Semi Critical	**Chittoor**	Gangavaram	54.18	Safe	Improved
15	**Chittoor**	Nagari	88.77	Semi Critical	**Chittoor**	Nagari	65.21	Safe	Improved
16	**Chittoor**	Palasamudram	81.87	Semi Critical	**Chittoor**	Palasamudram	57.57	Safe	Improved
17	**Chittoor**	Pulicherla	73.89	Semi Critical	**Chittoor**	Pulicherla	58.33	Safe	Improved
18	**Chittoor**	Puthalapattu	93.62	Critical	**Chittoor**	Puthalapattu	84.86	Semi Critical	Improved
19	**Chittoor**	Santhi Puram	72.96	Semi Critical	**Chittoor**	Santhi Puram	58.30	Safe	Improved
20	**Chittoor**	Srirangarajapuram	92.45	Critical	**Chittoor**	Srirangarajapuram	70.61	Semi Critical	Improved
21	**East Godavari**	Rajahmundry (Urban)	75.80	Semi Critical	**East Godavari**	Rajahmundry (Urban)	6.72	Safe	Improved
22	**East Godavari**	Rangampeta	80.13	Semi Critical	**East Godavari**	Rangampeta	46.35	Safe	Improved
23	**Eluru**	Musunuru	76.96	Semi Critical	**Eluru**	Musunuru	54.21	Safe	Improved
24	**Kurnool**	Kosigi	73.06	Semi Critical	**Kurnool**	Kosigi	32.62	Safe	Improved
25	**Nandyal**	Bethamcherla	95.14	Critical	**Nandyal**	Bethamcherla	35.28	Safe	Improved
26	**Nandyal**	Chagalamarri	75.25	Semi Critical	**Nandyal**	Chagalamarri	19.01	Safe	Improved
27	**Palnadu**	Bollapalle	100.01	Over Exploited	**Palnadu**	Bollapalle	93.15	Critical	Improved
28	**Palnadu**	Piduguralla	90.89	Critical	**Palnadu**	Piduguralla	60.67	Safe	Improved
29	**Prakasam**	Cumbum	75.37	Semi Critical	**Prakasam**	Cumbum	67.02	Safe	Improved
30	**Prakasam**	Komarolu	75.94	Semi Critical	**Prakasam**	Komarolu	51.49	Safe	Improved
31	**Prakasam**	Markapur	138.52	Over Exploited	**Prakasam**	Markapur	77.49	Semi Critical	Improved
32	**Prakasam**	Pullalacheruvu	161.72	Over Exploited	**Prakasam**	Pullalacheruvu	85.91	Semi Critical	Improved
33	**Prakasam**	Racherla	106.09	Over Exploited	**Prakasam**	Racherla	92.73	Critical	Improved
34	**Prakasam**	Tarlapadu	73.33	Semi Critical	**Prakasam**	Tarlapadu	47.91	Safe	Improved
35	**Sri Sathya Sai**	Agali	215.11	Over Exploited	**Sri Sathya Sai**	Agali	97.71	Critical	Improved
36	**Sri Sathya Sai**	Amadagur	86.54	Semi Critical	**Sri Sathya Sai**	Amadagur	69.69	Safe	Improved
37	**Sri Sathya Sai**	Amarapuram	119.70	Over Exploited	**Sri Sathya Sai**	Amarapuram	63.14	Safe	Improved
38	**Sri Sathya Sai**	Chilamathur	80.38	Semi Critical	**Sri Sathya Sai**	Chilamathur	50.40	Safe	Improved
39	**Sri Sathya Sai**	Gudibanda	183.33	Over Exploited	**Sri Sathya Sai**	Gudibanda	78.12	Semi Critical	Improved
40	**Sri Sathya Sai**	Kothacheruvu	101.80	Over Exploited	**Sri Sathya Sai**	Kothacheruvu	53.64	Safe	Improved
41	**Sri Sathya Sai**	Lepakshi	114.56	Over Exploited	**Sri Sathya Sai**	Lepakshi	72.87	Semi Critical	Improved
42	**Sri Sathya Sai**	Madakasira	87.25	Semi Critical	**Sri Sathya Sai**	Madakasira	51.19	Safe	Improved
43	**Sri Sathya Sai**	Nallacheruvu	111.85	Over Exploited	**Sri Sathya Sai**	Nallacheruvu	68.29	Safe	Improved
44	**Sri Sathya Sai**	Nambulipulikunta	97.55	Critical	**Sri Sathya Sai**	Nambulipulikunta	69.50	Safe	Improved
45	**Sri Sathya Sai**	Roddam	84.80	Semi Critical	**Sri Sathya Sai**	Roddam	62.55	Safe	Improved
46	**Sri Sathya Sai**	Somandepalle	102.76	Over Exploited	**Sri Sathya Sai**	Somandepalle	60.41	Safe	Improved
47	**Sri Sathya Sai**	Talupula	109.96	Over Exploited	**Sri Sathya Sai**	Talupula	58.05	Safe	Improved
48	**Tirupati**	Chandragiri	80.39	Semi Critical	**Tirupati**	Chandragiri	30.23	Safe	Improved
49	**Tirupati**	Gudur	72.59	Semi Critical	**Tirupati**	Gudur	34.76	Safe	Improved
50	**Tirupati**	Naidupeta	92.36	Critical	**Tirupati**	Naidupeta	31.60	Safe	Improved
51	**Tirupati**	Pakala	75.16	Semi Critical	**Tirupati**	Pakala	66.73	Safe	Improved
52	**Tirupati**	Puttur	87.37	Semi Critical	**Tirupati**	Puttur	51.44	Safe	Improved
53	**Tirupati**	Ramachandrapuram-17	73.44	Semi Critical	**Tirupati**	Ramachandrapuram-17	45.20	Safe	Improved
54	**Tirupati**	Tirupati	94.38	Critical	**Tirupati**	Tirupati	65.43	Safe	Improved
55	**Y.S.R Kadapa**	Brahmamgarimattam	77.36	Semi Critical	**Y.S.R Kadapa**	Brahmamgarimattam	30.17	Safe	Improved
56	**Y.S.R Kadapa**	Chapad	96.70	Critical	**Y.S.R Kadapa**	Chapad	33.79	Safe	Improved
57	**Y.S.R Kadapa**	Chennur	80.53	Semi Critical	**Y.S.R Kadapa**	Chennur	43.18	Safe	Improved
58	**Y.S.R Kadapa**	Duvvur	70.11	Semi Critical	**Y.S.R Kadapa**	Duvvur	40.05	Safe	Improved
59	**Y.S.R Kadapa**	Kamalapuram	92.43	Critical	**Y.S.R Kadapa**	Kamalapuram	56.92	Safe	Improved
60	**Y.S.R Kadapa**	Proddutur	84.99	Semi Critical	**Y.S.R Kadapa**	Proddutur	53.17	Safe	Improved
61	**Y.S.R Kadapa**	Pulivendla	112.20	Over Exploited	**Y.S.R Kadapa**	Pulivendla	81.25	Semi Critical	Improved
62	**Y.S.R Kadapa**	Vempalle	92.35	Critical	**Y.S.R Kadapa**	Vempalle	53.87	Safe	Improved
63	**Y.S.R Kadapa**	Vemula	92.65	Critical	**Y.S.R Kadapa**	Vemula	74.61	Semi Critical	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
ANDHRA PRADESH									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**East Godavari**	Nallajerla	48.32	Safe	**East Godavari**	Nallajerla	79.76	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
ASSAM									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Kamrup Metro Urban**	Kamrup Metro Urban	57.26	Safe	**Kamrup Metro Urban**	Kamrup Metro Urban		Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)

BIHAR

S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
					Improved				
1	**Begusarai**	Bhagwanpur	74.98	Semi Critical	**Begusarai**	Bhagawanpur	66.80	Safe	Improved
2	**Bhojpur**	Jagdishpur	80.33	Semi Critical	**Bhojpur**	Jagdishpur	68.79	Safe	Improved
3	**Bhojpur**	Piro	84.10	Semi Critical	**Bhojpur**	Piro	52.28	Safe	Improved
4	**Buxar**	Simri	71.89	Semi Critical	**Buxar**	Simri	67.61	Safe	Improved
5	**Gaya**	Belaganj	119.47	Over Exploited	**Gaya**	Belaganj	79.69	Semi Critical	Improved
6	**Gaya**	Dumaria	78.99	Semi Critical	**Gaya**	Dumariya	35.98	Safe	Improved
7	**Gaya**	Gaya	89.80	Semi Critical	**Gaya**	Gaya Sadar	55.91	Safe	Improved
8	**Gaya**	Imamganj	109.58	Over Exploited	**Gaya**	Imamganj	35.56	Safe	Improved
9	**Gaya**	Khizirsarai	72.62	Semi Critical	**Gaya**	Khizar Sarai	66.74	Safe	Improved
10	**Gaya**	Konch	81.99	Semi Critical	**Gaya**	Konch	44.50	Safe	Improved
11	**Gaya**	Manpur	103.25	Over Exploited	**Gaya**	Manpur	66.86	Safe	Improved
12	**Gaya**	Tikari	86.99	Semi Critical	**Gaya**	Tekari	67.63	Safe	Improved
13	**Jehanabad**	Ghoshi	96.30	Critical	**Jehanabad**	Ghoshi	80.38	Semi Critical	Improved
14	**Jehanabad**	Hulhasganj	93.36	Critical	**Jehanabad**	Hulasgunj	61.22	Safe	Improved
15	**Jehanabad**	Jehanabad	90.23	Critical	**Jehanabad**	Jehanabad	82.74	Semi Critical	Improved
16	**Jehanabad**	Makhdumpur	86.04	Semi Critical	**Jehanabad**	Makhdumpur	65.97	Safe	Improved
17	**Katihar**	Dandkhora	76.75	Semi Critical	**Katihar**	Dandkhora	63.94	Safe	Improved
18	**Lakhisarai**	Halsi	82.41	Semi Critical	**Lakhisarai**	Halsi	51.30	Safe	Improved
19	**Madhepura**	Alamnagar	77.35	Semi Critical	**Madhepura**	Alamnagar	44.62	Safe	Improved
20	**Madhepura**	Biharriganj	75.62	Semi Critical	**Madhepura**	Bihariganj	38.00	Safe	Improved
21	**Madhepura**	Gamharia	79.52	Semi Critical	**Madhepura**	Gamharia	49.27	Safe	Improved
22	**Madhepura**	Gwalpara	86.60	Semi Critical	**Madhepura**	Gwalpara	45.08	Safe	Improved
23	**Madhepura**	Shankarpur	82.64	Semi Critical	**Madhepura**	Shankarpur	35.99	Safe	Improved
24	**Madhepura**	Singheswar	83.52	Semi Critical	**Madhepura**	Sigheshwarsthan	44.36	Safe	Improved
25	**Madhepura**	Kishanganj	89.21	Semi Critical	**Madhepura**	Uda Kishanganj	49.02	Safe	Improved
26	**Muzaffarpur**	Sakra	101.57	Over Exploited	**Muzaffarpur**	Sakra	89.87	Semi Critical	Improved
27	**Nalanda**	Giriak	103.95	Over Exploited	**Nalanda**	Giriyak	93.81	Critical	Improved
28	**Nalanda**	Islampur	85.64	Semi Critical	**Nalanda**	Islampur	68.72	Safe	Improved
29	**Nalanda**	Noorsarai	76.38	Semi Critical	**Nalanda**	Noorsarai	45.27	Safe	Improved
30	**Nawada**	Maskaur	91.37	Critical	**Nawada**	Meskaur	80.16	Semi Critical	Improved
31	**Nawada**	Nawada	72.90	Semi Critical	**Nawada**	Nawada	63.46	Safe	Improved
32	**Nawada**	Warisaliganj	72.33	Semi Critical	**Nawada**	Warisaliganj	53.87	Safe	Improved
33	**Patna**	Belchi	75.94	Semi Critical	**Patna**	Belchhia	43.21	Safe	Improved
34	**Patna**	Danapur/Khagaul	77.75	Semi Critical	**Patna**	Danapur	62.48	Safe	Improved
35	**Patna**	Naubatpur	72.00	Semi Critical	**Patna**	Naubatpur	68.70	Safe	Improved
36	**Purnea**	Dagaura	84.38	Semi Critical	**Purnea**	Dagarua	57.85	Safe	Improved
37	**Saran**	Nagra	71.94	Semi Critical	**Saran**	Nagra	52.31	Safe	Improved
38	**Sitamarhi**	Bajpatti	73.86	Semi Critical	**Sitamarhi**	Bajpatti	52.87	Safe	Improved
39	**Siwan**	Daeundah	75.74	Semi Critical	**Siwan**	Daraundha	57.79	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
BIHAR									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Begusarai**	Bachhwara	46.75	Safe	**Begusarai**	Bachwara	71.93	Semi Critical	Deteriorated
2	**Begusarai**	Birpur	59.97	Safe	**Begusarai**	Birpur	77.08	Semi Critical	Deteriorated
3	**Begusarai**	Khudabandpur	64.25	Safe	**Begusarai**	Khudabandpur	85.94	Semi Critical	Deteriorated
4	**Bhojpur**	Arrah	68.18	Safe	**Bhojpur**	Ara Sadar	75.35	Semi Critical	Deteriorated
5	**Bhojpur**	Koilwar	80.12	Semi Critical	**Bhojpur**	Koilwar	94.18	Critical	Deteriorated
6	**Bhojpur**	Shahpur	69.40	Safe	**Bhojpur**	Shahpur	72.85	Semi Critical	Deteriorated
7	**Jehanabad**	Kako	82.37	Semi Critical	**Jehanabad**	Kako	110.23	Over Exploited	Deteriorated
8	**Kaimur**	Kudra	47.42	Safe	**Kaimur**	Kudra	71.78	Semi Critical	Deteriorated
9	**Muzaffarpur**	Bochaha	65.45	Safe	**Muzaffarpur**	Bochahan	85.21	Semi Critical	Deteriorated
10	**Muzaffarpur**	Gaighat	58.25	Safe	**Muzaffarpur**	Gaighat	84.19	Semi Critical	Deteriorated
11	**Muzaffarpur**	Kanti	50.95	Safe	**Muzaffarpur**	Kanti	80.62	Semi Critical	Deteriorated
12	**Muzaffarpur**	Kurhani	64.75	Safe	**Muzaffarpur**	Kurhani	77.04	Semi Critical	Deteriorated
13	**Muzaffarpur**	Minapur	65.66	Safe	**Muzaffarpur**	Minapur	93.79	Critical	Deteriorated
14	**Muzaffarpur**	Dholi	62.68	Safe	**Muzaffarpur**	Muraul (Dholi)	86.26	Semi Critical	Deteriorated
15	**Nalanda**	Bind	61.33	Safe	**Nalanda**	Bind	74.49	Semi Critical	Deteriorated
16	**Nalanda**	Chandi	67.97	Safe	**Nalanda**	Chandi	74.29	Semi Critical	Deteriorated
17	**Nalanda**	Eknagarsari	73.65	Semi Critical	**Nalanda**	Ekangarsarai	92.17	Critical	Deteriorated
18	**Nalanda**	Harnaut	67.23	Safe	**Nalanda**	Harnaut	72.19	Semi Critical	Deteriorated
19	**Nalanda**	Hilsa	62.05	Safe	**Nalanda**	Hilsa	89.52	Semi Critical	Deteriorated
20	**Nalanda**	Karaiparsurai	85.99	Semi Critical	**Nalanda**	Karai Parsarai	91.84	Critical	Deteriorated
21	**Nalanda**	Nagar Nausa	59.54	Safe	**Nalanda**	Nagarnausa	158.54	Over Exploited	Deteriorated
22	**Nalanda**	Rajgir	69.17	Safe	**Nalanda**	Rajgir	73.50	Semi Critical	Deteriorated
23	**Nawada**	Akbarpur	62.08	Safe	**Nawada**	Akbarpur	82.18	Semi Critical	Deteriorated
24	**Nawada**	Hisua	61.53	Safe	**Nawada**	Hisua	88.36	Semi Critical	Deteriorated
25	**Nawada**	Nardiganj	65.19	Safe	**Nawada**	Nardiganj	87.97	Semi Critical	Deteriorated
26	**Nawada**	Narhat	60.64	Safe	**Nawada**	Narhat	76.42	Semi Critical	Deteriorated
27	**Patna**	Athmalgola	82.23	Semi Critical	**Patna**	Athmalgola	98.05	Critical	Deteriorated
28	**Patna**	Dhanarua	62.63	Safe	**Patna**	Dhanarua	87.33	Semi Critical	Deteriorated
29	**Patna**	Fathua	65.48	Safe	**Patna**	Fatuha	80.96	Semi Critical	Deteriorated
30	**Patna**	Masaurhi	83.73	Semi Critical	**Patna**	Masaurhi	90.64	Critical	Deteriorated
31	**Patna**	Sampatchak	87.41	Semi Critical	**Patna**	Sampatchak	98.12	Critical	Deteriorated
32	**Rohtas**	Dehri	68.78	Safe	**Rohtas**	Dehri	80.70	Semi Critical	Deteriorated
33	**Rohtas**	Kochas	21.53	Safe	**Rohtas**	Kochas	79.11	Semi Critical	Deteriorated
34	**Samastipur**	Bibhutipur	69.73	Safe	**Samastipur**	Bibhutipur	77.10	Semi Critical	Deteriorated
35	**Samastipur**	Dalsinghsarai	68.84	Safe	**Samastipur**	Dalsingsarai	98.17	Critical	Deteriorated
36	**Samastipur**	Kalyanpur	62.05	Safe	**Samastipur**	Kalyanpur	72.30	Semi Critical	Deteriorated
37	**Samastipur**	Sarairanjan	63.33	Safe	**Samastipur**	Sarairanjan	83.43	Semi Critical	Deteriorated
38	**Samastipur**	Tajpur	66.99	Safe	**Samastipur**	Tajpur	108.04	Over Exploited	Deteriorated
39	**Samastipur**	Vidyapatinagar	51.08	Safe	**Samastipur**	Vidyapatinagar	75.80	Semi Critical	Deteriorated
40	**Sheikhpura**	Barbhiga	39.73	Safe	**Sheikhpura**	Barbigha	93.33	Critical	Deteriorated
41	**Vaishali**	Goraul	54.85	Safe	**Vaishali**	Goraul	82.97	Semi Critical	Deteriorated
42	**Vaishali**	Hajipur	78.24	Semi Critical	**Vaishali**	Hajipur	104.49	Over Exploited	Deteriorated
43	**Vaishali**	Jandaha	89.32	Semi Critical	**Vaishali**	Jandaha	98.04	Critical	Deteriorated
44	**Vaishali**	Mehnar	63.49	Safe	**Vaishali**	Mahnar	89.56	Semi Critical	Deteriorated
45	**Vaishali**	Patepur	97.55	Critical	**Vaishali**	Patepur	108.46	Over Exploited	Deteriorated
46	**Vaishali**	Raja Pakar	85.82	Semi Critical	**Vaishali**	Raja Pakar	93.33	Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
CHHATISGARH									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Dhamtari**	Magarlod	70.48	Semi Critical	**Dhamtari**	Magarlod	69.85	Safe	Improved
2	**Janjgir-Champa**	Sakti	70.64	Semi Critical	**Janjgir-Champa**	Sakti	60.22	Safe	Improved
3	**Baloda Bazar**	Simga	73.20	Semi Critical	**Baloda Bazar**	Simga	67.19	Safe	Improved
4	**Mahasamund**	Pithora	77.32	Semi Critical	**Mahasamund**	Pithora	67.90	Safe	Improved
5	**Kabirdham**	Sahaspur Lohara	83.12	Semi Critical	**Kabirdham**	Sahaspur Lohara	58.87	Safe	Improved
6	**Rajnandgaon**	Chhuikhadan	85.71	Semi Critical	**Rajnandgaon**	Chhuikhadan	67.15	Safe	Improved
7	**Dhamtari**	Nagri	88.86	Semi Critical	**Dhamtari**	Nagri	62.87	Safe	Improved
8	**Durg**	Durg	90.48	Critical	**Durg**	Durg	88.15	Semi Critical	Improved
9	**Rajnandgaon**	Khairagarh	93.38	Critical	**Rajnandgaon**	Khairagarh	88.76	Semi Critical	Improved
10	**Kabirdham**	Pandariya	93.59	Critical	**Kabirdham**	Pandariya	77.31	Semi Critical	Improved
11	**Kabirdham**	Kawardha	96.10	Critical	**Kabirdham**	Kawardha	66.58	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
CHHATISGARH									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Bilaspur**	Takhatpur	61.12	Safe	**Bilaspur**	Takhatpur	87.18	Semi Critical	Deteriorated
2	**Rajnandgaon**	Rajnandgaon	65.28	Safe	**Rajnandgaon**	Rajnandgaon	73.81	Semi Critical	Deteriorated
3	**Bemetara**	Nawagarh	84.72	Semi Critical	**Bemetara**	Nawagarh	94.02	Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
DELHI									
S. No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2020**	**Categorization 2020**	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2022**	**Categorization 2022**	**Remark**
Improved									
1	**Central**	Civil Lines	76.01	Semi Critical	**Central**	Civil Lines	65.23	Safe	Improved
2	**East**	Mayur Vihar	107.12	Over Exploited	**East**	Mayur Vihar	97.91	Critical	Improved
3	**North**	Alipur	97.90	Critical	**North**	Alipur	88.32	Semi Critical	Improved
4	**North East**	Seelampur	99.27	Critical	**North East**	Seelampur	81.19	Semi Critical	Improved
5	**South East**	Kalkaji	113.85	Over Exploited	**South East**	Kalkaji	99.94	Critical	Improved
6	**South East**	Sarita Vihar	114.23	Over Exploited	**South East**	Sarita Vihar	98.18	Critical	Improved
7	**South West**	Najafgarh	94.18	Critical	**South West**	Najafgarh	82.73	Semi Critical	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
DELHI									
S. No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2020**	**Categorization 2020**	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2022**	**Categorization 2022**	**Remark**
Deteriorated									
1	**North East**	Karawal Nagar	98.69	Critical	**North East**	Karawal Nagar	102.77	Over Exploited	Deteriorated
2	**West**	Patel Nagar	84.35	Semi Critical	**West**	Patel Nagar	96.97	Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
GUJARAT									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Junagadh**	Visavadar	91.12	Critical	**Junagadh**	Visavadar	36.06	Safe	Improved
2	**Junagadh**	Junagadh City & Juna	103.12	Over Exploited	**Junagadh**	Junagadh City & Juna	62.56	Safe	Improved
3	**Junagadh**	Manavadar	126.04	Over Exploited	**Junagadh**	Manavadar	52.87	Safe	Improved
4	**Junagadh**	Keshod	85.14	Semi Critical	**Junagadh**	Keshod	66.66	Safe	Improved
5	**Junagadh**	Malia	75.07	Semi Critical	**Junagadh**	Malia	48.13	Safe	Improved
6	**Porbandar**	Porbandar	71.73	Semi Critical	**Porbandar**	Porbandar	64.61	Safe	Improved
7	**Gir Somnath**	Una	71.85	Semi Critical	**Gir Somnath**	Una	65.91	Safe	Improved
8	**Ahmedabad**	Bavla	90.61	Critical	**Ahmedabad**	Bavla	75.20	Semi Critical	Improved
9	**Mahesana**	Mahesana	100.79	Over Exploited	**Mahesana**	Mahesana	92.79	Critical	Improved
10	**Vadodara**	Padra	100.90	Over Exploited	**Vadodara**	Padra	94.31	Critical	Improved
11	**Junagadh**	Bhesan	128.07	Over Exploited	**Junagadh**	Bhesan	71.21	Semi Critical	Improved
12	**Surendranagar**	Lakhtar	0.00	Salinity	**Surendranagar**	Lakhtar	7.26	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
GUJARAT									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Mahesana**	Vijapur	94.96	Critical	**Mahesana**	Vijapur	108.32	Over Exploited	Deteriorated
2	**Rajkot**	Jasdan	62.80	Safe	**Rajkot**	Jasdan	96.10	Critical	Deteriorated
3	**Vadodara**	Desar	39.33	Safe	**Vadodara**	Desar	79.16	Semi Critical	Deteriorated
4	**Vadodara**	Sinor	53.18	Safe	**Vadodara**	Sinor	78.93	Semi Critical	Deteriorated
5	**Amreli**	Rajula	88.61	Semi Critical	**Amreli**	Rajula	92.14	Critical	Deteriorated
6	**Vadodara**	Vadodara	76.63	Semi Critical	**Vadodara**	Vadodara	96.73	Critical	Deteriorated
7	**Ahmedabad**	Ahmedabad City & Das	82.58	Semi Critical	**Ahmedabad**	Ahmedabad City & Das	153.05	Over Exploited	Deteriorated
8	**Banaskantha**	Vadgam	75.20	Semi Critical	**Banaskantha**	Vadgam	107.31	Over Exploited	Deteriorated
9	**Mahesana**	Jotana	130.99	Over Exploited	**Mahesana**	Jotana	0.00	Salinity	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
HARYANA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Ambala**	Shahzadpur	98.01	Critical	**Ambala**	Shahzadpur	75.87	Semi Critical	Improved
2	**Bhiwani**	Bawani Khera	74.48	Semi Critical	**Bhiwani**	Bawani Khera	66.50	Safe	Improved
3	**Bhiwani**	Bhiwani	90.00	Semi Critical	**Bhiwani**	Bhiwani	68.51	Safe	Improved
4	**Fatehabaad**	Bhattu Kalan	112.23	Over Exploited	**Fatehabaad**	Bhattu Kalan	99.44	Critical	Improved
5	**Hisar**	Adampur	91.82	Critical	**Hisar**	Adampur	49.49	Safe	Improved
6	**Hisar**	Barwala	119.64	Over Exploited	**Hisar**	Barwala	82.31	Semi Critical	Improved
7	**Hisar**	Hansi	80.69	Semi Critical	**Hisar**	Hansi	68.78	Safe	Improved
8	**Hisar**	Hisar-I	76.21	Semi Critical	**Hisar**	Hisar-I	64.19	Safe	Improved
9	**Hisar**	Hisar-Ii	78.28	Semi Critical	**Hisar**	Hisar-Ii	65.87	Safe	Improved
10	**Jhajjar**	Badli	71.09	Semi Critical	**Jhajjar**	Badli	67.70	Safe	Improved
11	**Mewat**	Indri	70.59	Semi Critical	**Mewat**	Indri	68.71	Safe	Improved
12	**Mewat**	Punahana	93.43	Critical	**Mewat**	Punahana	88.74	Semi Critical	Improved
13	**Palwal**	Palwal	77.47	Semi Critical	**Palwal**	Palwal	68.03	Safe	Improved
14	**Yamunanagar**	Chhachhrauli	103.16	Over Exploited	**Yamunanagar**	Chhachhrauli	80.81	Semi Critical	Improved
15	**Yamunanagar**	Khizrabad	125.99	Over Exploited	**Yamunanagar**	Khizrabad	89.45	Semi Critical	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
HARYANA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Karnal**	Indri	75.44	Semi Critical	**Karnal**	Indri	96.82	Critical	Deteriorated
2	**Mahendragarh**	Ateli Nangal	91.29	Critical	**Mahendragarh**	Ateli Nangal	121.07	Over Exploited	Deteriorated
3	**Mahendragarh**	Nangal Chaudhry	61.61	Safe	**Mahendragarh**	Nangal Chaudhry	153.08	Over Exploited	Deteriorated
4	**Mahendragarh**	Narnaul	45.23	Safe	**Mahendragarh**	Narnaul	112.00	Over Exploited	Deteriorated
5	**Mahendragarh**	Nizampur	28.67	Safe	**Mahendragarh**	Nizampur	97.32	Critical	Deteriorated
6	**Mahendragarh**	Satnali	75.11	Semi Critical	**Mahendragarh**	Satnali	96.61	Critical	Deteriorated
7	**Mewat**	Ferozepur Jhirka	90.71	Critical	**Mewat**	Ferozepur Jhirka	103.63	Over Exploited	Deteriorated
8	**Yamuna Nagar**	Sadaura (Part)	95.39	Critical	**Yamuna Nagar**	Sadaura (Part)	145.01	Over Exploited	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
JHARKHAND									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Bokaro**	Chas	81.67	Semi Critical	**Bokaro**	Chas	50.25	Safe	Improved
2	**Dhanbad**	Topchanchi	115.57	Over Exploited	**Dhanbad**	Topchanchi	91.93	Critical	Improved
3	**Ramgarh**	Mandu	71.69	Semi Critical	**Ramgarh**	Mandu	60.12	Safe	Improved
4	**Ranchi**	Kanke	75.39	Semi Critical	**Ranchi**	Kanke	46.53	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
JHARKHAND									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Deoghar**	Karon	53.29	Safe	**Deoghar**	Karon	71.89	Semi Critical	Deteriorated
2	**Deoghar**	Sarwan	56.72	Safe	**Deoghar**	Sarwan	77.53	Semi Critical	Deteriorated
3	**Dhanbad**	Baliapur	92.84	Critical	**Dhanbad**	Baliapur	114.36	Over Exploited	Deteriorated
4	**Dhanbad**	Gobindpur	69.35	Safe	**Dhanbad**	Gobindpur	80.32	Semi Critical	Deteriorated
5	**Giridih**	Giridih	62.25	Safe	**Giridih**	Giridih	79.25	Semi Critical	Deteriorated
6	**Koderma**	Jainagar	61.81	Safe	**Koderma**	Jainagar	91.08	Critical	Deteriorated
7	**Koderma**	Koderma	68.68	Safe	**Koderma**	Koderma	80.09	Semi Critical	Deteriorated
8	**Ramgarh**	Chitarpur	84.13	Semi Critical	**Ramgarh**	Chitarpur	103.47	Over Exploited	Deteriorated
9	**Ramgarh**	Ramgarh	83.47	Semi Critical	**Ramgarh**	Ramgarh	94.29	Critical	Deteriorated
10	**Ranchi**	Ormanjhi	60.19	Safe	**Ranchi**	Ormanjhi	84.04	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
KARNATAKA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Bagalkot**	Guledagudda	121.79	Over Exploited	**Bagalkot**	Guledagudda	91.33	Critical	Improved
2	**Bagalkot**	Mudhol	98.97	Critical	**Bagalkot**	Mudhol	76.30	Semi Critical	Improved
3	**Belagavi**	Athani	97.54	Critical	**Belagavi**	Athani	72.71	Semi Critical	Improved
4	**Belagavi**	Kagavada	119.45	Over Exploited	**Belagavi**	Kagavada	96.18	Critical	Improved
5	**Belagavi**	Mudalagi	70.67	Semi Critical	**Belagavi**	Mudalagi	57.31	Safe	Improved
6	**Davanagere**	Nyamati	70.37	Semi Critical	**Davanagere**	Nyamati	67.02	Safe	Improved
7	**Gadag**	Gadag	95.15	Critical	**Gadag**	Gadag	81.13	Semi Critical	Improved
8	**Gadag**	Naragund	80.93	Semi Critical	**Gadag**	Naragund	57.52	Safe	Improved
9	**Koppal**	Kukanuru	102.57	Over Exploited	**Koppal**	Kukanuru	98.56	Critical	Improved
10	**Raichur**	Raichur	72.06	Semi Critical	**Raichur**	Raichur	66.65	Safe	Improved
11	**Ramanagara**	Kanakpura	92.37	Critical	**Ramanagara**	Kanakpura	80.33	Semi Critical	Improved
12	**Tumakuru**	Koratagere	114.66	Over Exploited	**Tumakuru**	Koratagere	97.33	Critical	Improved
13	**Vijayapura**	Chadachana	94.09	Critical	**Vijayapura**	Chadachana	83.35	Semi Critical	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
KARNATAKA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Haveri**	Ratteehalli	86.18	Semi Critical	**Haveri**	Ratteehalli	91.13	Critical	Deteriorated
2	**Ramanagara**	Magadi	92.59	Critical	**Ramanagara**	Magadi	103.13	Over Exploited	Deteriorated
3	**Vijayapura**	Nidagundi	88.99	Semi Critical	**Vijayapura**	Nidagundi	91.47	Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
KERALA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Kasargod**	Karadka	73.71	Semi Critical	**Kasargod**	Karadka	68.90	Safe	Improved
2	**Kasargod**	Kanhangad	72.25	Semi Critical	**Kasargod**	Kanhangad	67.43	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
MADHYA PRADESH									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Mandsaur**	Bhanpura	93.23	Critical	**Mandsaur**	Bhanpura	85.09	Semi Critical	Improved
2	**Indore**	Indore Urban	101.23	Over Exploited	**Indore**	Indore Urban	98.02	Critical	Improved
3	**Jabalpur**	Jabalpur Urban	90.66	Critical	**Jabalpur**	Jabalpur Urban	88.60	Semi Critical	Improved
4	**Mandsaur**	Malhargarh	93.57	Critical	**Mandsaur**	Malhargarh	83.09	Semi Critical	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
MADHYA PRADESH									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Satna**	Amarpatan	67.13	Safe	**Satna**	Amarpatan	73.09	Semi Critical	Deteriorated
2	**Bhopal**	Berasia	69.23	Safe	**Bhopal**	Berasia	72.48	Semi Critical	Deteriorated
3	**Ashoknagar**	Chanderi	68.35	Safe	**Ashoknagar**	Chanderi	71.92	Semi Critical	Deteriorated
4	**Anuppur**	Kotma	22.84	Safe	**Anuppur**	Kotma	78.24	Semi Critical	Deteriorated
5	**Rajgarh**	Rajgarh	69.96	Safe	**Rajgarh**	Rajgarh	73.27	Semi Critical	Deteriorated
6	**Rajgarh**	Sarangpur	98.18	Critical	**Rajgarh**	Sarangpur	106.36	Over Exploited	Deteriorated
7	**Sheopur**	Vijaypur	68.96	Safe	**Sheopur**	Vijaypur	72.36	Semi Critical	Deteriorated
8	**Burhanpur**	Burhanpur	68.56	Safe	**Burhanpur**	Burhanpur	71.68	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
MAHARASHTRA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Satara**	Patan	70.59	Semi Critical	**Satara**	Patan	69.70	Safe	Improved
2	**Satara**	Wai	71.46	Semi Critical	**Satara**	Wai	69.53	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
MAHARASHTRA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Nashik**	Sinnar	99.93	Critical	**Nashik**	Sinnar	100.32	Over Exploited	Deteriorated
2	**Amravati**	Tiwsa	69.36	Safe	**Amravati**	Tiwsa	70.32	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
ODISHA									
S. No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2020**	**Categorization 2020**	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2022**	**Categorization 2022**	**Remark**
Deteriorated									
1	**Nayagarh**	Nayagarh	69.04	Safe	**Nayagarh**	Nayagarh	75.86	Semi Critical	Deteriorated
2	**Angul**	Talcher	69.72	Safe	**Angul**	Talcher	71.26	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
PUNJAB									
S. No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2020**	**Categorization 2020**	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2022**	**Categorization 2022**	**Remark**
Improved									
1	**Fazilka**	Arniwala Sheikh Subanpur	124.27	Over Exploited	**Fazilka**	Arniwala Sheikh Subanpur	80.62	Semi Critical	Improved
2	**Mansa**	Budhlada	143.83	Over Exploited	**Mansa**	Budhlada	99.92	Critical	Improved
3	**Fazilka**	Fazilka	95.74	Critical	**Fazilka**	Fazilka	34.36	Safe	Improved
4	**Mansa**	Jhunir	119.73	Over Exploited	**Mansa**	Jhunir	47.61	Safe	Improved
5	**Firozpur**	Makhu	131.68	Over Exploited	**Firozpur**	Makhu	98.90	Critical	Improved
6	**Rupnagar**	Nurpur Bedi	91.73	Critical	**Rupnagar**	Nurpur Bedi	69.14	Safe	Improved
7	**Mansa**	Sardulgarh	170.18	Over Exploited	**Mansa**	Sardulgarh	87.59	Semi Critical	Improved
8	**Bathinda**	Talwandi Saboo	94.40	Critical	**Bathinda**	Talwandi Sabo	75.18	Semi Critical	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
PUNJAB									
S. No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2020**	**Categorization 2020**	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2022**	**Categorization 2022**	**Remark**
Deteriorated									
1	**Hoshiarpur**	Bhunga	58.38	Safe	**Hoshiarpur**	Bhunga	75.91	Semi Critical	Deteriorated
2	**Gurdaspur**	Dorangala	67.03	Safe	**Gurdaspur**	Dorangala	87.09	Semi Critical	Deteriorated
3	**Gurdaspur**	Gurdaspur	99.36	Critical	**Gurdaspur**	Gurdaspur	109.46	Over Exploited	Deteriorated
4	**Hoshiarpur**	Mahilpur	80.65	Semi Critical	**Hoshiarpur**	Mahilpur	90.14	Critical	Deteriorated
5	**Gurdaspur**	Qadian	99.09	Critical	**Gurdaspur**	Qadian	102.52	Over Exploited	Deteriorated
6	**Bathinda**	Sangat	39.75	Safe	**Bathinda**	Sangat	72.35	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
RAJASTHAN									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Jhalawar**	Pirawa	71.67	Semi Critical	**Jhalawar**	Pirawa	63.84	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
RAJASTHAN									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Dhaulpur**	Baseri	98.31	Critical	**Dhaulpur**	Baseri	101.45	Over Exploited	Deteriorated
2	**Bharatpur**	Deeg	98.10	Critical	**Bharatpur**	Deeg	113.60	Over Exploited	Deteriorated
3	**Udaipur**	Kherwara	95.80	Critical	**Udaipur**	Kherwara	100.59	Over Exploited	Deteriorated
4	**Udaipur**	Sayra	97.73	Critical	**Udaipur**	Sayra	100.42	Over Exploited	Deteriorated
5	**Barmer**	Gudhamalani	97.94	Critical	**Barmer**	Gudhamalani	103.44	Over Exploited	Deteriorated
6	**Barmer**	Siwana	98.08	Critical	**Barmer**	Siwana	102.14	Over Exploited	Deteriorated
7	**Jhalawar**	Manohar Thana	96.92	Critical	**Jhalawar**	Manohar Thana	103.42	Over Exploited	Deteriorated
8	**Sikar**	Fatehpur	90.63	Critical	**Sikar**	Fatehpur	113.83	Over Exploited	Deteriorated
9	**Nagaur**	Nagaur	91.44	Critical	**Nagaur**	Nagaur	117.14	Over Exploited	Deteriorated
10	**Barmer**	Kalyanpur	62.43	Safe	**Barmer**	Kalyanpur	72.31	Semi Critical	Deteriorated
11	**Karauli**	Nadoti	78.37	Semi Critical	**Karauli**	Nadoti	90.73	Critical	Deteriorated
12	**Jalor**	Chitalwana	85.01	Semi Critical	**Jalor**	Chitalwana	101.47	Over Exploited	Deteriorated
13	**Baran**	Kishanganj	84.15	Semi Critical	**Baran**	Kishanganj	94.19	Critical	Deteriorated
14	**Baran**	Shahbad	75.68	Semi Critical	**Baran**	Shahbad	93.60	Critical	Deteriorated
15	**Udaipur**	Salumbar	89.68	Semi Critical	**Udaipur**	Salumbar	91.16	Critical	Deteriorated
16	**Udaipur**	Semari	88.75	Semi Critical	**Udaipur**	Semari	90.66	Critical	Deteriorated
17	**Sirohi**	Pindwara	74.32	Semi Critical	**Sirohi**	Pindwara	91.69	Critical	Deteriorated
18	**Jhalawar**	Aklera	89.68	Semi Critical	**Jhalawar**	Aklera	94.68	Critical	Deteriorated
19	**Kota**	Ladpura_Rural	82.65	Semi Critical	**Kota**	Ladpura_Rural	110.73	Over Exploited	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)								
TAMIL NADU								
S. No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2020**	**Categorization 2020**	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2022**	**Categorization 2022**	**Remark**
Improved									
1	**Chengalpattu**	Cheyyur	77.82	Semi Critical	**Chengalpattu**	Cheyyur	63.97	Safe	Improved
2	**Chengalpattu**	Pallur(K)	72.59	Semi Critical	**Chengalpattu**	Pallur(K)	65.15	Safe	Improved
3	**Coimbatore**	Alandurai	123.84	Over Exploited	**Coimbatore**	Alandurai	94.99	Critical	Improved
4	**Coimbatore**	Anamalai	84.24	Semi Critical	**Coimbatore**	Anamalai	19.55	Safe	Improved
5	**Coimbatore**	Karamadai	107.78	Over Exploited	**Coimbatore**	Karamadai	86.01	Semi Critical	Improved
6	**Coimbatore**	Kottur	93.70	Critical	**Coimbatore**	Kottur	70.74	Semi Critical	Improved
7	**Coimbatore**	Kuniamuthur	87.25	Semi Critical	**Coimbatore**	Kuniyamuthur	58.85	Safe	Improved
8	**Coimbatore**	Kurichi	84.96	Semi Critical	**Coimbatore**	Kurichi	58.99	Safe	Improved
9	**Coimbatore**	Madukkarai	111.95	Over Exploited	**Coimbatore**	Madukkarai	90.28	Critical	Improved
10	**Coimbatore**	Marchinaickenpalayam	72.79	Semi Critical	**Coimbatore**	Marchinaickenpalayam	34.96	Safe	Improved
11	**Coimbatore**	Perur	105.51	Over Exploited	**Coimbatore**	Perur	94.03	Critical	Improved
12	**Coimbatore**	Pollachi(N)	120.05	Over Exploited	**Coimbatore**	Pollachi(N)	88.92	Semi Critical	Improved
13	**Coimbatore**	Pollachi(S)	100.82	Over Exploited	**Coimbatore**	Pollachi(S)	86.60	Semi Critical	Improved
14	**Coimbatore**	Sulur	96.43	Critical	**Coimbatore**	Sulur	65.60	Safe	Improved
15	**Coimbatore**	Thirumalaiampalayam	119.55	Over Exploited	**Coimbatore**	Thirumalaiampalayam	92.49	Critical	Improved
16	**Cuddalore**	Rettichavadi	140.26	Over Exploited	**Cuddalore**	Retty Chavadi	98.29	Critical	Improved
17	**Cuddalore**	Umangalam	89.44	Semi Critical	**Cuddalore**	Umangalam	47.55	Safe	Improved
18	**Dharmapuri**	Nallampalli	85.94	Semi Critical	**Dharmapuri**	Nallampalli	68.15	Safe	Improved
19	**Dharmapuri**	Papparapatty	128.02	Over Exploited	**Dharmapuri**	Papparapatty	94.26	Critical	Improved
20	**Dindigul**	Korikadavu	96.52	Critical	**Dindigul**	Korikadavu	84.04	Semi Critical	Improved
21	**Dindigul**	Neikkarapattai	98.46	Critical	**Dindigul**	Neikkarapattai	86.65	Semi Critical	Improved
22	**Dindigul**	Pappampatti	80.53	Semi Critical	**Dindigul**	Pappampatti	53.49	Safe	Improved
23	**Dindigul**	Senthurai	70.08	Semi Critical	**Dindigul**	Senthurai	63.88	Safe	Improved
24	**Erode**	Ammapettai	97.48	Critical	**Erode**	Ammapettai	78.44	Semi Critical	Improved
25	**Erode**	Arachalur	112.27	Over Exploited	**Erode**	Arachalur	85.59	Semi Critical	Improved
26	**Erode**	Arasur	119.77	Over Exploited	**Erode**	Arasur(E)	97.84	Critical	Improved
27	**Erode**	Bhavani	84.82	Semi Critical	**Erode**	Bhavani	51.76	Safe	Improved
28	**Erode**	Erode East	136.91	Over Exploited	**Erode**	Erode East	86.56	Semi Critical	Improved
29	**Erode**	Erode North	132.04	Over Exploited	**Erode**	Erode North	82.00	Semi Critical	Improved
30	**Erode**	Erode West	122.74	Over Exploited	**Erode**	Erode West	87.04	Semi Critical	Improved
31	**Erode**	Kanjikoil	85.31	Semi Critical	**Erode**	Kanjikoil	49.14	Safe	Improved
32	**Erode**	Kasipalayam	119.55	Over Exploited	**Erode**	Kasipalayam	75.15	Semi Critical	Improved
33	**Erode**	Kavandapadi	85.65	Semi Critical	**Erode**	Kavandapadi	39.75	Safe	Improved
34	**Erode**	Kilampadi	112.38	Over Exploited	**Erode**	Kilampadi	76.65	Semi Critical	Improved
35	**Erode**	Kodumudi	169.80	Over Exploited	**Erode**	Kodumudi	74.56	Semi Critical	Improved
36	**Erode**	Kurichi	75.46	Semi Critical	**Erode**	Kurichi(E)	59.84	Safe	Improved
37	**Erode**	Kuthiyalathur	76.13	Semi Critical	**Erode**	Kuthiyalathur	55.04	Safe	Improved
38	**Erode**	Modakurichi	103.55	Over Exploited	**Erode**	Modakurichi	94.45	Critical	Improved
39	**Erode**	Sathyamangalam	102.47	Over Exploited	**Erode**	Sathyamangalam	70.54	Semi Critical	Improved
40	**Erode**	Thalavadi	81.30	Semi Critical	**Erode**	Thalavadi	50.03	Safe	Improved
41	**Erode**	Vaniputhur	81.55	Semi Critical	**Erode**	Vaniputhur	47.65	Safe	Improved
42	**Kallakkurichi**	Alathaur	75.53	Semi Critical	**Kallakkurichi**	Alathaur	57.99	Safe	Improved
43	**Kallakkurichi**	Eraiyur	116.09	Over Exploited	**Kallakkurichi**	Eraiyur	87.77	Semi Critical	Improved
44	**Kallakkurichi**	Kalamarudur	96.51	Critical	**Kallakkurichi**	Kalamarudur	75.23	Semi Critical	Improved
45	**Kallakkurichi**	Kallakurichi	97.63	Critical	**Kallakkurichi**	Kallakurichi	87.25	Semi Critical	Improved
46	**Kallakkurichi**	Manalurpettai	75.08	Semi Critical	**Kallakkurichi**	Manalurpettai	64.32	Safe	Improved
47	**Kallakkurichi**	Nagalur	91.06	Critical	**Kallakkurichi**	Nagalur	89.02	Semi Critical	Improved
48	**Kallakkurichi**	Nainarpalayam	119.57	Over Exploited	**Kallakkurichi**	Nainarpalayam	98.14	Critical	Improved
49	**Kallakkurichi**	Sengurichi	73.10	Semi Critical	**Kallakkurichi**	Sengurichi	47.11	Safe	Improved
50	**Kallakkurichi**	Thiruppalapandal	114.90	Over Exploited	**Kallakkurichi**	Thiruppalapandal	60.97	Safe	Improved
51	**Kallakkurichi**	Thiyagadurgam	111.59	Over Exploited	**Kallakkurichi**	Thiyagadurgam	91.52	Critical	Improved
52	**Kallakkurichi**	Ulundurpettai	98.35	Critical	**Kallakkurichi**	Ulundurpettai	72.12	Semi Critical	Improved
53	**Kancheepuram**	Govindhavadi	95.13	Critical	**Kancheepuram**	Govindhavadi	87.00	Semi Critical	Improved
54	**Kancheepuram**	Kaliyampoondi	76.47	Semi Critical	**Kancheepuram**	Kaliyampoondi	69.73	Safe	Improved
55	**Kancheepuram**	Kunnavakkam	77.69	Semi Critical	**Kancheepuram**	Kunnavakkam	67.98	Safe	Improved
56	**Kancheepuram**	Walajabad	101.42	Over Exploited	**Kancheepuram**	Walajabad	91.15	Critical	Improved
57	**Karur**	Chinthalavadi	72.12	Semi Critical	**Karur**	Chinthalavadi	50.06	Safe	Improved
58	**Karur**	Manmangalam	73.79	Semi Critical	**Karur**	Manmangalam	50.58	Safe	Improved
59	**Krishnagiri**	Berigai	120.68	Over Exploited	**Krishnagiri**	Berigai	86.30	Semi Critical	Improved
60	**Krishnagiri**	Mathigiri	87.84	Semi Critical	**Krishnagiri**	Mathigiri	69.52	Safe	Improved
61	**Krishnagiri**	Palepalli	114.75	Over Exploited	**Krishnagiri**	Palepalli	96.63	Critical	Improved
62	**Krishnagiri**	Pochampalli	88.97	Semi Critical	**Krishnagiri**	Pochampalli	65.44	Safe	Improved
63	**Krishnagiri**	Rayakottai	94.35	Critical	**Krishnagiri**	Rayakottai	79.69	Semi Critical	Improved
64	**Madurai**	A.Vellalapatti	117.75	Over Exploited	**Madurai**	A.Vellalapatti	96.49	Critical	Improved
65	**Madurai**	Kalligudi	86.24	Semi Critical	**Madurai**	Kalligudi	61.73	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
TAMIL NADU									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
66	**Madurai**	Karumathur	90.53	Critical	**Madurai**	Karumathur	86.83	Semi Critical	Improved
67	**Madurai**	Kokkulam	102.40	Over Exploited	**Madurai**	Kokkulam	90.89	Critical	Improved
68	**Madurai**	Kottampatti	105.89	Over Exploited	**Madurai**	Kottampatti	97.40	Critical	Improved
69	**Madurai**	Nagamalali Pudukotta	107.08	Over Exploited	**Madurai**	Nagamalali Pudukotta	99.40	Critical	Improved
70	**Madurai**	Pannikkundu	71.18	Semi Critical	**Madurai**	Pannikkundu	59.23	Safe	Improved
71	**Madurai**	Sedapatti	104.25	Over Exploited	**Madurai**	Sedapatti	90.79	Critical	Improved
72	**Madurai**	Thirumangalam	93.76	Critical	**Madurai**	Thirumangalam	86.98	Semi Critical	Improved
73	**Madurai**	Usilampatti	107.85	Over Exploited	**Madurai**	Usilampatti	84.72	Semi Critical	Improved
74	**Madurai**	Uthappanaickanur	112.34	Over Exploited	**Madurai**	Uthappanaickanur	89.73	Semi Critical	Improved
75	**Madurai**	Vellalur	105.49	Over Exploited	**Madurai**	Vellalur	77.06	Semi Critical	Improved
76	**Namakkal**	Elachipalayam	94.22	Critical	**Namakkal**	Elachipalayam	80.88	Semi Critical	Improved
77	**Namakkal**	Manickampalayam	73.35	Semi Critical	**Namakkal**	Manickampalayam	65.55	Safe	Improved
78	**Namakkal**	Pallapatti	76.49	Semi Critical	**Namakkal**	Pallapatti	59.92	Safe	Improved
79	**Namakkal**	Tiruchengode	124.62	Over Exploited	**Namakkal**	Tiruchengode	97.72	Critical	Improved
80	**Pudukkottai**	Arasarkulam	73.59	Semi Critical	**Pudukkottai**	Arasarkulam	54.60	Safe	Improved
81	**Pudukkottai**	Karaiyur	73.45	Semi Critical	**Pudukkottai**	Karaiyur	68.58	Safe	Improved
82	**Pudukkottai**	Kottur	75.57	Semi Critical	**Pudukkottai**	Kottur(P)	58.58	Safe	Improved
83	**Pudukkottai**	Narthamalai	78.53	Semi Critical	**Pudukkottai**	Narthamalai	56.49	Safe	Improved
84	**Pudukkottai**	Vennavalkudi	77.94	Semi Critical	**Pudukkottai**	Vennavalkudi	58.25	Safe	Improved
85	**Ranipet**	Kalavai	93.73	Critical	**Ranipet**	Kalavai	89.92	Semi Critical	Improved
86	**Ranipet**	Nemili(V)	92.30	Critical	**Ranipet**	Nemili(V)	86.50	Semi Critical	Improved
87	**Ranipet**	Pallur	81.68	Semi Critical	**Ranipet**	Pallur	65.46	Safe	Improved
88	**Ranipet**	Velam	78.05	Semi Critical	**Ranipet**	Velam	64.57	Safe	Improved
89	**Salem**	Mettur	109.15	Over Exploited	**Salem**	Mettur	89.47	Semi Critical	Improved
90	**Salem**	Pottaneri	118.24	Over Exploited	**Salem**	Pottaneri	97.72	Critical	Improved
91	**Tenkasi**	Ayikudi	126.56	Over Exploited	**Tenkasi**	Ayikudi	97.33	Critical	Improved
92	**Tenkasi**	Gudalur	108.82	Over Exploited	**Tenkasi**	Gudalur	94.11	Critical	Improved
93	**Tenkasi**	Kallurani	132.23	Over Exploited	**Tenkasi**	Kallurani	93.92	Critical	Improved
94	**Tenkasi**	Nettur	124.78	Over Exploited	**Tenkasi**	Nettur	87.17	Semi Critical	Improved
95	**Tenkasi**	Sankarankoil	115.14	Over Exploited	**Tenkasi**	Sankarankoil	94.25	Critical	Improved
96	**Tenkasi**	Surandai	158.99	Over Exploited	**Tenkasi**	Surandai	91.03	Critical	Improved
97	**Tenkasi**	Thiruvengadem	74.04	Semi Critical	**Tenkasi**	Thiruvengadem	68.38	Safe	Improved
98	**Tenkasi**	Vasudevanallur	80.25	Semi Critical	**Tenkasi**	Vasudevanallur	69.61	Safe	Improved
99	**Tenkasi**	Veerakeralampudur	96.64	Critical	**Tenkasi**	Veerakeralampudur	72.10	Semi Critical	Improved
100	**The Nilgiris**	Ithalar	71.97	Semi Critical	**The Nilgiris**	Ithalar	38.21	Safe	Improved
101	**The Nilgiris**	Kundah	73.19	Semi Critical	**The Nilgiris**	Kundah	32.57	Safe	Improved
102	**Theni**	Kodangipatti	72.83	Semi Critical	**Theni**	Kodangipatti	67.76	Safe	Improved
103	**Theni**	Kodivilarpatti	74.76	Semi Critical	**Theni**	Kodivilarpatti	65.04	Safe	Improved
104	**Thiruvallur**	Avadi	103.55	Over Exploited	**Thiruvallur**	Avadi	87.56	Semi Critical	Improved
105	**Thiruvallur**	Poonamallee	120.54	Over Exploited	**Thiruvallur**	Poonamallee	99.74	Critical	Improved
106	**Thiruvallur**	Poondi	74.76	Semi Critical	**Thiruvallur**	Poondi	63.98	Safe	Improved
107	**Thiruvallur**	Puzhal	70.03	Semi Critical	**Thiruvallur**	Puzhal	38.58	Safe	Improved
108	**Thiruvallur**	R.K.Pet	127.49	Over Exploited	**Thiruvallur**	R.K.Pet	98.02	Critical	Improved
109	**Thiruvallur**	Thirumazhisai	89.84	Semi Critical	**Thiruvallur**	Thirumazhisai	55.85	Safe	Improved
110	**Thiruvallur**	Thiruninravur	128.39	Over Exploited	**Thiruvallur**	Thiruninravur	96.33	Critical	Improved
111	**Thiruvallur**	Tirur	75.93	Semi Critical	**Thiruvallur**	Tirur	63.29	Safe	Improved
112	**Thiruvallur**	Tiruttani	98.30	Critical	**Thiruvallur**	Tiruttani	80.07	Semi Critical	Improved
113	**Thiruvallur**	Vellanur	119.82	Over Exploited	**Thiruvallur**	Vellanur	95.84	Critical	Improved
114	**Thiruvallur**	Vengathur	99.32	Critical	**Thiruvallur**	Vengathur	78.72	Semi Critical	Improved
115	**Thoothukkudi**	Ilayarasanendal	127.76	Over Exploited	**Thoothukkudi**	Ilayarasanendal	95.62	Critical	Improved
116	**Thoothukkudi**	Parivallikottai	95.55	Critical	**Thoothukkudi**	Parivallikottai	81.32	Semi Critical	Improved
117	**Thoothukkudi**	Udangudi	103.85	Over Exploited	**Thoothukkudi**	Udangudi	97.67	Critical	Improved
118	**Tiruchirappalli**	Ealurpatti	86.21	Semi Critical	**Tiruchirappalli**	Ealurpatti	59.36	Safe	Improved
119	**Tiruchirappalli**	Mannachanallur	77.61	Semi Critical	**Tiruchirappalli**	Mannachanallur	62.46	Safe	Improved
120	**Tiruchirappalli**	Thottiyam	86.77	Semi Critical	**Tiruchirappalli**	Thottiyam	64.68	Safe	Improved
121	**Tirunelveli**	Moolakaraipatti	73.75	Semi Critical	**Tirunelveli**	Moolakaraipatti	67.86	Safe	Improved
122	**Tirunelveli**	Pazhavoor	104.21	Over Exploited	**Tirunelveli**	Pazhavoor	93.88	Critical	Improved
123	**Tirunelveli**	Radhapuram	95.15	Critical	**Tirunelveli**	Radhapuram	86.17	Semi Critical	Improved
124	**Tirunelveli**	Sivanthipatti	79.64	Semi Critical	**Tirunelveli**	Sivanthipatti	62.52	Safe	Improved
125	**Tiruppur**	Alangiyam	92.80	Critical	**Tiruppur**	Alangiyam	68.29	Safe	Improved
126	**Tiruppur**	Avinashi(E)	124.18	Over Exploited	**Tiruppur**	Avinashi(E)	98.61	Critical	Improved
127	**Tiruppur**	Avinashi(W)	119.88	Over Exploited	**Tiruppur**	Avinashi(W)	98.15	Critical	Improved
128	**Tiruppur**	Cheyur	119.94	Over Exploited	**Tiruppur**	Cheyur	99.74	Critical	Improved
129	**Tiruppur**	Dharapuram	72.25	Semi Critical	**Tiruppur**	Dharapuram	46.16	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
TAMIL NADU									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
130	**Tiruppur**	Gudimangalam	116.78	Over Exploited	**Tiruppur**	Gudimangalam	88.48	Semi Critical	Improved
131	**Tiruppur**	Kannivadi	120.15	Over Exploited	**Tiruppur**	Kannivadi	84.20	Semi Critical	Improved
132	**Tiruppur**	Kundadam	116.69	Over Exploited	**Tiruppur**	Kundadam	93.75	Critical	Improved
133	**Tiruppur**	Kurichikottai	77.48	Semi Critical	**Tiruppur**	Kurichikottai	40.53	Safe	Improved
134	**Tiruppur**	Nallur	80.57	Semi Critical	**Tiruppur**	Nallur	64.83	Safe	Improved
135	**Tiruppur**	Nathakadaiyur	94.66	Critical	**Tiruppur**	Nathakadaiyur	78.43	Semi Critical	Improved
136	**Tiruppur**	Perumanallur	113.38	Over Exploited	**Tiruppur**	Perumanallur	92.46	Critical	Improved
137	**Tiruppur**	Pethappampatti	104.87	Over Exploited	**Tiruppur**	Pethappampatti	90.02	Critical	Improved
138	**Tiruppur**	Pongalur	112.39	Over Exploited	**Tiruppur**	Pongalur	96.61	Critical	Improved
139	**Tiruppur**	Ponnapuram	105.36	Over Exploited	**Tiruppur**	Ponnapuram	83.65	Semi Critical	Improved
140	**Tiruppur**	Sankarandampalayam	94.02	Critical	**Tiruppur**	Sankarandampalayam	74.01	Semi Critical	Improved
141	**Tiruppur**	Thungavi	82.69	Semi Critical	**Tiruppur**	Thungavi	54.17	Safe	Improved
142	**Tiruppur**	Tiruppur (N)	97.95	Critical	**Tiruppur**	Tiruppur (N)	78.58	Semi Critical	Improved
143	**Tiruppur**	Udumalpet	81.72	Semi Critical	**Tiruppur**	Udumalpet	56.89	Safe	Improved
144	**Tiruppur**	Uthiyur	131.59	Over Exploited	**Tiruppur**	Uthiyur	97.99	Critical	Improved
145	**Tiruppur**	Uthukuli	116.20	Over Exploited	**Tiruppur**	Uthukuli	95.73	Critical	Improved
146	**Tiruppur**	Vellakoil	109.41	Over Exploited	**Tiruppur**	Vellakoil	84.71	Semi Critical	Improved
147	**Tiruvannamalai**	Agrapalayam	78.45	Semi Critical	**Tiruvannamalai**	Agrapalayam	64.89	Safe	Improved
148	**Tiruvannamalai**	Arni	88.45	Semi Critical	**Tiruvannamalai**	Arni	62.62	Safe	Improved
149	**Tiruvannamalai**	Chengam Jawadhuhills	130.24	Over Exploited	**Tiruvannamalai**	Chengam	95.62	Critical	Improved
150	**Tiruvannamalai**	Cheyyar	88.48	Semi Critical	**Tiruvannamalai**	Cheyyar	55.68	Safe	Improved
151	**Tiruvannamalai**	Dusi	89.05	Semi Critical	**Tiruvannamalai**	Dusi	65.55	Safe	Improved
152	**Tiruvannamalai**	Eraiyur	108.35	Over Exploited	**Tiruvannamalai**	Eraiyur(T)	96.00	Critical	Improved
153	**Tiruvannamalai**	Kadaladi	103.40	Over Exploited	**Tiruvannamalai**	Kadaladi(T)	85.66	Semi Critical	Improved
154	**Tiruvannamalai**	Kolappalur	107.76	Over Exploited	**Tiruvannamalai**	Kolappalur	95.23	Critical	Improved
155	**Tiruvannamalai**	Nateri	77.02	Semi Critical	**Tiruvannamalai**	Nateri	51.39	Safe	Improved
156	**Tiruvannamalai**	Nedungunam	105.18	Over Exploited	**Tiruvannamalai**	Nedungunam	93.26	Critical	Improved
157	**Tiruvannamalai**	Osur	107.74	Over Exploited	**Tiruvannamalai**	Osur	87.22	Semi Critical	Improved
158	**Tiruvannamalai**	Peranamallur	88.73	Semi Critical	**Tiruvannamalai**	Peranamallur	66.90	Safe	Improved
159	**Tiruvannamalai**	Perungattur	71.34	Semi Critical	**Tiruvannamalai**	Perungattur	37.48	Safe	Improved
160	**Tiruvannamalai**	Santhavasal	101.72	Over Exploited	**Tiruvannamalai**	Santhavasal	82.22	Semi Critical	Improved
161	**Tiruvannamalai**	Sathyavijayanagaram	72.09	Semi Critical	**Tiruvannamalai**	Sathyavijayanagaram	46.10	Safe	Improved
162	**Tiruvannamalai**	Somaspadi	133.17	Over Exploited	**Tiruvannamalai**	Somaspadi	76.67	Semi Critical	Improved
163	**Tiruvannamalai**	Thanipadi	108.84	Over Exploited	**Tiruvannamalai**	Thanipadi	95.66	Critical	Improved
164	**Tiruvannamalai**	Thethurai	88.82	Semi Critical	**Tiruvannamalai**	Thethurai	69.67	Safe	Improved
165	**Tiruvannamalai**	Thurinjapuram	119.42	Over Exploited	**Tiruvannamalai**	Thurinjapuram	84.19	Semi Critical	Improved
166	**Tiruvannamalai**	Vadathandalam	95.32	Critical	**Tiruvannamalai**	Vadathandalam	56.02	Safe	Improved
167	**Tiruvannamalai**	Vakkadai	72.88	Semi Critical	**Tiruvannamalai**	Vakkadai	51.44	Safe	Improved
168	**Tiruvannamalai**	Vandavasi	98.21	Critical	**Tiruvannamalai**	Vandavasi	89.99	Semi Critical	Improved
169	**Tiruvannamalai**	Vembakkam	72.11	Semi Critical	**Tiruvannamalai**	Vembakkam	57.50	Safe	Improved
170	**Tiruvannamalai**	Veraiyur	95.21	Critical	**Tiruvannamalai**	Veraiyur	83.08	Semi Critical	Improved
171	**Tiruvannamalai**	Vettavlam	110.52	Over Exploited	**Tiruvannamalai**	Vettavlam	84.60	Semi Critical	Improved
172	**Vellore**	Pennathur	98.81	Critical	**Vellore**	Pennathur	80.49	Semi Critical	Improved
173	**Vellore**	Thiruvalam	71.67	Semi Critical	**Vellore**	Thiruvalam	67.97	Safe	Improved
174	**Vellore**	Ussoor	99.98	Critical	**Vellore**	Ussoor	82.16	Semi Critical	Improved
175	**Viluppuram**	Avalurpettai	102.11	Over Exploited	**Viluppuram**	Avalurpettai	95.88	Critical	Improved
176	**Viluppuram**	Gingee	121.59	Over Exploited	**Viluppuram**	Gingee	89.25	Semi Critical	Improved
177	**Viluppuram**	Kanai	81.65	Semi Critical	**Viluppuram**	Kanai	65.25	Safe	Improved
178	**Viluppuram**	Kandamangalam	91.29	Critical	**Viluppuram**	Kandamangalam	80.16	Semi Critical	Improved
179	**Viluppuram**	Kiliyanur	95.59	Critical	**Viluppuram**	Kiliyanur	87.01	Semi Critical	Improved
180	**Viluppuram**	Olakkur	107.92	Over Exploited	**Viluppuram**	Olakkur	87.14	Semi Critical	Improved
181	**Viluppuram**	Sathampati	108.75	Over Exploited	**Viluppuram**	Sathampati	92.85	Critical	Improved
182	**Viluppuram**	Sithalampattu	121.81	Over Exploited	**Viluppuram**	Sithalampattu	83.40	Semi Critical	Improved
183	**Viluppuram**	Uppuvelur	115.89	Over Exploited	**Viluppuram**	Uppuvelur	99.05	Critical	Improved
184	**Viluppuram**	Vadasiruvalur	105.34	Over Exploited	**Viluppuram**	Vadasiruvalur	91.68	Critical	Improved
185	**Viluppuram**	Vikkiravandi	99.35	Critical	**Viluppuram**	Vikkiravandi	89.80	Semi Critical	Improved
186	**Virudhunagar**	Alangulam	98.83	Critical	**Virudhunagar**	Alangulam	86.88	Semi Critical	Improved
187	**Virudhunagar**	Amathur	94.34	Critical	**Virudhunagar**	Amathur	82.16	Semi Critical	Improved
188	**Virudhunagar**	Elayiram- Pannai	76.64	Semi Critical	**Virudhunagar**	Elayiram- Pannai	65.67	Safe	Improved
189	**Virudhunagar**	Kottaiyur	76.52	Semi Critical	**Virudhunagar**	Kottaiyur	62.28	Safe	Improved
190	**Virudhunagar**	Mallankinar	96.13	Critical	**Virudhunagar**	Mallankinar	88.20	Semi Critical	Improved
191	**Virudhunagar**	Malli	70.01	Semi Critical	**Virudhunagar**	Malli	61.15	Safe	Improved
192	**Virudhunagar**	Mangalam	91.25	Critical	**Virudhunagar**	Mangalam(V)	87.50	Semi Critical	Improved
193	**Virudhunagar**	Pillaiyarkulam	102.13	Over Exploited	**Virudhunagar**	Pillaiyarkulam	93.14	Critical	Improved
194	**Virudhunagar**	Vatchakara-Patti	98.93	Critical	**Virudhunagar**	Vatchakara-Patti	84.95	Semi Critical	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
TAMIL NADU									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Chennai**	Alanthur	46.45	Safe	**Chennai**	Alanthur	79.60	Semi Critical	Deteriorated
2	**Chennai**	Pallikaranai	67.10	Safe	**Chennai**	Pallikaranai	85.00	Semi Critical	Deteriorated
3	**Cuddalore**	Bhuvanagiri	60.22	Safe	**Cuddalore**	Bhuvanagiri	89.68	Semi Critical	Deteriorated
4	**Cuddalore**	Kattumannarkoil	62.18	Safe	**Cuddalore**	Kattumannarkoil	74.73	Semi Critical	Deteriorated
5	**Cuddalore**	Thiruvanthipuram	84.80	Semi Critical	**Cuddalore**	Thiruvanthipuram	94.05	Critical	Deteriorated
6	**Cuddalore**	Thozhudur	91.03	Critical	**Cuddalore**	Thozhudur	109.12	Over Exploited	Deteriorated
7	**Cuddalore**	Tittagudi (E)	89.90	Semi Critical	**Cuddalore**	Tittagudi (E)	96.84	Critical	Deteriorated
8	**Cuddalore**	Veppur	43.04	Safe	**Cuddalore**	Veppur	82.59	Semi Critical	Deteriorated
9	**Cuddalore**	Virudhachalam(N)	87.87	Semi Critical	**Cuddalore**	Virudhachalam (N)	95.92	Critical	Deteriorated
10	**Dindigul**	Athoor	97.30	Critical	**Dindigul**	Athoor	105.94	Over Exploited	Deteriorated
11	**Dindigul**	Dindigul East	80.64	Semi Critical	**Dindigul**	Dindigul East	94.09	Critical	Deteriorated
12	**Erode**	Siruvalur	87.29	Semi Critical	**Erode**	Siruvalur	101.83	Over Exploited	Deteriorated
13	**Kallakkurichi**	Chinnaselam	96.70	Critical	**Kallakkurichi**	Chinnaselam	108.56	Over Exploited	Deteriorated
14	**Kallakkurichi**	Sankarapuram	88.38	Semi Critical	**Kallakkurichi**	Sankarapuram	94.43	Critical	Deteriorated
15	**Kancheepuram**	Mangadu	60.00	Safe	**Kancheepuram**	Mangadu	75.46	Semi Critical	Deteriorated
16	**Krishnagiri**	Barur	57.12	Safe	**Krishnagiri**	Barur	88.97	Semi Critical	Deteriorated
17	**Madurai**	Alanganallur	50.13	Safe	**Madurai**	Alanganallur	78.29	Semi Critical	Deteriorated
18	**Madurai**	Athipatti	55.08	Safe	**Madurai**	Athipatti	86.02	Semi Critical	Deteriorated
19	**Madurai**	Karungalakudi	40.37	Safe	**Madurai**	Karungalakudi	77.36	Semi Critical	Deteriorated
20	**Madurai**	Koolapandi	52.82	Safe	**Madurai**	Koolapandi	88.27	Semi Critical	Deteriorated
21	**Madurai**	Madurai East	77.58	Semi Critical	**Madurai**	Madurai East	93.41	Critical	Deteriorated
22	**Madurai**	Madurai West	97.37	Critical	**Madurai**	Madurai West	118.70	Over Exploited	Deteriorated
23	**Madurai**	Melavalavu	55.67	Safe	**Madurai**	Melavalavu	82.26	Semi Critical	Deteriorated
24	**Madurai**	Neerathan	48.01	Safe	**Madurai**	Neerathan	89.69	Semi Critical	Deteriorated
25	**Madurai**	Othakkadai	36.75	Safe	**Madurai**	Othakkadai	89.83	Semi Critical	Deteriorated
26	**Madurai**	Sathamangalam	25.81	Safe	**Madurai**	Sathamangalam	78.52	Semi Critical	Deteriorated
27	**Madurai**	Solavandhan	53.61	Safe	**Madurai**	Solavandhan	74.09	Semi Critical	Deteriorated
28	**Madurai**	Thanichiam	47.74	Safe	**Madurai**	Thanichiam	77.26	Semi Critical	Deteriorated
29	**Madurai**	Thenkarai	35.75	Safe	**Madurai**	Thenkarai(M)	79.97	Semi Critical	Deteriorated
30	**Madurai**	Valanthur	75.00	Semi Critical	**Madurai**	Valanthur	95.16	Critical	Deteriorated
31	**Namakkal**	Jedarpalayam	85.45	Semi Critical	**Namakkal**	Jedarpalayam	97.01	Critical	Deteriorated
32	**Pudukkottai**	Vallanadu	69.32	Safe	**Pudukkottai**	Vallanadu	84.31	Semi Critical	Deteriorated
33	**Salem**	Thevur	41.88	Safe	**Salem**	Thevur	74.07	Semi Critical	Deteriorated
34	**Theni**	Markayankottai	59.16	Safe	**Theni**	Markayankottai	77.09	Semi Critical	Deteriorated
35	**Tirunelveli**	Tisayanvilai	66.70	Safe	**Tirunelveli**	Tisayanvilai	72.69	Semi Critical	Deteriorated
36	**Tirupathur**	Alangayam	95.51	Critical	**Tirupathur**	Alangayam	115.70	Over Exploited	Deteriorated
37	**Tirupathur**	Andiyappanur	92.35	Critical	**Tirupathur**	Andiyappanur	148.01	Over Exploited	Deteriorated
38	**Tiruvannamalai**	Mangalam	98.94	Critical	**Tiruvannamalai**	Mangalam	109.58	Over Exploited	Deteriorated
39	**Tiruvannamalai**	Nayadumangalam	89.93	Semi Critical	**Tiruvannamalai**	Nayadumangalam	94.70	Critical	Deteriorated
40	**Vellore**	Kaniyambadi	82.40	Semi Critical	**Vellore**	Kaniyambadi	99.12	Critical	Deteriorated
41	**Vellore**	Melpadi	65.45	Safe	**Vellore**	Melpadi	75.64	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
TELANGANA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Rangareddy**	Serilingampally	101.30	Over Exploited	**Rangareddy**	Serilingampally	99.86	Critical	Improved
2	**Nagarkurnool**	Veldanda	100.29	Over Exploited	**Nagarkurnool**	Veldanda	98.38	Critical	Improved
3	**Nizamabad**	Rudrur	100.04	Over Exploited	**Nizamabad**	Rudrur	97.23	Critical	Improved
4	**Siddipet**	Jagadevpur	72.94	Semi Critical	**Siddipet**	Jagadevpur	69.57	Safe	Improved
5	**Nizamabad**	Dichpalle	73.28	Semi Critical	**Nizamabad**	Dichpalle	67.26	Safe	Improved
6	**Mahabubnagar**	Koilkonda	74.90	Semi Critical	**Mahabubnagar**	Koilkonda	67.89	Safe	Improved
7	**Nalgonda**	Chandur	72.73	Semi Critical	**Nalgonda**	Chandur	65.08	Safe	Improved
8	**Siddipet**	Siddipet_Rural	71.02	Semi Critical	**Siddipet**	Siddipet_Rural	62.54	Safe	Improved
9	**Medak**	Yeldurthy	74.88	Semi Critical	**Medak**	Yeldurthy	66.12	Safe	Improved
10	**Narayanpet**	Dhanwada	75.28	Semi Critical	**Narayanpet**	Dhanwada	66.07	Safe	Improved
11	**Bhadradri Kothagudem**	Julurpad	73.34	Semi Critical	**Bhadradri Kothagudem**	Julurpad	63.97	Safe	Improved
12	**Karimnagar**	Gannervaram	71.03	Semi Critical	**Karimnagar**	Gannervaram	61.62	Safe	Improved
13	**Kamareddy**	Machareddy	79.75	Semi Critical	**Kamareddy**	Machareddy	69.49	Safe	Improved
14	**Bhadradri Kothagudem**	Yellandu	72.12	Semi Critical	**Bhadradri Kothagudem**	Yellandu	61.68	Safe	Improved
15	**Khammam**	Penuballi	71.39	Semi Critical	**Khammam**	Penuballi	60.95	Safe	Improved
16	**Mahabubnagar**	Gandeed	74.12	Semi Critical	**Mahabubnagar**	Gandeed	63.56	Safe	Improved
17	**Mahabubnagar**	Mahabubnagar_Rural	75.21	Semi Critical	**Mahabubnagar**	Mahabubnagar_Rural	64.57	Safe	Improved
18	**Mahabubabad**	Peddavangara	71.07	Semi Critical	**Mahabubabad**	Peddavangara	59.81	Safe	Improved
19	**Kamareddy**	Sadasivanagar	79.68	Semi Critical	**Kamareddy**	Sadasivanagar	67.98	Safe	Improved
20	**Mahabubnagar**	Bhoothpur	73.52	Semi Critical	**Mahabubnagar**	Bhoothpur	61.62	Safe	Improved
21	**Medak**	Chegunta	81.18	Semi Critical	**Medak**	Chegunta	68.67	Safe	Improved
22	**Rangareddy**	Amangal	75.94	Semi Critical	**Rangareddy**	Amangal	63.42	Safe	Improved
23	**Narayanpet**	Marikal	78.66	Semi Critical	**Narayanpet**	Marikal	65.94	Safe	Improved
24	**Mahabubabad**	Nellikudur	71.57	Semi Critical	**Mahabubabad**	Nellikudur	57.95	Safe	Improved
25	**Jangaon**	Zaffergadh	79.06	Semi Critical	**Jangaon**	Zaffergadh	65.31	Safe	Improved
26	**Nalgonda**	Thipparthi	73.94	Semi Critical	**Nalgonda**	Thipparthi	59.71	Safe	Improved
27	**Rangareddy**	Kandukur	72.75	Semi Critical	**Rangareddy**	Kandukur	58.44	Safe	Improved
28	**Adilabad**	Neradigonda	73.32	Semi Critical	**Adilabad**	Neradigonda	59.01	Safe	Improved
29	**Kamareddy**	Tadwai	72.28	Semi Critical	**Kamareddy**	Tadwai	57.80	Safe	Improved
30	**Vikarabad**	Doma	70.21	Semi Critical	**Vikarabad**	Doma	55.67	Safe	Improved
31	**Rangareddy**	Chevella	74.34	Semi Critical	**Rangareddy**	Chevella	59.30	Safe	Improved
32	**Sangareddy**	Kondapur	76.26	Semi Critical	**Sangareddy**	Kondapur	61.10	Safe	Improved
33	**Siddipet**	Cheriyal	81.36	Semi Critical	**Siddipet**	Cheriyal	66.13	Safe	Improved
34	**Hanumakonda**	Khazipet	85.40	Semi Critical	**Hanumakonda**	Khazipet	69.80	Safe	Improved
35	**Medchal Malkajgiri**	Alwal	74.36	Semi Critical	**Medchal Malkajgiri**	Alwal	58.60	Safe	Improved
36	**Rangareddy**	Farooqnagar	84.92	Semi Critical	**Rangareddy**	Farooqnagar	69.05	Safe	Improved
37	**Nagarkurnool**	Uppunuthala	77.97	Semi Critical	**Nagarkurnool**	Uppunuthala	61.97	Safe	Improved
38	**Sangareddy**	Naykal	76.11	Semi Critical	**Sangareddy**	Naykal	59.13	Safe	Improved
39	**Sangareddy**	Hathanoora	74.98	Semi Critical	**Sangareddy**	Hathanoora	57.99	Safe	Improved
40	**Mahabubnagar**	Jadcherla	76.68	Semi Critical	**Mahabubnagar**	Jadcherla	59.52	Safe	Improved
41	**Mahabubabad**	Garla	72.61	Semi Critical	**Mahabubabad**	Garla	55.14	Safe	Improved
42	**Sangareddy**	Mogdampalle	77.75	Semi Critical	**Sangareddy**	Mogdampalle	59.61	Safe	Improved
43	**Siddipet**	Doultabad	79.53	Semi Critical	**Siddipet**	Doultabad	61.27	Safe	Improved
44	**Nagarkurnool**	Bijinapalle	73.95	Semi Critical	**Nagarkurnool**	Bijinapalle	55.52	Safe	Improved
45	**Khammam**	Singareni	85.97	Semi Critical	**Khammam**	Singareni	67.26	Safe	Improved
46	**Siddipet**	Bejjanki	85.46	Semi Critical	**Siddipet**	Bejjanki	66.68	Safe	Improved
47	**Khammam**	Kamepalle	75.49	Semi Critical	**Khammam**	Kamepalle	56.70	Safe	Improved
48	**Vikarabad**	Peddemul	72.02	Semi Critical	**Vikarabad**	Peddemul	52.88	Safe	Improved
49	**Sangareddy**	Jharasangam	73.48	Semi Critical	**Sangareddy**	Jharasangam	54.23	Safe	Improved
50	**Rajanna Siricilla**	Thangallapalle	85.57	Semi Critical	**Rajanna Siricilla**	Thangallapalle	65.76	Safe	Improved
51	**Narayanpet**	Narayanpet	71.69	Semi Critical	**Narayanpet**	Narayanpet	51.83	Safe	Improved
52	**Medak**	Shivampet	82.70	Semi Critical	**Medak**	Shivampet	62.73	Safe	Improved
53	**Jayashankar Bhupalapally**	Tekumatla	70.77	Semi Critical	**Jayashankar Bhupalapally**	Tekumatla	50.74	Safe	Improved
54	**Nagarkurnool**	Tadoor	73.45	Semi Critical	**Nagarkurnool**	Tadoor	53.40	Safe	Improved
55	**Nizamabad**	Mupkal	74.42	Semi Critical	**Nizamabad**	Mupkal	54.35	Safe	Improved
56	**Mahabubnagar**	Chinna_Chintha_Kunta	73.55	Semi Critical	**Mahabubnagar**	Chinna_Chintha_Kunta	53.42	Safe	Improved
57	**Mahabubnagar**	Devarkadara	74.79	Semi Critical	**Mahabubnagar**	Devarkadara	54.62	Safe	Improved
58	**Kamareddy**	Lingampet	79.31	Semi Critical	**Kamareddy**	Lingampet	58.60	Safe	Improved
59	**Bhadradri Kothagudem**	Aswaraopeta	76.15	Semi Critical	**Bhadradri Kothagudem**	Aswaraopeta	55.27	Safe	Improved
60	**Nizamabad**	Indalwai	83.64	Semi Critical	**Nizamabad**	Indalwai	62.33	Safe	Improved
61	**Warangal**	Warangal	72.90	Semi Critical	**Warangal**	Warangal	51.51	Safe	Improved
62	**Mahabubnagar**	Mahabubnagar_Urban	73.31	Semi Critical	**Mahabubnagar**	Mahabubnagar_Urban	51.88	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
TELANGANA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
63	**Vikarabad**	Nawabpet	75.45	Semi Critical	**Vikarabad**	Nawabpet	53.93	Safe	Improved
64	**Yadadri Bhuvanagiri**	Atmakur_M	88.94	Semi Critical	**Yadadri Bhuvanagiri**	Atmakur_M	67.40	Safe	Improved
65	**Jangaon**	Chilpur	81.17	Semi Critical	**Jangaon**	Chilpur	59.48	Safe	Improved
66	**Mahabubabad**	Thorrur	73.97	Semi Critical	**Mahabubabad**	Thorrur	52.20	Safe	Improved
67	**Yadadri Bhuvanagiri**	Alair	84.55	Semi Critical	**Yadadri Bhuvanagiri**	Alair	62.56	Safe	Improved
68	**Sangareddy**	Kohir	82.76	Semi Critical	**Sangareddy**	Kohir	60.43	Safe	Improved
69	**Yadadri Bhuvanagiri**	Addagudur	85.15	Semi Critical	**Yadadri Bhuvanagiri**	Addagudur	62.81	Safe	Improved
70	**Suryapet**	Nagaram	88.52	Semi Critical	**Suryapet**	Nagaram	65.98	Safe	Improved
71	**Bhadradri Kothagudem**	Kothagudem	73.34	Semi Critical	**Bhadradri Kothagudem**	Kothagudem	50.73	Safe	Improved
72	**Jangaon**	Raghunathpalle	84.40	Semi Critical	**Jangaon**	Raghunathpalle	61.39	Safe	Improved
73	**Suryapet**	Noothankal	86.73	Semi Critical	**Suryapet**	Noothankal	63.13	Safe	Improved
74	**Nagarkurnool**	Thimmajipeta	73.41	Semi Critical	**Nagarkurnool**	Thimmajipeta	49.49	Safe	Improved
75	**Nalgonda**	Chandampet	84.50	Semi Critical	**Nalgonda**	Chandampet	60.29	Safe	Improved
76	**Mahabubabad**	Narsimhulapet	88.48	Semi Critical	**Mahabubabad**	Narsimhulapet	64.09	Safe	Improved
77	**Rangareddy**	Keshampeta	74.67	Semi Critical	**Rangareddy**	Keshampeta	50.11	Safe	Improved
78	**Rajanna Siricilla**	Boinpalle	82.35	Semi Critical	**Rajanna Siricilla**	Boinpalle	57.54	Safe	Improved
79	**Jagtial**	Metpalle	76.84	Semi Critical	**Jagtial**	Metpalle	51.58	Safe	Improved
80	**Siddipet**	Mulug	81.73	Semi Critical	**Siddipet**	Mulug	56.43	Safe	Improved
81	**Vikarabad**	Bantwaram	70.71	Semi Critical	**Vikarabad**	Bantwaram	45.40	Safe	Improved
82	**Adilabad**	Gudihathnur	75.33	Semi Critical	**Adilabad**	Gudihathnur	49.81	Safe	Improved
83	**Rangareddy**	Shankarpalle	89.64	Semi Critical	**Rangareddy**	Shankarpalle	63.61	Safe	Improved
84	**Mahabubabad**	Chinnagudur	72.19	Semi Critical	**Mahabubabad**	Chinnagudur	46.09	Safe	Improved
85	**Nirmal**	Lokeswaram	71.90	Semi Critical	**Nirmal**	Lokeswaram	45.11	Safe	Improved
86	**Yadadri Bhuvanagiri**	Rajapet	88.46	Semi Critical	**Yadadri Bhuvanagiri**	Rajapet	60.67	Safe	Improved
87	**Yadadri Bhuvanagiri**	Bhongiri	81.59	Semi Critical	**Yadadri Bhuvanagiri**	Bhongiri	53.48	Safe	Improved
88	**Nagarkurnool**	Nagar_Kurnool	73.99	Semi Critical	**Nagarkurnool**	Nagar_Kurnool	45.75	Safe	Improved
89	**Medak**	Ramayampet	81.35	Semi Critical	**Medak**	Ramayampet	53.05	Safe	Improved
90	**Medak**	Shankarampet_R	78.03	Semi Critical	**Medak**	Shankarampet_R	49.68	Safe	Improved
91	**Jangaon**	Ganpur_stn	86.51	Semi Critical	**Jangaon**	Ganpur_stn	58.08	Safe	Improved
92	**Vikarabad**	Bomraspeta	79.34	Semi Critical	**Vikarabad**	Bomraspeta	50.85	Safe	Improved
93	**Siddipet**	Rayapole	74.65	Semi Critical	**Siddipet**	Rayapole	46.14	Safe	Improved
94	**Jayashankar Bhupalapally**	Mogullapalle	80.82	Semi Critical	**Jayashankar Bhupalapally**	Mogullapalle	52.30	Safe	Improved
95	**Yadadri Bhuvanagiri**	Mothkur	84.52	Semi Critical	**Yadadri Bhuvanagiri**	Mothkur	55.95	Safe	Improved
96	**Rangareddy**	Ibrahimpatnam	79.60	Semi Critical	**Rangareddy**	Ibrahimpatnam	50.17	Safe	Improved
97	**Adilabad**	Inderavelly	73.43	Semi Critical	**Adilabad**	Inderavelly	43.44	Safe	Improved
98	**Yadadri Bhuvanagiri**	Turkapalle_M	89.70	Semi Critical	**Yadadri Bhuvanagiri**	Turkapalle_M	59.39	Safe	Improved
99	**Yadadri Bhuvanagiri**	Bommalaramaram	80.14	Semi Critical	**Yadadri Bhuvanagiri**	Bommalaramaram	49.73	Safe	Improved
100	**Nalgonda**	Kangal	87.58	Semi Critical	**Nalgonda**	Kangal	56.94	Safe	Improved
101	**Nalgonda**	Neredugommu	86.50	Semi Critical	**Nalgonda**	Neredugommu	55.73	Safe	Improved
102	**Karimnagar**	V_Saidapur	88.98	Semi Critical	**Karimnagar**	V_Saidapur	57.91	Safe	Improved
103	**Mahabubabad**	Maripeda	89.89	Semi Critical	**Mahabubabad**	Maripeda	58.71	Safe	Improved
104	**Warangal**	Khilla_Warangal	85.40	Semi Critical	**Warangal**	Khilla_Warangal	54.13	Safe	Improved
105	**Rangareddy**	Yacharam	87.76	Semi Critical	**Rangareddy**	Yacharam	56.37	Safe	Improved
106	**Nizamabad**	Mosra	87.73	Semi Critical	**Nizamabad**	Mosra	55.14	Safe	Improved
107	**Nagarkurnool**	Lingal	82.60	Semi Critical	**Nagarkurnool**	Lingal	49.66	Safe	Improved
108	**Medak**	Narsingi	80.18	Semi Critical	**Medak**	Narsingi	47.08	Safe	Improved
109	**Suryapet**	Atmakur_S	87.19	Semi Critical	**Suryapet**	Atmakur_S	53.82	Safe	Improved
110	**Adilabad**	Talamadugu	77.46	Semi Critical	**Adilabad**	Talamadugu	44.02	Safe	Improved
111	**Jangaon**	Narmetta	89.61	Semi Critical	**Jangaon**	Narmetta	56.05	Safe	Improved
112	**Rangareddy**	Manchal	80.41	Semi Critical	**Rangareddy**	Manchal	46.40	Safe	Improved
113	**Medak**	Medak	75.02	Semi Critical	**Medak**	Medak	40.78	Safe	Improved
114	**Khammam**	Sathupalle	82.17	Semi Critical	**Khammam**	Sathupalle	47.67	Safe	Improved
115	**Adilabad**	Utnur	74.06	Semi Critical	**Adilabad**	Utnur	38.64	Safe	Improved
116	**Siddipet**	Thoguta	83.57	Semi Critical	**Siddipet**	Thoguta	47.75	Safe	Improved
117	**Adilabad**	Sirikonda	71.02	Semi Critical	**Adilabad**	Sirikonda	34.15	Safe	Improved
118	**Nalgonda**	Gundlapalle	79.04	Semi Critical	**Nalgonda**	Gundlapalle	41.63	Safe	Improved
119	**Suryapet**	Jajireddigudem	85.59	Semi Critical	**Suryapet**	Jajireddigudem	47.21	Safe	Improved
120	**Rangareddy**	Balapur	83.05	Semi Critical	**Rangareddy**	Balapur	44.61	Safe	Improved
121	**Suryapet**	Mothey	87.79	Semi Critical	**Suryapet**	Mothey	49.28	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
TELANGANA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
122	**Medchal Malkajgiri**	Dundigal_Gandimaisamma	76.28	Semi Critical	**Medchal Malkajgiri**	Dundigal_Gandimaisamma	37.05	Safe	Improved
123	**Rangareddy**	Abdullapurmet	77.54	Semi Critical	**Rangareddy**	Abdullapurmet	37.22	Safe	Improved
124	**Nagarkurnool**	Telkapalle	78.90	Semi Critical	**Nagarkurnool**	Telkapalle	38.11	Safe	Improved
125	**Nizamabad**	Dharpalle	88.54	Semi Critical	**Nizamabad**	Dharpalle	47.73	Safe	Improved
126	**Nagarkurnool**	Balmoor	83.58	Semi Critical	**Nagarkurnool**	Balmoor	39.51	Safe	Improved
127	**Nalgonda**	Kethepalle	79.75	Semi Critical	**Nalgonda**	Kethepalle	34.71	Safe	Improved
128	**Nizamabad**	Balkonda	83.43	Semi Critical	**Nizamabad**	Balkonda	36.68	Safe	Improved
129	**Sangareddy**	Manoor	71.11	Semi Critical	**Sangareddy**	Manoor	23.75	Safe	Improved
130	**Vikarabad**	Doulatabad	70.79	Semi Critical	**Vikarabad**	Doulatabad	22.62	Safe	Improved
131	**Adilabad**	Tamsi	75.63	Semi Critical	**Adilabad**	Tamsi	27.22	Safe	Improved
132	**Vikarabad**	Mominpet	71.88	Semi Critical	**Vikarabad**	Mominpet	18.57	Safe	Improved
133	**Adilabad**	Bheempoor	72.42	Semi Critical	**Adilabad**	Bheempoor	15.63	Safe	Improved
134	**Karimnagar**	Karimnagar	76.23	Semi Critical	**Karimnagar**	Karimnagar	19.07	Safe	Improved
135	**Rangareddy**	Gandipet	88.15	Semi Critical	**Rangareddy**	Gandipet	26.85	Safe	Improved
136	**Vikarabad**	Marpalle	76.02	Semi Critical	**Vikarabad**	Marpalle	13.33	Safe	Improved
137	**Nizamabad**	Mendora	87.12	Semi Critical	**Nizamabad**	Mendora	17.48	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
TELANGANA									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Adilabad**	Adilabad Urban	77.46	Semi Critical	**Adilabad**	Adilabad Urban	205.36	Over Exploited	Deteriorated
2	**Rangareddy**	Hayathnagar	65.72	Safe	**Rangareddy**	Hayathnagar	141.92	Over Exploited	Deteriorated
3	**Nizamabad**	Nizamabad_South	53.34	Safe	**Nizamabad**	Nizamabad_South	120.26	Over Exploited	Deteriorated
4	**Bhadradri Kothagudem**	Chunchupally	73.34	Semi Critical	**Bhadradri Kothagudem**	Chunchupally	91.74	Critical	Deteriorated
5	**Siddipet**	Dubbak	82.08	Semi Critical	**Siddipet**	Dubbak	94.61	Critical	Deteriorated
6	**Bhadradri Kothagudem**	Dammapeta	88.64	Semi Critical	**Bhadradri Kothagudem**	Dammapeta	93.51	Critical	Deteriorated
7	**Nizamabad**	Armur	87.88	Semi Critical	**Nizamabad**	Armur	91.75	Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
UTTAR PRADESH									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Improved									
1	**Agra**	Achhnera	93.00	Critical	**Agra**	Achhnera	89.10	Semi Critical	Improved
2	**Amroha**	Hasanpur	92.35	Critical	**Amroha**	Hasanpur	83.40	Semi Critical	Improved
3	**Ayodhya**	Bikapur	74.57	Semi Critical	**Ayodhya**	Bikapur	67.32	Safe	Improved
4	**Ayodhya**	Milkipur	75.84	Semi Critical	**Ayodhya**	Milkipur	65.83	Safe	Improved
5	**Azamgarh**	Ahiraula	71.48	Semi Critical	**Azamgarh**	Ahiraula	62.53	Safe	Improved
6	**Azamgarh**	Atraulia	71.22	Semi Critical	**Azamgarh**	Atraulia	66.99	Safe	Improved
7	**Azamgarh**	Koilsa	73.56	Semi Critical	**Azamgarh**	Koilsa	64.69	Safe	Improved
8	**Azamgarh**	Palhana	72.84	Semi Critical	**Azamgarh**	Palhana	65.12	Safe	Improved
9	**Azamgarh**	Palhani	77.95	Semi Critical	**Azamgarh**	Palhani	65.73	Safe	Improved
10	**Azamgarh**	Sathiyaon	80.64	Semi Critical	**Azamgarh**	Sathiyaon	69.55	Safe	Improved
11	**Azamgarh**	Tarwa	86.81	Semi Critical	**Azamgarh**	Tarwa	68.71	Safe	Improved
12	**Budaun**	Asafpur	100.41	Over Exploited	**Budaun**	Asafpur	97.14	Critical	Improved
13	**Etah**	Aliganj	90.02	Critical	**Etah**	Aliganj	79.29	Semi Critical	Improved
14	**Etah**	Sakit	70.48	Semi Critical	**Etah**	Sakit	64.67	Safe	Improved
15	**Fatehpur**	Amauli	95.20	Critical	**Fatehpur**	Amauli	77.13	Semi Critical	Improved
16	**Hardoi**	Todarpur	73.00	Semi Critical	**Hardoi**	Todarpur	59.65	Safe	Improved
17	**Jaunpur**	Barsathi	78.68	Semi Critical	**Jaunpur**	Barsathi	63.73	Safe	Improved
18	**Kasganj**	Ganjdundwara	92.04	Critical	**Kasganj**	Ganjdundwara	81.66	Semi Critical	Improved
19	**Kasganj**	Sahawar	77.54	Semi Critical	**Kasganj**	Sahawar	66.61	Safe	Improved
20	**Mainpuri**	Kurawali	70.30	Semi Critical	**Mainpuri**	Kurawali	69.91	Safe	Improved
21	**Mathura**	Farah	72.33	Semi Critical	**Mathura**	Farah	68.06	Safe	Improved
22	**Mathura**	Nohjhil	110.72	Over Exploited	**Mathura**	Nohjhil	94.06	Critical	Improved
23	**Meerut**	Rajpura	95.52	Critical	**Meerut**	Rajpura	87.27	Semi Critical	Improved
24	**Mirzapur**	Sikhar	91.81	Critical	**Mirzapur**	Sikhar	89.18	Semi Critical	Improved
25	**Prayagraj**	Baharia	97.75	Critical	**Prayagraj**	Baharia	70.78	Semi Critical	Improved
26	**Rampur**	Chamrauwa	94.46	Critical	**Rampur**	Chamrauwa	87.47	Semi Critical	Improved
27	**Rampur**	Said Nagar	80.16	Semi Critical	**Rampur**	Said Nagar	64.23	Safe	Improved
28	**Saharanpur**	Sadhauli Kadeem	91.76	Critical	**Saharanpur**	Sadhauli Kadeem	88.42	Semi Critical	Improved
29	**Sambhal**	Gunnaur	90.86	Critical	**Sambhal**	Gunnaur	80.11	Semi Critical	Improved
30	**Shamli**	Kairana	115.77	Over Exploited	**Shamli**	Kairana	99.78	Critical	Improved
31	**Varanasi**	Baragaon	72.68	Semi Critical	**Varanasi**	Baragaon	69.36	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
UTTAR PRADESH									
S. No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2020**	**Categorization 2020**	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) in 2022**	**Categorization 2022**	**Remark**
Deteriorated									
1	**Agra**	Jaitpur Kalan	80.44	Semi Critical	**Agra**	Jaitpur Kalan	95.38	Critical	Deteriorated
2	**Agra**	Pinahat	66.04	Safe	**Agra**	Pinahat	73.87	Semi Critical	Deteriorated
3	**Budaun**	Bisauli	83.28	Semi Critical	**Budaun**	Bisauli	92.14	Critical	Deteriorated
4	**Bulandshahar**	Debai	67.60	Safe	**Bulandshahar**	Debai	83.74	Semi Critical	Deteriorated
5	**Jaunpur**	Ramnagar	64.30	Safe	**Jaunpur**	Ramnagar	73.20	Semi Critical	Deteriorated
6	**Kannauj**	Kannauj	85.53	Semi Critical	**Kannauj**	Kannauj	95.29	Critical	Deteriorated
7	**Muzaffarnagar**	Charthawal	89.54	Semi Critical	**Muzaffarnagar**	Charthawal	98.66	Critical	Deteriorated
8	**Pratapgarh**	Kunda	68.15	Safe	**Pratapgarh**	Kunda	71.54	Semi Critical	Deteriorated
9	**Prayagraj**	Phulpur	66.75	Safe	**Prayagraj**	Phulpur	85.65	Semi Critical	Deteriorated
10	**Rampur**	Milak	64.65	Safe	**Rampur**	Milak	73.51	Semi Critical	Deteriorated
11	**Varanasi**	Chiraigaon	79.92	Semi Critical	**Varanasi**	Chiraigaon	93.03	Critical	Deteriorated
12	**Varanasi**	Pindra	83.27	Semi Critical	**Varanasi**	Pindra	90.64	Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)

WEST BENGAL

S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
					Improved				
1	**Bankura**	Vishnupur	98.08	Semi Critical	**Bankura**	Vishnupur	60.57	Safe	Improved
2	**Birbhum**	Labpur	63.70	Semi Critical	**Birbhum**	Labpur	33.55	Safe	Improved
3	**Birbhum**	Murarai-Ii	47.16	Semi Critical	**Birbhum**	Murarai-Ii	27.04	Safe	Improved
4	**Birbhum**	Nalhati-Ii	59.39	Semi Critical	**Birbhum**	Nalhati-Ii	13.52	Safe	Improved
5	**Birbhum**	Nanoor	46.38	Semi Critical	**Birbhum**	Nanoor	22.36	Safe	Improved
6	**Birbhum**	Rampurhat-Ii	61.80	Semi Critical	**Birbhum**	Rampurhat-Ii	22.94	Safe	Improved
7	**Birbhum**	Sainthia	45.19	Semi Critical	**Birbhum**	Sainthia	34.20	Safe	Improved
8	**Hugli**	Arambag	63.42	Semi Critical	**Hugli**	Arambag	55.50	Safe	Improved
9	**Hugli**	Chanditala-I	52.52	Semi Critical	**Hugli**	Chanditala-I	46.48	Safe	Improved
10	**Hugli**	Chanditala-Ii	32.52	Semi Critical	**Hugli**	Chanditala-Ii	32.73	Safe	Improved
11	**Hugli**	Dhaniakhali	45.86	Semi Critical	**Hugli**	Dhaniakhali	30.32	Safe	Improved
12	**Hugli**	Goghat-I	53.37	Semi Critical	**Hugli**	Goghat-I	31.36	Safe	Improved
13	**Hugli**	Goghat-Ii	80.20	Critical	**Hugli**	Goghat-Ii	74.96	Semi Critical	Improved
14	**Hugli**	:	47.86	Semi Critical	**Hugli**	Jangipara	19.36	Safe	Improved
15	**Hugli**	Khanakul-I	48.84	Semi Critical	**Hugli**	Khanakul-I	57.20	Safe	Improved
16	**Hugli**	Pandua	55.13	Semi Critical	**Hugli**	Pandua	51.90	Safe	Improved
17	**Hugli**	Polba-Dadpur	51.63	Semi Critical	**Hugli**	Polba-Dadpur	34.01	Safe	Improved
18	**Hugli**	Pursura	69.78	Semi Critical	**Hugli**	Pursura	57.75	Safe	Improved
19	**Hugli**	Singur	42.25	Semi Critical	**Hugli**	Singur	64.62	Safe	Improved
20	**Hugli**	Tarakeswar	46.03	Semi Critical	**Hugli**	Tarakeswar	42.04	Safe	Improved
21	**Malda**	Habibpur	19.92	Semi Critical	**Malda**	Habibpur	18.05	Safe	Improved
22	**Murshidabad**	Bhagawangola-Ii	95.59	Semi Critical	**Murshidabad**	Bhagawangola-Ii	69.11	Safe	Improved
23	**Murshidabad**	Bharatpur-I	45.74	Semi Critical	**Murshidabad**	Bharatpur-I	49.08	Safe	Improved
24	**Murshidabad**	Bharatpur-Ii	55.06	Semi Critical	**Murshidabad**	Bharatpur-Ii	17.88	Safe	Improved
25	**Murshidabad**	Burwan	52.55	Semi Critical	**Murshidabad**	Burwan	45.06	Safe	Improved
26	**Murshidabad**	Domkal	145.44	Semi Critical	**Murshidabad**	Domkal	54.04	Safe	Improved
27	**Murshidabad**	Jalangi	96.69	Semi Critical	**Murshidabad**	Jalangi	58.34	Safe	Improved
28	**Murshidabad**	Kandi	46.28	Semi Critical	**Murshidabad**	Kandi	59.65	Safe	Improved
29	**Murshidabad**	Khargram	48.16	Semi Critical	**Murshidabad**	Khargram	55.32	Safe	Improved
30	**Murshidabad**	Lalgola	115.81	Semi Critical	**Murshidabad**	Lalgola	61.47	Safe	Improved
31	**Murshidabad**	Nabagram	52.73	Semi Critical	**Murshidabad**	Nabagram	66.23	Safe	Improved
32	**Murshidabad**	Raninagar-Ii	107.74	Semi Critical	**Murshidabad**	Raninagar-Ii	57.59	Safe	Improved
33	**Murshidabad**	Sagardighi	51.87	Semi Critical	**Murshidabad**	Sagardighi	65.15	Safe	Improved
34	**Murshidabad**	Suti-Ii	92.19	Semi Critical	**Murshidabad**	Suti-Ii	55.46	Safe	Improved
35	**North 24 Parganas**	Barrackpur-Ii	96.54	Semi Critical	**North 24 Parganas**	Barrackpur-Ii	13.49	Safe	Improved
36	**Pasemi Criticalhim Medinipur**	Chandrakona-I	44.38	Semi Critical	**Pasemi Criticalhim Medinipu**	Chandrakona-I	60.19	Safe	Improved
37	**Pasemi Criticalhim Medinipur**	Dantan-Ii	66.49	Semi Critical	**Pasemi Criticalhim Medinipu**	Dantan-Ii	54.50	Safe	Improved
38	**Pasemi Criticalhim Medinipur**	Daspur-Ii	15.73	Semi Critical	**Pasemi Criticalhim Medinipu**	Daspur-Ii	20.05	Safe	Improved
39	**Pasemi Criticalhim Medinipur**	Debra	53.12	Semi Critical	**Pasemi Criticalhim Medinipu**	Debra	69.06	Safe	Improved
40	**Pasemi Criticalhim Medinipur**	Ghatal	25.69	Semi Critical	**Pasemi Criticalhim Medinipu**	Ghatal	49.69	Safe	Improved
41	**Pasemi Criticalhim Medinipur**	Pingla	50.59	Semi Critical	**Pasemi Criticalhim Medinipu**	Pingla	53.04	Safe	Improved
42	**Pasemi Criticalhim Medinipur**	Sabang	47.59	Semi Critical	**Pasemi Criticalhim Medinipu**	Sabang	60.19	Safe	Improved
43	**Purba Barddhaman**	Bhatar	45.01	Semi Critical	**Purba Barddhaman**	Bhatar	53.63	Safe	Improved
44	**Purba Barddhaman**	Katwa-I	54.55	Semi Critical	**Purba Barddhaman**	Katwa-I	48.17	Safe	Improved
45	**Purba Barddhaman**	Katwa-Ii	44.55	Semi Critical	**Purba Barddhaman**	Katwa-Ii	56.25	Safe	Improved
46	**Purba Barddhaman**	Ketugram-I	62.65	Semi Critical	**Purba Barddhaman**	Ketugram-I	40.04	Safe	Improved
47	**Purba Barddhaman**	Ketugram-Ii	46.81	Semi Critical	**Purba Barddhaman**	Ketugram-Ii	22.41	Safe	Improved
48	**Purba Barddhaman**	Memari-Ii	65.33	Semi Critical	**Purba Barddhaman**	Memari-Ii	56.35	Safe	Improved
49	**Purba Barddhaman**	Raina-I	59.46	Semi Critical	**Purba Barddhaman**	Raina-I	54.23	Safe	Improved
50	**Purba Barddhaman**	Raina-Ii	57.20	Semi Critical	**Purba Barddhaman**	Raina-Ii	63.24	Safe	Improved
51	**Purba Medinipur**	Bhagawanpur-I	27.07	Semi Critical	**Purba Medinipur**	Bhagawanpur-I	9.98	Safe	Improved
52	**Purba Medinipur**	Bhagawanpur-Ii	27.42	Semi Critical	**Purba Medinipur**	Bhagawanpur-Ii	50.10	Safe	Improved
53	**Purba Medinipur**	Egra-I	43.72	Semi Critical	**Purba Medinipur**	Egra-I	54.16	Safe	Improved
54	**Purba Medinipur**	Egra-Ii	30.70	Semi Critical	**Purba Medinipur**	Egra-Ii	33.19	Safe	Improved
55	**Purba Medinipur**	Moyna	18.25	Semi Critical	**Purba Medinipur**	Moyna	13.41	Safe	Improved
56	**Purba Medinipur**	Panskura-I	31.47	Semi Critical	**Purba Medinipur**	Panskura-I	16.19	Safe	Improved
57	**Purba Medinipur**	Panskura-Ii	16.59	Semi Critical	**Purba Medinipur**	Panskura-Ii	17.90	Safe	Improved
58	**Purba Medinipur**	Potashpur-I	43.03	Semi Critical	**Purba Medinipur**	Potashpur-I	58.61	Safe	Improved
59	**Purba Medinipur**	Potashpur-Ii	60.66	Semi Critical	**Purba Medinipur**	Potashpur-Ii	46.09	Safe	Improved

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
WEST BENGAL									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Birbhum**	Mayureswar-Ii	55.73	Safe	**Birbhum**	Mayureswar-Ii	70.82	Semi Critical	Deteriorated
2	**Dakshin Dinajpur**	Balurghat	56.68	Safe	**Dakshin Dinajpur**	Balurghat	72.32	Semi Critical	Deteriorated
3	**Dakshin Dinajpur**	Hilli	72.32	Safe	**Dakshin Dinajpur**	Hilli	96.58	Critical	Deteriorated
4	**Dakshin Dinajpur**	Kushmundi	65.09	Safe	**Dakshin Dinajpur**	Kushmundi	72.71	Semi Critical	Deteriorated
5	**Haora**	Udaynarayanpur	52.55	Safe	**Haora**	Udaynarayanpur	74.44	Semi Critical	Deteriorated
6	**Hugli**	Balagarh	54.46	Safe	**Hugli**	Balagarh	86.68	Semi Critical	Deteriorated
7	**Hugli**	Serampur Uttarpara	56.25	Safe	**Hugli**	Serampur Uttarpara	70.60	Semi Critical	Deteriorated
8	**Malda**	Kaliachak-I	81.08	Safe	**Malda**	Kaliachak-I	75.90	Semi Critical	Deteriorated
9	**Malda**	Ratua-Ii	54.99	Safe	**Malda**	Ratua-Ii	72.31	Semi Critical	Deteriorated
10	**Murshidabad**	Beldanga-I	64.79	Safe	**Murshidabad**	Beldanga-I	73.95	Semi Critical	Deteriorated
11	**Murshidabad**	Berhampore	79.38	Safe	**Murshidabad**	Berhampore	73.68	Semi Critical	Deteriorated
12	**Murshidabad**	Hariharpara	84.80	Safe	**Murshidabad**	Hariharpara	71.64	Semi Critical	Deteriorated
13	**Murshidabad**	Raninagar-I	133.67	Semi Critical	**Murshidabad**	Raninagar-I	95.90	Critical	Deteriorated
14	**Nadia**	Chapra	119.30	Semi Critical	**Nadia**	Chapra	97.41	Critical	Deteriorated
15	**Nadia**	Haringhata	86.51	Safe	**Nadia**	Haringhata	85.97	Semi Critical	Deteriorated
16	**Nadia**	Karimpur-I	127.32	Semi Critical	**Nadia**	Karimpur-I	95.47	Critical	Deteriorated
17	**Nadia**	Karimpur-Ii	134.90	Semi Critical	**Nadia**	Karimpur-Ii	91.03	Critical	Deteriorated
18	**Nadia**	Krishnaganj	97.07	Semi Critical	**Nadia**	Krishnaganj	97.35	Critical	Deteriorated
19	**Nadia**	Krishnanagar-Ii	84.39	Safe	**Nadia**	Krishnanagar-Ii	79.63	Semi Critical	Deteriorated
20	**Nadia**	Nabadwip	76.61	Safe	**Nadia**	Nabadwip	98.70	Critical	Deteriorated
21	**Nadia**	Nakashipara	93.93	Semi Critical	**Nadia**	Nakashipara	97.57	Critical	Deteriorated
22	**Nadia**	Ranaghat-Ii	95.57	Semi Critical	**Nadia**	Ranaghat-Ii	92.83	Critical	Deteriorated
23	**Nadia**	Santipur	70.61	Safe	**Nadia**	Santipur	97.80	Critical	Deteriorated
24	**Nadia**	Tehatta-I	121.72	Semi Critical	**Nadia**	Tehatta-I	96.52	Critical	Deteriorated
25	**Nadia**	Tehatta-Ii	121.97	Semi Critical	**Nadia**	Tehatta-Ii	96.64	Critical	Deteriorated
26	**North 24 Parganas**	Baduria	78.41	Safe	**North 24 Parganas**	Baduria	85.30	Semi Critical	Deteriorated
27	**North 24 Parganas**	Bagda	78.51	Safe	**North 24 Parganas**	Bagda	98.31	Critical	Deteriorated
28	**North 24 Parganas**	Barasat-I	44.35	Safe	**North 24 Parganas**	Barasat-I	74.80	Semi Critical	Deteriorated
29	**North 24 Parganas**	Basirhat-I	52.97	Safe	**North 24 Parganas**	Basirhat-I	93.70	Critical	Deteriorated
30	**North 24 Parganas**	Bongaon	71.65	Safe	**North 24 Parganas**	Bongaon	90.09	Critical	Deteriorated
31	**North 24 Parganas**	Deganga	72.98	Safe	**North 24 Parganas**	Deganga	98.46	Critical	Deteriorated
32	**North 24 Parganas**	Gaighata	77.39	Safe	**North 24 Parganas**	Gaighata	93.91	Critical	Deteriorated
33	**North 24 Parganas**	Habra-I	69.62	Safe	**North 24 Parganas**	Habra-I	99.56	Critical	Deteriorated
34	**North 24 Parganas**	Swarupnagar	75.99	Safe	**North 24 Parganas**	Swarupnagar	78.30	Semi Critical	Deteriorated
35	**Pasemi Criticalhim Barddhaman**	Raniganj	27.50	Safe	**Pasemi Criticalhim Barddhar**	Raniganj	95.16	Critical	Deteriorated
36	**Pasemi Criticalhim Medinipur**	Chandrakona-Ii	62.63	Semi Critical	**Pasemi Criticalhim Medinipu**	Chandrakona-Ii	92.33	Critical	Deteriorated
37	**Pasemi Criticalhim Medinipur**	Garbeta-I	49.58	Safe	**Pasemi Criticalhim Medinipu**	Garbeta-I	95.63	Critical	Deteriorated
38	**Pasemi Criticalhim Medinipur**	Keshpur	42.12	Safe	**Pasemi Criticalhim Medinipu**	Keshpur	73.09	Semi Critical	Deteriorated
39	**Pasemi Criticalhim Medinipur**	Kharagpur-Ii	61.70	Safe	**Pasemi Criticalhim Medinipu**	Kharagpur-Ii	84.08	Semi Critical	Deteriorated
40	**Purba Barddhaman**	Burdwan-Ii	44.89	Safe	**Purba Barddhaman**	Burdwan-Ii	84.25	Semi Critical	Deteriorated
41	**Purba Barddhaman**	Manteswar	66.85	Semi Critical	**Purba Barddhaman**	Manteswar	91.37	Critical	Deteriorated
42	**Purba Barddhaman**	Memari-I	27.23	Safe	**Purba Barddhaman**	Memari-I	80.56	Semi Critical	Deteriorated
43	**Purba Barddhaman**	Purbasthali-Ii	86.33	Safe	**Purba Barddhaman**	Purbasthali-Ii	87.23	Semi Critical	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
DADRA & NAGAR HAVELI									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Dadra Nagar Haveli**	Dadra Nagar Haveli	46.00	Safe	**Dadra Nagar Haveli**	Dadra Nagar Haveli	133.20	Over Exploited	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
DAMAN & DIU									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Diu**	Diu	18.10	Safe	**Diu**	Diu	230.66	Over Exploited	Deteriorated

COMPARISON OF CATEGORIZATION OF ASSESSMENT UNITS (2022 AND 2020)									
JAMMU AND KASHMIR									
S. No	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2020	Categorization 2020	Name of District	Name of Assessment Unit	Stage of Ground Water Extraction (%) in 2022	Categorization 2022	Remark
Deteriorated									
1	**Sri Nagar**	Sri Nagar	58.51	Safe	Srinagar Urban	Srinagar Urban	73.85	Semi Critical	Deteriorated

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ABBREVIATIONS

ARDC	Agriculture Refinance and Development Corporation
CGWA	Central Ground Water Authority
CGWB	Central Ground Water Board
bcm	Billion cubic metre
CLEG	Central Level Expert Group for overall reassessment of ground water resource of the country
GEC-1997	Ground Water Resources Estimation Committee, 1997
GWRA- 2020	Ground Water Resources Assessment, 2020
GSDA	Ground Water Survey and Development Agency, Maharashtra
ham	Hectare metre
IMD	India Meteorological Department
LPA	Long Period Average
lps	Litres per second
m	Meter
m bgl	Meter below ground level
m ham	Million hectare metre
M.I.	Minor Irrigation
DOWR, RD & GR	Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti, Govt. of India
NABARD	National Bank for Agricultural and Rural Development
NAQUIM	National Aquifer Mapping & Management Programme
UT	Union Territory

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