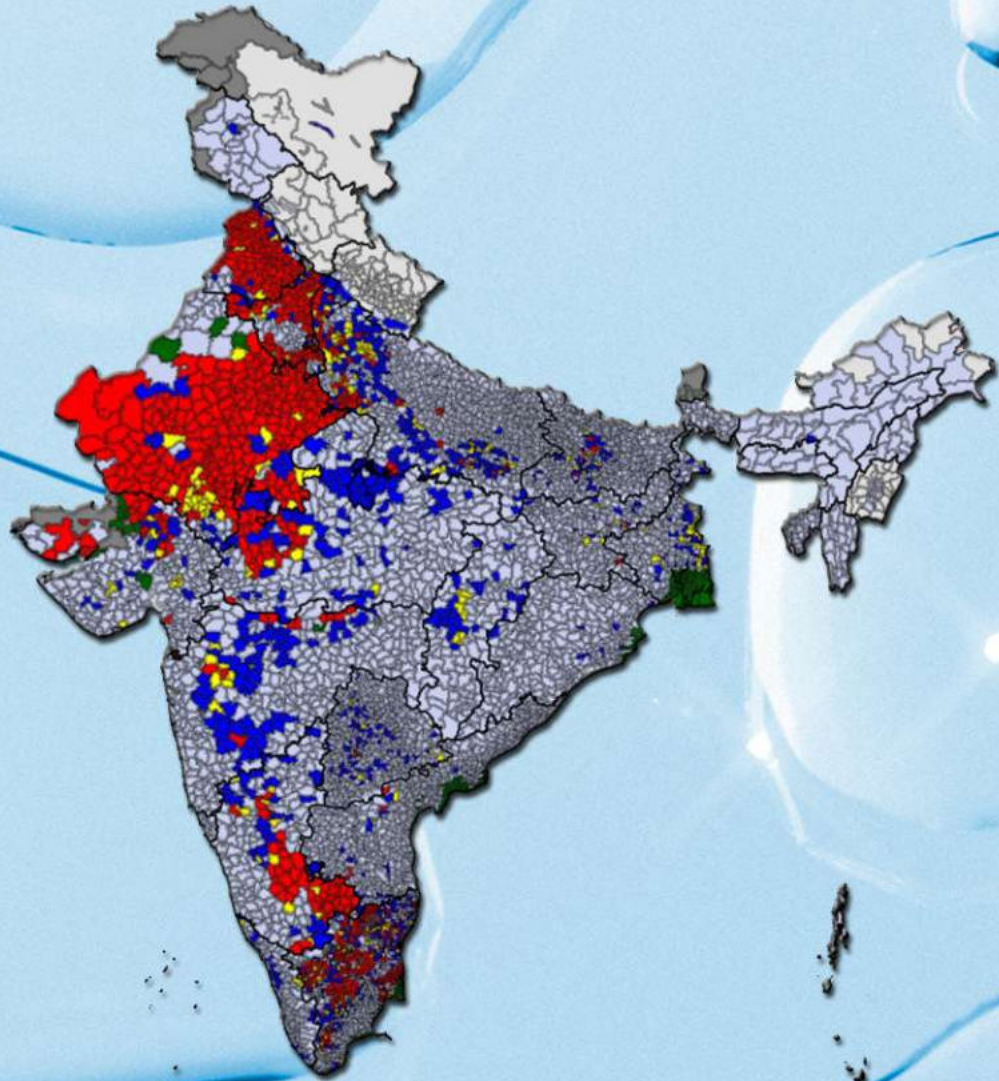




सत्यमेव जयते

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
Department of Water Resources,
River Development & Ganga Rejuvenation
Ministry of Jal Shakti
Government of India**

**Faridabad
October, 2022**



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 forms 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)





प्रहलाद सिंह पटेल
PRAHLAD SINGH PATEL



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

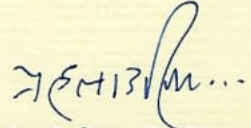


MESSAGE

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.


(Prahlad Singh Patel)

विश्वेश्वर टुडु
BISHWESWAR TUDU



Message

जल शक्ति एवं
जनजातीय कार्य राज्य मंत्री
भारत सरकार
नई दिल्ली-110001
MINISTER OF STATE FOR
JAL SHAKTI & TRIBAL AFFAIRS
GOVERNMENT OF INDIA
NEW DELHI - 110001

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 it 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.

(Bishweswar Tudu)

पंकज कुमार
PANKAJ KUMAR
सचिव
SECRETARY



भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
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)



सुनील कुमार
अध्यक्ष

Sunil Kumar
Chairman



भारत सरकार
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

डॉ. ए. सुब्बुराज
सदस्य
Dr. A. Subburaj
Member



भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केंद्रीय भूमि जल बोर्ड
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Board

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)

Dynamic Ground Water Resources Estimation of India-2022

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DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022

AT A GLANCE

1.	Total Annual Ground Water Recharge	: 437.60 bcm
2.	Annual Extractable Ground Water Resources	: 398.08 bcm
3.	Annual Ground Water Extraction	: 239.16 bcm
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, 2020 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 efficient use.

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, which envisages 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 –

$$\text{Inflow} - \text{Outflow} = \text{Change in Storage (of an aquifer)} \dots \dots \dots (1)$$

Equation (1) can be further elaborated as –

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

Where,

- ΔS - Change in 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 10 years), 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

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

Where,

- ΔS - Change in 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:

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

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:

$$\Delta S = \Delta h \times A \times S_Y \dots \dots \dots (5)$$

Where,

- ΔS - Change in 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,

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

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

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 $r(\text{normal})$ 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

$$R = ar \dots \dots \dots (8)$$

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:

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

Where,

- $R_{RF}(\text{normal})$ - Normalized Rainfall Recharge in the monsoon season
- R_i - Rainfall Recharge in the monsoon season for the i^{th} year
- $r(\text{normal})$ - 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,

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

Where,

- $R_{RF}(\text{normal})$ - Normalized Rainfall Recharge in the monsoon season
- $r(\text{normal})$ - 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:

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

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

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 –

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

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

$$PD = \frac{R_{RF}(normal, wtfm) - R_{RF}(normal, rfm)}{R_{RF}(normal, rfm)} \times 100 \dots \dots \dots (14)$$

Where,

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

$R_{RF}(normal, rfm)$ = 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 than 3.5m 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.

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

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.

$$GE_{DOM} = Population \times Consumptive Requirement \times L_g \dots \dots \dots (16)$$

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.

$$GE_{IND} = Number\ of\ Industrial\ Units \times Unit\ Water\ Consumption \times L_g \dots \dots \dots (17)$$

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,

$$\text{Stage of GW Extraction} = \frac{\text{Existing Gross GW Extraction for all Uses}}{\text{Annual Extractable GW Resources}} \times 100 \dots \dots \dots (18)$$

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.

$$Alloc = 22 \times N \times L_g \text{ mm per year} \dots \dots \dots (19)$$

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.

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

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:

$$\text{Potential ground water resource in shallow water table areas} = (5 - D) \times A \times S_y \dots \dots \dots (21)$$

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.

$$\text{Potential ground water resource in Flood Prone Areas} = 1.4 \times N \times \frac{A}{1000} \dots \dots \dots (22)$$

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: -

$$SGWR = A \times (Z_2 - Z_1) \times S_Y \dots \dots \dots (23)$$

Where,

- SGWR = Static or in-storage ground water resources
- A = Area of the assessment unit
- Z₂= Bottom of unconfined aquifer
- Z₁= 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

$$Q = S \times A \times \Delta h \dots \dots \dots (24)$$

Where,

- Q = Quantity of water confined aquifer can release (m³)
- S = Storativity
- A = Areal extent of the confined aquifer (m²)
- Δh = Change in Piezometric head (m)

Once the piezometric head reaches below the top confining bed, it behaves like an unconfined aquifer and directly dewater 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 (h_t) at any given time 't' and the bottom of the top confining layer (h_0) by using the following equation.

$$Q_p = S \times A \times \Delta h = S \times A \times (h_t - h_0) \dots \dots \dots (25)$$

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.

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

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:

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

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.

$$Q_p = S \times A \times \Delta h = S \times A \times (h_{POST} - h_0) \dots \dots \dots (28)$$

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

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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

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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 - Massive, 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

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Sl. No.	Principal Aquifer	Major Aquifers		Age	Recommended (%)	Minimum (%)	Maximum (%)
		Code	Name				
			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

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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	Ulrra Basics (Epidiorite, Granophyre etc.) - Weathered, Jointed	Proterozoic to Cenozoic	7	6	8
62	Intrusive	IN02	Ulrra 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 m² of wetted area/day and cumecs per million m² of wetted area. As all other norms are in ham, the committee recommends the norm in ham/million m² 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 field 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:

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

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.

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

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

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.

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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

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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	UTTARAKHAND	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 METEOROLOGICAL 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

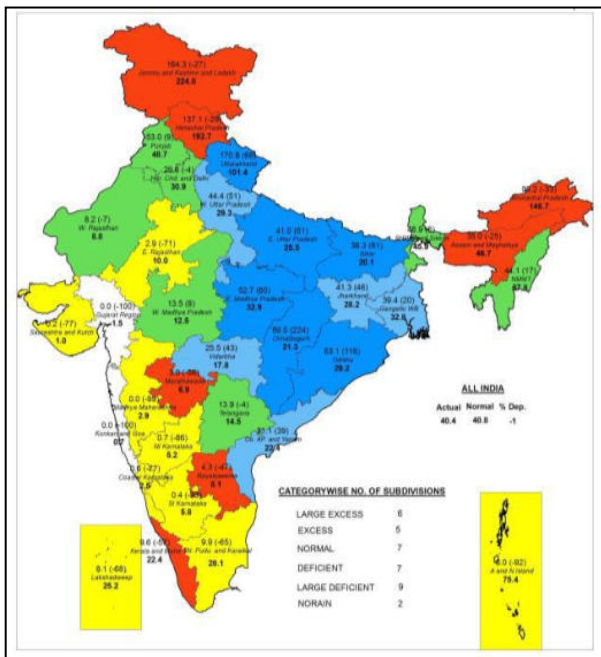


Figure-3.2 : Winter Rainfall Map

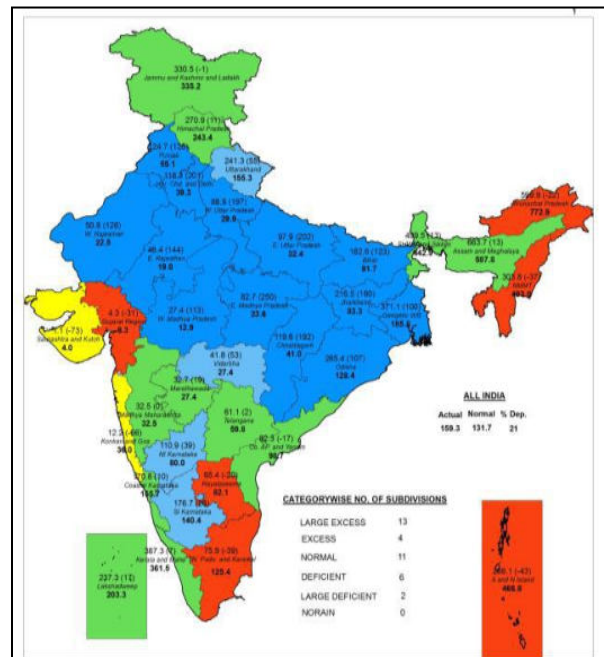


Figure-3.3 : Pre-Monsoon Rainfall Map

Dynamic Ground Water Resources Assessment Of India - 2022

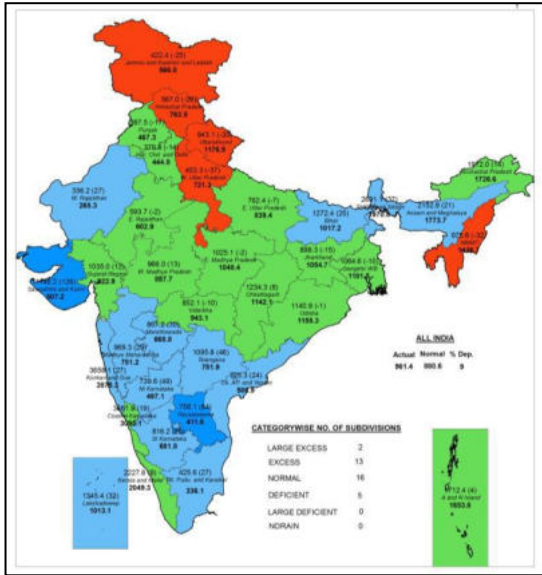


Figure-3.4 : SW Monsoon Rainfall Map

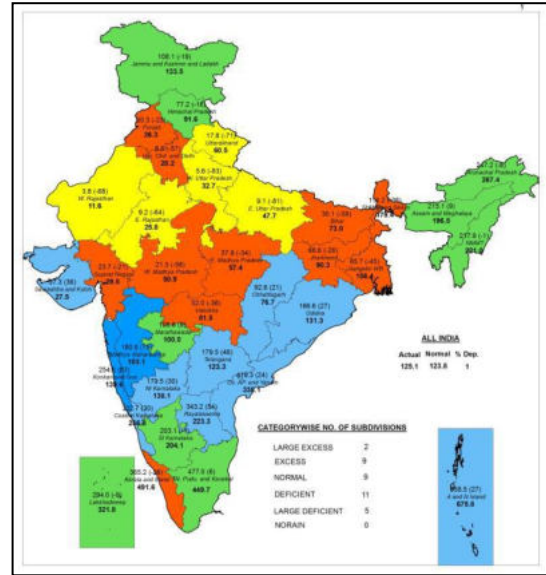


Figure-3.5 : Post-Monsoon Rainfall Map

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
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NOTES :

- Rainfall figures are based on operation data.
- Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).
- 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 into 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.

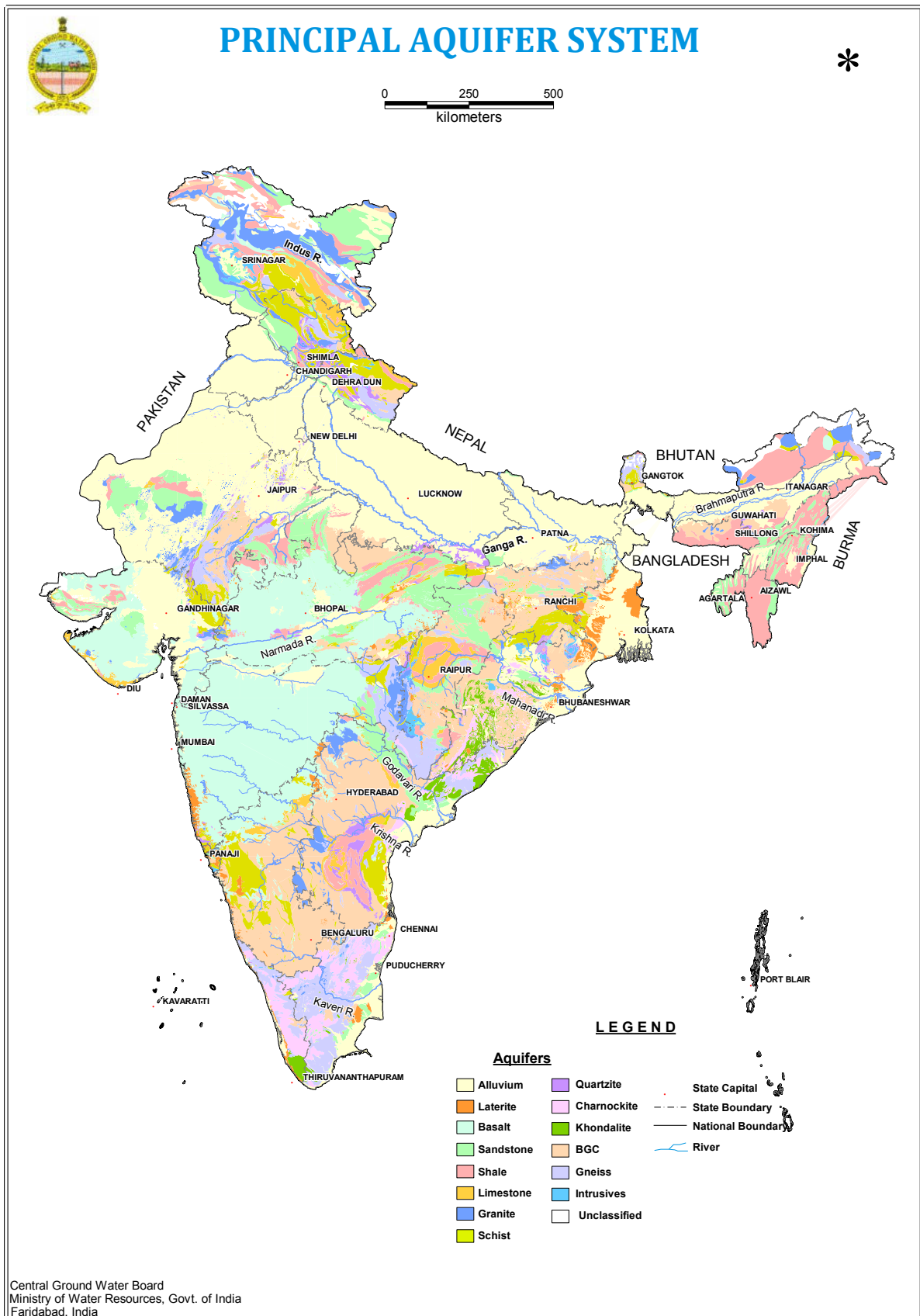


Fig-4.1: Principal Aquifer Systems of India

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.

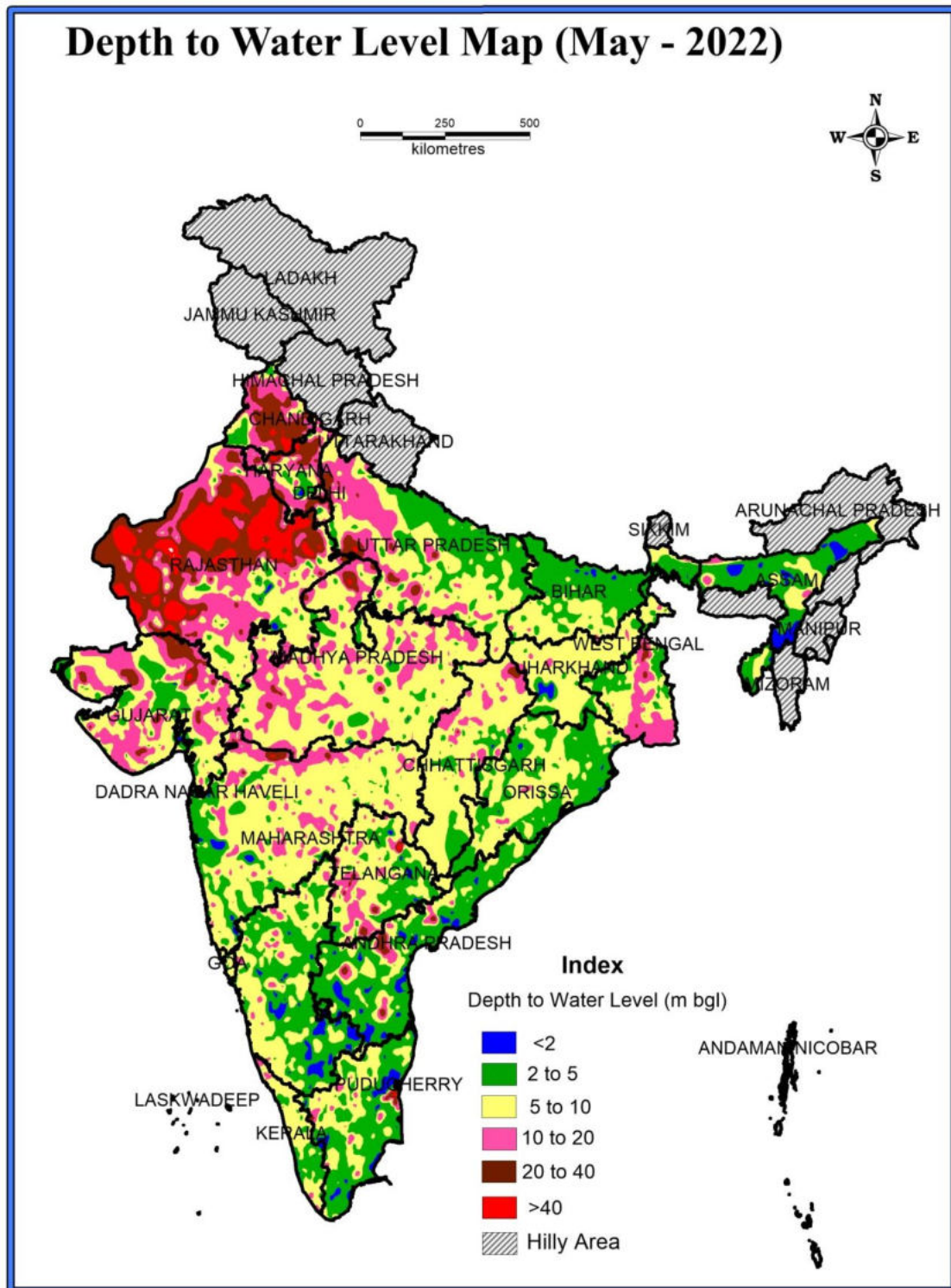


Fig-5.1: Pre-monsoon Depth to Water Level Map (2022)

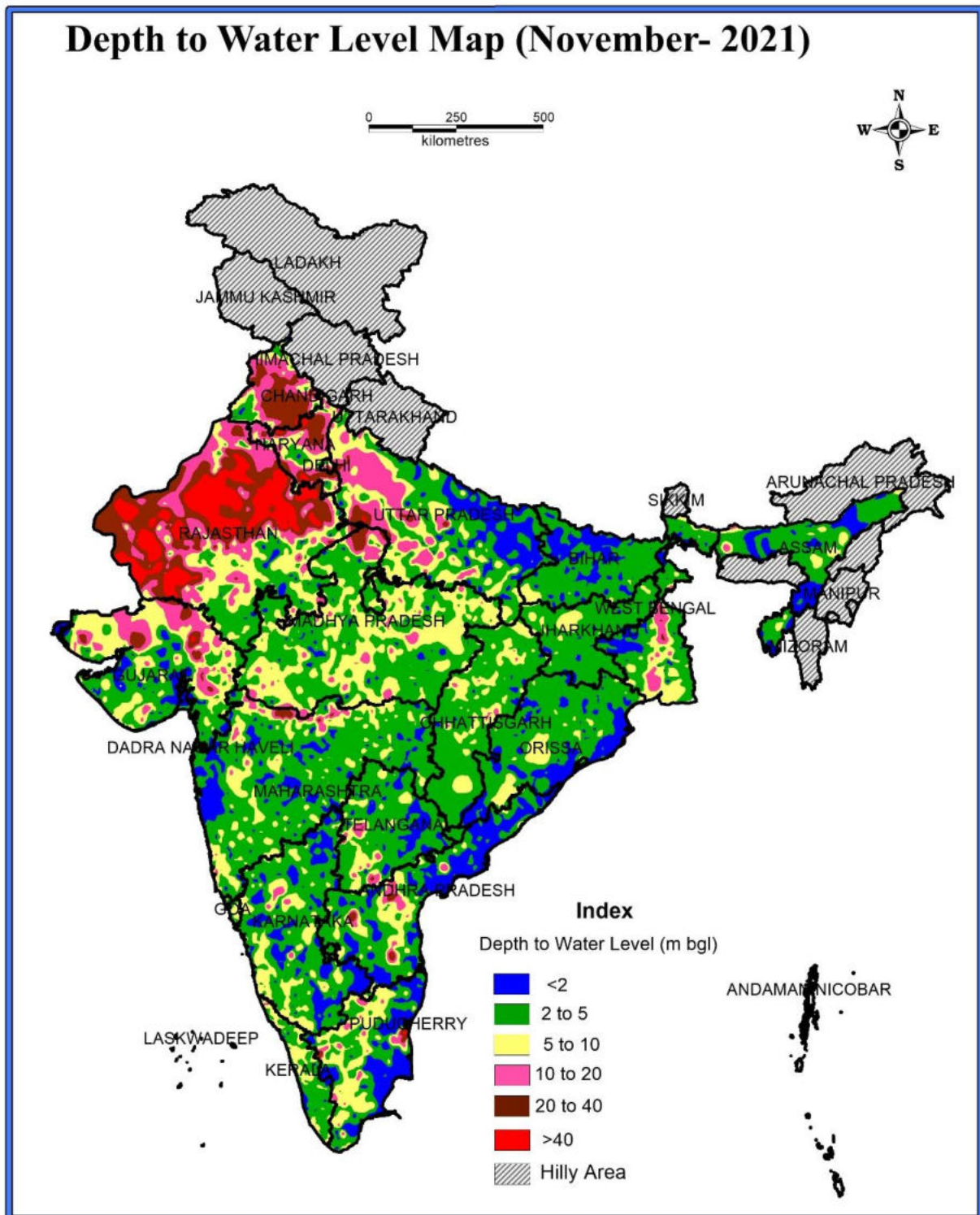


Fig-5.2: Post-monsoon Depth to Water Level Map (2019)

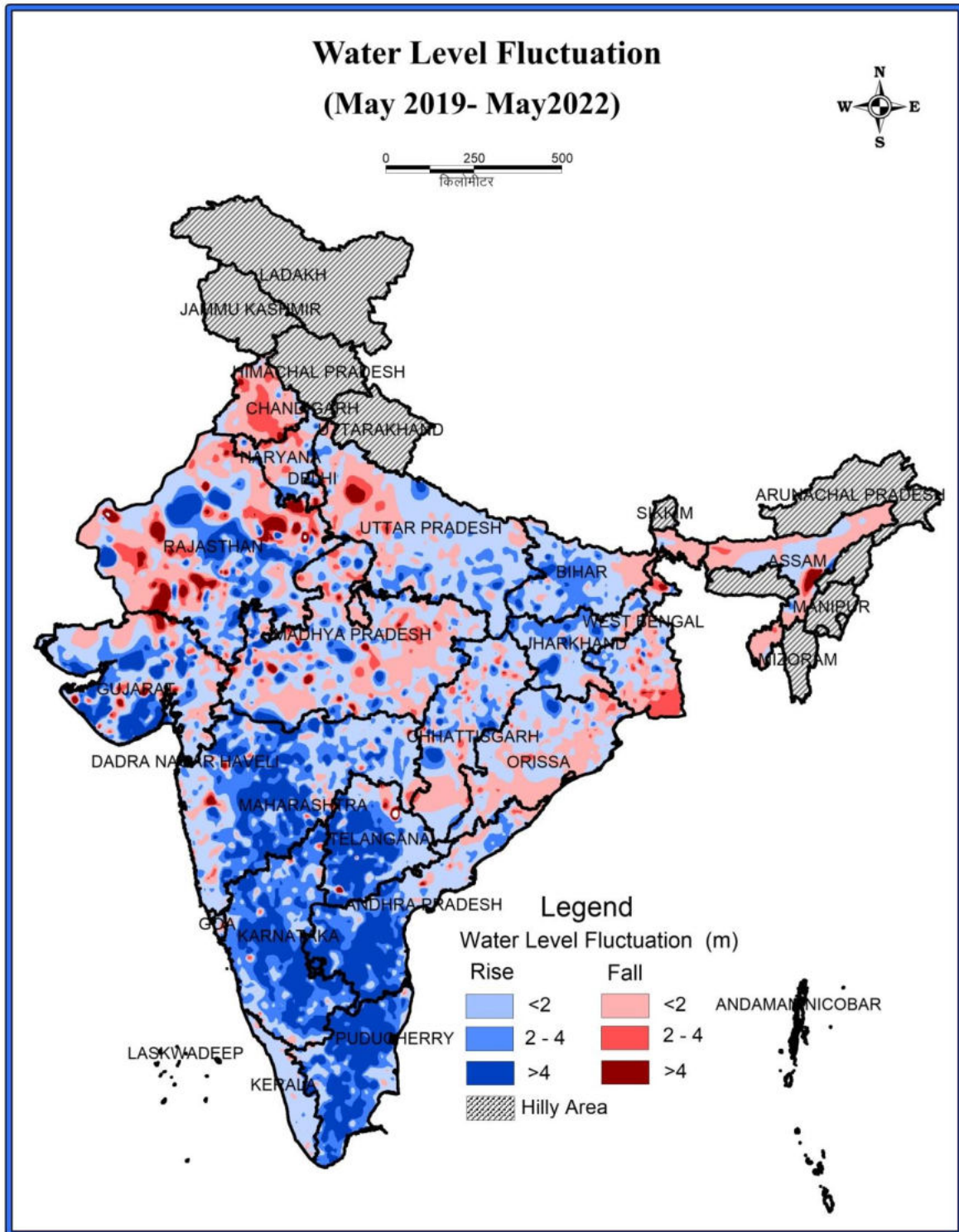


Fig-5.3: Ground Water Level Fluctuation: Pre-monsoon 2019 compared to Pre-monsoon 2022

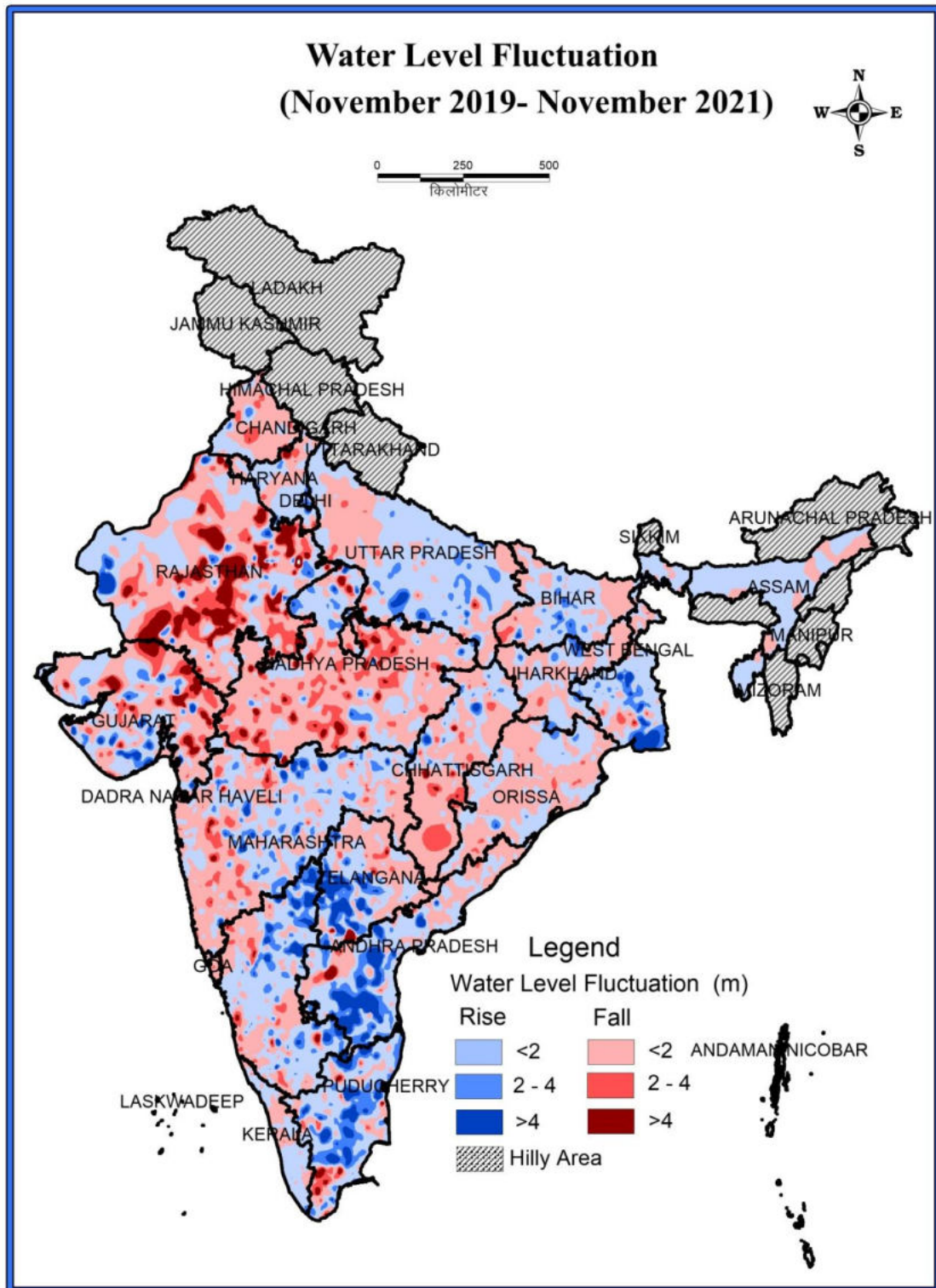


Fig-5.4: Ground Water Level Fluctuation: November 2019 compared to November 2021

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 (km²). 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.

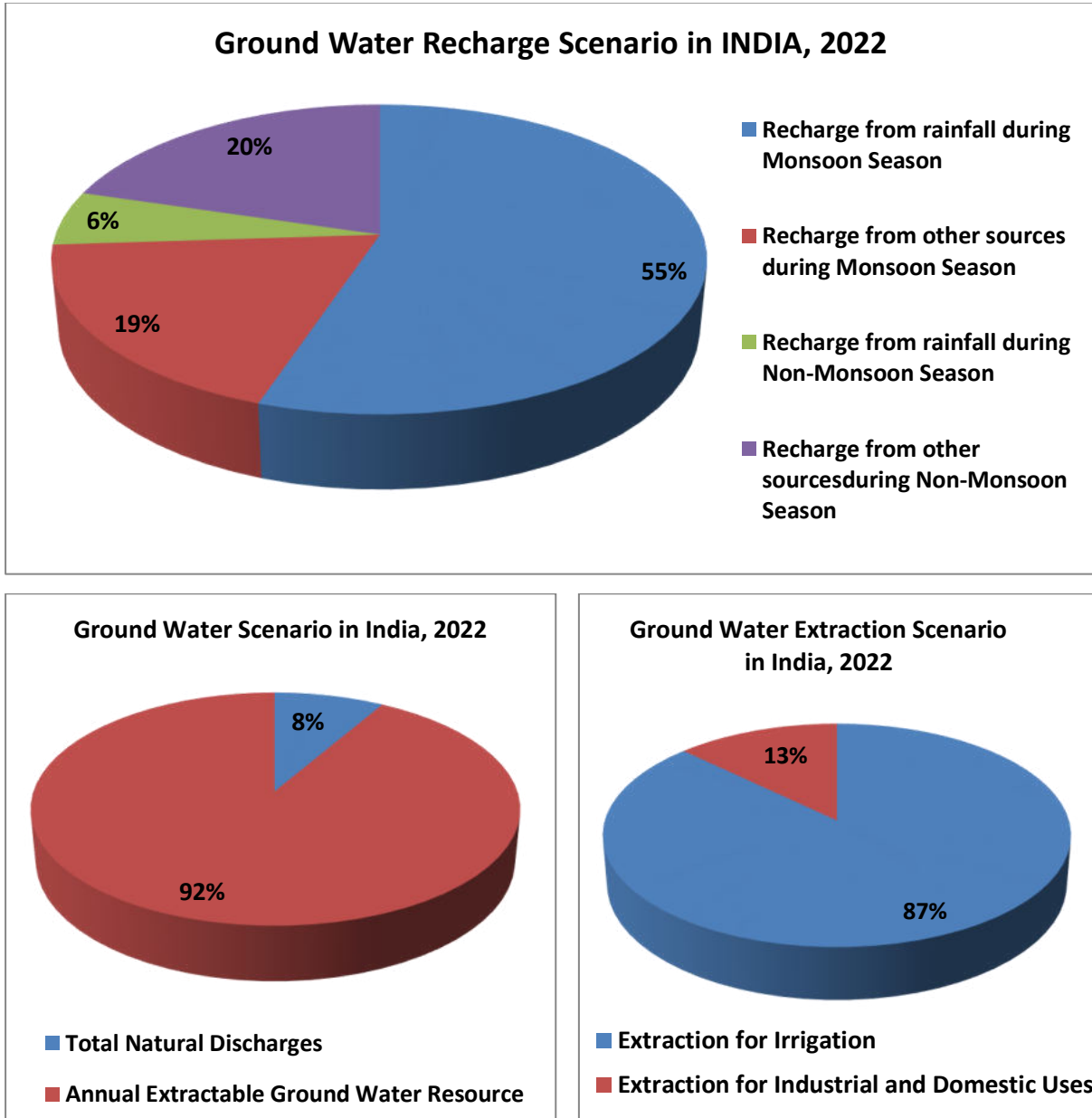


Fig-6.1: Ground Water Resources and Extraction Scenario in India, 2022

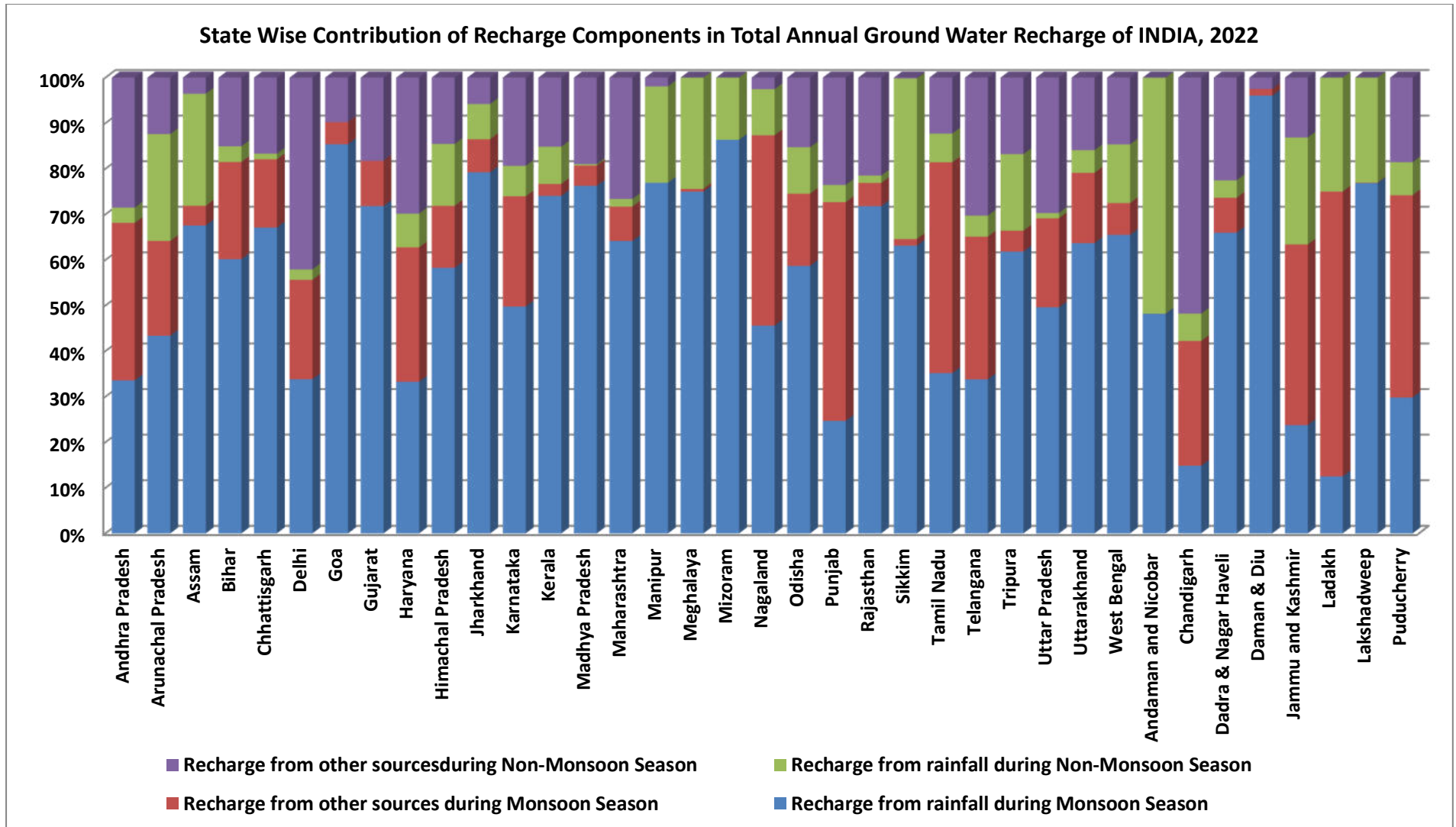


Fig-6.2: State wise contribution of recharge components in Total Annual Ground Water Recharge of India, 2022

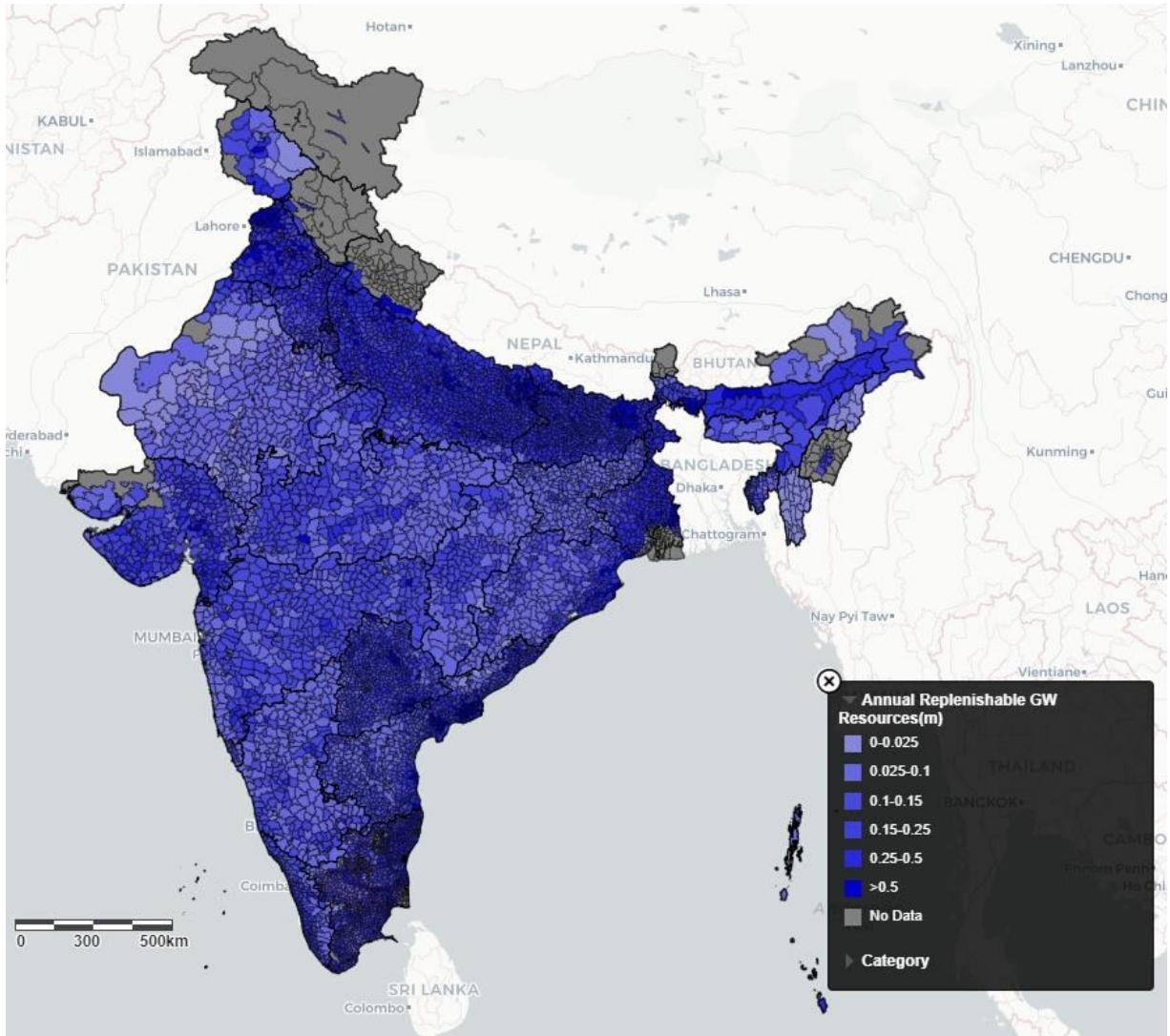


Fig. 6.3: Spatial variation in annual ground water recharge, 2022

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.

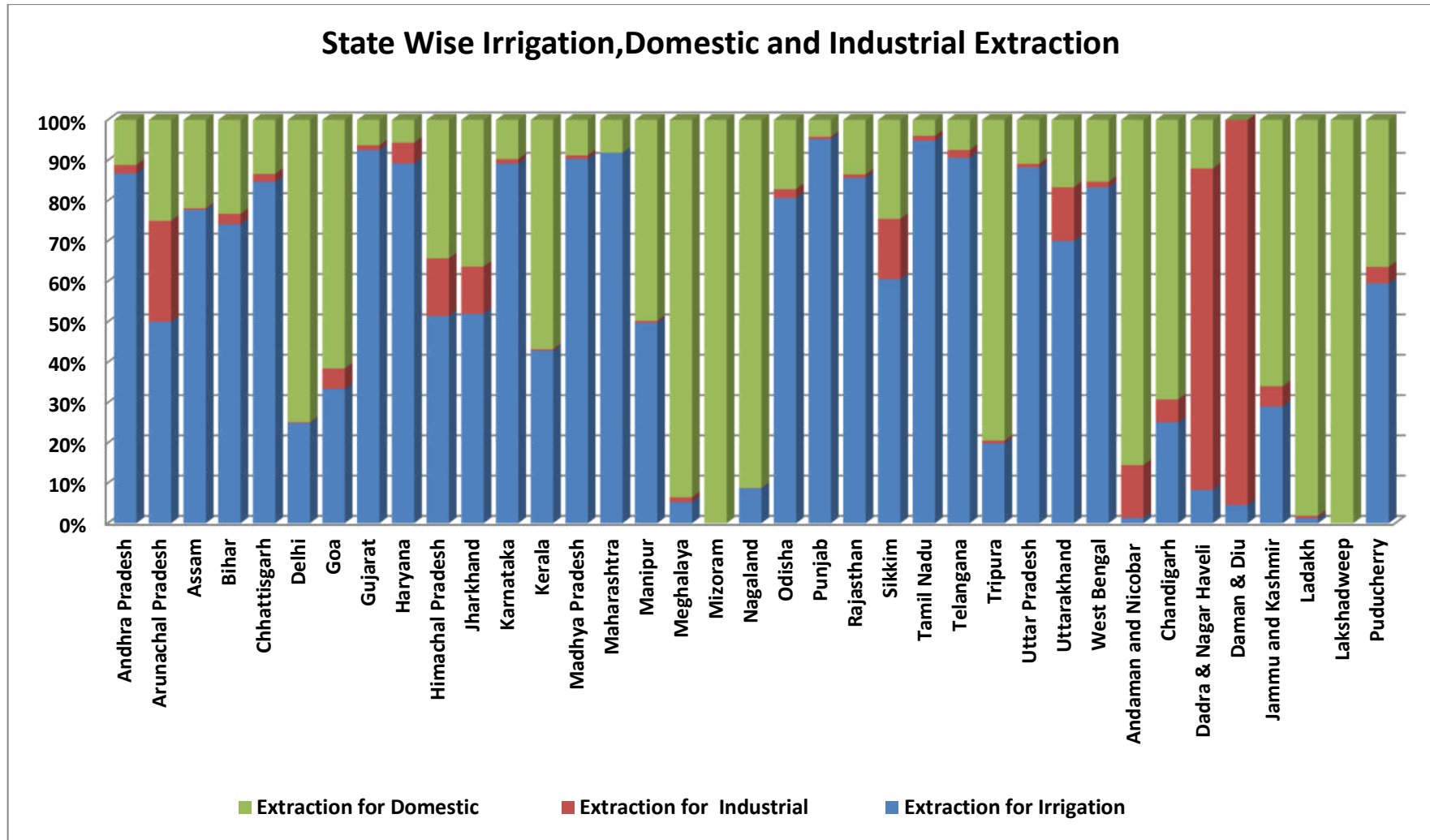


Fig-6.4: State wise Irrigation Draft Vs Domestic & Industrial

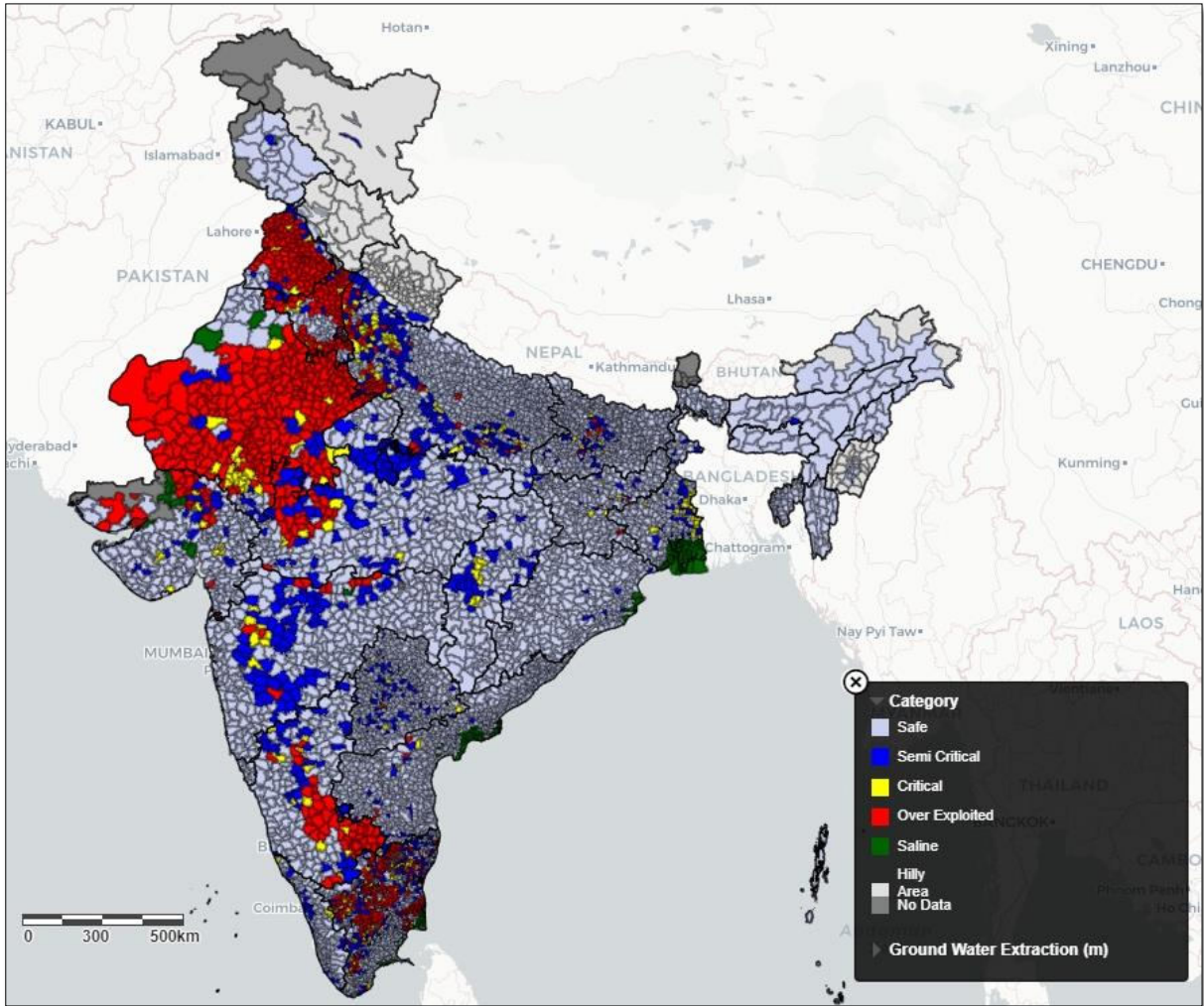


Fig-6.5: Categorization of Assessment Units

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.

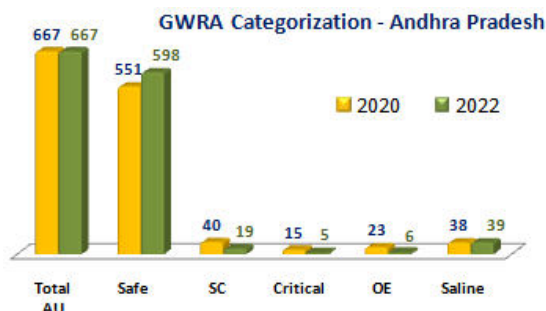
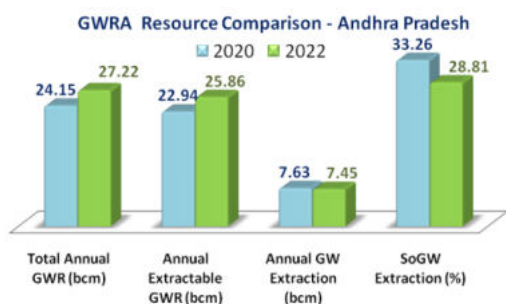
The Ground water resources have been assessed watershed wise and are apportioned to mandals. The Total Annual Ground Water Recharge of the State has been estimated as 27.22bcm and Annual Extractable Resource is 25.86bcm. The current Annual Ground Water Extraction for all uses is 7.45 bcm and Stage of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

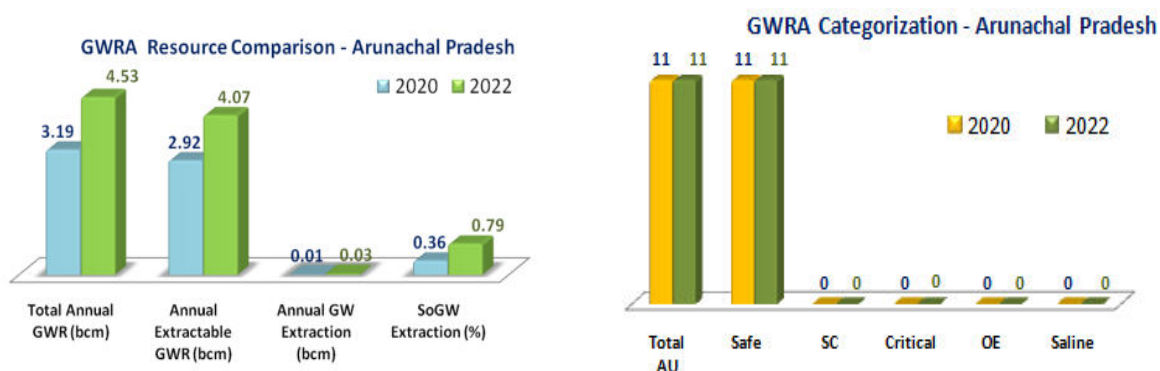


7.2 ARUNACHAL PRADESH

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 1.4m³/hr to 54m³/hr, while transmissivity ranges from 1 to 661m²/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.

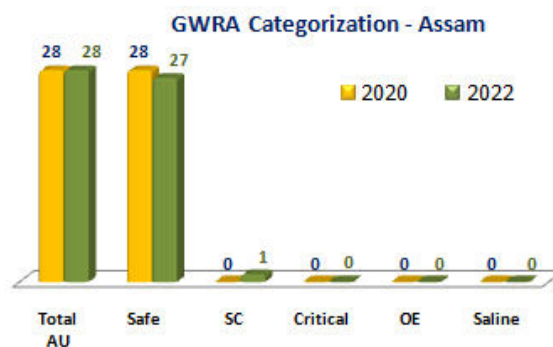
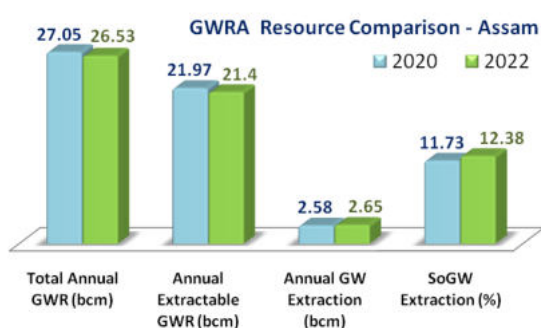


7.3 ASSAM

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, Golaghat districts. 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.

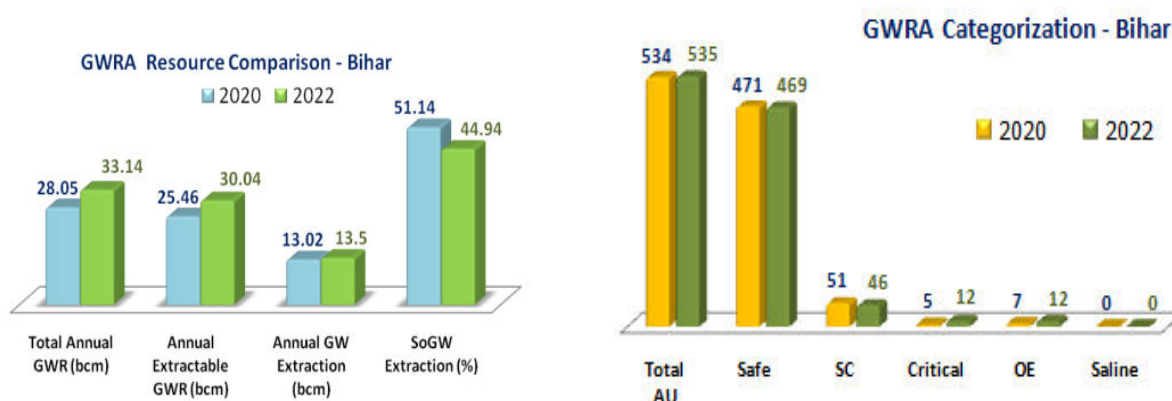


7.4 BIHAR

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.



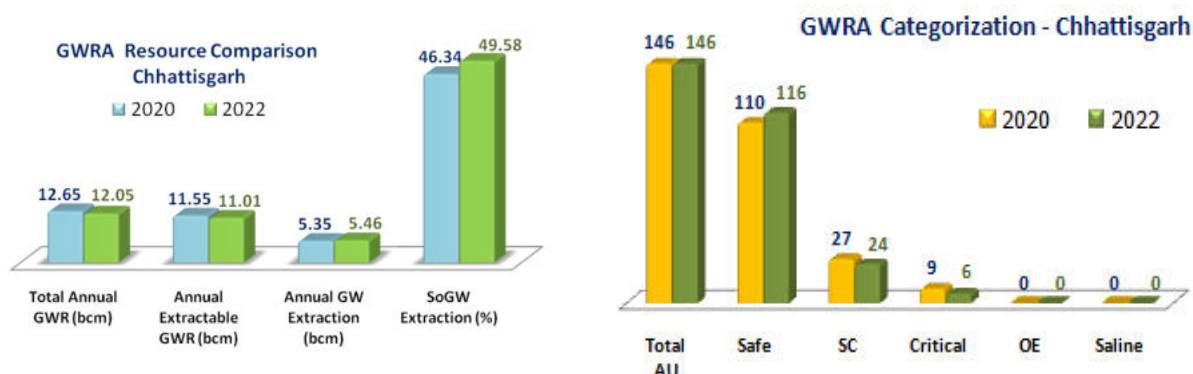
7.5 CHHATTISGARH

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 total 11010.29 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.



7.6 DELHI

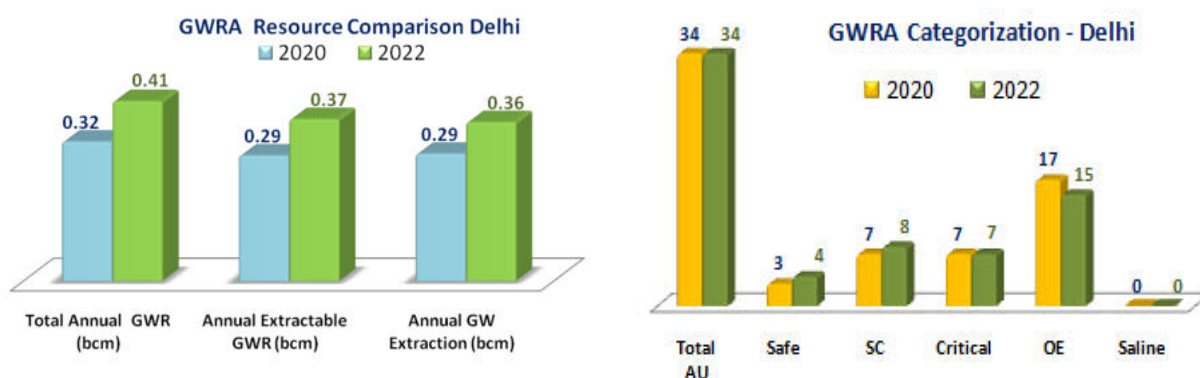
The State is covered by diverse rock types of different geological ages from Pre-Cambrian to Recent. As much as 89% of the State is occupied by alluvium and ground water is being tapped mostly through tube wells. Yields of tube wells vary from 4 to 10 lps in older alluvial deposits and from 25 to 55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

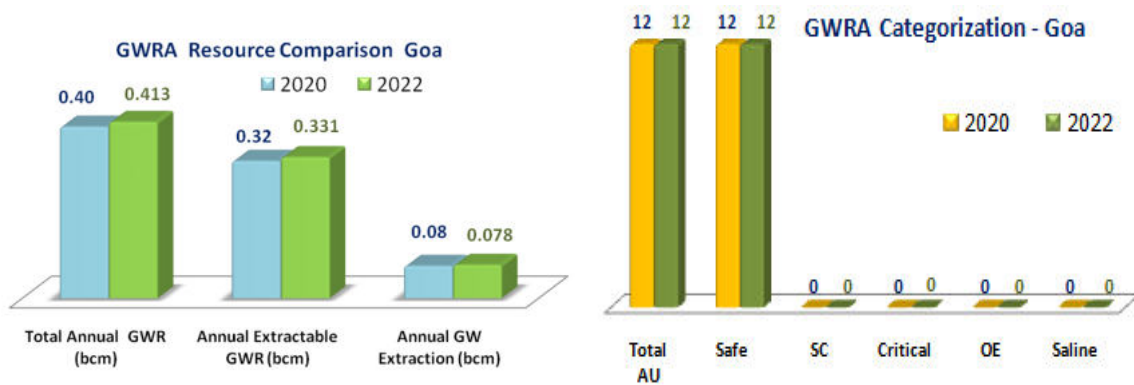
The increase in the groundwater extraction can be attributed to refinement in database extraction data of about 12000 private tube wells which have been registered with DJB has been incorporated in this estimation and refinement of data on piped water supply and increased piped water supply by Delhi 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 m³/day, whereas that of tube wells ranges from less than 10 to 100 m³/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 26.81 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 13.30 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 %.

GWRA Resource Comparison - Gujarat



GWRA Categorization Gujarat



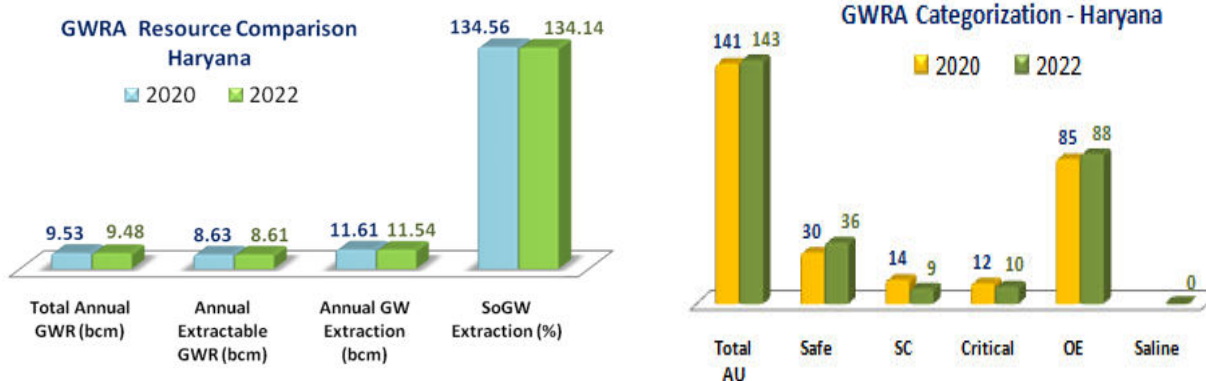
7.9 HARYANA

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

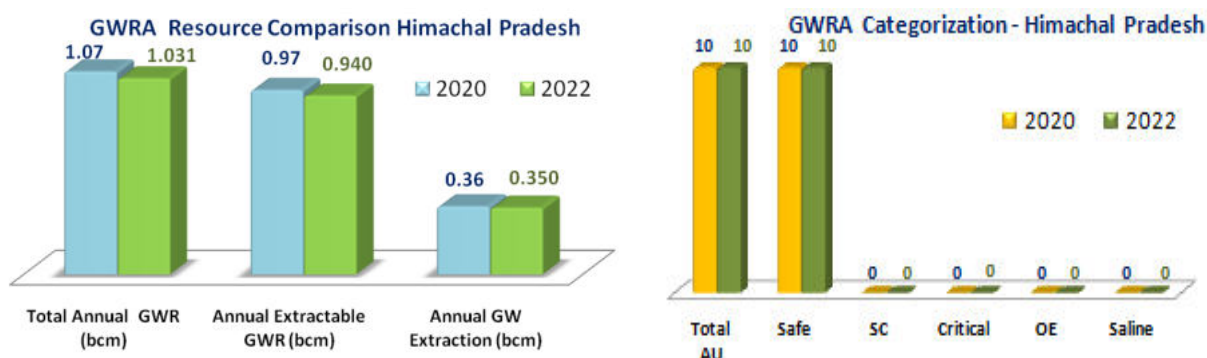
The diverse physiographic, climatic, topographic and geologic conditions have given rise to diversified groundwater situation in different parts of the state. The rock formations ranging in age from Archean to Recent occupy the State and control the occurrence and movement of ground water depending upon 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 through 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.



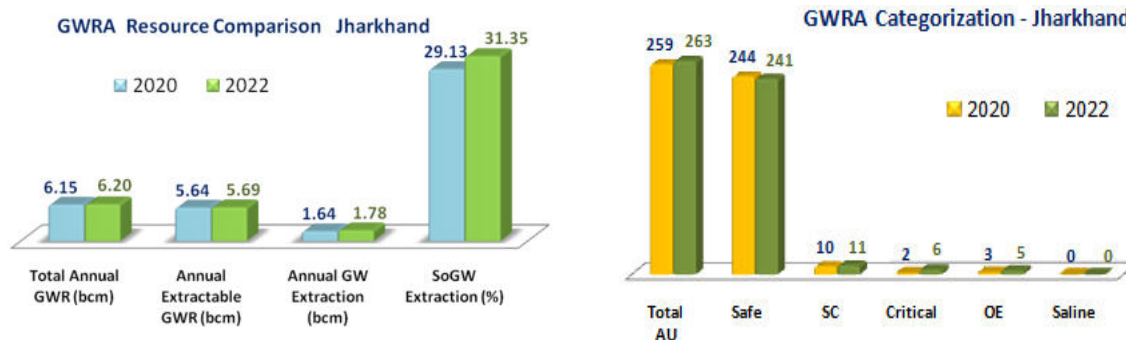
7.11 JHARKHAND

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 151m³/hr. The yield of the dugwells ranges from 0.5 to 0.75m³/hr. The dug wells tapping the weathered mantle have an average yield of 0.5 to 1.2 m³/hr. In Gondwana Super group, bore well discharge ranges between 7 to 15m³/hr and in Tertiary formations, yield ranges from 18 to 78 m³/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

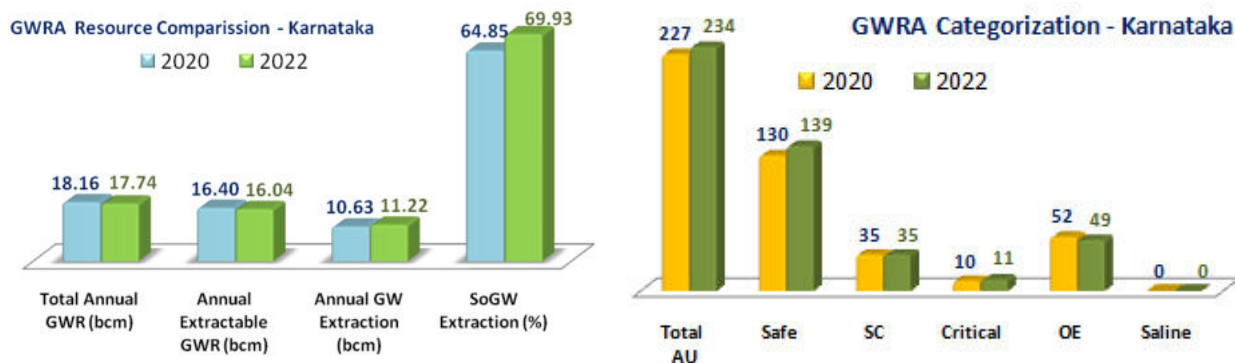
Karnataka State is underlain by rock types ranging in age from Archaean to Recent. Major portion of the State is covered by Peninsular Gneisses, Granites and Dharwar Schists of Archaean age. Substantial area in the northern part of Karnataka is underlain by basalts, which form a continuation of the Deccan 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 total 16043.89mcm 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.



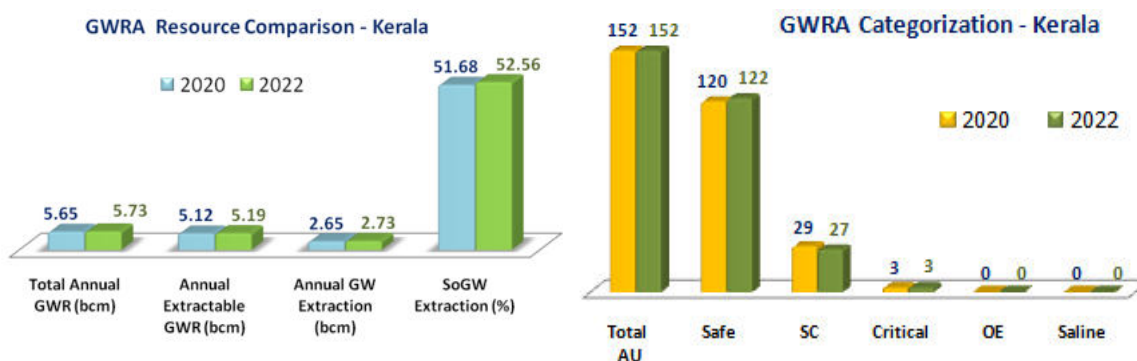
7.13 KERALA

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 m³/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 m³/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 m³/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

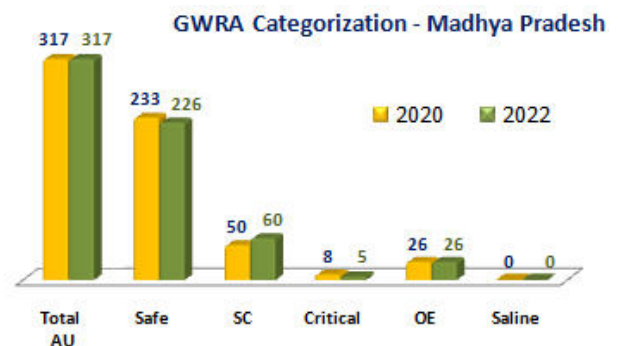
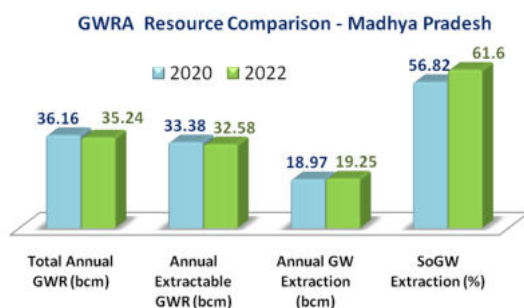
The State of Madhya Pradesh has varied hydrogeological characteristics due to which ground water potential differs from place to place. The State is underlain by various Geological formations ranging in age from the Archaean to the Recent. Hard rock areas cover more than 80% of total land area of the 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.



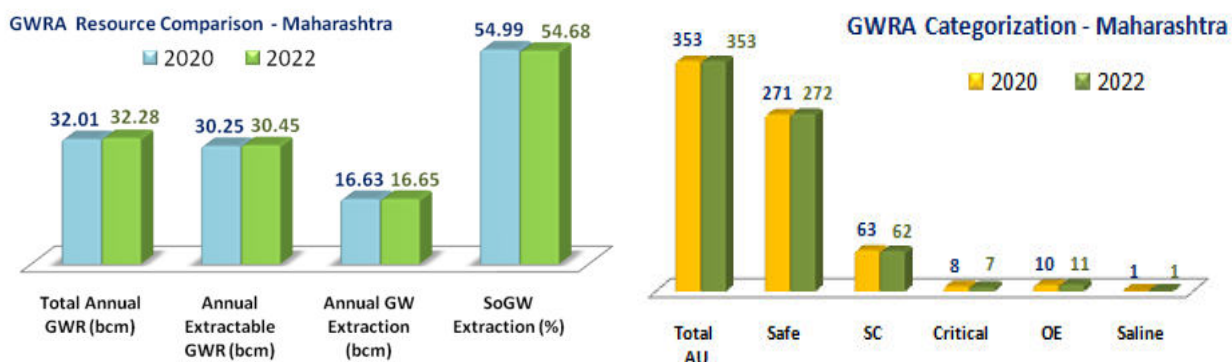
7.15 MAHARASTRA

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.

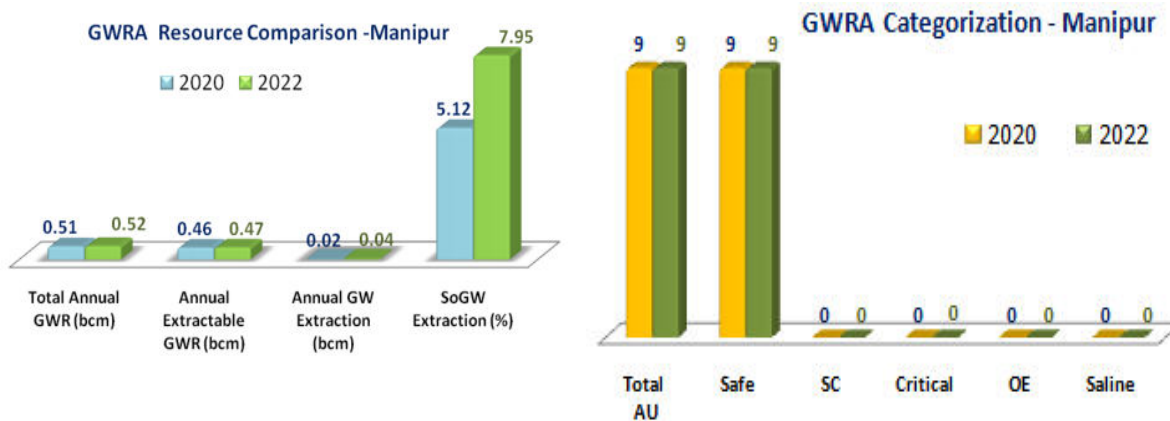
As compared to 2020 assessment, the Annual Ground Water Recharge in 2022 has increased from 32.01 to 32.28bcm,Annual Extractable Ground Water Recharge from 30.25 to 30.45bcm and Annual Ground Water Extraction from 16.63 to 16.65bcm.There is a marginal decrease in the Stage of Ground Water Extraction 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 m³/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-HKGP-GW in Manipur.

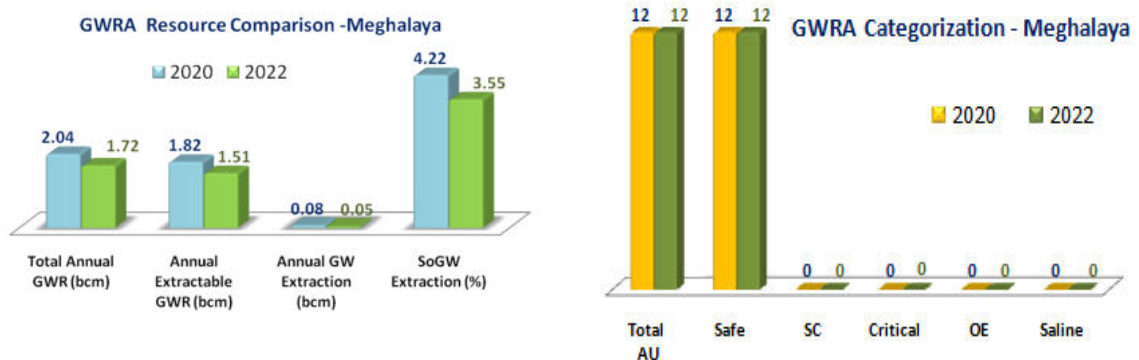


7.17 MEGHALAYA

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’.

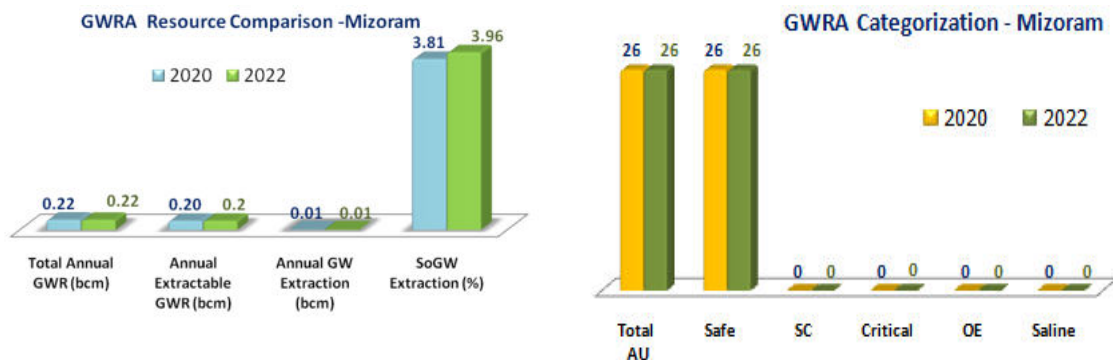
As compared to 2020 assessment, the Annual Ground Water Recharge and Annual Extractable Ground Water Resources have decreased from 2.04 to 1.72 bcm and 1.82 to 1.51 bcm respectively. The reasons can be attributed to changes in rainfall and during 2022 assessment, normal rainfall was calculated using 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 m²/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.

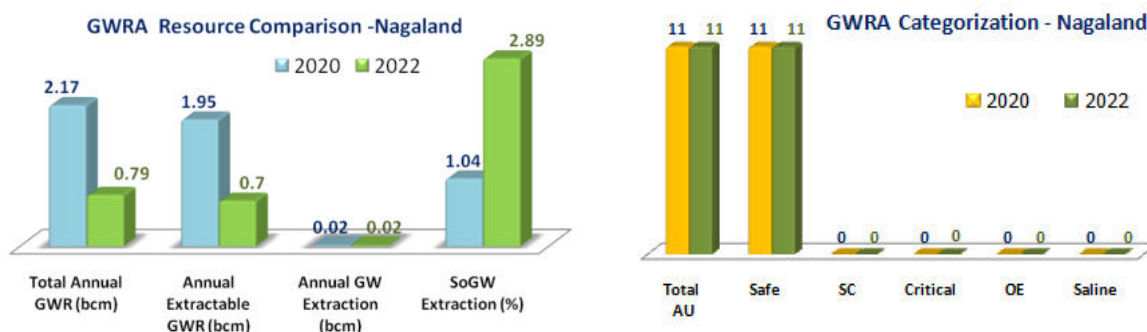


7.19 NAGALAND

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 Arenaceous. 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 45m³/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 20m³/hr. The valleys underlain by Tipam sandstones form good aquifers with yield prospects varying from 30 to 80m³/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.

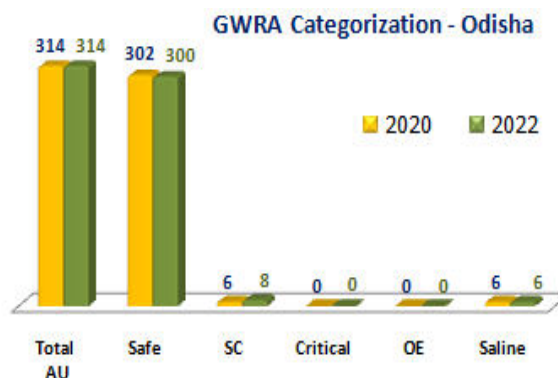
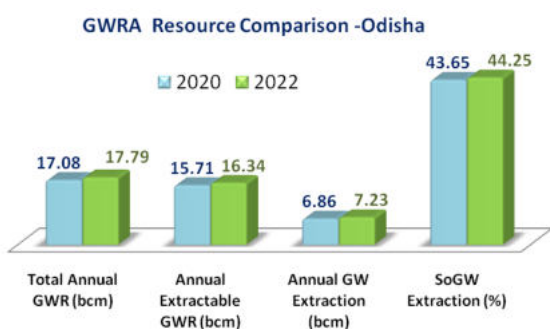


7.20 ODISHA

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.



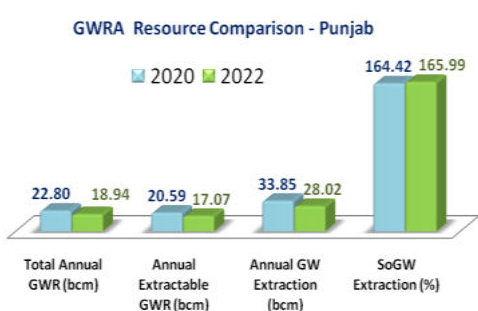
7.21 PUNJAB

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, 114 blocks and 03 Urban Areas have been categorized as 'Over-exploited', 04 blocks as 'Critical', 15 blocks as 'Semi Critical' and 17 blocks 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.



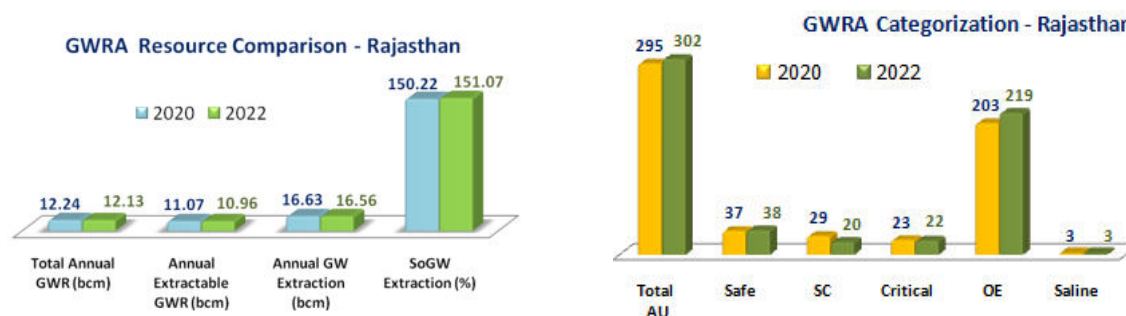
7.22 RAJASTHAN

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 m³/day, transmissivity ranges between 80 to 300 m²/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 m³/day. The yield of the wells drilled in Vindhyan formation has been observed to be 15 m³/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 m³/day, whereas transmissivity varies from 3 to 30 m²/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.



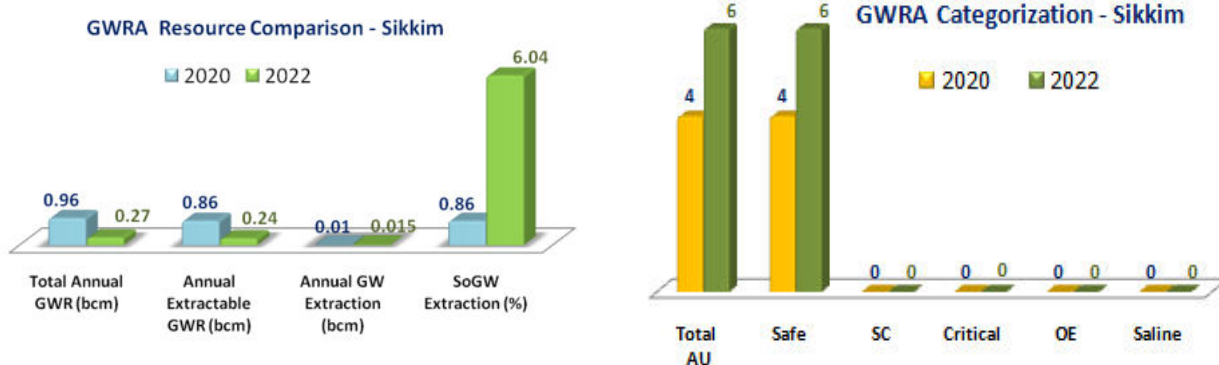
7.23 SIKKIM

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.



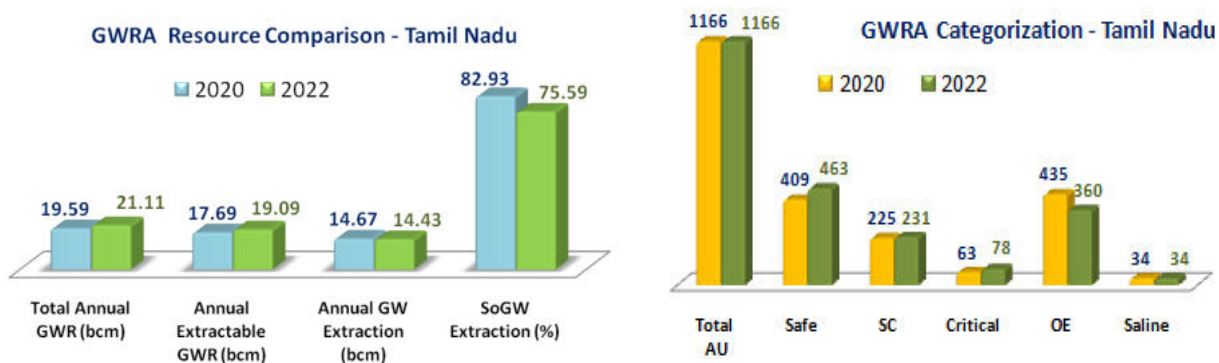
7.24 TAMIL NADU

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 17.69 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

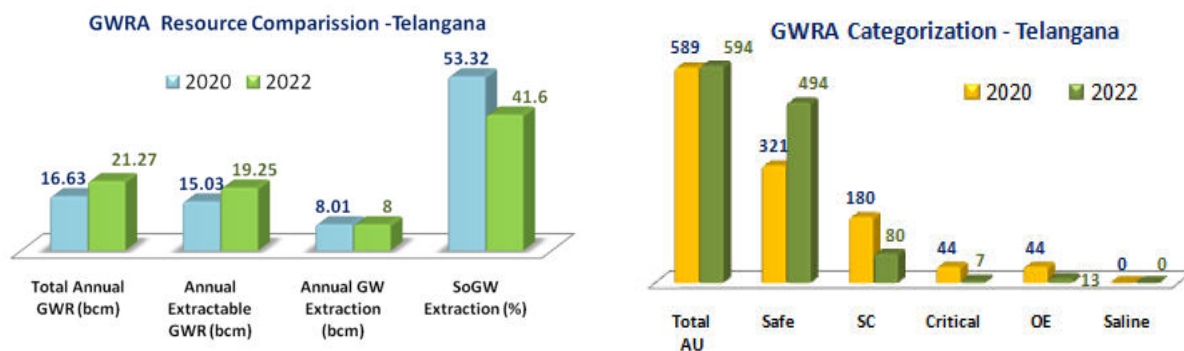
The State of Telangana shares its boundaries with Andhra Pradesh, Chattisgarh, Maharashtra and Karnataka. The state has 2 major rivers, the Godavari and the Krishna. The River Godavari with its tributaries Pranahita, Manjeera, Maneru, Indravati, and Kinnerasani drains through the northern parts of the 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 950m²/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.

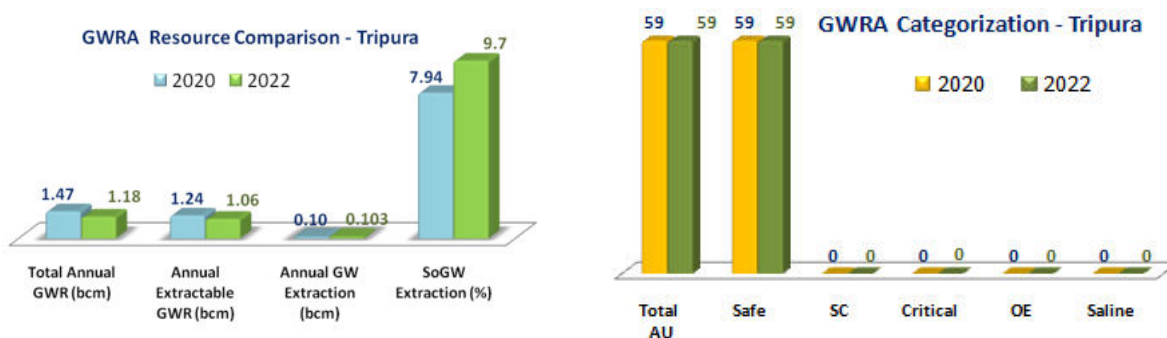


7.26 TRIPURA

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.



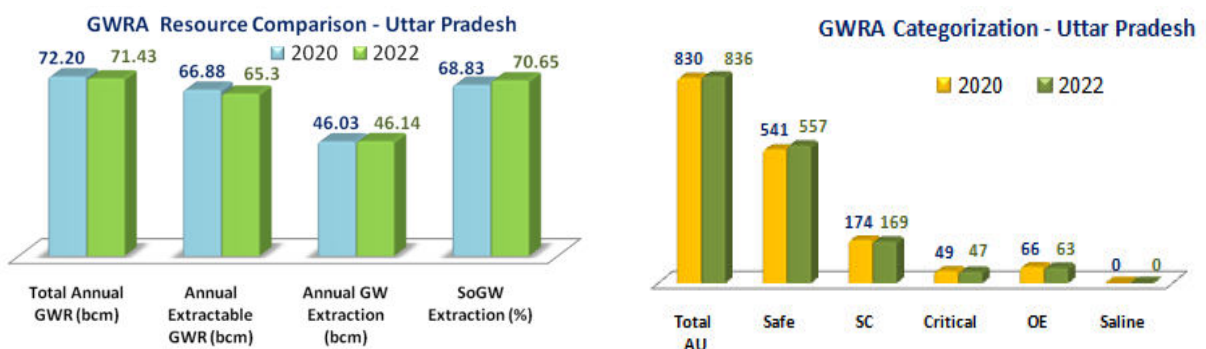
7.27 UTTAR PRADESH

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 Sonbhadra 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.



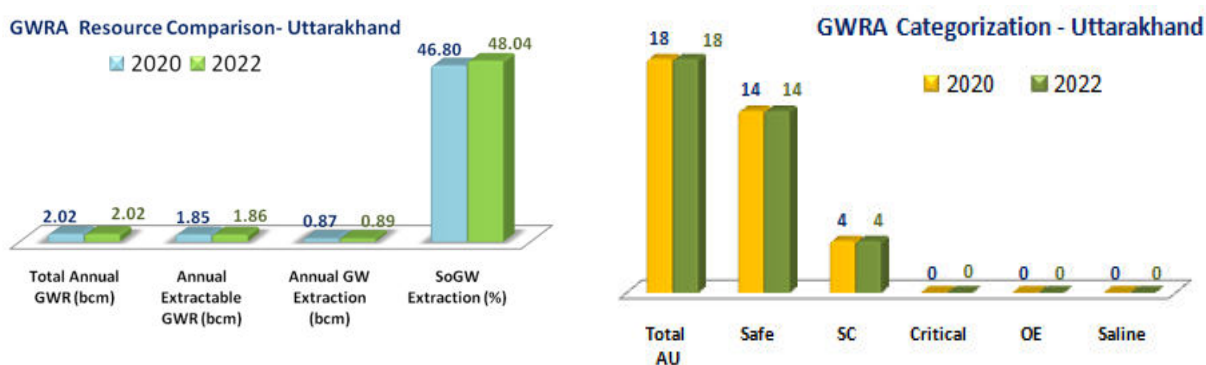
7.28 UTTARAKHAND

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.



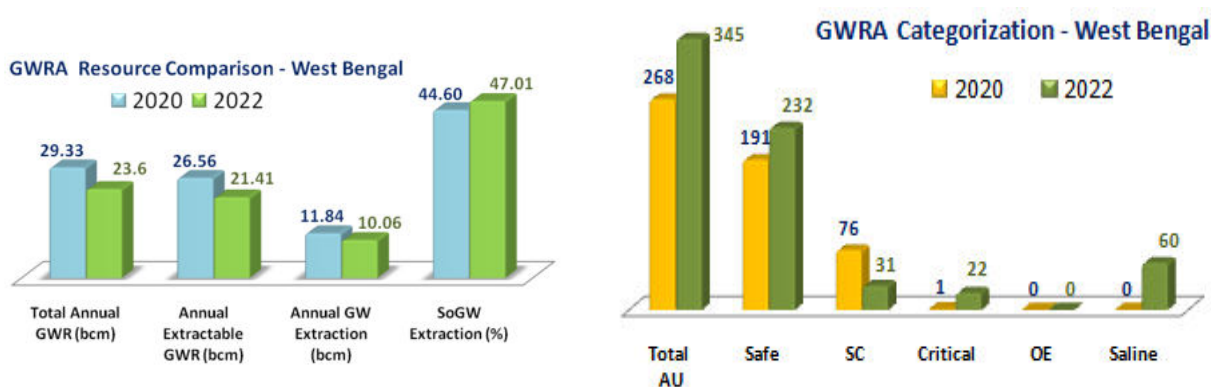
7.29 WEST BENGAL

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.

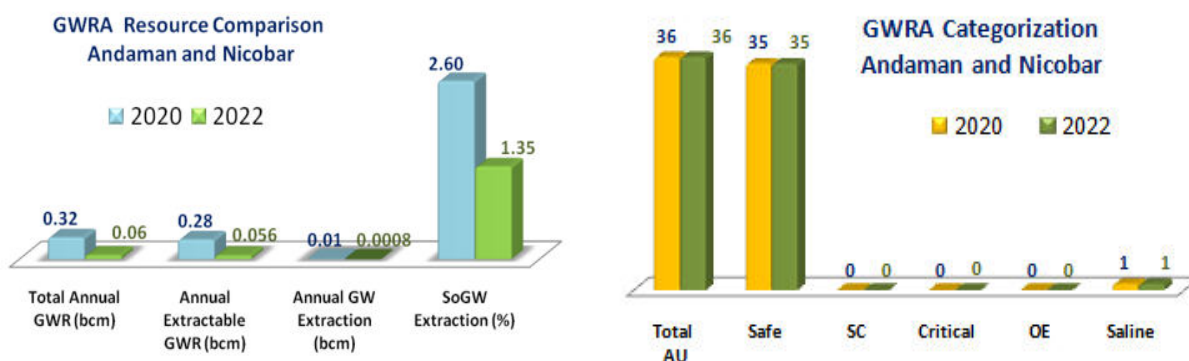


7.30 ANDAMAN AND NICOBAR ISLANDS

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 to 25 lps.

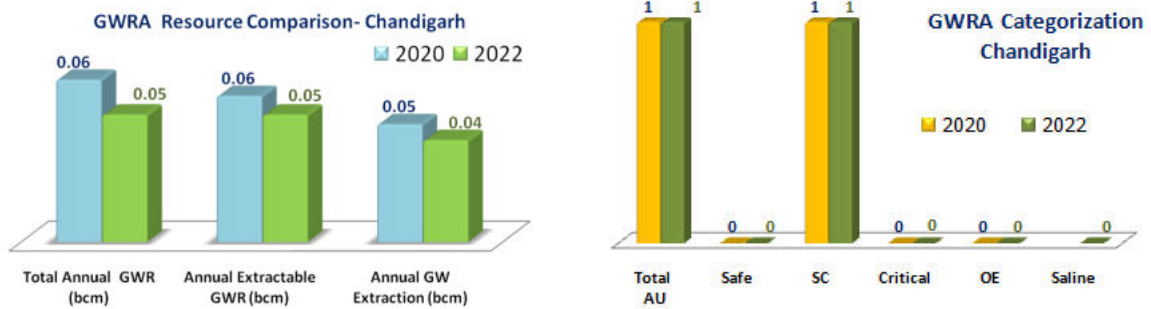
The Ground Water Resources (in 2022), following GEC 2015 guidelines, have been assessed island-wise. Total Annual Ground Water Recharge of the A&N Islands have been assessed as 0.6184 bcm and Annual Extractable Ground Water Recharge is assessed as 0.5566 bcm. The Annual Ground Water extraction is 0.0075 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 m²/day. The transmissivity values of shallow aquifers up to 100 m depth ranges from 70 to 466 m²/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.

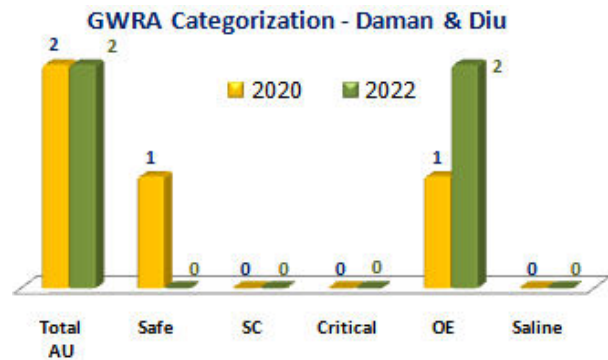
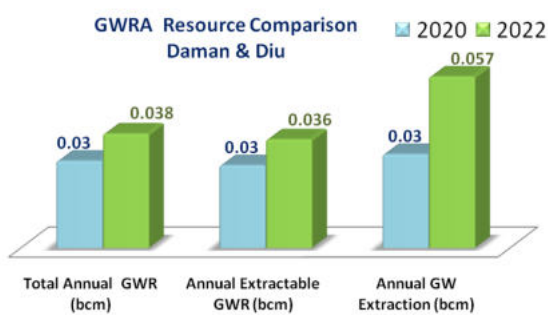


7.32 DAMAN & DIU AND DADRA & NAGAR HAVELI

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 than 1 to 5 m³/day, whereas that of Dug cum Bore wells ranges from less than 2 to 10 m³/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 %.

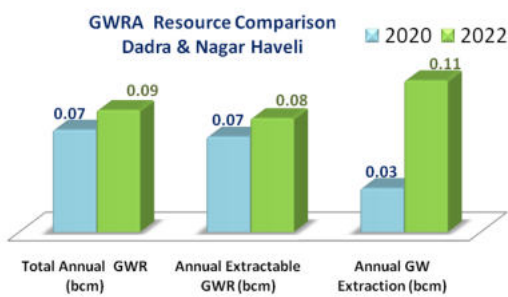


Dadra & Nagar Haveli

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 m³/day. The transmissivity of shallow aquifer ranges from 5.5 to 305 m²/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

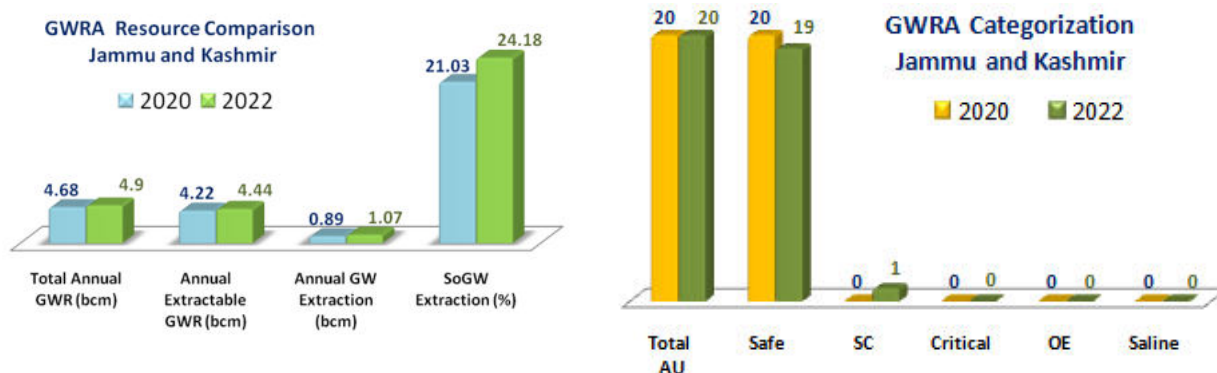
Jammu & Kashmir Union Territory comprises two regions viz-Jammu, Kashmir with 10 districts each, representing different ground water regimes. In Jammu Region, the ground water occurs in the outer plains extending between Munawar Tawi in the north-west to River Ravi in the south-east. The ground water 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 units include 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. The Total 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' whereas 1 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.



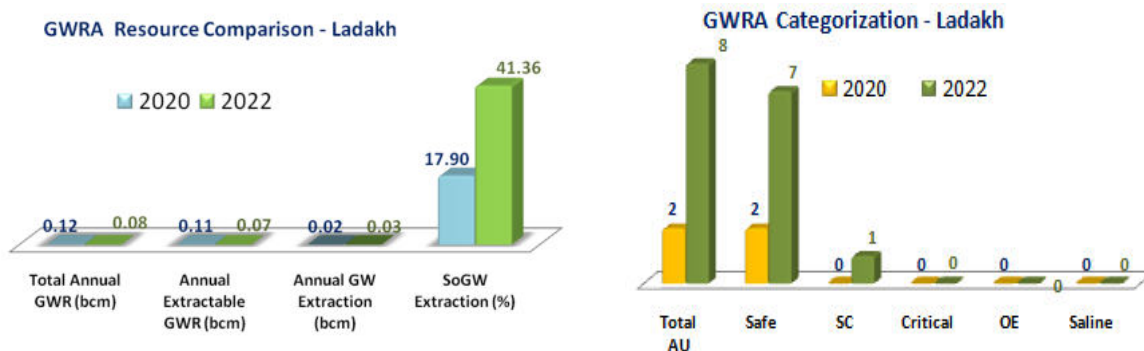
7.34 LADAKH

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.

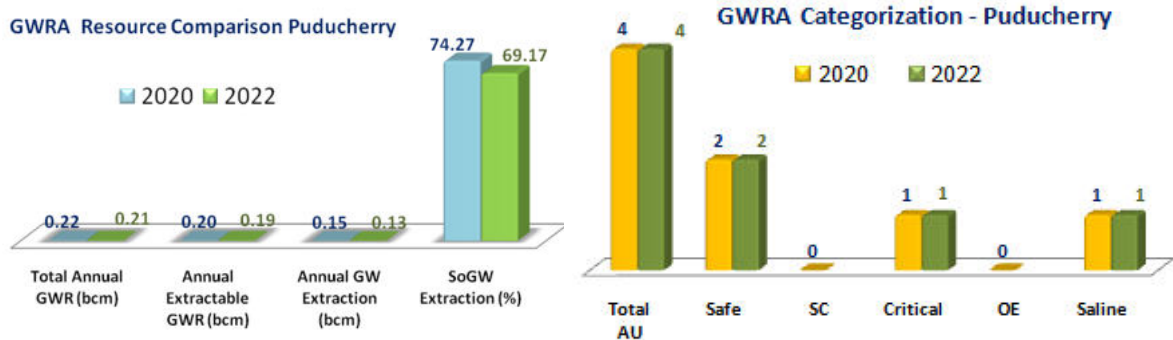
Dynamic ground water resources have been assessed for individual islands. The total Annual Ground Water Recharge in the islands has been estimated as 0.01 bcm and Annual Extractable Ground Water Resources works out as 0.01bcm. The total current Annual Ground Water Extraction has been assessed as 0.0033 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 Annual 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					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 Daman & Diu	0.06 0.037	0.01 0.001	0.003 0.000	0.02 0.001	0.09 0.038	0.01 0.002	0.08 0.036	0.01 0.003	0.09 0.055	0.01 0.000	0.11 0.057	0.02 0.016	0.01 0.000	133.2 157.927
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)

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022																
ANDHRA PRADESH																
S. No.	Name of District	Ground Water Recharge					Total Annual 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		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	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	Eiuru	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 Annual 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		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	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 Annual 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		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 Annual 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		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	Arwai	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	8706.84	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	20209.64	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 Annual 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		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 Annual 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		Irrigation				Industrial	Domestic	Total				
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 Annual 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		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 Annual 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		Irrigation				Industrial	Domestic	Total				
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	51695.33	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 Annual 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		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 Annual 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		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 Annual 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		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	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 Annual 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		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 Annual 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		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 Annual 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		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 Annual 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		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	Umari	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 Annual 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		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 Annual 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		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 Annual 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		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 Hills	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 Annual 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		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	Lawnqtlai	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 Annual 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		Irrigation				Industrial	Domestic	Total				
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 Annual 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		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	28289.93	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	Rayaqada	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 Annual 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		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 Annual 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		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 Annual 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		Irrigation				Industrial	Domestic	Total				
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 Annual 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		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	Kallakurichi	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 Annual 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		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 Annual 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		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 Annual 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					Irrigation	Industrial	Domestic	Total			
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	6307.14	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	50162.21	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	Ghaziipur	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

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022																
UTTAR PRADESH																
S. No.	Name of District	Ground Water Recharge					Total Annual 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		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	Raibareilly	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	83.49	
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 Annual 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		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 Annual 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		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 Annual 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		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	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 Annual 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		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 Annual 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		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 Annual 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		Irrigation				Industrial	Domestic	Total				
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 Annual 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		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 Annual 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		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 Annual 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		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 Annual 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		Irrigation				Industrial	Domestic	Total				
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		
			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, Chhattisgarh, 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 Wells	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	Annamavva	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	Bairampur	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	Damtari	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	Sonapat	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	Saraikele 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	Kolar	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	Paighar	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	Kallakurichi	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	Bhadradi 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						

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2013												
WEST BENGAL												
S.No	Name of District	Total No. of Assessed Units	Safe		Semi-Critical		Critical		Over-Exploited		Saline	
			No.	%	No.	%	No.	%	No.	%	No.	%
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				

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
BIHAR										
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	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

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022										
MAHARASHTRA										
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	Kallakurichi	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	Bhadradi 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)

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
ANDHRA 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	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	Bairampur	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	Suraipur	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	Sonapat	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

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022												
MAHARASHTRA												
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	Paighar	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	Muksar	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	Kallakurichi	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	Bhadradi 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			
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	Kolkata	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	100.00						
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	Naqarousa
		2	Parwalpur	2	Karai Parsarai		
		3	Chandi	3	Giriyak		
		4	Raigir				
		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				
10	Rohtas	1	Punpun				
		2	Kochas				
11	Samastipur	1	Dehri				
		2	Uliyarpur	1	Dalsingsarai	1	Tajpur
		3	Sarairanjan				
		4	Bibhutipur				
		5	Vidyapatnagar				
12	Sheikhpura	1	Kalyanpur				
		2	Barbigha	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	Nawaqarh		
				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
11	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	Mahešana	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
2	Bhiwani					3	Saha
						1	Loharu
						2	Kairu
						3	Tosham
3	Charkhi Dadri					4	Behal
						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 Naqar
						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	Kalayath
						4	Guhla
						5	Kaithal
						6	Rajound
						7	Siwan
10	Karnal			1	Indri	1	Nissing At Chirao
						2	Nilokheri
						3	Karnal
						4	Munak
						5	Kunipura
						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
13	Mewat	1	Punahana			6	Ateli Nangal
						1	Taoru
						2	Ferozepur Jhirka
14	Palwal	1	Hodal	1	Hassanpur	1	Prithla
						2	Badoli
15	Panchkula			1	Rajpur 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	Baraquadha			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	Ballapur
		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)						
7	Chikkaballapura					2	Gundlupet		
						1	Shidlagatta		
						2	Chinthamani		
						3	Bagepalli		
						4	Chikballapur		
						5	Gudibande		
8	Chikkamagaluru					6	Gauribidanur		
						1	Ajampura		
9	Chitradurga					2	Kadur		
						1	Challakere		
						2	Hosadurga		
						3	Chitradurga		
						4	Holalkere		
10	Davanagere	1	Honnali	1	Davanagere	5	Hiriyur		
						1	Channagiri		
11	Gadag	1	Gadag	1	Gadag	2	Jagaluru		
						2	Gajendragad		
						3	Rona		
12	Hassan			1	Channarayapatna	1	Arsikere		
13	Haveri	1	Ranebennur	1	Ratteeahalli				
		2	Hirekerur						
		3	Byadagi						
14	Kalburgi	1	Afzalpur						
15	Kolar					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	Maqadi		
		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	Vijayanagara	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	Name of Over-Exploited Assessment Units
1	Idukki	1	Kattappana			
		2	Nedumkandam			
2	Kannur	1	Thalassery			
		2	Kannur			
		3	Panur			
3	Kasaragod	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	Kuttiippuram			
		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	Raigarh	1	Rajgarh	1	Narsinghgarh	1	Sarangpur
		2	Blaora				
		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	Maihar				
		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	Chatia
		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 Semcritical 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	Boloqarh				
		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	Khamaanon
						2	Sirhind
						3	Amloh
						4	Khera
						5	Bassi Pathanan
6	Fazilka	1	Arniwala Sheikh Subanpur			1	Jalalabad
7	Firozpur			1	Makhu	1	Gururhar Sahai
						2	Mamdot
						3	Firozpur
						4	Zira
						5	Ghall Khurd
8	Gurdaspur	1	Dina Naqar	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	Phaqwara
						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	Bhikki
						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	Barnial				
		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	Vaitoha
						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	Aimer					1	Aimer Urban
						2	Masooda
						3	Sarwar
						4	Kekri
						5	Shrinagar Rural
						6	Kishangarh
						7	Arain
						8	Jawaja
						9	Peesangan Rural
						10	Bhinay
2	Alwar					1	Raigarh
						2	Tijara
						3	Kathumar
						4	Mandawar
						5	Umren
						6	Bansur
						7	Behror
						8	Laxmangarh
						9	Neemrana
						10	Kishangarh Bas
						11	Kotkasim
						12	Rangarh
						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	Gadroad
						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	Bijolijan
						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	Bhainsrogarh
						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	Sujargarh
						3	Rajgarh
						4	Ratargarh
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	Jaloo
						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	Sanchole
						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	Kheensar
						3	Molasar
						4	Dezana
						5	Makrana
						6	Didwana
						7	Riyan Bari
						8	Merta
						9	Jaisal
						10	Nawa
						11	Parbatsar
						12	Nagaur
						13	Kuchaman City
						14	Mundwa
24	Pali	1	Pali			1	Rani Station
						2	Sumerpur
						3	Bali
						4	Rajpur
						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	Lachmangarh
						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	Goqunda	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 - Thondiarpatt-I
						8	Kottai - Thondiarpatt-II
						9	Kottai - Thondiarpatt-III
						10	Kottai - Thondiarpatt-IV
						11	Maduravil
						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	Thirumalaipalayam	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	Selakkarachal
						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	Pillaiyamatham	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	Puliyumatham		
				20	Reddiarchatram		
				21	Shanarpatti		
				22	Silvathur		
				23	Thoppampatti		
				24	Vadamadurai		
				25	Vatlagundu		
				26	Vedasandur		
				27	Viruveedu		
8	Erode	1	Ammappettai	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	Punjaijuliampatti
		9	Poondurai			9	Siruvallur
		10	Sathyamangalam			10	Thingalur
		11	Sivagiri(E)			11	Vellore
9	Kallakurichi	1	Erailiyur	1	Kalvarayan Malai	1	Chinnaselam
		2	Kalamarudur	2	Nainarpalayam	2	Elavanasurkottai
		3	Kallakurichi	3	Sankarapuram	3	Indilii
		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	Velliyani
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	Senthamangalam
						19	Vaiyappamalai
						20	Valaiyapatti
						21	Vennandur
17	Perambalur	1	Koothur			1	Chettikulam
						2	Keelapuliur
						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				
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	Mallyakara
						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	Karaisal 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	Serthamangalam
						9	Uthumalai
						10	Veerasingamani
						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	Ammappet
		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	Thiruvadamardur
						30	Thondarampattu
						31	Thuvankurichi
						32	Tiruchitrambalam
						33	Tiruppanandal
						34	Vallam
23	Theni	1	Andipatti	1	Kandamanur	1	Erasakkanackanur
		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	Kannigapair				
		7	Manavor				
		8	Mappedu				
		9	Morai				
		10	Nemam				
		11	Pallipattu				
		12	Poonimangadu				
		13	Tiruttani				
		14	Uthukkottai				
		15	Velliyur				
		16	Vengathur				
25	Thiruvarur	1	Kootheranallur	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.Peryapatti
						16	Vaiyampatti
						17	Valaieduppu
28	Tirunelveli	1	Levinjipuram	1	Pazhavor	1	Vannikonenthal
		2	Manur				
		3	Radhapuram				
		4	Thalayuthu				
		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	Kikodungalur
		6	Mandakolathur	6	Nayadumangalam	6	Malaiyur
		7	Osur	7	Nedlungunam	7	Mangalam
		8	Polur	8	Thanipadi	8	Melpalipattu
		9	Santhavalas			9	Mullipattu
		10	Somaspadi			10	Pachal
		11	T.V.Malai (North)			11	Pudupalayam
		12	T.V.Malai (South)			12	Thachambadi
		13	Thandampat			13	Thatchampattu
		14	Thellar				
		15	Thurinjapuram				
16	Vanapuram						
17	Vandavasi						
18	Veraiyur						
19	Vettaviam						
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	Oduqathur
						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	Olakur			7	Meloiakur
		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	Bhadradi 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	Jaqtial	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	Raghnadhapalem				
		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	Guthbullapur
		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	Saroonagar				
		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	Thirumalaqiri				
		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	Bareru				
		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	Jaqat				
		4	Miaon				
		5	Salarpur				
		6	Ujhani				
11	Bulandshahar	1	Pahasu	1	Arnia Khurd	1	Sikandrabad
		2	Debai	2	Khurja	2	Bulandshahar
		3	Anup Shahr	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	Nidhauri 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	Airava				
		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	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	Jalalabad
		2	Chhibramau		2	Talgram
26	Kanpur Dehat	1	Akbarpur			
		2	Maitha			
		3	Jhinhak			
		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	Ganjidundwara			
		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	Jaqir			1 Bamahal
		2	Mainpuri			
34	Mathura			1	Baldeo	1 Raya
				2	Nohhil	
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	Bhaqatpur			
		5	Mundapandey			
		6	Chhajlet			
38	Muzaffarnagar	1	Shahpur	1	Charthawal	1 Bhaghara
		2	Muzaffarnagar	2	Budhana	
39	Pratapgarh	1	Lalqanj	1	Shivgarh	
		2	Gaura	2	Sadar	
		3	Baba Belkhar Nath	3	Mandhata	
		4	Patti	4	Sandwa Chandika	
		5	Rampur-Sangramgarh			
		6	Lakshmanpur			
40	Prayagraj	7	Aspur Deosara			
		8	Kunda			
		9	Mangaraura			
		1	Bahadurpur	1	Chaka	1 Prayagraj City
		2	Baharia	2	Sahson	
		3	Holagarh			
		4	Saidabad			
		5	Mauaima			
		6	Phulpur			
7	Pratappur					
41	Rampur	8	Shringverpur Dham			
		9	Dhanupur			
		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	Bahoi		
		3	Asmoli	3	Pawansa		
				4	Baniakhera		
44	Sant Ravidas Nagar	1	Gyanpur				
		2	Deegh				
		3	Suriyawan				
		4	Abhauli				
		5	Aurai				
		6	Bhadochi				
45	Shamli	1	Thana Bhawan	1	Kairana	1	Kandhala
						2	Shamli
						3	Un
46	Sonbhadra	1	Dudhi				
		2	Nagawa				
47	Varanasi	1	Sevapuri	1	Chiraiqaon	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	Bhaqwanpur				
		2	Bahadradab				
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	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	Balaqarh			
		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		

CATEGORIZATION of ASSESSMENT UNITS, 2022							
DAMAN & DIU							
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	Daman					1	Daman
2	Diu					1	Diu
ABSTRACT							
Total No. of Assessed Units		Number of Semicritical Assessment Units		Number of Critical Assessment Units		Number of Over Exploited Assessment Units	
2		Nil		Nil		2	

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	Janakavarampanulu
						6	Karamchedu (C)
						7	Karlapalem
						8	Nagaram
						9	Nizampatnam
						10	Parchur
						11	Pittalavanipalem
						12	Repalle
						13	Yeddapanudi
2	Eluru					1	Ganapavaram (C)
						2	Kaikalur (C)
						3	Kalidindi (C)
						4	Mandavalli (C)
						5	Mudinapalle (C)
						6	Nidamaru (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	Kaikuluru
						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	Uppalaqutam (C)
6	Krishna					1	Bantumilli (C)
						2	Gudlalleru (C)
						3	Gudur (Krishna) (C)
						4	Koduru (C)
						5	Kruthivenu (C)
						6	Machilipatnam (C)
						7	Naqavalanka (C)
						8	Nandivada (C)
7	Palnadu					9	Pedana (C)
						1	Amaravathi
						2	Chilakaluripet
						3	Etlapadu
						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	Naqulupalapadu
						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	Nabinaagar				
		9	Obra				
		10	Rafiqani				
2	Banka	1	Amarpur				
		2	Banka				
		3	Barahat				
		4	Belhar				
		5	Bounsi				
		6	Chandan				
		7	Dhoraiva				
		8	Fullidumar				
		9	Katoriya				
		10	Raloun				
		11	Shambhuqanj				
3	Begusarai			1	Bachwara		
				2	Balia		
				3	Barauni		
				4	Begusarai		
				5	Matihani		
				6	Navkothi		
				7	Sahebour Kamal		
4	Bhagalpur	1	Gauradih	1	Jagdishpur		
		2	Knarik	2	Kahalgaon		
		3	Narayanpur	3	Nathnagar		
		4	Nauqachhia	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	Bihiva		
				4	Koilwar		
				5	Shahpur		
				6	Udwantnagar		
6	Buxar			1	Brahmpur		
				2	Buxar		
				3	Chakki		
				4	Simi		
7	Darbhanga			1	Baheri		
				2	Biraul		
8	Gaya	1	Amas				
		2	Atri				
		3	Banke Bazar				
		4	Barachatty				
		5	Belaqanj				
		6	Bodh Gaya				
		7	Dobhi				
		8	Dumariya				
		9	Fatehpur				
		10	Gaya Sadar				
		11	Guraru				
		12	Gurua				
		13	Imanganj				
		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	Jhaiha				
		7	Khaira				
		8	Laxmipur				
		9	Sikandra				
		10	Sono				
10	Jehanabad	1	Hulasquni				
		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	Goqri		
				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	Tetiabambar				
		6	Barivarpur	1	Barivarpur		
		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	Raigir				
		18	Sarmera				
		19	Silao				
		20	Tharthari				
18	Nawada	1	Akbarpur				
		2	Govindpur				
		3	Hisua				
		4	Kashichak				
		5	Kawakole				
		6	Meskaur				
		7	Nardigani				
		8	Narhat				
		9	Nawada				
		10	Pakaribarawan				
		11	Rajauli				
		12	Roh				
		13	Sirdala				
		14	Warisaligani				
19	Patna			1	Bakhtivarpur		
				2	Barh		
				3	Danapur		
				4	Maner		
20	Purnea			1	Kasba		
				2	Purnea		
21	Rohtas	1	Akorhigola				
		2	Bikramgani				
		3	Chenari				
		4	Dawath				
		5	Dehri				
		6	Dinara				
		7	Karakat				
		8	Kargahar				
		9	Nasrigani				
		10	Nokha				
		11	Sanjhauli				
		12	Sheosagar				
22	Samastipur			1	Mohanpur		
				2	Mohiuddin Nagar		
				3	Patori		
				4	Vidyapatnagar		
23	Saran			1	Chapra Sadar		
				2	Dighwara		
				3	Rivilganj		
				4	Sonepur		
24	Sheikhpura	1	Arivari				
		2	Barbigaha				
		3	Chewara				
		4	Ghat Kusumba				
		5	Sheikhopur Sarai				
		6	Sheikhpura				
25	Vaishali			1	Bidupur		
				2	Desri		
				3	Hajipur		
				4	Rachopur		
				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		NII	

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	Bilairgarh				
		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	Meghrai				
		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	Kankrei				
		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	Kalvanpur				
		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	Sattasana				
		6	Uniha				
		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	Muji				
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	Jhoihu
		2	Tohana			2	Charkhi Dadri
3	Faridabad					1	Ballabgarh
						2	Faridabad
4	Fatehabad	1	Fatehabad			1	Fatehabad
5	Gurgaon					1	Farrukh Naqar
						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	Raiound			1	Guhla
						2	Kaithal
						3	Kalavat
10	Karnal						
11	Mahendragarh	1	Mahendergarh			1	Kanina
						2	Mahendragarh
						3	Narnaul
12	Mewat					1	Ferozepur Jhirka
						2	Naqina
						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	Sarnalkha				
		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 Maira		
				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	Porevahat				
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	Haidemagar				
		6	Hariharqanj				
		7	Leslieganj				
		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	Siraquppa				
2	Chitradurga	1	Molakalmuru			1	Holalkere
3	Davanagere	1	Davanagere				
		2	Harihar				
4	Kalburgi	1	Chincholi				
5	Kolara	1	Mulabaqilu				
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	Mokkheda				
		7	Pandhurna				
		8	Parasia				
		9	Sausar				
		10	Tamia				
3	Dhar	1	Badnawar				
		2	Bagh				
		3	Dahi				
		4	Dhar				
		5	Dharpuri				
		6	Gandhwani				
		7	Manawar				
		8	Nalchha				
		9	Nisarpur				
		10	Sardarpur				
		11	Tirfa				
		12	Umarvan				
4	Dindori	1	Amarpur				
		2	Dindori				
5	Jhabua	1	Jhabua				
		2	Petlawad				
		4	Ranapur				
		5	Thandla				
6	Ratlam	1	Baina				
7	Sehore	1	Ashta				
		2	Ichhawar				
		3	Nasrullagani				
		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	Sangrapur
						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	Marshaghal (C)
						7	Pattamundai
						8	Rajkanika (C)
						9	Rajnagar (C)
7	Puri					1	Astarang
						2	Brahmaqiri
						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	Khuan 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	Moqa-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	Robar		
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	Gudhamalari
						9	Kalvanpur
						10	Patodi
						11	Ramsar
						12	Samdari
						13	Serwa
						14	Sheo
						15	Sindhari
						16	Siwana
3	Bharatpur					1	Deeg
						2	Kumher
						3	Nadbai
						4	Naqar
						5	Sewar
						6	Weir
4	Bikaner					1	Bikaner
						2	Bikaner urban
						3	Dungargarh
						4	Khailwala(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	Solat
						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	Bommi				
		2	Dharmapuri				
		3	Harur				
		4	Indur				
		5	Karimangalam				
		6	Marandahalli				
		7	Morappur				
		8	Nallampalli				
		9	Palacode				
		10	Pappireddipatty				
		11	Pennagaram				
		12	Pulicarai				
		13	Theerthamalai				
4	Dindigul	1	Vatlagundu				
5	Erode	1	Ammappetai				
		2	Sathvamangalam				
		3	Vaniputhur				
6	Kallakurichi	1	Thirukoilur				
7	Karur	1	Chinnadharapuram				
		2	K.Paramathy				
		3	Pugalur				
8	Krishnagiri	1	Bagalur				
		2	Barqur				
		3	Barur				
		4	Hosur				
		5	Kelamangalam				
		6	Krishnagiri				
		7	Mathur				
		8	Pochampalli				
		9	Shoolagiri				
		10	Uthanagarai				
		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	Thalainavar
						3	Nagapattinam
						4	Nirmulai
						5	Thillayadi
						6	Thirukannapuram
						7	Thirukkuvalai
						8	Kariyapattinam
						9	Thagatur
						10	Kivelur
						11	Kangalancheri
						12	Thirumarugal
						13	Keelaiyur
						14	Therkupoigainallur
						15	Thevoor
						16	Vedaranyam
						17	Velanganni
12	Perambalur	1	Varaqr			1	Perumaruthur
13	Pudukkottai	1	Karaiyur			2	Kottaipattinam
						3	Sinkavanam
14	Ranipet	1	Ranipet				
15	Ramanathapuram	1	Keelakkurai			1	Thirupullani
						2	Kadaladi
						3	Sikkal
						4	Mangalakudi
						5	Mudukulathur South
						6	Melachelvanur
						7	Thondi
						8	Savalkudi
						9	S.Tharaikudi
16	Salem	1	Edappadi				
		2	Ernapuram				
		3	Gangavalli				
		4	Kadavampatti				
		5	Karipatti				
		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	Alangavam				
		2	Andiyappanur				
		3	Tirupathur				
		4	Vaniyambadi				
20	Theni	1	Cumbam				
		2	Devathanapatti				
21	Thiruvallur					1	Miniur
22	Thiruvarur					1	Muthupet
						2	Thiruthuraiipoondi
						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	Meipallipattu				
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	Ramaduqu				
		2	Shankarapatnam				
		3	Thimmapur				
		4	V.Saidapur				
		5	Veenavanka				
8	Khammam	1	Madhira				
		2	Wvra				
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	Naravanpet				
		7	Uttoor				
12	Mancherial	1	Bellampally				
		2	Chennur				
13	Medak	1	Chegunta				
14	Medchal	1	Alwal				
		2	Balanagar				
		3	Keesara				
		4	Malkaigiri				
		5	Shamirpet				
15	Nagarkurnool	1	Balmoor				
		2	Bijinepally				
		3	Charakonda				
		4	Kalwakurthy				
		5	Nagarkurnool				
		6	Urkonda				
		7	Vangoor				
		8	Veladanda				
16	Peddapalli	1	Eliqadu				
		2	Julapalle				
		3	Odela				
		4	Peddapalle				
		5	Srirampur				
17	Rangareddy	6	Sultanabad				
		1	Abdullapurmet				
		2	Chevella				
		3	Havathnagar				
		4	Manchal				
		5	Talakondapally				
6	Yacharam						

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022							
TELANGANA							
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	Yadaginutta				
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	Maharajgani		
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	Vijayeeepur				
15	Ferrukabad	1	Raiepur				
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	Gacaha		
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	Dudhal		
				3	Nebuwa Naurangia		
28	Lakhimpur Kheri			1	Nakaha		
				2	Nighasan		
				3	Ishanagasr		
29	Maharajganj			1	Ghughuli		
				2	Maharajgani		
30	Mahoba	1	Charkhari				
31	Mahamaya Nagar/Hathras					1	Mursan
						2	Sadabad
32	Mainpuri	1	Kishni				
33	Mathura	1	Goverdhan			1	Chamuhan
		2	Baldeo			2	Goverdhan
		3	Farah			3	Manth
		4	Manth			4	Nandgaon
						5	Naujhil
						6	Raya
34	Mirzapur			1	Kon		
35	Moradabad			1	Moontha Pandey		
				2	Chhallet		
				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	Taldanara				
2	Birbhum	1	Dubrajpur				
		2	Khovrasol				
		3	Mavureswar-I				
		4	Nalhati-I				
		5	Rainagar				
		6	Rampurhat-I				
		7	Suri-II				
3	Dakshin Dinajpur	1	Bansihari	1	Balurghat		
		2	Gangarampur				
		3	Kumarani				
		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	Balaqarh		
				2	Chanditala-II		
				3	Dhaniakhali		
				4	Gochat-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	Bamanqola	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	Bharatour-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	Degana		
				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 Bardhaman			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	Jhaldai-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-II
							25	Namkhana
							26	Patharpratima
							27	Sagar
							28	Sonarpur
							29	Thakurpukur Mahestala
16	Uttar Dinaipur	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	Puttur	169.97	Over Exploited	Ananthapuramu	Puttur	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	Belagani	119.47	Over Exploited	Gaya	Belagani	79.69	Semi Critical	Improved
6	Gaya	Dumaria	78.99	Semi Critical	Gaya	Dumaria	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	Siqheshwarsthan	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	Girivak	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/Khagaui	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	Daqaura	84.38	Semi Critical	Purnea	Dagarua	57.85	Safe	Improved
37	Saran	Naqra	71.94	Semi Critical	Saran	Naqra	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	Daroundha	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	Eknagarisari	73.65	Semi Critical	Nalanda	Eknagarisari	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	Fathua	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	Dalsingsarai	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	Vidyapatnagar	51.08	Safe	Samastipur	Vidyapatnagar	75.80	Semi Critical	Deteriorated
40	Sheikhpura	Barbhiga	39.73	Safe	Sheikhpura	Barbhiga	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	Mavur Vihar	107.12	Over Exploited	East	Mavur 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-li	78.28	Semi Critical	Hisar	Hisar-li	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	Gadaq	95.15	Critical	Gadag	Gadaq	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	Korataqere	114.66	Over Exploited	Tumakuru	Korataqere	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	Ratteeahali	86.18	Semi Critical	Haveri	Ratteeahali	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	Kanhanqad	72.25	Semi Critical	Kasargod	Kanhanqad	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 Saboo	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	Mahlipur	80.65	Semi Critical	Hoshiarpur	Mahlipur	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	Kuniamuthur	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	Thirumalaipalayam	119.55	Over Exploited	Coimbatore	Thirumalaipalayam	92.49	Critical	Improved
16	Cuddalore	Rettichavadi	140.26	Over Exploited	Cuddalore	Retty Chavadi	98.29	Critical	Improved
17	Cuddalore	Umanqalam	89.44	Semi Critical	Cuddalore	Umanqalam	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	Kuthivalathur	76.13	Semi Critical	Erode	Kuthivalathur	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	Kalivampoondi	76.47	Semi Critical	Kancheepuram	Kalivampoondi	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	Manangalam	73.79	Semi Critical	Karur	Manangalam	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	Ravakottai	94.35	Critical	Krishnagiri	Ravakottai	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	Karalvur	73.45	Semi Critical	Pudukkottai	Karalvur	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	Avikudi	126.56	Over Exploited	Tenkasi	Avikudi	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	Itthalar	71.97	Semi Critical	The Nilgiris	Itthalar	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	Ilayarasandal	127.76	Over Exploited	Thoothukkudi	Ilayarasandal	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	Pazhavor	104.21	Over Exploited	Tirunelveli	Pazhavor	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	Arapalayam	78.45	Semi Critical	Tiruvannamalai	Arapalayam	64.89	Safe	Improved
148	Tiruvannamalai	Arni	88.45	Semi Critical	Tiruvannamalai	Arni	62.62	Safe	Improved
149	Tiruvannamalai	Chengam Jawaduhills	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	Eraiyrur	108.35	Over Exploited	Tiruvannamalai	Eraiyrur(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	Vettaviam	110.52	Over Exploited	Tiruvannamalai	Vettaviam	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	Elaiyiram- Pannai	76.64	Semi Critical	Virudhunagar	Elaiyiram- 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	Markavankottai	59.16	Safe	Theni	Markavankottai	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	Jagadeypur	72.94	Semi Critical	Siddipet	Jagadeypur	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	Bhadradi Kothagudem	Julurpad	73.34	Semi Critical	Bhadradi 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	Bhadradi Kothagudem	Yellandu	72.12	Semi Critical	Bhadradi 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	Amanqal	75.94	Semi Critical	Rangareddy	Amanqal	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	Neradiqonda	73.32	Semi Critical	Adilabad	Neradiqonda	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	Bijnapalle	73.95	Semi Critical	Nagarkurnool	Bijnapalle	55.52	Safe	Improved
45	Khammam	Singareni	85.97	Semi Critical	Khammam	Singareni	67.26	Safe	Improved
46	Siddipet	Bejanki	85.46	Semi Critical	Siddipet	Bejanki	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	China Chintla Kunta	73.55	Semi Critical	Mahabubnagar	China Chintla 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	Bhadradi Kothagudem	Aswaraopeta	76.15	Semi Critical	Bhadradi 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	Thorur	73.97	Semi Critical	Mahabubabad	Thorur	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	Bhadradi Kothagudem	Kothagudem	73.34	Semi Critical	Bhadradi Kothagudem	Kothagudem	50.73	Safe	Improved
72	Jangaon	Rachunathpalle	84.40	Semi Critical	Jangaon	Rachunathpalle	61.39	Safe	Improved
73	Suryapet	Noothankal	86.73	Semi Critical	Suryapet	Noothankal	63.13	Safe	Improved
74	Nagarkurnool	Thimmailipeta	73.41	Semi Critical	Nagarkurnool	Thimmailipeta	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	Ramavampet	81.35	Semi Critical	Medak	Ramavampet	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	Ibrahimpattam	79.60	Semi Critical	Rangareddy	Ibrahimpattam	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	Bommalararam	80.14	Semi Critical	Yadadri Bhuvanagiri	Bommalararam	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	Sirkonda	71.02	Semi Critical	Adilabad	Sirkonda	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	Bheemipoor	72.42	Semi Critical	Adilabad	Bheemipoor	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	Bhadradi Kothagudem	Chunchupally	73.34	Semi Critical	Bhadradi Kothagudem	Chunchupally	91.74	Critical	Deteriorated
5	Siddipet	Dubbak	82.08	Semi Critical	Siddipet	Dubbak	94.61	Critical	Deteriorated
6	Bhadradi Kothagudem	Dammapeta	88.64	Semi Critical	Bhadradi 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	Kolsa	73.56	Semi Critical	Azamgarh	Kolsa	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	Nohihil	110.72	Over Exploited	Mathura	Nohihil	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 Naqar	80.16	Semi Critical	Rampur	Said Naqar	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	Chiraiqaon	79.92	Semi Critical	Varanasi	Chiraiqaon	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	Murara-li	47.16	Semi Critical	Birbhum	Murara-li	27.04	Safe	Improved
4	Birbhum	Nalhata-li	59.39	Semi Critical	Birbhum	Nalhata-li	13.52	Safe	Improved
5	Birbhum	Nancoor	46.38	Semi Critical	Birbhum	Nancoor	22.36	Safe	Improved
6	Birbhum	Rampurhat-li	61.80	Semi Critical	Birbhum	Rampurhat-li	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	Janjipara	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	Jalanqi	96.69	Semi Critical	Murshidabad	Jalanqi	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	Raninaagar-II	107.74	Semi Critical	Murshidabad	Raninaagar-II	57.59	Safe	Improved
33	Murshidabad	Sagarighi	51.87	Semi Critical	Murshidabad	Sagarighi	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 Medinipur	Chandrakona-I	60.19	Safe	Improved
37	Pasemi Criticalhim Medinipur	Dantan-II	66.49	Semi Critical	Pasemi Criticalhim Medinipur	Dantan-II	54.50	Safe	Improved
38	Pasemi Criticalhim Medinipur	Daspur-II	15.73	Semi Critical	Pasemi Criticalhim Medinipur	Daspur-II	20.05	Safe	Improved
39	Pasemi Criticalhim Medinipur	Debra	53.12	Semi Critical	Pasemi Criticalhim Medinipur	Debra	69.06	Safe	Improved
40	Pasemi Criticalhim Medinipur	Ghatal	25.69	Semi Critical	Pasemi Criticalhim Medinipur	Ghatal	49.69	Safe	Improved
41	Pasemi Criticalhim Medinipur	Pingla	50.59	Semi Critical	Pasemi Criticalhim Medinipur	Pingla	53.04	Safe	Improved
42	Pasemi Criticalhim Medinipur	Sabang	47.59	Semi Critical	Pasemi Criticalhim Medinipur	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-li	55.73	Safe	Birbhum	Mayureswar-li	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-li	54.99	Safe	Malda	Ratua-li	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	Hariharpura	84.80	Safe	Murshidabad	Hariharpura	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 Barddhaman	Raniganj	95.16	Critical	Deteriorated
36	Pasemi Criticalhim Medinipur	Chandrakona-li	62.63	Semi Critical	Pasemi Criticalhim Medinipur	Chandrakona-li	92.33	Critical	Deteriorated
37	Pasemi Criticalhim Medinipur	Garbeta-I	49.58	Safe	Pasemi Criticalhim Medinipur	Garbeta-I	95.63	Critical	Deteriorated
38	Pasemi Criticalhim Medinipur	Keshpur	42.12	Safe	Pasemi Criticalhim Medinipur	Keshpur	73.09	Semi Critical	Deteriorated
39	Pasemi Criticalhim Medinipur	Kharagpur-II	61.70	Safe	Pasemi Criticalhim Medinipur	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-I	86.33	Safe	Purba Barddhaman	Purbasthali-I	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

CONTRIBUTORS

Assessment of GW Resource of State/UT

Officers of Central Ground Water Board, Regional / State Unit Offices
& State Ground Water / Nodal Department for respective States/UTs.

Principal Contributors

1. Dr. Ratikanta Nayak, Scientist-E, Central Ground Water Board, CHQ, Faridabad.
2. Dr.G. Praveen Kumar, Scientist-D, Central Ground Water Board, CHQ, Faridabad.
3. Miss. Subhra Satapathy, Scientist-B, Central Ground Water Board, CHQ, Faridabad

Contributors

1. Dr. Ranjan Kumar Ray, Scientist-E, Central Ground Water Board, CHQ, Faridabad.
2. Shri. D.N.Mandal , Scientist-E, Central Ground Water Board, CHQ, Faridabad.
3. Dr. M. Senthil Kumar, Scientist-D, Central Ground Water Board, CHQ, Faridabad.

Overall Guidance & Supervision

Dr.A.Subburaj, Member (South), Central Ground Water Board, CHQ, Faridabad.
Shri.P.K.Jain, Member (Retired), Central Ground Water Board, CHQ, Faridabad.



Central Ground Water Board
Department of Water Resources,
River Development and Ganga Rejuvenation
Ministry of Jal Shakti,
Government of India
Bhujal Bhawan, NH IV Faridabad, Haryana
e-mail: cgwb@nic.in