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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 and Ganga Rejuvenation
Central Ground Water Board

भूमि जल वार्षिक पुस्तिका- भारत

GROUND WATER YEAR BOOK - INDIA

2024-25

ISBN: 978-93-47719-60-8

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Government of India

डॉ. सुनील कुमार अम्बष्ट
अध्यक्ष
Dr. Sunil Kumar Ambast
Chairman

सत्यमेव जयते

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प्रस्तावना

भूजलवैज्ञानिक व्यवस्था भूजल की उपस्थिति और गति का प्राथमिक नियंत्रण है। पिछले कुछ दशकों में, देश में कुल सिंचित क्षेत्र में 62% की वृद्धि भूजल के कारण हुई है। भूजल पर बढ़ती निर्भरता ने भूजल संसाधनों की स्थिरता को खतरे में डाल दिया है। वार्षिक पुनःपूर्ति की तुलना में अत्यधिक भूजल दोहन और इसके परिणामस्वरूप जल स्तर में गिरावट कई क्षेत्रों में एक बढ़ती हुई चिंता का विषय बन गई है। जहाँ देश के कई हिस्सों में भूजल की कम उपलब्धता अपने आप में एक चुनौती है, वहीं भूजल पर अत्यधिक निर्भरता स्थिति को और भी बदतर बना देती है।

भूजल स्तर का अवलोकन हमें जलभृत प्रणालियों और जल प्रवाह के तरीके को समझने में मदद कर सकती है। साथ ही, यह पर्यावरण और अन्य उपयोगकर्ताओं पर भूजल निष्कर्षण के प्रभावों का मूल्यांकन करने में भी मदद कर सकती है। केंद्रीय भूजल बोर्ड और विभिन्न राज्य सरकार के विभागों द्वारा स्थापित अवलोकन केंद्रों के माध्यम से नियमित समय अंतराल पर भूजल स्तर का अवलोकन किया जाता हैं।

"भूमि जल वार्षिक पुस्तिका - भारत 2024-2025" वास्तव में भूजल डेटा विश्लेषण में एक महत्वपूर्ण उपलब्धि का प्रतिनिधित्व करती है। लगभग 26,000 अवलोकन केंद्रों से प्राप्त आँकड़ों का उपयोग करके, मौसमी तथा दशकीय उतार-चढ़ावों की जानकारी प्रदान करके, यह रिपोर्ट सभी स्तरों पर हितधारकों के लिए अमूल्य जानकारी प्रदान करती है। राज्यों और जिलों में गहराई से जल स्तर और उतार-चढ़ाव के रुझानों का विस्तृत विश्लेषण नीति निर्माताओं, नियामकों और शोधकर्ताओं को वर्तमान भूजल स्थिति को समझने में मदद करेगा। इस तरह का व्यापक विवरण निर्णय लेने और प्रभावी भूजल प्रबंधन के लिए अत्यंत महत्वपूर्ण है।

आँकड़ों को संकलित करने और इस रिपोर्ट को तैयार करने में श्री डी. एन. मंडल, डॉ. गजानन रामटेके, श्री राजेश कुमार, श्री अजीत सिंह और श्रीमती पूनम पांचाल के समर्पित प्रयासों की हम सराहना करते हैं। उनकी कड़ी मेहनत और प्रतिबद्धता ने इसे समय पर पूरा करने में महत्वपूर्ण भूमिका निभाई है।

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अध्यक्ष

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आमुख

भूजल एक ऐसा बहुमूल्य प्राकृतिक संसाधन है, जो देश की खाद्य सुरक्षा को सुनिश्चित करने में अपनी महत्वपूर्ण भूमिका निभाता है। आजीविका को समर्थन देने तथा सतत आर्थिक विकास में भूजल की भूमिका उल्लेखनीय है। इस संसाधन पर बढ़ते दबाव तथा वर्षा में विविधता के परिणामस्वरूप इसका सामाजिक एवं आर्थिक महत्व और अधिक बढ़ गया है। वर्षा की अनिश्चितता और असमान वितरण से प्राकृतिक पुनर्भरण प्रभावित होता है, जिससे कई क्षेत्रों में भूजल स्तर में निरंतर गिरावट दर्ज की जा रही है। ऐसी परिस्थिति में भूजल के वैज्ञानिक एवं सतत प्रबंधन कार्यनीतियों की तत्काल आवश्यकता और अधिक बढ़ गयी है।

पिछले पाँच दशकों से केंद्रीय भूजल बोर्ड (सीजीडब्ल्यूबी) प्रेक्षण कुओं के विस्तृत नेटवर्क के माध्यम से भूजल स्तर की मॉनिटरिंग एवं इससे संबन्धित आंकड़े तैयार कर रहा है। इन आंकड़ों के वैज्ञानिक अध्ययन से भूजल की विशिष्टता को और अधिक गहनता से समझने तथा भूजल संसाधन आँकलन, योजना, प्रबंधन और संरक्षण से संबंधित नीतिगत निर्णयों को तैयार करने में सहायता प्राप्त होती है।

"भूजल वार्षिकी - भारत 2024-2025" इस दिशा में एक सराहनीय प्रयास है, जो देशभर में भूजल की स्थिति एवं विशिष्टताओं को समग्र और सुव्यवस्थित रूप में प्रस्तुत करती है।

मुझे विश्वास है कि यह प्रकाशन नीति-निर्धारकों, शोधकर्ताओं एवं जल संसाधन प्रबंधकों के लिए एक महत्वपूर्ण संदर्भ सामग्री सिद्ध होगा। मैं इस महत्वपूर्ण पुस्तिका के सफल प्रकाशन हेतु सीजीडब्ल्यूबी की समस्त टीम को उनके बहुमूल्य योगदान के लिए हार्दिक बधाई एवं शुभकामनाएँ प्रेषित करता हूँ।

एन. वरदराज

(एन. वरदराज)

दिनांक:

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आमुख

भूजल क्षेत्र में कार्यरत केंद्र सरकार की शीर्ष संस्था, केंद्रीय भूजल बोर्ड, पिछले पाँच दशकों से देश में भूजल स्तर की अवलोकन कर रही है। भूजल उपलब्धता के रुझानों को समझने और कमी से संबंधित मुद्दों के समाधान के लिए केंद्रीय भूजल बोर्ड द्वारा व्यवस्थित आँकड़ों का संग्रह आवश्यक है। लगभग 26,000 अवलोकन केंद्रों के माध्यम से, केंद्रीय भूजल बोर्ड वर्ष में चार बार: जनवरी, मानसून-पूर्व (मार्च/अप्रैल/मई), अगस्त और मानसून-पश्चात (नवंबर) में आँकड़े एकत्र करता है, जिससे देश भर में भूजल स्तर का एक व्यापक दृष्टिकोण प्राप्त होता है।

इसके अलावा, यह आँकड़े कृत्रिम पुनर्भरण, सतत भूजल उपयोग सुनिश्चित करने और अत्यधिक दोहन तथा जलवायु परिवर्तनशीलता से उत्पन्न चुनौतियों का समाधान करने जैसी पहलों में सहायक हो सकते हैं। प्रभावी भूजल प्रबंधन के लिए न केवल नियमित निगरानी की आवश्यकता है, बल्कि दीर्घकालिक स्थिरता सुनिश्चित करने के लिए इस आँकड़े को व्यापक जल संसाधन प्रबंधन ढाँचों में एकीकृत करने की भी आवश्यकता है।

यह वार्षिक संकलन, "भूमि जल वार्षिक पुस्तिका - भारत 2024-2025", विभिन्न जलभृतों में भूजल की गतिशीलता को समझने में एक महत्वपूर्ण योगदान है और राज्यवार परिदृश्यों में बहुमूल्य अंतर्दृष्टि प्रदान करता है। ऐसी व्यापक रिपोर्टें नीति निर्माताओं से लेकर शोधकर्ताओं तक, हितधारकों के लिए महत्वपूर्ण हैं, क्योंकि ये प्रभावी प्रबंधन पद्धतियों की जानकारी देती हैं और भूजल चुनौतियों से निपटने के लिए बेहतर योजना बनाने में सहायक होती हैं। जागरूकता बढ़ाने और सतत भूजल उपयोग को बढ़ावा देने के लिए चल रहे प्रयासों को देखना उत्साहजनक है। मैं इस रिपोर्ट को प्रकाशित करने में केंद्रीय भूजल बोर्ड द्वारा किए गए प्रयासों की सराहना करता हूँ।

मैं डेटा संकलित करने और इस रिपोर्ट को इसके वर्तमान स्वरूप में तैयार करने के लिए योगदानकर्ताओं को बधाई देता हूँ। उनके प्रयास अत्यंत सराहनीय हैं।

(पी. के. त्रिपाठी)
सदस्य (उत्तर एवं पश्चिम)

फरीदाबाद

GROUNDWATER YEAR BOOK - INDIA 2024-2025

CONTENTS

LIST OF PLATES

LIST OF TABLES

LIST OF ANNEXURES

कार्यकारी सारांश

"भूमि जल वार्षिक पुस्तिका - भारत 2024-2025" भारत के जटिल जल-भूवैज्ञानिक ढाँचे का अवलोकन प्रदान करती है, जिसमें विभिन्न भूवैज्ञानिक संरचनाओं में भूजल वितरण, विशेषताओं और संसाधनों का विवरण दिया गया है। रिपोर्ट भारत के जलभृतों को दो मुख्य प्रकारों में वर्गीकृत करती है: छिद्रयुक्त और विदरयुक्त संरचनाएँ। नदी घाटियों और डेल्टाई क्षेत्रों में जलोढ़ जलभृत जैसी छिद्रयुक्त संरचनाएँ, विशेष रूप से सिंधु-गंगा-ब्रह्मपुत्र बेसिन में, महत्वपूर्ण वार्षिक पुनःपूर्ति वाले महत्वपूर्ण भूजल भंडार हैं। वहीं, आग्नेय, ज्वालामुखीय और समेकित अवसादी चट्टानों सहित विदरयुक्त संरचनाएँ देश के दो-तिहाई हिस्से को आच्छादित करती हैं, लेकिन इनकी जल धारण क्षमता चट्टान के प्रकार और विखंडन जैसे कारकों पर निर्भर करती है। प्रमुख खंड छिद्रयुक्त जलभृतों में असंगठित और अर्ध-समेकित संरचनाओं को कवर करते हैं, जहाँ भूजल विकास कुओं और नलकूपों के माध्यम से व्यापक रूप से होता है। विदारक संरचनाओं में आग्नेय और ज्वालामुखीय चट्टानें शामिल हैं, जिनमें भूजल की उपलब्धता चट्टानों के प्रकार और अपक्षय के स्तर पर निर्भर करती है। वर्ष पुस्तिका में अप्रतिबंधित और परिबद्ध जलभृत क्षेत्रों, दोनों पर प्रकाश डाला गया है, और भारत के भविष्य के लिए सतत भूजल प्रबंधन के महत्व पर बल दिया गया है।

वर्षा विश्लेषण 2024 रिपोर्ट वर्ष 2024 के लिए भारत के वर्षा पैटर्न का विस्तृत अवलोकन प्रदान करती है, जो विभिन्न राज्यों में मौसमी और वार्षिक वर्षा वितरण पर डेटा प्रस्तुत करती है। सर्दियों की बारिश (जनवरी-फरवरी) सबसे कमजोर थी, जिसमें राष्ट्रीय कमी -32% थी, तेलंगाना (-93%) पंजाब (-65%), उत्तराखंड (-52%), गुजरात (-50%) छत्तीसगढ़ (-50%), महाराष्ट्र (-48%) जम्मू और कश्मीर (-48%), और हिमाचल प्रदेश (-41%) जैसे राज्यों में भारी कमी दर्ज की गई। प्री-मानसून सीज़न (मार्च-मई) ने कई तटीय और द्वीप क्षेत्रों में असाधारण अधिशेष दिखाया, विशेष रूप से गुजरात (+204%), छत्तीसगढ़ (+122%), मध्य प्रदेश (+122%), लद्दाख (+99%) और दादरा नगर हवेली और दानम और दीव (-99%), दिल्ली (-68%), दक्षिण-पश्चिम मानसून (जून-सितंबर) सामान्य से +8% अधिक के साथ मज़बूत रहा, जिससे राजस्थान (+56%), गुजरात (+48%), गोवा (+46%), तेलंगाना (+29%), आंध्र प्रदेश (+27%) और महाराष्ट्र (+26%) में कुल वर्षा में वृद्धि हुई, जबकि पंजाब (-28%), अरुणाचल प्रदेश (-28%), नागालैंड (-27%), जम्मू और कश्मीर (-26%), बिहार (-19%), हिमाचल प्रदेश (-18%) और असम (-18%) जैसे राज्य पिछड़ गए। मानसूनोत्तर (अक्टूबर-दिसंबर) अवधि अत्यधिक परिवर्तनशील रही; गोवा (+97%), दादरा नगर हवेली और दानम एवं दीव (+82%), दिल्ली (+53%), गुजरात (+50%), हरियाणा (+38%), तमिलनाडु (+33%), कर्नाटक (+30%) ने विपरीत रुझान दिखाए, जबकि उत्तर प्रदेश (-80%), बिहार (-71%), जम्मू और कश्मीर (-65%), मिज़ोरम (-52%), तेलंगाना (-34%) को गंभीर घाटे का सामना करना पड़ा। कुल मिलाकर, 2024 में मौसमी वितरण ने दक्षिणी और पश्चिमी राज्यों में मजबूत अधिशेष को उजागर किया, लेकिन उत्तरी और हिमालयी क्षेत्रों में गंभीर सर्दियों और मानसून के बाद की कमी ने क्षेत्रीय असंतुलन को बढ़ा दिया है।

देश भर के 27,163 अवलोकन कुओं से आँकड़े एकत्र किए जाते हैं, और भूजल स्तर का अवलोकन वर्ष में चार बार की जाती है - जनवरी, मानसून-पूर्व (मार्च/अप्रैल/मई), अगस्त और मानसून-पश्चात (नवंबर)। रिपोर्ट में भूजल स्तर, जलवायु और मानवजनित कारकों के प्रभाव और विभिन्न मौसमों में देखे गए उतार-चढ़ाव के माप शामिल हैं। मौसमी, वार्षिक और दशकीय पैटर्न को प्रकट करने के लिए भूजल स्तरों का मानचित्रण और विश्लेषण किया जाता है।

मानसून-पूर्व जल स्तर की गहराई के आँकड़े दर्शाते हैं कि अधिकांश क्षेत्रों में जल की औसत गहराई 5-10 मीटर बीजीएल के बीच थी, जो उत्तर-पश्चिमी राज्यों (दिल्ली, हरियाणा, पंजाब, राजस्थान) में और गहरी हो गई। मानसून-पश्चात जल स्तर की गहराई के आँकड़ों में उल्लेखनीय पुनःपूर्ति देखी गई, विशेष रूप से अगस्त में, जहाँ 71% कुओं में भूजल स्तर की गहराई 5 मीटर बीजीएल से कम थी। नवंबर तक, लगभग 68% कुओं में अभी भी उथला स्तर दर्ज किया गया, जो अच्छे मानसून पुनर्भरण का संकेत देता है, लेकिन उत्तरी क्षेत्रों में जनवरी 2025 तक भूजल स्तर फिर से गहरा हो जाता है। नवंबर और जनवरी की अवलोकन में भी इसी तरह के पैटर्न देखने को मिले हैं, जहाँ भूजल दोहन के कारण कुछ क्षेत्रों में जल स्तर की गहराई में उल्लेखनीय वृद्धि देखी गई है। उत्तरी और उत्तर-पश्चिमी क्षेत्रों में भूजल स्तर लगातार गहरा रहा, जबकि मध्य और दक्षिणी क्षेत्रों में सभी मौसमों में भूजल का स्तर सामान्य रूप से मध्यम बना रहा।

वार्षिक भूजल उतार-चढ़ाव से पता चलता है कि अधिकांश क्षेत्रों में वार्षिक गिरावट देखी गई है, मानसून-पूर्व तुलनाओं में 2023 और 2024 के बीच लगभग 56% कुओं में जल स्तर में कमी दर्ज की गई है। इसके बाद, 2024 में मानसून के मौसम में अत्यधिक वर्षा के कारण मानसून-पश्चात तुलनाओं में 2023 और 2024 के बीच लगभग 61% कुओं में जल स्तर में वृद्धि दर्ज की गई है। उतार-चढ़ाव मुख्यतः 0-2 मीटर के बीच रहा। छत्तीसगढ़, गोवा, गुजरात, झारखंड, कर्नाटक, महाराष्ट्र, पूर्वी राजस्थान और त्रिपुरा राज्यों में कुछ स्थानों पर जल स्तर में वृद्धि प्रमुखता से देखी गई है। जल स्तर में गिरावट बिखरी हुई थी, बिहार, हरियाणा, मध्य प्रदेश, ओडिशा, पंजाब, तेलंगाना, तमिलनाडु, पुडुचेरी, उत्तर प्रदेश और चंडीगढ़ जैसे राज्यों में जल स्तर में गिरावट देखी गई। मानसून-पूर्व 2024 को छोड़कर, कुल मिलाकर, वार्षिक भूजल उतार-चढ़ाव पूरे भारत में भूजल स्तर में वृद्धि की एक सामान्य प्रवृत्ति का संकेत देते हैं, जिसमें स्थानीय क्षेत्रों में या तो गिरावट देखी गई है या अपेक्षाकृत स्थिर स्तर देखा गया है।

भारत भर में भूजल स्तर की दशकीय तुलना, अधिकांश क्षेत्रों में मामूली उतार-चढ़ाव, लेकिन महत्वपूर्ण क्षेत्रीय भिन्नताएं दर्शाती है। पिछले दशक में, लगभग आधे कुओं में वृद्धि देखी गई थी, विशेष रूप से आंध्र प्रदेश, अरुणाचल, असम, बिहार, छत्तीसगढ़, चंडीगढ़, दिल्ली, गोवा, गुजरात, झारखंड, कर्नाटक, केरल, मध्य प्रदेश, महाराष्ट्र, तमिलनाडु, तेलंगाना, त्रिपुरा, पश्चिम बंगाल और राजस्थान के दक्षिण-पूर्वी भाग में। हालांकि, हरियाणा, हिमाचल प्रदेश, जम्मू और कश्मीर, मेघालय, नागालैंड, ओडिशा, पंजाब, पूर्वी उत्तर प्रदेश और उत्तराखंड जैसे क्षेत्रों में भूजल स्तर में गिरावट देखी गई, जो इन क्षेत्रों में जल संसाधनों पर तनाव का संकेत देता है। भूजल स्तर में अधिकांश परिवर्तन उथले रेंज (0-2 मीटर) के भीतर हुए, जो बड़े बदलावों के बजाय क्रमिक बदलावों को इंगित करता है, हालांकि कुछ क्षेत्रों में अभी भी भूजल की काफी कमी है।

EXECUTIVE SUMMARY

The "Ground Water Year Book - India 2024-2025" provides an overview of India's complex hydrogeological framework, detailing groundwater distribution, characteristics, and resources across various geological formations. The report categorizes India's aquifers into two main types: porous and fissured formations. Porous formations, such as alluvial aquifers in river basins and deltaic areas, are critical groundwater reservoirs with significant annual replenishment, especially in the Indo-Ganga-Brahmaputra basin. Meanwhile, fissured formations, including igneous, volcanic, and consolidated sedimentary rocks, cover two-thirds of the country but have variable water-bearing capacities dependent on factors like rock type and fracturing. Key segments cover unconsolidated and semi-consolidated formations in porous aquifers, where groundwater development is widespread through dug wells and tube wells. Fissured formations include igneous and volcanic rocks, with groundwater availability governed by rock type and weathering levels. The Year Book highlights both the unconfined and confined aquifer zones, emphasizing the importance of sustainable groundwater management for India's future.

The rainfall analysis 2024 report provides a detailed overview of India's rainfall patterns for the year 2024, presenting data on seasonal and annual rainfall distribution across various states. Winter rains (Jan–Feb) were the weakest, with a national deficit of -32%, states like Telangana (-93%) Punjab (-65%), Uttarakhand (-52%), Gujarat (-50%) Chhattisgarh (-50%), Maharashtra (-48%) Jammu & Kashmir (-48%), and Himachal Pradesh (-41%) recorded sharp shortfalls. The pre-monsoon season (Mar–May) showed extraordinary surpluses in several coastal and island regions, notably Gujarat (+204%), Chhattisgarh (+122%), Madhya Pradesh (+122%), Ladakh (+99%) and Dadra Nagar Haveli and Danam & Diu (-99%), Delhi (-68%), Rajasthan (-54%) saw deficits. The SW-monsoon (Jun–Sep) was robust with +8% above normal, boosting totals in Rajasthan (+56%), Gujarat (+48%), Goa (+46%), Telangana (+29%), Andhra Pradesh (+27%) and Maharashtra (+26%) while states like Punjab (-28%), Arunachal Pradesh (-28%), Nagaland (-27%), Jammu and Kashmir (-26%), Bihar (-19%), Himachal Pradesh (-18%) and Assam (-18%) lagged behind. The post-monsoon (Oct–Dec) was highly variable; Goa (+97%), Dadra Nagar Haveli and Danam & Diu (+82%), Delhi (+53%), Gujarat (+50%), Haryana (+38%) Tamil Nadu (+33%), Karnataka (+30%) showed contrasting trends while Uttar Pradesh (-80%), Bihar (-71%), Jammu and Kashmir (-65%), Mizoram (-52%), Telangana (-34%) faced severe deficits. Overall, the seasonal distribution in 2024 highlighted strong surpluses in southern and western states, but critical winter and post-monsoon deficits in northern and Himalayan regions, deepening regional imbalances.

Data is gathered from 27,163 observation wells across the country, with groundwater levels monitored four times a year January, pre-monsoon (March/April/May), August and post-monsoon (November). The report includes measurements on groundwater levels, influences of climatic and anthropogenic factors, and fluctuations observed during different seasons. The groundwater levels are mapped and analyzed to reveal seasonal, annual, and decadal patterns.

Pre-monsoon depth to water level data shows, the average depth to water in most areas was between 5-10 m bgl, deepening in north-western states (Delhi, Haryana, Punjab, Rajasthan). Post-monsoon depth to water level data showed significant replenishment, especially in August, where 71% of wells had depths under 5 m bgl. By November, approximately 68% of wells still recorded shallow levels, indicating good monsoon recharge, but levels deepened again by January 2025 in northern areas. November and January monitoring reveal similar patterns, with notable depth to water level increases in certain areas due to groundwater extraction. North and north-western regions consistently showed deeper groundwater, while central and southern areas generally maintained moderate levels across seasons.

Annual groundwater fluctuations reveals that most regions showed annual fall, with nearly 56% of wells recording decreases in water levels between 2023 and 2024 in pre-monsoon comparisons. Subsequently, nearly 61% of wells recording rise in water levels between 2023 and 2024 in post-monsoon comparisons due to excessive rainfall during the monsoon season in 2024. Fluctuations largely ranged from 0-2 m. The rise in water level is prominently observed in patches in the states of Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Maharashtra, Eastern Rajasthan and Tripura. Decreases in water levels were scattered, with states like Bihar, Haryana, Madhya Pradesh, Odisha, Punjab, Telangana, Tamil Nadu, Puducherry, Uttar Pradesh, and Chandigarh showing falling water levels. Except for pre-monsoon 2024, overall, annual groundwater fluctuations indicate a general trend of rising groundwater levels across India, with localized areas experiencing either falls or relatively stable levels.

A decadal comparison of groundwater levels across India, shows slight fluctuations in most areas but significant regional variances. Over the past decade, slight rises were observed in about half of the wells, particularly in Andhra Pradesh, Arunachal, Assam, Bihar, Chhattisgarh, Chandigarh, Delhi, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu, Telangana, Tripura, West Bengal, and south eastern part of Rajasthan. However, regions like Haryana, Himachal Pradesh, Jammu & Kashmir, Meghalaya, Nagaland, Odisha, Punjab, Eastern Uttar Pradesh and Uttarakhand exhibited declines in groundwater levels, suggesting stress on water resources in these areas. Most changes in groundwater levels occurred within a shallow range (0-2 m), indicating gradual shifts rather than drastic changes, though certain regions still face considerable groundwater depletion. This trend highlights the need for targeted groundwater management efforts in regions showing persistent declines.

1 HYDROGEOLOGICAL SETUP OF THE COUNTRY

1.1 GROUNDWATER OCCURRENCE

The groundwater behavior in the Indian sub-continent is highly complicated due to the occurrence of diversified geological formations with considerable lithological and chronological variations, complex tectonic framework, climatological dissimilarities and various hydrochemical conditions. Studies carried out over the years have revealed that aquifer groups in alluvial / soft rocks even transcend the surface basin boundaries. Broadly two groups of rock formations have been identified depending on characteristically different hydraulics of groundwater, Viz. Porous Formations and Fissured Formations.

1.1.1 POROUS FORMATION

Porous formations have been further subdivided into Unconsolidated and Semi-consolidated formations.

UNCONSOLIDATED FORMATIONS

The areas covered by alluvial sediments of river basins, coastal and deltaic tracts constitute the unconsolidated formations. These are by far the most significant groundwater reservoirs for large scale and extensive development. The hydrogeological environment and groundwater regime in the Indo-Ganga-Brahmaputra basin indicate the existence of potential aquifers having enormous fresh groundwater reserve. Bestowed with high incidence of rainfall and covered by a thick pile of porous sediments, these groundwater reservoirs get replenished every year and are being used heavily. In these areas, in addition to the Annual Replenishable Groundwater Resources available in the zone of water level fluctuation (Dynamic Groundwater Resource), there exists a huge groundwater reserve in the deeper passive recharge zone below the zone of fluctuation as well as in the deeper confined aquifers which remains largely unexplored as yet. Although the mode of development of groundwater is primarily through dug wells, dug cum bore well and cavity wells, thousands of tube wells have been constructed during last few decades.

SEMI-CONSOLIDATED FORMATIONS

The semi-consolidated formations normally occur in narrow valleys or structurally faulted basins. The Gondwanas, Lathis, Tipams, Cuddalore sandstones and their equivalents are the most extensive productive aquifers in this category. Under favorable situations, these formations give rise to free-flowing wells. In selected tracts of northeastern India, these

water-bearing formations are quite productive. The Upper Gondwanas, which are generally arenaceous, in general, constitute prolific aquifers.

1.1.2 FISSURED FORMATIONS (CONSOLIDATED FORMATIONS)

The consolidated formations occupy almost two-thirds of the country. These formations, except vesicular volcanic rocks have negligible primary porosity. From the hydrogeological point of view, fissured rocks are broadly classified into four types viz. Igneous and metamorphic rocks (excluding volcanic and carbonate rocks), volcanic rocks, consolidated sedimentary rocks and Carbonate rocks.

IGNEOUS AND METAMORPHIC ROCKS EXCLUDING VOLCANIC AND CARBONATE ROCKS

The most common rock types under this category are granites, gneisses, charnockites, khondalites, quartzites, schists and associated phyllites, slates, etc. These rocks possess negligible primary porosity but attain porosity and permeability due to fracturing and weathering. Groundwater yield also depends on the rock type and grade of metamorphism. Generally, the granites, Khondalites and biotite gneisses have better yield potential as compared to charnockites.

VOLCANIC ROCKS

The predominant types of volcanic rocks are the basaltic lava flows of Deccan Plateau. The highly variable water bearing properties of different flow units control groundwater occurrence in Deccan Traps. The Deccan Traps have usually poor to moderate permeability depending on the presence of primary and secondary fractures.

CONSOLIDATED SEDIMENTARY ROCKS EXCLUDING CARBONATE ROCKS

Consolidated sedimentary rocks occur in Cuddapahs, Vindhyans and their equivalents. The formations consist of conglomerates, sandstones, shales. The presence of bedding planes, joints, contact zones and fractures controls the groundwater occurrence, movement and yield potential.

CARBONATE ROCKS

Limestones in the Cuddapah, Vindhyan and Bijawar group of rocks dominates the carbonate rocks other than marbles and dolomites. In carbonate rocks, the circulation of water creates solution cavities thereby increasing the permeability of the aquifers. The solution activity leads to widely contrasting permeabilities within short distances.

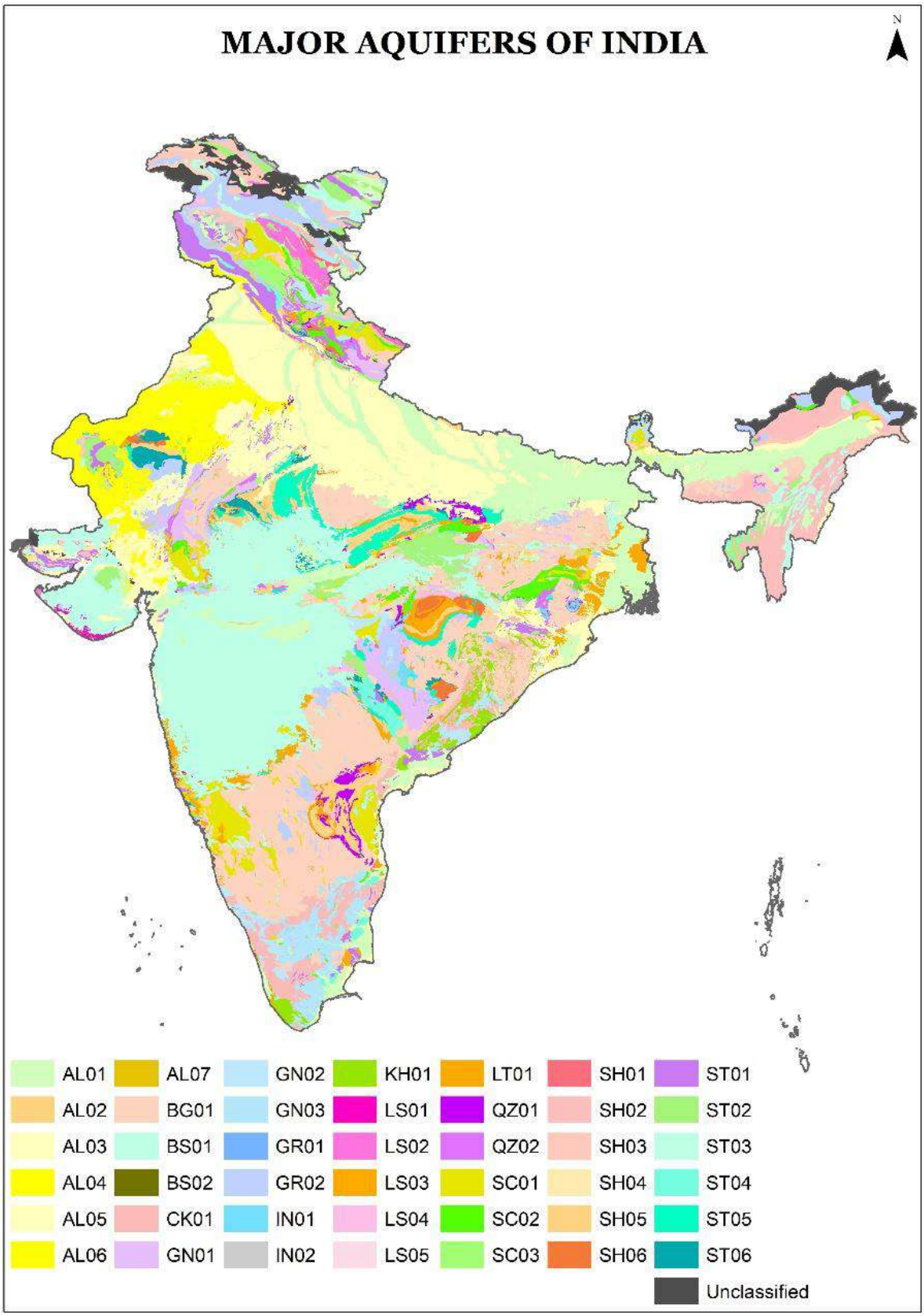
1.2 HYDROGEOLOGICAL UNITS AND THEIR GROUNDWATER POTENTIAL

Hydrogeological map of India is depicted in **Plate-I** and the geographical distribution of hydrogeological units along with their Groundwater potential is given in **Table- 1**. The details of aquifer codes are given in Annexure-1.

Table 1: Aquifer system in the country

System	Coverage	Groundwater potential
Unconsolidated formations - alluvial	Indo-Gangetic, Brahmaputra plains	Enormous reserves down to 600 m depth. High rainfall and hence recharge is ensured. Can support large-scale development through deep tube wells
	Coastal Areas	Reasonably extensive aquifers but risk of saline water intrusion
	Part of Desert area – Rajasthan and Gujarat	Scanty rainfall. Negligible recharge. Salinity hazards. Groundwater Availability at great depths.
Consolidated/semi-consolidated formations - sedimentaries, basalts and crystalline rocks	Peninsular Areas	Availability depends on secondary porosity developed due to weathering, fracturing etc. Scope for GW availability at shallow depths (20-40 m) in some areas and deeper depths (100-200 m) in other areas. Varying yields.
Hilly	Hilly states	Low storage capacity due to quick runoff

PLATE – I: Major Aquifers of India



2 RAINFALL VARIATIONS

Variability in the onset, withdrawal and quantum of rainfall during the monsoon season has profound impacts on water resources, power generation, agriculture, economics and ecosystems in the country. The variation in climate is perhaps greater than any other area of similar size in the world. There is a large variation in the amounts of rainfall received at different locations. The average annual rainfall of the country is about 116 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. The temporal distribution of Long Period Average (Normal) rainfall over the four seasons viz., winter (Jan-Feb), pre-monsoon (March to May), southwest monsoon (June to September) and post monsoon (October to December) are 3, 11, 75 and 11% of the annual rainfall, respectively. So, most of the rainfall received in the four rainy months, June to September. The rainfall pattern roughly reflects the different climate regimes of the country, which vary from humid in the northeast (about 180 days rainfall in a year), to arid in Rajasthan (20 days rainfall in a year). Due to climatic changes, in recent times, the occurrence of high intensity rainfall event has increased and the number of rainy days has decreased. In some years, it has been observed that, the southwest monsoon has extended beyond its normal withdrawal date.

Normal Annual Rainfall

The rainfall over India has large spatial as well as temporal variability. The all-India annual rainfall normal is about 116 cm. For the country as whole, mean monthly rainfall during July (301 mm) is highest and contributes about 24.6% of annual rainfall (1219.77 mm). The mean rainfall during August is slightly lower and contributes about 21.9% of annual rainfall. June and September rainfall are almost similar and contribute 13.8% and 14.5% of annual rainfall, respectively. The mean southwest monsoon (June, July, August & September) rainfall (914 mm) contributes 75.5% of annual rainfall (1219.77 mm). Contribution of pre-monsoon (March, April & May) rainfall and post-monsoon (October, November & December) rainfall in annual rainfall is mostly the same (11%). Coefficient of variation is higher during the months of November, December, January and February. The Thematic map of distribution of annual normal rainfall is given in **Plate-II**. The map shows that states/UTs Andhra Pradesh, Delhi, Gujarat, Haryana, Ladakh, Punjab, Rajasthan, Tamil Nadu, Telangana and Uttara Pradesh receive annual rainfall between 50 – 1000 mm, 11

states/UTs between 1000 mm – 1500 mm, 4 states between 1500 – 2000 mm, 8 states between 2000-3000 mm and 2 states more than 3000 mm in a year.

Normal Monsoon Rainfall

The SW monsoon is the most significant feature of the Indian climate. The season is spread over four months, but the actual period at a particular place depends on onset and withdrawal dates. It varies from less than 75 days over West Rajasthan, to more than 120 days over the south-western regions of the country contributing to about 75% of the annual rainfall. The onset of the SW monsoon normally starts over the Kerala coast, the southern tip of the country by 1st June, advances along the Konkan coast in early June and covers the whole country by middle of July. However, onset occurs about a week earlier over islands in the Bay of Bengal. The monsoon is influenced by global and local phenomenon like El Nino, northern hemispheric temperatures, sea surface temperatures, snow cover etc. Normal monsoon rainfall more than 1500 mm is being observed over most parts of northeast India, Konkan & Goa. It ranges from 317 mm in Tamil Nadu state to 6218 mm in Meghalaya state with an average of 914.46 mm.

Rainfall Variation in 2024

The distribution of annual rainfall in 2024 is given in a thematic map in **Plate III**. The map shows that Ladakh received the lowest annual rainfall and Goa received the highest annual rainfall in the country. A total of 10 states has rainfall less than 1000 mm, 13 states between 1000 – 1500 mm, 4 states between 1500 - 2000 mm, 7 states between 2000 - 3000 mm and 2 states more than 3000 mm. State-wise seasonal and annual observed rainfall, and its percentage departure from normal rainfall is given in **Table 3**. This data is based on the annual rainfall statistical report of IMD. However, when compared with normal rainfall, it can be seen that Ladakh has the highest positive departure of 56% from its normal, whereas Punjab has the highest negative departure of 31% from its normal rainfall. Negative departure from normal annual rainfall is observed in 18 states/UTs. The national average rainfall is 1206.6 mm with a positive departure of 4% from normal. The comparison of rainfall received in 2024 with the rainfall received in 2023 shows that Manipur has the highest positive departure and Chandigarh has the highest negative departure.

It may be observed from the data that the variation of southwest monsoon rainfall is very high and it ranges from 26 mm in Ladakh to 4398.7 mm in Goa. The states of Andhra Pradesh, Delhi, DNH & DD, Goa, Gujarat, Lakshadweep (UT), Maharashtra, Rajasthan and Sikkim have received more than normal (positive departure of more than 19%) rainfall in

the monsoon season. The states of Arunachal Pradesh, Bihar, Jammu & Kashmir, Manipur, Nagaland and Punjab have received rainfall with negative departure (more than 19%) from normal. The national average monsoon rainfall is 935.9 mm with a positive departure of 8% from normal. The percentage departure of rainfall is color-coded and categorized in the following classes.

Table 2: The list of categories, their corresponding ranges and color codes

Category	Departure from Normal	Color 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	

Source: India Meteorological Department

Table 3: State-wise Seasonal and Annual Rainfall (mm) - Year 2024

S. No	States/UT	Annual Rainfall (mm) 2023 and % Deviation		Season-wise Rainfall (mm) 2024 and % Deviation from Normal								Annual Rainfall (mm) 2024 and % Deviation		% Annual Deviation from 2023 to 2024
				Winter		Pre-Monsoon		SW-Monsoon		Post-Monsoon				
		Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	
1	A & N Island	3510.8	24%	115.1	44%	322.3	-29%	1630.7	0%	726.1	8%	2794.2	-2%	-20%
2	Andhra Pradesh	874.4	-4%	2	-88%	88.8	-1%	663	27%	309.7	8%	1059.4	16%	21%
3	Arunachal Pradesh	2249.3	-20%	101.9	-23%	581.5	-23%	1200.3	-28%	281.4	17%	2192.8	-22%	-3%
4	Assam	1716.7	-23%	29.2	-34%	421.5	-22%	1206.8	-18%	190.7	23%	1858.5	-16%	8%
5	Bihar	938.1	-19%	14	-29%	84.2	-1%	798.7	-19%	19.7	-71%	916.7	-21%	-2%
6	Chandigarh	1537.3	52%	57.2	-19%	61.6	12%	710.8	-16%	40.5	3%	870.1	-14%	-43%
7	Chhattisgarh	1232.5	-3%	11	-50%	82.3	122%	1231.7	9%	39.2	-48%	1364.1	8%	11%
8	DNH & DD	1836.7	-19%	0	-100%	0.1	-99%	2885.2	31%	111.3	82%	2088.9	-8%	14%
9	Delhi	723.8	10%	23.6	-36%	17.9	-68%	656.7	21%	34.5	53%	732.7	11%	1%
10	Goa	3642.3	11%	4.3	170%	112.8	58%	4398.7	46%	390.8	97%	4906.6	50%	35%
11	Gujarat	907.3	21%	0.5	-50%	12.5	204%	1055.4	48%	45.7	50%	1114.2	49%	23%
12	Haryana	557.9	7%	15.3	-52%	25.6	-43%	408.6	-4%	26.6	38%	476.1	-9%	-15%
13	Himachal Pradesh	1331.1	7%	109.9	-41%	221.2	-8%	600.8	-18%	47.1	-43%	979	-21%	-26%
14	Jammu & Kashmir	1198.4	-3%	117.1	-48%	300.5	-9%	408.5	-26%	44.6	-65%	873.1	-29%	-27%
15	Jharkhand	1022.1	-16%	33.8	33%	85.7	3%	1008.9	-1%	54.7	-39%	1183	-3%	16%
16	Karnataka	914.3	-19%	8.5	73%	138.4	18%	927.3	11%	229.5	30%	1303.7	15%	43%
17	Kerala	2203.5	-24%	59.6	183%	500.4	39%	1748.2	-13%	487.2	-1%	2795.4	-3%	27%
18	Ladakh	84.1	65%	30.4	162%	17.8	99%	26	17%	5.1	-36%	79.3	56%	-6%
19	Lakshadweep	1455.9	-8%	156.8	508%	357.2	81%	1304.2	27%	325.9	-3%	2144.1	35%	47%
20	Madhya Pradesh	1077.4	4%	18.8	-16%	39.9	122%	1121.2	18%	44.6	-12%	1224.4	18%	14%
21	Maharashtra	1089.1	-3%	4.1	-48%	45.2	73%	1252.1	26%	90.9	-6%	1385.3	23%	27%
22	Manipur	798.6	-51%	27.8	-27%	394.1	9%	712.1	-31%	168.1	-8%	1303.9	-20%	63%
23	Meghalaya	3022.6	-19%	23.5	-32%	670.8	-6%	2470	-8%	282.2	-8%	3446.4	-8%	14%
24	Mizoram	1714.4	-30%	23.9	-15%	400.7	-29%	1343.4	-17%	118.5	-52%	1886.5	-23%	10%

S. No	States/UT	Annual Rainfall (mm) 2023 and % Deviation		Season-wise Rainfall (mm) 2024 and % Deviation from Normal								Annual Rainfall (mm) 2024 and % Deviation		% Annual Deviation from 2023 to 2024
				Winter		Pre-Monsoon		SW-Monsoon		Post-Monsoon				
		Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	Actual Rainfall	% Deviation	
25	Nagaland	1299.2	-17%	47.3	46%	374.9	10%	759.2	-27%	111.5	-24%	1362.3	-13%	5%
26	Odisha	1413.6	-2%	25.5	2%	136	6%	1092	-5%	119.4	-15%	1372.9	-5%	-3%
27	Puducherry	1404.1	-1%	183	270%	75.5	-21%	497	19%	1002.2	16%	1757.6	23%	25%
28	Punjab	599.2	6%	16.6	-65%	33.2	-39%	314.6	-28%	27.1	13%	391.5	-31%	-35%
29	Rajasthan	631.4	30%	5.4	-44%	10.8	-54%	678.5	56%	15.3	-16%	710	46%	12%
30	Sikkim	2811.1	9%	87.9	-13%	439.6	-28%	2039.9	22%	226.7	23%	2799.2	9%	0%
31	Tamil Nadu	1035.2	13%	52	111%	142.2	14%	389.7	19%	588.9	33%	1172.7	27%	13%
32	Telangana	1058.7	13%	1.2	-93%	81.6	28%	948.3	29%	82.4	-34%	1113.5	19%	5%
33	Tripura	1750.3	-24%	47.2	54%	508.8	-23%	1578.3	13%	148.6	-27%	2282.9	0%	30%
34	Uttar Pradesh	739.8	-12%	19.9	-27%	21	-37%	744.6	0%	7.6	-80%	794.1	-6%	7%
35	Uttarakhand	1492.9	1%	49.3	-52%	127.5	-19%	1273	9%	36.4	-34%	1486.2	1%	0%
36	West Bengal	1629.9	-8%	25.3	-8%	249.4	9%	1399.8	4%	198.8	15%	1873.4	6%	15%
COUNTRY AS A WHOLE		**1102.8**	**-5%**	**26.9**	**-32%**	**126.6**	**-3%**	**935.9**	**8%**	**117.3**	**-3%**	**1206.6**	**4%**	**9%**

Source: 'Rainfall Statistics of India – 2024' report of IMD

PLATE – II: Normal Annual Rainfall Map of India

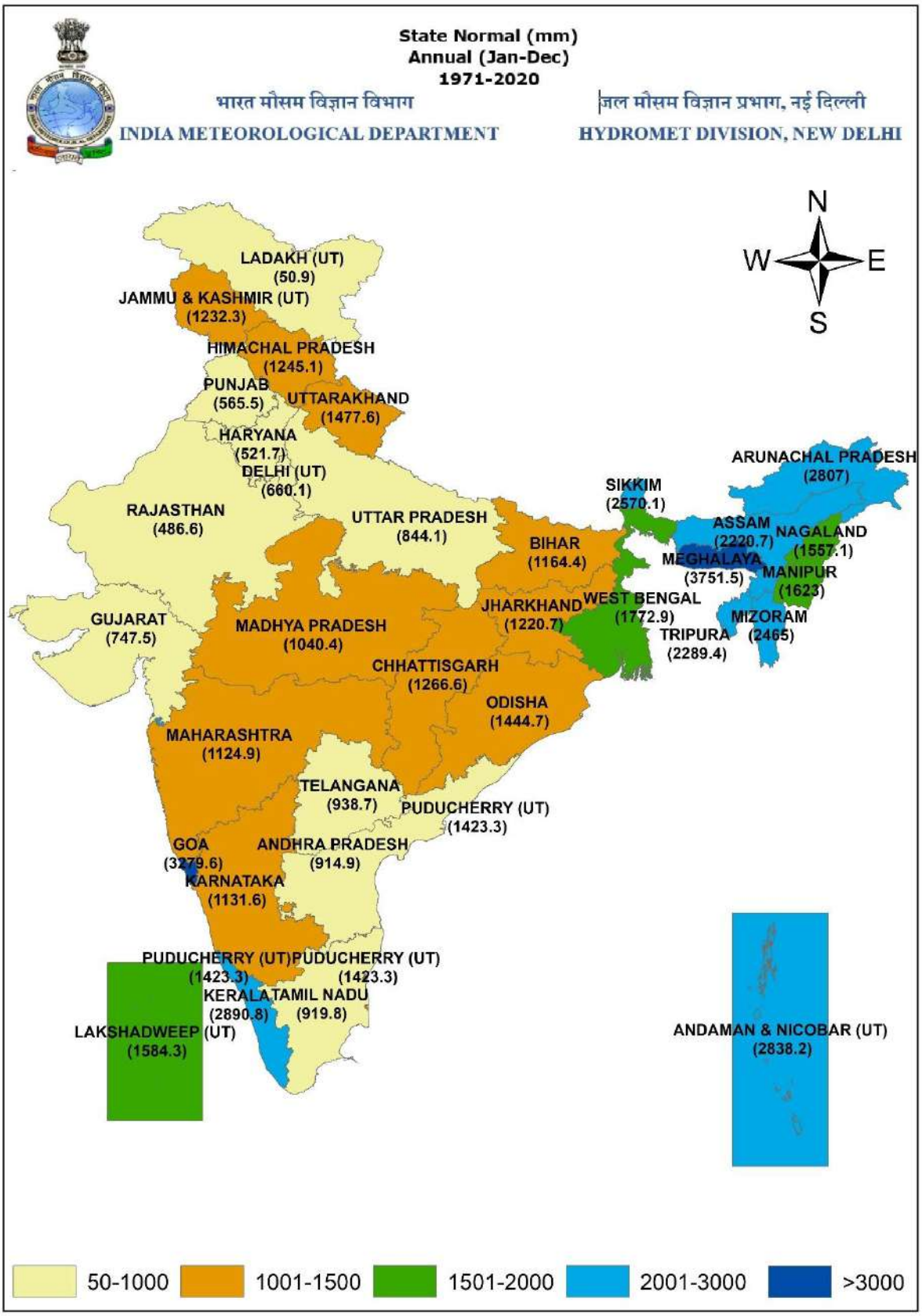


PLATE – III: Actual Annual Rainfall Map of India 2024

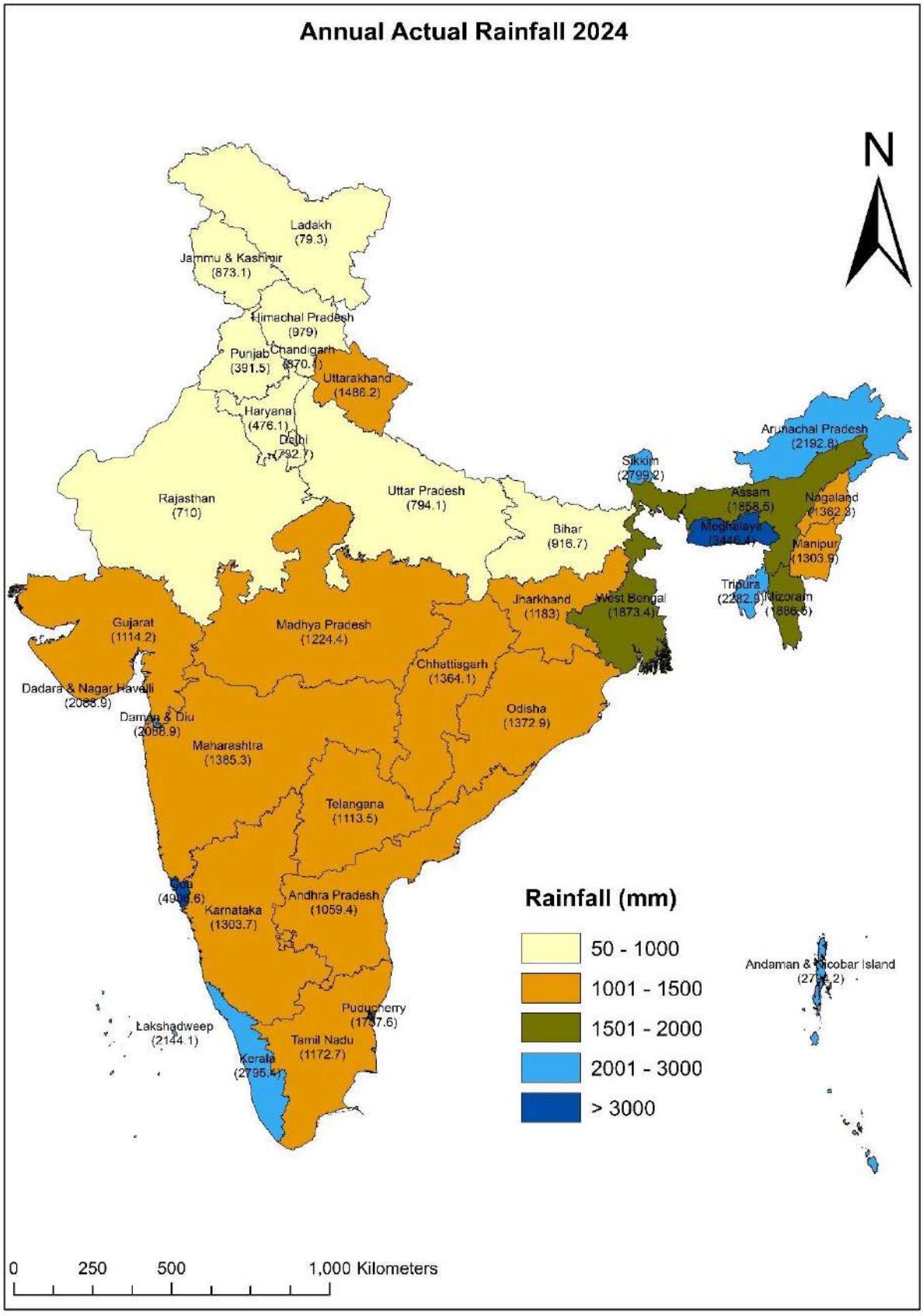


PLATE – IV: Percentage Deviation of Annual Rainfall 2024 from Normal Rainfall

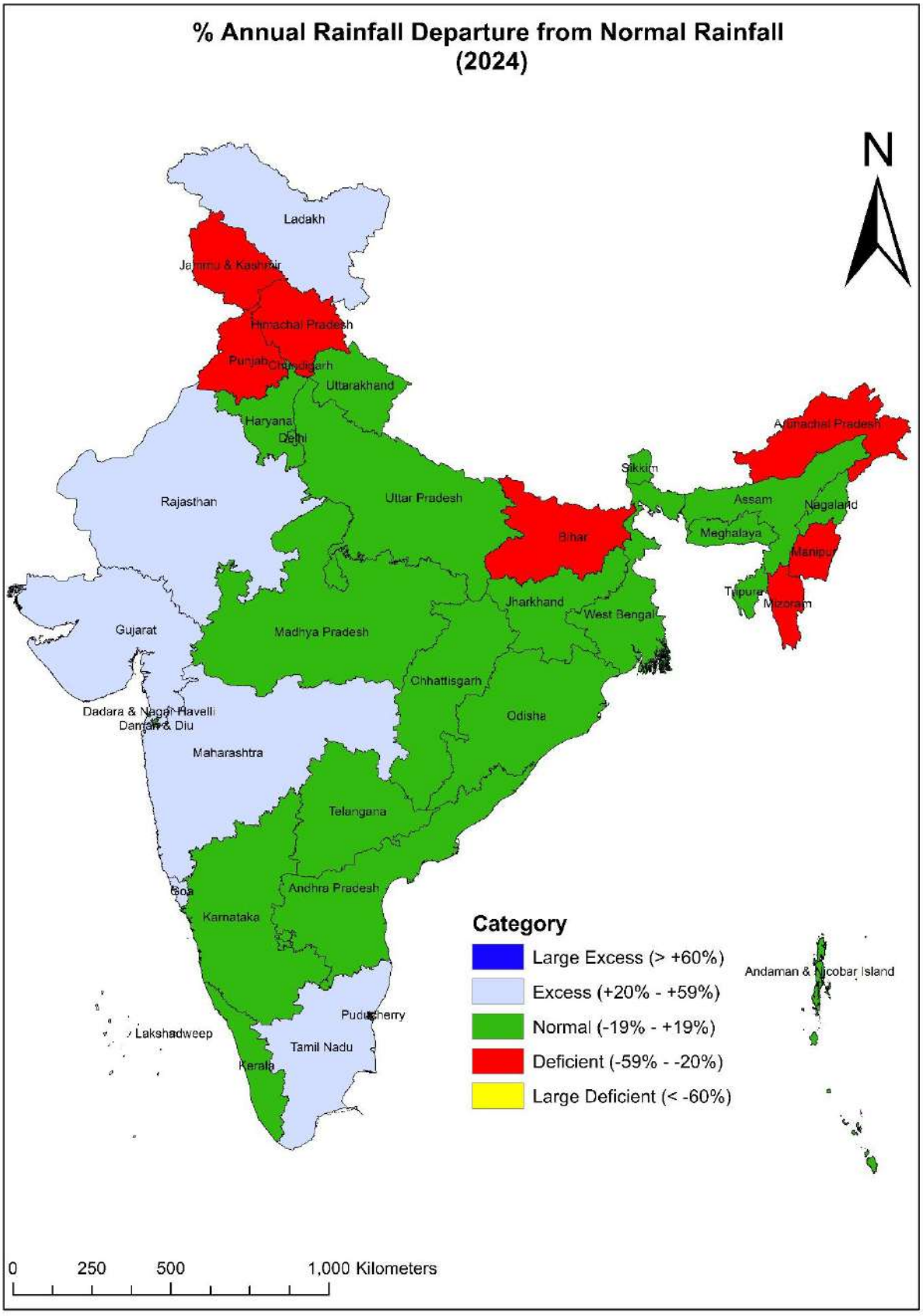
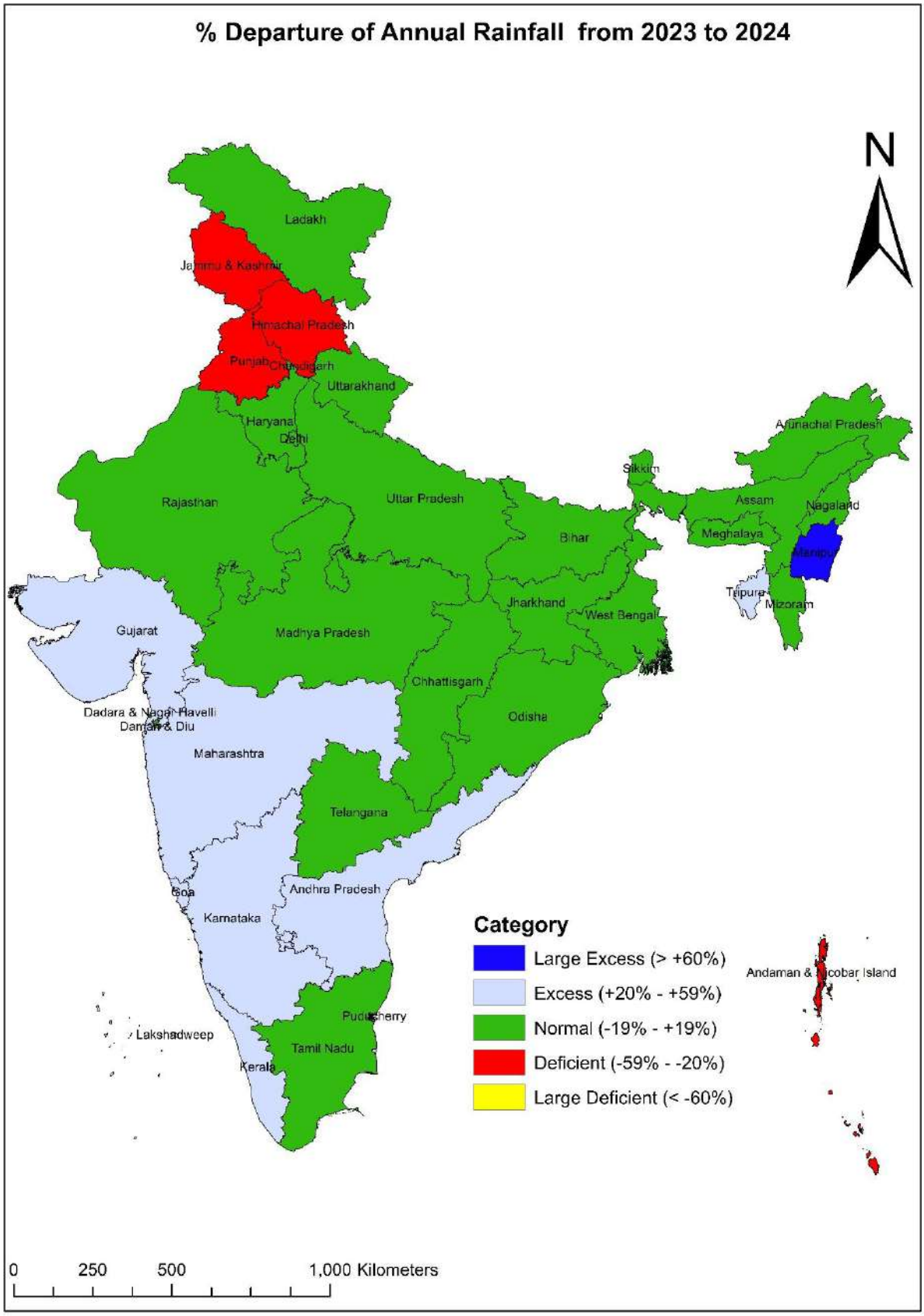


PLATE – V: Percentage Deviation of Annual Rainfall 2024 from Annual Rainfall 2023



3 GROUNDWATER LEVEL SCENARIO

3.1 INTRODUCTION

Groundwater Year Book is prepared annually by CGWB depicting changes in groundwater regime of the country through different seasons. It is an effort to obtain information on groundwater levels through representative monitoring wells. The important attributes of groundwater regime monitoring are groundwater level.

The natural conditions affecting the groundwater regime involve climatic parameters like rainfall, evapotranspiration etc., whereas anthropogenic influences include pumpage from the aquifer, recharge due to irrigation systems and other practices like waste disposal etc.

Groundwater levels are measured by Central Ground Water Board four times a year during January, March/April/ May, August and November. The groundwater regime monitoring started in the year 1969 by Central Ground Water Board. A network of 26351 National Hydrographic Monitoring stations (NHNS)/observation wells, as on March 2025, located all over the country is being monitored. Groundwater samples are collected from these observation wells once a year during the month of March/April/May to obtain background information of groundwater quality changes on regional scale. The database thus generated forms the basis for planning the groundwater development and management programmes. The groundwater level and quality monitoring are of particular importance in coastal as well inland saline environment to assess the changes in salt water/fresh water interface as also the gradual quality changes in the fresh groundwater regime. This data is used for assessment of groundwater resources and changes in the regime consequent to various development and management activities.

The premonsoon water level data is collected from all the monitoring stations during the months of March/April/May, depending on the climatological conditions of the region. For North eastern states premonsoon data is collected during March, since the onset of monsoon is normally observed in April. Similarly for Orissa, West Bengal and Kerala where monsoon appears early in May the monitoring is carried out during the month of April. For remaining states pre-monsoon monitoring month is May. Water levels during August are monitored to access the impact of monsoon on the groundwater resources. Post monsoon data collected during November reflects the cumulative effect of groundwater recharge and withdrawal of groundwater for various purposes. January water level data indicates the effect of withdrawal for rabi crops.

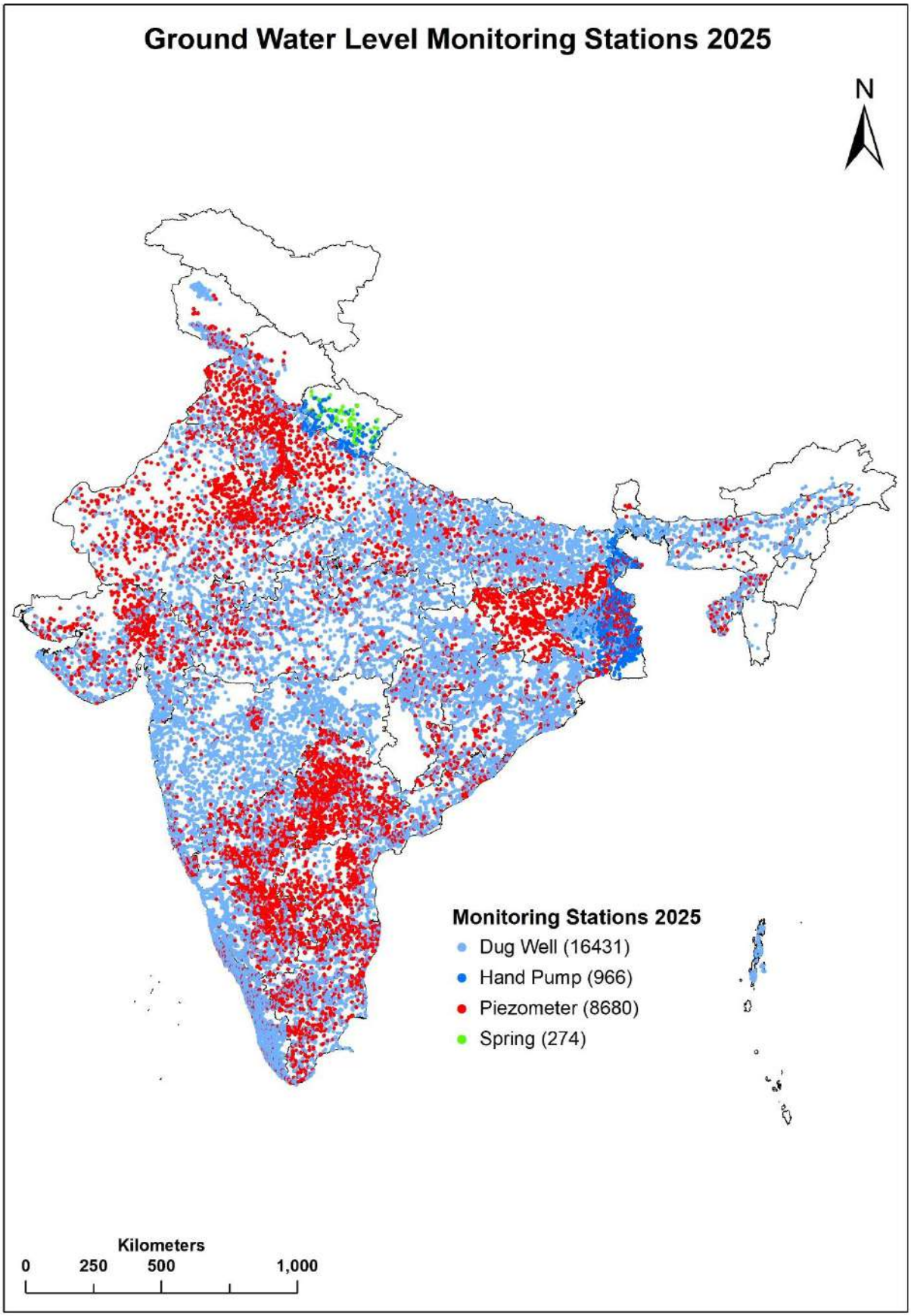
The data is analyzed to know about the frequency distribution of water levels during different periods and seasonal, annual and decadal fluctuations in water levels. The water level and water level fluctuation maps are prepared for each monitoring period to study the spatial and temporal changes in groundwater regime.

The State/UT-wise distribution of the groundwater observation wells is given in **Table 4** and depicted in **Plate-VI**.

Table 4: Status of Groundwater Monitoring Wells in Country

S. N.	State/UT	Groundwater Level Monitoring 2025				
		Dug Well	Piezometer	Hand Pump	Spring	Total
1	Andhra Pradesh	656	790			1446
2	Arunachal Pradesh	26	4		8	38
3	Assam	383	91	8	5	487
4	Bihar	977	117			1094
5	Chhattisgarh	1006	269			1275
6	Goa	81	54			135
7	Gujarat	781	500			1281
8	Haryana	150	345			495
9	Himachal Pradesh	129	66		27	222
10	Jammu and Kashmir	270	87		26	383
11	Jharkhand	466	147			613
12	Karnataka	1316	946			2262
13	Kerala	1379	271		24	1674
14	Madhya Pradesh	1378	476			1854
15	Maharashtra	1857	318			2175
16	Manipur	4			2	6
17	Meghalaya	70	13		21	104
18	Mizoram	7	0		20	27
19	Nagaland	80	1		20	101
20	Odisha	1489	291			1780
21	Punjab	115	346			461
22	Rajasthan	647	842			1489
23	Sikkim	0	4			4
24	Tamil Nadu	766	713			1479
25	Telangana	270	1001			1271
26	Tripura	104	13		10	127
27	Uttar Pradesh	1082	453			1535
28	Uttarakhand	35	12	196	111	354
29	West Bengal	725	352	762		1839
	UT/NCR					
30	Andaman & Nicobar	111	2			113
31	Chandigarh	1	23			24
32	DNH and DD	40	4			44
33	Delhi	22	115			137
34	Puducherry	8	14			22
	Total	**16431**	**8680**	**966**	**274**	**26351**

PLATE – VI: Distribution of NHNS Monitoring Stations 2025

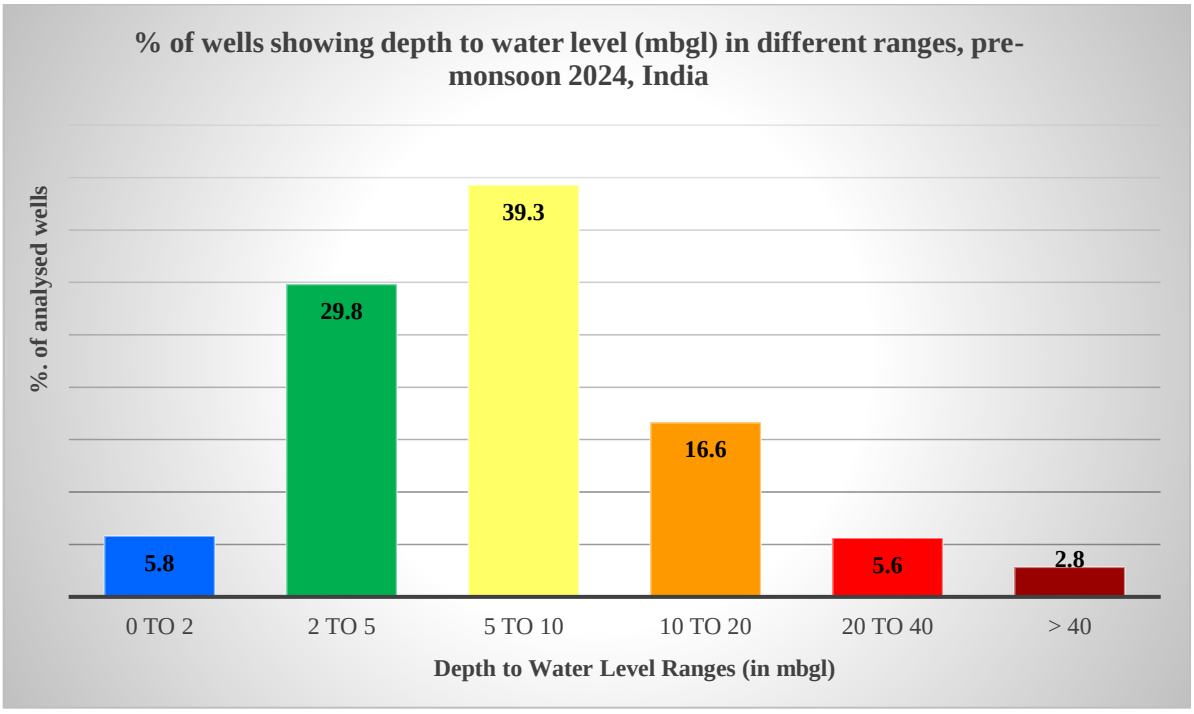


3.2 GROUNDWATER REGIME IN UNCONFINED AQUIFER

3.2.1 DEPTH TO WATER LEVEL IN UNCONFINED AQUIFER

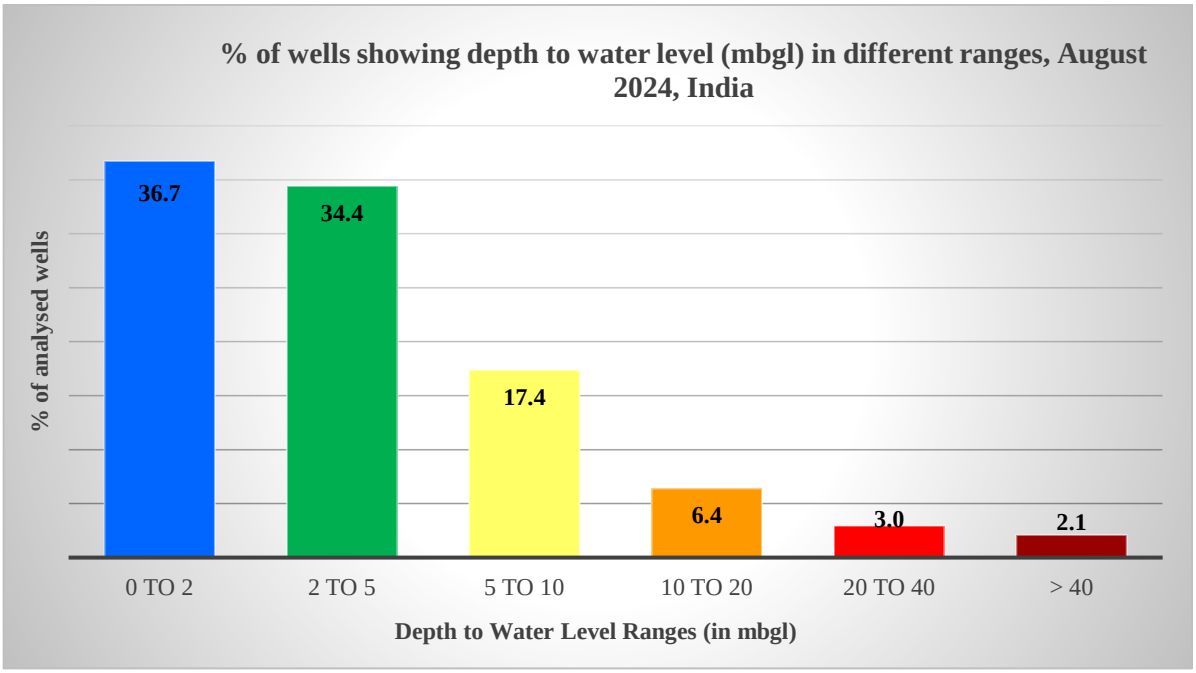
DEPTH TO WATER LEVEL – PRE-MONSOON 2024

The groundwater level data for pre-monsoon 2024 indicates that out of the total 17700 wells analysed, 1029 (5.8%) wells are showing water level less than 2 m bgl (metres below ground level), 5278 (29.8%) wells are showing water level in the depth range of 2 to 5 m bgl, 6953 (39.3%) wells are showing water level in the depth range of 5 to10 m bgl, 2943 (16.6%) wells are showing water level in the depth range of 10 to 20 m bgl, 995 (5.6%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 502 (2.8%) wells are showing water level more than 40 m bgl. **(Plate VIII, *Annexure I*)**. Groundwater level data of pre-monsoon 2024 for the country reveals that the general depth to water level of the country ranges from 2 to 10 m bgl. Very shallow water level of less than 2 m bgl is observed in in few states, such as Assam, Maharashtra and West Bengal in small patches. Groundwater level in the range of 2 to 5 m bgl is prominently seen in a scattered pattern in all states except Rajasthan. A major part of the country shows water level in the range 5 to 10 m bgl, in almost all states of the country. 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.



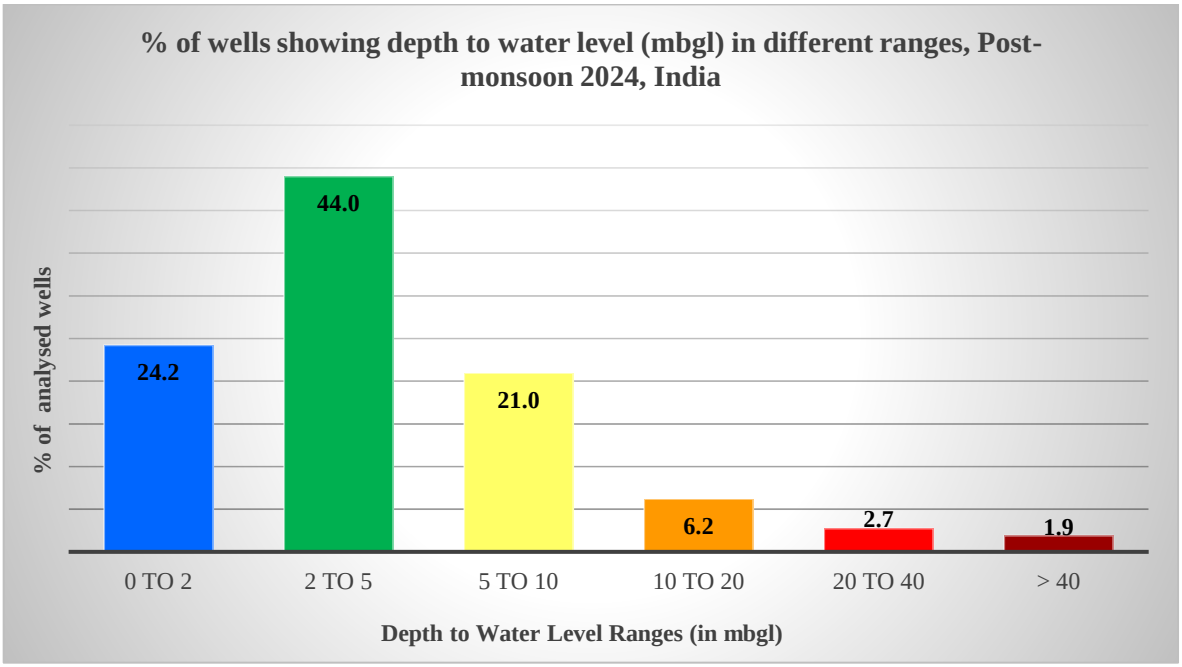
DEPTH TO WATER LEVEL – AUGUST 2024

The groundwater level data for August 2024 ***(Annexure-II)*** indicates that, out of the 17500 wells analysed, 6429 (36.7 %) wells are showing water level less than 2 m bgl (metres below ground level), 6024 (34.4%) wells are showing water level in the depth range of 2-5 m bgl, 3041 (17.4%) wells are showing water level in the depth range of 5-10 m bgl, 1121 (6.4%) wells are showing water level in the depth range of 10-20 m bgl, 517 (3.0%) wells are showing water level in the depth range of 20-40 m bgl and the remaining 368 (2.1%) wells are showing water level more than 40 m bgl, The map of depth to water levels during August 2024 is shown in **Plate-IX**. The general depth to water level of the country ranges from 0 to 5 m bgl. Almost 71% of the wells analysed show water level in the range of 0 to 5 m bgl. Very shallow water level of less than 5 m bgl is observed in considerable number of wells in almost all the states, except Chandigarh, Delhi, Haryana, Punjab, Rajasthan and Uttarakhand. 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. ***(Annexure-II)***



DEPTH TO WATER LEVEL – NOVEMBER 2024 (POST-MONSOON)

The groundwater level data for November 2024 indicates that out of the total 16981 wells analysed, 24.2% (4111) wells are showing water level less than 2 m bgl (meter below ground level), 44.0% (7471) wells are showing water level in the depth range of 2 to 5 m bgl, 21% (3559) wells are showing water level in the depth range of 5 to10 m bgl, 6.2% (1054) wells are showing water level in the depth range of 10 to 20 m bgl, 2.7% (464) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 1.9% (322) wells are showing water level more than 40 m bgl. In general, depth to water level ranges from 0 to 5 m bgl as observed at about 68.2% of the monitoring stations. A very shallow water level of less than 10 m bgl is observed in almost all states in patches except Haryana, Himachal, Punjab, Rajasthan, Chandigarh and Delhi. 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. **(Plate-X, *Annexure- III*)**.



DEPTH TO WATER LEVEL– JANUARY 2025

The groundwater level data for January 2025 indicates that out of the total 16755 wells analysed, 2577 (15.4%) wells are showing water level less than 2 m bgl (metres below ground level), 6956 (41.5%) wells are showing water level in the depth range of 2 to 5 m bgl, 4923 (29.4%) wells are showing water level in the depth range of 5 to 10 m bgl, 1423 (8.5%) wells are showing water level in the depth range of 10 to 20 m bgl, 506 (3.0%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 370 (2.2%) wells are showing water level more than 40 m bgl. **(Plate-XI, *Annexure-IV*)**. The depth to water level map of January 2025 for the country indicates that in general depth to water level ranges from 2 to 10 m bgl as observed at about 71% of the monitoring stations. Shallow water level of less than 2 m bgl is observed in very small and isolated pockets in some North Eastern states and coastal areas of Odisha, Andhra Pradesh, Tamil Nadu, West Bengal and Konkan areas of Maharashtra. A water level in the range of 5 to 10 m bgl is prominent in all the states of the central and western parts of Karnataka and Kerala in Southern India. In major parts of north-western states depth to water level generally ranges from 10 to 40 m bgl. Water level of more than 40 m bgl is also prevalent in the north western part of the country. In some parts of Haryana, Punjab and Delhi and major parts of Rajasthan, water level of more than 40 m bgl is recorded.

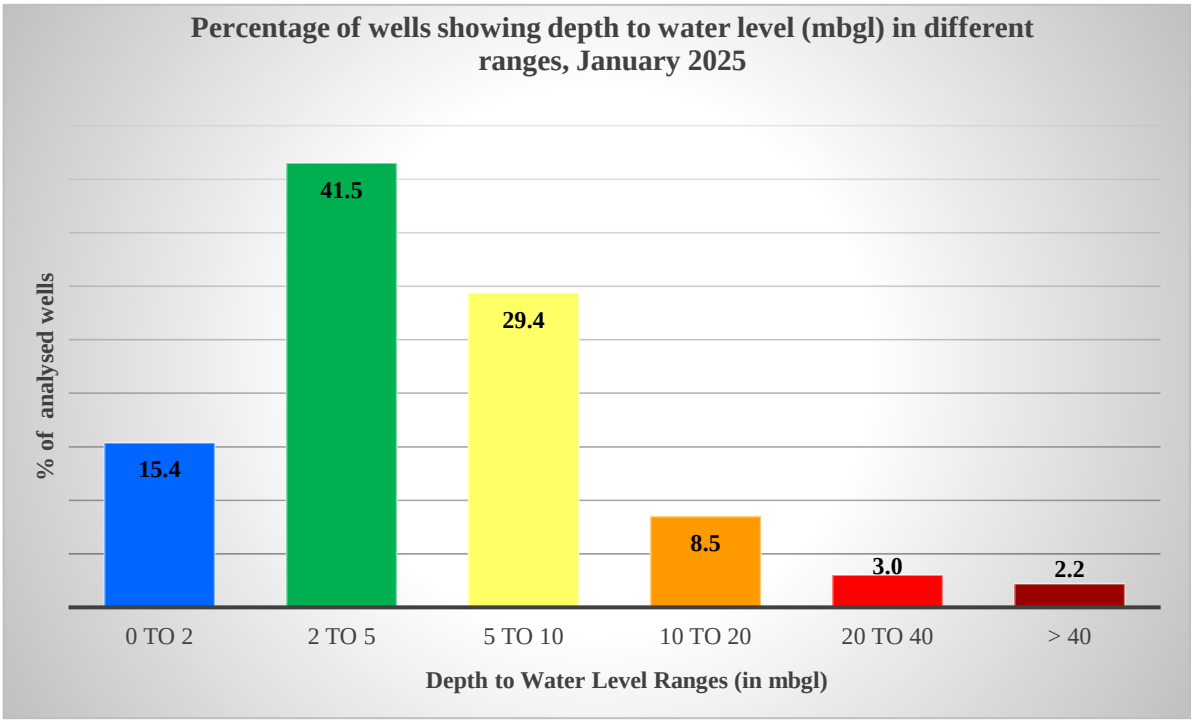
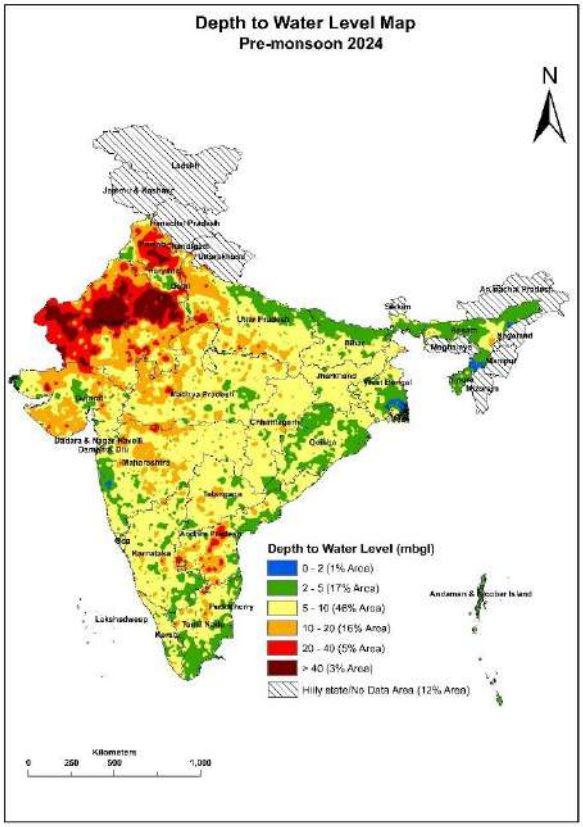
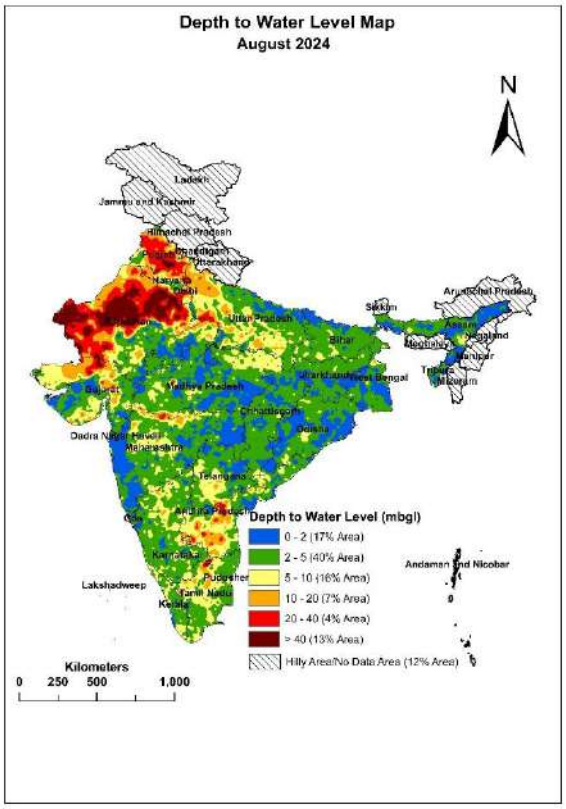
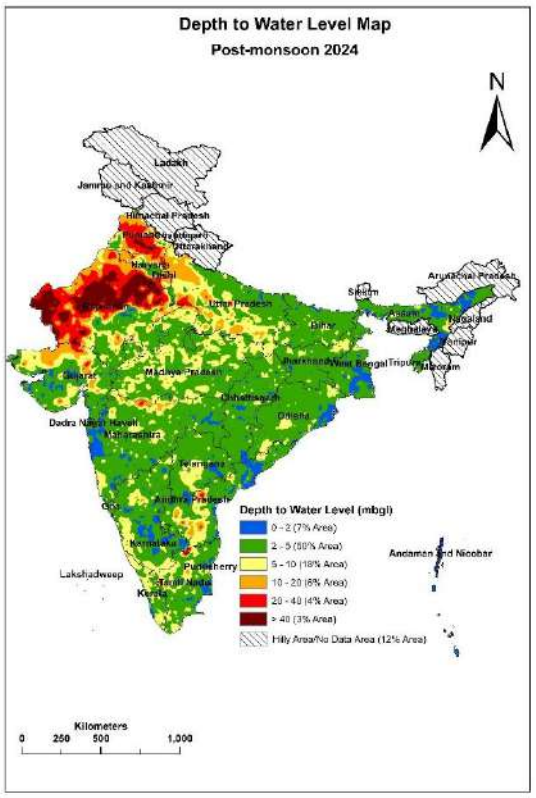


PLATE – VII: Ground Water Level Scenario of India 2024-25







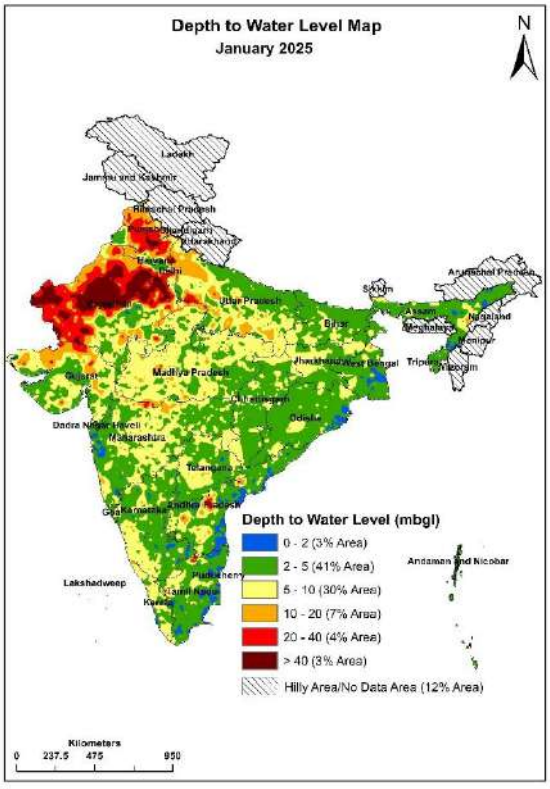


PLATE – VIII: Ground Water Level Map of India (Pre-monsoon 2024)

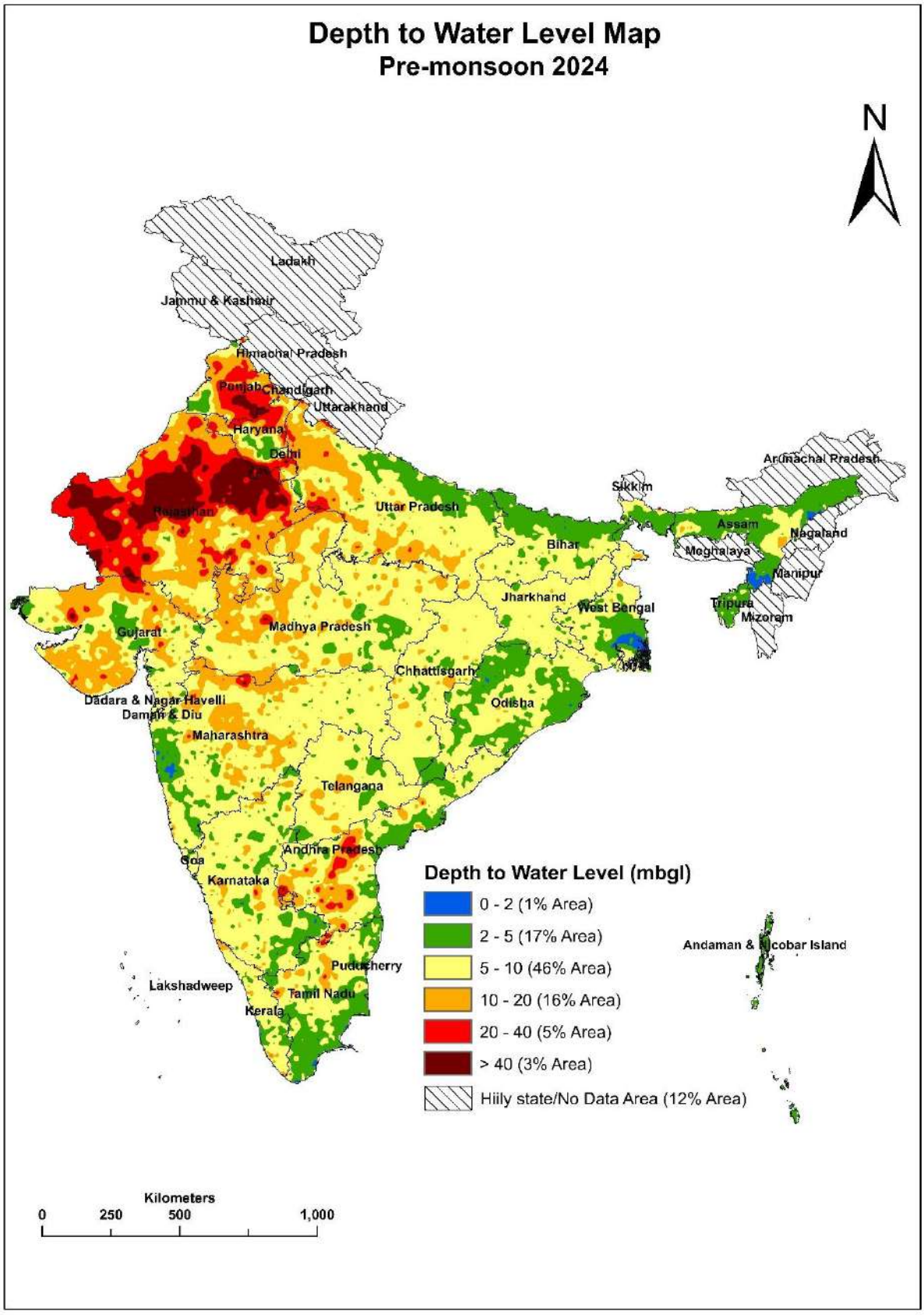


PLATE – IX: Ground Water Level Map of India (August 2024)

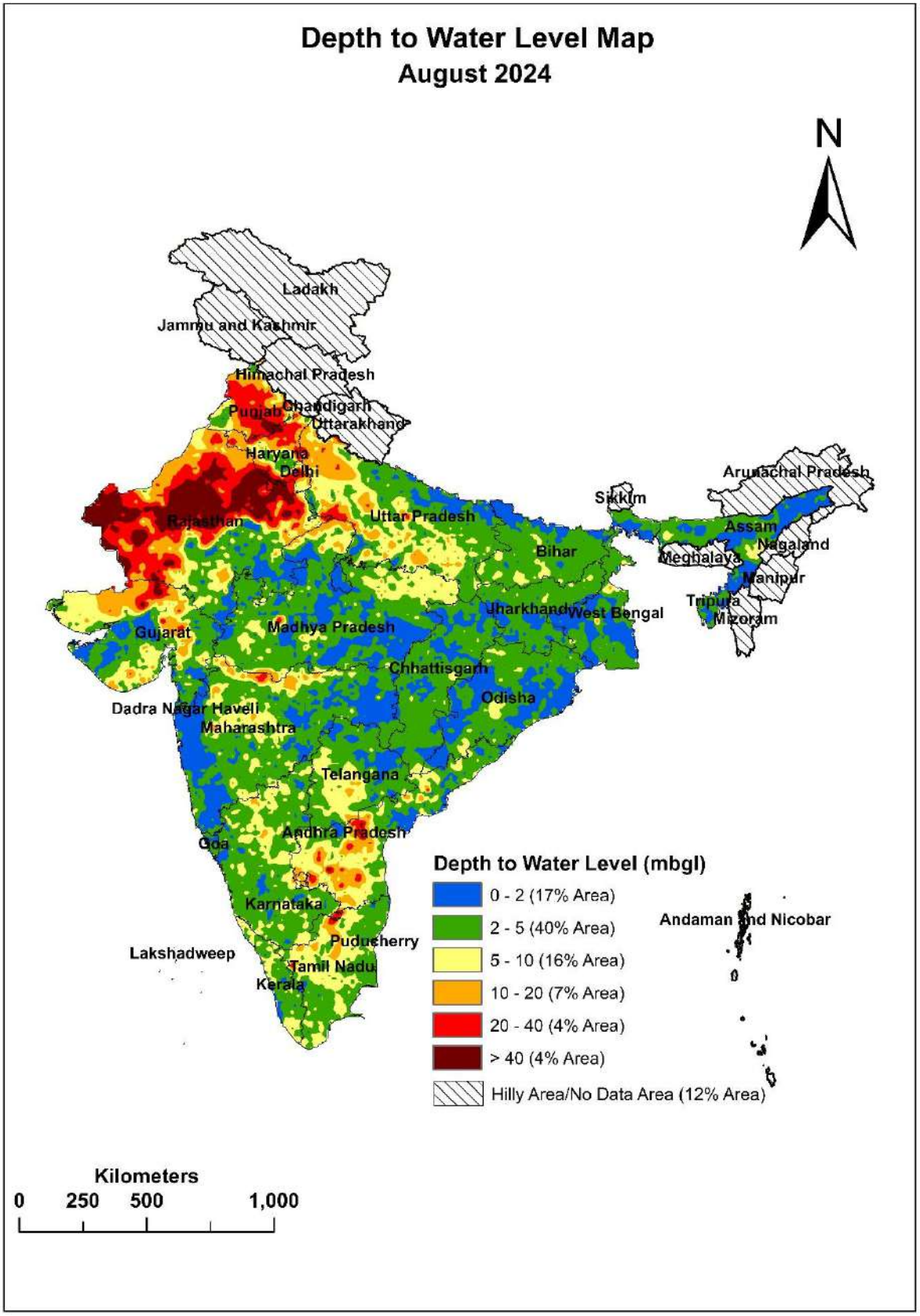


PLATE – X: Ground Water Level Map of India (Post-monsoon 2024)

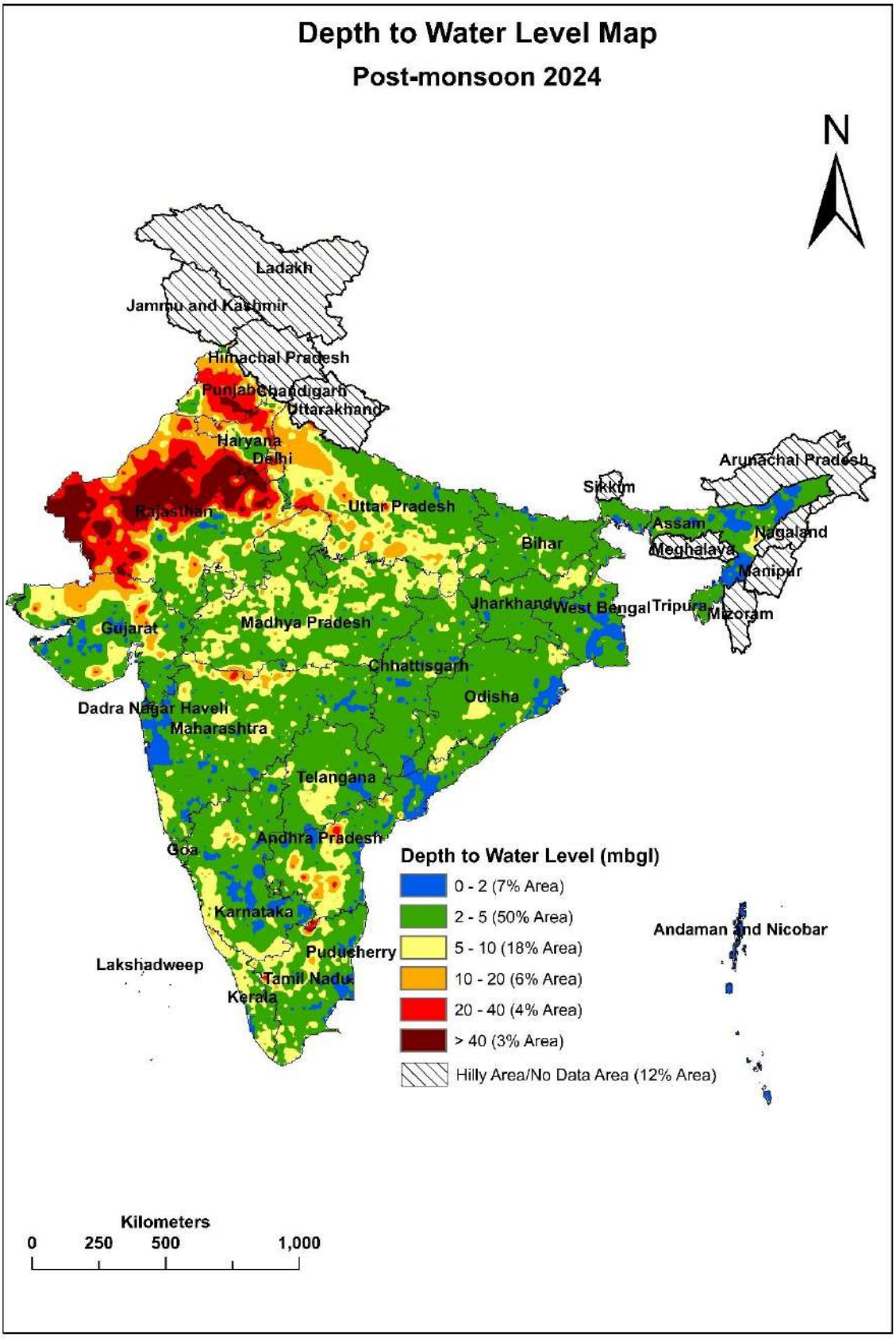
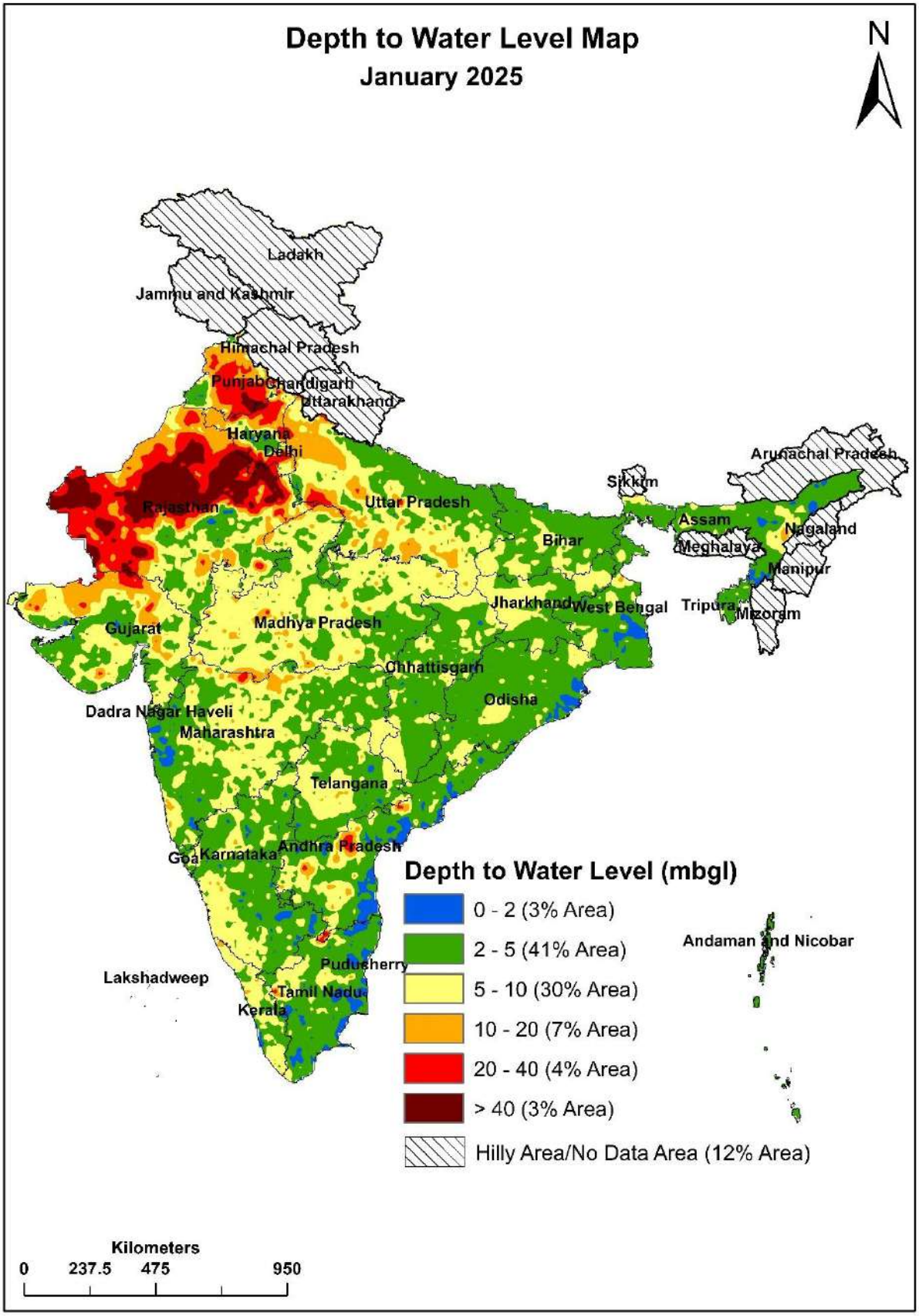


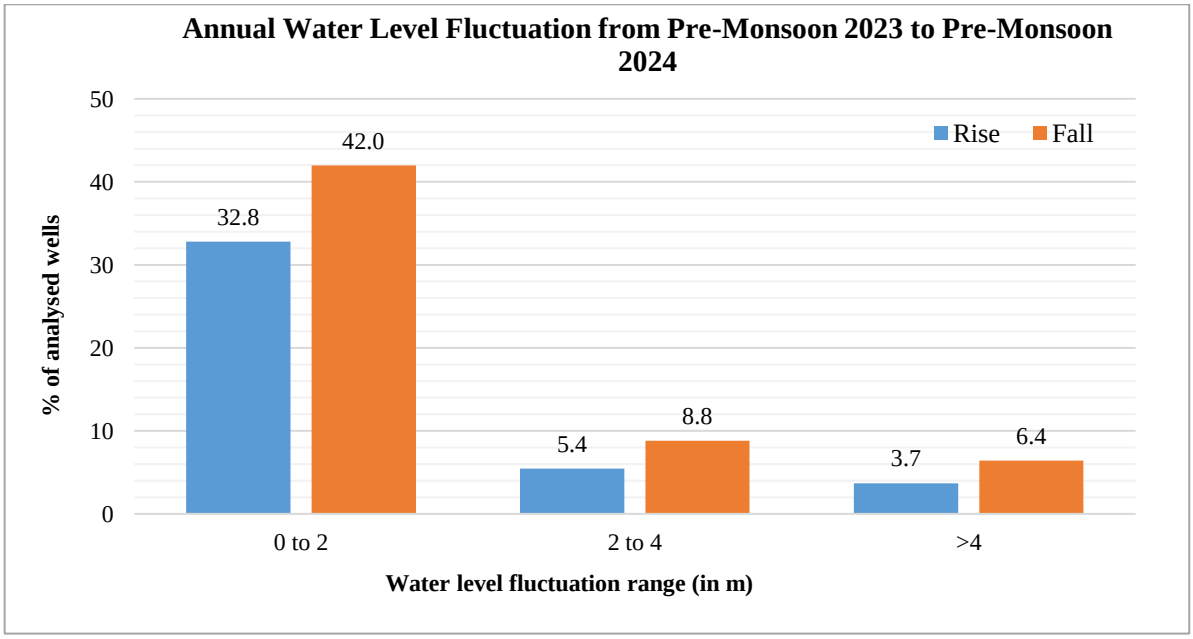
PLATE – XI: Ground Water Level Map of India (January 2025)



3.2.2 ANNUAL WATER LEVEL FLUCTUATION IN UNCONFINED AQUIFER

ANNUAL WATER LEVEL FLUCTUATION (PREMONSOON 2024 - PREMONSOON 2023)

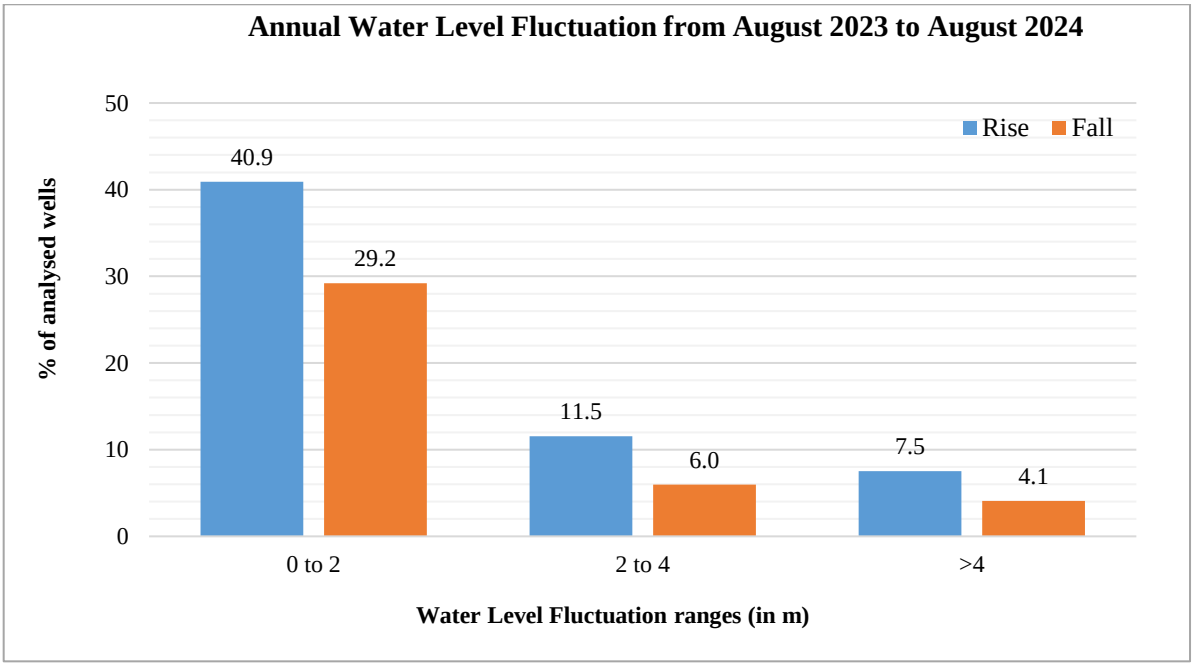
The water level fluctuation of pre-monsoon 2024 compared to pre-monsoon 2023 shows that out of 14822 wells analyzed, 6211 (41.9%) are showing rise and 8475 (57.2%) are showing fall in water level. The remaining 136 (0.9%) stations do not show any change in water level. Both rise and fall are equally predominant in the country. About 32.8% wells are showing rise in the water level in the range of less than 2 m. About 5.4% wells are showing rise in water level in 2 to 4 m range and 3.7% wells showing rise in water level more than 4 m range. Similarly, 42.0% wells are showing decline in water level in less than 2 m range. About 8.8% wells are showing decline in water level in 2 to 4 m range and 6.4% wells are showing a decline in water level more than 4 m range. Fluctuation is mainly in the range of 0 to 2 m (**Plate XIII, *Annexure V***).



A comparison of depth to water level of pre-monsoon 2024 to pre-monsoon 2023 also reveals that in general there is fall in water level in most parts of the country. The declining groundwater level is prominently observed in the parts of the states like Andaman and Nicobar Islands, Andhra Pradesh, Assam, Chhattisgarh, Delhi, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Punjab, Rajasthan, Telangana, Uttarakhand and Uttar Pradesh. A fall of more than 4 m is observed in isolated pockets in the states of Andhra Pradesh, Maharashtra and Rajasthan. The Rise in water level is prominently observed in patches in the states of Arunachal Pradesh, Bihar, Goa, Himachal Pradesh, Jharkhand, Karnataka, Nagaland, Odisha, Tamil Nadu, Tripura, West Bengal, Jammu and Kashmir, Northern part of Punjab and south western part of Rajasthan.

ANNUAL WATER LEVEL FLUCTUATION (AUGUST 2023-AUGUST 2024)

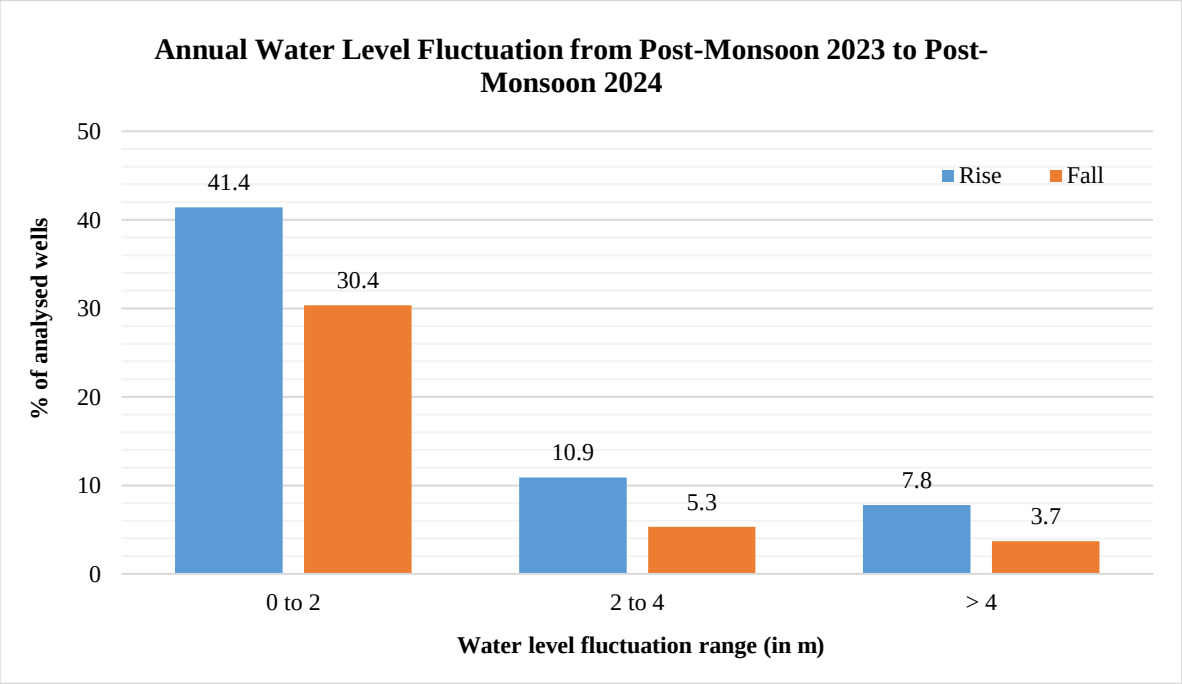
The water level fluctuation of August 2024 compared to August 2023 shows that out of 15077 wells analyzed, 9046 (60.0%) are showing rise and 5919 (39.3%) are showing fall in water level. The remaining 112 (0.7%) stations do not show any change in water level. Both rise and fall are equally predominant in the country. About 40.9% wells are showing rise in the water level in the range of less than 2 m. About 11.5% wells are showing rise in water level in 2 to 4 m range and 7.5% wells showing rise in water level more than 4 m range. Similarly, 29.2% wells are showing decline in water level in less than 2 m range. About 6.0% wells are showing decline in water level in 2 to 4 m range and 4.1% wells are showing a decline in water level more than 4 m range.



A comparison of depth to water level of August 2024 with August 2023 reveals that in general, the rise and fall are mostly in the range of 0 to 2 m. A rise in water level is prominently observed in patches in the states of Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tripura, and West Bengal **(Plate-XIV, *Annexure-VI*)**. The fall in the water level is prominently observed part of the states such as Assam, Bihar, Haryana, Punjab, Telangana, Tamil Nadu, Puducherry and Chandigarh. Fall is mostly in the range of 0 to 2 m observed in all states of the country.

ANNUAL WATER LEVEL FLUCTUATION (NOVEMBER 2024- NOVEMBER 2023) POST-MONSOON

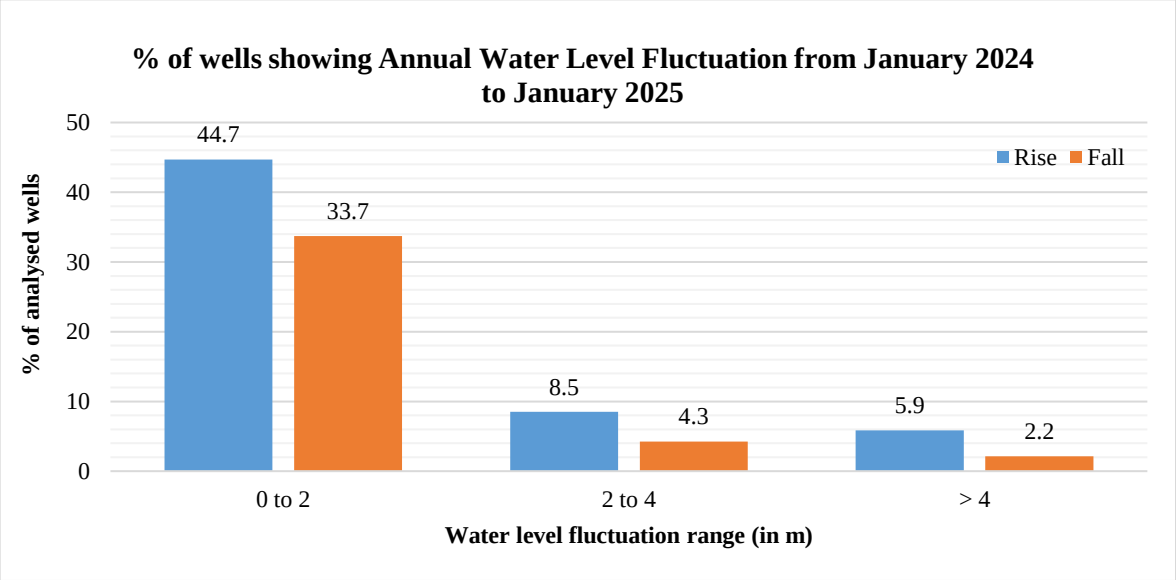
The water level fluctuation of November 2024 compared to November 2023 shows that out of 15096 wells analysed, 9076 (60.12%) are showing rise and 5938 (39.33%) are showing fall in water level. The remaining 82 (0.6%) stations do not show any change in water level. About 41.4% wells (6254) are showing rise in the water level in the range of less than 2 m. About 10.9% wells (1646) are showing rise in water level in 2 to 4 m range and 7.8% wells (1176) are showing a rise in water level more than 4 m range. About 39.33% (5938) wells are showing decline in water level, out of which 30.4% wells (4582) are showing a decline in water level in less than 2 m range. About 5.3% wells (800) are showing fall in water level in 2 to 4 m range and 3.7% wells (556) are showing a fall in water level more than 4 m range. **(Plate-XV, *Annexure-VII*).**



A comparison of the depth to water level of November 2024 compared to November 2023 is presented in the form of water level fluctuation map reveals that the general range of fluctuation is between 0 – 2 m. The rise in water level is prominently observed in patches in the states of Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Maharashtra, Eastern Rajasthan and Tripura. The fall in water levels is noticeably observed in parts of states such as Bihar, Haryana, Madhya Pradesh, Odisha, Punjab, Telangana, Tamil Nadu, Puducherry, Uttar Pradesh, and Chandigarh.

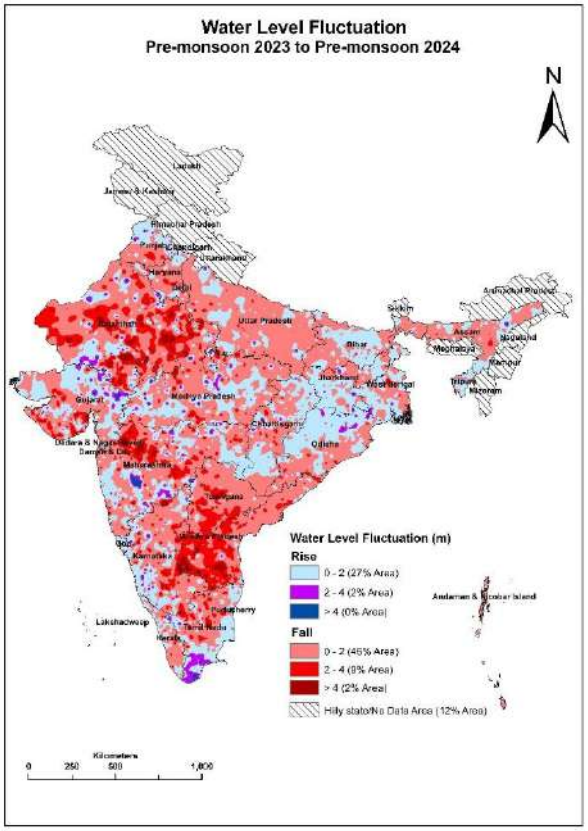
ANNUAL WATER LEVEL FLUCTUATION (JANUARY 2025- JANUARY 2024)

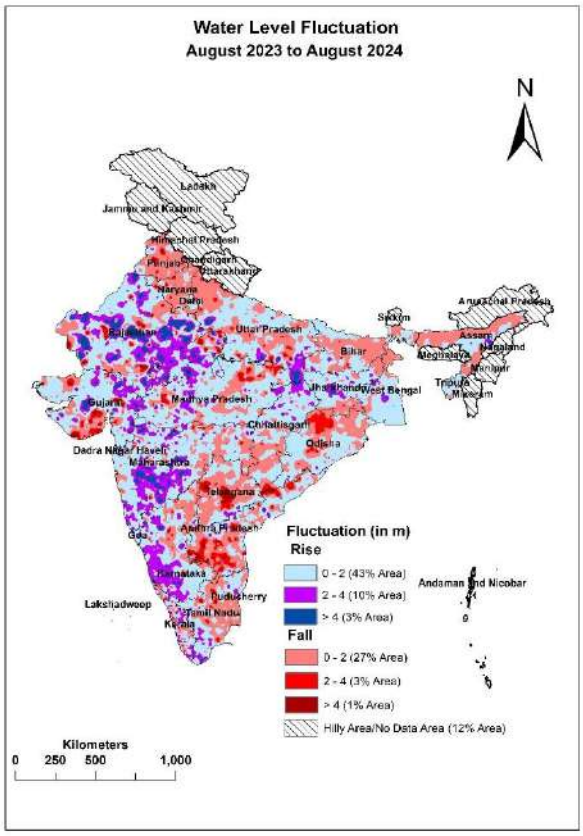
The water level fluctuation of January 2025 to January 2024 shows that out of 14929 wells analysed, 8820 (59.1%) are showing rise and 5993 (40.1%) are showing fall in water level. The remaining 116 (0.8%) stations do not show any change in water level. About 44.7% (6675) wells are showing rise in the water level in the range of less than 2 m. About 8.5% (1270) wells are showing rise in water level in 2 to 4 m range and 5.9% (875) wells showing rise in water level more than 4 m range. About 40.1% wells are showing decline in water level, out of which 33.7% (5036) wells are showing decline in water level in less than 2 m range. About 4.3% (636) wells are showing decline in water level in 2 to 4 m range and 2.2% (321) wells are showing decline in water level more than 4 m range. The majority of the wells showing rise/decline falls in the range of 0 to 2 m **(Plate-XVI, *Annexure-VIII*)**.

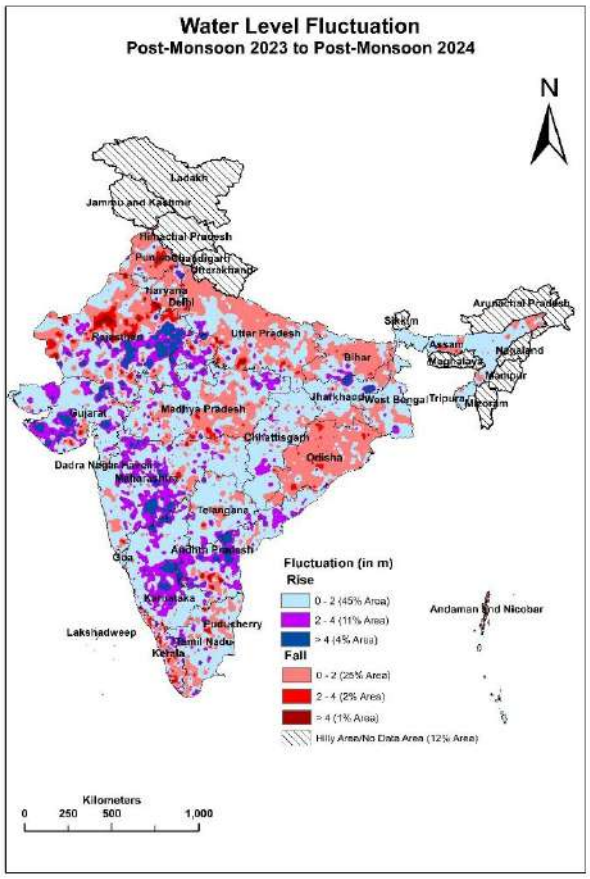


A comparison of the depth to water level of January 2025 to January 2024 is presented in the form of water level fluctuation map reveals that the general range of fluctuation is between 0 – 2 m. The rise in water level is prominently observed in patches in the states of Andhra Pradesh, Goa, Karnataka, Rajasthan, Jharkhand, Delhi, Telangana, Maharashtra, Chandigarh, Chhattisgarh, Gujarat, Uttarakhand, Odisha, Tamil Nadu and Uttar Pradesh. Groundwater levels have decreased in various areas of all states in a scattered pattern, with more significant decreases observed in parts of the states such as Puducherry, Punjab, Jammu and Kashmir, Arunachal Pradesh, Nagaland, Himachal Pradesh, Meghalaya, Tripura, Kerala, Haryana and West Bengal.

PLATE – XII: Annual Comparison of Ground Water Level with the Previous Year







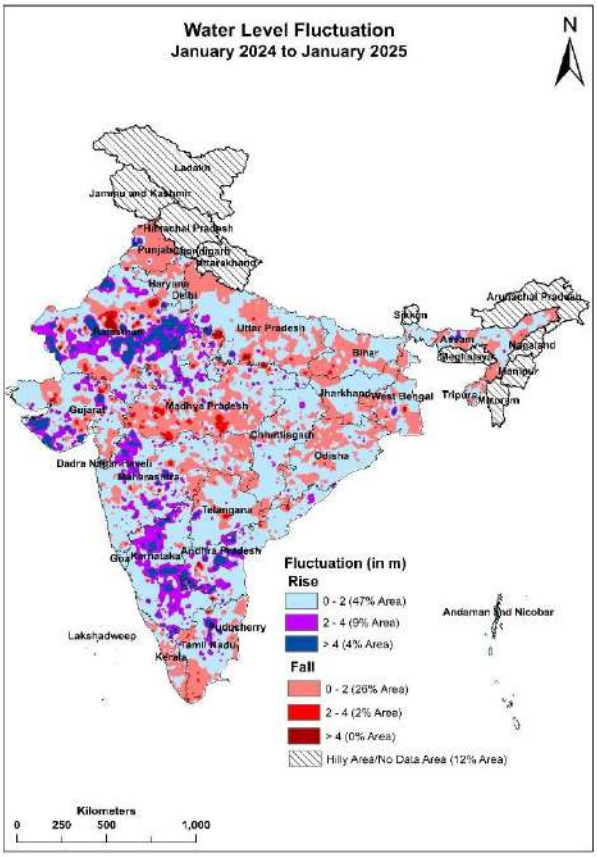


PLATE – XIII: Annual Comparison of Ground Water Level of Pre-monsoon 2024 with Pre-monsoon 2023

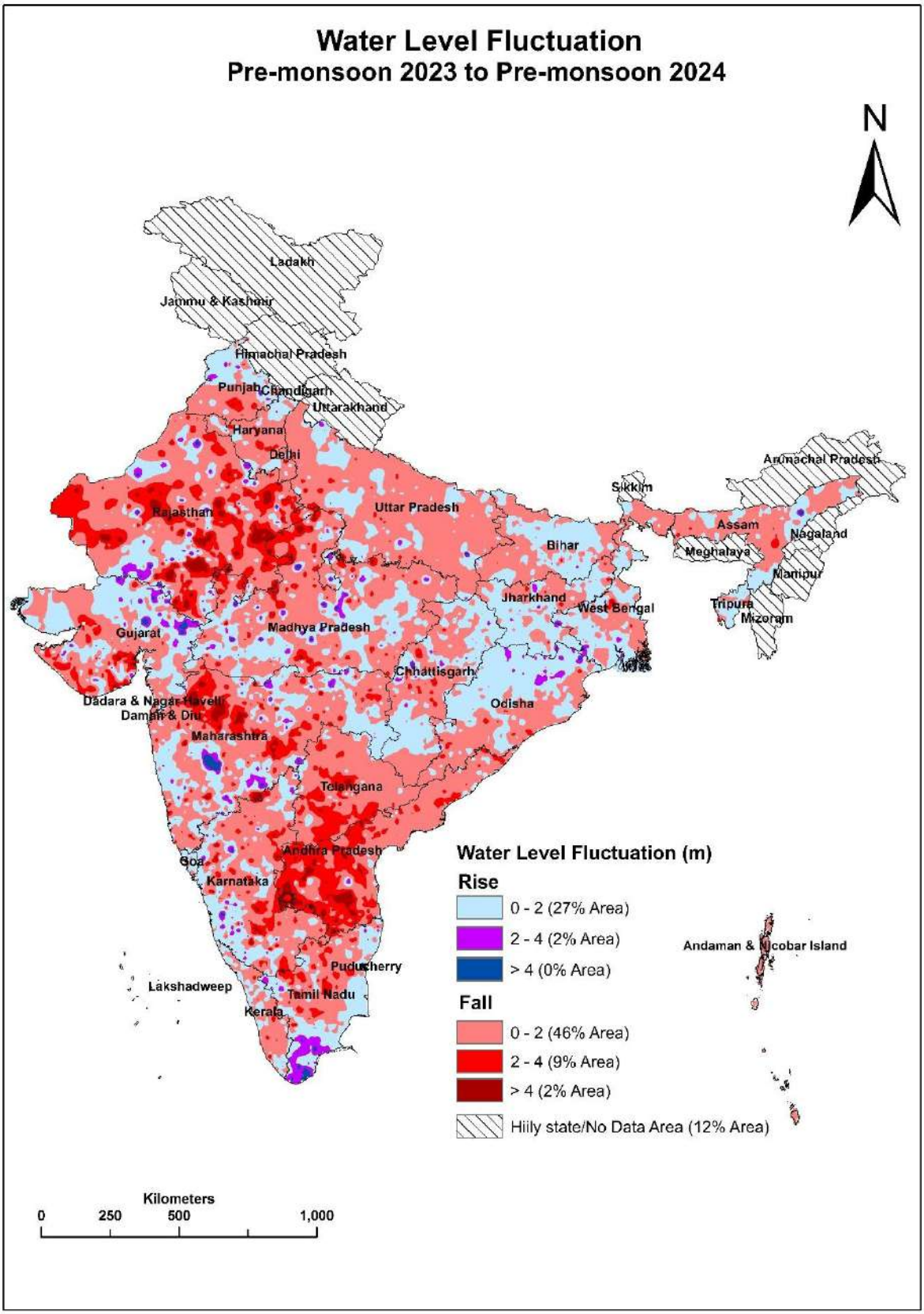


PLATE – XIV: Annual Comparison of Ground Water Level of August 2024 with August 2023

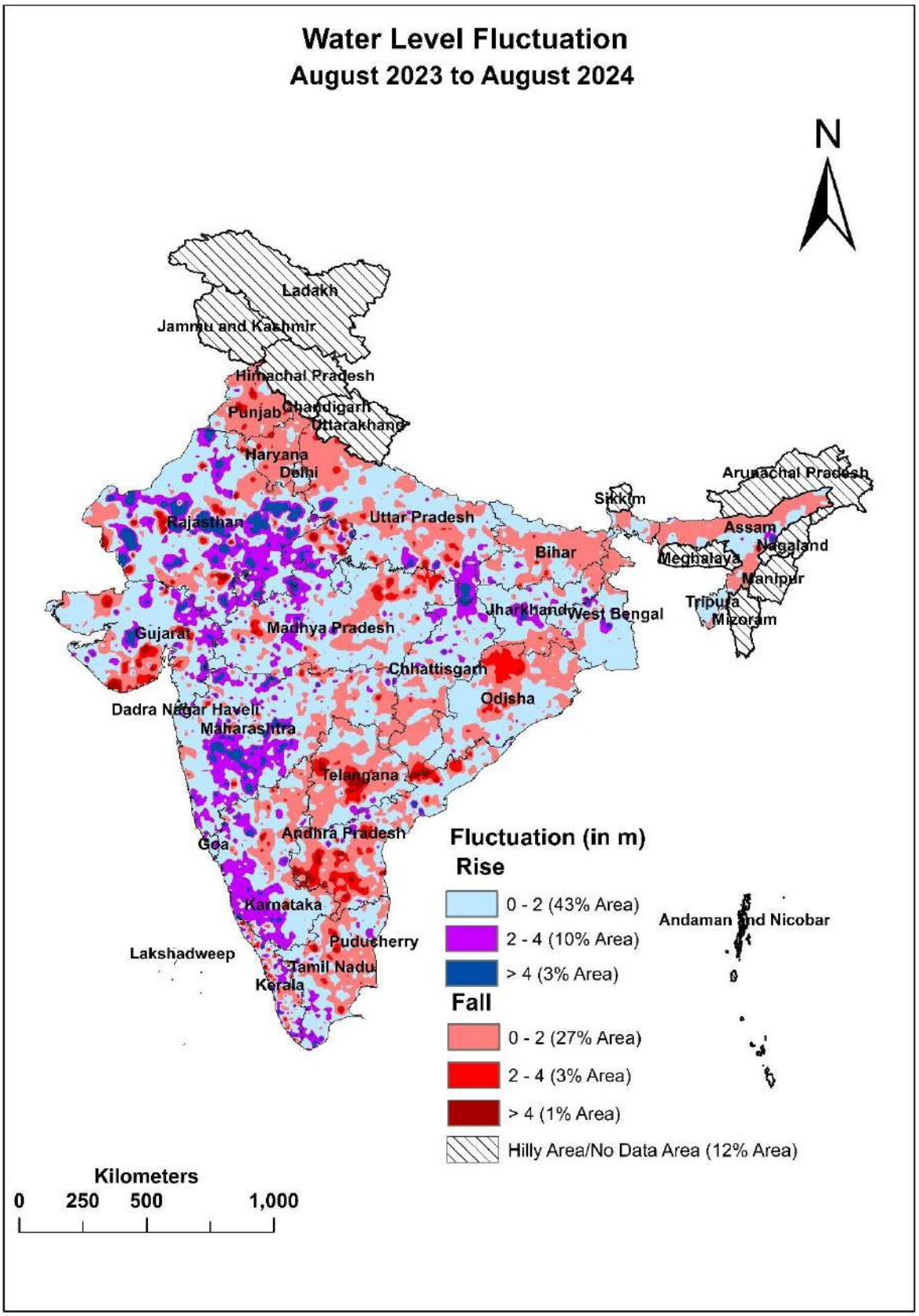


PLATE – XV: Annual Comparison of Ground Water Level of Post-monsoon 2024 with post-monsoon 2023

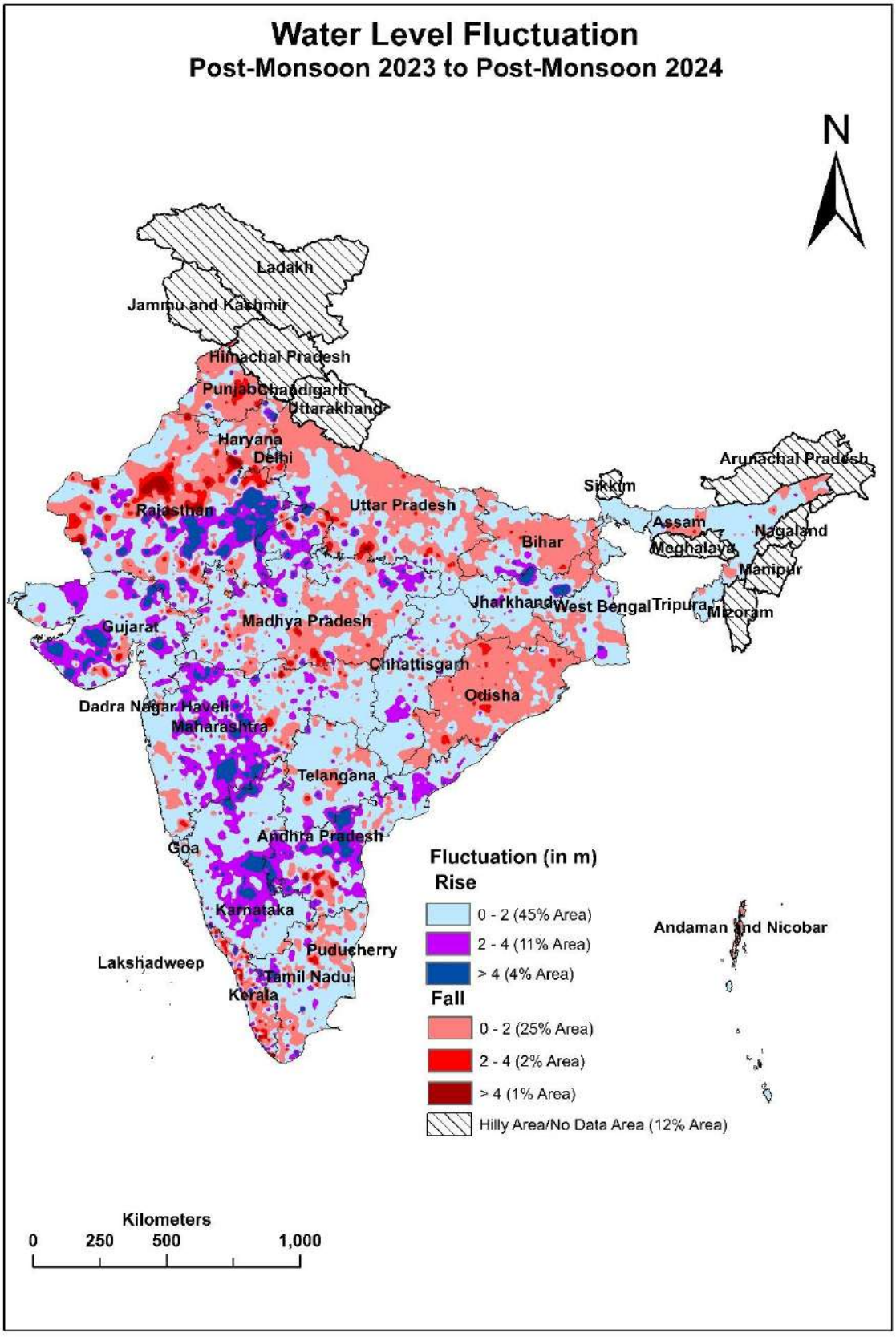
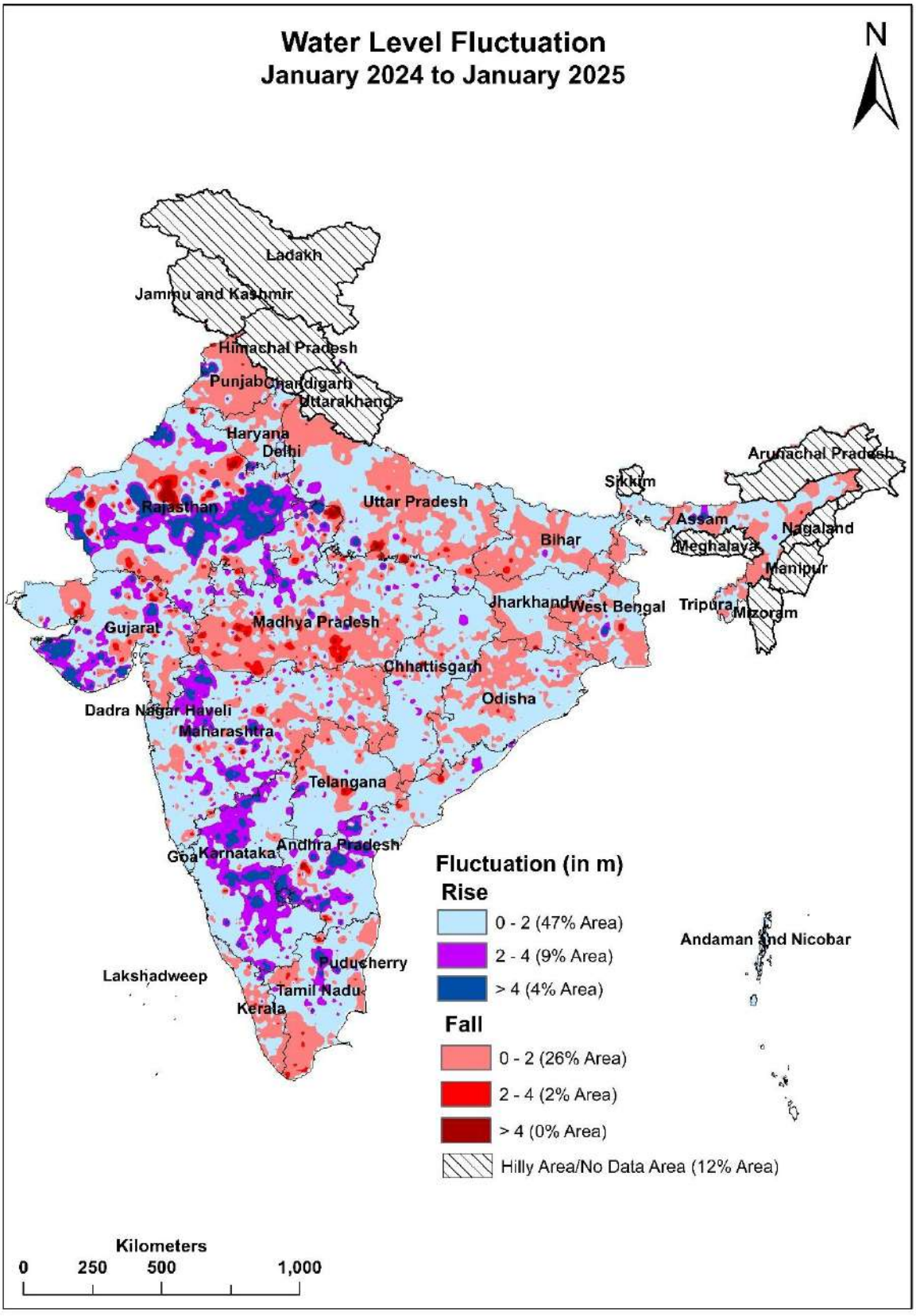


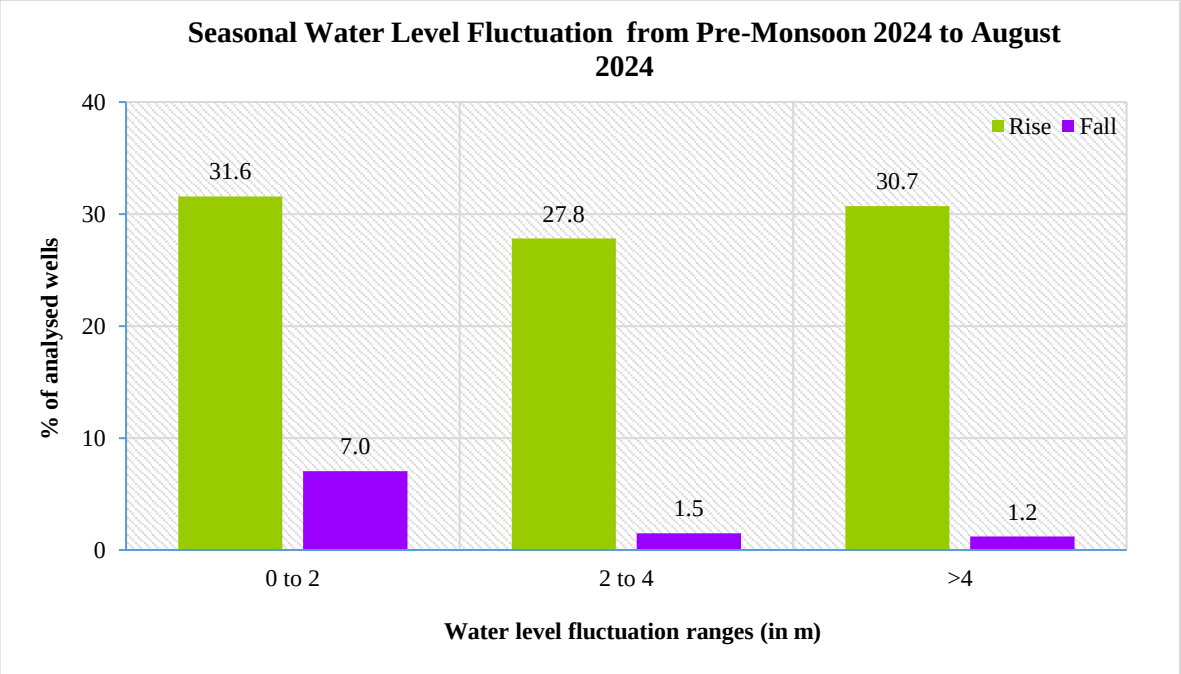
PLATE – XVI: Annual Comparison of Ground Water Level of January 2025 with January 2024



3.2.3 SEASONAL WATER LEVEL FLUCTUATION IN UNCONFINED AQUIFER

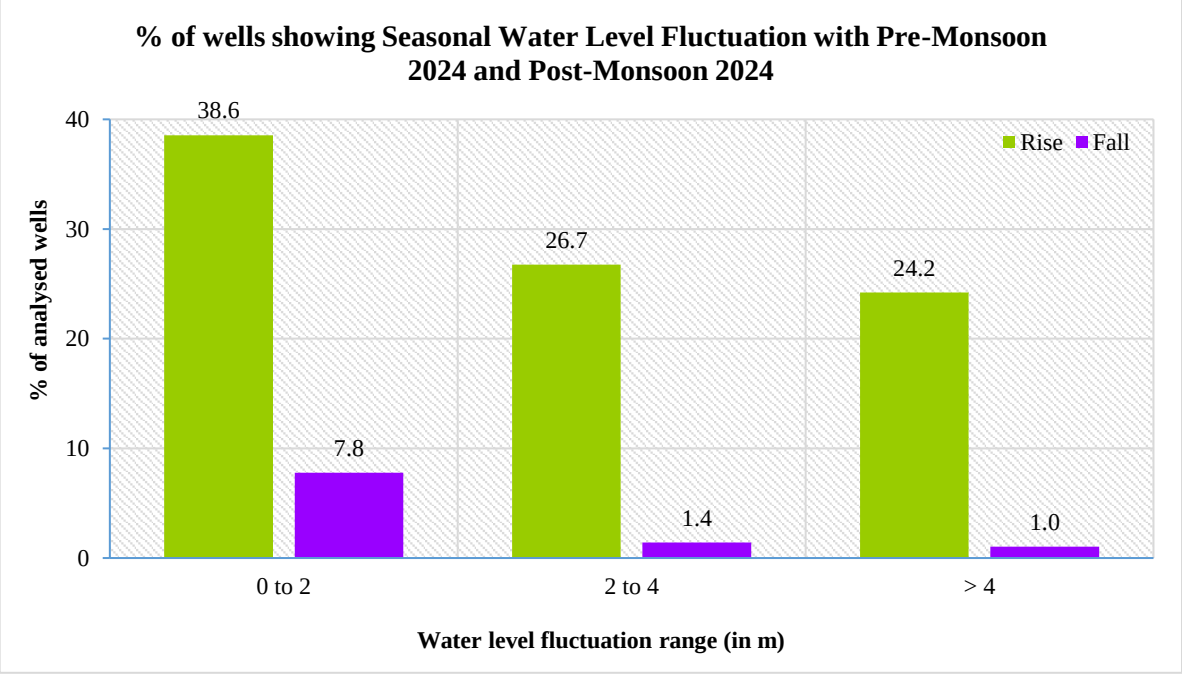
SEASONAL WATER LEVEL FLUCTUATION (PRE-MONSOON 2024- AUGUST 2024)

A comparison of depth to water level of pre-monsoon 2024 with August 2024 indicates that out of analysed 15614 wells, about 90.1% (14066) of wells are showing rise in water levels, out of which 31.6% (4930) wells are showing rise of less than 2 m range. About 27.8% (4342) wells are showing rise in water level in the range of 2 to 4 m and another 30.7% (4794) wells are showing rise in water in range of more than 4 m. Similarly, 9.7% (1519) wells are showing decline in water level, out of which 7.0% (1100) wells are showing decline in water in the range of 0 to 2 m, 1.5% (232) wells are showing fall in water level in the range of 2 to 4 m and 1.2% (187) wells are showing fall in water level of more than 4 m. The remaining 0.2% wells are showing no change. **(Plate-XVIII, *Annexure-IX*)**. A rise in water level was prominently observed in all states except Punjab. A fall in water levels is observed in a scattered pattern in states like Haryana, Punjab, Rajasthan, Tamil Nadu, and West Bengal.



SEASONAL WATER LEVEL FLUCTUATION (PRE-MONSOON 2024- NOVEMBER 2024)

A comparison of depth to water level of pre-monsoon 2024 with November 2024 indicates that about 89.5% of wells (13315) analysed are showing rise in water levels, out of which 38.6% (5736) wells are showing rise of less than 2 m range. About 26.7% (3979) wells are showing rise in water level in the range of 2 to 4 m and another 24.2 % (3600) wells are showing rise in water in range of more than 4 m. About 10.2% wells are showing decline in water level, out of which 7.8 % wells (1158) are showing decline in water in the range of 0 to 2 m. About 1.4 % (209) wells are showing decline in water in the range of 2 to 4 m and 1.0% (155) wells are showing decline in water in range of more than 4 m. The remaining 39 (0.3%) stations analysed do not show any change in water level. A rise in water level is prominent in all the states of the country. The rise in water level has been prominently observed all over the country, covering all the states except some parts of states like Punjab, Haryana, Rajasthan and Tamil Nadu. **(Plate XIX, *Annexure X*)**.



SEASONAL WATER LEVEL FLUCTUATION (PREMONSOON 2024 JANUARY 2025)

The water level fluctuation of pre-monsoon 2024 with January 2025 indicates that out of 14623 wells analysed, 12334 (84.3%) are showing rise and 2257 (15.4%) are showing fall in water level. The remaining 32 (0.3%) wells analysed do not show any change in water level. About 46.9% (6859) wells are showing rise in the water level in the range of less than 2 m. About 21.8% (3190) wells are showing rise in water level in 2 to 4 m range and another 15.6% (2285) wells showing rise in water level more than 4 m range. About 15.4% (2257) wells are showing decline in water level, out of which 12.1% (1776) wells are showing decline in water level in less than 2 m range. About 2.1 % (300) wells are showing decline in water in the range of 2 to 4 m and 1.2% (181) wells are showing decline in water in range of more than 4 m. Majority of the wells showing rise/decline falls in the range of 0 to 2 m **(Plate XX, *Annexure XI*)**.

A comparison of depth to water level of pre-monsoon 2024 with January 2025 with reveals that in general, there is a rise in water level is prominent in almost all states of the country. The fall in the water level is observed between 0 - 2 m range in small patches in a few states like Punjab, Haryana and Rajasthan.

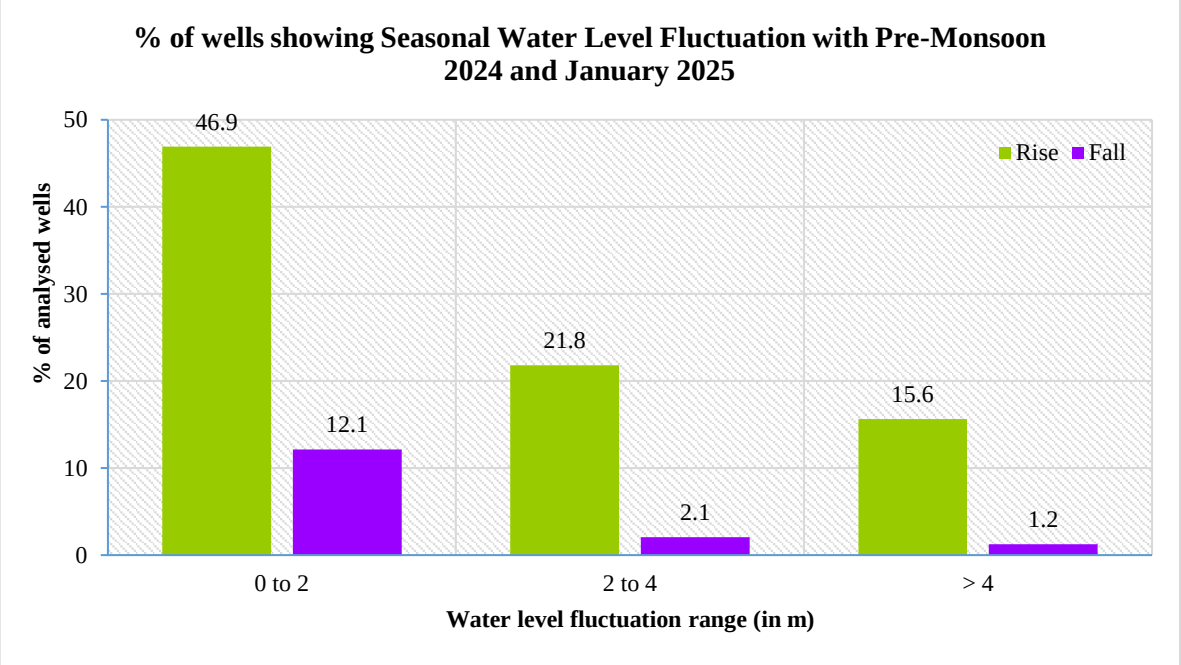
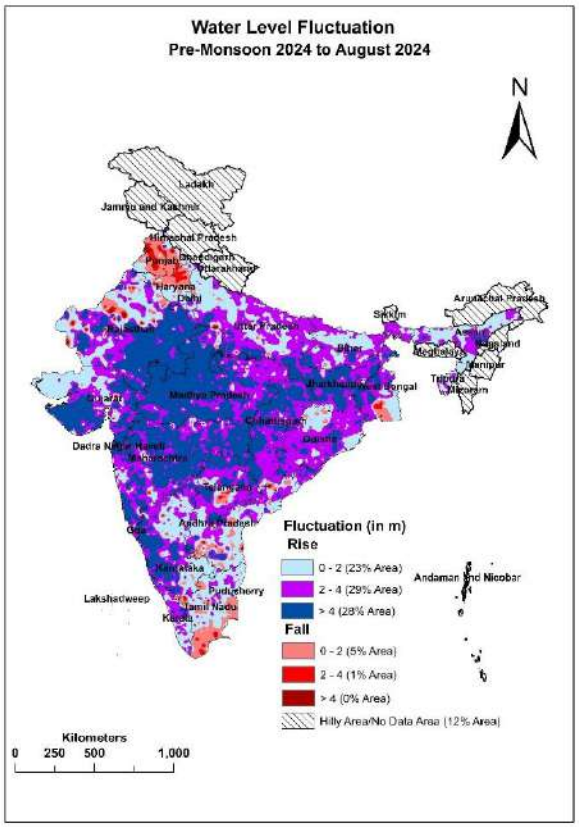
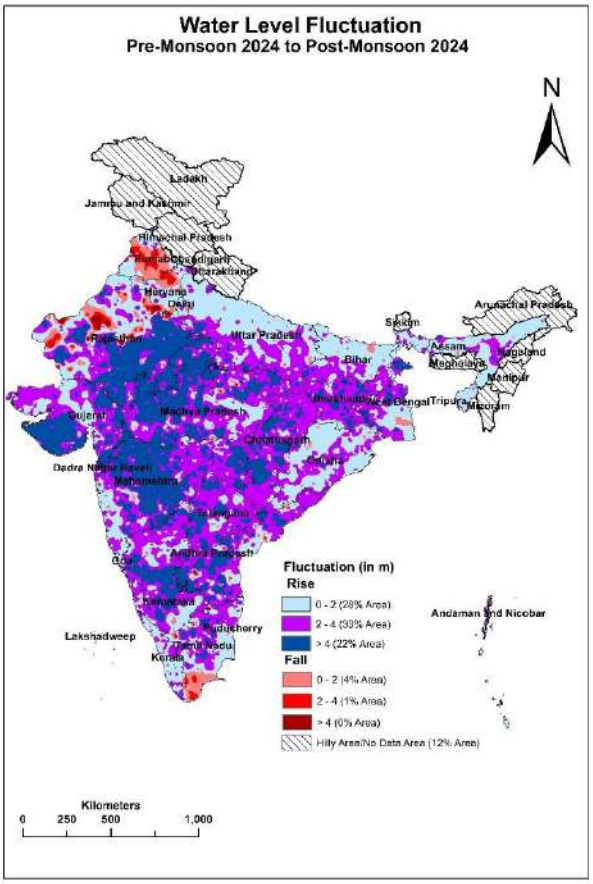


PLATE – XVII: Seasonal Comparison of Ground Water Level with the Pre-monsoon 2024





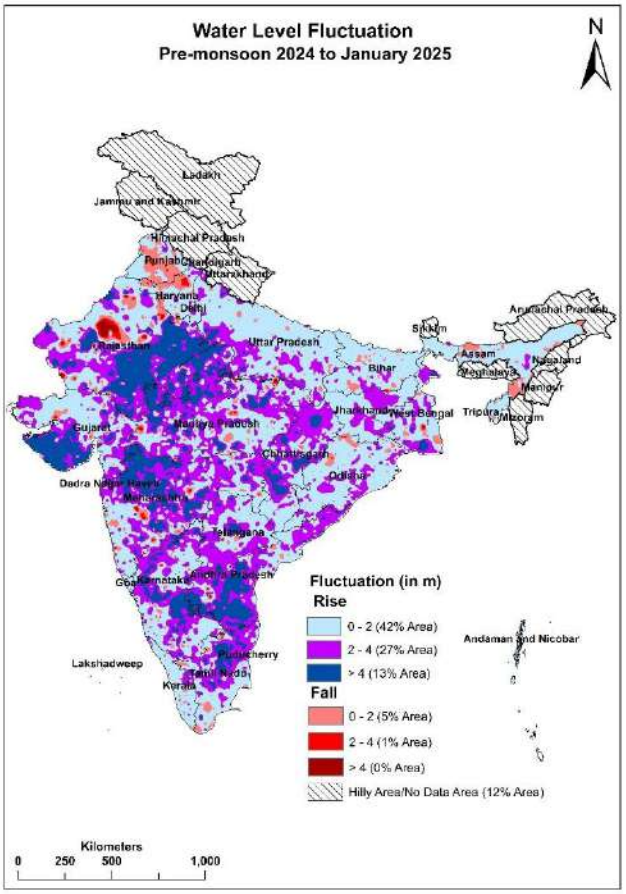


PLATE – XVIII: Seasonal Comparison of Ground Water Level of August 2024 with the Pre-monsoon 2024

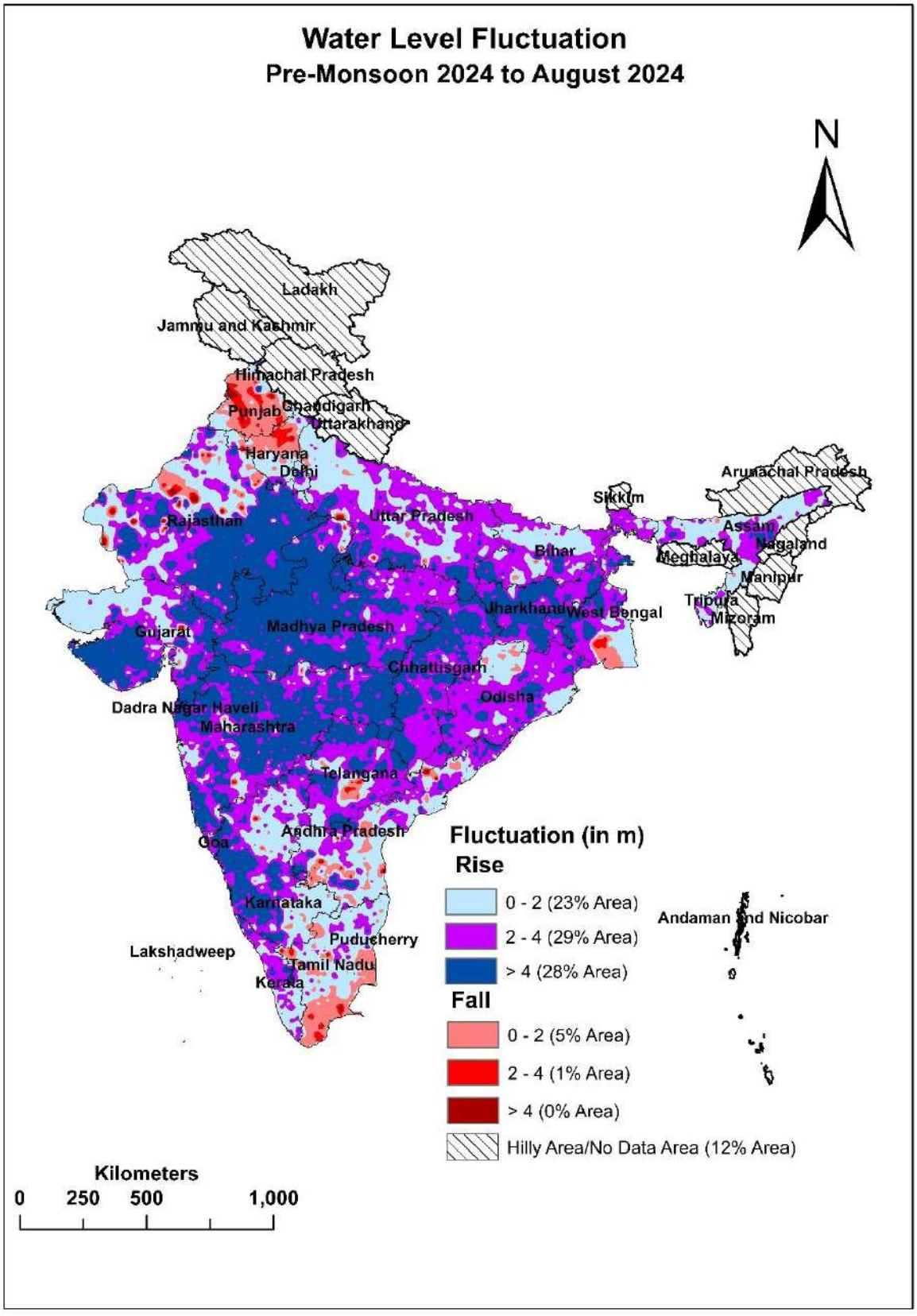


PLATE – XIX: Seasonal Comparison of Ground Water Level of Post-monsoon 2024 with the Pre-monsoon 2024

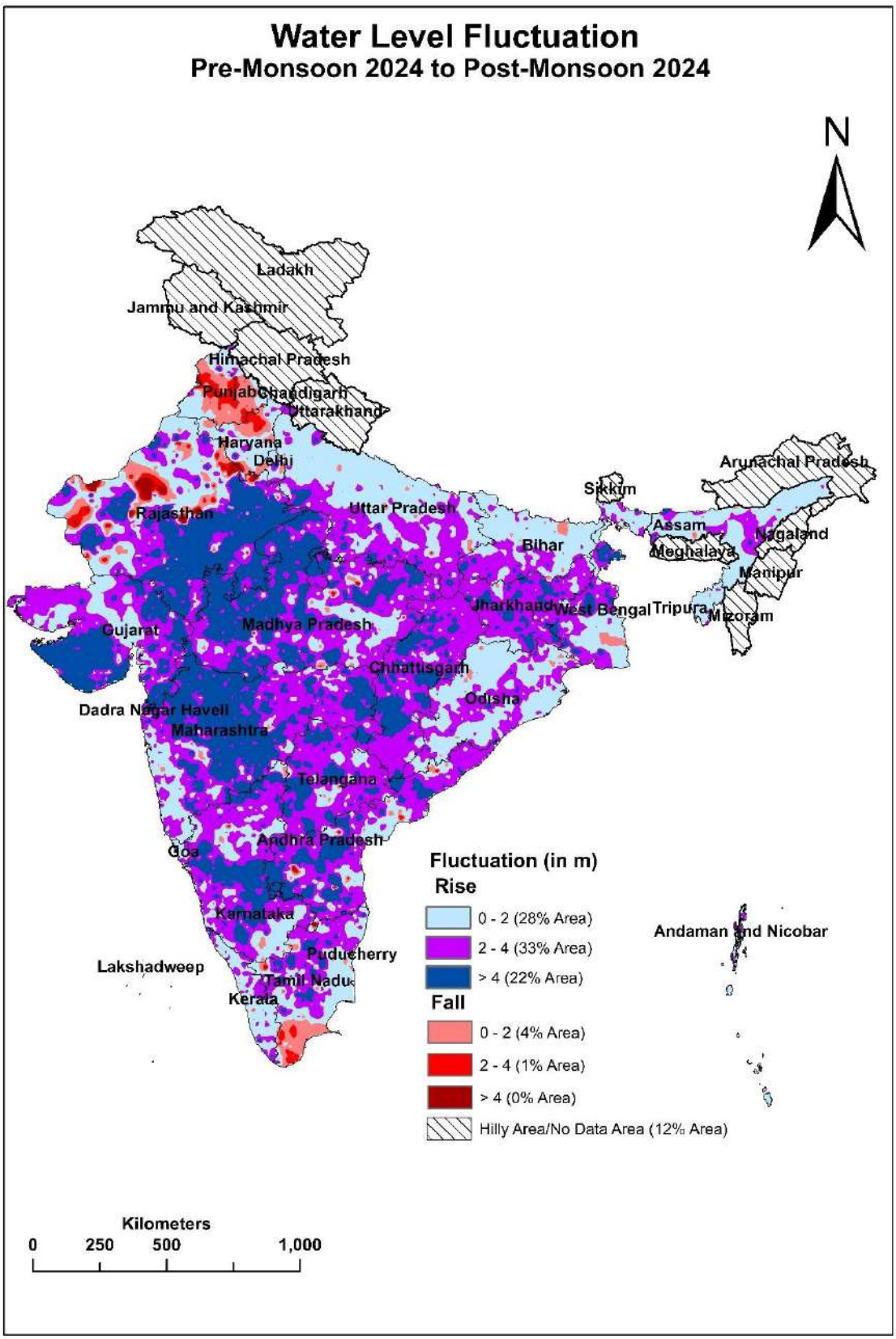
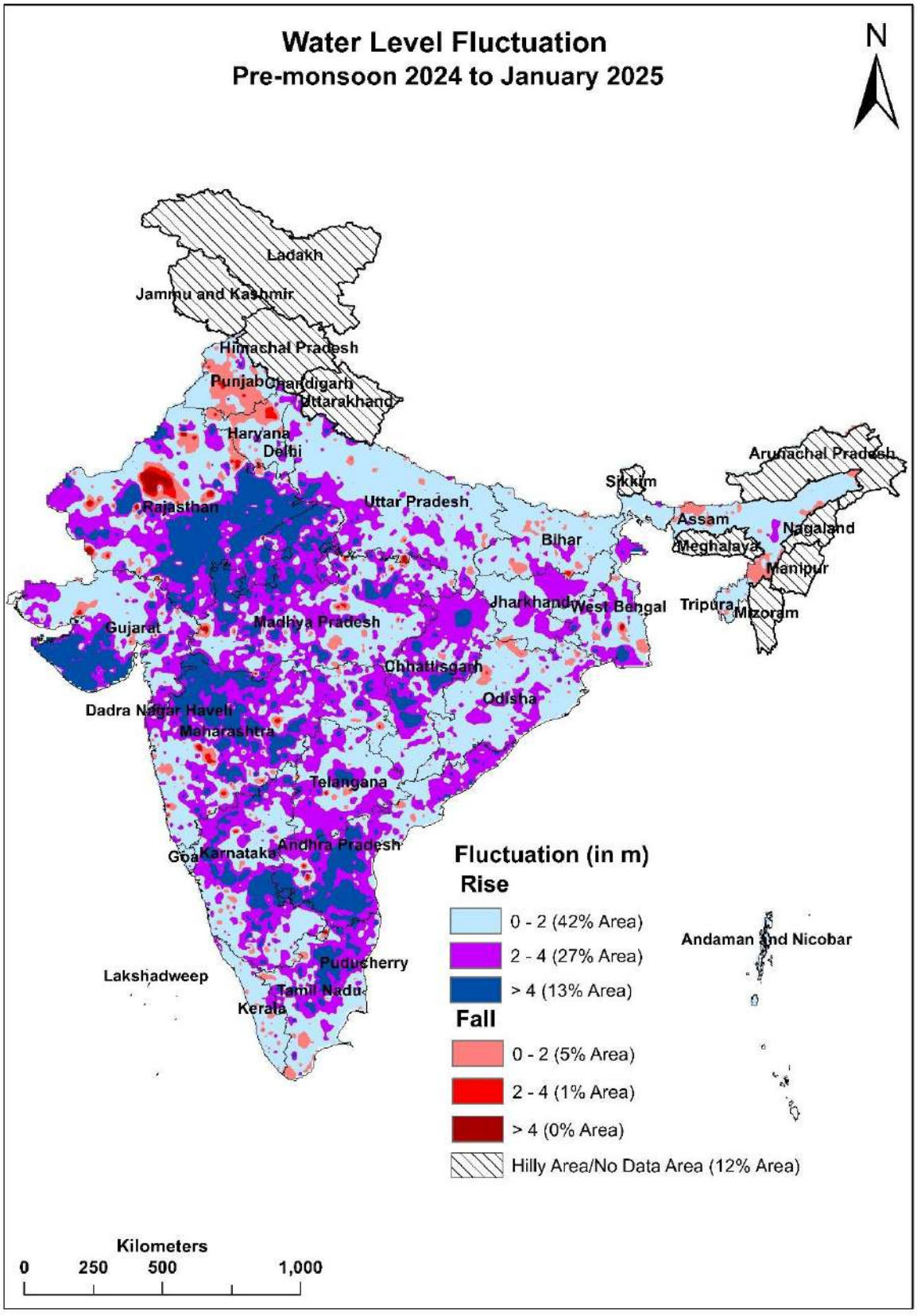


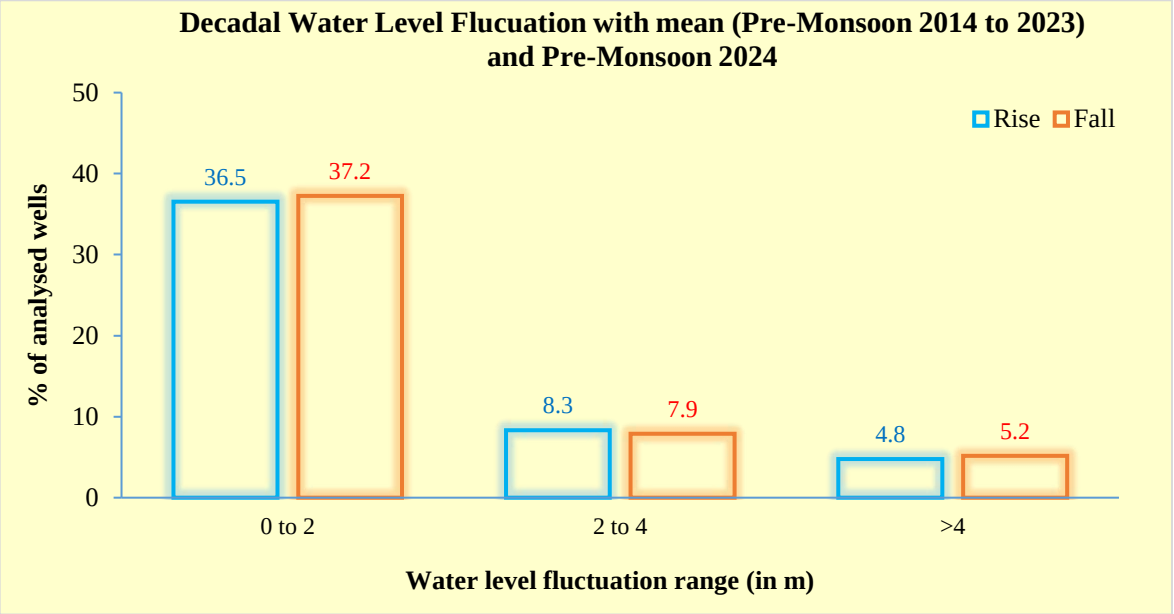
PLATE – XX: Seasonal Comparison of Ground Water Level of January 2025 with the Pre-monsoon 2024



3.2.4 DECADAL WATER LEVEL FLUCTUATION

WATER LEVEL FLUCTUATION WITH DECADAL MEAN (PRE-MONSOON 2014 TO 2023) TO PRE-MONSOON 2024

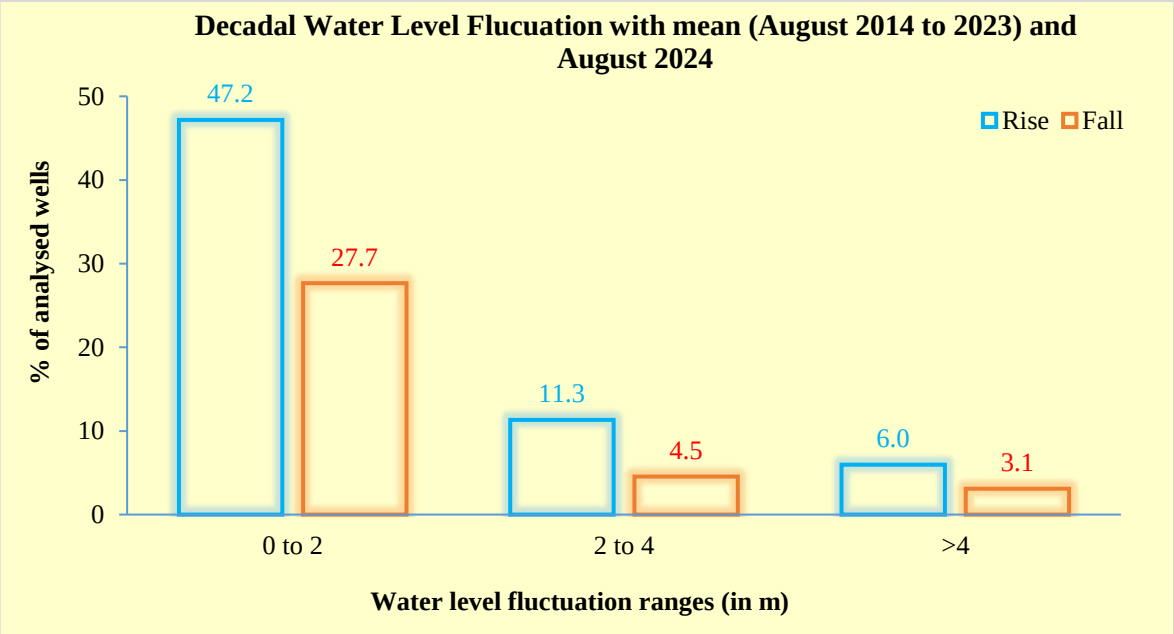
A comparison of depth to water level of pre-monsoon 2024 with decadal mean of pre-monsoon (2014-2023) indicate that 6722 (49.6%) of wells are showing rise in water level, out of which 36.5% (4945) wells are showing rise of less than 2 m. About 8.3% (1130) wells are showing rise in water level in the range of 2 to 4 m and about 4.8% (647) wells are showing rise in water level in the range of more than 4 m. A total of 6811 (50.3%) wells are showing decline in water level, out of which 37.2% (5042) wells are showing decline in water in the range of 0 to 2 m. 7.9% (1068) wells are showing decline in water level in 2 to 4 m range and remaining 5.2% (701) are in the range of more than 4 m. A comparison of depth to water level of pre-monsoon 2024 with decadal mean of pre-monsoon (2014-2023) indicates that 49.7% of the analysed wells show rise in water level whereas 50.3% wells show decline in water level. Rise and decline in water level are primarily in the 0 to 2 m range.



The rise in water levels is prominently seen in the parts of states/UTs of Assam, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Tripura, West Bengal, Northern part of Punjab and south western part of Rajasthan. Similarly, Fall is mostly in the range of 0 to 2 m observed in all states of the country. A fall in water level is observed prominently in the states of Andaman and Nicobar Islands, Andhra Pradesh, Bihar, Haryana, Rajasthan, Punjab, Uttar Pradesh, Uttarakhand, and West Bengal **(Plate-XXII, *Annexure-XII*).**

WATER LEVEL FLUCTUATION WITH DECADAL MEAN (AUGUST 2014 TO AUGUST 2023) TO AUGUST 2024

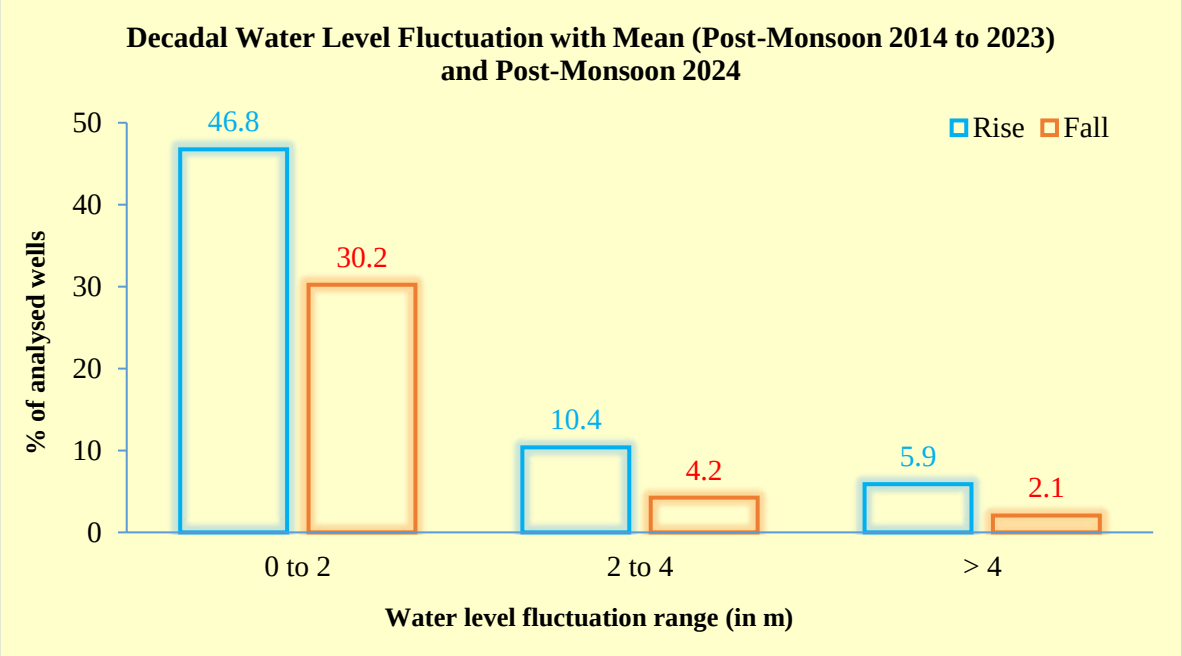
A comparison of depth to water level of August 2024 with decadal mean of August (2014-2023) indicate that about 64.5% (8632) of wells are showing rise in water level, out of which 47.2% (6315) wells are showing rise of less than 2 m. About 11.3% (1516) wells are showing rise in water in the range of 2 to 4 m and about 6.0% (801) wells are showing rise in water level in the range of more than 4 m. About 35.3% (4726) wells are showing decline in water level, out of which 27.7% (3703) wells are showing decline in water in the range of 0 to 2 m. 4.5% (607) wells are showing decline in water level in 2 to 4 m range and remaining 3.1% (416) are in the range of more than 4 m. The remaining 30 (0.2%) stations analysed do not show any change in water level.



A comparison of depth to water level of August 2024 with decadal mean of August (2014-2023) indicates that the general range of fluctuation is between 0 - 2 m. A rise in water level is prominently observed in the states of Andhra Pradesh, Assam, Chhattisgarh, Chandigarh, Delhi, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, West Bengal, and south eastern part of Rajasthan. A fall is mostly in the range of 0 to 2 m observed in patches in northern states like Punjab, Haryana, Rajasthan and Eastern Uttar Pradesh, Bihar, Assam and Odisha **(Plate XXIII, Annexure XIII)**.

WATER LEVEL FLUCTUATION WITH DECADAL MEAN (POST- MONSOON-2014 TO POST-MONSOON-2023) TO POST-MONSOON-2024

A comparison of depth to water level of post-monsoon 2024 with decadal mean of post-monsoon (2014-2023) indicate that, out of 13358 wells analysed, 8420 (63.0%) of wells are showing rise in water level, out of which 46.8% (6248) wells are showing rise of less than 2 m. About 104% (1385) wells are showing rise in water level in the range of 2 to 4 m and about 5.9% (787) wells are showing rise in water level in the range of more than 4 m. About 4883 (36.6%) wells showing decline in water level, out of which 30.2% (4040) wells are showing decline in water in the range of 0 to 2 m. About 4.2% (566) wells are showing decline in water level in 2 to 4 m range and remaining 2.1% (277) are in the range of more than 4 m **(Plate XXIV, *Annexure-XIV*)**.



A comparison of decadal water level fluctuation with mean of post-monsoon (2014 to 2023) and post-monsoon 2024 (Fig. 5.6) indicates that 63.0% of the analysed wells show rise in water level whereas 36.6% wells show decline in water level. Only 0.4% of the wells have shown no change. Rise and decline in water level are primarily in the 0 to 2 m range. Rise in water level is prominently observed in the states of Andaman & Nicobar, Andhra Pradesh, Arunachal, Assam, Bihar, Chhattisgarh, Chandigarh, Delhi, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu, Telangana, Tripura, West Bengal, and south eastern part of Rajasthan. Similarly, Fall is mostly in the range of 0 to 2 m observed in patches in northern states like Haryana, Himachal Pradesh, Jammu & Kashmir, Meghalaya, Nagaland, Odisha, Punjab, Eastern Uttar Pradesh and Uttarakhand.

WATER LEVEL FLUCTUATION WITH DECADAL MEAN (JANUARY 2015 TO JANUARY 2024) TO JANUARY 2025

A comparison of depth to water level of January 2025 with decadal mean of January (2015-2024) indicates that out of 13101 well analysed, 8697 (66.4%) of wells are showing rise in water level, out of which 49.8% (6524) wells are showing rise of less than 2 m. About 105% (1376) wells are showing rise in water level in the range of 2 to 4 m and only 6.1% (797) wells are showing rise in the range of more than 4 m. Total 4350 (33.2%) wells showing the decline in water level, out of which 27.6% (3611) wells are showing decline in water in the range of 0 to 2 m. 3.7% (487) wells are showing decline in water level in 2 to 4 m range and the remaining 1.9% (252) are in the range of more than 4 m. A rise in water level is prominently observed in all states except Himachal Pradesh, Bihar, Jammu and Kashmir, Nagaland and Punjab. The fall is mostly in the range of 0 to 2 m observed in patches in states like Himachal Pradesh, Bihar, Jammu and Kashmir, Nagaland and Punjab. **(Plate XXV, *Annexure-XV*)**.

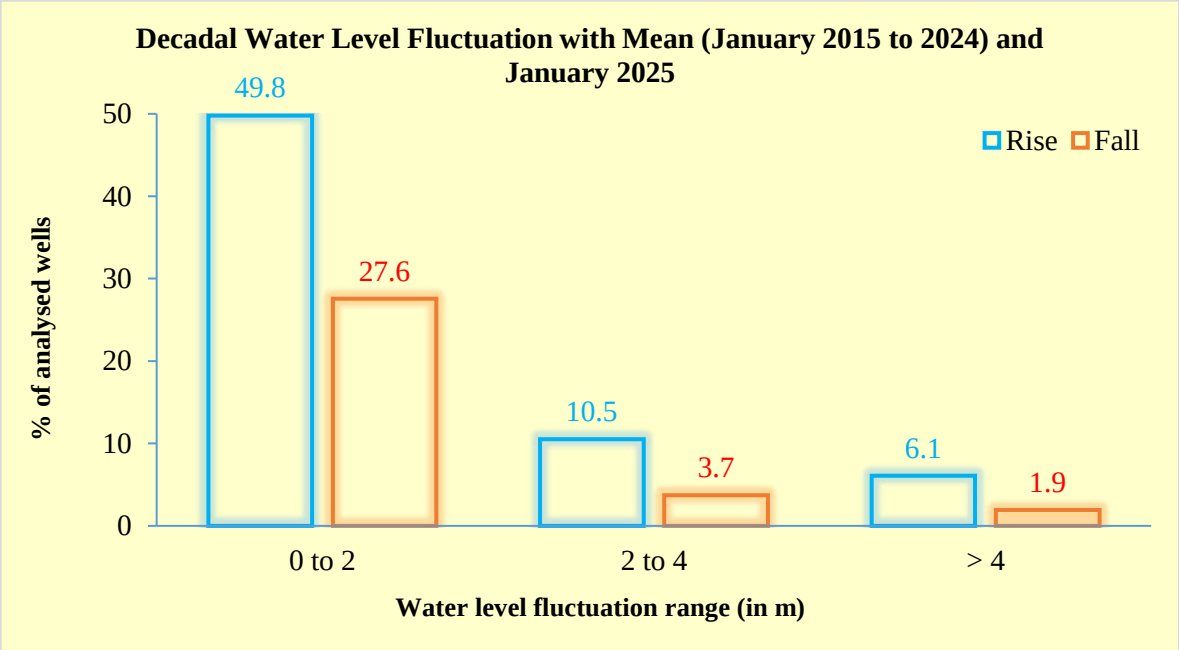
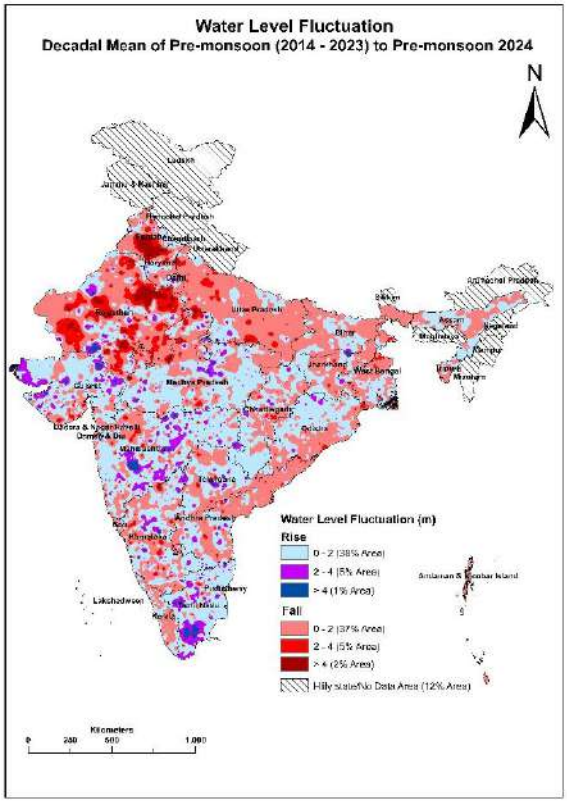
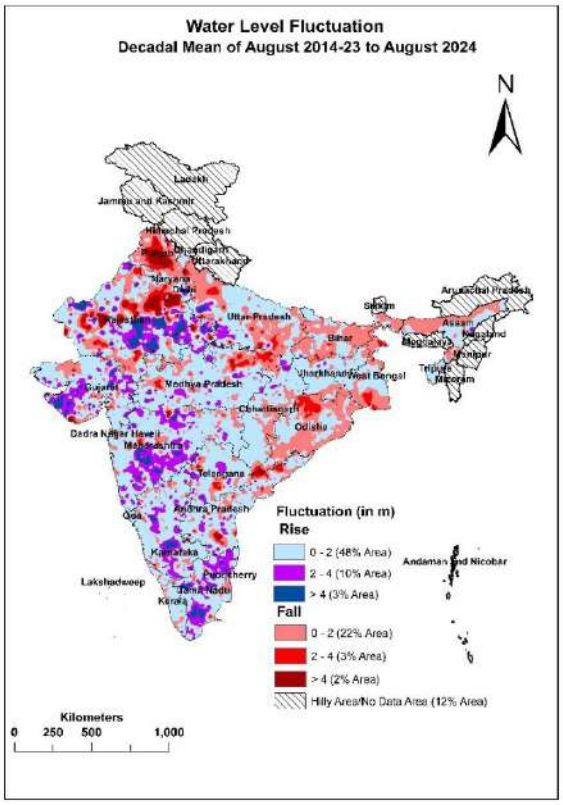
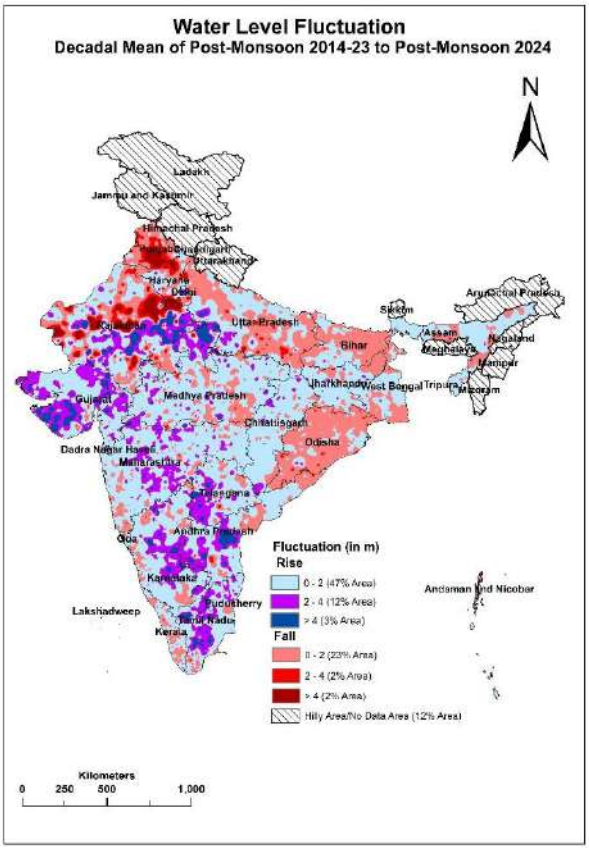


PLATE – XXI: Decadal Comparison of Ground Water Level 2024-25 with the Mean of the last decade







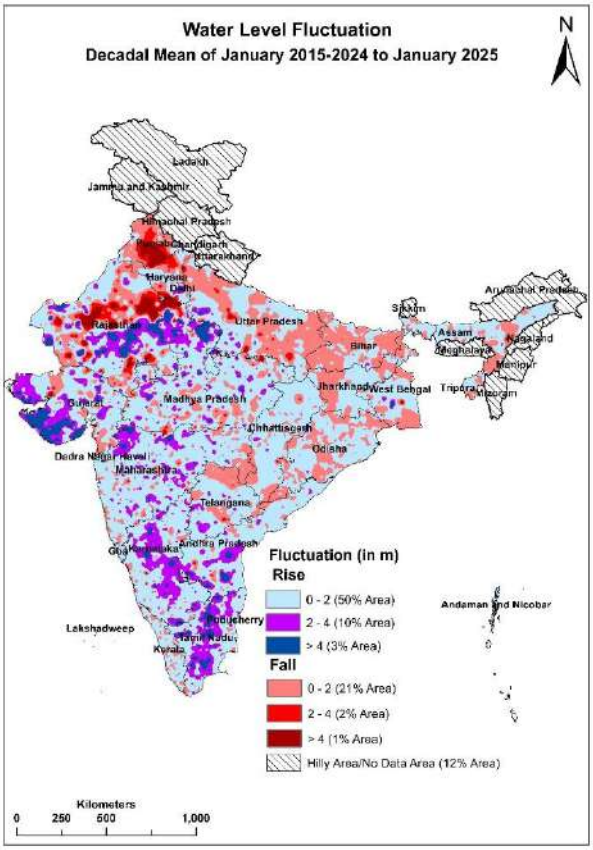


PLATE – XXII: Decadal Comparison of Ground Water Level of Pre-monsoon 2024 with the Mean of Pre-monsoon 2014-2023

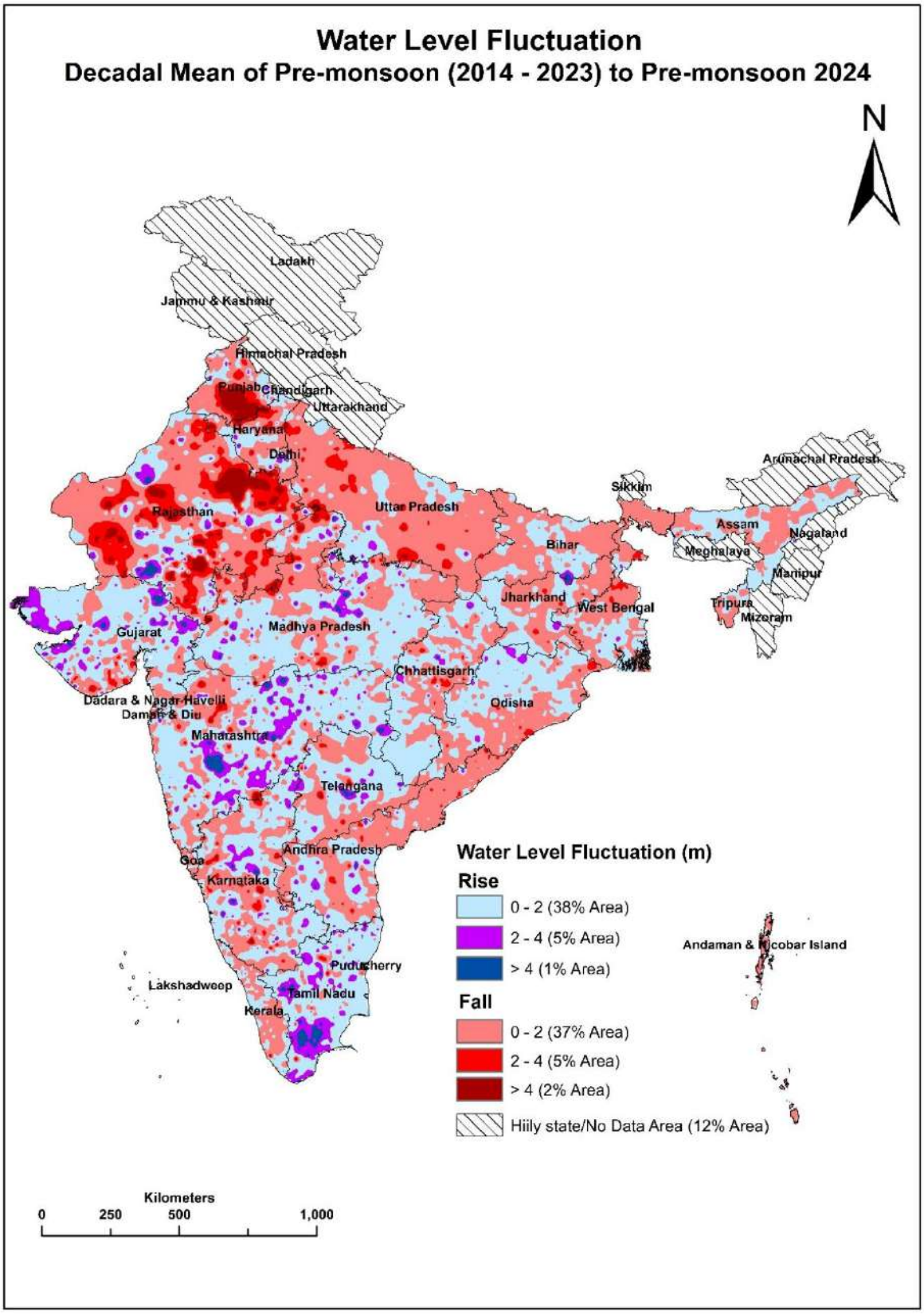


PLATE – XXIII: Decadal Comparison of Ground Water Level of August 2024 with the Mean of August 2014-2023

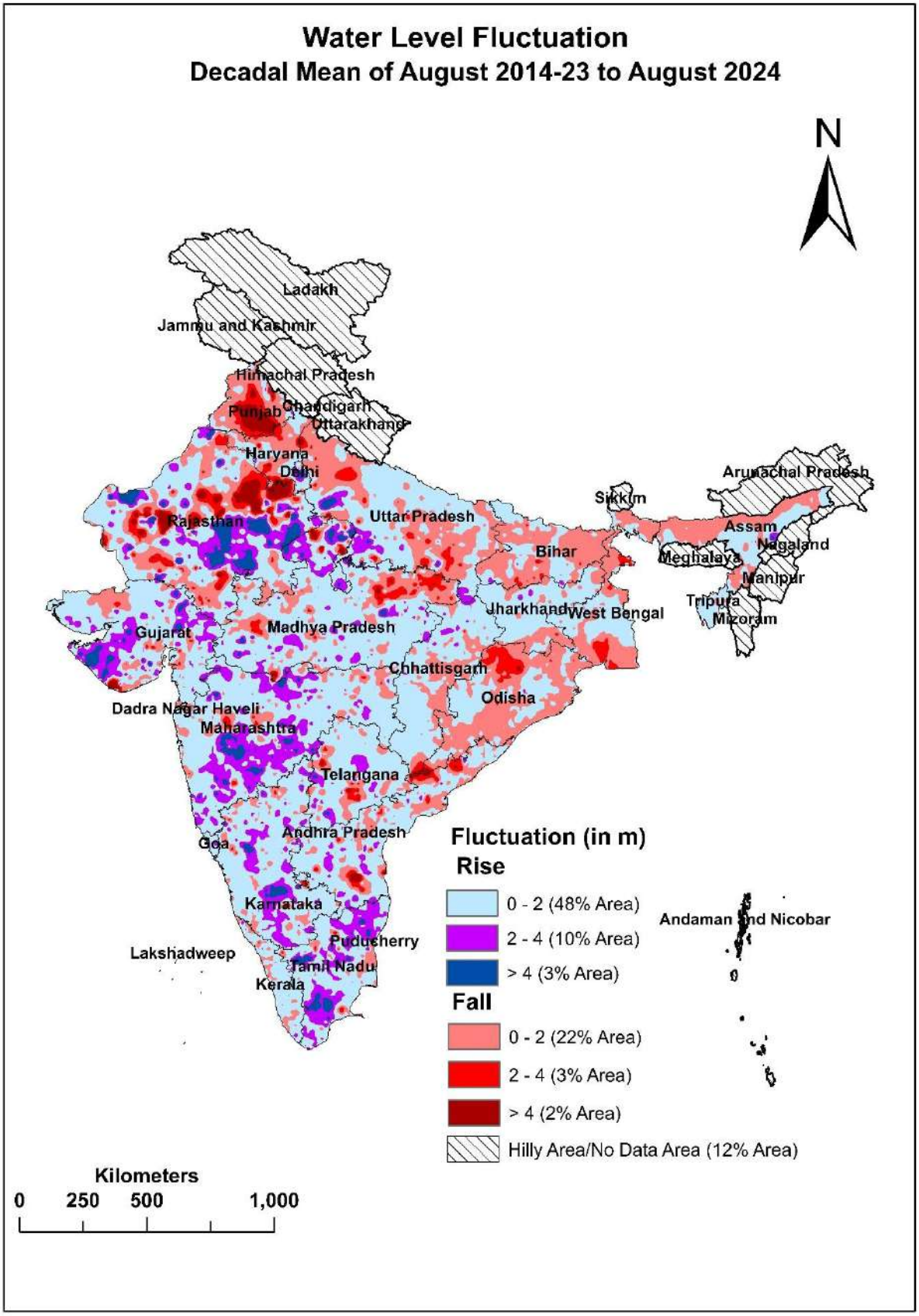


PLATE – XXIV: Decadal Comparison of Ground Water Level of Post-monsoon 2024 with the Mean of Post-monsoon 2014-2023

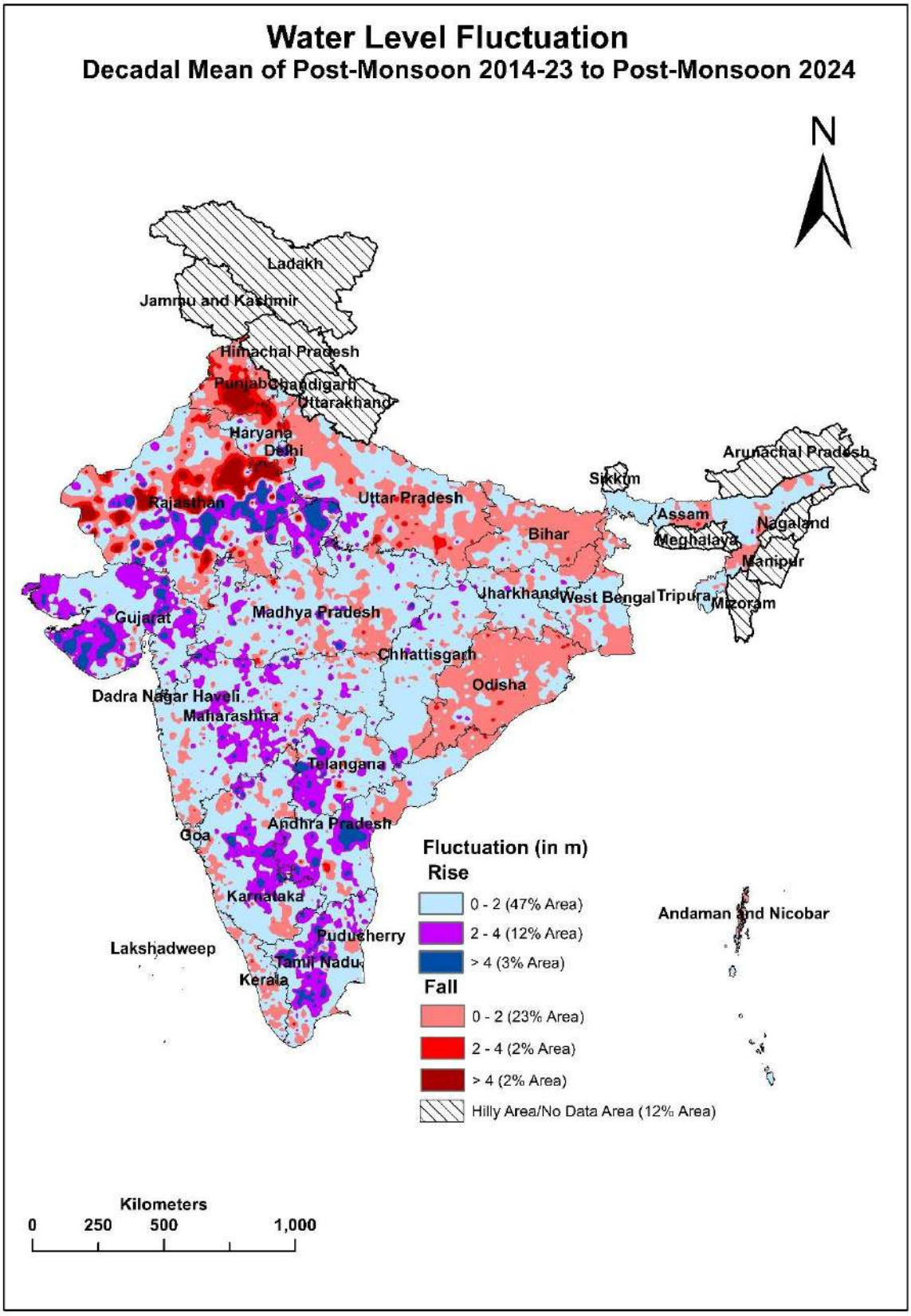
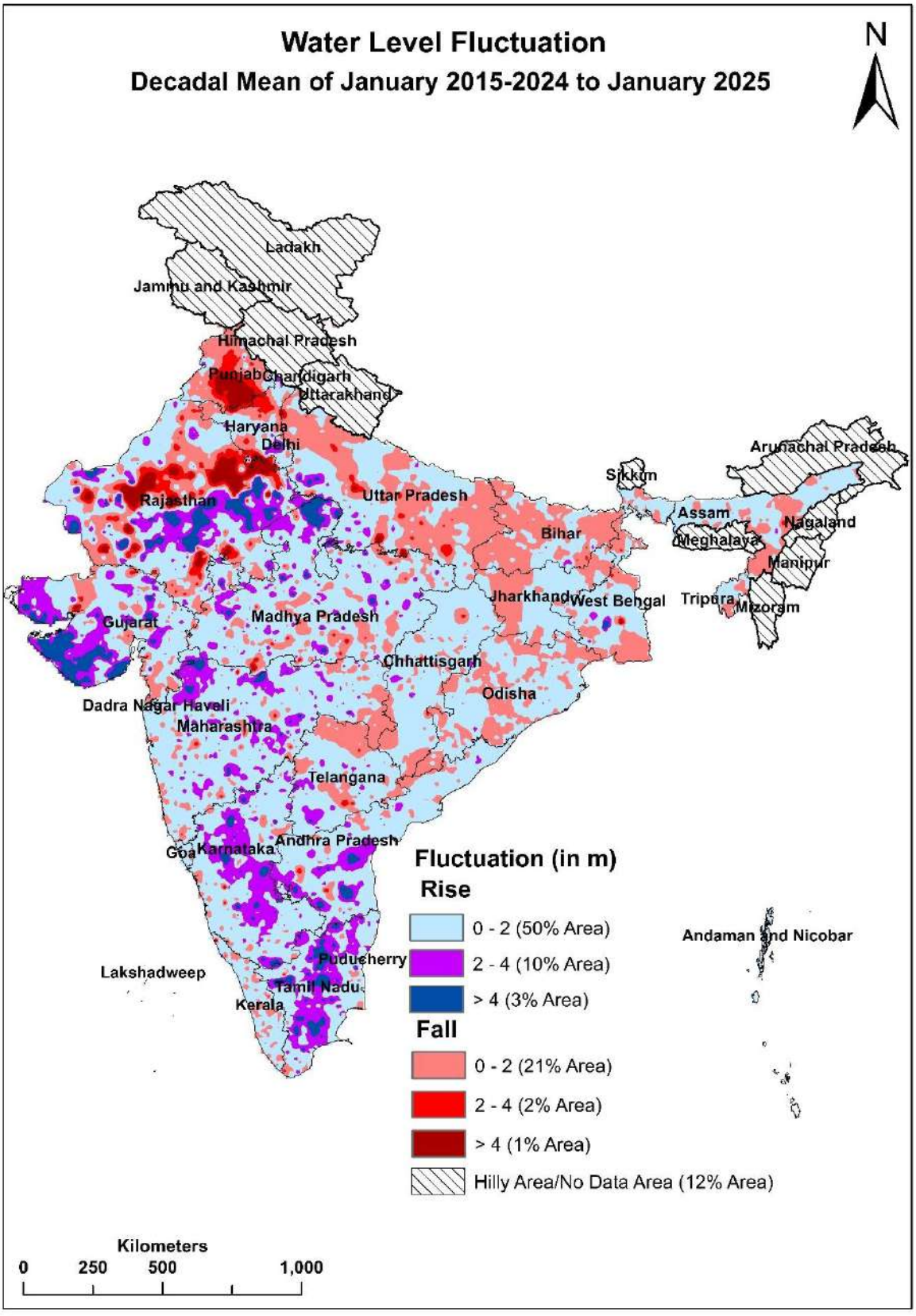


PLATE – XXV: Decadal Comparison of Ground Water Level of January 2025 with the Mean of January 2015-2024



4 CONCLUSION AND RECOMMENDATIONS

The year 2024 witnessed moderate to above-normal rainfall at the national level, with India receiving 1206.6 mm, which is about 4% above the long-term average. Rainfall distribution, however, showed significant regional disparities. While northern and north-western states such as Punjab (-31%), Haryana, and Bihar received below-normal rainfall, parts of the north-east (Manipur, Mizoram) and Union Territories like Ladakh (+56%) recorded substantial surpluses. Coastal regions of the south and west also experienced above-normal rainfall, particularly during the southwest monsoon season.

The southwest monsoon (June–September) accounted for nearly 77% of the annual rainfall, playing a critical role in replenishing surface water and groundwater resources. Seasonal analysis indicates that pre-monsoon (March–May) rainfall was below normal in most states, limiting early-season recharge. The monsoon months, particularly August, contributed to significant aquifer recharge, while post-monsoon rains (October–November) supported the recovery of soil moisture and shallow aquifers in several regions. Conversely, north-western and some eastern states continued to experience rainfall deficits, exacerbating water stress in these areas.

Comparative analysis with 2023 highlights mixed trends. States such as Manipur, Mizoram, and parts of central India saw notable improvement in rainfall, while Punjab, Chandigarh, and Bihar registered marked declines. This inter-annual variability underscores the continuing challenges in managing regional water resources effectively.

The report further analyzes groundwater conditions based on 26,351 monitoring wells across the country. During pre-monsoon 2024, widespread declines were observed, especially in the north-western regions, with water table depths reaching 20–40 m bgl in Delhi, Haryana, Punjab, and Rajasthan. This trend is indicative of over-extraction for irrigation and urban use.

With the onset of the monsoon, groundwater levels improved substantially. About 70% of wells recorded shallow water levels (0–5 m bgl) by the end of August, reflecting the positive impact of seasonal rainfall on aquifer recharge. Post-monsoon monitoring showed a subsequent decline in groundwater levels due to agricultural withdrawals, particularly in heavily irrigated areas.

Annual groundwater trends reveal that 60% of wells showed net rises, suggesting a positive effect of monsoon rains on recharge. Nevertheless, the north-western region remains critically stressed, with persistent deep-water levels indicating unsustainable extraction. Similarly, parts of Tamil Nadu, Kerala, and Bihar also exhibited localized declines despite adequate rainfall.

Key insights from the report

- Regional rainfall variability continues to influence groundwater recharge, making localized water management strategies essential.
- The north-western states face a dual challenge of low rainfall and high extraction rates, requiring urgent interventions for sustainable groundwater management.
- Coastal and central India showed improved groundwater conditions, reflecting better recharge from above-normal rainfall.
- Seasonal planning, including pre-monsoon conservation and post-monsoon storage, is critical to optimize water availability.
- There is a need to enhance artificial recharge measures, regulate groundwater extraction, and improve data-driven monitoring to ensure long-term sustainability.
- In conclusion, while 2024 rainfall has contributed positively to groundwater replenishment across many parts of India, the uneven distribution and continued over-extraction in specific regions pose significant challenges. These findings highlight the importance of integrating rainfall patterns, aquifer characteristics, and usage trends into water resource management planning. Sustainable strategies focusing on demand regulation, artificial recharge, and region-specific interventions are essential to safeguard India's groundwater resources for future years.

Annexure- 1: The Principal Aquifers and Their Geology

S. N.	Code	Principal Aquifer	Geology
1	AL01	Alluvium	Alluvium AL01
2	AL02	Alluvium	Alluvium AL02
3	AL03	Alluvium	Alluvium AL03
4	AL04	Alluvium	Alluvium AL04
5	AL05	Alluvium	Alluvium AL05
6	AL06	Alluvium	Alluvium AL06
7	AL07	Alluvium	Alluvium AL07
8	BG01	Basement Gneissic Complex	Basement Gneissic Complex BG01
9	BS01	Basalt	Basalt BS01
10	BS02	Basalt	Basalt BS02
11	CK01	Charnockite	Charnockite CK01
12	GN01	Gneiss	Gneiss GN01
13	GN02	Gneiss	Gneiss GN02
14	GN03	Gneiss	Gneiss GN03
15	GR01	Granite	Granite GR01
16	GR02	Granite	Granite GR02
17	IN01	Intrusive	Intrusive IN01
18	IN02	Intrusive	Intrusive IN02
19	KH01	Khondalites	Khondalites KH01
20	LS01	Limestone	Limestone LS01
21	LS02	Limestone	Limestone LS02
22	LS03	Limestone	Limestone LS03
23	LS04	Limestone	Limestone LS04
24	LS05	Limestone	Limestone LS05
25	LT01	Laterite	Laterite LT01
26	QZ01	Quartzite	Quartzite QZ01
27	QZ02	Quartzite	Quartzite QZ02
28	SC01	Schist	Schist SC01
29	SC02	Schist	Schist SC02
30	SC03	Schist	Schist SC03
31	SH01	Shale	Shale SH01
32	SH02	Shale	Shale SH02
33	SH03	Shale	Shale SH03
34	SH04	Shale	Shale SH04
35	SH05	Shale	Shale SH05
36	SH06	Shale	Shale SH06
37	ST01	Sandstone	Sandstone ST01
38	ST02	Sandstone	Sandstone ST02
39	ST03	Sandstone	Sandstone ST03
40	ST04	Sandstone	Sandstone ST04
41	ST05	Sandstone	Sandstone ST05
42	ST06	Sandstone	Sandstone ST06
43		Unclassified	Unclassified

Annexure- 2

Depth to Water Level Distribution of Percentage of Observation Wells Pre-Monsoon 2024

Sr. No.	State/UT Name	No of well analysed	No./Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
			0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	796	29	3.6	316	39.7	320	40.2	83	10.4	28	3.5	20	2.5
2	Arunachal Pradesh	29	5	17.2	13	44.8	9	31.0	2	6.9	0	0.0	0	0.0
3	Assam	341	61	17.9	203	59.5	61	17.9	14	4.1	2	0.6	0	0.0
4	Bihar	604	24	4.0	267	44.2	299	49.5	14	2.3	0	0.0	0	0.0
5	Chhattisgarh	967	23	2.4	293	30.3	533	55.1	98	10.1	20	2.1	0	0.0
6	Goa	84	8	9.5	30	35.7	34	40.5	12	14.3	0	0.0	0	0.0
7	Gujarat	913	36	3.9	199	21.8	336	36.8	272	29.8	65	7.1	5	0.5
8	Haryana	665	18	2.7	115	17.3	114	17.1	143	21.5	173	26.0	102	15.3
9	Himachal Pradesh	172	13	7.6	59	34.3	40	23.3	37	21.5	18	10.5	5	2.9
10	Jharkhand	403	9	2.2	75	18.6	280	69.5	39	9.7	0	0.0	0	0.0
11	Karnataka	1147	92	8.0	318	27.7	501	43.7	227	19.8	9	0.8	0	0.0
12	Kerala	1370	92	6.7	396	28.9	638	46.6	227	16.6	16	1.2	1	0.1
13	Madhya Pradesh	1380	22	1.6	268	19.4	659	47.8	390	28.3	38	2.8	3	0.2
14	Maharashtra	1860	99	5.3	437	23.5	890	47.8	395	21.2	36	1.9	3	0.2
15	Manipur	4	0	0.0	4	100.0	0	0.0	0	0.0	0	0.0	0	0.0
16	Meghalaya	68	17	25.0	44	64.7	7	10.3	0	0.0	0	0.0	0	0.0
17	Mizoram	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	Nagaland	87	23	26.4	30	34.5	25	28.7	8	9.2	1	1.1	0	0.0
19	Odisha	1360	113	8.3	686	50.4	530	39.0	31	2.3	0	0.0	0	0.0
20	Punjab	541	7	1.3	56	10.4	103	19.0	133	24.6	205	37.9	37	6.8
21	Rajasthan	1123	9	0.8	83	7.4	202	18.0	320	28.5	233	20.7	276	24.6
22	Tamil Nadu	856	94	11.0	363	42.4	288	33.6	100	11.7	9	1.1	2	0.2
23	Telangana	288	9	3.1	78	27.1	148	51.4	50	17.4	3	1.0	0	0.0
24	Tripura	88	16	18.2	45	51.1	26	29.5	1	1.1	0	0.0	0	0.0
25	Uttar Pradesh	946	14	1.5	320	33.8	411	43.4	158	16.7	40	4.2	3	0.3
26	Uttarakhand	223	6	2.7	24	10.8	52	23.3	67	30.0	46	20.6	28	12.6
27	West Bengal	700	83	11.9	279	39.9	290	41.4	45	6.4	3	0.4	0	0.0
28	Andaman And Nicobar Islands	111	31	27.9	71	64.0	9	8.1	0	0.0	0	0.0	0	0.0
29	Chandigarh	10	0	0.0	3	30.0	3	30.0	1	10.0	3	30.0	0	0.0
30	The Dadra And Nagar Haveli And Daman And Diu	41	0	0.0	9	22.0	26	63.4	6	14.6	0	0.0	0	0.0
31	Delhi	134	1	0.7	34	25.4	43	32.1	33	24.6	16	11.9	7	5.2
32	Jammu and Kashmir	378	72	19.0	154	40.7	74	19.6	37	9.8	31	8.2	10	2.6
33	Puducherry	9	1	11.1	6	66.7	2	22.2	0	0.0	0	0.0	0	0.0
	Total	**17700**	**1029**	**5.8**	**5278**	**29.8**	**6953**	**39.3**	**2943**	**16.6**	**995**	**5.6**	**502**	**2.8**

Annexure- 3

Depth to Water Level Distribution of Percentage of Observation Wells August 2024

Sr. No.	State/UT Name	No of well analysed	No./Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
			0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	794	225	28.3	276	34.8	184	23.2	70	8.8	20	2.5	19	2.4
2	Arunachal Pradesh	26	13	50.0	9	34.6	3	11.5	1	3.8	0	0.0	0	0.0
3	Assam	366	206	56.3	130	35.5	22	6.0	8	2.2	0	0.0	0	0.0
4	Bihar	722	177	24.5	430	59.6	113	15.7	2	0.3	0	0.0	0	0.0
5	Chhattisgarh	979	483	49.3	406	41.5	76	7.8	12	1.2	2	0.2	0	0.0
6	Goa	78	41	52.6	28	35.9	7	9.0	2	2.6	0	0.0	0	0.0
7	Gujarat	913	323	35.4	325	35.6	137	15.0	99	10.8	24	2.6	5	0.5
8	Haryana	258	28	10.9	60	23.3	45	17.4	54	20.9	46	17.8	25	9.7
9	Himachal Pradesh	177	44	24.9	45	25.4	39	22.0	25	14.1	19	10.7	5	2.8
10	Jharkhand	410	172	42.0	187	45.6	48	11.7	3	0.7	0	0.0	0	0.0
11	Karnataka	1260	394	31.3	518	41.1	302	24.0	45	3.6	1	0.1	0	0.0
12	Kerala	1446	399	27.6	496	34.3	456	31.5	88	6.1	6	0.4	1	0.1
13	Madhya Pradesh	1506	631	41.9	476	31.6	310	20.6	72	4.8	16	1.1	1	0.1
14	Maharashtra	1906	895	47.0	635	33.3	272	14.3	81	4.2	22	1.2	1	0.1
15	Manipur	4	3	75.0	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0
16	Meghalaya	67	50	74.6	14	20.9	3	4.5	0	0.0	0	0.0	0	0.0
17	Mizoram	3	2	66.7	1	33.3	0	0.0	0	0.0	0	0.0	0	0.0
18	Nagaland	99	50	50.5	34	34.3	14	14.1	1	1.0	0	0.0	0	0.0
19	Odisha	1370	742	54.2	524	38.2	99	7.2	5	0.4	0	0.0	0	0.0
20	Punjab	212	16	7.5	36	17.0	37	17.5	48	22.6	59	27.8	16	7.5
21	Rajasthan	1085	221	20.4	158	14.6	127	11.7	155	14.3	173	15.9	251	23.1
22	Tamil Nadu	859	125	14.6	368	42.8	276	32.1	80	9.3	9	1.0	1	0.1
23	Telangana	305	111	36.4	110	36.1	62	20.3	21	6.9	1	0.3	0	0.0
24	Tripura	95	48	50.5	41	43.2	6	6.3	0	0.0	0	0.0	0	0.0
25	Uttar Pradesh	1089	345	31.7	347	31.9	227	20.8	132	12.1	35	3.2	3	0.3
26	Uttarakhand	226	29	12.8	36	15.9	54	23.9	40	17.7	43	19.0	24	10.6
27	West Bengal	674	483	71.7	151	22.4	25	3.7	12	1.8	3	0.4	0	0.0
28	Chandigarh	8	0	0.0	3	37.5	2	25.0	2	25.0	1	12.5	0	0.0
29	The Dadra And Nagar Haveli And Daman And Diu	42	22	52.4	15	35.7	5	11.9	0	0.0	0	0.0	0	0.0
30	Delhi	123	17	13.8	18	14.6	39	31.7	27	22.0	17	13.8	5	4.1
31	Jammu and Kashmir	390	134	34.4	140	35.9	49	12.6	36	9.2	20	5.1	11	2.8
32	Puducherry	8	0	0.0	6	75.0	2	25.0	0	0.0	0	0.0	0	0.0
	Total	**17500**	**6429**	**36.7**	**6024**	**34.4**	**3041**	**17.4**	**1121**	**6.4**	**517**	**3.0**	**368**	**2.1**

Annexure- 4

Depth to Water Level Distribution of Percentage of Observation Wells Post-Monsoon 2024

Sr. No.	State/UT Name	No of well analysed	No./Percentage of wells showing depth to water level (mbgl) in the range of											
			0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	835	309	37.0	322	38.6	143	17.1	38	4.6	17	2.0	6	0.7
2	Arunachal Pradesh	28	12	42.9	10	35.7	5	17.9	1	3.6	0	0.0	0	0.0
3	Assam	340	164	48.2	135	39.7	32	9.4	8	2.4	1	0.3	0	0.0
4	Bihar	707	87	12.3	467	66.1	150	21.2	3	0.4	0	0.0	0	0.0
5	Chhattisgarh	999	290	29.0	522	52.3	168	16.8	18	1.8	1	0.1	0	0.0
6	Goa	76	20	26.3	30	39.5	21	27.6	5	6.6	0	0.0	0	0.0
7	Gujarat	825	247	29.9	355	43.0	140	17.0	62	7.5	19	2.3	2	0.2
8	Haryana	210	30	14.3	53	25.2	38	18.1	46	21.9	34	16.2	9	4.3
9	Himachal Pradesh	145	21	14.5	40	27.6	45	31.0	20	13.8	15	10.3	4	2.8
10	Jharkhand	405	54	13.3	261	64.4	86	21.2	4	1.0	0	0.0	0	0.0
11	Karnataka	976	313	32.1	360	36.9	267	27.4	34	3.5	2	0.2	0	0.0
12	Kerala	1444	293	20.3	476	33.0	549	38.0	116	8.0	9	0.6	1	0.1
13	Madhya Pradesh	1483	183	12.3	778	52.5	419	28.3	93	6.3	10	0.7	0	0.0
14	Maharashtra	1859	502	27.0	908	48.8	357	19.2	76	4.1	15	0.8	1	0.1
15	Manipur	2	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
16	Meghalaya	70	26	37.1	39	55.7	5	7.1	0	0.0	0	0.0	0	0.0
17	Mizoram	5	3	60.0	2	40.0	0	0.0	0	0.0	0	0.0	0	0.0
18	Nagaland	95	34	35.8	36	37.9	20	21.1	5	5.3	0	0.0	0	0.0
19	Odisha	1361	363	26.7	772	56.7	220	16.2	6	0.4	0	0.0	0	0.0
20	Punjab	220	16	7.3	42	19.1	36	16.4	53	24.1	58	26.4	15	6.8
21	Rajasthan	1118	148	13.2	225	20.1	154	13.8	160	14.3	178	15.9	253	22.6
22	Tamil Nadu	859	231	26.9	368	42.8	202	23.5	53	6.2	4	0.5	1	0.1
23	Telangana	307	74	24.1	155	50.5	61	19.9	17	5.5	0	0.0	0	0.0
24	Tripura	92	36	39.1	48	52.2	8	8.7	0	0.0	0	0.0	0	0.0
25	Uttar Pradesh	1008	162	16.1	441	43.8	234	23.2	138	13.7	31	3.1	2	0.2
26	Uttarakhand	188	19	10.1	40	21.3	46	24.5	31	16.5	35	18.6	17	9.0
27	West Bengal	717	281	39.2	373	52.0	52	7.3	10	1.4	1	0.1	0	0.0
28	Andaman And Nicobar Islands	108	98	90.7	10	9.3	0	0.0	0	0.0	0	0.0	0	0.0
29	Chandigarh	8	0	0.0	3	37.5	3	37.5	1	12.5	1	12.5	0	0.0
30	The Dadra And Nagar Haveli And Daman And Diu	31	14	45.2	15	48.4	2	6.5	0	0.0	0	0.0	0	0.0
31	Delhi	129	15	11.6	28	21.7	41	31.8	25	19.4	15	11.6	5	3.9
32	Jammu and Kashmir	324	63	19.4	152	46.9	54	16.7	31	9.6	18	5.6	6	1.9
33	Puducherry	7	3	42.9	3	42.9	1	14.3	0	0.0	0	0.0	0	0.0
	Total	**16981**	**4111**	**24.2**	**7471**	**44.0**	**3559**	**21.0**	**1054**	**6.2**	**464**	**2.7**	**322**	**1.9**

Annexure- 5

Depth to Water Level Distribution of Percentage of Observation Wells January 2025

Sr. No.	State/UT Name	No of well analysed	No./Percentage of wells showing depth to water level (mbgl) in the range of											
			0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	718	260	36.2	291	40.5	122	17.0	26	3.6	13	1.8	6	0.8
2	Arunachal Pradesh	27	3	11.1	14	51.9	9	33.3	1	3.7	0	0.0	0	0.0
3	Assam	341	90	26.4	190	55.7	51	15.0	8	2.3	2	0.6	0	0.0
4	Bihar	716	51	7.1	445	62.2	212	29.6	8	1.1	0	0.0	0	0.0
5	Chandigarh	9	0	0.0	3	33.3	2	22.2	1	11.1	2	22.2	1	11.1
6	Chhattisgarh	718	118	16.4	351	48.9	231	32.2	16	2.2	2	0.3	0	0.0
7	Delhi	122	15	12.3	27	22.1	42	34.4	21	17.2	12	9.8	5	4.1
8	Goa	77	11	14.3	32	41.6	28	36.4	6	7.8	0	0.0	0	0.0
9	Gujarat	888	108	12.2	374	42.1	280	31.5	96	10.8	28	3.2	2	0.2
10	Haryana	277	40	14.4	61	22.0	41	14.8	66	23.8	48	17.3	21	7.6
11	Himachal Pradesh	178	25	14.0	52	29.2	44	24.7	32	18.0	17	9.6	8	4.5
12	Jammu And Kashmir	271	47	17.3	104	38.4	57	21.0	32	11.8	23	8.5	8	3.0
13	Jharkhand	389	12	3.1	163	41.9	198	50.9	16	4.1	0	0.0	0	0.0
14	Karnataka	1149	222	19.3	421	36.6	419	36.5	86	7.5	1	0.1	0	0.0
15	Kerala	1430	206	14.4	437	30.6	613	42.9	164	11.5	9	0.6	1	0.1
16	Madhya Pradesh	1483	92	6.2	516	34.8	670	45.2	188	12.7	15	1.0	2	0.1
17	Maharashtra	1837	258	14.0	792	43.1	628	34.2	144	7.8	13	0.7	2	0.1
18	Manipur	4	0	0.0	4	100.0	0	0.0	0	0.0	0	0.0	0	0.0
19	Meghalaya	66	26	39.4	36	54.5	4	6.1	0	0.0	0	0.0	0	0.0
20	Mizoram	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	Nagaland	108	22	20.4	42	38.9	32	29.6	12	11.1	0	0.0	0	0.0
22	Odisha	1335	279	20.9	797	59.7	250	18.7	9	0.7	0	0.0	0	0.0
23	Puducherry	8	3	37.5	5	62.5	0	0.0	0	0.0	0	0.0	0	0.0
24	Punjab	222	15	6.8	42	18.9	40	18.0	53	23.9	56	25.2	16	7.2
25	Rajasthan	1165	97	8.3	239	20.5	174	14.9	186	16.0	192	16.5	277	23.8
26	Tamil Nadu	864	288	33.3	368	42.6	168	19.4	33	3.8	5	0.6	2	0.2
27	Telangana	252	29	11.5	121	48.0	81	32.1	21	8.3	0	0.0	0	0.0
28	The Dadra And Nagar Haveli And Daman And Diu	36	4	11.1	21	58.3	11	30.6	0	0.0	0	0.0	0	0.0
29	Tripura	87	22	25.3	51	58.6	14	16.1	0	0.0	0	0.0	0	0.0
30	Uttar Pradesh	1071	86	8.0	511	47.7	303	28.3	136	12.7	33	3.1	2	0.2
31	Uttarakhand	195	16	8.2	42	21.5	45	23.1	42	21.5	33	16.9	17	8.7
32	West Bengal	710	131	18.5	404	56.9	154	21.7	19	2.7	2	0.3	0	0.0
	Total	**16755**	**2577**	**15.4**	**6956**	**41.5**	**4923**	**29.4**	**1423**	**8.5**	**506**	**3.0**	**370**	**2.2**

Annexure- 6

Annual Water Level Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2023 to Pre-Monsoon 2024

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	748	57	7.6	14	1.9	15	2.0	397	53.1	154	20.6	111	14.8	86	662
2	Arunachal Pradesh	27	15	55.6	1	3.7	0	0.0	11	40.7	0	0.0	0	0.0	16	11
3	Assam	265	112	42.3	9	3.4	2	0.8	117	44.2	15	5.7	6	2.3	123	138
4	Bihar	503	215	42.7	25	5.0	5	1.0	221	43.9	17	3.4	2	0.4	245	240
5	Chhattisgarh	875	311	35.5	60	6.9	39	4.5	312	35.7	80	9.1	64	7.3	410	456
6	Goa	81	68	84.0	2	2.5	1	1.2	6	7.4	2	2.5	2	2.5	71	10
7	Gujarat	654	202	30.9	46	7.0	48	7.3	247	37.8	53	8.1	48	7.3	296	348
8	Haryana	550	160	29.1	17	3.1	17	3.1	298	54.2	30	5.5	22	4.0	194	350
9	Himachal Pradesh	102	40	39.2	5	4.9	5	4.9	42	41.2	6	5.9	2	2.0	50	50
10	Jharkhand	320	143	44.7	23	7.2	5	1.6	117	36.6	20	6.3	8	2.5	171	145
11	Karnataka	1115	452	40.5	69	6.2	59	5.3	334	30.0	120	10.8	75	6.7	580	529
12	Kerala	1202	470	39.1	30	2.5	17	1.4	587	48.8	61	5.1	23	1.9	517	671
13	Madhya Pradesh	1027	283	27.6	65	6.3	53	5.2	441	42.9	103	10.0	76	7.4	401	620
14	Maharashtra	1615	469	29.0	114	7.1	82	5.1	596	36.9	189	11.7	140	8.7	665	925
15	Meghalaya	57	21	36.8	1	1.8	0	0.0	32	56.1	2	3.5	0	0.0	22	34
16	Nagaland	10	4	40.0	2	20.0	1	10.0	1	10.0	1	10.0	1	10.0	7	3
17	Odisha	1189	510	42.9	93	7.8	29	2.4	477	40.1	53	4.5	17	1.4	632	547
18	Punjab	424	169	39.9	24	5.7	9	2.1	191	45.0	13	3.1	18	4.2	202	222
19	Rajasthan	860	113	13.1	37	4.3	63	7.3	297	34.5	145	16.9	204	23.7	213	646
20	Tamil Nadu	791	307	38.8	82	10.4	37	4.7	215	27.2	85	10.7	63	8.0	426	363
21	Telangana	278	24	8.6	6	2.2	5	1.8	155	55.8	60	21.6	28	10.1	35	243
22	Tripura	77	44	57.1	5	6.5	0	0.0	19	24.7	7	9.1	0	0.0	49	26
23	Uttar Pradesh	711	173	24.3	17	2.4	9	1.3	468	65.8	29	4.1	11	1.5	199	508
24	Uttarakhand	155	47	30.3	5	3.2	8	5.2	84	54.2	9	5.8	2	1.3	60	95
25	West Bengal	647	254	39.3	34	5.3	33	5.1	282	43.6	24	3.7	16	2.5	321	322
26	Andaman & Nicobar Islands	109	21	19.3	3	2.8	0	0.0	75	68.8	9	8.3	0	0.0	24	84
27	Chandigarh	8	5	62.5	1	12.5	0	0.0	0	0.0	1	12.5	1	12.5	6	2
28	The Dadra and Nagar Haveli And Daman and Diu	26	8	30.8	1	3.8	0	0.0	14	53.8	3	11.5	0	0.0	9	17
29	Delhi	73	20	27.4	2	2.7	0	0.0	45	61.6	3	4.1	1	1.4	22	49
30	Jammu and Kashmir	314	138	43.9	12	3.8	4	1.3	135	43.0	12	3.8	8	2.5	154	155
31	Puducherry	9	4	44.4	1	11.1	0	0.0	4	44.4	0	0.0	0	0.0	5	4
	Total	**14822**	**4859**	**32.8**	**806**	**5.4**	**546**	**3.7**	**6220**	**42.0**	**1306**	**8.8**	**949**	**6.4**	**6211**	**8475**

Annexure- 7

Annual Water Level Fluctuation & Frequency Distribution of Different Ranges from August 2023 to August 2024

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	761	322	42.3	46	6.0	25	3.3	232	30.5	58	7.6	76	10.0	393	366
2	Arunachal Pradesh	26	3	11.5	1	3.8	1	3.8	15	57.7	6	23.1	0	0.0	5	21
3	Assam	286	73	25.5	19	6.6	4	1.4	171	59.8	12	4.2	4	1.4	96	187
4	Bihar	626	240	38.3	44	7.0	6	1.0	291	46.5	33	5.3	5	0.8	290	329
5	Chhattisgarh	868	437	50.3	114	13.1	48	5.5	232	26.7	20	2.3	10	1.2	599	262
6	Goa	76	43	56.6	18	23.7	6	7.9	8	10.5	1	1.3	0	0.0	67	9
7	Gujarat	647	279	43.1	95	14.7	62	9.6	131	20.2	34	5.3	40	6.2	436	205
8	Haryana	157	51	32.5	3	1.9	1	0.6	79	50.3	16	10.2	6	3.8	55	101
9	Himachal Pradesh	98	14	14.3	0	0.0	1	1.0	58	59.2	14	14.3	11	11.2	15	83
10	Jharkhand	361	149	41.3	52	14.4	27	7.5	117	32.4	14	3.9	0	0.0	228	131
11	Karnataka	1221	540	44.2	304	24.9	131	10.7	163	13.3	50	4.1	32	2.6	975	245
12	Kerala	1207	241	20.0	189	15.7	240	19.9	258	21.4	131	10.9	146	12.1	670	535
13	Madhya Pradesh	1271	550	43.3	138	10.9	106	8.3	319	25.1	86	6.8	63	5.0	794	468
14	Maharashtra	1837	828	45.1	278	15.1	182	9.9	402	21.9	80	4.4	35	1.9	1288	517
16	Meghalaya	53	29	54.7	1	1.9	0	0.0	20	37.7	1	1.9	1	1.9	30	22
17	Mizoram	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0
18	Nagaland	10	2	20.0	2	20.0	4	40.0	0	0.0	0	0.0	2	20.0	8	2
19	Odisha	1275	607	47.6	39	3.1	8	0.6	477	37.4	93	7.3	35	2.7	654	605
20	Punjab	148	27	18.2	4	2.7	1	0.7	96	64.9	16	10.8	4	2.7	32	116
21	Rajasthan	862	318	36.9	152	17.6	163	18.9	149	17.3	32	3.7	47	5.5	633	228
22	Tamil Nadu	732	273	37.3	74	10.1	38	5.2	265	36.2	52	7.1	24	3.3	385	341
23	Telangana	295	104	35.3	15	5.1	6	2.0	120	40.7	30	10.2	19	6.4	125	169
24	Tripura	92	63	68.5	6	6.5	1	1.1	20	21.7	1	1.1	0	0.0	70	21
25	Uttar Pradesh	852	372	43.7	73	8.6	36	4.2	307	36.0	47	5.5	15	1.8	481	369
26	Uttarakhand	162	28	17.3	2	1.2	5	3.1	65	40.1	38	23.5	24	14.8	35	127
27	West Bengal	635	351	55.3	57	9.0	25	3.9	186	29.3	8	1.3	6	0.9	433	200
28	Chandigarh	7	1	14.3	0	0.0	0	0.0	5	71.4	0	0.0	1	14.3	1	6
29	The Dadra And Nagar Haveli And Daman And Diu	28	17	60.7	2	7.1	0	0.0	7	25.0	2	7.1	0	0.0	19	9
30	Delhi	112	51	45.5	5	4.5	4	3.6	39	34.8	11	9.8	2	1.8	60	52
31	Jammu and Kashmir	364	154	42.3	7	1.9	4	1.1	167	45.9	14	3.8	8	2.2	165	189
32	Puducherry	6	2	33.3	0	0.0	0	0.0	4	66.7	0	0.0	0	0.0	2	4
	Total	**15077**	**6171**	**40.9**	**1740**	**11.5**	**1135**	**7.5**	**4403**	**29.2**	**900**	**6.0**	**616**	**4.1**	**9046**	**5919**

Annexure- 8

Annual Water Level Fluctuation & Frequency Distribution of Different Ranges from Post-Monsoon 2023 and Post-Monsoon 2024

Sr. No.	State/UT Name	No of wells analysed	No. & % of wells showing change in water level												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andaman And Nicobar Islands	108	51	47.2	0	0.0	0	0.0	55	50.9	1	0.9	0	0.0	51	56
2	Andhra Pradesh	776	386	49.7	158	20.4	90	11.6	89	11.5	29	3.7	23	3.0	634	141
3	Arunachal Pradesh	26	17	65.4	2	7.7	1	3.8	6	23.1	0	0.0	0	0.0	20	6
4	Assam	249	147	59.0	16	6.4	6	2.4	65	26.1	11	4.4	2	0.8	169	78
5	Bihar	654	204	31.2	34	5.2	18	2.8	341	52.1	49	7.5	6	0.9	256	396
6	Chandigarh	7	2	28.6	0	0.0	0	0.0	5	71.4	0	0.0	0	0.0	2	5
7	Chhattisgarh	907	530	58.4	88	9.7	29	3.2	222	24.5	20	2.2	12	1.3	647	254
8	Delhi	123	63	51.2	7	5.7	6	4.9	43	35.0	2	1.6	1	0.8	76	46
9	Goa	74	58	78.4	1	1.4	3	4.1	10	13.5	1	1.4	0	0.0	62	11
10	Gujarat	673	319	47.4	130	19.3	105	15.6	85	12.6	17	2.5	15	2.2	554	117
11	Haryana	178	50	28.1	12	6.7	7	3.9	89	50.0	12	6.7	7	3.9	69	108
12	Himachal Pradesh	94	23	24.5	0	0.0	3	3.2	56	59.6	10	10.6	1	1.1	26	67
13	Jammu and Kashmir	308	70	22.7	4	1.3	2	0.6	198	64.3	19	6.2	9	2.9	76	226
14	Jharkhand	342	145	42.4	38	11.1	17	5.0	128	37.4	10	2.9	1	0.3	200	139
15	Karnataka	938	560	59.7	191	20.4	97	10.3	72	7.7	11	1.2	6	0.6	848	89
16	Kerala	1335	244	18.3	169	12.7	206	15.4	297	22.2	182	13.6	234	17.5	619	713
17	Madhya Pradesh	1305	551	42.2	159	12.2	105	8.0	364	27.9	72	5.5	50	3.8	815	486
18	Maharashtra	1775	849	47.8	266	15.0	199	11.2	355	20.0	62	3.5	26	1.5	1314	443
19	Meghalaya	64	13	20.3	0	0.0	0	0.0	51	79.7	0	0.0	0	0.0	13	51
20	Mizoram	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
21	Nagaland	9	4	44.4	1	11.1	0	0.0	2	22.2	0	0.0	2	22.2	5	4
22	Odisha	1263	294	23.3	41	3.2	12	1.0	749	59.3	131	10.4	28	2.2	347	908
23	Puducherry	7	6	85.7	0	0.0	0	0.0	1	14.3	0	0.0	0	0.0	6	1
24	Punjab	167	20	12.0	3	1.8	6	3.6	112	67.1	17	10.2	8	4.8	29	137
25	Rajasthan	880	263	29.9	120	13.6	174	19.8	200	22.7	54	6.1	65	7.4	557	319
26	Tamil Nadu	724	301	41.6	83	11.5	43	5.9	244	33.7	27	3.7	22	3.0	427	293
27	Telangana	287	164	57.1	44	15.3	11	3.8	52	18.1	9	3.1	6	2.1	219	67
28	The Dadra And Nagar Haveli And Daman And Diu	26	16	61.5	4	15.4	1	3.8	5	19.2	0	0.0	0	0.0	21	5
29	Tripura	89	60	67.4	6	6.7	2	2.2	20	22.5	0	0.0	0	0.0	68	20
30	Uttar Pradesh	852	338	39.7	27	3.2	17	2.0	420	49.3	31	3.6	15	1.8	382	466
31	Uttarakhand	167	59	35.3	8	4.8	7	4.2	68	40.7	12	7.2	13	7.8	74	93
32	West Bengal	688	446	64.8	34	4.9	9	1.3	178	25.9	11	1.6	4	0.6	489	193
	Total	**15096**	**6254**	**41.4**	**1646**	**10.9**	**1176**	**7.8**	**4582**	**30.4**	**800**	**5.3**	**556**	**3.7**	**9076**	**5938**

Annexure- 9

Annual Water Level Fluctuation & Frequency Distribution of Different Ranges from January 2024 and January 2025

Sr. No.	State/UT Name	No of wells analysed	No. & % of wells showing change in water level												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	681	428	62.8	93	13.7	60	8.8	58	8.5	26	3.8	14	2.1	581	98
2	Arunachal Pradesh	23	7	30.4	0	0.0	0	0.0	13	56.5	2	8.7	1	4.3	7	16
3	Assam	301	138	45.8	8	2.7	7	2.3	137	45.5	7	2.3	1	0.3	153	145
4	Bihar	474	218	46.0	19	4.0	4	0.8	208	43.9	17	3.6	3	0.6	241	228
5	Chandigarh	8	5	62.5	0	0.0	0	0.0	3	37.5	0	0.0	0	0.0	5	3
6	Chhattisgarh	649	321	49.5	55	8.5	25	3.9	192	29.6	33	5.1	16	2.5	401	241
7	Delhi	86	44	51.2	11	12.8	4	4.7	26	30.2	0	0.0	1	1.2	59	27
8	Goa	72	67	93.1	2	2.8	0	0.0	3	4.2	0	0.0	0	0.0	69	3
9	Gujarat	703	251	35.7	68	9.7	107	15.2	213	30.3	39	5.5	20	2.8	426	272
10	Haryana	198	81	40.9	10	5.1	6	3.0	92	46.5	7	3.5	2	1.0	97	101
11	Himachal Pradesh	140	51	36.4	3	2.1	2	1.4	63	45.0	11	7.9	8	5.7	56	82
12	Jammu And Kashmir	254	55	21.7	8	3.1	1	0.4	177	69.7	9	3.5	3	1.2	64	189
13	Jharkhand	369	171	46.3	13	3.5	8	2.2	151	40.9	18	4.9	4	1.1	192	173
14	Karnataka	1095	669	61.1	207	18.9	113	10.3	79	7.2	9	0.8	12	1.1	989	100
15	Kerala	1410	586	41.6	41	2.9	14	1.0	689	48.9	42	3.0	21	1.5	641	752
16	Madhya Pradesh	1348	476	35.3	122	9.1	81	6.0	468	34.7	116	8.6	76	5.6	679	660
17	Maharashtra	1798	814	45.3	194	10.8	142	7.9	487	27.1	92	5.1	41	2.3	1150	620
18	Manipur	4	0	0.0	0	0.0	0	0.0	3	75.0	1	25.0	0	0.0	0	4
19	Meghalaya	63	27	42.9	0	0.0	0	0.0	36	57.1	0	0.0	0	0.0	27	36
20	Nagaland	99	28	28.3	3	3.0	2	2.0	57	57.6	4	4.0	3	3.0	33	64
21	Odisha	1249	615	49.2	66	5.3	17	1.4	481	38.5	49	3.9	13	1.0	698	543
22	Puducherry	6	1	16.7	0	0.0	0	0.0	5	83.3	0	0.0	0	0.0	1	5
23	Punjab	172	32	18.6	1	0.6	3	1.7	127	73.8	7	4.1	2	1.2	36	136
24	Rajasthan	948	326	34.4	192	20.3	198	20.9	155	16.4	40	4.2	36	3.8	716	231
25	Tamil Nadu	660	262	39.7	66	10.0	39	5.9	230	34.8	45	6.8	16	2.4	367	291
26	Telangana	234	130	55.6	24	10.3	6	2.6	61	26.1	4	1.7	6	2.6	160	71
27	The Dadra And Nagar Haveli And Daman And Diu	28	16	57.1	3	10.7	0	0.0	9	32.1	0	0.0	0	0.0	19	9
28	Tripura	84	32	38.1	4	4.8	0	0.0	44	52.4	2	2.4	0	0.0	36	46
29	Uttar Pradesh	931	456	49.0	24	2.6	10	1.1	405	43.5	21	2.3	9	1.0	490	435
30	Uttarakhand	162	65	40.1	13	8.0	13	8.0	54	33.3	13	8.0	4	2.5	91	71
31	West Bengal	680	303	44.6	20	2.9	13	1.9	310	45.6	22	3.2	9	1.3	336	341
	Total	**14929**	**6675**	**44.7**	**1270**	**8.5**	**875**	**5.9**	**5036**	**33.7**	**636**	**4.3**	**321**	**2.2**	**8820**	**5993**

Annexure- 10

Seasonal Water Level Fluctuation & Frequency Distribution of Different Ranges from Pre-monsoon 2024 to August 2024

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	753	346	45.9	172	22.8	113	15.0	66	8.8	23	3.1	32	4.2	631	121
2	Arunachal Pradesh	26	16	61.5	3	11.5	4	15.4	3	11.5	0	0.0	0	0.0	23	3
3	Assam	317	191	60.3	73	23.0	30	9.5	19	6.0	4	1.3	0	0.0	294	23
4	Bihar	545	243	44.6	185	33.9	80	14.7	31	5.7	3	0.6	2	0.4	508	36
5	Chhattisgarh	840	173	20.6	258	30.7	397	47.3	5	0.6	4	0.5	3	0.4	828	12
6	Goa	78	29	37.2	18	23.1	27	34.6	3	3.8	1	1.3	0	0.0	74	4
7	Gujarat	794	197	24.8	184	23.2	367	46.2	28	3.5	7	0.9	10	1.3	748	45
8	Haryana	183	97	53.0	10	5.5	3	1.6	55	30.1	14	7.7	4	2.2	110	73
9	Himachal Pradesh	168	78	46.4	23	13.7	24	14.3	35	20.8	3	1.8	3	1.8	125	41
10	Jharkhand	368	41	11.1	122	33.2	198	53.8	6	1.6	1	0.3	0	0.0	361	7
11	Karnataka	1116	358	32.1	272	24.4	377	33.8	79	7.1	16	1.4	12	1.1	1007	107
12	Kerala	1340	547	40.8	527	39.3	211	15.7	41	3.1	7	0.5	6	0.4	1285	54
13	Madhya Pradesh	1329	176	13.2	375	28.2	733	55.2	21	1.6	9	0.7	14	1.1	1284	44
14	Maharashtra	1811	366	20.2	510	28.2	866	47.8	50	2.8	9	0.5	7	0.4	1742	66
15	Manipur	4	3	75.0	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0	4	0
16	Meghalaya	65	42	64.6	17	26.2	2	3.1	3	4.6	1	1.5	0	0.0	61	4
17	Mizoram	2	1	50.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	1	1
18	Nagaland	86	35	40.7	16	18.6	16	18.6	12	14.0	6	7.0	1	1.2	67	19
19	Odisha	1312	471	35.9	497	37.9	260	19.8	71	5.4	8	0.6	1	0.1	1228	80
20	Punjab	188	49	26.1	17	9.0	3	1.6	74	39.4	31	16.5	13	6.9	69	118
21	Rajasthan	899	227	25.3	155	17.2	417	46.4	52	5.8	13	1.4	33	3.7	799	98
22	Tamil Nadu	770	315	40.9	88	11.4	46	6.0	263	34.2	41	5.3	13	1.7	449	317
23	Telangana	276	76	27.5	81	29.3	97	35.1	12	4.3	5	1.8	5	1.8	254	22
24	Tripura	88	48	54.5	30	34.1	6	6.8	4	4.5	0	0.0	0	0.0	84	4
25	Uttar Pradesh	879	331	37.7	326	37.1	169	19.2	41	4.7	6	0.7	5	0.6	826	52
26	Uttarakhand	218	65	29.8	61	28.0	68	31.2	11	5.0	1	0.5	12	5.5	194	24
27	West Bengal	621	179	28.8	203	32.7	218	35.1	15	2.4	1	0.2	4	0.6	600	20
28	Chandigarh	8	5	62.5	1	12.5	1	12.5	1	12.5	0	0.0	0	0.0	7	1
29	The Dadra And Nagar Haveli And Daman And Diu	38	9	23.7	9	23.7	20	52.6	0	0.0	0	0.0	0	0.0	38	0
30	Delhi	119	61	51.3	19	16.0	9	7.6	26	21.8	2	1.7	2	1.7	89	30
31	Jammu and Kashmir	365	154	42.2	89	24.4	32	8.8	65	17.8	16	4.4	5	1.4	275	86
32	Puducherry	8	1	12.5	0	0.0	0	0.0	7	87.5	0	0.0	0	0.0	1	7
	Total	**15614**	**4930**	**31.6**	**4342**	**27.8**	**4794**	**30.7**	**1100**	**7.0**	**232**	**1.5**	**187**	**1.2**	**14066**	**1519**

Annexure- 11

Seasonal Water Level Fluctuation & Frequency Distribution of Different Ranges Pre-Monsoon 2024 and Post-Monsoon 2024

Sr. No.	State/UT Name	No of wells analysed	No. & % of wells showing change in water level												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andaman And Nicobar Islands	108	62	57.4	36	33.3	6	5.6	3	2.8	0	0.0	0	0.0	104	3
2	Andhra Pradesh	762	221	29.0	324	42.5	174	22.8	22	2.9	7	0.9	14	1.8	719	43
3	Arunachal Pradesh	26	13	50.0	6	23.1	2	7.7	4	15.4	0	0.0	0	0.0	21	4
4	Assam	278	192	69.1	46	16.5	16	5.8	18	6.5	3	1.1	0	0.0	254	21
5	Bihar	526	310	58.9	133	25.3	34	6.5	43	8.2	3	0.6	2	0.4	477	48
6	Chandigarh	8	3	37.5	1	12.5	1	12.5	3	37.5	0	0.0	0	0.0	5	3
7	Chhattisgarh	836	234	28.0	300	35.9	268	32.1	24	2.9	8	1.0	1	0.1	802	33
8	Delhi	125	85	68.0	14	11.2	7	5.6	16	12.8	0	0.0	0	0.0	106	16
9	Goa	76	47	61.8	16	21.1	8	10.5	5	6.6	0	0.0	0	0.0	71	5
10	Gujarat	730	187	25.6	157	21.5	349	47.8	33	4.5	3	0.4	1	0.1	693	37
11	Haryana	175	76	43.4	20	11.4	11	6.3	41	23.4	19	10.9	4	2.3	107	64
12	Himachal Pradesh	143	76	53.1	10	7.0	13	9.1	38	26.6	3	2.1	3	2.1	99	44
13	Jammu and Kashmir	317	169	53.3	39	12.3	17	5.4	66	20.8	19	6.0	6	1.9	225	91
14	Jharkhand	349	80	22.9	137	39.3	118	33.8	12	3.4	1	0.3	0	0.0	335	13
15	Karnataka	850	284	33.4	250	29.4	243	28.6	54	6.4	11	1.3	7	0.8	777	72
16	Kerala	1325	759	57.3	360	27.2	106	8.0	80	6.0	11	0.8	6	0.5	1225	97
17	Madhya Pradesh	1304	297	22.8	361	27.7	543	41.6	69	5.3	19	1.5	15	1.2	1201	103
18	Maharashtra	1735	419	24.1	485	28.0	681	39.3	125	7.2	13	0.7	6	0.3	1585	144
19	Manipur	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	1
20	Meghalaya	62	49	79.0	2	3.2	1	1.6	10	16.1	0	0.0	0	0.0	52	10
21	Mizoram	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	1
22	Nagaland	43	23	53.5	5	11.6	4	9.3	8	18.6	3	7.0	0	0.0	32	11
23	Odisha	1232	714	58.0	279	22.6	80	6.5	135	11.0	12	1.0	5	0.4	1073	152
24	Puducherry	6	6	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	0
25	Punjab	179	73	40.8	12	6.7	5	2.8	56	31.3	22	12.3	11	6.1	90	89
26	Rajasthan	918	219	23.9	174	19.0	404	44.0	59	6.4	19	2.1	42	4.6	797	120
27	Tamil Nadu	727	288	39.6	158	21.7	115	15.8	128	17.6	19	2.6	17	2.3	561	164
28	Telangana	265	64	24.2	93	35.1	93	35.1	9	3.4	4	1.5	2	0.8	250	15
29	The Dadra And Nagar Haveli And Daman And Diu	29	2	6.9	10	34.5	15	51.7	2	6.9	0	0.0	0	0.0	27	2
30	Tripura	82	49	59.8	17	20.7	7	8.5	7	8.5	1	1.2	0	0.0	73	8
31	Uttar Pradesh	813	419	51.5	273	33.6	80	9.8	30	3.7	6	0.7	5	0.6	772	41
32	Uttarakhand	179	62	34.6	42	23.5	55	30.7	11	6.1	0	0.0	7	3.9	159	18
33	West Bengal	666	254	38.1	219	32.9	144	21.6	45	6.8	3	0.5	1	0.2	617	49
	Total	**14876**	**5736**	**38.6**	**3979**	**26.7**	**3600**	**24.2**	**1158**	**7.8**	**209**	**1.4**	**155**	**1.0**	**13315**	**1522**

Annexure- 12

Seasonal Water Level Fluctuation & Frequency Distribution of Different Ranges Pre-Monsoon 2024 and January 2025

Sr. No.	State/UT Name	No of wells analysed	No. & % of wells showing change in water level												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	667	257	38.5	216	32.4	156	23.4	24	3.6	6	0.9	7	1.0	629	37
2	Arunachal Pradesh	24	11	45.8	2	8.3	0	0.0	9	37.5	1	4.2	1	4.2	13	11
3	Assam	290	191	65.9	17	5.9	6	2.1	70	24.1	6	2.1	0	0.0	214	76
4	Bihar	562	363	64.6	90	16.0	15	2.7	85	15.1	4	0.7	3	0.5	468	92
5	Chandigarh	8	4	50.0	1	12.5	1	12.5	2	25.0	0	0.0	0	0.0	6	2
6	Chhattisgarh	614	237	38.6	191	31.1	113	18.4	52	8.5	15	2.4	4	0.7	541	71
7	Delhi	114	67	58.8	26	22.8	6	5.3	15	13.2	0	0.0	0	0.0	99	15
8	Goa	75	49	65.3	9	12.0	1	1.3	16	21.3	0	0.0	0	0.0	59	16
9	Gujarat	751	264	35.2	166	22.1	230	30.6	67	8.9	11	1.5	9	1.2	660	87
10	Haryana	189	105	55.6	22	11.6	6	3.2	45	23.8	7	3.7	4	2.1	133	56
11	Himachal Pradesh	142	76	53.5	10	7.0	8	5.6	37	26.1	6	4.2	3	2.1	94	46
12	Jammu And Kashmir	265	170	64.2	24	9.1	10	3.8	52	19.6	3	1.1	6	2.3	204	61
13	Jharkhand	320	153	47.8	102	31.9	24	7.5	33	10.3	5	1.6	2	0.6	279	40
14	Karnataka	990	450	45.5	234	23.6	159	16.1	106	10.7	26	2.6	10	1.0	843	142
15	Kerala	1310	868	66.3	179	13.7	39	3.0	195	14.9	17	1.3	12	0.9	1086	224
16	Madhya Pradesh	1318	449	34.1	340	25.8	323	24.5	137	10.4	43	3.3	24	1.8	1112	204
17	Maharashtra	1727	584	33.8	465	26.9	415	24.0	190	11.0	43	2.5	24	1.4	1464	257
18	Manipur	4	1	25.0	0	0.0	0	0.0	2	50.0	1	25.0	0	0.0	1	3
19	Meghalaya	65	52	80.0	2	3.1	0	0.0	11	16.9	0	0.0	0	0.0	54	11
20	Mizoram	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	1
21	Nagaland	90	32	35.6	4	4.4	0	0.0	37	41.1	9	10.0	5	5.6	36	51
22	Odisha	1206	694	57.5	235	19.5	65	5.4	179	14.8	27	2.2	6	0.5	994	212
23	Puducherry	6	4	66.7	1	16.7	0	0.0	1	16.7	0	0.0	0	0.0	5	1
24	Punjab	188	94	50.0	13	6.9	5	2.7	67	35.6	9	4.8	0	0.0	112	76
25	Rajasthan	953	246	25.8	195	20.5	370	38.8	79	8.3	22	2.3	39	4.1	811	140
26	Sikkim	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	1
27	Tamil Nadu	716	289	40.4	175	24.4	147	20.5	84	11.7	12	1.7	8	1.1	611	104
28	Telangana	228	96	42.1	77	33.8	34	14.9	15	6.6	5	2.2	1	0.4	207	21
29	The Dadra And Nagar Haveli And Daman And Diu	31	10	32.3	12	38.7	6	19.4	3	9.7	0	0.0	0	0.0	28	3
30	Tripura	86	49	57.0	10	11.6	3	3.5	22	25.6	2	2.3	0	0.0	62	24
31	Uttar Pradesh	857	554	64.6	193	22.5	45	5.3	51	6.0	11	1.3	2	0.2	792	64
32	Uttarakhand	168	68	40.5	38	22.6	46	27.4	10	6.0	0	0.0	6	3.6	152	16
33	West Bengal	657	372	56.6	141	21.5	52	7.9	78	11.9	9	1.4	5	0.8	565	92
	Total	**14623**	**6859**	**46.9**	**3190**	**21.8**	**2285**	**15.6**	**1776**	**12.1**	**300**	**2.1**	**181**	**1.2**	**12334**	**2257**

Annexure- 13

Decadal Water Level Fluctuation with Mean (Pre-Monsoon 2014 to 2023) and Pre-Monsoon 2024

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	589	126	21.4	34	5.8	14	2.4	332	56.4	69	11.7	13	2.2	174	414
2	Arunachal Pradesh	21	10	47.6	0	0.0	0	0.0	8	38.1	3	14.3	0	0.0	10	11
3	Assam	222	128	57.7	4	1.8	1	0.5	79	35.6	7	3.2	2	0.9	133	88
4	Bihar	457	156	34.1	25	5.5	6	1.3	252	55.1	17	3.7	1	0.2	187	270
5	Chhattisgarh	661	232	35.1	61	9.2	29	4.4	247	37.4	55	8.3	37	5.6	322	339
6	Goa	82	45	54.9	0	0.0	0	0.0	32	39.0	3	3.7	2	2.4	45	37
7	Gujarat	658	248	37.7	106	16.1	71	10.8	167	25.4	41	6.2	25	3.8	425	233
8	Haryana	606	141	23.3	47	7.8	29	4.8	213	35.1	107	17.7	69	11.4	217	389
9	Himachal Pradesh	96	49	51.0	4	4.2	4	4.2	35	36.5	2	2.1	1	1.0	57	38
10	Jharkhand	192	73	38.0	8	4.2	3	1.6	90	46.9	16	8.3	2	1.0	84	108
11	Karnataka	1084	455	42.0	104	9.6	51	4.7	347	32.0	79	7.3	47	4.3	610	473
12	Kerala	1283	534	41.6	37	2.9	14	1.1	643	50.1	39	3.0	15	1.2	585	697
13	Madhya Pradesh	986	384	38.9	94	9.5	62	6.3	318	32.3	80	8.1	47	4.8	540	445
14	Maharashtra	1457	651	44.7	213	14.6	115	7.9	351	24.1	82	5.6	45	3.1	979	478
15	Meghalaya	45	25	55.6	1	2.2	0	0.0	19	42.2	0	0.0	0	0.0	26	19
16	Nagaland	9	4	44.4	1	11.1	1	11.1	1	11.1	1	11.1	1	11.1	6	3
17	Odisha	1068	492	46.1	91	8.5	8	0.7	412	38.6	49	4.6	15	1.4	591	476
18	Punjab	463	97	21.0	12	2.6	14	3.0	194	41.9	64	13.8	82	17.7	123	340
19	Rajasthan	821	150	18.3	53	6.5	63	7.7	201	24.5	148	18.0	206	25.1	266	555
20	Tamil Nadu	692	268	38.7	151	21.8	108	15.6	114	16.5	29	4.2	21	3.0	527	164
21	Telangana	260	102	39.2	23	8.8	18	6.9	82	31.5	25	9.6	10	3.8	143	117
22	Tripura	65	35	53.8	2	3.1	0	0.0	22	33.8	4	6.2	2	3.1	37	28
23	Uttar Pradesh	512	150	29.3	12	2.3	6	1.2	289	56.4	39	7.6	16	3.1	168	344
24	Uttarakhand	143	37	25.9	6	4.2	6	4.2	56	39.2	24	16.8	14	9.8	49	94
25	West Bengal	609	195	32.0	25	4.1	8	1.3	306	50.2	55	9.0	20	3.3	228	381
26	Andaman And Nicobar Islands	109	27	24.8	0	0.0	0	0.0	71	65.1	11	10.1	0	0.0	27	82
27	Chandigarh	8	5	62.5	0	0.0	0	0.0	2	25.0	0	0.0	1	12.5	5	3
28	The Dadra And Nagar Haveli And Daman And Diu	21	7	33.3	3	14.3	1	4.8	10	47.6	0	0.0	0	0.0	11	10
29	Delhi	79	25	31.6	10	12.7	12	15.2	21	26.6	8	10.1	3	3.8	47	32
30	Jammu and Kashmir	235	88	37.4	2	0.9	3	1.3	128	54.5	10	4.3	4	1.7	93	142
31	Puducherry	8	6	75.0	1	12.5	0	0.0	0	0.0	1	12.5	0	0.0	7	1
	Total	**13541**	**4945**	**36.5**	**1130**	**8.3**	**647**	**4.8**	**5042**	**37.2**	**1068**	**7.9**	**701**	**5.2**	**6722**	**6811**

Annexure- 14

Decadal Water Level Fluctuation with Mean (August 2014 to 2023) and August 2024

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	604	295	48.8	61	10.1	17	2.8	178	29.5	23	3.8	30	5.0	373	231
2	Arunachal Pradesh	19	4	21.1	0	0.0	0	0.0	14	73.7	1	5.3	0	0.0	4	15
3	Assam	230	109	47.4	6	2.6	2	0.9	106	46.1	5	2.2	2	0.9	117	113
4	Bihar	562	234	41.6	17	3.0	3	0.5	252	44.8	42	7.5	10	1.8	254	304
5	Chhattisgarh	681	333	48.9	65	9.5	11	1.6	242	35.5	19	2.8	8	1.2	409	269
6	Goa	75	48	64.0	11	14.7	2	2.7	13	17.3	1	1.3	0	0.0	61	14
7	Gujarat	639	262	41.0	118	18.5	91	14.2	121	18.9	25	3.9	20	3.1	471	166
8	Haryana	141	59	41.8	12	8.5	4	2.8	49	34.8	10	7.1	6	4.3	75	65
9	Himachal Pradesh	94	28	29.8	3	3.2	2	2.1	45	47.9	10	10.6	6	6.4	33	61
10	Jharkhand	222	123	55.4	15	6.8	2	0.9	75	33.8	6	2.7	1	0.5	140	82
11	Karnataka	1194	660	55.3	176	14.7	85	7.1	219	18.3	30	2.5	22	1.8	921	271
12	Kerala	1379	801	58.1	122	8.8	30	2.2	373	27.0	40	2.9	11	0.8	953	424
13	Madhya Pradesh	1077	506	47.0	142	13.2	47	4.4	259	24.0	67	6.2	54	5.0	695	380
14	Maharashtra	1565	778	49.7	288	18.4	153	9.8	286	18.3	36	2.3	21	1.3	1219	343
16	Meghalaya	42	26	61.9	1	2.4	0	0.0	14	33.3	0	0.0	1	2.4	27	15
18	Nagaland	12	3	25.0	3	25.0	1	8.3	2	16.7	1	8.3	2	16.7	7	5
19	Odisha	1098	446	40.6	21	1.9	2	0.2	521	47.4	84	7.7	21	1.9	469	626
20	Punjab	151	36	23.8	6	4.0	2	1.3	57	37.7	24	15.9	26	17.2	44	107
21	Rajasthan	811	233	28.7	129	15.9	146	18.0	143	17.6	61	7.5	98	12.1	508	302
22	Tamil Nadu	760	312	41.1	157	20.7	131	17.2	128	16.8	18	2.4	14	1.8	600	160
23	Telangana	282	130	46.1	42	14.9	20	7.1	63	22.3	13	4.6	13	4.6	192	89
24	Tripura	62	44	71.0	4	6.5	0	0.0	12	19.4	2	3.2	0	0.0	48	14
25	Uttar Pradesh	594	268	45.1	58	9.8	18	3.0	188	31.6	46	7.7	16	2.7	344	250
26	Uttarakhand	149	53	35.6	9	6.0	9	6.0	49	32.9	14	9.4	15	10.1	71	78
27	West Bengal	593	348	58.7	32	5.4	7	1.2	176	29.7	12	2.0	13	2.2	387	201
28	Chandigarh	7	5	71.4	0	0.0	0	0.0	0	0.0	2	28.6	0	0.0	5	2
29	The Dadra And Nagar Haveli And Daman And Diu	21	9	42.9	0	0.0	0	0.0	12	57.1	0	0.0	0	0.0	9	12
30	Delhi	75	25	33.3	13	17.3	16	21.3	15	20.0	4	5.3	2	2.7	54	21
31	Jammu and Kashmir	241	131	54.4	5	2.1	0	0.0	89	36.9	11	4.6	4	1.7	136	104
32	Puducherry	8	6	75.0	0	0.0	0	0.0	2	25.0	0	0.0	0	0.0	6	2
	Total	**13388**	**6315**	**47.2**	**1516**	**11.3**	**801**	**6.0**	**3703**	**27.7**	**607**	**4.5**	**416**	**3.1**	**8632**	**4726**

Annexure- 15

State-wise Decadal Water Level Fluctuation with Mean (Post-Monsoon 2014 to 2023) and Post-Monsoon 2024

Sr. No.	State/UT Name	No of wells analysed	No. & % of wells showing change in water level												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andaman And Nicobar Islands	107	70	65.4	0	0.0	0	0.0	36	33.6	0	0.0	0	0.0	70	36
2	Andhra Pradesh	617	318	51.5	65	10.5	33	5.3	173	28.0	19	3.1	9	1.5	416	201
3	Arunachal Pradesh	18	12	66.7	1	5.6	0	0.0	5	27.8	0	0.0	0	0.0	13	5
4	Assam	210	132	62.9	10	4.8	1	0.5	58	27.6	7	3.3	2	1.0	143	67
5	Bihar	558	183	32.8	18	3.2	4	0.7	313	56.1	32	5.7	1	0.2	205	346
6	Chandigarh	7	5	71.4	0	0.0	0	0.0	1	14.3	1	14.3	0	0.0	5	2
7	Chhattisgarh	734	446	60.8	84	11.4	15	2.0	159	21.7	17	2.3	9	1.2	545	185
8	Delhi	79	26	32.9	13	16.5	21	26.6	10	12.7	5	6.3	4	5.1	60	19
9	Goa	74	49	66.2	2	2.7	0	0.0	23	31.1	0	0.0	0	0.0	51	23
10	Gujarat	642	275	42.8	165	25.7	125	19.5	59	9.2	10	1.6	7	1.1	565	76
11	Haryana	190	69	36.3	14	7.4	6	3.2	64	33.7	27	14.2	10	5.3	89	101
12	Himachal Pradesh	92	25	27.2	2	2.2	2	2.2	57	62.0	1	1.1	2	2.2	29	60
13	Jammu and Kashmir	208	63	30.3	4	1.9	1	0.5	118	56.7	16	7.7	2	1.0	68	136
14	Jharkhand	222	107	48.2	23	10.4	3	1.4	79	35.6	10	4.5	0	0.0	133	89
15	Karnataka	937	517	55.2	112	12.0	62	6.6	211	22.5	21	2.2	8	0.9	691	240
16	Kerala	1381	723	52.4	47	3.4	14	1.0	548	39.7	32	2.3	13	0.9	784	593
17	Madhya Pradesh	1067	527	49.4	155	14.5	77	7.2	239	22.4	42	3.9	21	2.0	759	302
18	Maharashtra	1543	823	53.3	260	16.9	92	6.0	298	19.3	57	3.7	10	0.6	1175	365
19	Meghalaya	46	9	19.6	0	0.0	0	0.0	37	80.4	0	0.0	0	0.0	9	37
20	Nagaland	12	4	33.3	0	0.0	1	8.3	3	25.0	2	16.7	2	16.7	5	7
21	Odisha	1137	330	29.0	9	0.8	4	0.4	689	60.6	92	8.1	9	0.8	343	790
22	Puducherry	6	3	50.0	2	33.3	0	0.0	1	16.7	0	0.0	0	0.0	5	1
23	Punjab	185	40	21.6	8	4.3	4	2.2	74	40.0	24	13.0	34	18.4	52	132
24	Rajasthan	821	241	29.4	124	15.1	141	17.2	146	17.8	70	8.5	98	11.9	506	314
25	Tamil Nadu	739	314	42.5	144	19.5	120	16.2	135	18.3	16	2.2	6	0.8	578	157
26	Telangana	270	112	41.5	56	20.7	34	12.6	57	21.1	7	2.6	4	1.5	202	68
27	The Dadra And Nagar Haveli And Daman And Diu	16	8	50.0	4	25.0	0	0.0	3	18.8	1	6.3	0	0.0	12	4
28	Tripura	72	52	72.2	3	4.2	0	0.0	13	18.1	1	1.4	0	0.0	55	14
29	Uttar Pradesh	578	244	42.2	30	5.2	10	1.7	249	43.1	35	6.1	9	1.6	284	293
30	Uttarakhand	152	51	33.6	7	4.6	14	9.2	56	36.8	13	8.6	10	6.6	72	79
31	West Bengal	638	470	73.7	23	3.6	3	0.5	126	19.7	8	1.3	7	1.1	496	141
	Total	**13358**	**6248**	**46.8**	**1385**	**10.4**	**787**	**5.9**	**4040**	**30.2**	**566**	**4.2**	**277**	**2.1**	**8420**	**4883**

Annexure- 16

Decadal Water Level Fluctuation with Mean (January 2015 to 2024) and January 2025

Sr. No.	State/UT Name	No of wells analysed	No. & % of wells showing change in water level												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	543	352	64.8	62	11.4	23	4.2	85	15.7	14	2.6	5	0.9	437	104
2	Arunachal Pradesh	17	8	47.1	1	5.9	0	0.0	7	41.2	1	5.9	0	0.0	9	8
3	Assam	218	117	53.7	3	1.4	1	0.5	89	40.8	5	2.3	2	0.9	121	96
4	Bihar	575	203	35.3	16	2.8	4	0.7	325	56.5	24	4.2	1	0.2	223	350
5	Chandigarh	8	7	87.5	0	0.0	0	0.0	0	0.0	1	12.5	0	0.0	7	1
6	Chhattisgarh	537	297	55.3	75	14.0	10	1.9	135	25.1	15	2.8	4	0.7	382	154
7	Delhi	74	26	35.1	9	12.2	18	24.3	13	17.6	4	5.4	4	5.4	53	21
8	Goa	73	42	57.5	4	5.5	1	1.4	25	34.2	0	0.0	0	0.0	47	25
9	Gujarat	648	243	37.5	108	16.7	131	20.2	128	19.8	25	3.9	12	1.9	482	165
10	Haryana	183	79	43.2	20	10.9	5	2.7	57	31.1	17	9.3	5	2.7	104	79
11	Himachal Pradesh	92	35	38.0	3	3.3	2	2.2	43	46.7	5	5.4	3	3.3	40	51
12	Jammu And Kashmir	192	55	28.6	4	2.1	0	0.0	112	58.3	17	8.9	1	0.5	59	130
13	Jharkhand	210	79	37.6	8	3.8	3	1.4	102	48.6	15	7.1	3	1.4	90	120
14	Karnataka	1090	627	57.5	181	16.6	64	5.9	186	17.1	24	2.2	7	0.6	872	217
15	Kerala	1359	873	64.2	34	2.5	9	0.7	407	29.9	17	1.3	8	0.6	916	432
16	Madhya Pradesh	1053	504	47.9	127	12.1	96	9.1	251	23.8	49	4.7	23	2.2	727	323
17	Maharashtra	1527	807	52.8	264	17.3	99	6.5	281	18.4	46	3.0	25	1.6	1170	352
18	Meghalaya	44	30	68.2	1	2.3	0	0.0	13	29.5	0	0.0	0	0.0	31	13
19	Nagaland	12	1	8.3	1	8.3	1	8.3	5	41.7	3	25.0	1	8.3	3	9
20	Odisha	1162	616	53.0	40	3.4	7	0.6	450	38.7	35	3.0	4	0.3	663	489
21	Puducherry	7	6	85.7	0	0.0	0	0.0	1	14.3	0	0.0	0	0.0	6	1
22	Punjab	176	39	22.2	3	1.7	2	1.1	82	46.6	25	14.2	25	14.2	44	132
23	Rajasthan	844	255	30.2	137	16.2	147	17.4	158	18.7	55	6.5	91	10.8	539	304
24	Tamil Nadu	755	342	45.3	167	22.1	138	18.3	87	11.5	13	1.7	5	0.7	647	105
25	Telangana	224	100	44.6	30	13.4	8	3.6	71	31.7	12	5.4	2	0.9	138	85
26	The Dadra And Nagar Haveli And Daman And Diu	19	13	68.4	1	5.3	0	0.0	5	26.3	0	0.0	0	0.0	14	5
27	Tripura	70	40	57.1	4	5.7	0	0.0	23	32.9	2	2.9	0	0.0	44	25
28	Uttar Pradesh	602	278	46.2	31	5.1	7	1.2	237	39.4	36	6.0	8	1.3	316	281
29	Uttarakhand	152	63	41.4	13	8.6	10	6.6	50	32.9	10	6.6	6	3.9	86	66
30	West Bengal	635	387	60.9	29	4.6	11	1.7	183	28.8	17	2.7	7	1.1	427	207
	Total	**13101**	**6524**	**49.8**	**1376**	**10.5**	**797**	**6.1**	**3611**	**27.6**	**487**	**3.7**	**252**	**1.9**	**8697**	**4350**

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"The best time to save water was yesterday.
"The next best time is now."

Act now – every drop saved counts!

ISBN 978-93-47719-60-8

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