INDIA WATER SYSTEMS ATLAS

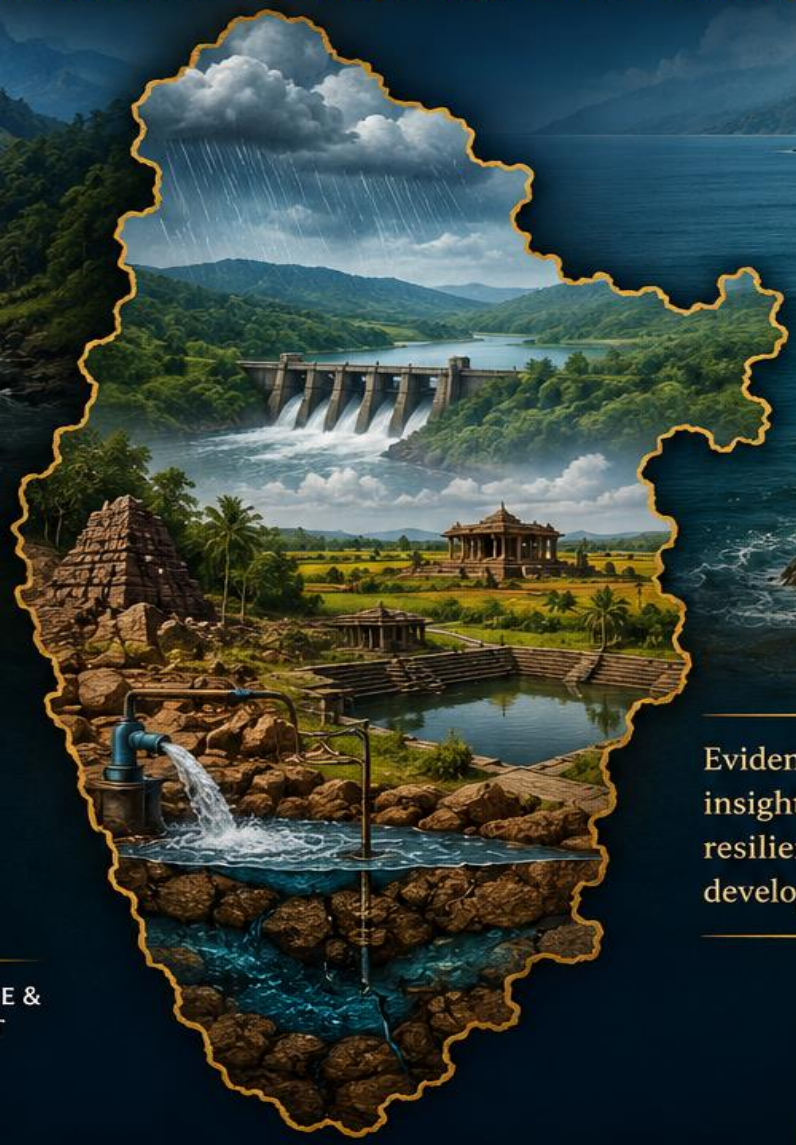
KARNATAKA

— GROUNDWATER + SURFACE WATER —

ABRIDGED VOLUME

"Rainfall is an input. Water availability is a system outcome."

Water outcome = Geomorphology × Soil × Lithology



- GROUNDWATER SYSTEMS
- RAINFALL & RECHARGE
- GEOLOGY & AQUIFERS
- RIVERS & BASINS
- ECOLOGY & LANDSCAPES
- URBAN & RURAL WATER SYSTEMS
- DATA, INTELLIGENCE & DECISION SUPPORT

Evidence, intelligence and insights for water-secure, resilient and sustainable development of Karnataka.

OPXL Consulting · Akhsheya Group · Chennai

G.L. Sudhakar
WATER INTELLIGENCE
WATER SYSTEMS

Edition T0 — May 2026 · Schema KA-GW v1.41 + KA-SW v1.37

Merged Groundwater + Surface Water Synthesis

INDIA WATER SYSTEMS ATLAS

KARNATAKA

GROUNDWATER + SURFACE WATER

ABRIDGED VOLUME

"Rainfall is an input. Water availability is a system outcome."

Water outcome = Geomorphology × Soil × Lithology

OPXL Consulting · Akhsheya Group · Chennai

Edition T0 — May 2026 · Schema KA-GW v1.37 · 1,989 sourced rows

This is one volume. Edition T0 (May 2026) runs through “How Does Karnataka Become Water Secure?” District stages in those chapters are the 2024 assessment (CGWB GWRA-2024) unless the sentence names another year. The October 2026 revision is part of the same volume. It places the 2025 assessment beside the 2024 figures and does not replace them. A 2024 figure governs statements in the May chapters. A 2025 figure governs only the October revision. The state stage of 66.49% is statewide extraction divided by statewide extractable resource. It is not the average of the district percentages.

TABLE OF CONTENTS

How Karnataka Is Read: Clusters and Nodes 6
Five clusters 6
Four strategic nodes 6
Before the data: how to read this state 6
Why clusters, not districts 7
A note on evidence 8
1 The Karnataka groundwater story 11
1.1 One state, five water worlds 11
1.2 The headline diagnosis 11
2 How to read this Atlas 13
The surface water system 18
From framework to governance 24
River and catchment restoration 28
3 The five clusters 31
3.1 C1 · Cauvery Basin South 33
3.2 C2 · Bengaluru Urban Region 34
3.3 C3 · Western Ghats & Coastal 36
3.4 C4 · North Karnataka Dry Zone 37
3.5 C5 · Central Plateau 39
9 The full state table 41
10 How the stressed districts got here 43
10.1 C1 — Cauvery Basin South trajectories 43
10.2 C2 — Bengaluru Urban Region trajectories 44
10.3 C3 — Western Ghats & Coastal trajectories 46
10.4 C4 — North Karnataka Dry Zone trajectories 48
10.5 C5 — Central Plateau trajectories 51
11 Node deep-dives 53
11.1 N1 · Bengaluru — the mining of a metropolis 53
11.2 N2 · Ballari — the safest number worth doubting 54
11.3 N3 · Hubballi–Dharwad — the next tip 54
11.4 N4 · Mangaluru — quantity comfortable, quality exposed 54
12 The crop economy behind the numbers 56
13 The borewell census, where recorded 58
14 Method and sources 59

12.1 How this Atlas is built 59
12.2 The rules that constrain it 59
12.3 Principal sources 60
17 The district register 61
C1 · Cauvery Basin South 61
C2 · Bengaluru Urban Region 74
C3 · Western Ghats & Coastal 90
C4 · North Karnataka Dry Zone 103
C5 · Central Plateau 128
13 The quality crisis runs deeper than the quantity one 141
14 Disconnection, not scarcity 142
15 What this volume does not yet resolve 143
16 Synthesis: the state in one page 144
9 The 2025 assessment: extraction by sector 145
10 Traditional water systems: the inherited infrastructure 146
11 Vulnerability and development: two more lenses 147
How Does Karnataka Become Water Secure? 151
Protect before you build (C1) 151
Finish before you diagnose further (C2) 151
Reallocate before you build more (C3) 151
Verify before you invest further (C4) 152
Deliver before the wait becomes the damage (C5) 152
October 2026 revision 153
18.1 Freeze control 153
18.2 Vijayanagara's own outline 154
18.3 Ramanagara and the source label Bengaluru South 154
18.4 STAGE25 on the frozen spine 154
18.5 Rainfall, January to May 2025 only 156
18.6 Crops and land use — what was added, and what stayed blank 157
18.7 Map layers added with the atlas 158
18.8 Sewage plants, as printed 158
18.9 What this part does not do 163

How Karnataka Is Read: Clusters and Nodes

This Atlas reads Karnataka through five hydro-geological clusters and four strategic nodes, not through its 31 administrative districts directly. Clusters are groundwater and surface-water systems, grouped by shared geology, recharge behaviour, and stress pattern — water does not respect administrative boundaries.

Five clusters

Cluster	Districts
C1 — Cauvery Basin South	Mandya, Mysuru, Hassan, Kodagu, Chamarajanagar
C2 — Bengaluru Urban Region	Bengaluru Urban, Bengaluru Rural, Ramanagara, Tumakuru, Kolar, Chikkaballapura
C3 — Western Ghats & Coastal	Dakshina Kannada, Udupi, Uttara Kannada, Shivamogga, Chikkamagaluru
C4 — North Karnataka Dry Zone	Vijayapura, Bagalkot, Belagavi, Dharwad, Gadag, Haveri, Raichur, Ballari, Koppal, Davanagere
C5 — Central Plateau	Chitradurga, Bidar, Kalaburagi, Yadgir, Vijayanagara

Four strategic nodes

Nodes are urban and industrial concentration points layered on the cluster map, where demand and impact peak: N1 Bengaluru (metropolitan stress, within C2), N2 Ballari (recharge audit, within C4), N3 Hubballi–Dharwad (emerging pressure, within C4), N4 Mangaluru (coastal quality, within C3).

Before the data: how to read this state

If you live in Karnataka, you already know the paradox this Atlas exists to explain: your state catches a real monsoon — generous on its western face, drenching along its coast, modest but sufficient across its plateau — and yet your well may be deeper this year than last, or your tanker queue longer, or your tap running for an hour where it once ran all day. The rain was never the problem. What is failing, in the districts where it is failing, is the system that should turn that rain into water you can reach: the rock that should hold it, the tank and canal that should carry it, the rule that should stop one borewell from taking more than its share.

THE THESIS

Rainfall is an input. Water availability is an outcome. Water outcome = Geomorphology × Soil Condition × Lithology. The shape of the land decides whether rain is held or shed; the soil decides whether what is held infiltrates or evaporates; the rock beneath decides whether what infiltrates is banked in an accessible aquifer or lost. The three multiply — a failure in any one collapses the outcome regardless of how much rain fell.

Karnataka sits almost entirely on hard, old, crystalline rock — granite, gneiss, schist — that stores little and yields slowly through fracture networks rather than the pore spaces of a sedimentary aquifer. This is why Bengaluru Urban, receiving an entirely ordinary 885mm of rain, is over-exploited at 187% of its recharge, while Bagalkot, receiving barely a third of that rainfall, sits only semi-critical: rainfall does not predict your district's stress. The gap between demand and what the rock can hold and yield does.

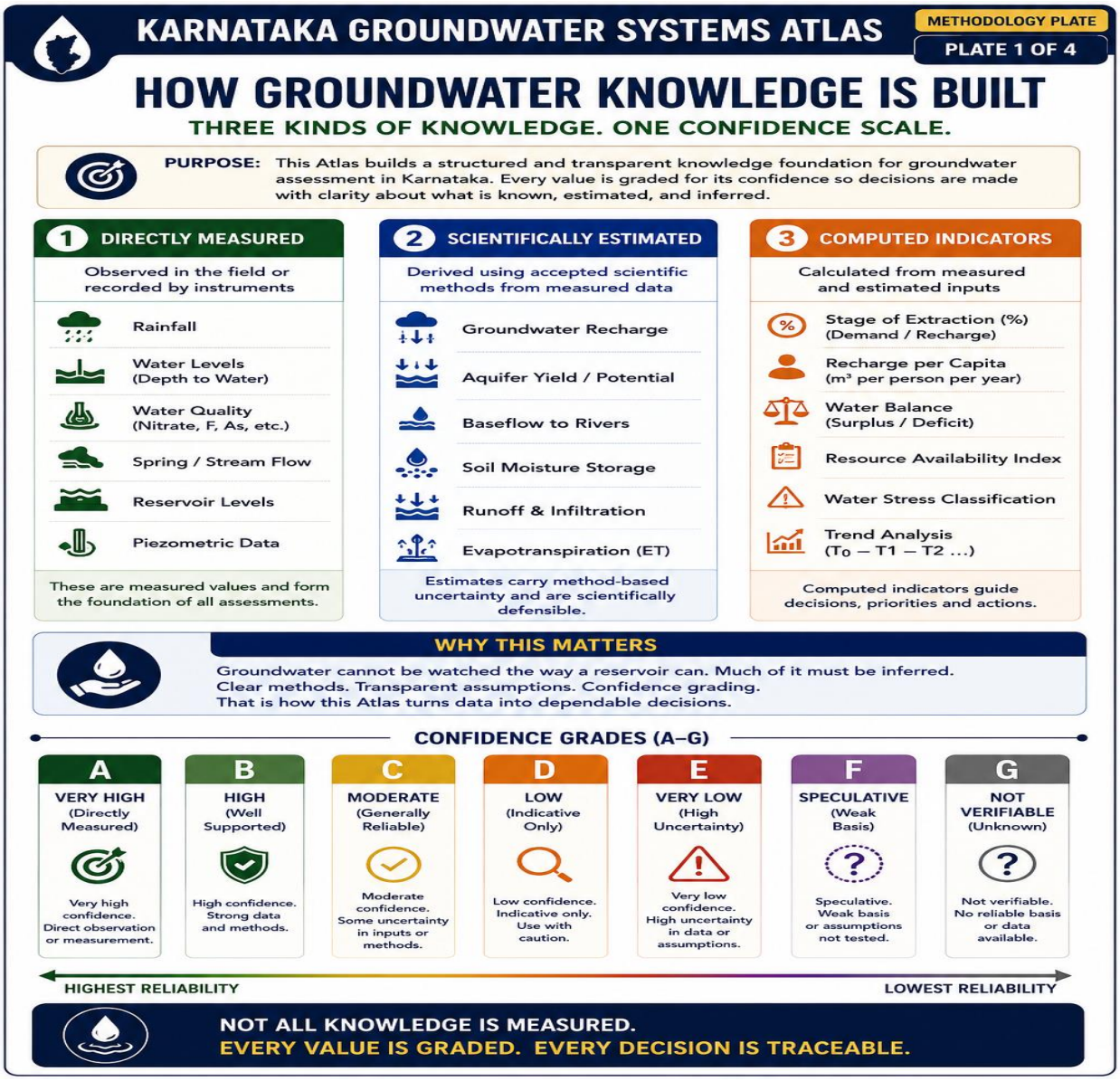
Why clusters, not districts

This Atlas reads Karnataka as five water systems — clusters — grouped by shared geology, recharge-extraction balance, and characteristic stress, not by administrative boundary. Districts are placed by what their water does, not by which revenue division drew their border. Four industrial nodes are read separately within their parent clusters, because urban and industrial density governs their water behaviour more than the surrounding cluster's character does.

A NOTE ON WHAT THESE NUMBERS ARE

Not every figure in this Atlas was directly measured. Rainfall and water levels are — a gauge or a dip meter produced the number. Recharge and aquifer yield are scientifically estimated by applying an accepted infiltration methodology to measured rainfall. The stage-of-extraction figures that drive most of this Atlas's verdicts are computed by dividing one estimate by another, and carry the compounded uncertainty of both. Every figure in this Atlas carries a quality grade (A through G) for exactly this reason: an aquifer cannot be watched the way a reservoir can, so its state must be carefully inferred, not simply witnessed.

A note on evidence



Methodology Plate 1 of 4 — How Groundwater Knowledge Is Built: three kinds of number, one confidence scale (A-G).

This Atlas is built directly from the Karnataka Groundwater Schema, a register now exceeding **3,000 individually sourced data rows**. Every headline number traces to a named source — Central Ground Water Board assessments, the Karnataka Directorate of Economics & Statistics, KSNDMC rainfall series, the Forest Survey of India, CAG audits, and CGWB district booklets. Where a figure could not be sourced, the gap is marked, not filled.

EVIDENCE-STATUS DECLARATION

Groundwater diagnostic spine: COMPLETE at 31/31 district depth — stage, recharge (decomposed), extraction, static water level, category, decadal trend.

Full data domains: rainfall, geology, groundwater, aquifer, quality, agriculture, irrigation, urban water, forest, population, sanitation, industry, economy, river basin, soil, ecology.

Carried as flagged context where still thin: borewell census and full urban-infrastructure detail — real for 18 districts via CGWB booklets, thinner elsewhere, never fabricated to fill the gap.

Coverage: 13+ of 22 applicable domains fully district-complete; every remaining domain carries genuine sourced content, honestly labelled FULL, PARTIAL, or THIN per this Atlas's own coverage standard.

1 The Karnataka groundwater story

1.1 One state, five water worlds

Karnataka does not have a water problem. It has five, and they do not resemble one another. The 66.49% is statewide extraction divided by statewide extractable resource, not the average of the district percentages. The wettest district, Udupi, receives **4119 mm** of rain a year; the driest, Bagalkot, receives **562 mm** — barely a seventh. Between these extremes sit peri-urban districts where extraction has passed **190% of annual recharge**, and coastal districts where the aquifer is full but salting at its seaward edge. A single state-average — Karnataka draws **66.49% of its groundwater** — hides every one of these realities. This Atlas takes that average apart.

The organising thesis runs through every section: ***rainfall is an input, but water availability is a system outcome***. What a district has to draw on is decided less by how much rain falls than by what happens to that rain once it lands — by geomorphology, soil, and the rock beneath. Karnataka is largely **hard-rock terrain** (hard-rock, the Dharwar craton), and hard rock stores little and yields slowly. That single fact explains how a district can catch a decent monsoon and still run its wells dry: the water arrives, but the system cannot hold it.

1.2 The headline diagnosis

KARNATAKA GROUNDWATER — STATE HEADLINES (GWRA-2024, T0 May 2026)

State stage of extraction: **66.49%** (down from 68.44% in 2024 — a real improvement, from conservation structures and Jal Jeevan surface-water substitution)

Over-exploited districts: **5** — Bengaluru Urban, Bengaluru Rural, Kolar, Chikkaballapura, Chitradurga

Severely over-exploited taluks: **45** — 27 of them in the six Bengaluru-region districts

Taluks with contamination: **86** — nitrate dominant across 27 of 31 districts

Sinha-flag districts: **16 of 31** — "other-source" recharge exceeds 45% of the total (§4)

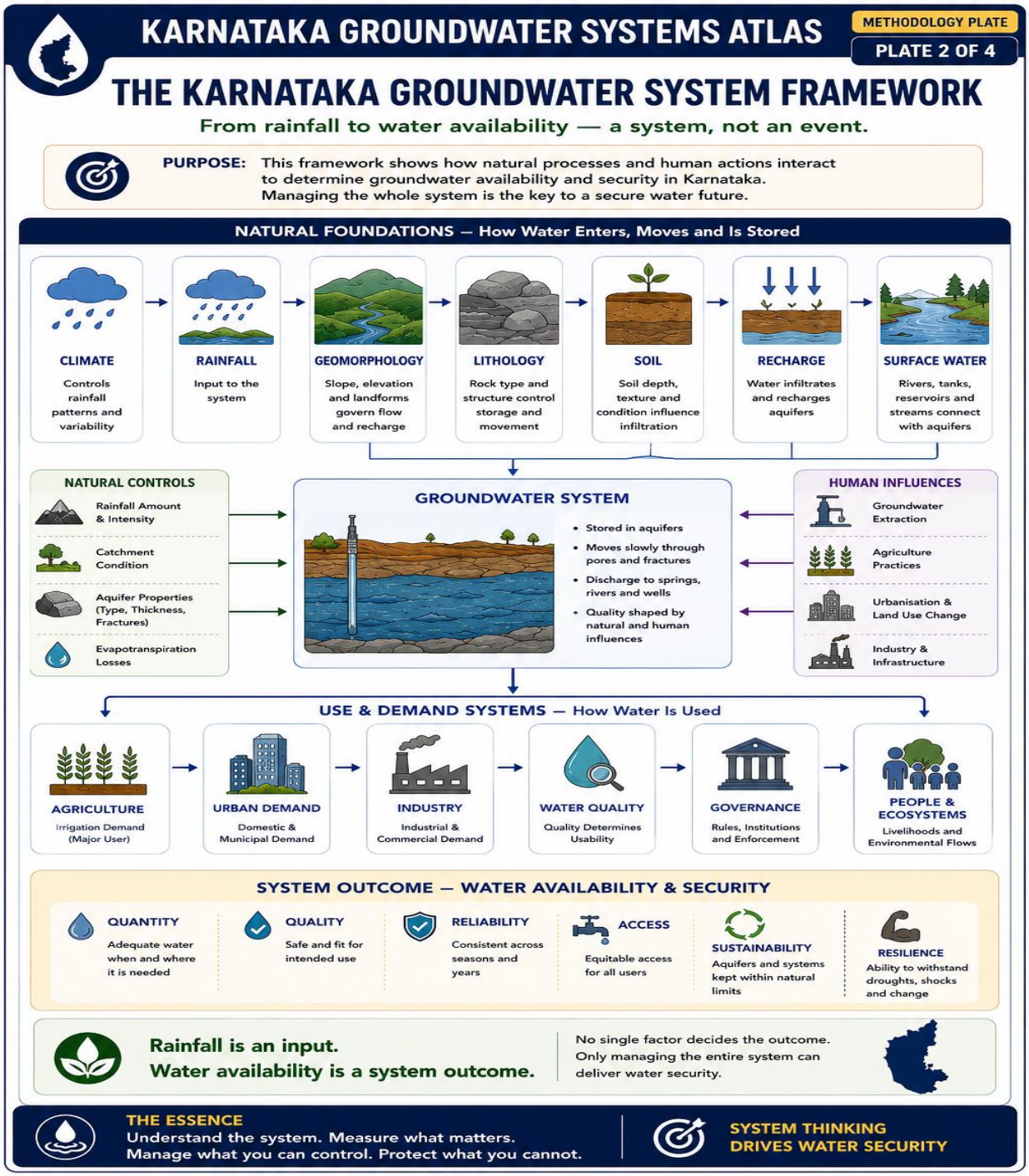
Read together these tell a story of **concentration**. The crisis is not spread evenly — it is packed into an arc of peri-urban and eastern-plateau districts where cities, borewell agriculture, and hard rock meet. The Cauvery south and the coastal west are, for now, safe. The dry north is safe on paper but structurally fragile. Understanding why means walking the clusters one at a time.

2 How to read this Atlas

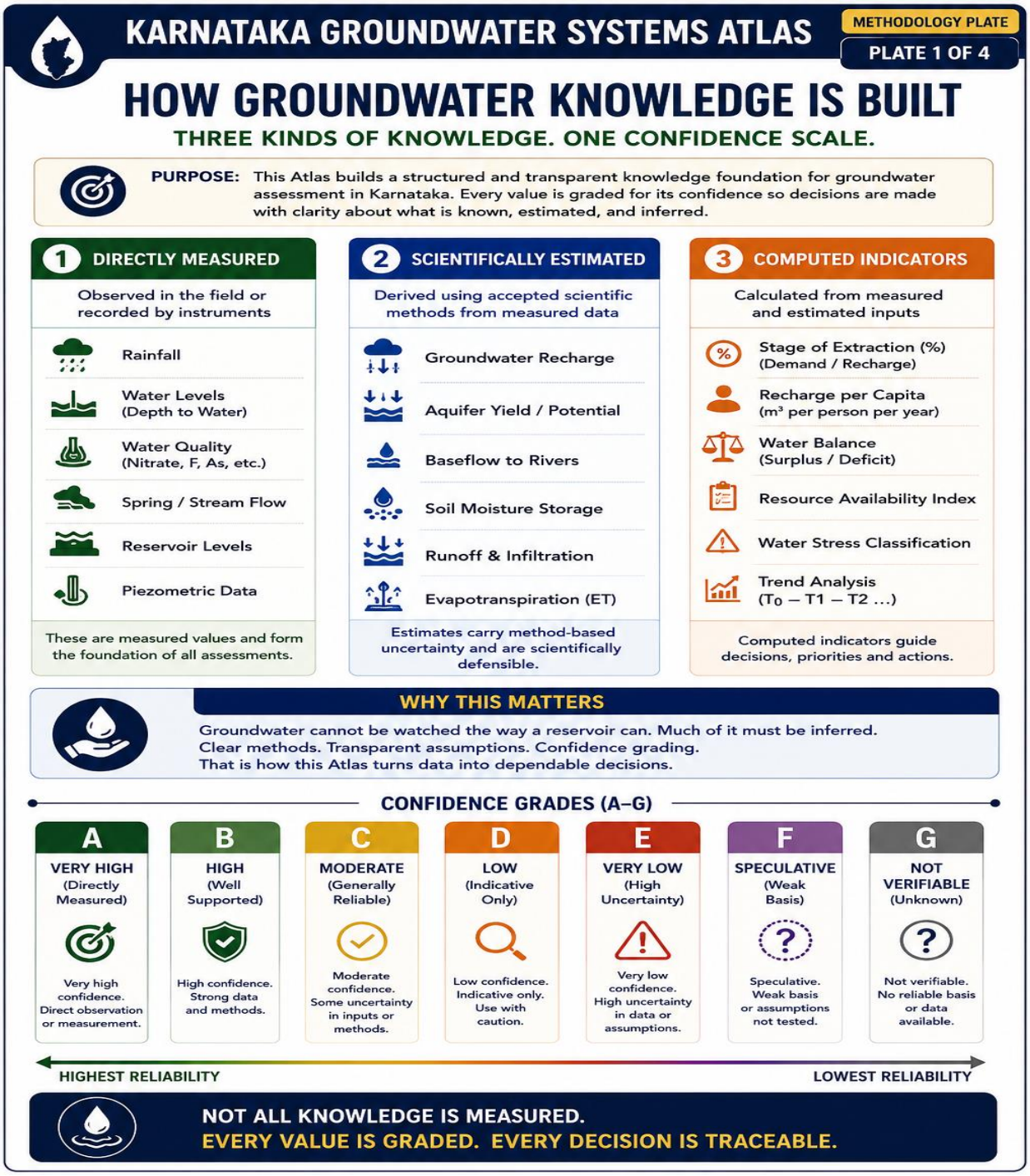
The state is divided into **five hydro-geographic clusters** and **four industrial water-system nodes**. Clusters group districts that share a water logic — a basin, a rock type, a rainfall regime — not administrative adjacency. Nodes are the cities where stress concentrates and intervention leverage is highest.

Cluster	Districts	Water logic	Stage
C1 Cauvery Basin South	5	Cauvery command; alluvial pockets in hard-rock matrix; canal + well conjunctive use	35–96%
C2 Bengaluru Urban Region	6	Peri-urban hard-rock; borewell agriculture + city demand; the over-exploitation core	91–193%
C3 Western Ghats & Coastal	5	High-rainfall Western Ghats + coast; laterite/coastal aquifers; quality not quantity	32–56%
C4 North Karnataka Dry Zone	10	Semi-arid Krishna-basin plains; tank-and-borewell; the Sinha-flag heartland	27–91%
C5 Central Plateau	5	Central maidan plateau; low rainfall, hard rock; Chitradurga the lone OE outlier	38–144%

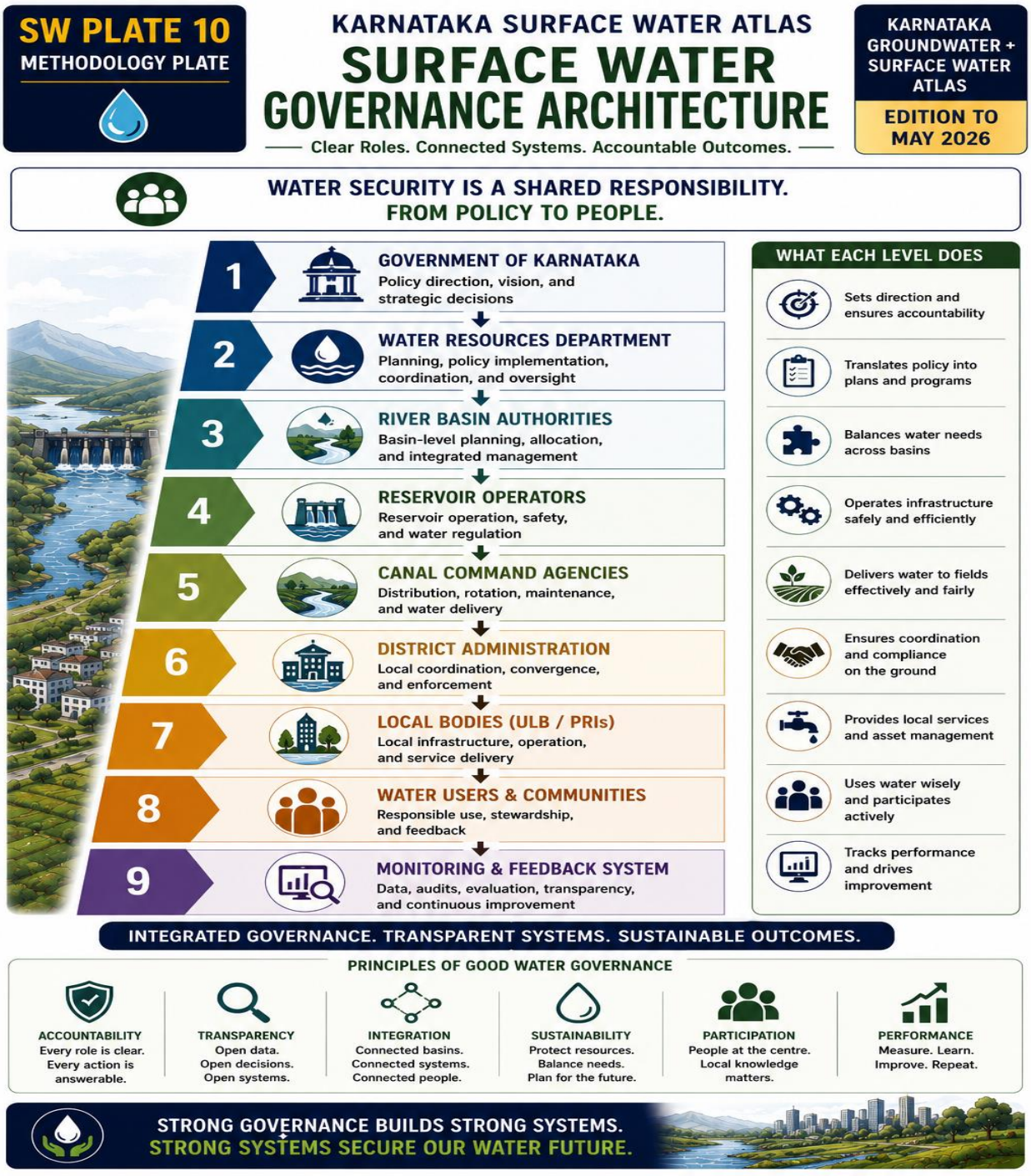
Each cluster section carries a groundwater diagnostic table — every district's stage, recharge, water level, and category — a reading of what those numbers mean, and the intervention the evidence points to. *The verdict for each cluster is not a grade; it is a diagnosis of which system link has broken.*



GW Methodology Plate 1 of 4 — How Groundwater Knowledge Is Built



GW Methodology Plate 2 of 4 — The Karnataka Groundwater System Framework



GW Methodology Plate 3 of 4 — Why Karnataka Is Read Through Five Clusters and Four Nodes

GW
METHODOLOGY
PLATE 4 OF 4

THE METHOD COMES FULL CIRCLE

KARNATAKA SURFACE & GROUNDWATER ATLAS

GROUNDWATER METHODOLOGY
PLATE 4 OF 4

ASSESSMENT → PRIORITISATION → INVESTMENT → MONITORING

A Continuous Cycle that Turns Science into Action and Delivers Lasting Water Security for Karnataka

MEASURE.
PRIORITISE.
INVEST.
MONITOR.
IMPROVE.

SUSTAIN WATER.
SECURE KARNATAKA.

1 ASSESSMENT

Understand the Groundwater Reality



- Hydrogeological Mapping
- Water Levels & Trends
- Aquifer Stress (Stage of Extraction)
- Groundwater Quality
- Supply–Demand Balance
- Risk & Vulnerability Mapping

OUTCOME
A clear, science-based understanding of where, how much and why groundwater is stressed.

2 PRIORITISATION

Focus on Where Action Matters Most



- Compare Stress, Decline, Quality & Dependence
- Identify Critical Blocks
- Rank by Risk, Impact & Opportunity
- Consider Social, Ecological & Economic Factors
- Create Priority Investment List

OUTCOME
A ranked list of priority areas for targeted interventions and investments.

3 INVESTMENT

Design & Implement the Right Solutions



- Identify Fit-for-Purpose Interventions
- Plan Recharge, Regulation, Efficiency & Reuse
- Align with Local Hydrogeology and Community Needs
- Estimate Cost, Benefits & Expected Impact
- Implement with Stakeholder Participation

OUTCOME
Investments that create measurable improvement in water security.

4 MONITORING

Track, Learn & Continuously Improve



- Monitor Water Levels, Quality & Usage
- Track Intervention Performance
- Use Data Dashboards & Field Validation
- Review Outcomes & Adapt Strategies
- Feed Learnings Back into the System

OUTCOME
Evidence-based decisions that keep improving results over time.

THE CONTINUOUS IMPROVEMENT CYCLE

Better assessment creates better priorities. → Better priorities drive better investments. → Better investments deliver better impact. → Better monitoring drives better decisions.

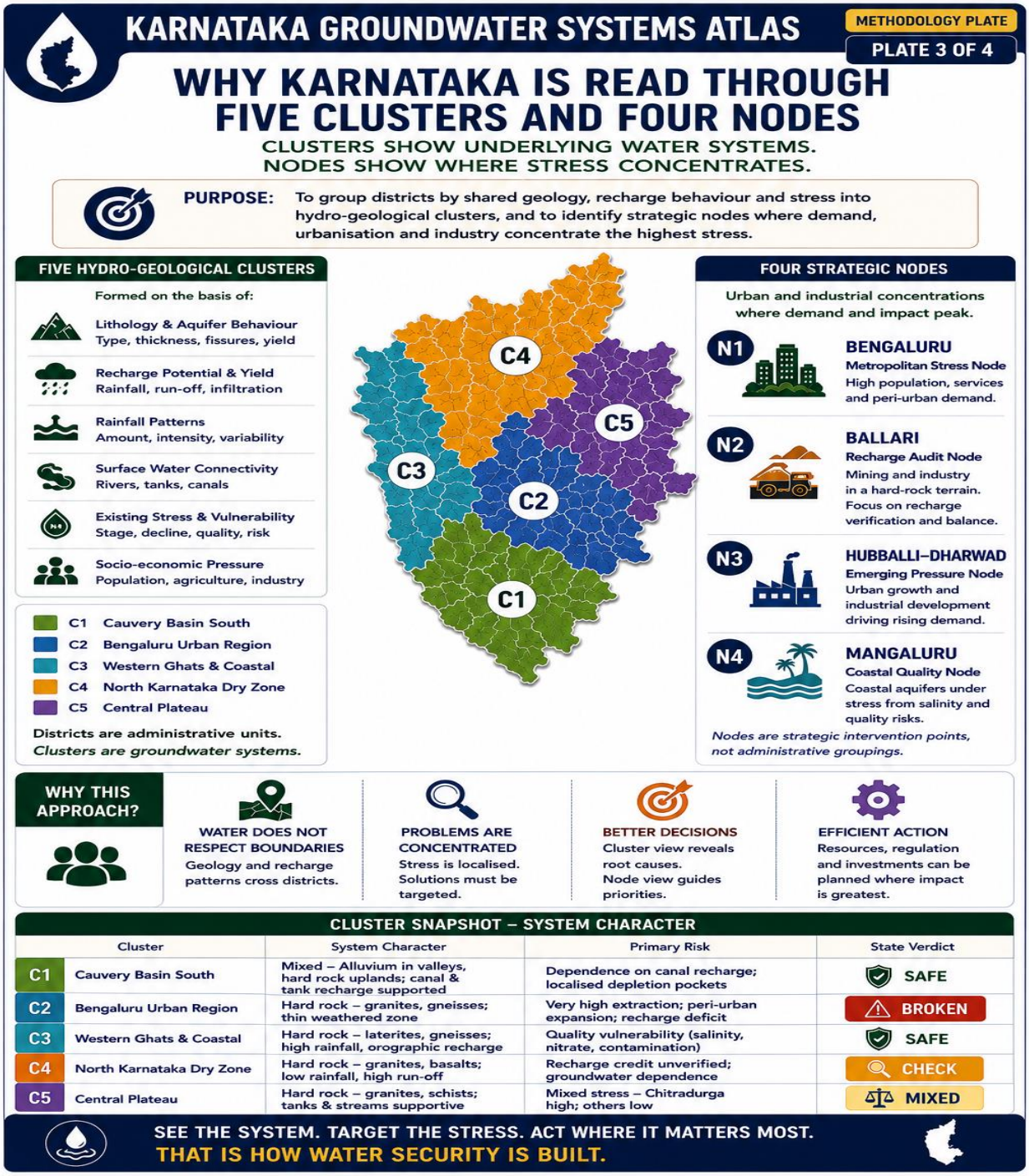
THE POWER OF THE CYCLE

No single step is enough. Together, they create lasting groundwater security.

ASSESS. PRIORITISE. INVEST. MONITOR.
REPEAT. IMPROVE. SUSTAIN.
This is how Karnataka secures its water future.

STRONGER DATA.
SMARTER ACTION.
SECURE WATER.
SUSTAINABLE KARNATAKA.

A SYSTEM. A METHOD. A FUTURE THAT HOLDS.



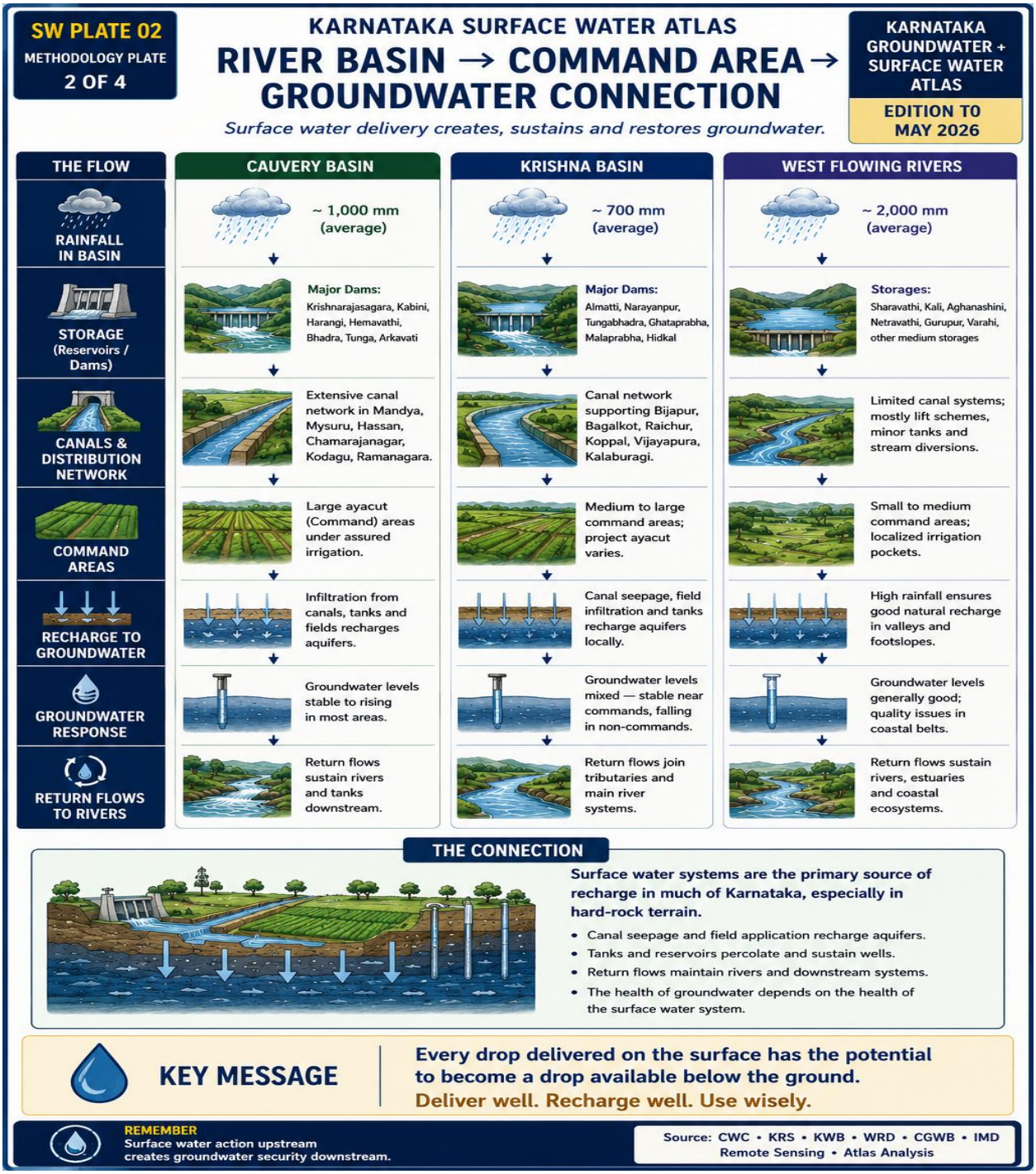
GW Methodology Plate 4 of 4 — Assessment → Prioritisation → Investment → Monitoring

The surface water system

Groundwater is only half the system this Atlas reads. Every borewell sits beneath a catchment shaped upstream first — through rainfall capture, storage, canal delivery, and the return flows that either recharge an aquifer or bypass it entirely. Karnataka's three basins deliver this chain

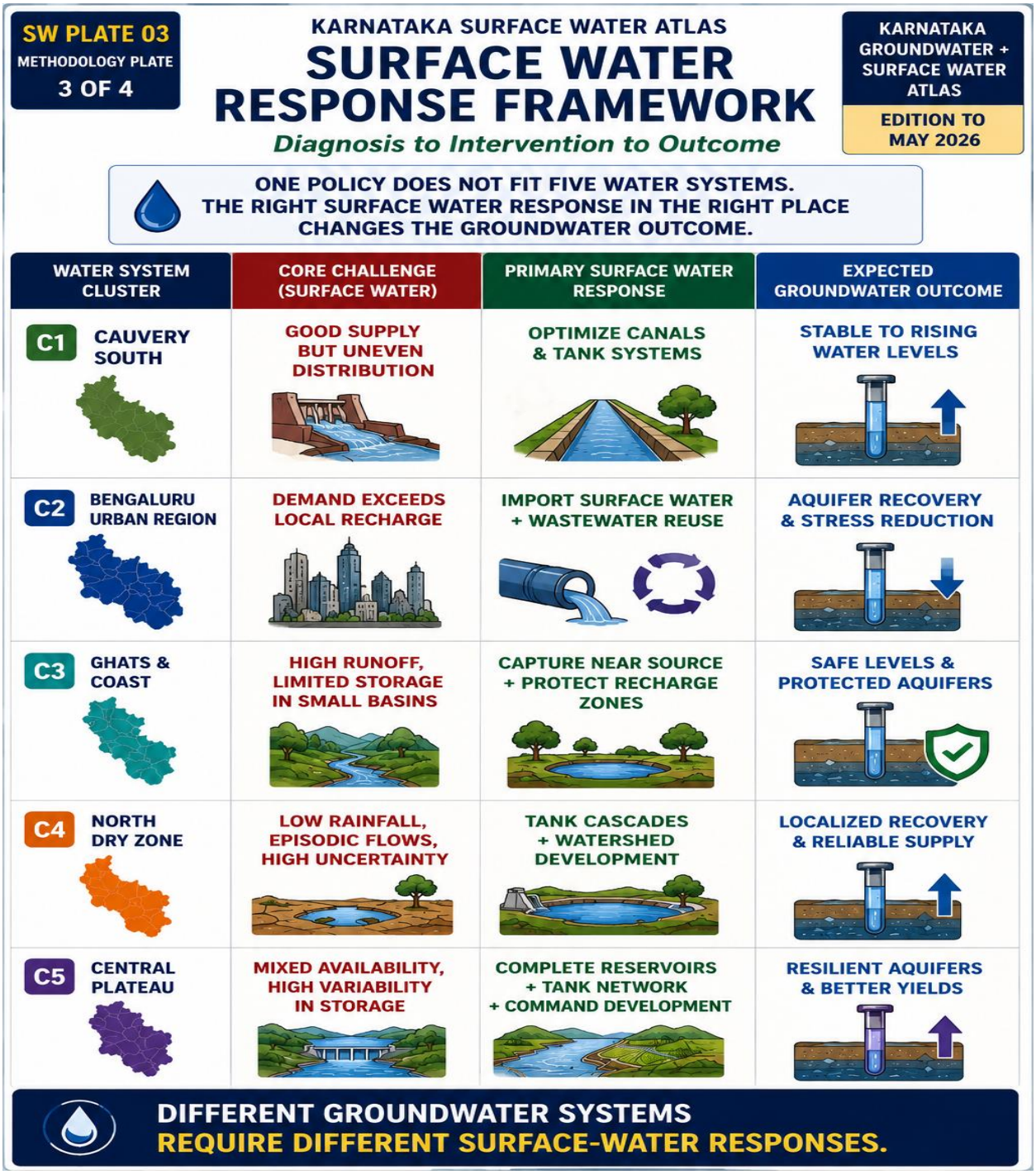
on different terms: the Cauvery basin (south) runs through a mature reservoir cascade into extensive canal-fed command areas with generally stable to rising groundwater; the Krishna basin (north) shows a sharper divide between recovering command-area districts and falling non-command ones; and the short west-flowing rivers off the Ghats (coast) carry the state's highest rainfall through its smallest canal footprint, so their groundwater is generally secure in quantity but exposed on quality.

SW Plate 01 — The Karnataka Surface Water System Framework



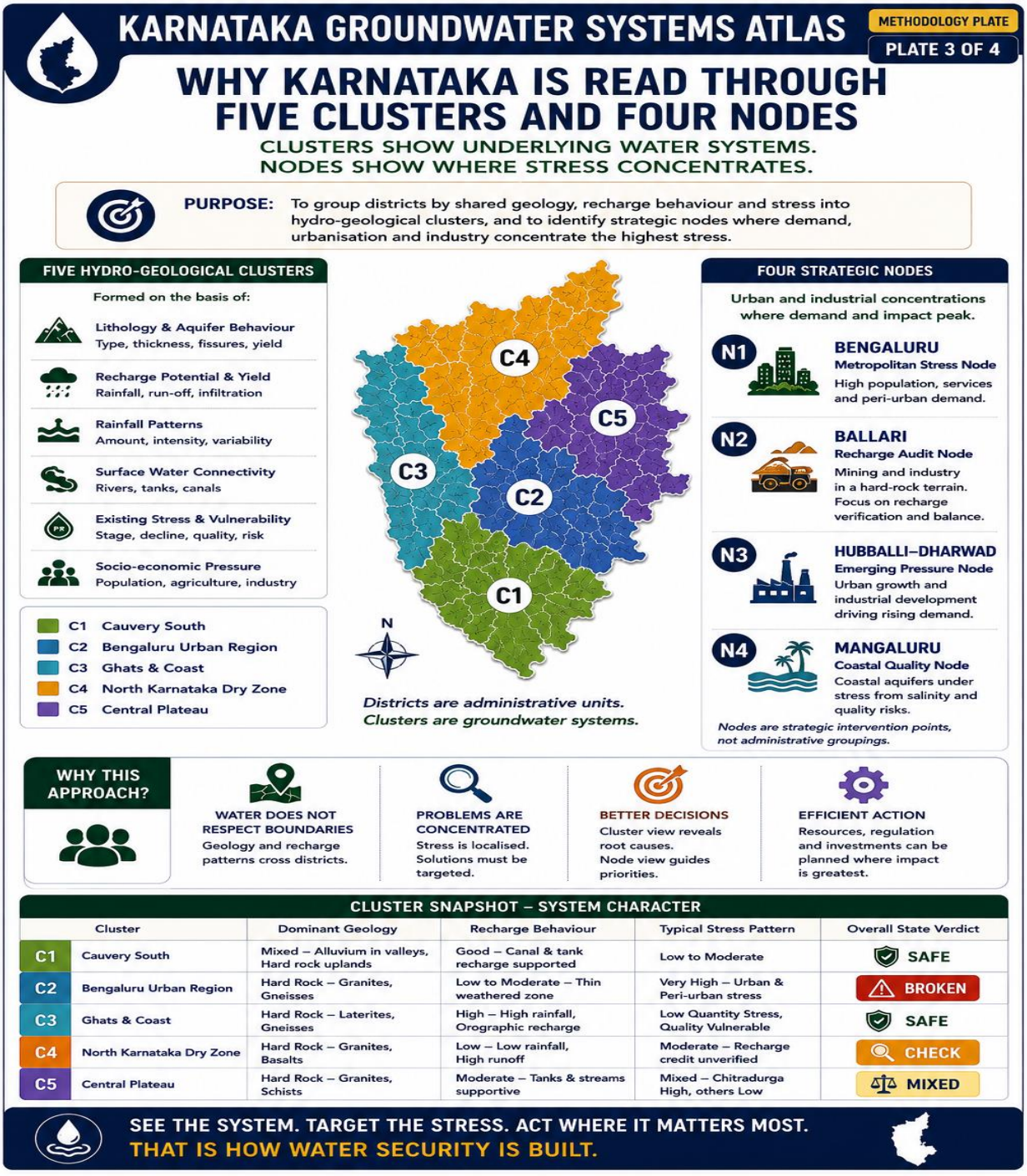
SW Plate 02 — River Basin → Command Area → Groundwater Connection

The same five clusters this Atlas uses for its groundwater diagnosis carry five distinct surface-water prescriptions, because the underlying problem differs: Cauvery South needs better distribution of water it largely already has; Bengaluru's demand has outrun local recharge entirely and needs imported water plus wastewater reuse; the Ghats and coast need to capture high runoff near its source rather than build large storage; the North Karnataka dry zone responds best to tank cascades and watershed development; and the Central Plateau needs its existing reservoirs and tank networks completed before anything new is added.



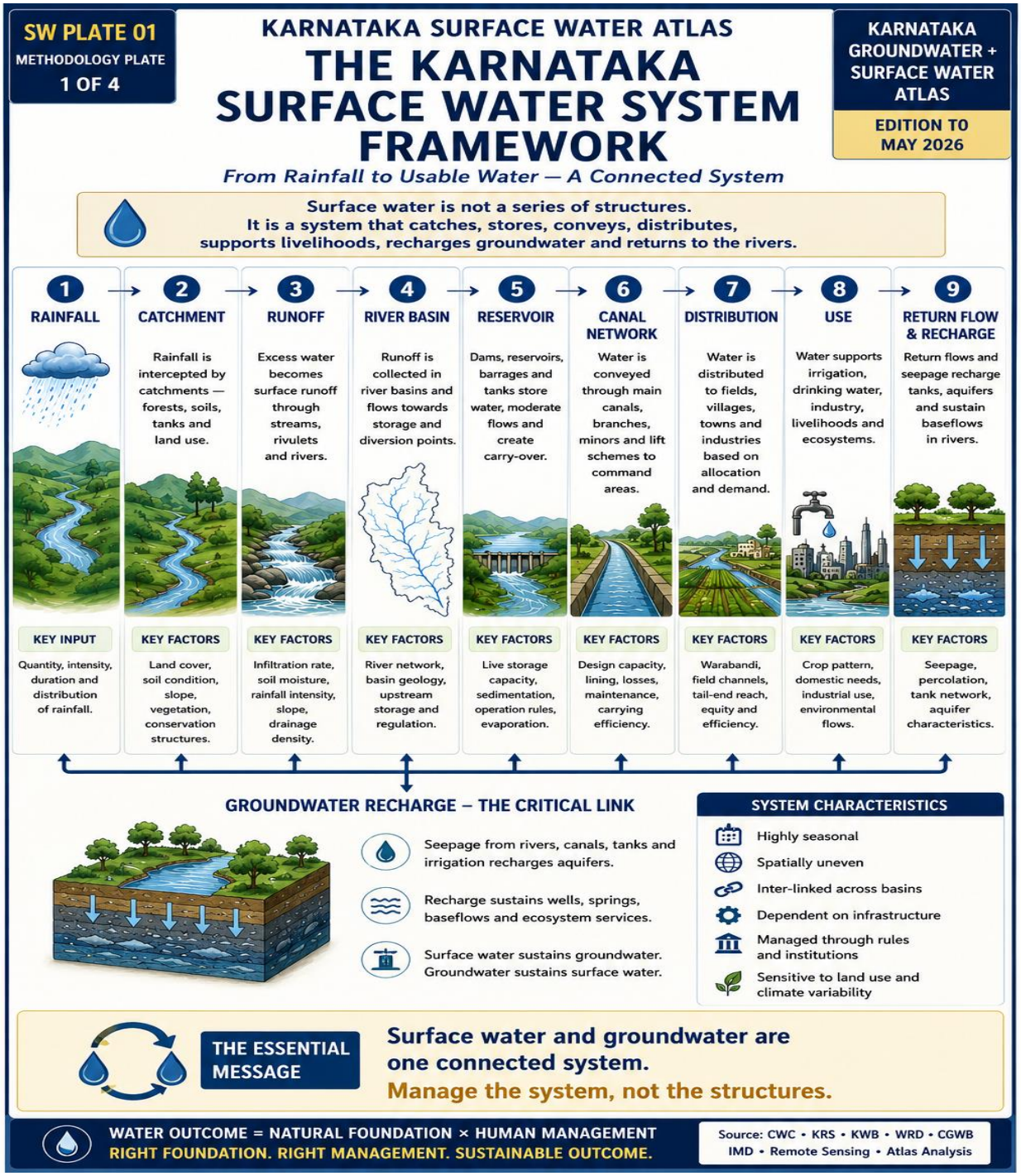
SW Plate 03 — Surface Water Response Framework

Investment follows the same evidence discipline in both atlases: evidence, diagnosis, priority, projects, implementation, monitoring, system improvement — a closed loop, not a one-time build. A project that skips the diagnosis step is exactly the failure mode this Atlas is built to catch.



SW Plate 04 — From Framework to Impact

Karnataka's built surface-water estate — dams, barrages, canals, lift schemes — is the physical layer every command-area recharge figure in this volume rests on. Where that estate is complete and maintained, the groundwater verdict trends toward Safe; where it is incomplete or silted, the command/non-command divergence documented throughout this volume widens.



From framework to governance

Surface water in Karnataka moves through a fixed chain of custody — river, storage, inter-state tribunal, state allocation, reservoir, canal, district, user — and a district's groundwater can be hydrologically sound and still governance-fragile if any link above it is contested. The failure pathway runs storage loss, canal losses, incomplete distribution, tail-end failure, groundwater

dependence, over-extraction — a sequence every stressed non-command district in this volume can be read against to identify which link broke first.

SW Plate 05 — Five Principles for Success

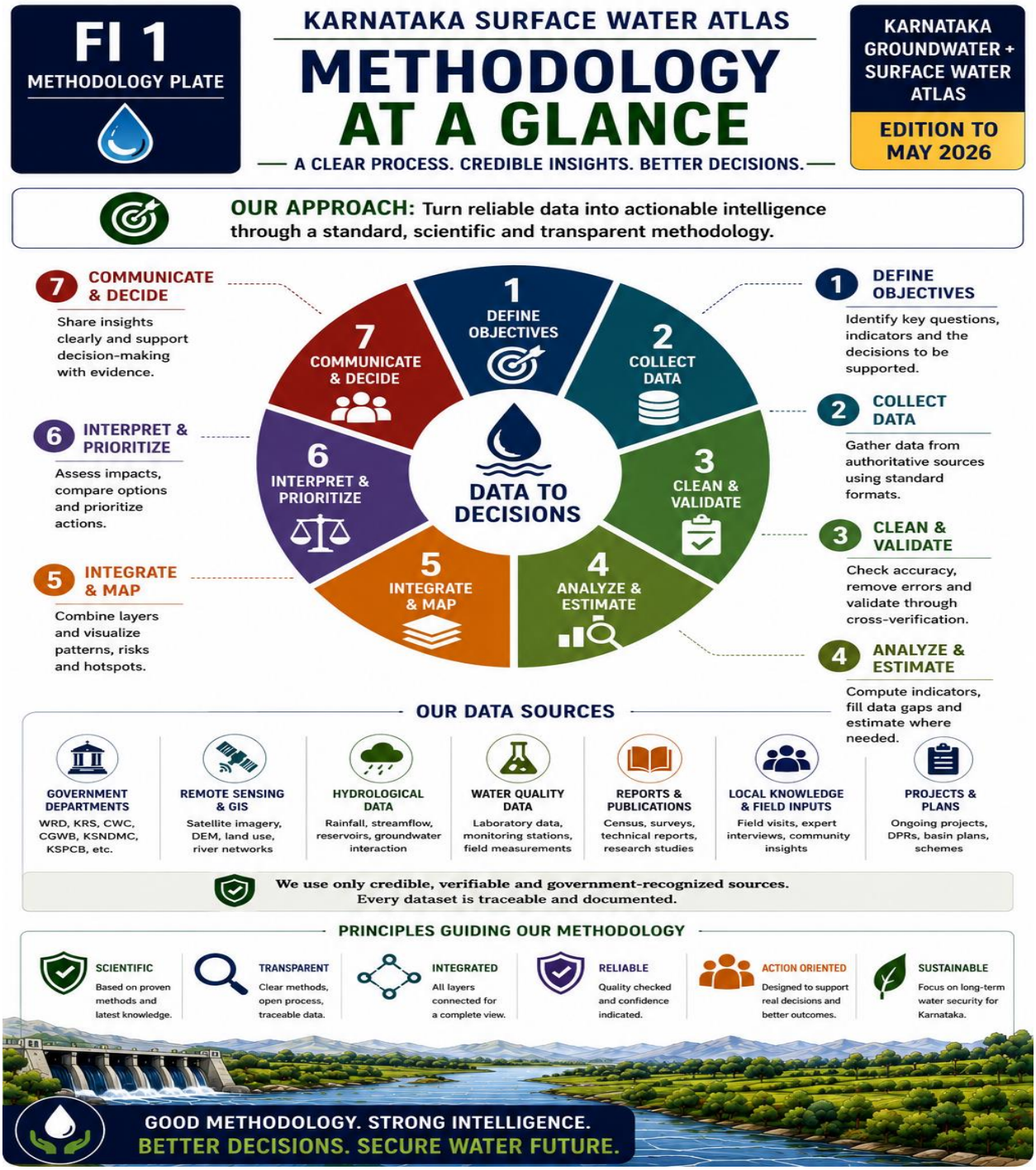


SW Plate 06 — Measuring Impact That Matters

Reading the five groundwater clusters against the surface-water interventions available to each — recharge, reliability, demand reduction, quality, resilience — is what turns the groundwater and surface-water atlases into one decision system rather than two separate reports read side by side.



SW Plate 07 — Our Tools for Better Decisions



SW Plate 08 — Surface Water Investment Intelligence

River and catchment restoration

River rejuvenation is read here as Hydrological Corridor Restoration — catchment restoration, headwater protection, tank cascade restoration, and pollution interception, among other

components — sitting inside this Atlas's recovery hierarchy, not beside it. Five named Karnataka programmes are active; one river shows what happens without follow-through.

Kumudvathi (C2, Bengaluru Rural, since 2013): recharge structures and eucalyptus removal across a 460 sq km watershed. 10–15 feet of well-level recovery reported in several villages. Strong emerging evidence.

Vedavathi (C4/C5, since 2013–15): basin-wide recharge programme benefiting an estimated 1.5 million people; irrigation pumps that had gone silent resumed operation. Carries a documented 2 TMC supply link into the Upper Bhadra Project. Strong emerging evidence.

Palar (C2, since 2015): government-mandated MGNREGA programme; one named village (Kaiwara) shows single-monsoon groundwater recovery, but basin-wide outcome data is thin.

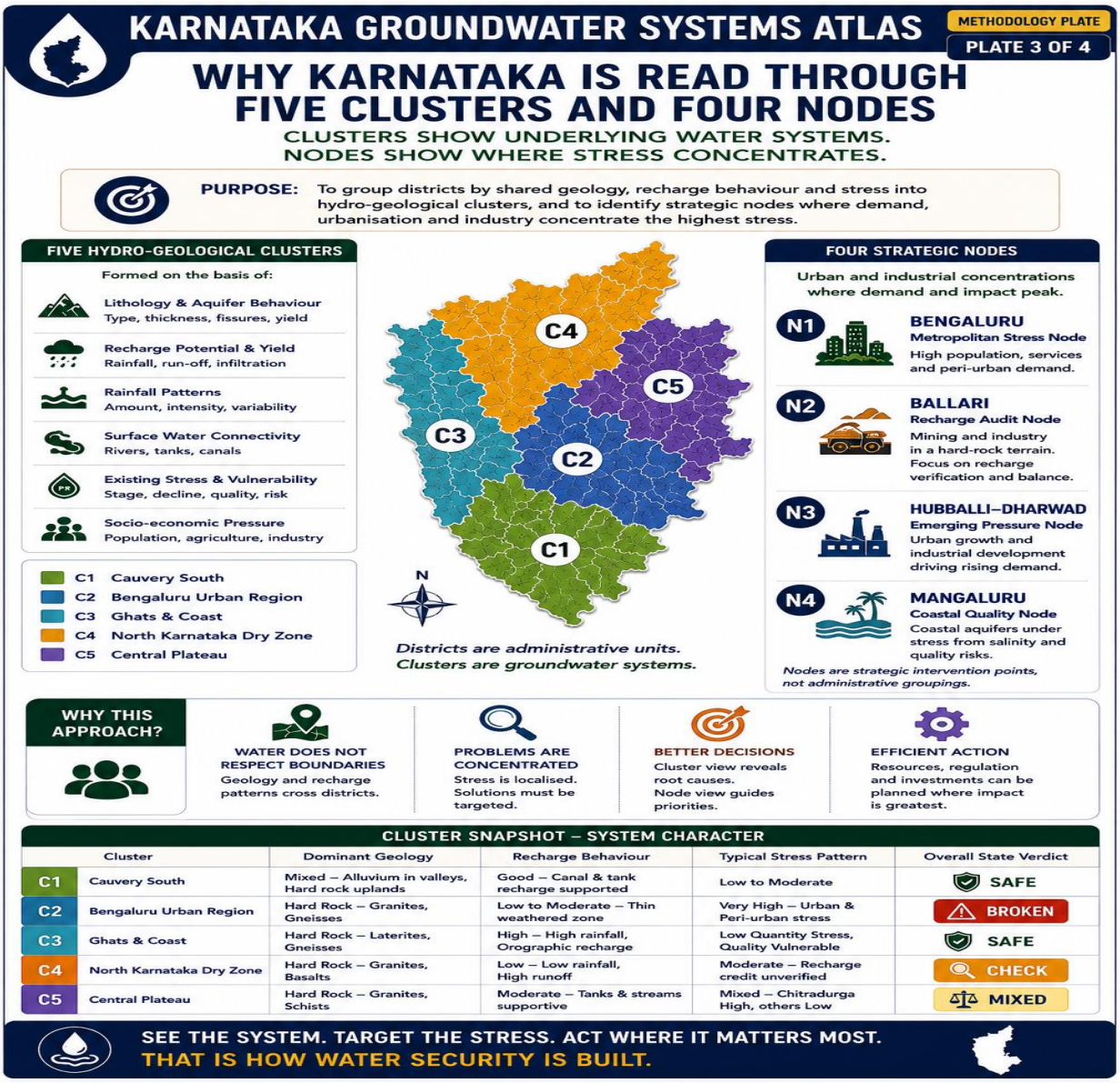
Vrishabhavathi (C2, since Nov 2024): a different intervention type — bioremediation and phytoremediation for pollution interception, under a university-and-state-institute research MoU. Impact not yet quantified.

Dakshina Pinakini (C2, since Sep 2025): the newest programme, and the only one with a named corporate co-funder (ITC Limited). Too early to assess.

Arkavathy — a documented stall: the same eucalyptus-driven collapse as Kumudvathi, but a 2005 rejuvenation committee that took no further action, and a 2019 state budget allocation with no implementation plan. The state's actual response was to redirect Netravathi river water 280 km into the reservoir Arkavathy once fed, rather than wait for its recovery.

Sixteen further river stretches carry a National Green Tribunal restoration mandate with no named project yet found. Full river-by-river detail, including impact assessments, sits in the companion document Karnataka River Rejuvenation.

3 The five clusters



Methodology Plate 3 of 4 — Why Karnataka Is Read Through Five Clusters and Four Nodes.

What follows is the diagnostic core of the volume. Each cluster is read on its own terms: the numbers first, then what they mean, then the intervention they imply. The clusters are ordered not alphabetically but by escalating stress — from the Cauvery south, where the system still works, through the Bengaluru core, where it has broken, and out to the dry north, where it is quietly fragile.

This diagnosis now reads alongside its companion, the Karnataka Surface Water → Groundwater Synthesis Atlas. Each cluster below closes with the

surface-water response its own diagnosis calls for -- not a generic recommendation, but the specific lever this cluster's own mechanism requires.

3.1 C1 · Cauvery Basin South

Districts: Mandya, Mysuru, Hassan, Kodagu, Chamarajanagar. This is the cluster where Karnataka's water system still functions roughly as designed. Four of its five districts are **SAFE**; only Chamarajanagar, on the drier Tamil Nadu edge, has tipped to **semi-critical at 96.1%**. The Cauvery and its command carry surface water across the alluvial pockets, and the Kabini–Hemavathi reservoirs give a buffer the rest of the state lacks.

District	Stage	Recharge (TMC)	Water level	Category	Other-src %
Mandya	63.8%	25.45	5.5 m	SAFE	69.9%
Mysuru	51.6%	24.32	7.7 m	SAFE	57.8%
Hassan	65.7%	30.05	7.2 m	SAFE	62.5%
Kodagu	35.4%	8.58	10.8 m	SAFE	21.7%
Chamarajanagar	96.1%	13.27	10.0 m	SEMI-CRIT	37.1%

The number to sit with here is not the stage — it is the **other-source recharge share**. Mandya (69.9%), Hassan (62.5%), and Mysuru (57.8%) all show more than half their recharge coming from "other sources" — canal seepage, tank percolation, return flow — rather than direct rainfall infiltration. In a Cauvery-command district this is expected and benign: the canals are doing exactly what canals do. ***But it means these districts' safety is a function of surface-water delivery, not of a healthy aquifer.*** Cut the canal, and the recharge base collapses. The safety is real but borrowed.

Chamarajanagar is the warning. At 96.1% and semi-critical, with two over-exploited taluks and only **751 mm** of rain, it sits below the Cauvery command and cannot lean on canal recharge the way Mandya can. It is the C1 district that most resembles the eastern-plateau stress zone, and it is the one to watch over the next assessment cycle.

C1 DIAGNOSIS

Broken link: None yet — but the aquifer's health is underwritten by surface-water recharge, not intrinsic storage.

Intervention type: PROTECT. Maintain canal-tank recharge; ring-fence Chamarajanagar before it crosses into over-exploitation.

THE SURFACE-WATER RESPONSE

Zone A · Decisive. In a cascade this complete -- KRS, Hemavathi, Kabini and Harangi, ~113 TMC combined gross capacity -- canal reliability is doing the safety work for three of five districts, not the aquifer's own strength. The open risk is not infrastructure failure but allocation: by May 2026 KRS had drawn down to ≃ 9 TMC usable, with Bengaluru's drinking-water lift, Mandya irrigation, and mandatory Tamil Nadu tribunal releases competing for the same shrinking pool this cluster's safety verdict rests on. The Surface Water volume's recommendation: protect that allocation as the first and cheapest action available anywhere in this pair, and commission the recharge-credit audit for Mandya, Hassan and Mysuru before their SAFE status is treated as earned rather than borrowed. The department's own official ayacut data (1,95,972 acres ≈ 79,307 ha) now anchors the command-area figure this cluster's investment case depends on, converging with CWC's independent 79,310 ha culturable-command figure to within 0.02%.

3.2 C2 · Bengaluru Urban Region

Districts: Bengaluru Urban, Bengaluru Rural, Ramanagara, Tumakuru, Kolar, Chikkaballapura. This is the broken cluster — the core of Karnataka's groundwater crisis and the reason the state appears on national over-exploitation maps. **Four of its six districts are over-exploited**; the other two are critical. There is not a single safe district in C2.

District	Stage	Recharge (TMC)	Water level	Category	Other-src %
Bengaluru Urban	186.7%	11.21	21.5 m	OE	58.5%
Bengaluru Rural	147.1%	6.18	30.1 m	OE	23.6%
Ramanagara	97.9%	16.95	11.9 m	CRITICAL	63.3%
Tumakuru	90.9%	29.94	10.2 m	CRITICAL	37.5%
Kolar	193.3%	14.56	21.1 m	OE	50.2%
Chikkaballapura	164.3%	11.99	17.8 m	OE	34.6%

Vintage: GWRA-2024, as printed in Edition To (May 2026). Bengaluru Urban 186.7% and Kolar 193.3% (193.35% in the diagnosis above) are this 2024 reading. They are not the 2025 figures (Bengaluru Urban 268.46%, Kolar 184.43%), which are kept in the October revision and do not replace these. Kolar draws **193.35% of its annual recharge** — for every hundred litres the aquifer receives, nearly two hundred are pumped out. Bengaluru Urban follows at 186.7%, Chikkaballapura at 164.33%, Bengaluru Rural at 147.05%. These are not stressed aquifers; they are aquifers being mined. The static water level tells the same story from the other side: Bengaluru Rural's water table now sits at **30 metres** depth, Bengaluru Urban at 21.5 m, Kolar at 21 m — against a state where most districts still find water within 10 m.

Why here? Three forces converge. First, **hard rock**: the Bengaluru plateau is granite-gneiss with almost no natural storage, so recharge is inherently thin (Bengaluru Rural's total recharge is just 6.18 TMC, the lowest in the state). Second, **borewell agriculture**: Kolar, Chikkaballapura, and Tumakuru draw their irrigation overwhelmingly from wells rather than canals, and every failed borewell is followed by a deeper one. Third, **the city**: Bengaluru's peri-urban ring pumps groundwater for construction and domestic supply that the piped network cannot meet. The IISc groundwater outlook flags 80 critical wards inside the metropolitan area alone.

The trend is not uniformly downward, and honesty requires saying so. Between 2022 and 2024, 150 taluks across the state recorded ~10 m water-level improvement after good monsoons and conservation works, and six over-exploited taluks were regraded to safer categories. But in C2 the recovery is fragile: a single weak monsoon reverses it, because the structural draw — city plus borewell agriculture on thin hard-rock recharge — never lets up. *This is the disconnection thesis in its clearest form: the rain is not the problem; the system's inability to hold what it catches is.*

C2 DIAGNOSIS

Broken link: Extraction decoupled from recharge. Demand (city + borewell agriculture) structurally exceeds what hard-rock recharge can supply.

Intervention type: RESTRUCTURE. Surface-water import — Cauvery Stage V (₹4,336 cr, JICA, 775 MLD, commissioned Oct 2024) and Stage VI (≈₹7,000 cr, 500 MLD, targeted 2028) — plus treated-wastewater recharge (KC Valley Phase 1+2, ₹1,788 cr combined, 470 MLD; HN Valley, 210 MLD, capital cost not independently sourced — GAP), borewell moratoria in OE taluks enforced as notified-area permit refusal under Sections 10–11 of the Karnataka Ground Water Act, 2011, and a hard shift of peri-urban agriculture off groundwater.

THE SURFACE-WATER RESPONSE

Zone B · Necessary, not yet present. Unlike C1, where surface delivery already displaces pumping, this cluster's surface delivery does not yet displace the pumping it was built to displace -- because the delivery itself is not yet complete. Cauvery CWSS (KAR-007) delivers an estimated 1,450-1,520 MLD against demand of 2,100-2,632 MLD, a documented 35-40% supply gap groundwater fills. Two named rescue projects remain incomplete: Yettinahole (68% of Rs 25,151 crore spent, not yet delivering) and Mekedatu (DPR filed February 2026, pre-construction). The Surface Water volume's recommendation: complete both, and scale the wastewater-to-lake recharge programme already documented as working at smaller scale in this cluster. Construction completion alone will not return this cluster to SAFE -- it requires paired demand management, stated plainly rather than oversold.

3.3 C3 · Western Ghats & Coastal

Districts: Dakshina Kannada, Udupi, Uttara Kannada, Shivamogga, Chikkamagaluru. Every district in C3 is **SAFE**. This is the wettest cluster — Udupi (**4119 mm**), Dakshina Kannada (**3975 mm**), Uttara Kannada (**2835 mm**) — and the least groundwater-stressed. But "safe on stage" is not the same as "no problem," and C3 is the cluster where the Atlas's quantity-versus-quality distinction earns its keep.

District	Stage	Recharge (TMC)	Water level	Category	Other-src %
Dakshina Kannada	44.3%	26.45	11.9 m	SAFE	13.9%
Udupi	34.4%	18.32	6.2 m	SAFE	15.1%
Uttara Kannada	32.2%	32.33	5.7 m	SAFE	11.0%
Shivamogga	41.1%	38.98	7.2 m	SAFE	41.2%
Chikkamagaluru	55.6%	23.87	8.4 m	SAFE	55.5%

The coastal districts' real risk is not depletion but **salinity and iron**. Dakshina Kannada and Udupi sit on coastal laterite aquifers where over-pumping near the shore pulls in

seawater, and where dissolved iron already exceeds drinking limits in many sources. Their low stage (34–44%) is a genuine buffer, but it is a buffer that shrinks fast if coastal urbanisation and tourism accelerate withdrawals near the sea. *The intervention here is preventive, not remedial.*

Inland, Shivamogga (38.98 TMC recharge — the highest in the state) and Chikkamagaluru are Ghats-fed and comfortable, though Chikkamagaluru's single over-exploited taluk and 55.5% other-source share hint at localised coffee-belt borewell pressure. C3 is the cluster the rest of the state should be learning from: high rainfall, intact catchment, storage that works.

C3 DIAGNOSIS

Broken link: None on quantity. Emerging risk is coastal-aquifer quality (salinity, iron), not depletion.

Intervention type: PRESERVE + monitor. Coastal-zone withdrawal caps; quality surveillance for iron and salinity; protect Ghats catchment integrity.

THE SURFACE-WATER RESPONSE

Zone S · Stranded Abundance -- a category this Atlas's own A-D grading has no name for, because this cluster's problem is not a delivery gap or an unverified number. Roughly 360 TMC of captured reservoir capacity sits across three major dams in this cluster -- Sharavathi (genuinely surplus), Kali/Supa (already over-committed on ecological grounds), and Bhadra's Chikkamagaluru portion -- built for hydropower, not water security, and barely reaching local agriculture despite this cluster carrying the least-borrowed groundwater safety in the state outside Kodagu. The Surface Water volume's recommendation: reallocation, not construction. The Sharavathi Pumped Storage project's stated secondary aim -- Bengaluru drinking water -- is the first documented bridge in this Atlas between a stranded-abundance cluster and a crisis cluster, currently under construction.

3.4 C4 · North Karnataka Dry Zone

Districts: Vijayapura, Bagalkot, Belagavi, Dharwad, Gadag, Haveri, Raichur, Ballari, Koppal, Davanagere. The largest cluster, and the most deceptive. On stage, C4 looks healthy — most districts SAFE, a handful semi-critical, none over-exploited. **But C4 is the Sinha-flag heartland**, and its apparent safety needs scrutiny.

District	Stage	Recharge (TMC)	Water level	Category	Other-src %
Vijayapura	43.2%	35.45	10.4 m	SAFE	35.9%
Bagalkot	84.4%	23.08	10.7 m	SEMI-CRIT	66.3%
Belagavi	71.9%	42.43	9.4 m	SEMI-CRIT	49.4%
Dharwad	55.3%	11.44	6.9 m	SAFE	42.5%
Gadag	81.3%	11.73	8.9 m	SEMI-CRIT	49.1%
Haveri	70.7%	20.22	7.8 m	SAFE	58.6%
Raichur	47.4%	27.98	4.5 m	SAFE	60.6%
Ballari	26.6%	24.32	4.3 m	SAFE	76.7%
Koppal	63.5%	23.02	8.3 m	SAFE	70.8%
Davanagere	90.7%	21.74	5.4 m	SEMI-CRIT	70.6%

Look at the other-source column. **Ballari 76.7%, Koppal 70.8%, Davanagere 70.6%, Bagalkot 66.3%, Raichur 60.6%, Haveri 58.6%** — six of the ten districts derive well over half their recharge from "other sources" rather than rainfall. In a low-rainfall zone (Bagalkot **562 mm**, Koppal **572 mm**) that is a red flag worth naming precisely.

THE SINHA CONSISTENCY RULE

The rule, plainly: when a district shows rainfall recharge declining, extraction flat or rising, yet groundwater condition improving, the improvement is physically suspect — it usually holds only because "other-source" recharge has been credited generously.

Why it matters in C4: a SAFE stage that rests on 70%+ other-source recharge is a SAFE that depends on tanks, canals, and return flow continuing to perform. If that credit is optimistic — or if the surface delivery falters — the true stage is higher than the assessment shows.

The honest position: the Atlas flags these 16 districts for scrutiny. It does not substitute a number. The GWRA figure stands; the confidence attached to it is lowered.

Ballari is the sharpest case: a 26.6% stage — the lowest in the cluster, nominally very safe — resting on the highest other-source share in the state (76.7%). Either Ballari's aquifer is genuinely comfortable because the Tungabhadra command recharges it heavily (plausible), or the recharge credit is doing more work than the water table can justify. *The Atlas's job is to make that question visible, not to pretend it is settled.* Raichur and Yadgir sharpen it further: despite good recent monsoons, their decadal water-level recovery lags

the state (Raichur's rise, Yadgir net-declining), the signature of structural hard-rock depletion that a wet year cannot fix.

C4 DIAGNOSIS

Broken link: Measurement confidence. Stage looks safe but rests heavily on other-source recharge in a low-rainfall zone — the safety may be overstated.

Intervention type: VERIFY + buffer. Independent recharge audit for the 6 high-flag districts; protect the tank-and-canal recharge base the safety depends on; hard-rock recovery monitoring in Raichur–Yadgir.

THE SURFACE-WATER RESPONSE

Zone A · Working, unverified. The mechanism evidently works at scale here -- or six of ten districts would not show the recharge credit they do -- but every major reservoir behind that credit carries a documented degradation pattern: Tungabhadra silted from ~132 to ~100-105 TMC design capacity, Ghataprabha's GRBC delivering 2,000 of 2,100 design cusecs (8,750 ha documented 'suffering command'), Malaprabha running ~40% below its 1972-73 design capacity. Ballari carries the single sharpest instance in the state: a 26.6% extraction stage that looks like the safest number in the cluster, with 76.7% of that safety credited to Tungabhadra canal seepage -- the highest such share anywhere in Karnataka, and never independently audited. The Surface Water volume's recommendation: fund the Ballari recharge audit first. It is this Atlas's single highest-value, lowest-cost next action, because it is a study, not a structure, and it determines whether the state's largest irrigation command (1,474,632 ha gross) is as safe as its headline numbers suggest.

3.5 C5 · Central Plateau

Districts: Chitradurga, Bidar, Kalaburagi, Yadgir, Vijayanagara. The central maidan — low rainfall, hard rock, and one glaring outlier. Four districts are SAFE; **Chitradurga alone is over-exploited at 144.44%**, the only OE district in Karnataka outside the Bengaluru arc.

District	Stage	Recharge (TMC)	Water level	Category	Other-src %
Chitradurga	144.4%	14.07	8.2 m	OE	32.1%
Bidar	60.4%	13.24	10.2 m	SAFE	17.2%
Kalaburagi	43.5%	25.39	6.6 m	SAFE	19.7%
Yadgir	37.5%	21.09	4.3 m	SAFE	60.4%
Vijayanagara	—%	14.15	12.0 m	SEMI-CRIT	44.2%

Chitradurga is C2's logic transplanted west: low rainfall (**573 mm**), hard rock, thin recharge (14.07 TMC), and heavy borewell dependence with five named over-exploited taluks. It is the eastern-plateau stress pattern appearing in the central plateau, and it should be read as a leading indicator — where Chitradurga is now, its neighbours may follow if borewell agriculture spreads.

Vijayanagara is a genuine data gap and is flagged as one: carved from Ballari in 2021, its district stage is not separately reported in GWRA-2024 (the assessment folds it into Ballari), so this Atlas carries its recharge and water-level figures but marks its stage GAP rather than borrow Ballari's. Bidar, Kalaburagi, and Yadgir are Krishna-basin and comfortable on stage, though Yadgir's 60.4% other-source share places it, too, on the Sinha watchlist.

C5 DIAGNOSIS

Broken link: Localised, in Chitradurga — the same extraction-recharge decoupling as C2, isolated so far.

THE SURFACE-WATER RESPONSE

Zone A · Named rescue in progress. Chitradurga is this cluster's C2-in-miniature: a named, funded, singular project -- Upper Bhadra, National Project status since February 2022, Rs 21,473.67 crore, 47.3 TMC combined lift capacity -- exists specifically to rescue this one district, and its continued 144.4% over-exploitation is itself the evidence the project has not yet delivered at the pace the crisis requires. Unlike C2, the rescue here is contained to a single district and already funded past the DPR stage, via the 210 km Chitradurga Branch Canal. The Surface Water volume's recommendation: track construction pace against the district's continued decline. Upper Bhadra's explicit objective of filling 367 tanks to 50% capacity is this Atlas's clearest example of a project designed for recharge, not incidentally producing it.

Intervention type: CONTAIN. Treat Chitradurga as an OE district on Bengaluru lines; monitor central-plateau neighbours for spread; resolve the Vijayanagara assessment gap.

9 The full state table

Every district, every core groundwater metric, on one spread. This is the numeric spine of the Atlas — the table from which every cluster verdict in §3 is drawn. Districts are grouped by cluster; categories are colour-coded by impact (red = over-exploited, amber = critical/semi-critical, green = safe).

District	Clu	Stage	Rech	WL	Cat	Oth%	Rain
Mandya	C1	63.8%	25.4	5.5m	SAFE	69.9%	806
Mysuru	C1	51.6%	24.3	7.7m	SAFE	57.8%	798
Hassan	C1	65.7%	30.1	7.2m	SAFE	62.5%	1031
Kodagu	C1	35.4%	8.6	10.8m	SAFE	21.7%	2718
Chamarajanagar	C1	96.1%	13.3	10.0m	S-CRIT	37.1%	751
Bengaluru Urban	C2	186.7%	11.2	21.5m	OE	58.5%	885
Bengaluru Rural	C2	147.1%	6.2	30.1m	OE	23.6%	978
Ramanagara	C2	97.9%	16.9	11.9m	CRIT	63.3%	—
Tumakuru	C2	90.9%	29.9	10.2m	CRIT	37.5%	688
Kolar	C2	193.3%	14.6	21.1m	OE	50.2%	744
Chikkaballapura	C2	164.3%	12.0	17.8m	OE	34.6%	—
Dakshina Kannada	C3	44.3%	26.5	11.9m	SAFE	13.9%	3975
Udupi	C3	34.4%	18.3	6.2m	SAFE	15.1%	4119
Uttara Kannada	C3	32.2%	32.3	5.7m	SAFE	11.0%	2835
Shivamogga	C3	41.1%	39.0	7.2m	SAFE	41.2%	1813
Chikkamagaluru	C3	55.6%	23.9	8.4m	SAFE	55.5%	1925
Vijayapura	C4	43.2%	35.4	10.4m	SAFE	35.9%	578
Bagalkot	C4	84.4%	23.1	10.7m	S-CRIT	66.3%	562
Belagavi	C4	71.9%	42.4	9.4m	S-CRIT	49.4%	808
Dharwad	C4	55.3%	11.4	6.9m	SAFE	42.5%	772
Gadag	C4	81.3%	11.7	8.9m	S-CRIT	49.1%	612
Haveri	C4	70.7%	20.2	7.8m	SAFE	58.6%	753
Raichur	C4	47.4%	28.0	4.5m	SAFE	60.6%	621
Ballari	C4	26.6%	24.3	4.3m	SAFE	76.7%	636
Koppal	C4	63.5%	23.0	8.3m	SAFE	70.8%	572
Davanagere	C4	90.7%	21.7	5.4m	S-CRIT	70.6%	700
Chitradurga	C5	144.4%	14.1	8.2m	OE	32.1%	573
Bidar	C5	60.4%	13.2	10.2m	SAFE	17.2%	847
Kalaburagi	C5	43.5%	25.4	6.6m	SAFE	19.7%	777
Yadgir	C5	37.5%	21.1	4.3m	SAFE	60.4%	—

District	Clu	Stage	Rech	WL	Cat	Oth%	Rain
Vijayanagara	C5	—%	14.1	12.0m	S-CRIT	44.2%	—

The table rewards slow reading. Note how stage and rainfall do not move together — the over-exploited districts are not the driest. Note how the amber "other-source %" clusters in the north (C4) and the Cauvery command (C1), for opposite reasons: canal recharge in one, questionable recharge credit in the other. And note that the deepest water tables — Bengaluru Rural at 30 m, Bengaluru Urban and Kolar above 20 m — sit exactly where extraction is heaviest. The table is the disconnection thesis in numbers.

10 How the stressed districts got here

A stage number is a snapshot. To read it as intelligence you need the trajectory — where the district was ten years ago, five years ago, and where it is now. This section carries the temporal matrix for the over-exploited and critical districts, drawn from successive CGWB assessments. *Per the Atlas standard, no value is interpolated: where an assessment did not publish a figure, the cell reads "—". Recent Δ compares T-5 to T0.*

10.1 C1 — Cauvery Basin South trajectories

Mandya · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	56.7%	62.2%	63.8%	→ stable
Static water level	9.6 m	10.2 m	5.5 m	↓ 5
Annual recharge (TMC)	—	25.1	25.4	→ stable
Rainfall (mm)	—	—	806.0	—

Stage worsened from 56.7% (T-10) to 63.8% (T0). Water level risen (recovered) from 10.2 m to 5.5 m.

Mysuru · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	46.5%	60.1%	51.6%	↓ 9
Static water level	11.3 m	10.6 m	7.7 m	↓ 3
Annual recharge (TMC)	—	21.2	24.3	↑ 3
Rainfall (mm)	—	—	798.0	—

Stage worsened from 46.5% (T-10) to 51.6% (T0). Water level risen (recovered) from 10.6 m to 7.7 m.

Hassan · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	61.7%	69.7%	65.7%	↓ 4

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Static water level	13.0 m	15.7 m	7.2 m	↓ 8
Annual recharge (TMC)	—	28.7	30.1	→ stable
Rainfall (mm)	—	—	1031.0	—

Stage worsened from 61.7% (T-10) to 65.7% (T0). Water level risen (recovered) from 15.7 m to 7.2 m.

Kodagu · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	30.8%	36.1%	35.4%	→ stable
Static water level	10.0 m	10.4 m	10.8 m	→ stable
Annual recharge (TMC)	—	10.7	8.6	↓ 2
Rainfall (mm)	—	—	2718.0	—

Stage worsened from 30.8% (T-10) to 35.4% (T0). Water level deepened from 10.4 m to 10.8 m.

Chamarajanagar · SEMI-CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	101.6%	105.0%	96.1%	↓ 9
Static water level	19.4 m	16.3 m	10.0 m	↓ 6
Annual recharge (TMC)	—	13.3	13.3	→ stable
Rainfall (mm)	—	—	751.0	—

Stage eased from 101.6% (T-10) to 96.1% (T0). Water level risen (recovered) from 16.3 m to 10.0 m.

10.2 C2 — Bengaluru Urban Region trajectories

Bengaluru Urban · OVER-EXPLOITED

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	138.7%	150.4%	186.7%	↑ 36
Static water level	33.5 m	28.4 m	21.5 m	↓ 7
Annual recharge (TMC)	—	—	2.6	—

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Rainfall (mm)	—	—	885.0	—

Stage worsened from 138.7% (T-10) to 186.7% (T0). Water level risen (recovered) from 28.4 m to 21.5 m.

Bengaluru Rural · OVER-EXPLOITED

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	137.4%	147.5%	147.1%	→ stable
Static water level	39.1 m	41.9 m	30.1 m	↓ 12
Annual recharge (TMC)	—	7.6	6.2	↓ 1
Rainfall (mm)	—	—	978.0	—

Stage worsened from 137.4% (T-10) to 147.1% (T0). Water level risen (recovered) from 41.9 m to 30.1 m.

Ramanagara · CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	90.4%	96.1%	97.9%	→ stable
Static water level	36.5 m	21.3 m	11.9 m	↓ 9
Annual recharge (TMC)	—	15.7	16.9	↑ 1
Rainfall (mm)	—	961.0	878.0	↓ 83

Stage worsened from 90.4% (T-10) to 97.9% (T0). Water level risen (recovered) from 21.3 m to 11.9 m.

Tumakuru · CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	90.5%	94.6%	90.9%	→ stable
Static water level	26.7 m	32.8 m	10.2 m	↓ 23
Annual recharge (TMC)	—	28.3	29.9	↑ 2
Rainfall (mm)	—	—	688.0	—

Stage worsened from 90.5% (T-10) to 90.9% (T0). Water level risen (recovered) from 32.8 m to 10.2 m.

Kolar · OVER-EXPLOITED

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	200.0%	181.8%	193.3%	↑ 12
Static water level	47.9 m	76.9 m	21.1 m	↓ 56
Annual recharge (TMC)	—	15.2	14.6	→ stable
Rainfall (mm)	—	—	744.0	—

Stage eased from 200.0% (T-10) to 193.3% (T0). Water level risen (recovered) from 76.9 m to 21.1 m.

Chikkaballapura · OVER-EXPLOITED

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	145.4%	146.4%	164.3%	↑ 18
Static water level	35.8 m	55.1 m	17.8 m	↓ 37
Annual recharge (TMC)	—	12.8	12.0	↓ 1
Rainfall (mm)	—	962.0	755.0	↓ 207

Stage worsened from 145.4% (T-10) to 164.3% (T0). Water level risen (recovered) from 55.1 m to 17.8 m.

10.3 C3 — Western Ghats & Coastal trajectories

Dakshina Kannada · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	37.5%	44.1%	44.3%	→ stable
Static water level	9.4 m	11.9 m	11.9 m	→ stable
Annual recharge (TMC)	—	24.8	26.5	↑ 2
Rainfall (mm)	—	—	3975.0	—

Stage worsened from 37.5% (T-10) to 44.3% (T0). Water level deepened from 11.9 m to 11.9 m.

Udupi · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	23.8%	35.0%	34.4%	→ stable
Static water level	6.6 m	6.8 m	6.2 m	↓ 1
Annual recharge (TMC)	—	17.6	18.3	→ stable
Rainfall (mm)	—	—	4119.0	—

Stage worsened from 23.8% (T-10) to 34.4% (T0). Water level risen (recovered) from 6.8 m to 6.2 m.

Uttara Kannada · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	24.4%	32.7%	32.2%	→ stable
Static water level	6.4 m	6.4 m	5.7 m	↓ 1
Annual recharge (TMC)	—	31.9	32.3	→ stable
Rainfall (mm)	—	—	2835.0	—

Stage worsened from 24.4% (T-10) to 32.2% (T0). Water level risen (recovered) from 6.4 m to 5.7 m.

Shivamogga · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	33.3%	42.9%	41.1%	→ stable
Static water level	6.8 m	9.1 m	7.2 m	↓ 2
Annual recharge (TMC)	—	35.3	39.0	↑ 4
Rainfall (mm)	—	—	1813.0	—

Stage worsened from 33.3% (T-10) to 41.1% (T0). Water level risen (recovered) from 9.1 m to 7.2 m.

Chikkamagaluru · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	47.1%	63.0%	55.6%	↓ 7
Static water level	9.7 m	14.8 m	8.4 m	↓ 6
Annual recharge (TMC)	—	20.6	23.9	↑ 3

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Rainfall (mm)	—	—	1925.0	—

Stage worsened from 47.1% (T-10) to 55.6% (T0). Water level risen (recovered) from 14.8 m to 8.4 m.

10.4 C4 — North Karnataka Dry Zone trajectories

Vijayapura · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	65.5%	62.9%	43.2%	↓ 20
Static water level	12.6 m	20.5 m	10.4 m	↓ 10
Annual recharge (TMC)	—	23.7	35.4	↑ 12
Rainfall (mm)	—	—	DEFICIT	—

Stage eased from 65.5% (T-10) to 43.2% (T0). Water level risen (recovered) from 20.5 m to 10.4 m.

Bagalkot · SEMI-CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	92.6%	83.9%	84.4%	→ stable
Static water level	9.6 m	17.1 m	10.7 m	↓ 6
Annual recharge (TMC)	—	24.5	23.1	↓ 1
Rainfall (mm)	—	—	562.0	—

Stage eased from 92.6% (T-10) to 84.4% (T0). Water level risen (recovered) from 17.1 m to 10.7 m.

Belagavi · SEMI-CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	74.3%	63.5%	71.9%	↑ 8
Static water level	10.4 m	12.1 m	9.4 m	↓ 3
Annual recharge (TMC)	—	46.6	42.4	↓ 4
Rainfall (mm)	—	—	808.0	—

Stage eased from 74.3% (T-10) to 71.9% (T0). Water level risen (recovered) from 12.1 m to 9.4 m.

Dharwad · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	54.4%	60.3%	55.3%	↓ 5
Static water level	12.7 m	14.8 m	6.9 m	↓ 8
Annual recharge (TMC)	—	11.4	11.4	→ stable
Rainfall (mm)	—	—	772.0	—

Stage worsened from 54.4% (T-10) to 55.3% (T0). Water level risen (recovered) from 14.8 m to 6.9 m.

Gadag · SEMI-CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	86.9%	87.3%	81.3%	↓ 6
Static water level	15.3 m	14.7 m	8.9 m	↓ 6
Annual recharge (TMC)	—	10.7	11.7	↑ 1
Rainfall (mm)	—	—	612.0	—

Stage eased from 86.9% (T-10) to 81.3% (T0). Water level risen (recovered) from 14.7 m to 8.9 m.

Haveri · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	54.5%	69.3%	70.7%	→ stable
Static water level	14.1 m	17.6 m	7.8 m	↓ 10
Annual recharge (TMC)	—	19.0	20.2	↑ 1
Rainfall (mm)	—	—	753.0	—

Stage worsened from 54.5% (T-10) to 70.7% (T0). Water level risen (recovered) from 17.6 m to 7.8 m.

Raichur · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	48.1%	46.5%	47.4%	→ stable
Static water level	6.5 m	8.5 m	4.5 m	↓ 4
Annual recharge (TMC)	—	25.9	28.0	↑ 2
Rainfall (mm)	—	—	621.0	—

Stage eased from 48.1% (T-10) to 47.4% (T0). Water level risen (recovered) from 8.5 m to 4.5 m.

Ballari · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	60.1%	32.9%	26.6%	↓ 6
Static water level	7.9 m	5.4 m	4.3 m	↓ 1
Annual recharge (TMC)	—	19.2	24.3	↑ 5
Rainfall (mm)	—	—	DEFICIT	—

Stage eased from 60.1% (T-10) to 26.6% (T0). Water level risen (recovered) from 5.4 m to 4.3 m.

Koppal · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	57.2%	54.0%	63.5%	↑ 9
Static water level	11.2 m	11.3 m	8.3 m	↓ 3
Annual recharge (TMC)	—	25.5	23.0	↓ 2
Rainfall (mm)	—	—	572.0	—

Stage worsened from 57.2% (T-10) to 63.5% (T0). Water level risen (recovered) from 11.3 m to 8.3 m.

Davanagere · SEMI-CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	81.8%	96.8%	90.7%	↓ 6
Static water level	11.3 m	11.6 m	5.4 m	↓ 6
Annual recharge (TMC)	—	20.2	21.7	↑ 2

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Rainfall (mm)	—	—	700.0	—

Stage worsened from 81.8% (T-10) to 90.7% (T0). Water level risen (recovered) from 11.6 m to 5.4 m.

10.5 C5 — Central Plateau trajectories

Chitradurga · OVER-EXPLOITED

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	108.4%	140.6%	144.4%	→ stable
Static water level	17.6 m	28.5 m	8.2 m	↓ 20
Annual recharge (TMC)	—	15.2	14.1	↓ 1
Rainfall (mm)	—	—	573.0	—

Stage worsened from 108.4% (T-10) to 144.4% (T0). Water level risen (recovered) from 28.5 m to 8.2 m.

Bidar · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	50.6%	60.3%	60.4%	→ stable
Static water level	13.6 m	14.9 m	10.2 m	↓ 5
Annual recharge (TMC)	—	12.9	13.2	→ stable
Rainfall (mm)	—	—	DEFICIT	—

Stage worsened from 50.6% (T-10) to 60.4% (T0). Water level risen (recovered) from 14.9 m to 10.2 m.

Kalaburagi · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	44.5%	41.6%	43.5%	→ stable
Static water level	8.1 m	8.4 m	6.6 m	↓ 2
Annual recharge (TMC)	—	24.7	25.4	→ stable
Rainfall (mm)	—	—	777.0	—

Stage eased from 44.5% (T-10) to 43.5% (T0). Water level risen (recovered) from 8.4 m to 6.6 m.

Yadgir · SAFE

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Stage of extraction	36.5%	43.0%	37.5%	↓ 5
Static water level	4.8 m	7.2 m	4.3 m	↓ 3
Annual recharge (TMC)	—	16.9	21.1	↑ 4
Rainfall (mm)	—	925.0	736.0	↓ 189

Stage worsened from 36.5% (T-10) to 37.5% (T0). Water level risen (recovered) from 7.2 m to 4.3 m.

Vijayanagara · SEMI-CRITICAL

Metric	T-10 (2014-16)	T-5 (2019-21)	T0 (2024-26)	Recent Δ
Static water level	15.2 m	17.3 m	12.0 m	↓ 5
Annual recharge (TMC)	—	13.3	14.1	↑ 1
Rainfall (mm)	—	—	764.0	—

Water level risen (recovered) from 17.3 m to 12.0 m.

READING THE TRAJECTORIES

The common signature: stages that were already high a decade ago and have stayed high or climbed. These are not new emergencies — they are chronic conditions that predate the current assessment.

The recovery caveat: where water levels show recent recovery (a ↓ in depth), it reflects the good 2022-24 monsoons and conservation works — real, but reversible. A high stage on a recovering water level is a district living on borrowed rain.

11 Node deep-dives

The four nodes carry more detail than a cluster summary allows, because they are where intervention money and political attention concentrate. Each is read for its specific mechanism of stress and its specific lever.

11.1 N1 · Bengaluru — the mining of a metropolis

Bengaluru Urban's **186.7% stage** is the second-highest district figure in Karnataka, and it sits under India's fifth-largest urban agglomeration. The mechanism is threefold: a piped network that cannot meet demand, a peri-urban construction boom that runs on tanker-supplied borewell water, and an agricultural fringe still drawing from wells. The static water level has moved from 33.5 m (T-10) to 21.5 m (T0) — a recovery on paper, but one driven by the good recent monsoon, not by any easing of demand. **The IISc groundwater outlook flags 80 wards as critical.**

The lever is unusually clear here, and it is already partly pulled: **surface-water import** (Cauvery Stage V) and **treated-wastewater recharge**. Bengaluru generates more treated sewage than most Indian cities and has begun using it to recharge peri-urban lakes — a direct reconnection of the system. Every litre imported or recharged here relieves not just the city but the four over-exploited districts of C2 that share its aquifer stress.

What this costs, and who can already stop it. Cauvery Stage V (₹4,336 cr, JICA loan, commissioned Oct 2024) and Stage VI (≈₹7,000 cr, approved, targeted 2028) are the sanctioned supply-side spend. KC Valley Phase 1+2 (₹1,788 cr combined) is built and operating, with an IISc study recording a 58–73% rise in groundwater levels across the served tanks. HN Valley's capital cost is not independently sourced in this edition — marked GAP rather than estimated. On the demand side, the Karnataka Ground Water Authority already holds the power it needs: Section 10 of the Karnataka Ground Water Act, 2011 lets it declare a notified area, and Section 11 lets it refuse new-borewell permits inside one. All six C2 taluk clusters qualify today. The constraint on the Bengaluru fix is not money or law — both already exist at the required scale — it is enforcement of

registration and permit refusal against the bulk of the district's borewells that remain unregistered — a 2017 Authority estimate put registered borewells at under one in four of those drilled within BBMP limits, and this Atlas has not independently sourced a more current count.

11.2 N2 · Ballari — the safest number worth doubting

Ballari's **26.6% stage** is one of the lowest in the state — and its **76.7% other-source recharge share** is the highest. Both cannot be casually true. Either the Tungabhadra command genuinely recharges the Ballari aquifer so heavily that extraction barely dents it (plausible, and the benign reading), or the recharge accounting credits surface influence more generously than the water table justifies. This is the Sinha Consistency Rule's home case. The node's intervention is not a dam or a moratorium — it is **an independent recharge audit**, because a wrong "safe" here propagates into every plan that trusts it.

11.3 N3 · Hubballi–Dharwad — the next tip

Dharwad's 55.3% stage is unremarkable, which is exactly why the node matters: it is a growing urban twin-city on a middling hard-rock aquifer with the lowest recharge in its cluster (11.44 TMC) and a Malaprabha dependence that a dry year would test. It is the C4 node most likely to move from safe to stressed in the next cycle, and the cheapest to protect now — before, not after, the tip.

11.4 N4 · Mangaluru — quantity comfortable, quality exposed

Dakshina Kannada's 44.3% stage and **3975 mm** of rain make Mangaluru the node least worried about running dry. Its exposure is at the coast: laterite aquifers vulnerable to **saline intrusion** where shoreline pumping pulls seawater in, and geogenic **iron** already above drinking limits in many sources. The lever is a coastal-zone withdrawal cap and a

quality-surveillance network — preventive, before industrial and tourism growth force the issue.

12 The crop economy behind the numbers

The Directorate of Economics & Statistics' 2022-23 crop survey shows what is actually grown where — the direct cause of the demand recorded throughout this volume. This table gives the leading crop by area for every district with surveyed data.

District	Cluster	Leading crop (2022-23)	Area
Mandya	C1	Paddy	76.5k ha
Mysuru	C1	Ragi	103.5k ha
Hassan	C1	Maize	117.6k ha
Kodagu	C1	Paddy	13.4k ha
Chamarajanagar	C1	Maize	46.4k ha
Bengaluru Urban	C2	Ragi	15.6k ha
Bengaluru Rural	C2	Ragi	62.0k ha
Ramanagara	C2	Ragi	60.7k ha
Tumakuru	C2	Ragi	150.8k ha
Kolar	C2	Ragi	44.8k ha
Chikkaballapura	C2	Maize	56.0k ha
Dakshina Kannada	C3	Paddy	7.3k ha
Udupi	C3	Paddy	41.2k ha
Uttara Kannada	C3	Paddy	39.9k ha
Shivamogga	C3	Paddy	82.3k ha
Vijayapura	C4	Tur	375.2k ha
Bagalkot	C4	Maize	79.9k ha
Belagavi	C4	Maize	188.7k ha
Dharwad	C4	Bengalgram	141.6k ha
Gadag	C4	Bengalgram	154.0k ha
Haveri	C4	Maize	326.6k ha
Raichur	C4	Paddy	263.5k ha
Ballari	C4	Paddy	154.4k ha
Koppal	C4	Maize	141.3k ha
Davanagere	C4	Maize	132.4k ha
Chitradurga	C5	Maize	145.6k ha
Bidar	C5	Tur	113.7k ha
Kalaburagi	C5	Tur	486.2k ha
Yadgir	C5	Paddy	138.4k ha
Vijayanagara	C5	Maize	215.1k ha

Ragi and maize recur across the over-exploited Bengaluru arc — moderate-water cereals grown at a scale that, combined with urban demand, still produces the state's highest extraction figures. Paddy holds the wetter east and coastal fringe; cotton, jowar, and sugarcane concentrate in the irrigation-dependent north, in the same districts this Atlas's Sinha analysis already flags for recharge-credit audit. The crop map is, in effect, a second independent rendering of the groundwater map.

13 The borewell census, where recorded

For the districts where CGWB Ground Water Information Booklets were retrieved this edition, the Minor Irrigation Census gives exact borewell and dug-well counts — the physical instrument of every stage percentage in this Atlas made countable.

District	Cluster	Borewells (in use)	Dug wells (in use)
Mandya	C1	15381	8334
Mysuru	C1	16478	4501
Tumakuru	C2	68420	—
Shivamogga	C3	14752	—
Chikkamagaluru	C3	—	426
Gadag	C4	6772	2201
Chitradurga	C5	—	2314
Bidar	C5	47066	—
Yadgir	C5	—	3042

A heavy tilt toward borewells over dug wells signals a district where the water table has already retreated past what a traditional shallow well can reach — the mechanism by which extraction deepens over time as the easier sources fail first, visible here as a physical count rather than a percentage.

14 Method and sources

12.1 How this Atlas is built

The Atlas is not written and then sourced; it is sourced and then written. Every figure enters a structured schema first — the Karnataka Groundwater Schema, 1,989 rows at this edition — with its quality class, caveat, source agency, publication, and year attached before any prose is composed. The prose is then built *from* the schema. This ordering is what lets the volume make the honesty guarantees it does.

Quality class	Meaning	Use in this volume
A	Primary national-agency data (CGWB, DES, FSI)	Headline metrics — stage, recharge, water level
C	Secondary / open-source published	Context, cross-checks, state-level anchors
D	Reconstructed from parent district	Split-district figures, flagged EST
G / GAP	Genuine absence after search	Marked "—", never filled

12.2 The rules that constrain it

- **No fabrication.** A missing value is a gap, marked. One invented cell would poison every verdict that touches it.
- **No interpolation dressed as data.** Temporal cells read "—" where no assessment published a figure; trend arrows, not manufactured numbers, fill the space.
- **Append-only.** Corrections add rows; they never overwrite. The schema keeps its own audit trail.
- **Governing-metric rule.** The headline number for a district must match the schema value; secondary figures need a named location and independent source or they are dropped.

- **Volume in TMC only.** One unit throughout (1 TMC = 2,831 crore litres); BCM/HAM/MCM converted at source.

12.3 Principal sources

Central Ground Water Board — Dynamic Ground Water Resource Assessment (GWRA-2024) and Karnataka Dynamic Ground Water Resources 2025; CGWB Ground Water Year Book of Karnataka 2024-25; Karnataka Directorate of Economics & Statistics; KSNDMC district and taluk rainfall series; Forest Survey of India (ISFR 2023); Karnataka Economic Survey; and the Water Bodies First Census (2018-19). Individual figures carry their source in the schema register underlying this volume.

17 The district register

The clusters diagnose; the register documents. What follows is a one-card profile for every one of Karnataka's 31 districts — its groundwater headline, a cross-domain snapshot of the sourced indicators the schema holds for it, and a one-line reading of where it stands. *Districts are ordered by cluster (C1 through C5). Every figure carries its quality class in brackets; "—" marks a genuine gap.*

C1 · Cauvery Basin South

Mandya · C1 Cauvery Basin South

Stage **63.8%** · SAFE · recharge 25.4 TMC · water level 5.5 m · other-source 69.9% · rainfall 806 mm

Indicator	Value	Src
Aquifer depth-to-water	0.5	[A]
Forest cover	10.2%	[A]
District GDP (INR cr)	53318.0	[A]
Per-capita income (INR)	306448.0	[A]
Sewage generated (MLD)	67.1	[A]
MSME units	24418.0	[A]
Population (2011 Census)	1805769.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]
River basin	Cauvery (KRS command)	[C]
Dominant soil	Red	[C]
Principal reservoir	Krishnarajasagar (13,200 ha)	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Mandya — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	806.0 mm
Climate	Rainfall	869.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	264.5 mm
D4	River basin / drainage system	Cauvery (KRS command) text
Reservoir	Storage	11.1 TMC
Reservoir	Major reservoirs (count, area)	4.0 count/ha
Reservoir	Principal named reservoir	Krishnarajasagar (13,200 ha) text
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	63.8 %
Groundwater	Total Annual GW Recharge (district)	25.4 TMC (1 T
Groundwater	Static Water Level depth (district mea	5.5 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	69.9 % of tot
Groundwater	Recharge-decomp	69.9 %
Groundwater	Irrigation extraction (GWRA-2025)	1.3 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	65.8 %
Groundwater	Taluk-average stage (CGWB booklet cros	37.9 %
Groundwater	Over-exploited blocks (CGWB booklet)	— count
Groundwater	Total assessed taluks (GWRA-2020)	7.0 count
Groundwater	Safe-category taluks (GWRA-2020)	6.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	1.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	0.5 m bgl
D9	Borewells in use (MI Census)	15381.0 count
D9	Dug wells in use (MI Census)	8334.0 count
Quality	Quality	3.0 count
D11	Dominant soil type	Red text
Agriculture	Sugarcane Area (district)	40361.0 ha
Agriculture	Paddy Area (district)	57084.0 ha
Agriculture	Agriculture share of GDDP	15.9 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	76532.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	24.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	69259.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	7459.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	1.0 ha

Domain	Indicator	Value
Agriculture	Area under Tur (Reconciled, Crop Surve	182.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	285.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	8.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	4113.0 ha
Irrigation	Irrigation by canal	73.8 %
Irrigation	Irrigation by tank	8.5 %
Irrigation	Irrigation by dugwell	8.2 %
Irrigation	Irrigation by borewell	8.1 %
Irrigation	Irrigation by lift	0.3 %
Consumption	Consumption	1.5 TMC
Water bodies	Irrigation tank count and area	224.0 count/ha
Forest	Forest Cover (district)	10.2 % of geo
Forest	ForestCover	10.9 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	1805769.0 count
Population	Decadal population growth 2001-2011	2.4 %
Population	Sex ratio (females per 1000 males)	995.0 ratio
Population	Literacy rate	70.4 %
Population	Population density	364.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1805769.0 count
Population	Population Density (Census 2011)	364.0 per km2
Sanitation	Sewage Treatment Gap	38.3 MLD
Sanitation	Municipal Solid Waste (district)	139.0 TPD
Sanitation	Municipal Solid Waste generated (distr	117.2 TPD (ton
Sanitation	Sewage generated (district)	67.1 MLD
Sanitation	Number of Urban Local Bodies reporting	4.0 count
Sanitation	Municipal solid waste generated	47.0 tonnes/d
Industry	MSME Units (district)	24418.0 count
Economy	Gross District Domestic Product	53318.0 INR cr
Economy	Per Capita Income (district)	237220.0 INR
Economy	Per Capita Income (2023-24)	306448.0 Rs/yr
D28	Traditional tank count	224.0 count
D31	Heritage water structures (cluster-lev	Cauvery-basin temple tanks (pushkarinis) at Srirangapatna, Melukote; Mysuru palace tank network text
D31	Named heritage tank (Sule Kere)	Major heritage lake near Mandya town, KRS-fed, Important

Domain	Indicator	Value
		Bird Area IN-KA-34 text

Safe on stage (63.8%), but 69.9% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Mysuru · C1 Cauvery Basin South

Stage **51.6%** · SAFE · recharge 24.3 TMC · water level 7.7 m · other-source 57.8% · rainfall 798 mm

Indicator	Value	Src
Aquifer depth-to-water	0.6	[A]
Forest cover	16.9%	[A]
District GDP (INR cr)	80676.0	[A]
Per-capita income (INR)	239296.0	[A]
Sewage generated (MLD)	134.1	[A]
MSME units	61574.0	[A]
Population (2011 Census)	3001127.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]
River basin	Cauvery (Kabini)	[C]
Dominant soil	Red	[C]
Principal reservoir	Kabini (6,020 ha)	[C]
Leading crop (2022-23)	Ragi	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Mysuru — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	798.0 mm
Climate	Rainfall	965.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	285.3 mm
D4	River basin / drainage system	Cauvery (Kabini) text
Reservoir	Storage	5.8 TMC
Reservoir	Major reservoirs (count, area)	8.0 count/ha
Reservoir	Principal named reservoir	Kabini (6,020 ha) text

Domain	Indicator	Value
Reservoir	Named dam register	Kabini Dam, KRS Dam (Brindavan Gardens), Nugu Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	51.6 %
Groundwater	Total Annual GW Recharge (district)	24.3 TMC (1 T
Groundwater	Static Water Level depth (district mea	7.7 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	57.8 % of tot
Groundwater	Recharge-decomp	57.8 %
Groundwater	Irrigation extraction (GWRA-2025)	1.0 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	46.9 %
Groundwater	Taluk-average stage (CGWB booklet cros	47.1 %
Groundwater	Over-exploited blocks (CGWB booklet)	— count
Groundwater	Total assessed taluks (GWRA-2020)	8.0 count
Groundwater	Safe-category taluks (GWRA-2020)	7.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	1.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	0.6 m bgl
D9	Borewells in use (MI Census)	16478.0 count
D9	Dug wells in use (MI Census)	4501.0 count
Quality	Quality	3.0 count
D11	Dominant soil type	Red text
Agriculture	Agriculture share of GDDP	20.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	98346.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	3465.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	103484.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	50959.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	8.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	1836.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	546.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	846.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	2408.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	1179.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	2558.0 ha
Irrigation	Irrigation by canal	81.0 %
Irrigation	Irrigation by tank	7.0 %

Domain	Indicator	Value
Irrigation	Irrigation by gw_dugwell_borewell	11.0 %
Irrigation	Irrigation by lift	0.0 %
Consumption	Consumption	1.1 TMC
Water bodies	Irrigation tank count and area	292.0 count/ha
Forest	Forest Cover (district)	16.9 % of geo
Forest	ForestCover	16.5 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	3001127.0 count
Population	Decadal population growth 2001-2011	13.6 %
Population	Sex ratio (females per 1000 males)	985.0 ratio
Population	Literacy rate	72.8 %
Population	Population density	476.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	3001127.0 count
Population	Population Density (Census 2011)	476.0 per km2
Sanitation	Sewage Treatment Gap	-7.1 MLD
Sanitation	Municipal Solid Waste (district)	571.0 TPD
Sanitation	Municipal Solid Waste generated (distr	553.0 TPD (ton
Sanitation	Sewage generated (district)	134.1 MLD
Sanitation	Number of Urban Local Bodies reporting	9.0 count
Sanitation	Municipal solid waste generated	1232.0 tonnes/d
Industry	MSME Units (district)	61574.0 count
Economy	Gross District Domestic Product	80676.0 INR cr
Economy	Per Capita Income (district)	215398.0 INR
Economy	Per Capita Income (2023-24)	239296.0 Rs/yr
D28	Traditional tank count	292.0 count

Safe on stage (51.6%), but 57.8% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Hassan · C1 Cauvery Basin South

Stage **65.7%** · SAFE · recharge 30.1 TMC · water level 7.2 m · other-source 62.5% · rainfall 1031 mm

Indicator	Value	Src
Aquifer depth-to-water	1.3	[A]
Forest cover	21.8%	[A]

Indicator	Value	Src
District GDP (INR cr)	52632.0	[A]
Per-capita income (INR)	294272.0	[A]
Sewage generated (MLD)	67.1	[A]
MSME units	29466.0	[A]
Population (2011 Census)	1776421.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	LOW	[B]
River basin	Cauvery (Hemavathy)	[C]
Dominant soil	Red + Western Ghats	[C]
Principal reservoir	Hemavathy (8,000 ha)	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Hassan — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	1031.0 mm
Climate	Rainfall	1580.0 mm
D4	River basin / drainage system	Cauvery (Hemavathy) text
Reservoir	Storage	15.7 TMC
Reservoir	Major reservoirs (count, area)	3.0 count/ha
Reservoir	Principal named reservoir	Hemavathy (8,000 ha) text
Reservoir	Named dam register	Hemavathy Dam, Votehole Dam, Yagachi Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	65.7 %
Groundwater	Total Annual GW Recharge (district)	30.1 TMC (1 T
Groundwater	Static Water Level depth (district mea	7.2 m bgl
Groundwater	Over-Exploited taluks (share)	12.5 % of ass
Groundwater	GW Recharge: other-source share (2024)	62.5 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	1.0 named un
Groundwater	Recharge-decomp	62.5 %
Groundwater	Irrigation extraction (GWRA-2025)	1.7 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	61.5 %

Domain	Indicator	Value
Groundwater	Total assessed taluks (GWRA-2020)	8.0 count
Groundwater	Safe-category taluks (GWRA-2020)	6.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	1.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	1.0 count
Aquifer	DepthToWater	1.3 m bgl
Quality	Quality	1.0 count
D11	Dominant soil type	Red + Western Ghats text
Agriculture	Agriculture share of GDDP	21.3 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	33270.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	4994.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	110418.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	117567.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	8.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	227.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	1106.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	257.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	2334.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	16.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	287.0 ha
Consumption	Consumption	1.8 TMC
Water bodies	Irrigation tank count and area	440.0 count/ha
Forest	Forest Cover (district)	21.8 % of geo
Forest	ForestCover	20.1 %
D18	Groundwater vulnerability class (DRAST	LOW
Population	Total population (2011 Census)	1776421.0 count
Population	Decadal population growth 2001-2011	3.2 %
Population	Sex ratio (females per 1000 males)	1010.0 ratio
Population	Literacy rate	76.1 %
Population	Population density	261.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1776421.0 count
Population	Population Density (Census 2011)	261.0 per km2
Sanitation	Sewage Treatment Gap	41.8 MLD
Sanitation	Municipal Solid Waste (district)	140.0 TPD
Sanitation	Municipal Solid Waste generated (distr	162.2 TPD (ton
Sanitation	Sewage generated (district)	67.1 MLD
Sanitation	Number of Urban Local Bodies reporting	8.0 count
Sanitation	Municipal solid waste generated	93.0 tonnes/d

Domain	Indicator	Value
Industry	MSME Units (district)	29466.0 count
Economy	Gross District Domestic Product	52632.0 INR cr
Economy	Per Capita Income (district)	238029.0 INR
Economy	Per Capita Income (2023-24)	294272.0 Rs/yr
D28	Traditional tank count	440.0 count

Safe on stage (65.7%), but 62.5% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Kodagu · C1 Cauvery Basin South

Stage **35.4%** · SAFE · recharge 8.6 TMC · water level 10.8 m · other-source 21.7% · rainfall 2718 mm

Indicator	Value	Src
Aquifer depth-to-water	1.8	[A]
Forest cover	79.4%	[A]
District GDP (INR cr)	17995.0	[A]
Per-capita income (INR)	294898.0	[A]
Sewage generated (MLD)	17.4	[A]
MSME units	9546.0	[A]
Population (2011 Census)	554519.0	[A]
HDI (2022)	0.7	[B]
Vulnerability class (DRASTIC)	LOW	[B]
River basin	Cauvery (headwaters, Harangi)	[C]
Dominant soil	Western Ghats (forest laterite)	[C]
Principal reservoir	Harangi (1,886 ha)	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Kodagu — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	2718.0 mm
Climate	Rainfall	3052.0 mm
D4	River basin / drainage system	Cauvery (headwaters, Harangi) text

Domain	Indicator	Value
Reservoir	Storage	3.5 TMC
Reservoir	Major reservoirs (count, area)	2.0 count/ha
Reservoir	Principal named reservoir	Harangi (1,886 ha) text
Reservoir	Named dam register	Chiklihole Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	35.4 %
Groundwater	Total Annual GW Recharge (district)	8.6 TMC (1 T
Groundwater	Static Water Level depth (district mea	10.8 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	21.7 % of tot
Groundwater	Recharge-decomp	21.7 %
Groundwater	Irrigation extraction (GWRA-2025)	0.2 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	35.6 %
Groundwater	All 5 taluks in SAFE category (Kodagu	SAFE (5/5 taluks) category
Groundwater	Total assessed taluks (GWRA-2020)	3.0 count
Groundwater	Safe-category taluks (GWRA-2020)	3.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	1.8 m bgl
Quality	Quality	1.0 count
D11	Dominant soil type	Western Ghats (forest laterite) text
Agriculture	Agriculture share of GDDP	45.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	13448.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	176.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	1.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	1892.0 ha
Irrigation	Dominant irrigation source (district r	Least irrigated land in
Irrigation	Dominant/leading irrigation source (st	Minimal text
Consumption	Consumption	0.3 TMC
Water bodies	Irrigation tank count and area	Minimal (coastal) count/ha
Forest	Forest Cover (district)	79.4 % of geo
Forest	ForestCover	78.8 %
D18	Groundwater vulnerability class (DRAST	LOW
Population	Total population (2011 Census)	554519.0 count

Domain	Indicator	Value
Population	Decadal population growth 2001-2011	1.1 %
Population	Sex ratio (females per 1000 males)	1019.0 ratio
Population	Literacy rate	82.6 %
Population	Population density	135.0 per sq k
Population	Human Development Index (2022)	0.7 index
Population	Total Population (Census 2011)	554519.0 count
Population	Population Density (Census 2011)	135.0 per km2
Sanitation	Sewage Treatment Gap	17.4 MLD
Sanitation	Municipal Solid Waste (district)	41.0 TPD
Sanitation	Municipal Solid Waste generated (distr	41.1 TPD (ton
Sanitation	Sewage generated (district)	17.4 MLD
Sanitation	Number of Urban Local Bodies reporting	3.0 count
Sanitation	Municipal solid waste generated	6.4 tonnes/d
Industry	MSME Units (district)	9546.0 count
Economy	Gross District Domestic Product	17995.0 INR cr
Economy	Per Capita Income (district)	260558.0 INR
Economy	Per Capita Income (2023-24)	294898.0 Rs/yr
D28	Traditional tank count	— count

Safe: stage 35.4% with recharge comfortably ahead of extraction. High rainfall (2718 mm) underwrites the margin — quality, not quantity, is the watch-item here.

Chamarajanagar · C1 Cauvery Basin South

Stage **96.1%** · SEMI-CRITICAL · recharge 13.3 TMC · water level 10.0 m · other-source 37.1% · rainfall 751 mm

Indicator	Value	Src
Aquifer depth-to-water	0.5	[A]
Forest cover	48.4%	[A]
District GDP (INR cr)	26064.0	[A]
Per-capita income (INR)	259387.0	[A]
Sewage generated (MLD)	32.0	[A]
STP count	4.0	[A]
MSME units	11219.0	[A]
Population (2011 Census)	1020791.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]

Indicator	Value	Src
River basin	Cauvery (Suvarnavathi/Kabini)	[C]
Dominant soil	Red	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Chamarajanagar — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	751.0 mm
Climate	Rainfall	799.3 mm
D4	River basin / drainage system	Cauvery (Suvarnavathi/Kabini) text
Groundwater	GW Category (district)	SEMI-CRITICAL
Groundwater	Stage of GW Extraction (district)	96.1 %
Groundwater	Total Annual GW Recharge (district)	13.3 TMC (1 T
Groundwater	Static Water Level depth (district mea	10.0 m bgl
Groundwater	Over-Exploited taluks (share)	40.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	37.1 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	2.0 named un
Groundwater	Recharge-decomp	37.1 %
Groundwater	Irrigation extraction (GWRA-2025)	1.0 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	88.4 %
Groundwater	Total assessed taluks (GWRA-2020)	5.0 count
Groundwater	Safe-category taluks (GWRA-2020)	0.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	2.0 count
Groundwater	Critical taluks (GWRA-2020)	1.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	2.0 count
Aquifer	DepthToWater	0.5 m bgl
Quality	Quality	2.0 count
D11	Dominant soil type	Red text
Agriculture	Agriculture share of GDDP	23.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	9927.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	13458.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	4137.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	46392.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	294.0 ha

Domain	Indicator	Value
Agriculture	Area under Wheat (Reconciled, Crop Sur	14.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	190.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	1163.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	2098.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	19410.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	29.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	3891.0 ha
Consumption	Consumption	1.2 TMC
Forest	Forest Cover (district)	48.4 % of geo
Forest	ForestCover	48.4 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	1020791.0 count
Population	Decadal population growth 2001-2011	5.7 %
Population	Sex ratio (females per 1000 males)	993.0 ratio
Population	Literacy rate	61.4 %
Population	Population density	181.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1020791.0 count
Population	Population Density (Census 2011)	181.0 per km2
Sanitation	Sewage Treatment Gap	20.2 MLD
Sanitation	Municipal Solid Waste (district)	73.0 TPD
Sanitation	Municipal Solid Waste generated (distr	75.4 TPD (ton
Sanitation	Sewage generated (district)	32.0 MLD
Sanitation	Number of Sewage Treatment Plants	4.0 count
Sanitation	STP installed capacity	22.0 MLD
Sanitation	STP capacity gap (installed vs operati	10.2 MLD
Sanitation	Number of Urban Local Bodies reporting	2.0 count
Sanitation	Municipal solid waste generated	0.3 tonnes/d
Industry	MSME Units (district)	11219.0 count
Economy	Gross District Domestic Product	26064.0 INR cr
Economy	Per Capita Income (district)	202494.0 INR
Economy	Per Capita Income (2023-24)	259387.0 Rs/yr

Semi-critical: stage in the 70–100% band. Watch for the tip into critical if borewell demand grows.

C2 · Bengaluru Urban Region

Bengaluru Urban · C2 Bengaluru Urban Region

Stage **186.7%** · OVER-EXPLOITED · recharge 11.2 TMC · water level 21.5 m · other-source 58.5% · rainfall 885 mm

Indicator	Value	Src
Aquifer depth-to-water	0.9	[A]
Forest cover	13.1%	[A]
District GDP (INR cr)	859154.0	[A]
Per-capita income (INR)	738910.0	[A]
Sewage generated (MLD)	1440.0	[A]
STP count	38.0	[A]
MSME units	323483.0	[A]
Population (2011 Census)	9621551.0	[A]
HDI (2022)	0.7	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Cauvery (Arkavati/Vrishabhavati)	[C]
Dominant soil	Red (granite-gneiss weathering)	[C]
Principal reservoir	Thippagondanahally (1,762 ha)	[C]
Leading crop (2022-23)	Ragi	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Bengaluru Urban — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	885.0 mm
Climate	Annual rainfall (district)	831.0 mm
Climate	Rainfall	934.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	336.7 mm
D4	River basin / drainage system	Cauvery (Arkavati/Vrishabhavati) text
Reservoir	Major reservoirs (count, area)	4.0 count/ha
Reservoir	Principal named reservoir	Thippagondanahally (1,762 ha) text
Groundwater	Urban-core GW Stage	95.0 %

Domain	Indicator	Value
Groundwater	Stage of GW Extraction (district, GWRA	186.7 %
Groundwater	GW Category (district)	OVER-EXPLOITED
Groundwater	GW Stage of Development (district)	186.7 %
Groundwater	Stage of GW Extraction (taluk: Anekal)	128.7 %
Groundwater	Total Annual GW Recharge (taluk: Aneka	2.6 TMC (1 T
Groundwater	Stage of GW Extraction (taluk: Bangalo	170.4 %
Groundwater	Total Annual GW Recharge (taluk: Banga	0.8 TMC (1 T
Groundwater	Stage of GW Extraction (taluk: Bangalo	192.6 %
Groundwater	Total Annual GW Recharge (taluk: Banga	0.9 TMC (1 T
Groundwater	Stage of GW Extraction (taluk: Bangalo	239.2 %
Groundwater	Total Annual GW Recharge (taluk: Banga	0.8 TMC (1 T
Groundwater	Stage of GW Extraction (taluk: Bangalo	107.8 %
Groundwater	Total Annual GW Recharge (taluk: Banga	1.9 TMC (1 T
Groundwater	Stage of GW Extraction (taluk: Yelahan	157.1 %
Groundwater	Total Annual GW Recharge (taluk: Yelah	1.4 TMC (1 T
Groundwater	Urban decadal WL fall (Bangalore, % we	91.7 % of wel
Groundwater	Stage of GW Extraction (district)	186.7 %
Groundwater	Total Annual GW Recharge (district)	11.2 TMC (1 T
Groundwater	Static Water Level depth (district mea	21.5 m bgl
Groundwater	Over-Exploited taluks (share)	100.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	58.5 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	6.0 named un
Groundwater	Recharge-decomp	58.5 %
Groundwater	Irrigation extraction (GWRA-2025)	2.3 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.5 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.7 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	268.5 %
Groundwater	Total assessed taluks (GWRA-2020)	5.0 count
Groundwater	Safe-category taluks (GWRA-2020)	0.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	5.0 count
Aquifer	Aquifer zones (district)	3.0 flag
Aquifer	DepthToWater	0.9 m bgl
D9	Borewell count (district)	130023.0 count
D9	Status	UNMETERED —
Quality	Nitrate-affected area	45.0 %
Quality	Quality	1.0 count
D11	Dominant soil type	Red (granite-gneiss weathering) text

Domain	Indicator	Value
Agriculture	Agriculture share of GDDP	1.7 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	161.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	757.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	15561.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	749.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	11.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	240.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	10.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	14.0 ha
Irrigation	GW share of net irrigated area	11395.0 ha
Irrigation	Borewell-irrigated area	10814.0 ha
Consumption	Flow	1920.0 MLD
Consumption	Consumption	1.9 TMC
Urban	Urban Water Import Dependency	70.0 %
Urban	Tanker Dependency	42.0 % hh
Urban	Cauvery allocation to Bengaluru	19.0 TMC
Urban	Water supply vs demand	900.0 MLD
Urban	Energy cost of water conveyance	75.0 % revenu
Urban	Cauvery water pumped to city	810.0 MLD
Urban	Urban GW extraction (Bengaluru city)	800.0 MLD
Urban	Critical water-scarcity wards (Bengalu	80.0 count
Urban	Predicted WL drop CMC area (Apr 2025)	12.5 m
Urban	Bengaluru Cauvery supply intervention	Cauvery Stage-V + CCS status
Water bodies	Bengaluru lakes (2018 study)	1521.0 count
Water bodies	GW tanker market	85.0 lakh L/d
Water bodies	Irrigation tank count and area	183.0 count/ha
Forest	Forest Cover (district)	13.1 % of geo
Forest	ForestCover	12.9 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	9621551.0 count
Population	Decadal population growth 2001-2011	47.2 %
Population	Sex ratio (females per 1000 males)	916.0 ratio
Population	Literacy rate	87.7 %
Population	Population density	4381.0 per sq k
Population	Human Development Index (2022)	0.7 index
Population	Total Population (Census 2011)	9621551.0 count
Population	Population Density (Census 2011)	4393.0 per km2
Sanitation	Treated Wastewater Reuse	420.0 MLD
Sanitation	STP capacity (centralised)	1200.0 MLD

Domain	Indicator	Value
Sanitation	Treated wastewater reuse	800.0 MLD
Sanitation	Sewage Treatment Gap	225.0 MLD
Sanitation	Municipal Solid Waste (district)	161.0 TPD
Sanitation	Municipal Solid Waste generated (distr	231.0 TPD (ton
Sanitation	Sewage generated (district)	1440.0 MLD
Sanitation	Capacity	15.0 MLD
Sanitation	Practice	ACTIVE —
Sanitation	Number of Sewage Treatment Plants	38.0 count
Sanitation	STP installed capacity	1533.9 MLD
Sanitation	STP capacity gap (installed vs operati	318.9 MLD
Industry	Industrial water reuse mandate	recycled-mandatory flag
Industry	MSME Units (district)	323483.0 count
Economy	Gross District Domestic Product	859154.0 INR cr
Economy	Per Capita Income (district)	760362.0 INR
Economy	Per Capita Income (2023-24)	738910.0 Rs/yr
D28	Lake rejuvenation investment	200.0 INR cr
D28	Traditional tank count	183.0 count
D31	Heritage water structures (cluster-lev	Kolar-Chikkaballapur cascading tank system (originally 3,000+ lakes under undivided Kolar, Central Groundwater Board 2009); Bengaluru's historic lake chain (Kere) text

Over-exploited: extraction exceeds recharge. Stage has run above 100% since at least T-10 (138.7%). Water table at 21.5 m confirms sustained depletion.

Bengaluru Rural · C2 Bengaluru Urban Region

Stage **147.1%** · OVER-EXPLOITED · recharge 6.2 TMC · water level 30.1 m · other-source 23.6% · rainfall 978 mm

Indicator	Value	Src
Aquifer depth-to-water	3.8	[A]
Forest cover	6.9%	[A]
District GDP (INR cr)	35599.0	[A]
Per-capita income (INR)	404138.0	[A]
Sewage generated (MLD)	57.5	[A]

Indicator	Value	Src
STP count	1.0	[A]
MSME units	60201.0	[A]
Population (2011 Census)	990923.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Cauvery (Arkavati)	[C]
Dominant soil	Red	[C]
Principal reservoir	Kanva (440 ha)	[C]
Leading crop (2022-23)	Ragi	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Bengaluru Rural — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	978.0 mm
Climate	Rainfall	884.0 mm
D4	River basin / drainage system	Cauvery (Arkavati) text
Reservoir	Major reservoirs (count, area)	2.0 count/ha
Reservoir	Principal named reservoir	Kanva (440 ha) text
Groundwater	Stage of GW Extraction (district, GWRA	147.1 %
Groundwater	GW Category (district)	OVER-EXPLOITED
Groundwater	GW status (district)	over-exploited flag
Groundwater	Stage of GW Extraction (district)	147.1 %
Groundwater	Total Annual GW Recharge (district)	6.2 TMC (1 T
Groundwater	Static Water Level depth (district mea	30.1 m bgl
Groundwater	Over-Exploited taluks (share)	100.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	23.6 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	4.0 named un
Groundwater	Recharge-decomp	23.6 %
Groundwater	Irrigation extraction (GWRA-2025)	0.7 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	146.8 %
Groundwater	Stage of GW development (CGWB booklet	132.0 %
Groundwater	Over-exploited + notified blocks	4.0 count
Groundwater	Total assessed taluks (GWRA-2020)	4.0 count
Groundwater	Safe-category taluks (GWRA-2020)	0.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count

Domain	Indicator	Value
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	4.0 count
Aquifer	DepthToWater	3.8 m bgl
Quality	Quality	3.0 count
D11	Dominant soil type	Red text
Agriculture	Agriculture share of GDDP	18.1 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	194.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	2062.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	62025.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	5193.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	11.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	418.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	73.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	108.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	2.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	11.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	27937.0 ha
Irrigation	Irrigation by lift (CGWB booklet)	43.0 ha
Consumption	Consumption	0.8 TMC
Water bodies	Irrigation tank count and area	373.0 count/ha
Forest	Forest Cover (district)	6.9 % of geo
Forest	ForestCover	6.3 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	990923.0 count
Population	Decadal population growth 2001-2011	16.4 %
Population	Sex ratio (females per 1000 males)	946.0 ratio
Population	Literacy rate	77.9 %
Population	Population density	431.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	990923.0 count
Population	Population Density (Census 2011)	431.0 per km2
Sanitation	Sewage Treatment Gap	50.5 MLD
Sanitation	Municipal Solid Waste (district)	135.0 TPD
Sanitation	Municipal Solid Waste generated (distr	495.4 TPD (ton
Sanitation	Sewage generated (district)	57.5 MLD
Sanitation	Number of Sewage Treatment Plants	1.0 count
Sanitation	STP installed capacity	12.0 MLD
Sanitation	STP capacity gap (installed vs operati	5.0 MLD
Industry	MSME Units (district)	60201.0 count
Economy	Gross District Domestic Product	35599.0 INR cr

Domain	Indicator	Value
Economy	Per Capita Income (district)	291083.0 INR
Economy	Per Capita Income (2023-24)	404138.0 Rs/yr
D28	Traditional tank count	373.0 count

Over-exploited: extraction exceeds recharge. Stage has run above 100% since at least T-10 (137.4%). Water table at 30.1 m confirms sustained depletion.

Ramanagara · C2 Bengaluru Urban Region

Stage **97.9%** · CRITICAL · recharge 16.9 TMC · water level 11.9 m · other-source 63.3% · rainfall —

Indicator	Value	Src
Aquifer depth-to-water	1.2	[A]
Forest cover	19.2%	[A]
District GDP (INR cr)	33799.0	[A]
Per-capita income (INR)	277619.0	[A]
Sewage generated (MLD)	38.3	[A]
MSME units	18460.0	[A]
Population (2011 Census)	1082636.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Cauvery (Arkavati/Shimsha)	[C]
Dominant soil	Red	[C]
Leading crop (2022-23)	Ragi	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Ramanagara — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Rainfall	878.0 mm
D4	River basin / drainage system	Cauvery (Arkavati/Shimsha) text
Reservoir	Named dam register	Arkavathy Dam, Maralvadi Dam list
Groundwater	GW Category (district)	CRITICAL

Domain	Indicator	Value
Groundwater	Stage of GW Extraction (district)	97.9 %
Groundwater	Total Annual GW Recharge (district)	16.9 TMC (1 T
Groundwater	Static Water Level depth (district mea	11.9 m bgl
Groundwater	Over-Exploited taluks (share)	20.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	63.3 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	1.0 named un
Groundwater	Recharge-decomp	63.3 %
Groundwater	Stage of GW development (CGWB booklet	109.0 %
Groundwater	Total assessed taluks (GWRA-2020)	4.0 count
Groundwater	Safe-category taluks (GWRA-2020)	0.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	1.0 count
Groundwater	Critical taluks (GWRA-2020)	3.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	1.2 m bgl
D9	Drinking-water borewells serving habit	8854.0 count
D9	Total borewell count (irrigation)	38059.0 count
Quality	Quality	3.0 count
D11	Dominant soil type	Red text
Agriculture	Agriculture share of GDDP	16.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	3128.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	1901.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	60684.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	4079.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	4.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	500.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	599.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	11.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	24.0 ha
Irrigation	Irrigation by canal (CGWB booklet)	2346.0 ha
Irrigation	Irrigation by tank (CGWB booklet)	2993.0 ha
Irrigation	Irrigation by lift (CGWB booklet)	181.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	36808.0 ha
Consumption	Consumption	1.5 TMC
Urban	Piped water supply schemes	513.0 count
Forest	Forest Cover (district)	19.2 % of geo
Forest	ForestCover	19.6 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1082636.0 count
Population	Decadal population growth 2001-2011	5.0 %
Population	Sex ratio (females per 1000 males)	976.0 ratio

Domain	Indicator	Value
Population	Literacy rate	69.2 %
Population	Population density	308.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1082636.0 count
Population	Population Density (Census 2011)	308.0 per km2
Sanitation	Sewage Treatment Gap	27.0 MLD
Sanitation	Municipal Solid Waste (district)	126.0 TPD
Sanitation	Municipal Solid Waste generated (distr	129.6 TPD (ton
Sanitation	Sewage generated (district)	38.3 MLD
Industry	MSME Units (district)	18460.0 count
Economy	Gross District Domestic Product	33799.0 INR cr
Economy	Per Capita Income (district)	249998.0 INR
Economy	Per Capita Income (2023-24)	277619.0 Rs/yr

Critical: on the edge of over-extraction. Draw is close to recharge and rising; the next weak monsoon could tip it.

Tumakuru · C2 Bengaluru Urban Region

Stage **90.9%** · CRITICAL · recharge 29.9 TMC · water level 10.2 m · other-source 37.5% · rainfall 688 mm

Indicator	Value	Src
Aquifer depth-to-water	1.5	[A]
Forest cover	12.5%	[A]
District GDP (INR cr)	82626.0	[A]
Per-capita income (INR)	302707.0	[A]
Sewage generated (MLD)	95.8	[A]
MSME units	39902.0	[A]
Population (2011 Census)	2678980.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Cauvery (Shimsha)/Krishna edge	[C]
Dominant soil	Red + metamorphic	[C]
Principal reservoir	Markonahalli (1,336 ha)	[C]
Leading crop (2022-23)	Ragi	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Tumakuru — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	688.0 mm
Climate	Rainfall	1016.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	224.2 mm
D4	River basin / drainage system	Cauvery (Shimsha)/Krishna edge text
Reservoir	Major reservoirs (count, area)	5.0 count/ha
Reservoir	Principal named reservoir	Markonahalli (1,336 ha) text
Reservoir	Named dam register	Markonahalli Dam list
Groundwater	GW Category (district)	CRITICAL
Groundwater	Deeper Aquifer Water Level	132.3 m bgl
Groundwater	Deeper aquifer WL — deepest	132.3 m bgl
Groundwater	Stage of GW Extraction (district)	90.9 %
Groundwater	Total Annual GW Recharge (district)	29.9 TMC (1 T
Groundwater	Static Water Level depth (district mea	10.2 m bgl
Groundwater	Over-Exploited taluks (share)	50.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	37.5 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	5.0 named un
Groundwater	Recharge-decomp	37.5 %
Groundwater	Irrigation extraction (GWRA-2025)	2.3 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.2 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	91.4 %
Groundwater	Stage of GW development (CGWB booklet,	76.0 %
Groundwater	Total assessed taluks (GWRA-2020)	10.0 count
Groundwater	Safe-category taluks (GWRA-2020)	3.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	1.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	6.0 count
Aquifer	DepthToWater	1.5 m bgl
D9	Irrigation borewell structures (CGWB b	68420.0 count
Quality	Quality	4.0 count
D11	Dominant soil type	Red + metamorphic text
Agriculture	Agriculture share of GDDP	19.6 %

Domain	Indicator	Value
Agriculture	Area under Paddy (Reconciled, Crop Sur	3737.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	8372.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	150821.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	30491.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	102.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	6609.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	329.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	48015.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	40165.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	42.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	2.0 ha
Irrigation	Irrigation by canal (CGWB booklet)	6187.0 ha
Irrigation	Irrigation by tank (CGWB booklet)	11890.0 ha
Irrigation	Irrigation by dugwell (CGWB booklet)	8234.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	54823.0 ha
Irrigation	Irrigation by lift (CGWB booklet)	892.0 ha
Consumption	Consumption	2.4 TMC
Water bodies	Irrigation tank count and area	657.0 count/ha
Forest	Forest Cover (district)	12.5 % of geo
Forest	ForestCover	13.4 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	2678980.0 count
Population	Decadal population growth 2001-2011	3.6 %
Population	Sex ratio (females per 1000 males)	984.0 ratio
Population	Literacy rate	75.1 %
Population	Population density	253.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	2678980.0 count
Population	Population Density (Census 2011)	253.0 per km2
Sanitation	Sewage Treatment Gap	67.0 MLD
Sanitation	Municipal Solid Waste (district)	255.0 TPD
Sanitation	Municipal Solid Waste generated (distr	252.2 TPD (ton
Sanitation	Sewage generated (district)	95.8 MLD
Industry	MSME Units (district)	39902.0 count
Economy	Gross District Domestic Product	82626.0 INR cr
Economy	Per Capita Income (district)	245735.0 INR
Economy	Per Capita Income (2023-24)	302707.0 Rs/yr
D28	Traditional tank count	657.0 count

Critical: on the edge of over-extraction. Draw is close to recharge and rising; the next weak monsoon could tip it.

Kolar · C2 Bengaluru Urban Region

Stage **193.3%** · OVER-EXPLOITED · recharge 14.6 TMC · water level 21.1 m · other-source 50.2% · rainfall 744 mm

Indicator	Value	Src
Aquifer depth-to-water	0.3	[A]
Forest cover	9.6%	[A]
District GDP (INR cr)	36492.0	[A]
Per-capita income (INR)	215255.0	[A]
Sewage generated (MLD)	76.6	[A]
MSME units	20548.0	[A]
Population (2011 Census)	1536401.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Cauvery/Pennar (Palar) divide	[C]
Dominant soil	Red + laterite	[C]
Principal reservoir	Bethamangala (317 ha)	[C]
Leading crop (2022-23)	Ragi	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Kolar — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	744.0 mm
Climate	Rainfall	780.0 mm
D4	River basin / drainage system	Cauvery/Pennar (Palar) divide text
Reservoir	Major reservoirs (count, area)	2.0 count/ha
Reservoir	Principal named reservoir	Bethamangala (317 ha) text
Groundwater	Stage of GW Extraction (district, GWRA	193.3 %
Groundwater	GW Category (district)	OVER-EXPLOITED
Groundwater	Kolar irrigation demand — TIME SERIES	140.0 mm
Groundwater	Stage of GW Extraction (district)	193.3 %

Domain	Indicator	Value
Groundwater	Total Annual GW Recharge (district)	14.6 TMC (1 T
Groundwater	Static Water Level depth (district mea	21.1 m bgl
Groundwater	Over-Exploited taluks (share)	100.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	50.2 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	6.0 named un
Groundwater	Recharge-decomp	50.2 %
Groundwater	Irrigation extraction (GWRA-2025)	2.0 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	184.4 %
Groundwater	Total assessed taluks (GWRA-2020)	6.0 count
Groundwater	Safe-category taluks (GWRA-2020)	0.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	6.0 count
Aquifer	DepthToWater	0.3 m bgl
Quality	Quality	4.0 count
D11	Dominant soil type	Red + laterite text
Agriculture	Agriculture share of GDDP	19.6 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	3575.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	1019.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	44759.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	2710.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	33.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	459.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	11.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	3712.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	8.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	208.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	4.0 ha
Consumption	Consumption	2.5 TMC
Water bodies	Irrigation tank count and area	625.0 count/ha
Forest	Forest Cover (district)	9.6 % of geo
Forest	ForestCover	10.0 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Treated wastewater well rejuvenation	OBSERVED flag
Population	Total population (2011 Census)	1536401.0 count
Population	Decadal population growth 2001-2011	10.8 %
Population	Sex ratio (females per 1000 males)	979.0 ratio
Population	Literacy rate	74.4 %

Domain	Indicator	Value
Population	Population density	386.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1536401.0 count
Population	Population Density (Census 2011)	386.0 per km2
Sanitation	Sewage Treatment Gap	64.5 MLD
Sanitation	Municipal Solid Waste (district)	222.0 TPD
Sanitation	Municipal Solid Waste generated (distr	228.7 TPD (ton
Sanitation	Sewage generated (district)	76.6 MLD
Sanitation	Number of Urban Local Bodies reporting	2.0 count
Sanitation	Municipal solid waste generated	26.0 tonnes/d
Industry	MSME Units (district)	20548.0 count
Economy	Gross District Domestic Product	36492.0 INR cr
Economy	Per Capita Income (district)	187284.0 INR
Economy	Per Capita Income (2023-24)	215255.0 Rs/yr
D28	Traditional tank count	625.0 count
D31	Traditional equitable water-sharing cu	Practised in Bodampalli, Balasandra and other villages text

Over-exploited: extraction exceeds recharge. Stage has run above 100% since at least T-10 (200.0%). Water table at 21.1 m confirms sustained depletion.

Chikkaballapura · C2 Bengaluru Urban Region

Stage **164.3%** · OVER-EXPLOITED · recharge 12.0 TMC · water level 17.8 m · other-source 34.6% · rainfall —

Indicator	Value	Src
Aquifer depth-to-water	0.9	[A]
Forest cover	6.5%	[A]
District GDP (INR cr)	31671.0	[A]
Per-capita income (INR)	231154.0	[A]
Sewage generated (MLD)	39.4	[A]
STP count	3.0	[A]
MSME units	18327.0	[A]
Population (2011 Census)	1255104.0	[A]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Pennar/Palar headwaters	[C]

Indicator	Value	Src
Dominant soil	Red	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Chikkaballapura — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Rainfall	755.0 mm
D4	River basin / drainage system	Pennar/Palar headwaters text
Groundwater	Stage of GW Extraction (district, GWRA	164.3 %
Groundwater	GW Category (district)	OVER-EXPLOITED
Groundwater	Stage of GW Extraction (district)	164.3 %
Groundwater	Total Annual GW Recharge (district)	12.0 TMC (1 T
Groundwater	Static Water Level depth (district mea	17.8 m bgl
Groundwater	Over-Exploited taluks (share)	100.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	34.6 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	6.0 named un
Groundwater	Recharge-decomp	34.6 %
Groundwater	Irrigation extraction (GWRA-2025)	1.7 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	165.7 %
Groundwater	Total assessed taluks (GWRA-2020)	6.0 count
Groundwater	Safe-category taluks (GWRA-2020)	0.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	6.0 count
Aquifer	DepthToWater	0.9 m bgl
Quality	Uranium in GW (Chintamani)	8.6 ppm
Quality	Quality	3.0 count
D11	Dominant soil type	Red text
Agriculture	Agriculture share of GDDP	26.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	2959.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	1429.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	34338.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	55956.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	99.0 ha

Domain	Indicator	Value
Agriculture	Area under Tur (Reconciled, Crop Surve	1357.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	169.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	16353.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	1502.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	271.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	15.0 ha
Consumption	Consumption	1.8 TMC
Forest	Forest Cover (district)	6.5 % of geo
Forest	ForestCover	6.5 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1255104.0 count
Population	Decadal population growth 2001-2011	9.2 %
Population	Sex ratio (females per 1000 males)	972.0 ratio
Population	Literacy rate	69.8 %
Population	Population density	296.0 per sq k
Population	Total Population (Census 2011)	1255104.0 count
Population	Population Density (Census 2011)	296.0 per km2
Sanitation	Sewage Treatment Gap	28.8 MLD
Sanitation	Municipal Solid Waste (district)	107.0 TPD
Sanitation	Municipal Solid Waste generated (distr	121.0 TPD (ton
Sanitation	Sewage generated (district)	39.4 MLD
Sanitation	Number of Sewage Treatment Plants	3.0 count
Sanitation	STP installed capacity	15.1 MLD
Sanitation	STP capacity gap (installed vs operati	4.5 MLD
Sanitation	Number of Urban Local Bodies reporting	4.0 count
Sanitation	Municipal solid waste generated	4.0 tonnes/d
Industry	MSME Units (district)	18327.0 count
Economy	Gross District Domestic Product	31671.0 INR cr
Economy	Per Capita Income (district)	200424.0 INR
Economy	Per Capita Income (2023-24)	231154.0 Rs/yr

Over-exploited: extraction exceeds recharge. Stage has run above 100% since at least T-10 (145.4%). Water table at 17.8 m confirms sustained depletion.

C3 · Western Ghats & Coastal

Dakshina Kannada · C3 Western Ghats & Coastal

Stage **44.3%** · SAFE · recharge 26.5 TMC · water level 11.9 m · other-source 13.9% · rainfall 3975 mm

Indicator	Value	Src
Aquifer depth-to-water	0.2	[A]
Forest cover	63.0%	[A]
District GDP (INR cr)	125140.0	[A]
Per-capita income (INR)	556059.0	[A]
Sewage generated (MLD)	65.5	[A]
STP count	7.0	[A]
MSME units	49634.0	[A]
Population (2011 Census)	2089649.0	[A]
HDI (2022)	0.7	[B]
Vulnerability class (DRASTIC)	LOW	[B]
River basin	West-flowing (Netravati)	[C]
Dominant soil	Coastal laterite/alluvial	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Dakshina Kannada — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	3975.0 mm
Climate	Rainfall	4666.0 mm
D4	River basin / drainage system	West-flowing (Netravati) text
Reservoir	Major reservoirs (count, area)	No major reservoir (tank-fed) count/ha
Groundwater	GW Category (district)	SAFE
Groundwater	Deeper Aquifer Water Level	0.1 m bgl
Groundwater	Deeper aquifer WL — shallowest	0.1 m bgl
Groundwater	Stage of GW Extraction (district)	44.3 %
Groundwater	Total Annual GW Recharge (district)	26.5 TMC (1 T
Groundwater	Static Water Level depth (district mea	11.9 m bgl

Domain	Indicator	Value
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	13.9 % of tot
Groundwater	Recharge-decomp	13.9 %
Groundwater	Irrigation extraction (GWRA-2025)	0.9 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.2 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	45.7 %
Groundwater	Stage of GW development (CGWB booklet	59.5 %
Groundwater	Total assessed taluks (GWRA-2020)	7.0 count
Groundwater	Safe-category taluks (GWRA-2020)	7.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	0.2 m bgl
D9	Bore/tubewell structures (CGWB booklet	6477.0 count
Quality	Quality	1.0 count
D11	Dominant soil type	Coastal laterite/alluvial text
Agriculture	Agriculture share of GDDP	9.6 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	7322.0 ha
Irrigation	Irrigation by dugwell (CGWB booklet)	45014.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	9098.0 ha
Irrigation	Irrigation by other (CGWB booklet)	18404.0 ha
Consumption	Consumption	1.1 TMC
Urban	Primary water source (Mangaluru)	Netravati River — Thumbe vented dam (14 km)
Urban	Summer water-supply stress (Mangaluru)	Seasonal saline-ingress + low-flow scarcity status
Water bodies	Irrigation tank count and area	2.0 count/ha
Forest	Forest Cover (district)	63.0 % of geo
Forest	ForestCover	67.9 %
D18	Groundwater vulnerability class (DRAST	LOW
D19	Coastline length	62.0 km
D19	Key coastal groundwater issues	Flooding and coastal erosion; saline water intrusion along rivers in summer; water-logging in low-lying coastal/riverside areas text
Population	Total population (2011 Census)	2089649.0 count
Population	Decadal population growth 2001-2011	10.1 %

Domain	Indicator	Value
Population	Sex ratio (females per 1000 males)	1020.0 ratio
Population	Literacy rate	88.6 %
Population	Population density	430.0 per sq k
Population	Human Development Index (2022)	0.7 index
Population	Total Population (Census 2011)	2089649.0 count
Population	Population Density (Census 2011)	430.0 per km2
Sanitation	Sewage Treatment Gap	23.5 MLD
Sanitation	Municipal Solid Waste (district)	434.0 TPD
Sanitation	Municipal Solid Waste generated (distr	416.8 TPD (ton
Sanitation	Sewage generated (district)	65.5 MLD
Sanitation	Number of Sewage Treatment Plants	7.0 count
Sanitation	STP installed capacity	97.8 MLD
Sanitation	STP capacity gap (installed vs operati	55.8 MLD
Sanitation	Number of Urban Local Bodies reporting	7.0 count
Sanitation	Municipal solid waste generated	1096.0 tonnes/d
Industry	MSME Units (district)	49634.0 count
Economy	Gross District Domestic Product	125140.0 INR cr
Economy	Per Capita Income (district)	492074.0 INR
Economy	Per Capita Income (2023-24)	556059.0 Rs/yr
D28	Traditional tank count	2.0 count
D31	Heritage water structures (cluster-lev	Coastal temple tanks and sacred groves (kere/kola) tied to Western Ghats forest-stream systems text
D31	Traditional percolation ponds (madaka)	3.0 count

Safe: stage 44.3% with recharge comfortably ahead of extraction. High rainfall (3975 mm) underwrites the margin — quality, not quantity, is the watch-item here.

Udupi · C3 Western Ghats & Coastal

Stage **34.4%** · SAFE · recharge 18.3 TMC · water level 6.2 m · other-source 15.1% · rainfall 4119 mm

Indicator	Value	Src
Aquifer depth-to-water	2.2	[A]
Forest cover	63.0%	[A]
District GDP (INR cr)	59236.0	[A]
Per-capita income (INR)	533469.0	[A]

Indicator	Value	Src
Sewage generated (MLD)	47.9	[A]
MSME units	29905.0	[A]
Population (2011 Census)	1177361.0	[A]
HDI (2022)	0.7	[B]
Vulnerability class (DRASTIC)	LOW	[B]
River basin	West-flowing (short coastal)	[C]
Dominant soil	Coastal laterite/alluvial	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Udupi — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall	4119.0 mm
Climate	Average Annual Rainfall (district)	4119.0 mm
Climate	Rainfall	5261.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	938.8 mm
D4	River basin / drainage system	West-flowing (short coastal) text
Reservoir	Storage	5.3 TMC
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	34.4 %
Groundwater	Total Annual GW Recharge (district)	18.3 TMC (1 T
Groundwater	Static Water Level depth (district mea	6.2 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	15.1 % of tot
Groundwater	Recharge-decomp	15.1 %
Groundwater	Irrigation extraction (GWRA-2025)	0.5 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	32.8 %
Groundwater	Total assessed taluks (GWRA-2020)	7.0 count
Groundwater	Safe-category taluks (GWRA-2020)	7.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	2.2 m bgl
Quality	Quality	1.0 count

Domain	Indicator	Value
D11	Dominant soil type	Coastal laterite/alluvial text
Agriculture	Agriculture share of GDDP	15.1 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	41212.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	7.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	1.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	28.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	2.0 ha
Consumption	Consumption	0.6 TMC
Forest	Forest Cover (district)	63.0 % of geo
Forest	ForestCover	63.6 %
D18	Groundwater vulnerability class (DRAST	LOW
D19	Coastline length	98.0 km
D19	Fishing share of district income	4.3 %
Population	Total population (2011 Census)	1177361.0 count
Population	Decadal population growth 2001-2011	5.8 %
Population	Sex ratio (females per 1000 males)	1094.0 ratio
Population	Literacy rate	86.2 %
Population	Population density	329.0 per sq k
Population	Human Development Index (2022)	0.7 index
Population	Total Population (Census 2011)	1177361.0 count
Population	Population Density (Census 2011)	329.0 per km2
Sanitation	Sewage Treatment Gap	41.9 MLD
Sanitation	Municipal Solid Waste (district)	116.0 TPD
Sanitation	Municipal Solid Waste generated (distr	110.3 TPD (ton
Sanitation	Sewage generated (district)	47.9 MLD
Sanitation	Number of Urban Local Bodies reporting	5.0 count
Sanitation	Municipal solid waste generated	155.0 tonnes/d
Industry	MSME Units (district)	29905.0 count
Economy	Gross District Domestic Product	59236.0 INR cr
Economy	Per Capita Income (district)	414274.0 INR
Economy	Per Capita Income (2023-24)	533469.0 Rs/yr
D31	Traditional percolation ponds (madaka)	3.0 count

Safe: stage 34.4% with recharge comfortably ahead of extraction. High rainfall (4119 mm) underwrites the margin — quality, not quantity, is the watch-item here.

Uttara Kannada · C3 Western Ghats & Coastal

Stage **32.2%** · SAFE · recharge 32.3 TMC · water level 5.7 m · other-source 11.0% · rainfall 2835 mm

Indicator	Value	Src
Aquifer depth-to-water	2.0	[A]
Forest cover	79.1%	[A]
District GDP (INR cr)	39783.0	[A]
Per-capita income (INR)	266619.0	[A]
Sewage generated (MLD)	45.1	[A]
MSME units	27886.0	[A]
Population (2011 Census)	1437169.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	LOW	[B]
River basin	West-flowing (Kali/Sharavathi)	[C]
Dominant soil	Coastal laterite + Western Ghats	[C]
Principal reservoir	Supa/Kali (12,900 ha)	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Uttara Kannada — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	2835.0 mm
Climate	Rainfall	3914.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	453.4 mm
D4	River basin / drainage system	West-flowing (Kali/Sharavathi) text
Reservoir	Storage	29.3 TMC
Reservoir	Major reservoirs (count, area)	7.0 count/ha
Reservoir	Principal named reservoir	Supa/Kali (12,900 ha) text
Reservoir	Named dam register	Kadavinakatta Dam, Supa Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	32.2 %
Groundwater	Total Annual GW Recharge (district)	32.3 TMC (1 T
Groundwater	Static Water Level depth (district mea	5.7 m bgl

Domain	Indicator	Value
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	11.0 % of tot
Groundwater	Recharge-decomp	11.0 %
Groundwater	Irrigation extraction (GWRA-2025)	0.8 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	30.5 %
Groundwater	Stage of GW development (CGWB booklet	24.7 %
Groundwater	Total assessed taluks (GWRA-2020)	12.0 count
Groundwater	Safe-category taluks (GWRA-2020)	12.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	2.0 m bgl
D9	Drinking-water boreholes drilled	6607.0 count
Quality	Quality	2.0 count
D11	Dominant soil type	Coastal laterite + Western Ghats text
Agriculture	Agriculture share of GDDP	21.0 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	39856.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	65.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	8.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	10552.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	1.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	6.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	24.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	1630.0 ha
Irrigation	Irrigation by dugwell (CGWB booklet)	7302.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	2090.0 ha
Irrigation	Irrigation by lift (CGWB booklet)	596.0 ha
Irrigation	Irrigation by tank (CGWB booklet)	4754.0 ha
Irrigation	Irrigation by canal (CGWB booklet)	94.0 ha
Irrigation	Irrigation by other (CGWB booklet)	10601.0 ha
Consumption	Consumption	0.9 TMC
Urban	Piped water supply schemes	689.0 count
Water bodies	Irrigation tank count and area	48.0 count/ha
Forest	Forest Cover (district)	79.1 % of geo
Forest	ForestCover	79.2 %
D18	Groundwater vulnerability class (DRAST	LOW
D19	Coastline length	160.0 km

Domain	Indicator	Value
D19	Fishing share of district income	4.2 %
D19	Key coastal groundwater issues	Highly undulating topography + permeable shallow aquifers = high runoff, summer scarcity despite good rainfall; sea-water ingression risk coastal aquifers (Bhatkal); mining/industrial effluent risk Dandeli/Supa areas text
D19	Coastline length (CGWB booklet)	122.0 km
Population	Total population (2011 Census)	1437169.0 count
Population	Decadal population growth 2001-2011	6.2 %
Population	Sex ratio (females per 1000 males)	979.0 ratio
Population	Literacy rate	84.1 %
Population	Population density	140.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1437169.0 count
Population	Population Density (Census 2011)	140.0 per km2
Sanitation	Sewage Treatment Gap	39.3 MLD
Sanitation	Municipal Solid Waste (district)	124.0 TPD
Sanitation	Municipal Solid Waste generated (distr	152.0 TPD (ton
Sanitation	Sewage generated (district)	45.1 MLD
Industry	MSME Units (district)	27886.0 count
Economy	Gross District Domestic Product	39783.0 INR cr
Economy	Per Capita Income (district)	220984.0 INR
Economy	Per Capita Income (2023-24)	266619.0 Rs/yr
D28	Traditional tank count	48.0 count
D31	Traditional percolation ponds (madaka)	3.0 count

Safe: stage 32.2% with recharge comfortably ahead of extraction. High rainfall (2835 mm) underwrites the margin — quality, not quantity, is the watch-item here.

Shivamogga · C3 Western Ghats & Coastal

Stage **41.1%** · SAFE · recharge 39.0 TMC · water level 7.2 m · other-source 41.2% · rainfall 1813 mm

Indicator	Value	Src
Aquifer depth-to-water	0.7	[A]
Forest cover	50.4%	[A]
District GDP (INR cr)	63028.0	[A]
Per-capita income (INR)	349177.0	[A]
Sewage generated (MLD)	76.6	[A]
MSME units	32995.0	[A]
Population (2011 Census)	1752753.0	[A]
Vulnerability class (DRASTIC)	LOW	[B]
River basin	West-flowing (Sharavathi) + Tungabhadra	[C]
Dominant soil	Laterite + Western Ghats	[C]
Principal reservoir	Linganamakki/Sharavathi (40,500 ha)	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Shivamogga — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	1813.0 mm
Climate	Rainfall	2690.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	368.1 mm
D4	River basin / drainage system	West-flowing (Sharavathi) + Tungabhadra text
Reservoir	Storage	17.0 TMC
Reservoir	Major reservoirs (count, area)	10.0 count/ha
Reservoir	Principal named reservoir	Linganamakki/Sharavathi (40,500 ha) text
Reservoir	Named dam register	Chakra Dam, Gajanur Dam, Tunga Anicut Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	41.1 %
Groundwater	Total Annual GW Recharge (district)	39.0 TMC (1 T
Groundwater	Static Water Level depth (district mea	7.2 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	41.2 % of tot
Groundwater	Recharge-decomp	41.2 %
Groundwater	Irrigation extraction (GWRA-2025)	1.4 TMC (1 T

Domain	Indicator	Value
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	42.4 %
Groundwater	Stage of GW development (CGWB booklet,	32.1 %
Groundwater	Total assessed taluks (GWRA-2020)	7.0 count
Groundwater	Safe-category taluks (GWRA-2020)	7.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	0.7 m bgl
D9	Irrigation borewell structures (CGWB b	14752.0 count
Quality	Quality	1.0 count
D11	Dominant soil type	Laterite + Western Ghats text
Agriculture	Agriculture share of GDDP	23.3 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	82280.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	4.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	105.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	55579.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	1.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	19.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	81.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	599.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	24.0 ha
Irrigation	Dominant irrigation source (district r	Largest tank-irrigated a
Irrigation	Dominant/leading irrigation source (st	Tank text
Irrigation	Irrigation by canal (CGWB booklet)	43440.0 ha
Irrigation	Irrigation by tank (CGWB booklet)	47950.0 ha
Irrigation	Irrigation by dugwell (CGWB booklet)	6573.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	13242.0 ha
Irrigation	Irrigation by lift (CGWB booklet)	5427.0 ha
Consumption	Consumption	1.4 TMC
Water bodies	Irrigation tank count and area	626.0 count/ha
Forest	Forest Cover (district)	50.4 % of geo
Forest	ForestCover	50.6 %
D18	Groundwater vulnerability class (DRAST	LOW
Population	Total population (2011 Census)	1752753.0 count
Population	Decadal population growth 2001-2011	6.7 %
Population	Sex ratio (females per 1000 males)	998.0 ratio
Population	Literacy rate	80.5 %

Domain	Indicator	Value
Population	Population density	207.0 per sq k
Population	Total Population (Census 2011)	1752753.0 count
Population	Population Density (Census 2011)	207.0 per km2
Sanitation	Sewage Treatment Gap	45.3 MLD
Sanitation	Municipal Solid Waste (district)	318.0 TPD
Sanitation	Municipal Solid Waste generated (distr	289.0 TPD (ton
Sanitation	Sewage generated (district)	76.6 MLD
Sanitation	Number of Urban Local Bodies reporting	9.0 count
Sanitation	Municipal solid waste generated	304.0 tonnes/d
Industry	MSME Units (district)	32995.0 count
Economy	Gross District Domestic Product	63028.0 INR cr
Economy	Per Capita Income (district)	290893.0 INR
Economy	Per Capita Income (2023-24)	349177.0 Rs/yr
D28	Traditional tank count	626.0 count

Safe: stage 41.1% with recharge comfortably ahead of extraction. High rainfall (1813 mm) underwrites the margin — quality, not quantity, is the watch-item here.

Chikkamagaluru · C3 Western Ghats & Coastal

Stage **55.6%** · SAFE · recharge 23.9 TMC · water level 8.4 m · other-source 55.5% · rainfall 1925 mm

Indicator	Value	Src
Aquifer depth-to-water	0.9	[A]
Forest cover	55.1%	[A]
District GDP (INR cr)	52893.0	[A]
Per-capita income (INR)	444472.0	[A]
Sewage generated (MLD)	35.7	[A]
STP count	2.0	[A]
MSME units	17870.0	[A]
Population (2011 Census)	1137961.0	[A]
HDI (2022)	0.7	[B]
Vulnerability class (DRASTIC)	LOW	[B]
River basin	Tungabhadra (Bhadra) + Hemavathy	[C]
Dominant soil	Laterite + Western Ghats	[C]
Principal reservoir	Bhadra (10,870 ha)	[C]

Beyond the headline indicators above, the schema carries a fuller sourced record for Chikkamagaluru — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	1925.0 mm
Climate	Rainfall	2250.0 mm
D4	River basin / drainage system	Tungabhadra (Bhadra) + Hemavathy text
Reservoir	Major reservoirs (count, area)	2.0 count/ha
Reservoir	Principal named reservoir	Bhadra (10,870 ha) text
Reservoir	Named dam register	Bhadra Dam, Lakhya Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	55.6 %
Groundwater	Total Annual GW Recharge (district)	23.9 TMC (1 T
Groundwater	Static Water Level depth (district mea	8.4 m bgl
Groundwater	Over-Exploited taluks (share)	11.1 % of ass
Groundwater	GW Recharge: other-source share (2024)	55.5 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	1.0 named un
Groundwater	Recharge-decomp	55.5 %
Groundwater	Irrigation extraction (GWRA-2025)	1.1 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	55.2 %
Groundwater	Stage of GW development (CGWB booklet	46.0 %
Groundwater	Total assessed taluks (GWRA-2020)	8.0 count
Groundwater	Safe-category taluks (GWRA-2020)	6.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	2.0 count
Aquifer	DepthToWater	0.9 m bgl
D9	Dug wells (MI Census 2006-07)	426.0 count
D9	Shallow tubewells (MI Census 2006-07)	24212.0 count
Quality	Quality	1.0 count
D11	Dominant soil type	Laterite + Western Ghats text
Agriculture	Agriculture share of GDDP	23.8 %
Irrigation	Irrigation by dugwell (CGWB booklet)	500.0 ha
Irrigation	Irrigation by shallow_tw (CGWB booklet	26046.0 ha

Domain	Indicator	Value
Irrigation	Irrigation by lift (CGWB booklet)	16051.0 ha
Irrigation	Irrigation by surface_flow (CGWB bookl	17991.0 ha
Consumption	Consumption	1.2 TMC
Water bodies	Irrigation tank count and area	146.0 count/ha
Forest	Forest Cover (district)	55.1 % of geo
Forest	ForestCover	56.3 %
D18	Groundwater vulnerability class (DRAST	LOW
Population	Total population (2011 Census)	1137961.0 count
Population	Decadal population growth 2001-2011	-0.3 %
Population	Sex ratio (females per 1000 males)	1008.0 ratio
Population	Literacy rate	79.3 %
Population	Population density	158.0 per sq k
Population	Human Development Index (2022)	0.7 index
Population	Total Population (Census 2011)	1137961.0 count
Population	Population Density (Census 2011)	158.0 per km2
Sanitation	Sewage Treatment Gap	21.1 MLD
Sanitation	Municipal Solid Waste (district)	114.0 TPD
Sanitation	Municipal Solid Waste generated (distr	114.2 TPD (ton
Sanitation	Sewage generated (district)	35.7 MLD
Sanitation	Number of Sewage Treatment Plants	2.0 count
Sanitation	STP installed capacity	22.6 MLD
Sanitation	STP capacity gap (installed vs operati	8.0 MLD
Sanitation	Number of Urban Local Bodies reporting	7.0 count
Sanitation	Municipal solid waste generated	26.0 tonnes/d
Industry	MSME Units (district)	17870.0 count
Economy	Gross District Domestic Product	52893.0 INR cr
Economy	Per Capita Income (district)	377968.0 INR
Economy	Per Capita Income (2023-24)	444472.0 Rs/yr
D28	Traditional tank count	146.0 count

Safe on stage (55.6%), but 55.5% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

C4 · North Karnataka Dry Zone

Vijayapura · C4 North Karnataka Dry Zone

Stage **43.2%** · SAFE · recharge 35.4 TMC · water level 10.4 m · other-source 35.9% · rainfall 578 mm

Indicator	Value	Src
Aquifer depth-to-water	1.5	[A]
Forest cover	0.3%	[A]
District GDP (INR cr)	46483.0	[A]
Per-capita income (INR)	163431.0	[A]
Sewage generated (MLD)	68.3	[A]
STP count	6.0	[A]
MSME units	29866.0	[A]
Population (2011 Census)	2177331.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]
River basin	Krishna (Bhima)	[C]
Dominant soil	Black (Deccan basalt)	[C]
Principal reservoir	Narayanpura (13,048 ha)	[C]
Leading crop (2022-23)	Tur	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Vijayapura — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Rainfall status 2024	DEFICIT
Climate	Average Annual Rainfall (district)	578.0 mm
Climate	Rainfall	622.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	198.1 mm
D4	River basin / drainage system	Krishna (Bhima) text
Reservoir	Major reservoirs (count, area)	5.0 count/ha
Reservoir	Principal named reservoir	Narayanpura (13,048 ha) text
Reservoir	Named dam register	Aheri-Jumbagi Dam list
Groundwater	GW Category (district)	SAFE

Domain	Indicator	Value
Groundwater	Stage of GW Extraction (district)	43.2 %
Groundwater	Total Annual GW Recharge (district)	35.4 TMC (1 T
Groundwater	Static Water Level depth (district mea	10.4 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	35.9 % of tot
Groundwater	Recharge-decomp	35.9 %
Groundwater	Irrigation extraction (GWRA-2025)	1.3 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.2 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	45.0 %
Groundwater	Total assessed taluks (GWRA-2020)	12.0 count
Groundwater	Safe-category taluks (GWRA-2020)	7.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	4.0 count
Groundwater	Critical taluks (GWRA-2020)	1.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	1.5 m bgl
Quality	Quality	3.0 count
D11	Dominant soil type	Black (Deccan basalt) text
Agriculture	Agriculture share of GDDP	35.0 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	108.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	49551.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	129.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	103004.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	19314.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	29992.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	375180.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	19791.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	5930.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	1410.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	2240.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	23787.0 ha
Consumption	Consumption	1.4 TMC
Water bodies	Irrigation tank count and area	105.0 count/ha
Forest	Forest Cover (district)	0.3 % of geo
Forest	ForestCover	0.3 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	2177331.0 count
Population	Decadal population growth 2001-2011	20.5 %
Population	Sex ratio (females per 1000 males)	960.0 ratio

Domain	Indicator	Value
Population	Literacy rate	67.2 %
Population	Population density	207.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	2177331.0 count
Population	Population Density (Census 2011)	210.0 per km2
Sanitation	Sewage Treatment Gap	32.9 MLD
Sanitation	Municipal Solid Waste (district)	231.0 TPD
Sanitation	Municipal Solid Waste generated (distr	216.5 TPD (ton
Sanitation	Sewage generated (district)	68.3 MLD
Sanitation	Number of Sewage Treatment Plants	6.0 count
Sanitation	STP installed capacity	44.0 MLD
Sanitation	STP capacity gap (installed vs operati	8.5 MLD
Sanitation	Number of Urban Local Bodies reporting	10.0 count
Sanitation	Municipal solid waste generated	695.0 tonnes/d
Industry	MSME Units (district)	29866.0 count
Economy	Gross District Domestic Product	46483.0 INR cr
Economy	Per Capita Income (district)	169253.0 INR
Economy	Per Capita Income (2023-24)	163431.0 Rs/yr
D28	Traditional tank count	105.0 count
D31	Heritage water structures (cluster-lev	North Karnataka canal-command traditional structures; Krishna-basin ancient tanks text

Safe: stage 43.2% with recharge comfortably ahead of extraction.

Bagalkot · C4 North Karnataka Dry Zone

Stage **84.4%** · SEMI-CRITICAL · recharge 23.1 TMC · water level 10.7 m · other-source 66.3% · rainfall 562 mm

Indicator	Value	Src
Aquifer depth-to-water	0.1	[A]
Forest cover	3.9%	[A]
District GDP (INR cr)	53094.0	[A]
Per-capita income (INR)	249478.0	[A]
Sewage generated (MLD)	76.6	[A]
STP count	9.0	[A]
MSME units	26748.0	[A]

Indicator	Value	Src
Population (2011 Census)	1889752.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]
River basin	Krishna (Ghataprabha/Malaprabha)	[C]
Dominant soil	Black	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Bagalkot — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall	562.0 mm
Climate	Rainfall status 2024	DEFICIT
Climate	Average Annual Rainfall (district)	562.0 mm
Climate	Rainfall	603.0 mm
D4	River basin / drainage system	Krishna (Ghataprabha/Malaprabha) text
Reservoir	Named dam register	Kanakanala Dam list
Groundwater	GW Category (district)	SEMI-CRITICAL
Groundwater	Stage of GW Extraction (district)	84.4 %
Groundwater	Total Annual GW Recharge (district)	23.1 TMC (1 T
Groundwater	Static Water Level depth (district mea	10.7 m bgl
Groundwater	Over-Exploited taluks (share)	11.1 % of ass
Groundwater	GW Recharge: other-source share (2024)	66.3 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	1.0 named un
Groundwater	Recharge-decomp	66.3 %
Groundwater	Irrigation extraction (GWRA-2025)	1.6 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.2 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	78.9 %
Groundwater	Total assessed taluks (GWRA-2020)	9.0 count
Groundwater	Safe-category taluks (GWRA-2020)	3.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	2.0 count
Groundwater	Critical taluks (GWRA-2020)	1.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	3.0 count
Aquifer	DepthToWater	0.1 m bgl
Quality	Quality	2.0 count

Domain	Indicator	Value
D11	Dominant soil type	Black text
Agriculture	Agriculture share of GDDP	19.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	24.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	40108.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	12.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	79903.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	14761.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	22427.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	37495.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	57144.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	3381.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	31890.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	146.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	64787.0 ha
Consumption	Consumption	1.8 TMC
Forest	Forest Cover (district)	3.9 % of geo
Forest	ForestCover	4.0 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	1889752.0 count
Population	Decadal population growth 2001-2011	14.4 %
Population	Sex ratio (females per 1000 males)	989.0 ratio
Population	Literacy rate	68.8 %
Population	Population density	288.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1889752.0 count
Population	Population Density (Census 2011)	288.0 per km2
Sanitation	Sewage Treatment Gap	53.9 MLD
Sanitation	Municipal Solid Waste (district)	237.0 TPD
Sanitation	Municipal Solid Waste generated (distr	536.3 TPD (ton
Sanitation	Sewage generated (district)	76.6 MLD
Sanitation	Number of Sewage Treatment Plants	9.0 count
Sanitation	STP installed capacity	61.7 MLD
Sanitation	STP capacity gap (installed vs operati	39.0 MLD
Sanitation	Number of Urban Local Bodies reporting	8.0 count
Sanitation	Municipal solid waste generated	114.0 tonnes/d
Industry	MSME Units (district)	26748.0 count
Economy	Gross District Domestic Product	53094.0 INR cr
Economy	Per Capita Income (district)	226482.0 INR
Economy	Per Capita Income (2023-24)	249478.0 Rs/yr

Semi-critical: stage in the 70–100% band. With 66.3% other-source recharge, the margin depends on surface delivery holding up.

Belagavi · C4 North Karnataka Dry Zone

Stage **71.9%** · SEMI-CRITICAL · recharge 42.4 TMC · water level 9.4 m · other-source 49.4% · rainfall 808 mm

Indicator	Value	Src
Aquifer depth-to-water	0.5	[A]
Forest cover	8.7%	[A]
District GDP (INR cr)	91449.0	[A]
Per-capita income (INR)	162987.0	[A]
Sewage generated (MLD)	172.4	[A]
STP count	5.0	[A]
MSME units	82376.0	[A]
Population (2011 Census)	4779661.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]
River basin	Krishna (Ghataprabha/Malaprabha)	[C]
Dominant soil	Black + Western Ghats	[C]
Principal reservoir	Malaprabha (13,440 ha)	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Belagavi — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	808.0 mm
Climate	Rainfall	1165.0 mm
D4	River basin / drainage system	Krishna (Ghataprabha/Malaprabha) text
Reservoir	Major reservoirs (count, area)	4.0 count/ha
Reservoir	Principal named reservoir	Malaprabha (13,440 ha) text
Reservoir	Named dam register	Malaprabha Dam list
Groundwater	GW Category (district)	SEMI-CRITICAL

Domain	Indicator	Value
Groundwater	Stage of GW Extraction (district)	71.9 %
Groundwater	Total Annual GW Recharge (district)	42.4 TMC (1 T
Groundwater	Static Water Level depth (district mea	9.4 m bgl
Groundwater	Over-Exploited taluks (share)	13.3 % of ass
Groundwater	GW Recharge: other-source share (2024)	49.4 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	2.0 named un
Groundwater	Recharge-decomp	49.4 %
Groundwater	Irrigation extraction (GWRA-2025)	2.2 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.5 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	70.4 %
Groundwater	Total assessed taluks (GWRA-2020)	14.0 count
Groundwater	Safe-category taluks (GWRA-2020)	5.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	4.0 count
Groundwater	Critical taluks (GWRA-2020)	1.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	4.0 count
Aquifer	DepthToWater	0.5 m bgl
Quality	Quality	1.0 count
D11	Dominant soil type	Black + Western Ghats text
Agriculture	Maize Area	1300000.0 ha
Agriculture	Agriculture share of GDDP	22.6 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	53095.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	108646.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	762.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	188737.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	6392.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	47950.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	11516.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	107651.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	19060.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	17011.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	1610.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	167973.0 ha
Irrigation	Dominant irrigation source (district r	Largest traditional-well
Irrigation	Dominant/leading irrigation source (st	Well/Traditional text
Consumption	Consumption	2.8 TMC
Urban	Urban water supply status/coverage	KUWSMP demonstration zone city text
Water bodies	Irrigation tank count and area	81.0 count/ha

Domain	Indicator	Value
Forest	Forest Cover (district)	8.7 % of geo
Forest	ForestCover	8.6 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	4779661.0 count
Population	Decadal population growth 2001-2011	13.4 %
Population	Sex ratio (females per 1000 males)	973.0 ratio
Population	Literacy rate	73.5 %
Population	Population density	356.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	4779661.0 count
Population	Population Density (Census 2011)	356.0 per km2
Sanitation	Sewage Treatment Gap	164.2 MLD
Sanitation	Municipal Solid Waste (district)	557.0 TPD
Sanitation	Municipal Solid Waste generated (distr	120.9 TPD (ton
Sanitation	Sewage generated (district)	172.4 MLD
Sanitation	Number of Sewage Treatment Plants	5.0 count
Sanitation	STP installed capacity	29.8 MLD
Sanitation	STP capacity gap (installed vs operati	21.6 MLD
Sanitation	Number of Urban Local Bodies reporting	27.0 count
Sanitation	Municipal solid waste generated	347.0 tonnes/d
Industry	MSME Units (district)	82376.0 count
Economy	Gross District Domestic Product	91449.0 INR cr
Economy	Per Capita Income (district)	149710.0 INR
Economy	Per Capita Income (2023-24)	162987.0 Rs/yr
D28	Traditional tank count	81.0 count

Semi-critical: stage in the 70–100% band. With 49.4% other-source recharge, the margin depends on surface delivery holding up.

Dharwad · C4 North Karnataka Dry Zone

Stage **55.3%** · SAFE · recharge 11.4 TMC · water level 6.9 m · other-source 42.5% · rainfall 772 mm

Indicator	Value	Src
Aquifer depth-to-water	2.0	[A]
Forest cover	8.8%	[A]
District GDP (INR cr)	52941.0	[A]

Indicator	Value	Src
Per-capita income (INR)	261563.0	[A]
Sewage generated (MLD)	115.0	[A]
MSME units	48760.0	[A]
Population (2011 Census)	1847023.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Krishna (Malaprabha)	[C]
Dominant soil	Black + red (laterite)	[C]
Principal reservoir	Neerasagara (480 ha)	[C]
Leading crop (2022-23)	Bengalgram	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Dharwad — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	772.0 mm
Climate	Rainfall	890.0 mm
D4	River basin / drainage system	Krishna (Malaprabha) text
Reservoir	Major reservoirs (count, area)	2.0 count/ha
Reservoir	Principal named reservoir	Neerasagara (480 ha) text
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	55.3 %
Groundwater	Total Annual GW Recharge (district)	11.4 TMC (1 T
Groundwater	Static Water Level depth (district mea	6.9 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	42.5 % of tot
Groundwater	Recharge-decomp	42.5 %
Groundwater	Irrigation extraction (GWRA-2025)	0.5 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	56.9 %
Groundwater	Stage of GW development (CGWB booklet,	35.4 %
Groundwater	Annual GW resource (CGWB booklet, hist	1.1 TMC
Groundwater	Total assessed taluks (GWRA-2020)	8.0 count
Groundwater	Safe-category taluks (GWRA-2020)	8.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count

Domain	Indicator	Value
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	Principal aquifer (Dharwad)	Peninsular gneiss/granite + Dharwar schist
Aquifer	DepthToWater	2.0 m bgl
D9	Registered irrigation electric motors	13543.0 count
Quality	GW quality flag (Dharwad)	Navalgund taluk salinity-tagged (2024)
Quality	Quality	2.0 count
D11	Dominant soil type	Black + red (laterite) text
Agriculture	Agriculture share of GDDP	8.3 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	9076.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	28482.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	21.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	60101.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	15.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	3274.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	70.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	141619.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	18818.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	5766.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	2511.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	7065.0 ha
Consumption	Consumption	0.6 TMC
Urban	Per-capita water supply (HDMC)	55.0 LPCD
Urban	Primary water source (HDMC)	188.0 MLD
Urban	24x7 supply project status (HDMC)	STALLED (82 wards, decade+) status
Urban	Households on piped supply (HDMC)	85.0 %
Urban	Per-capita water supply target (KUWSMP	135.0 lpcd
Urban	Urban water supply status/coverage	~50% piped, 2-3x/week supply pre-project text
Water bodies	Irrigation tank count and area	245.0 count/ha
Forest	Forest Cover (district)	8.8 % of geo
Forest	ForestCover	9.0 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1847023.0 count
Population	Decadal population growth 2001-2011	15.1 %
Population	Sex ratio (females per 1000 males)	971.0 ratio
Population	Literacy rate	80.0 %

Domain	Indicator	Value
Population	Population density	434.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1847023.0 count
Population	Population Density (Census 2011)	434.0 per km2
Sanitation	Sewage Treatment Gap	74.2 MLD
Sanitation	Municipal Solid Waste (district)	466.0 TPD
Sanitation	Municipal Solid Waste generated (distr	438.8 TPD (ton
Sanitation	Sewage generated (district)	115.0 MLD
Sanitation	Number of Urban Local Bodies reporting	6.0 count
Sanitation	Municipal solid waste generated	484.0 tonnes/d
Industry	MSME Units (district)	48760.0 count
Economy	Gross District Domestic Product	52941.0 INR cr
Economy	Per Capita Income (district)	231939.0 INR
Economy	Per Capita Income (2023-24)	261563.0 Rs/yr
D28	Traditional tank count	245.0 count

Safe: stage 55.3% with recharge comfortably ahead of extraction.

Gadag · C4 North Karnataka Dry Zone

Stage **81.3%** · SEMI-CRITICAL · recharge 11.7 TMC · water level 8.9 m · other-source 49.1% · rainfall 612 mm

Indicator	Value	Src
Aquifer depth-to-water	1.6	[A]
Forest cover	3.0%	[A]
District GDP (INR cr)	22891.0	[A]
Per-capita income (INR)	194453.0	[A]
Sewage generated (MLD)	33.4	[A]
MSME units	15111.0	[A]
Population (2011 Census)	1064570.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Krishna (Malaprabha/Tungabhadra)	[C]
Dominant soil	Black	[C]
Leading crop (2022-23)	Bengalgram	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Gadag — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	612.0 mm
Climate	Rainfall	583.0 mm
D4	River basin / drainage system	Krishna (Malaprabha/Tungabhadra) text
Groundwater	GW Category (district)	SEMI-CRITICAL
Groundwater	Stage of GW Extraction (district)	81.3 %
Groundwater	Total Annual GW Recharge (district)	11.7 TMC (1 T
Groundwater	Static Water Level depth (district mea	8.9 m bgl
Groundwater	Over-Exploited taluks (share)	14.3 % of ass
Groundwater	GW Recharge: other-source share (2024)	49.1 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	1.0 named un
Groundwater	Recharge-decomp	49.1 %
Groundwater	Irrigation extraction (GWRA-2025)	0.8 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	75.4 %
Groundwater	Stage of GW development (CGWB booklet,	94.0 %
Groundwater	Total assessed taluks (GWRA-2020)	7.0 count
Groundwater	Safe-category taluks (GWRA-2020)	1.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	3.0 count
Groundwater	Critical taluks (GWRA-2020)	1.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	2.0 count
Aquifer	DepthToWater	1.6 m bgl
D9	Dug wells (MI Census 2000-01)	2201.0 count
D9	Shallow borewells (MI Census 2000-01)	6772.0 count
Quality	Quality	4.0 count
D11	Dominant soil type	Black text
Agriculture	Agriculture share of GDDP	15.7 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	7825.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	26165.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	39.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	124867.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	434.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	4631.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	196.0 ha

Domain	Indicator	Value
Agriculture	Area under Bengalgram (Reconciled, Cro	153989.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	22617.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	27210.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	1708.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	1902.0 ha
Irrigation	Irrigation by dugwell (CGWB booklet)	2008.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	26856.0 ha
Irrigation	Irrigation by tank (CGWB booklet)	1246.0 ha
Irrigation	Irrigation by canal (CGWB booklet)	20016.0 ha
Irrigation	Irrigation by other (CGWB booklet)	5246.0 ha
Irrigation	Irrigation by lift (CGWB booklet)	1309.0 ha
Consumption	Consumption	0.9 TMC
Forest	Forest Cover (district)	3.0 % of geo
Forest	ForestCover	3.0 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1064570.0 count
Population	Decadal population growth 2001-2011	9.5 %
Population	Sex ratio (females per 1000 males)	982.0 ratio
Population	Literacy rate	75.1 %
Population	Population density	229.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1064570.0 count
Population	Population Density (Census 2011)	229.0 per km2
Sanitation	Sewage Treatment Gap	23.3 MLD
Sanitation	Municipal Solid Waste (district)	148.0 TPD
Sanitation	Municipal Solid Waste generated (distr	148.0 TPD (ton
Sanitation	Sewage generated (district)	33.4 MLD
Industry	MSME Units (district)	15111.0 count
Economy	Gross District Domestic Product	22891.0 INR cr
Economy	Per Capita Income (district)	169704.0 INR
Economy	Per Capita Income (2023-24)	194453.0 Rs/yr

Semi-critical: stage in the 70–100% band. With 49.1% other-source recharge, the margin depends on surface delivery holding up.

Haveri · C4 North Karnataka Dry Zone

Stage **70.7%** · SAFE · recharge 20.2 TMC · water level 7.8 m · other-source 58.6% · rainfall 753 mm

Indicator	Value	Src
Aquifer depth-to-water	0.9	[A]
Forest cover	7.2%	[A]
District GDP (INR cr)	31989.0	[A]
Per-capita income (INR)	184111.0	[A]
Sewage generated (MLD)	50.1	[A]
MSME units	21880.0	[A]
Population (2011 Census)	1597668.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Tungabhadra (Varada)	[C]
Dominant soil	Black + red	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Haveri — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	753.0 mm
Climate	Rainfall	899.0 mm
D4	River basin / drainage system	Tungabhadra (Varada) text
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	70.7 %
Groundwater	Total Annual GW Recharge (district)	20.2 TMC (1 T
Groundwater	Static Water Level depth (district mea	7.8 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	58.6 % of tot
Groundwater	Recharge-decomp	58.6 %
Groundwater	Irrigation extraction (GWRA-2025)	1.2 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	64.5 %
Groundwater	Total assessed taluks (GWRA-2020)	8.0 count
Groundwater	Safe-category taluks (GWRA-2020)	4.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	4.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	0.9 m bgl

Domain	Indicator	Value
Quality	Quality	2.0 count
D11	Dominant soil type	Black + red text
Agriculture	Agriculture share of GDDP	21.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	38930.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	50975.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	155.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	326554.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	9.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	217.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	107.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	3934.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	10705.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	11299.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	1322.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	2731.0 ha
Consumption	Consumption	1.3 TMC
Forest	Forest Cover (district)	7.2 % of geo
Forest	ForestCover	7.4 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1597668.0 count
Population	Decadal population growth 2001-2011	11.0 %
Population	Sex ratio (females per 1000 males)	950.0 ratio
Population	Literacy rate	77.4 %
Population	Population density	331.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1597668.0 count
Population	Population Density (Census 2011)	331.0 per km2
Sanitation	Sewage Treatment Gap	38.6 MLD
Sanitation	Municipal Solid Waste (district)	131.0 TPD
Sanitation	Municipal Solid Waste generated (distr	352.6 TPD (ton
Sanitation	Sewage generated (district)	50.1 MLD
Industry	MSME Units (district)	21880.0 count
Economy	Gross District Domestic Product	31989.0 INR cr
Economy	Per Capita Income (district)	157931.0 INR
Economy	Per Capita Income (2023-24)	184111.0 Rs/yr

Safe on stage (70.7%), but 58.6% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Raichur · C4 North Karnataka Dry Zone

Stage **47.4%** · SAFE · recharge 28.0 TMC · water level 4.5 m · other-source 60.6% · rainfall 621 mm

Indicator	Value	Src
Aquifer depth-to-water	0.6	[A]
Forest cover	0.5%	[A]
District GDP (INR cr)	40226.0	[A]
Per-capita income (INR)	166371.0	[A]
Sewage generated (MLD)	70.9	[A]
MSME units	21063.0	[A]
Population (2011 Census)	1928812.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]
River basin	Krishna/Tungabhadra doab	[C]
Dominant soil	Black + red (salt-affected pockets)	[C]
Principal reservoir	Rajolibunda (570 ha)	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Raichur — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	621.0 mm
Climate	Rainfall	637.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	190.3 mm
D4	River basin / drainage system	Krishna/Tungabhadra doab text
Reservoir	Major reservoirs (count, area)	2.0 count/ha
Reservoir	Principal named reservoir	Rajolibunda (570 ha) text
Reservoir	Named dam register	Basava Sagar (Narayanpur) Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	47.4 %
Groundwater	Total Annual GW Recharge (district)	28.0 TMC (1 T
Groundwater	Static Water Level depth (district mea	4.5 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass

Domain	Indicator	Value
Groundwater	GW Recharge: other-source share (2024)	60.6 % of tot
Groundwater	Recharge-decomp	60.6 %
Groundwater	Irrigation extraction (GWRA-2025)	1.1 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	44.0 %
Groundwater	Total assessed taluks (GWRA-2020)	7.0 count
Groundwater	Safe-category taluks (GWRA-2020)	5.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	2.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	0.6 m bgl
Quality	Quality	5.0 count
D11	Dominant soil type	Black + red (salt-affected pockets) text
Agriculture	Agriculture share of GDDP	30.7 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	263548.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	53561.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	71.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	2467.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	21883.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	146.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	108337.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	35634.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	707.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	33002.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	3730.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	238.0 ha
Irrigation	Dominant irrigation source (district r	Largest canal-irrigated
Irrigation	Dominant/leading irrigation source (st	Canal text
Consumption	Consumption	1.2 TMC
Water bodies	Irrigation tank count and area	89.0 count/ha
Forest	Forest Cover (district)	0.5 % of geo
Forest	ForestCover	0.6 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	1928812.0 count
Population	Decadal population growth 2001-2011	15.5 %
Population	Sex ratio (females per 1000 males)	1000.0 ratio
Population	Literacy rate	59.6 %
Population	Population density	228.0 per sq k

Domain	Indicator	Value
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1928812.0 count
Population	Population Density (Census 2011)	228.0 per km2
Sanitation	Sewage Treatment Gap	49.7 MLD
Sanitation	Municipal Solid Waste (district)	220.0 TPD
Sanitation	Municipal Solid Waste generated (distr	223.9 TPD (ton
Sanitation	Sewage generated (district)	70.9 MLD
Sanitation	Number of Urban Local Bodies reporting	7.0 count
Sanitation	Municipal solid waste generated	49.0 tonnes/d
Industry	MSME Units (district)	21063.0 count
Economy	Gross District Domestic Product	40226.0 INR cr
Economy	Per Capita Income (district)	164705.0 INR
Economy	Per Capita Income (2023-24)	166371.0 Rs/yr
D28	Traditional tank count	89.0 count

Safe on stage (47.4%), but 60.6% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Ballari · C4 North Karnataka Dry Zone

Stage **26.6%** · SAFE · recharge 24.3 TMC · water level 4.3 m · other-source 76.7% · rainfall 636 mm

Indicator	Value	Src
Aquifer depth-to-water	3.0	[A]
Forest cover	8.7%	[A]
District GDP (INR cr)	45536.0	[A]
Per-capita income (INR)	293985.0	[A]
Sewage generated (MLD)	77.4	[A]
STP count	3.0	[A]
MSME units	29997.0	[A]
Population (2011 Census)	2452595.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Tungabhadra	[C]
Dominant soil	Red + black	[C]
Principal reservoir	Tungabhadra (37,814 ha)	[C]
Canal share of irrigation	64.0%	[C]

Indicator	Value	Src
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Ballari — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Rainfall status 2024	DEFICIT
Climate	Average Annual Rainfall (district)	636.0 mm
Climate	Rainfall	663.0 mm
D4	River basin / drainage system	Tungabhadra text
Reservoir	Major reservoirs (count, area)	3.0 count/ha
Reservoir	Principal named reservoir	Tungabhadra (37,814 ha) text
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	26.6 %
Groundwater	Total Annual GW Recharge (district)	24.3 TMC (1 T
Groundwater	Static Water Level depth (district mea	4.3 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	76.7 % of tot
Groundwater	Recharge-decomp	76.7 %
Groundwater	Irrigation extraction (GWRA-2025)	0.5 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	25.4 %
Groundwater	Total assessed taluks (GWRA-2020)	11.0 count
Groundwater	Safe-category taluks (GWRA-2020)	7.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	1.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	3.0 count
Aquifer	DepthToWater	3.0 m bgl
Quality	Quality	3.0 count
D11	Dominant soil type	Red + black text
Agriculture	Canal share of irrigation	64.0 %
Agriculture	Agriculture share of GDDP	12.6 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	154380.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	21848.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	2420.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	29715.0 ha

Domain	Indicator	Value
Agriculture	Area under Bajra (Reconciled, Crop Sur	1888.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	12.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	3751.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	5344.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	3573.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	1774.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	842.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	167.0 ha
Irrigation	Canal share of district irrigation	64.0 %
Consumption	Consumption	0.6 TMC
Urban	Primary water source (Ballari)	50.0 MLD
Urban	Water losses / supply frequency (Balla	50.0 %
Urban	Industrial GW dependence (Ballari)	Over-exploited GW; 25+ sponge-iron units status
Urban	Treated-wastewater reuse potential (Ba	57.0 MLD
Water bodies	Irrigation tank count and area	190.0 count/ha
Forest	Forest Cover (district)	8.7 % of geo
Forest	ForestCover	8.6 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	2452595.0 count
Population	Decadal population growth 2001-2011	21.0 %
Population	Sex ratio (females per 1000 males)	983.0 ratio
Population	Literacy rate	67.4 %
Population	Population density	290.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1400970.0 count
Population	Population Density (Census 2011)	290.0 per km2
Sanitation	Sewage Treatment Gap	21.7 MLD
Sanitation	Municipal Solid Waste (district)	282.0 TPD
Sanitation	Municipal Solid Waste generated (distr	4593.0 TPD (ton
Sanitation	Sewage generated (district)	77.4 MLD
Sanitation	Number of Sewage Treatment Plants	3.0 count
Sanitation	STP installed capacity	55.0 MLD
Sanitation	STP capacity gap (installed vs operati	13.0 MLD
Sanitation	Number of Urban Local Bodies reporting	6.0 count
Sanitation	Municipal solid waste generated	161.0 tonnes/d
Industry	MSME Units (district)	29997.0 count
Economy	Gross District Domestic Product	45536.0 INR cr
Economy	Per Capita Income (district)	278538.0 INR

Domain	Indicator	Value
Economy	Per Capita Income (2023-24)	293985.0 Rs/yr
D28	Traditional tank count	190.0 count

Safe on stage (26.6%), but 76.7% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Koppal · C4 North Karnataka Dry Zone

Stage **63.5%** · SAFE · recharge 23.0 TMC · water level 8.3 m · other-source 70.8% · rainfall 572 mm

Indicator	Value	Src
Aquifer depth-to-water	1.1	[A]
Forest cover	0.7%	[A]
District GDP (INR cr)	26804.0	[A]
Per-capita income (INR)	161491.0	[A]
Sewage generated (MLD)	43.6	[A]
MSME units	14746.0	[A]
Population (2011 Census)	1389920.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Tungabhadra	[C]
Dominant soil	Red + black	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Koppal — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	572.0 mm
Climate	Rainfall	598.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	174.4 mm
D4	River basin / drainage system	Tungabhadra text
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	63.5 %
Groundwater	Total Annual GW Recharge (district)	23.0 TMC (1 T

Domain	Indicator	Value
Groundwater	Static Water Level depth (district mea	8.3 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	70.8 % of tot
Groundwater	Recharge-decomp	70.8 %
Groundwater	Irrigation extraction (GWRA-2025)	1.2 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	61.3 %
Groundwater	Stage of GW development (CGWB booklet	48.1 %
Groundwater	Total assessed taluks (GWRA-2020)	7.0 count
Groundwater	Safe-category taluks (GWRA-2020)	4.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	2.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	1.0 count
Aquifer	DepthToWater	1.1 m bgl
Quality	Quality	3.0 count
D11	Dominant soil type	Red + black text
D11	Soil composition detail (CGWB booklet)	Black cotton, red, red sandy text
Agriculture	Agriculture share of GDDP	30.2 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	106854.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	16457.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	42.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	141260.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	39496.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	1017.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	34963.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	81798.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	5475.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	23017.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	211.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	604.0 ha
Consumption	Consumption	1.3 TMC
Forest	Forest Cover (district)	0.7 % of geo
Forest	ForestCover	0.7 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1389920.0 count
Population	Decadal population growth 2001-2011	16.2 %
Population	Sex ratio (females per 1000 males)	986.0 ratio
Population	Literacy rate	68.1 %

Domain	Indicator	Value
Population	Population density	250.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1389920.0 count
Population	Population Density (Census 2011)	250.0 per km2
Sanitation	Sewage Treatment Gap	31.0 MLD
Sanitation	Municipal Solid Waste (district)	121.0 TPD
Sanitation	Municipal Solid Waste generated (distr	129.0 TPD (ton
Sanitation	Sewage generated (district)	43.6 MLD
Sanitation	Number of Urban Local Bodies reporting	9.0 count
Sanitation	Municipal solid waste generated	23.0 tonnes/d
Industry	MSME Units (district)	14746.0 count
Economy	Gross District Domestic Product	26804.0 INR cr
Economy	Per Capita Income (district)	152489.0 INR
Economy	Per Capita Income (2023-24)	161491.0 Rs/yr

Safe on stage (63.5%), but 70.8% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Davanagere · C4 North Karnataka Dry Zone

Stage **90.7%** · SEMI-CRITICAL · recharge 21.7 TMC · water level 5.4 m · other-source 70.6% · rainfall 700 mm

Indicator	Value	Src
Aquifer depth-to-water	1.6	[A]
Forest cover	12.1%	[A]
District GDP (INR cr)	40352.0	[A]
Per-capita income (INR)	209655.0	[A]
Sewage generated (MLD)	76.6	[A]
MSME units	26467.0	[A]
Population (2011 Census)	1945497.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Tungabhadra (Vedavati/Haridra)	[C]
Dominant soil	Red + black	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Davanagere — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	700.0 mm
Climate	Rainfall	952.0 mm
D4	River basin / drainage system	Tungabhadra (Vedavati/Haridra) text
Groundwater	GW Category (district)	SEMI-CRITICAL
Groundwater	Stage of GW Extraction (district)	90.7 %
Groundwater	Total Annual GW Recharge (district)	21.7 TMC (1 T
Groundwater	Static Water Level depth (district mea	5.4 m bgl
Groundwater	Over-Exploited taluks (share)	33.3 % of ass
Groundwater	GW Recharge: other-source share (2024)	70.6 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	2.0 named un
Groundwater	Recharge-decomp	70.6 %
Groundwater	Irrigation extraction (GWRA-2025)	1.7 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	88.6 %
Groundwater	Taluk-average stage (CGWB booklet cros	76.3 %
Groundwater	Over-exploited blocks (CGWB booklet)	5.0 count
Groundwater	Total assessed taluks (GWRA-2020)	6.0 count
Groundwater	Safe-category taluks (GWRA-2020)	1.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	2.0 count
Groundwater	Critical taluks (GWRA-2020)	1.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	2.0 count
Aquifer	DepthToWater	1.6 m bgl
Quality	Quality	3.0 count
D11	Dominant soil type	Red + black text
Agriculture	Agriculture share of GDDP	31.9 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	116811.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	3499.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	23729.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	132408.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	179.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	125.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	512.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	6197.0 ha

Domain	Indicator	Value
Agriculture	Area under Groundnut (Reconciled, Crop	3568.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	2628.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	818.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	334.0 ha
Irrigation	Irrigation by canal	67926.0 ha
Irrigation	Irrigation by borewell	47242.0 ha
Irrigation	Irrigation by tank	1218.0 ha
Irrigation	Irrigation by dugwell	1483.0 ha
Irrigation	Irrigation by other	444.0 ha
Consumption	Consumption	1.8 TMC
Forest	Forest Cover (district)	12.1 % of geo
Forest	ForestCover	11.9 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1945497.0 count
Population	Decadal population growth 2001-2011	8.6 %
Population	Sex ratio (females per 1000 males)	972.0 ratio
Population	Literacy rate	75.7 %
Population	Population density	328.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1643494.0 count
Population	Population Density (Census 2011)	370.0 per km2
Sanitation	Sewage Treatment Gap	22.2 MLD
Sanitation	Municipal Solid Waste (district)	235.0 TPD
Sanitation	Municipal Solid Waste generated (distr	208.0 TPD (ton
Sanitation	Sewage generated (district)	76.6 MLD
Sanitation	Number of Urban Local Bodies reporting	6.0 count
Sanitation	Municipal solid waste generated	148.0 tonnes/d
Industry	MSME Units (district)	26467.0 count
Economy	Gross District Domestic Product	40352.0 INR cr
Economy	Per Capita Income (district)	193151.0 INR
Economy	Per Capita Income (2023-24)	209655.0 Rs/yr

Semi-critical: stage in the 70–100% band. With 70.6% other-source recharge, the margin depends on surface delivery holding up.

C5 · Central Plateau

Chitradurga · C5 Central Plateau

Stage **144.4%** · OVER-EXPLOITED · recharge 14.1 TMC · water level 8.2 m · other-source 32.1% · rainfall 573 mm

Indicator	Value	Src
Aquifer depth-to-water	0.9	[A]
Forest cover	7.2%	[A]
District GDP (INR cr)	37293.0	[A]
Per-capita income (INR)	198950.0	[A]
Sewage generated (MLD)	52.0	[A]
STP count	1.0	[A]
MSME units	18403.0	[A]
Population (2011 Census)	1659456.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	HIGH	[B]
River basin	Vedavati (Vanivilas Sagar)	[C]
Dominant soil	Red + metamorphic	[C]
Principal reservoir	Vanivilas Sagar (8,640 ha)	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Chitradurga — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	573.0 mm
Climate	Rainfall	698.0 mm
D4	River basin / drainage system	Vedavati (Vanivilas Sagar) text
Reservoir	Major reservoirs (count, area)	2.0 count/ha
Reservoir	Principal named reservoir	Vanivilas Sagar (8,640 ha) text
Reservoir	Named dam register	Bheemasamudra Dam list
Groundwater	Stage of GW Extraction (district, GWRA	144.4 %
Groundwater	GW Category (district)	OVER-EXPLOITED

Domain	Indicator	Value
Groundwater	Stage of GW Extraction (district)	144.4 %
Groundwater	Total Annual GW Recharge (district)	14.1 TMC (1 T
Groundwater	Static Water Level depth (district mea	8.2 m bgl
Groundwater	Over-Exploited taluks (share)	83.3 % of ass
Groundwater	GW Recharge: other-source share (2024)	32.1 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	5.0 named un
Groundwater	Recharge-decomp	32.1 %
Groundwater	Irrigation extraction (GWRA-2025)	1.7 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	133.0 %
Groundwater	Stage of GW development (CGWB booklet	103.0 %
Groundwater	Total assessed taluks (GWRA-2020)	6.0 count
Groundwater	Safe-category taluks (GWRA-2020)	1.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	0.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	5.0 count
Aquifer	DepthToWater	0.9 m bgl
D9	Dug wells (MI Census 2000-01)	2314.0 count
D9	Shallow tubewells (MI Census 2000-01)	40839.0 count
Quality	Quality	3.0 count
D11	Dominant soil type	Red + metamorphic text
Agriculture	Agriculture share of GDDP	32.1 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	734.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	5615.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	44818.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	145578.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	904.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	55.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	6815.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	30688.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	121756.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	9641.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	63.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	2.0 ha
Irrigation	Irrigation by dug wells (MI Census 200	451678.0 ha
Irrigation	Irrigation by shallow tubewell (MI Cen	833169.0 ha
Irrigation	Irrigation by lift schemes (MI Census	255896.0 ha
Irrigation	Irrigation by surface flow (MI Census	245766.0 ha

Domain	Indicator	Value
Consumption	Consumption	1.8 TMC
Water bodies	Irrigation tank count and area	128.0 count/ha
Water bodies	Tank count (CGWB booklet, cross-check)	320.0 count
Forest	Forest Cover (district)	7.2 % of geo
Forest	ForestCover	7.3 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	1659456.0 count
Population	Decadal population growth 2001-2011	9.3 %
Population	Sex ratio (females per 1000 males)	974.0 ratio
Population	Literacy rate	73.7 %
Population	Population density	197.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1659456.0 count
Population	Population Density (Census 2011)	197.0 per km2
Sanitation	Sewage Treatment Gap	34.0 MLD
Sanitation	Municipal Solid Waste (district)	129.0 TPD
Sanitation	Municipal Solid Waste generated (distr	137.0 TPD (ton
Sanitation	Sewage generated (district)	52.0 MLD
Sanitation	Number of Sewage Treatment Plants	1.0 count
Sanitation	STP installed capacity	20.0 MLD
Sanitation	STP capacity gap (installed vs operati	2.0 MLD
Sanitation	Number of Urban Local Bodies reporting	1.0 count
Sanitation	Municipal solid waste generated	0.4 tonnes/d
Industry	MSME Units (district)	18403.0 count
Economy	Gross District Domestic Product	37293.0 INR cr
Economy	Per Capita Income (district)	177777.0 INR
Economy	Per Capita Income (2023-24)	198950.0 Rs/yr
D28	Traditional tank count	128.0 count
D31	Heritage water structures (cluster-lev	Central plateau minor-irrigation tanks (part of the state's 36,672 MI tanks); Chitradurga fort-era water-harvesting structures text

Over-exploited: extraction exceeds recharge. Stage has run above 100% since at least T-10 (108.4%). Water table at 8.2 m confirms sustained depletion.

Bidar · C5 Central Plateau

Stage **60.4%** · SAFE · recharge 13.2 TMC · water level 10.2 m · other-source 17.2% · rainfall 847 mm

Indicator	Value	Src
Aquifer depth-to-water	1.7	[A]
Forest cover	1.8%	[A]
District GDP (INR cr)	32777.0	[A]
Per-capita income (INR)	163298.0	[A]
Sewage generated (MLD)	53.4	[A]
STP count	3.0	[A]
MSME units	21331.0	[A]
Population (2011 Census)	1703300.0	[A]
HDI (2022)	0.6	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Krishna (Manjra/Karanja)	[C]
Dominant soil	Laterite + black (sedimentary)	[C]
Principal reservoir	Karanja (2,000 ha)	[C]
Leading crop (2022-23)	Tur	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Bidar — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Rainfall status 2024	DEFICIT
Climate	Average Annual Rainfall (district)	847.0 mm
Climate	Rainfall	839.0 mm
D4	River basin / drainage system	Krishna (Manjra/Karanja) text
Reservoir	Major reservoirs (count, area)	3.0 count/ha
Reservoir	Principal named reservoir	Karanja (2,000 ha) text
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	60.4 %
Groundwater	Total Annual GW Recharge (district)	13.2 TMC (1 T
Groundwater	Static Water Level depth (district mea	10.2 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	17.2 % of tot

Domain	Indicator	Value
Groundwater	Recharge-decomp	17.2 %
Groundwater	Irrigation extraction (GWRA-2025)	0.7 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.2 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	68.0 %
Groundwater	Stage of GW development (CGWB booklet,	56.7 %
Groundwater	Total assessed taluks (GWRA-2020)	8.0 count
Groundwater	Safe-category taluks (GWRA-2020)	6.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	2.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	1.7 m bgl
D9	Irrigation borewell structures (CGWB b	47066.0 count
Quality	Quality	1.0 count
D11	Dominant soil type	Laterite + black (sedimentary) text
Agriculture	Agriculture share of GDDP	21.3 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	853.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	35474.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	5.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	1107.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	5.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	9466.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	113718.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	84622.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	101.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	245.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	8406.0 ha
Irrigation	Irrigation by canal (CGWB booklet)	6.2 sq km
Irrigation	Irrigation by tank (CGWB booklet)	8.5 sq km
Irrigation	Irrigation by dugwell (CGWB booklet)	239.9 sq km
Irrigation	Irrigation by borewell (CGWB booklet)	134.6 sq km
Irrigation	Irrigation by lift (CGWB booklet)	0.7 sq km
Irrigation	Irrigation by other (CGWB booklet)	10.4 sq km
Consumption	Consumption	0.7 TMC
Water bodies	Irrigation tank count and area	78.0 count/ha
Forest	Forest Cover (district)	1.8 % of geo
Forest	ForestCover	1.9 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1703300.0 count

Domain	Indicator	Value
Population	Decadal population growth 2001-2011	13.4 %
Population	Sex ratio (females per 1000 males)	956.0 ratio
Population	Literacy rate	70.5 %
Population	Population density	313.0 per sq k
Population	Human Development Index (2022)	0.6 index
Population	Total Population (Census 2011)	1703300.0 count
Population	Population Density (Census 2011)	313.0 per km2
Sanitation	Sewage Treatment Gap	44.6 MLD
Sanitation	Municipal Solid Waste (district)	166.0 TPD
Sanitation	Municipal Solid Waste generated (distr	183.0 TPD (ton
Sanitation	Sewage generated (district)	53.4 MLD
Sanitation	Number of Sewage Treatment Plants	3.0 count
Sanitation	STP installed capacity	40.5 MLD
Sanitation	STP capacity gap (installed vs operati	31.7 MLD
Sanitation	Number of Urban Local Bodies reporting	6.0 count
Sanitation	Municipal solid waste generated	41.0 tonnes/d
Industry	MSME Units (district)	21331.0 count
Economy	Gross District Domestic Product	32777.0 INR cr
Economy	Per Capita Income (district)	152141.0 INR
Economy	Per Capita Income (2023-24)	163298.0 Rs/yr
D28	Traditional tank count	78.0 count

Safe: stage 60.4% with recharge comfortably ahead of extraction.

Kalaburagi · C5 Central Plateau

Stage **43.5%** · SAFE · recharge 25.4 TMC · water level 6.6 m · other-source 19.7% · rainfall 777 mm

Indicator	Value	Src
Aquifer depth-to-water	0.7	[A]
Forest cover	1.8%	[A]
District GDP (INR cr)	45868.0	[A]
Per-capita income (INR)	143610.0	[A]
Sewage generated (MLD)	93.9	[A]
MSME units	25424.0	[A]
Population (2011 Census)	2566326.0	[A]
HDI (2022)	0.5	[B]
Vulnerability class (DRASTIC)	HIGH	[B]

Indicator	Value	Src
River basin	Krishna (Bhima)	[C]
Dominant soil	Black (sedimentary)	[C]
Principal reservoir	Lower Mullamari (862 ha)	[C]
Leading crop (2022-23)	Tur	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Kalaburagi — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Average Annual Rainfall (district)	777.0 mm
Climate	Rainfall	831.0 mm
D4	River basin / drainage system	Krishna (Bhima) text
Reservoir	Major reservoirs (count, area)	4.0 count/ha
Reservoir	Principal named reservoir	Lower Mullamari (862 ha) text
Reservoir	Named dam register	Amarja Dam, Bennithora Dam, Chandrampalli Dam, Gandorinala Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	GW Development stage (district)	28.0 %
Groundwater	Stage of GW Extraction (district)	43.5 %
Groundwater	Total Annual GW Recharge (district)	25.4 TMC (1 T
Groundwater	Static Water Level depth (district mea	6.6 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	19.7 % of tot
Groundwater	Recharge-decomp	19.7 %
Groundwater	Irrigation extraction (GWRA-2025)	0.8 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.3 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	46.2 %
Groundwater	Total assessed taluks (GWRA-2020)	11.0 count
Groundwater	Safe-category taluks (GWRA-2020)	10.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	1.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	Aquifer/geology (district)	limestone-basalt flag
Aquifer	DepthToWater	0.7 m bgl
Quality	Quality	2.0 count

Domain	Indicator	Value
D11	Dominant soil type	Black (sedimentary) text
Agriculture	Agriculture share of GDDP	25.9 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	10909.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	58233.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	96.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	1952.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	266.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	6022.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	486238.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	40267.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	425.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	5505.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	306.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	5094.0 ha
Consumption	Consumption	1.0 TMC
Urban	Urban water supply status/coverage	24.0 text
Water bodies	Irrigation tank count and area	73.0 count/ha
Forest	Forest Cover (district)	1.8 % of geo
Forest	ForestCover	1.8 %
D18	Groundwater vulnerability class (DRAST	HIGH
Population	Total population (2011 Census)	2566326.0 count
Population	Decadal population growth 2001-2011	18.0 %
Population	Sex ratio (females per 1000 males)	971.0 ratio
Population	Literacy rate	64.8 %
Population	Population density	234.0 per sq k
Population	Human Development Index (2022)	0.5 index
Population	Total Population (Census 2011)	2566326.0 count
Population	Population Density (Census 2011)	234.0 per km2
Sanitation	Sewage Treatment Gap	27.8 MLD
Sanitation	Municipal Solid Waste (district)	361.0 TPD
Sanitation	Municipal Solid Waste generated (distr	149.5 TPD (ton
Sanitation	Sewage generated (district)	93.9 MLD
Sanitation	Number of Urban Local Bodies reporting	9.0 count
Sanitation	Municipal solid waste generated	231.0 tonnes/d
Industry	MSME Units (district)	25424.0 count
Economy	Gross District Domestic Product	45868.0 INR cr
Economy	Per Capita Income (district)	139361.0 INR
Economy	Per Capita Income (2023-24)	143610.0 Rs/yr
D28	Traditional tank count	73.0 count

Safe: stage 43.5% with recharge comfortably ahead of extraction.

Yadgir · C5 Central Plateau

Stage **37.5%** · SAFE · recharge 21.1 TMC · water level 4.3 m · other-source 60.4% · rainfall —

Indicator	Value	Src
Aquifer depth-to-water	3.1	[A]
Forest cover	2.8%	[A]
District GDP (INR cr)	22754.0	[A]
Per-capita income (INR)	146364.0	[A]
Sewage generated (MLD)	36.8	[A]
MSME units	12621.0	[A]
Population (2011 Census)	1174271.0	[A]
HDI (2022)	0.5	[B]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Krishna (Bhima)	[C]
Dominant soil	Black + red	[C]
Leading crop (2022-23)	Paddy	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Yadgir — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Rainfall	736.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	194.8 mm
D4	River basin / drainage system	Krishna (Bhima) text
Reservoir	Named dam register	Basava Sagar (Narayanpur) Dam list
Groundwater	GW Category (district)	SAFE
Groundwater	Stage of GW Extraction (district)	37.5 %
Groundwater	Total Annual GW Recharge (district)	21.1 TMC (1 T
Groundwater	Static Water Level depth (district mea	4.3 m bgl
Groundwater	Over-Exploited taluks (share)	0.0 % of ass
Groundwater	GW Recharge: other-source share (2024)	60.4 % of tot
Groundwater	Recharge-decomp	60.4 %
Groundwater	Irrigation extraction (GWRA-2025)	0.6 TMC (1 T

Domain	Indicator	Value
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	38.1 %
Groundwater	Stage of GW development (CGWB booklet	60.0 %
Groundwater	Total assessed taluks (GWRA-2020)	6.0 count
Groundwater	Safe-category taluks (GWRA-2020)	4.0 count
Groundwater	Semi-critical taluks (GWRA-2020)	2.0 count
Groundwater	Critical taluks (GWRA-2020)	0.0 count
Groundwater	Over-exploited taluks (GWRA-2020)	0.0 count
Aquifer	DepthToWater	3.1 m bgl
D9	Dug wells (MI Census 2006-07)	3042.0 count
D9	Shallow tubewells (MI Census 2006-07)	5445.0 count
Quality	Quality	3.0 count
D11	Dominant soil type	Black + red text
Agriculture	Agriculture share of GDDP	29.9 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	138357.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	10086.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	8.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	361.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	5281.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	121.0 ha
Agriculture	Area under Tur (Reconciled, Crop Surve	48142.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	872.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	816.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	1936.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	637.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	321.0 ha
Irrigation	Irrigation by dugwell (CGWB booklet)	6330.0 ha
Irrigation	Irrigation by borewell (CGWB booklet)	8687.0 ha
Irrigation	Irrigation by tank (CGWB booklet)	2520.0 ha
Irrigation	Irrigation by canal (CGWB booklet)	151163.0 ha
Irrigation	Irrigation by lift (CGWB booklet)	2749.0 ha
Irrigation	Irrigation by surface_flow (CGWB bookl	4547.0 ha
Irrigation	Gross irrigated area, other source (DE	74742.0 ha
Irrigation	Net irrigated area, other source (DES	70602.0 ha
Irrigation	Gross irrigated area, tank (DES 2022-2	3982.0 ha
Irrigation	Net irrigated area, tank (DES 2022-23)	3944.0 ha
Irrigation	Gross irrigated area, all wells (DES 2	32250.0 ha
Irrigation	Net irrigated area, all wells (DES 202	28766.0 ha
Irrigation	Gross irrigated area, tubewell only (D	19264.0 ha

Domain	Indicator	Value
Irrigation	Net irrigated area, tubewell only (DES	16981.0 ha
Irrigation	Gross irrigated area, other well (DES	12986.0 ha
Irrigation	Gross irrigated area, government canal	128227.0 ha
Consumption	Consumption	0.7 TMC
Forest	Forest Cover (district)	2.8 % of geo
Forest	ForestCover	2.8 %
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Total population (2011 Census)	1174271.0 count
Population	Decadal population growth 2001-2011	22.8 %
Population	Sex ratio (females per 1000 males)	989.0 ratio
Population	Literacy rate	51.8 %
Population	Population density	223.0 per sq k
Population	Human Development Index (2022)	0.5 index
Population	Total Population (Census 2011)	1174271.0 count
Population	Population Density (Census 2011)	224.0 per km2
Sanitation	Sewage Treatment Gap	35.8 MLD
Sanitation	Municipal Solid Waste (district)	85.0 TPD
Sanitation	Municipal Solid Waste generated (distr	94.8 TPD (ton
Sanitation	Sewage generated (district)	36.8 MLD
Sanitation	Number of Urban Local Bodies reporting	3.0 count
Sanitation	Municipal solid waste generated	6.0 tonnes/d
Industry	MSME Units (district)	12621.0 count
Economy	Gross District Domestic Product	22754.0 INR cr
Economy	Per Capita Income (district)	153247.0 INR
Economy	Per Capita Income (2023-24)	146364.0 Rs/yr

Safe on stage (37.5%), but 60.4% other-source recharge places it on the Sinha watchlist — the safety leans on surface-water credit, not intrinsic aquifer health.

Vijayanagara · C5 Central Plateau

Stage **—%** · SEMI-CRITICAL · recharge 14.1 TMC · water level 12.0 m · other-source 44.2% · rainfall —

Indicator	Value	Src
Aquifer depth-to-water	0.8	[A]
District GDP (INR cr)	29433.0	[A]
Per-capita income (INR)	165546.0	[A]

Indicator	Value	Src
STP count	4.0	[A]
MSME units	6004.0	[A]
Population (2011 Census)	1353628.0	[A]
Vulnerability class (DRASTIC)	MODERATE	[B]
River basin	Tungabhadra	[C]
Dominant soil	Red + black	[C]
Leading crop (2022-23)	Maize	[A]

Beyond the headline indicators above, the schema carries a fuller sourced record for Vijayanagara — every individually verified figure across every domain the schema documents for this district, listed below for reference.

Domain	Indicator	Value
Climate	Rainfall	764.0 mm
Climate	Rainfall Jan-May 2025 (CGWB WL Bulleti	157.8 mm
D4	River basin / drainage system	Tungabhadra text
Groundwater	GW Category (district)	SEMI-CRITICAL
Groundwater	Stage of GW Extraction (district, 2022	90.0 %
Groundwater	Total Annual GW Recharge (district)	14.1 TMC (1 T
Groundwater	Static Water Level depth (district mea	12.0 m bgl
Groundwater	Over-Exploited taluks (share)	33.3 % of ass
Groundwater	GW Recharge: other-source share (2024)	44.2 % of tot
Groundwater	Over-Exploited taluks (named, 2024)	2.0 named un
Groundwater	Recharge-decomp	44.2 %
Groundwater	Irrigation extraction (GWRA-2025)	1.1 TMC (1 T
Groundwater	Industrial extraction (GWRA-2025)	0.0 TMC (1 T
Groundwater	Domestic extraction (GWRA-2025)	0.1 TMC (1 T
Groundwater	Stage of GW Extraction (district, GWRA	80.7 %
Aquifer	DepthToWater	0.8 m bgl
Quality	Contamination deaths (Makarabbi 2021)	6.0 count
Quality	Quality	3.0 count
D11	Dominant soil type	Red + black text
Agriculture	Agriculture share of GDDP	21.1 %
Agriculture	Area under Paddy (Reconciled, Crop Sur	28470.0 ha
Agriculture	Area under Jowar (Reconciled, Crop Sur	12040.0 ha
Agriculture	Area under Ragi (Reconciled, Crop Surv	45857.0 ha
Agriculture	Area under Maize (Reconciled, Crop Sur	215136.0 ha
Agriculture	Area under Bajra (Reconciled, Crop Sur	7098.0 ha
Agriculture	Area under Wheat (Reconciled, Crop Sur	40.0 ha

Domain	Indicator	Value
Agriculture	Area under Tur (Reconciled, Crop Surve	5804.0 ha
Agriculture	Area under Bengalgram (Reconciled, Cro	56540.0 ha
Agriculture	Area under Groundnut (Reconciled, Crop	32210.0 ha
Agriculture	Area under Sunflower (Reconciled, Crop	9615.0 ha
Agriculture	Area under Cotton (Reconciled, Crop Su	306.0 ha
Agriculture	Area under Sugarcane (Reconciled, Crop	4029.0 ha
Consumption	Consumption	1.1 TMC
D18	Groundwater vulnerability class (DRAST	MODERATE
Population	Population inherited from parent (Ball	See Ballari 2011 figures note
Population	Total Population (Census 2011)	1353628.0 count
Population	Population Density (Census 2011)	240.0 per km2
Sanitation	Municipal Solid Waste (district)	196.0 TPD
Sanitation	Number of Sewage Treatment Plants	4.0 count
Sanitation	STP installed capacity	43.8 MLD
Sanitation	STP capacity gap (installed vs operati	30.1 MLD
Industry	MSME Units (district)	6004.0 count
Economy	Gross District Domestic Product	29433.0 INR cr
Economy	Per Capita Income (district)	159868.0 INR
Economy	Per Capita Income (2023-24)	165546.0 Rs/yr

Semi-critical: stage in the 70–100% band. Watch for the tip into critical if borewell demand grows.

13 The quality crisis runs deeper than the quantity one

Depletion is visible and gets the headlines. Contamination is quieter and, across the state, more widespread. **86 taluks** carry documented groundwater contamination, and **27 of 31 districts** exceed the 45 mg/L nitrate limit in part of their sampled sources. Nitrate — from fertiliser and untreated sewage — is the dominant contaminant statewide.

Contaminant	Districts / reach	Signature geography
Nitrate (>45 mg/L)	27 of 31 districts	Statewide; worst in intensive-agriculture + peri-urban belts
Fluoride	~19 districts	Hard-rock north & central plateau — geogenic
RSC	~20 districts	Irrigation-return belts; degrades soil and water
Uranium	Kolar, Raichur, Tumakuru	Granitic terrain — geogenic, deep-aquifer
Iron	Dakshina Kannada, Udupi, Uttara Kannada	Coastal laterite — geogenic
Arsenic	Gadag, Raichur	Localised — point-source and geogenic

The pattern matters for intervention. Nitrate is a **management problem** — it tracks how we farm and handle sewage, and it can be reversed. Fluoride, uranium, iron, and arsenic are largely **geogenic** — from the rock, concentrated by over-pumping deep aquifers, managed but not eliminated. *Every metre the water table drops in a granitic district raises the odds of drawing up fluoride and uranium from depth.* Quantity and quality are one problem seen from two sides.

14 Disconnection, not scarcity

The evidence points to one conclusion, the thesis of the whole India Water Systems programme: ***Karnataka's groundwater problem is one of system disconnection, not of scarcity.***

If the problem were scarcity, stress would track rainfall. It does not. Bengaluru Urban (**885 mm**) is over-exploited; Bagalkot (**562 mm**) is only semi-critical. Kolar gets more rain than Ballari, yet Kolar is mined at 193% while Ballari sits at 27%. **Rainfall does not predict stress. The gap between demand and what the system can hold and yield does.**

The clearest proof is temporal. After good 2022-24 monsoons and a conservation push, 220 taluks improved and the state stage fell from 68.44% to 66.49%. The rain and the structures worked. Yet the over-exploited districts stayed over-exploited, because their disconnection is structural — city plus borewell agriculture on thin hard-rock recharge — and a wet year cannot repair a structural break. Raichur and Yadgir make the point from the dry side: good monsoon, lagging recovery.

WHAT THE THESIS IMPLIES FOR POLICY

Stop treating rainfall as the lever. More rain does not fix a district whose demand structurally exceeds its storage-and-yield.

Match intervention to the broken link. C2 needs demand restructuring; C4 needs measurement confidence; C3 needs quality protection. One policy does not fit five clusters.

Reconnect the system. Surface import, tank-canal recharge, wastewater reuse, demand shifts — levers that change what the system holds, not just what falls.

15 What this volume does not yet resolve

An atlas honest about its evidence must be honest about its gaps. Six domains sit at state level in this edition, carried as context rather than resolved to district depth — peripheral to the groundwater diagnosis but named so no reader mistakes silence for absence.

Domain	Known (state level)	Missing
River systems	7 major basins (CWC)	District river hydrology, low-flow
Dams / reservoirs	7 major reservoirs; Cauvery 36 vs 105 TMC yr-ago	Full district project register
Soil	Red–black–laterite triad (KSDA)	District soil-survey depth (NBSS&LUP)
Water bodies	26994 bodies (Census 2022)	Verified district split (KML too large this edition)
Ecology	DRASTIC vulnerability 70–190 (state)	District ecological-flow data
Ancient tanks	36672 MI tanks	District tank-register, command area

None of these gaps touches the groundwater verdict. Stage, recharge, water level, category, quality, and trend are complete at district depth for all 31 districts. *The gaps are in the surrounding context, not the spine* — listed so the next edition knows where to dig, and so this one is not mistaken for more complete than it is.

16 Synthesis: the state in one page

Karnataka's 66.49% state stage is a genuine improvement and a genuine deception. Real, because conservation and surface substitution pulled the average down. Deceptive, because the average is made of five water worlds no single number can hold.

Cluster	Verdict	The one thing to do
C1 Cauvery South	SAFE — borrowed	Protect canal-tank recharge; ring-fence Chamarajanagar
C2 Bengaluru	BROKEN	Restructure demand; surface import; borewell moratoria
C3 Ghats & Coast	SAFE — real	Preserve; guard coastal-aquifer quality
C4 North Dry Zone	SAFE — unverified	Audit recharge credit; protect the base it rests on
C5 Central Plateau	SAFE + 1 broken	Contain Chitradurga; watch for spread

The four over-exploited districts of C2 plus Chitradurga are where the state loses water it will not get back cheaply. The 16 Sinha-flag districts are where the accounts need auditing before they are trusted. The coastal west is where quality, not quantity, is the coming fight. Everywhere, the lesson is the same: **the rain is not the problem. The system's ability to hold what the rain delivers is.**

9 The 2025 assessment: extraction by sector

A newer assessment (GWRA-2025) decomposes extraction by purpose — irrigation, industrial, domestic — for the first time at this depth, and it confirms the diagnosis from a different angle. Statewide, irrigation dominates draw everywhere except the largest cities, which is exactly why the Bengaluru arc, with its unusual industrial and domestic share, reads differently from the agricultural interior.

This assessment also revises some district figures upward from the 2024 baseline used elsewhere in this volume — Kolar to 184%, Bengaluru Urban higher still once the newly-split Bengaluru South unit is combined back in. Per the Atlas's append-only rule, this is carried as a newer data point alongside the 2024 figures, not a silent overwrite: both vintages are preserved, and the trend — worsening, not improving, in the core over-exploited districts — is the same regardless of which year's number is used.

10 Traditional water systems: the inherited infrastructure

Beneath every modern assessment lies an older water system: the kere, Karnataka's traditional cascading tanks, engineered to harvest monsoon runoff from upstream to downstream in sequence, recharging the shallow aquifer at every step. Undivided Kolar alone once held over 3,000 such tanks. Where these systems survive intact — the Western Ghats above all — groundwater is healthiest. Where they have silted up and fallen from community management — the Bengaluru arc — groundwater is most stressed. This is not incidental: the same land-use shift from tank-fed agriculture to borewell agriculture and urban construction drove both the tank decline and the aquifer depletion.

Bengaluru's KC Valley and HN Valley projects, which refill historic lakes with treated wastewater rather than monsoon runoff, are a modern echo of the old cascade logic — reviving the function without reviving the original hydrology. It is a genuine, measurable intervention, and it is also a reminder of what was lost: a system that once ran on rain now runs on recycled sewage.

11 Vulnerability and development: two more lenses

Two further data layers, new to this edition, sharpen the diagnosis. A peer-reviewed 2026 DRASTIC-GIS study classifies every district's **intrinsic vulnerability** to contamination — independent of how much water is actually being drawn. And district Human Development Index (HDI) rankings show where water stress and development have moved together, and where they have not.

The two vulnerability lenses diverge instructively. Vijayapura and Kalaburagi score **HIGH** on intrinsic vulnerability — thin soil, permeable geology — yet read SAFE on extraction stage: their aquifers could contaminate quickly if pollution load rises, even though they are not over-drawn today. The over-exploited Bengaluru districts, by contrast, score only **MODERATE** on intrinsic vulnerability — their crisis is a demand problem superimposed on a moderately-protected aquifer, not an intrinsically fragile one. Vulnerability and depletion are different risks.

On development: Bengaluru Urban ranks 1st on HDI and is simultaneously over-exploited — development and depletion have advanced together, the classic peri-urban pattern. Yadgir and Kalaburagi rank lowest on HDI yet are groundwater-safe — low development in the north is not a groundwater story, and safe aquifers there are not translating into development gains. *This decouples the water and poverty narratives in the north, and ties them tightly together in the south — two different policy conversations a single state water plan often conflates.*

THE VERDICT

Diagnosis: System disconnection, concentrated. Not statewide scarcity — a peri-urban and eastern-plateau arc of structural over-extraction on thin hard-rock recharge, surrounded by districts safe, fragile, or unverified.

Prescription: Five interventions for five clusters — protect, restructure, preserve, verify, contain — anchored on the four nodes where leverage is highest.

Confidence: High on the groundwater spine (complete, 31/31, independently reproduced). Lowered on the 16 Sinha-flag districts. Honest about the six context domains at state level.

FI-3
FINANCIAL INTELLIGENCE
PLATE 3 OF 8

KARNATAKA SURFACE & GROUNDWATER ATLAS

PRIORITY INVESTMENT MATRIX

Where should Karnataka invest first for maximum water security impact?

INVEST RIGHT.
IMPACT MORE.
FUTURE SECURE.

	CLUSTER	PRIORITY PROJECTS (EXAMPLES)	ESTIMATED INVESTMENT (₹ CRORE)	EXPECTED BENEFIT (10 YEARS)	TIME HORIZON	STRATEGIC PRIORITY
1	STORAGE AUGMENTATION	• New Reservoirs • Raise Existing Dams • Off-stream Storage	28,500	25–30 TMC additional storage Irrigation | Drinking Water Flood Moderation	3–7 YEARS	★★★★★ VERY HIGH
2	CANAL MODERNISATION	• Canal Lining • System Automation • Distribution Network Improvement	18,750	15–20% water savings More Irrigation | Higher Reliability	2–5 YEARS	★★★★☆ HIGH
3	TANK & LAKE RESTORATION	• Desilting • Bund Strengthening • Feeder Channel Restoration	9,850	5–8 TMC recharge & storage Groundwater Recharge | Local Water Security	1–3 YEARS	★★★★☆ HIGH
4	WATERSHED & CATCHMENT TREATMENT	• Afforestation • Check Dams • Contour Bunding • Soil & Moisture Works	6,200	Improved baseflow & recharge Reduced Runoff | Lower Siltation	1–4 YEARS	★★★★☆ HIGH
5	URBAN WASTE WATER REUSE & STORMWATER MANAGEMENT	• STP Capacity • Reuse Infrastructure • Stormwater Drains • Urban Lakes	12,600	Reuse 300–400 MLD water Reduced Groundwater Dependence | Better Urban Water Security	2–5 YEARS	★★★☆☆ MEDIUM

FOCUS INVESTMENT ON HIGH IMPACT. SEQUENCE FOR RESULTS.

HIGHER RETURNS | MORE WATER SECURITY | BETTER LIVELIHOODS | STRONGER KARNATAKA

RIGHT INVESTMENT. RIGHT TIME. LASTING IMPACT.
Prioritised investments create water security for today and prosperity for generations.

FI-1 — The Investment Case



FI-2 — Investment → Water → Economy



FI-3 — Priority Investment Matrix

How Does Karnataka Become Water Secure?

Read separately, this diagnosis explains why five clusters behave five different ways, and the companion Surface Water volume explains what can be done about each. Read together, as this merged edition now presents them, they answer a single question neither volume poses alone: what does water security actually require, cluster by cluster, and in what order?

Protect before you build (C1)

Karnataka's one unqualified Decisive cluster is decisive because a working system is being protected, not because anything new was constructed. The first and cheapest action available anywhere in this pair is defending the Cauvery allocation that already keeps three districts safe.

Finish before you diagnose further (C2)

No further groundwater diagnosis of Bengaluru will change its verdict. Yettinahole, Mekedatu, and demand management are already the answer this Atlas has given. Every year of delay is measured in continued over-extraction on the state's largest economic base.

Reallocate before you build more (C3)

The only cluster in this pair with no groundwater problem to solve has the state's largest quantity of unused water. Karnataka does not need new hydropower storage; it needs a decision about what the storage it already has is for.

Verify before you invest further (C4)

The state's largest command rests on the least-verified safety in Karnataka. This is a call for an audit costing a fraction of the next canal expansion -- and it determines whether that expansion is even needed.

Deliver before the wait becomes the damage (C5)

Chitradurga's rescue is already funded and under way. The only remaining variable is speed -- every month of delay is a month of continued over-exploitation the plan was designed to end.

Karnataka becomes water secure not through one project, but through five specific, sequenced acts of discipline -- protect, finish, reallocate, verify, deliver -- each matched to a cluster whose groundwater diagnosis already identified which act it needs. That is the sentence this merged edition can now write as one document, where two separate volumes could each write only half.

Edition To (May 2026) ends here. The October 2026 revision continues in this volume. There is no second ending.

October 2026 revision

The May chapters stay, with their 2024 groundwater figures. This revision, October 2026, is part of the volume. It adds the 2025 assessment, the district-name crosswalk, and the controls locked on 8 October 2026. It does not replace a 2024 figure with a 2025 figure, and it does not recalculate completeness. Completeness against the 3,988-control benchmark remains 89.34% (3,563 closed, 425 pending). The pending controls stay empty.

The evidence register was locked on 8 October 2026. The benchmark is the Tamil Nadu Gold depth of 3,988 controls. Closed: 3563. Pending: 425. Completeness against that benchmark: 89.34%. The Tamil Nadu standard bar is 90%. Karnataka stands at 89.34%, so 0.66 percentage points remain. The pending controls are declared empties. They are not filled in this part.

18.1 Freeze control

Control	Value now
Spine	Locked evidence register
Frozen	2026-10-08T21:51:31
Gold benchmark	3988
Closed / pending	3563 / 425
Completeness	89.34%
District polygons	31 LIVE
Vijayanagara	KGIS LGD 738, separate from Ballari
Edition To schema	KA-GW v1.37 — kept above; not the frozen spine

Declared empties, as locked:

• Ramanagara AG-001 / AG-003 / CL-012 — rows absent; FRE 2023-24 peer not on DES (HTTP 500). EMPTY STAYS EMPTY.

• Firka/block GW GIS, tank-cascade GIS, village-pond GIS — OPEN until authoritative geometry.

• Live storage joined to each reservoir; dam≠reservoir identity — OPEN until exact PIC/agency volume.

• Drinking litres, polluted-stretch GIS, floodplain GIS, watershed polygons — OPEN.

• Industrial withdrawal, e-flow, food destination, virtual water, causation, time film — OPEN.

• WQ miss districts already REL_WQ_EMPTY_STAYS_EMPTY — no invent.

18.2 Vijayanagara's own outline

After Edition T0, the district map gained Vijayanagara as its own polygon from the KSRSAC K-GIS district boundary (LGD 738). The thirty NWIC/SOI districts were left as they were. Ballari remains a separate LIVE district. Ballari is not painted as Vijayanagara. Vijayanagara's 2022 stage on the spine (GW-013b) stays the value already on that row. It is not copied from Ballari.

18.3 Ramanagara and the source label Bengaluru South

Source label Bengaluru South is the renamed Ramanagara district. Atlas register still says Ramanagara. Names are kept both; not merged. The May edition's remark that Bengaluru South is combined back in is not how the frozen atlas keeps the names. Both stay. They are not merged, and neither name is used to fill the other's empty crop cells.

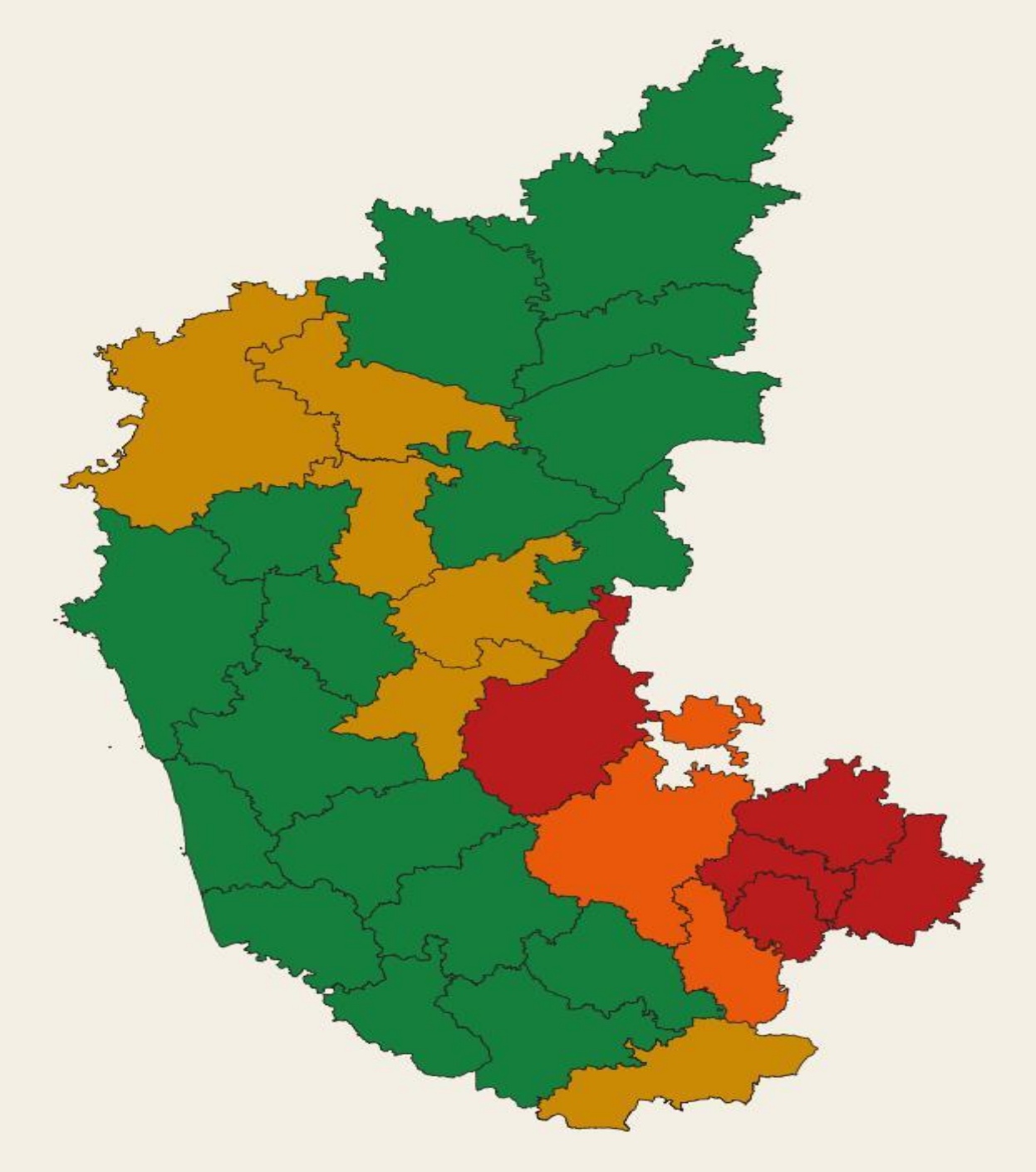
18.4 STAGE25 on the frozen spine

STAGE25 is assessed annual extraction divided by assessed annual extractable groundwater resource (CGWB, Dynamic Ground Water Resources 2025, draft compilation). It is not a percentage of water physically removed. The state figure printed with this evidence is 66.49%. That state figure is extraction divided by extractable resource. It is not the average of the thirty-one district stages. Extractable resource, state: 1741410.74 ha-m. Extraction, state: 1157913.85 ha-m.

Reconciliation, two vintages, both kept. Bengaluru Urban: 186.7% in 2024 (GWRA-2024, Edition T0) and 268.46% in 2025 (STAGE25, assessed extraction divided by assessed extractable resource). Kolar: 193.3% in 2024, printed 193.35% in the diagnosis, and 184.43% in 2025. The change is a later assessment, not a silent correction. Use the 2024 value for any statement in the May chapters. Use the 2025 value only for a statement in this revision. Publication page locators for these two assessments are not printed in this abridged volume. The source and year above are the citation.

District	STAGE25 %	Class
Bengaluru Urban	268.46	Over-exploited
Kolar	184.43	Over-exploited
Chikkaballapura	165.66	Over-exploited
Bengaluru Rural	146.78	Over-exploited
Chitradurga	133.04	Over-exploited
Tumakuru	91.43	Critical
Ramanagara	91.18	Critical
Davanagere	88.59	Semi-critical
Chamarajanagar	88.37	Semi-critical
Vijayanagara	80.69	Semi-critical
Bagalkot	78.88	Semi-critical
Gadag	75.41	Semi-critical
Belagavi	70.43	Semi-critical
Bidar	67.98	Safe
Mandya	65.85	Safe
Haveri	64.54	Safe
Hassan	61.47	Safe
Koppal	61.29	Safe

Dharwad	56.85	Safe
Chikkamagaluru	55.21	Safe
Mysuru	46.94	Safe
Kalaburagi	46.23	Safe
Dakshina Kannada	45.71	Safe
Vijayapura	44.96	Safe
Raichur	43.96	Safe
Shivamogga	42.41	Safe
Yadgir	38.06	Safe
Kodagu	35.60	Safe
Udupi	32.83	Safe
Uttara Kannada	30.54	Safe
Ballari	25.44	Safe



MAP-KA-04 | Stage of groundwater extraction, 2025, from the frozen spine. Green below 70%, gold 70–90%, orange 90–100%, red at or above 100%. Source: CGWB GWRA-2025, from the locked evidence register.

18.5 Rainfall, January to May 2025 only

District names. The register names are the names used in the May chapters: Ramanagara, Vijayanagara, Bagalkot, Chamarajanagar, Koppal, Ballari. The January–May 2025 rainfall table keeps the source spelling beside that register: Bengaluru South is the source label for

Ramanagara, not a second district and not Bengaluru Urban; Vijayanagar is the source spelling of Vijayanagara and is not Ballari; Bagalkote, Chamarajanagara and Koppala are the source spellings of Bagalkot, Chamarajanagar and Koppal. A similar spelling is not, by itself, the same geography.

Pre-monsoon only. Not annual rainfall. Categories kept as printed. Period: Jan-May 2025. Unit: mm. This is not an annual normal.

District	Actual mm	Normal mm	Departure from normal %
Bagalkote	176.5	80	121
Ballari	121.1	74	63
Belagavi	216.9	95	129
Bengaluru Rural	248.8	141	76
Bengaluru Urban	307.1	156	97
Bidar	136.4	71	92
Chamarajanagara	224.8	203	11
Chikkaballapura	192.8	108	78
Chikkamagaluru	427.7	164	160
Chitradurga	155	103	50
Dakshina Kannada	1093.1	243	351
Davanagere	170.2	105	62
Dharwad	224.9	125	79
Gadag	165.9	106	57
Hassan	370.8	168	120
Haveri	191.4	122	58
Kalaburagi	214.9	67	221
Kodagu	750.2	253	197
Kolar	262.1	117	124
Koppala	174.4	82	113
Mandya	264.5	166	59
Mysuru	285.3	205	39
Raichur	190.3	69	178
Bengaluru South	336.7	178	90
Shivamogga	368.1	129	185
Tumakuru	224.2	125	80
Udupi	938.8	201	368
Uttara Kannada	453.4	103	340
Vijayanagar	157.8	99	60
Vijayapura	198.1	63	215
Yadgir	194.8	68	189

18.6 Crops and land use — what was added, and what stayed blank

District crop area, production and yield for 2022-23 to 2024-25 were not acquired from DES or Karnataka OGD. Empty frame is not loaded as zeros. State benchmarks, where present, are reconciliation only.

District crop slots: 930. Filled: 0. Status: OPEN.

Year	Foodgrains area (million ha)	Production (million tonnes)	Yield (kg/ha)	Limit
2023-24	7.47	12.78	1710	State total only. Not a district figure.
2024-25	8.36	14.63	1749	State total only. Not a district figure.

DES LUS at a Glance. Table 5 Part 2 for 2015-16 to 2023-24 from the 2023-24 edition. 2024-25(P) Part 2: only net sown and gross cropped area are DERIVED; other Part 2 cells stay empty. Private canals blank in Table 7.

18.7 Map layers added with the atlas

The atlas map, built with the frozen pack, draws eight layers from files on disk. They are not in the May edition's page plates. Each layer is what its file contains, and nothing else.

Layer	What it is	What it is not
Districts	30 NWIC/SOI polygons plus Vijayanagara KGIS LGD 738	Ballari redrawn as Vijayanagara
Rivers	CWC/NWIC courses clipped to Karnataka	Discharge, or a polluted-stretch geometry
Basins	CWC basins that meet the state	Sub-basin or watershed polygons
Storage	CWC reservoir outlines	A live storage reading
Dams	NDSA structure points	The reservoir polygon
Water	NWDP water-spread area, lakes and tanks at or above 100 ha	A census of ponds under 100 ha, or an SAC product
Aquifers	CGWB principal-aquifer polygons	A well point or a stage class
Canals	CWC canal lines	A command polygon

Quality stretch geometry, command polygons, rain-gauge points, well points and river-level stations are not on this pack. Those maps stay empty.

18.8 Sewage plants, as printed

Not in the locked evidence register. Not a map. Not a state total.

152 rows from the Karnataka Legislative Council unstarred reply of 13 February 2024, Annexure 1, existing sewage plants. Spellings stay as printed, including Bangaluru. One V Valley row prints capacity as .150 MLD beside utilization 125 MLD; that pair stays as printed and is not an accepted capacity. These rows are not added into a state total and are not joined to the Bengaluru lists.

Where the printed town sits	Plant rows	Rows with utilisation below capacity	Gap, MLD
N1 Bengaluru	36	27	299.59
N2 Ballari	3	2	11.7
N3 Hubballi–Dharwad	8	8	31.544
N4 Mangaluru	4	4	47.75
Other towns	101	81	315.341

The town match is the printed string, not a guess from the district name. Anekal and Doddaballapur are not N1. Vijayanagara is not filled from Ballari. Towns that merely contain the letters of Mangaluru, other than those beginning "mangaluru(", are not N4. A listed plant is not a service area. Utilisation below capacity is not, by itself, a measured discharge. The quarantine row whose capacity is printed ".150" is left out of the gap. These rows are not added into a state total, and they are not cells of the frozen spine.

District	Town	Plant	Capacity MLD	Utilised MLD	Technology

Bagalkote	Jamkhandi	Near Malgur road	7.6	2	FAL
Bagalkote	Rabkavi Banahatti	Near Gattagi, Basaveshwara road	9.2	2	SBR
Bagalkote	Ilkal	Tondyal village	8	2	FAL
Bagalkote	Badami	Behind Veerpulikesh Education Institution, Yaragoppa Road,	4.3	4.4	WSP
Bagalkote	Mudhol	Near Yadahalli-Ingalgi road Mudhol	9.06	4.8	ULB
Bagalkote	Bilagi	Towards Korthi Road Distance 2 KM Away from city limit	3.5	2.4	ULB
Bagalkote	Hungund	Ramawadagi Village Road	3.5	0	WSP
Bagalkote	Guledgudda	Padanakatti Village	4	0	oxidation pond
Bagalkote	Bagalkote	near APMC Bagalkote	12.5	6.5	oxidation pond
Bangaluru	Bangalore Urban	V Valley	.150	125	ASP
Belagavi	Gokak	Maldinni Village	8.7	1.5	FAL
Belagavi	Bailhongal	Anigol Road, Bailhongal	8.28	4.5	Aerated Lagoon
Belagavi	Chikodi	HIREKODI	5.8	2.7	WSP
Belagavi	Sadalga	Dattawad Road Honde	3.72	0	Aerated Lagoon
Belagavi	Ramdurga	Halagatti	3.3	0	WSP
Belagavi	Ramadurga	Pudukote	1	0	MBBR
Bellary	CCB, Ballari	30MLD Annathapur Road	30	23.3	Aerated Lagoons
Bellary	CCB, Ballari	15 MLD at Cowl Bazaar	15	10	Aerated Lagoons
Bellary	CCB, Ballari	Enturi Nagar, Ballari	10	10	SBR Type
Bengaluru	Bangalore Urban	Agaram	35	34.51	SBR
Bengaluru	Bangalore Urban	Bellandur Amanikere	90	88.2	ASP
Bengaluru	Bangalore Urban	Chikkabanavara	5	4.88	SBR
Bengaluru	Bangalore Urban	Chikkabegur	5	4.24	SBR
Bengaluru	Bangalore Urban	Cubbon Park	4	2.1	MBBR
Bengaluru	Bangalore Urban	Doddabele	40	41.95	SBR
Bengaluru	Bangalore Urban	Doddabele	20	20.44	SBR
Bengaluru	Bangalore Urban	Halasuru	2	1.93	SBR
Bengaluru	Bangalore Urban	Hebbal	100	85.59	SBR
Bengaluru	Bangalore Urban	Horamavu	20	15.57	SBR
Bengaluru	Bangalore Urban	Hulimavu	10	9.62	SBR
Bengaluru	Bangalore Urban	Jakkur	15	17.18	UASB+EA
Bengaluru	Bangalore Urban	K & C Valley	218	152.65	ASP
Bengaluru	Bangalore Urban	K & C Valley	30	31.41	ASP
Bengaluru	Bangalore Urban	K & C Valley	60	59.98	ASP
Bengaluru	Bangalore Urban	K & C Valley	150	150.26	ASP
Bengaluru	Bangalore Urban	K R Puram	20	14.7	UASB+EA
Bengaluru	Bangalore Urban	K.R.Puram	20	19.81	SBR
Bengaluru	Bangalore Urban	Kadabeesanahalli	50	30.07	EA
Bengaluru	Bangalore Urban	Kadugodi	6	5.22	SBR
Bengaluru	Bangalore Urban	Kempambudhi	1	1.01	EA
Bengaluru	Bangalore Urban	Kengeri	60	41.95	ASP
Bengaluru	Bangalore Urban	Lalbagh	1.5	1.23	Activated aeration + plate settlers + UV
Bengaluru	Bangalore Urban	Mailsandra	75	77.04	EA
Bengaluru	Bangalore Urban	Mallathahalli	5	4.78	SBR
Bengaluru	Bangalore Urban	Nagasandra	20	15.57	SBR

Bengaluru	Bangalore Urban	Nagasandra	20	15.57	Extended Aeration
Bengaluru	Bangalore Urban	Rajacanal	40	30.68	SBR
Bengaluru	Bangalore Urban	Rajacanal	40	41.51	Extended Aeration
Bengaluru	Bangalore Urban	Sarakki	5	4.77	SBR
Bengaluru	Bangalore Urban	V Valley	180	37.11	Trickling process
Bengaluru	Bangalore Urban	Yelemelle chellappa chetty	15	13.63	SBR
Bengaluru	Bangalore Urban	Yelhanka	10	9.97	ASP
Bengaluru	Bangalore Urban	Hennur	1	0.5	SBT
Bengaluru	Bangalore Urban	Madiwala	4	2.08	SBR
Bengaluru	Anekal	Aldenahalli	3.1	1	SBR
Bengaluru	Anekal	Doodakere	3.3	1	SBR
Bengaluru rural	Doddaballapur	Majarahosahalli Sy No.35	12	7	WSP
Bidar	Bidar	Gornalli B Village Bidar - 01 No. (KUIDFC)	17.26	5	Aerated Lagoon Type
Bidar	Humnabad	Dummanasoor village, Chinnakera Road, Near Forestry Nursery	6	0	WSP
Bidar	CMC. Bidar	Gornalli B Village Bidar - 01 No.	17.26	7.5	SBR type
Bijapur	Bijapur	Indi Road, Vijayapur	31	25	FAL
Chamarajnagar	Chamarajanagar	Near Boodhittu village	9	5	FAL
Chamarajnagar	Kollegala	Kollegala- Mulluru Road	9	6	Aerated lagoon
Chamarajnagar	Gundlupete	Zone 'B' VIJAYAPURA	1.5	0.8	WSP
Chamarajnagar	Gundlupete	Chennapura Road, Chikkamagaluru	2.5	1.2	WSP
Chikkaballapur	Chikkaballapur	Gopala Krishna Amminikere Sy No.260	10	7	WSP
Chikkaballapur	Chintamani	Near Gopasandra Tank	2	2	WSP
Mysore	Hunsuru	Kalkunike	3.9	3.9	WSP
Mysore	Mysore	Rayanakere	60	51	Surface aeriator
Mysore	Mysore	Vidyaranyapuram	67.5	54	Surface aeriator
Mysore	Mysore	Hebbal	8	7.8	SBR
Mysore	Mysore	Kesare	30	27	Surface aeriator
Raichur	Raichur	Eklaspur	20	12	FAL
Raichur	Raichur	Hosur	8	5	FAL
Raichur	Sindhanur	Sukalpet	12	3	FAL
Raichur	CMC, Raichur	Yeramarus Village near Raichur	5.5	2	SBR
Ramanagara	Kanakapura	Aralalu Village	6.29	3.3	WSP
Ramanagara	Ramanagara	Kumbapura	7.56	6.24	Aerated Lagoon
Ramanagara	Magadi	PURA GRAMA	3.7	1.78	WSP
Shivamogga	Shivamogga	Purle	5.13	0.52	SBR
Shivamogga	Shivamogga	Near Thyavarechatnalli	35.58	24	Aerated Lagoon
Shivamogga	Bhadravathi	Near APMC yard	7.2	2	WSP
Shivamogga	Bhadravathi	Jatpat Nagara	5.83	4.8	WSP
Shivamogga	Bhadravathi	At Ujjinipura	1	0.05	SBR
Chikkaballapur	Shidlaghatta	Bellutti lake	3.1	0.001	WSP
Chikkamagalur	Chickmagalur	Chennapura Road, Chikkamagaluru	20	16	MBBR

Chikkamagalur	Birur	Hindu Rudrabhoomi, Yagati Road, Birur	2.64	2.64	WSP
Chitradurga	Chitradurga	Beside Railway Track, Near NH4, Chitradurga	20	18	SBR
Dakshina Kannada	Mangaluru(Pachanady)	Pachanady	8.75	4.5	ASP
Dakshina Kannada	Mangaluru(Kavoor)	Kavoor	43.5	27	UASB
Dakshina Kannada	Mangaluru(Surathkal)	Surathkal	16.5	1.5	ASP
Dakshina Kannada	Mangaluru(Bajal)	Bajal	20	8	ASP
Dakshina Kannada	Ullala	Kodikotepura, Ullala	4.4	0	SBT
Dakshina Kannada	Sullia	Oldgate,Hosagadde, Sullia	2	0	Oxidation Pond
Dakshina Kannada	Belthangady	Solid waste dumping yard, Koyyur.	0.01	0.01	FSTP
Davanagere	Davanagere	Shivanagar, Davanagere	20	20	SBR
Davanagere	Davanagere	Avaragere	5	2.5	SBR
Davanagere	Davanagere	Shivanagar	20	15	SBR
Davanagere	Harihara	Harlapura	18	4	FAL
Davanagere	Honnali	Malladevarakatte	3.3	1	WSP
Davanagere	Davanagere	Kundavada	14.8	12	WSP
Dharwad	Hubballi-Dharwad	Madihal in Dharwad	20	16	SBR
Dharwad	Hubballi-Dharwad	Gabbur in Hubballi	40	20	SBR
Dharwad	Dharwad	Sy. No. 151, Narendra village, University of agricultural sciences	10	3.83	SBR
Dharwad	Dharwad	At Kelageri lake premises, near Radhakrishna nagar,	3	2.68	SBR
Dharwad	Dharwad	Jogyallapur	0.25	0.06	MBBR
Dharwad	Hubballi	At RS No. 315, Unakal lake premises, Hubballi	3	2.452	Phytorid
Dharwad	Hubballi	Tolanakeri, Akshaya colony, Hubballi	1	0.811	Phytorid
Dharwad	Hubballi	At Ramanagar, near Ashraya colony, beside Tarihal Industrial area,	0.25	0.123	MBBR
Gadag	Gadag-Betageri CMC	Nagasamudra	13.88	8.2	WSP
Gadag	Laxmashwar	Akkigunda, Desaiban	5.5	0.8	Aerated Lagoon
Gadag	Naragund TMC	In Hirehal	4.18	0	WSP
Hassan	Hassan	Bittagowdanahalli	10	10	WSP
Hassan	Belur	Hole Beedhi	2.4	2.4	WSP
Hassan	Belur	Behind Ayyappa Swamy Temple	0.3	0.3	WSP
Hassan	Arasikere	Garudangiri Road	12	6	SBR
Hassan	Channarayapatna	Gadderameshwara badavane	4.6	4.6	WSP
Hassan	Holenarasipura	Tattekere Grama	3	3	WSP
Hassan	Channarayapatna	Udayagiri Badavane	0.25	0.25	SBR
Haveri	Ranebannur	Hunatti	7.5	7.5	FAL
Haveri	Ranebannur	Hunatti	7.5	2.5	FAL
Haveri	Haveri	Siddevapure	4.71	0	FAL
Haveri	Byadigi	Theradahalli	5	3	SBR
Kalburgi	Kalaburgi	Near Nandikur Village	40	40	SBR
Kalburgi	CC, Kalaburagi	Near Nandikur Village	20	12.5	SBR type

Kalburgi	CC, Kalaburagi	Near Kapnoor Village Sy. No. 69/2 & 69/3	25	10	SBR type
Kalburgi	TMC,Chittapur	Chittapura Town Sy. No. 82/2	5.1	3.6	WSP type
Kalburgi	TMC, Jewargi	Jewargi Town Near Kalaburagi Road	3.25	0	WSP
Kolar	Kolar	Near Siddhartha school, manighatta main Road, gandhi nagara kolar	10.16	10.16	WSP
Kolar	Mulbagal	Chikkagopammanakere	6.3	2.2	SBT
Kolar	Srinivasapura	Hebbata kere	3	2.2	WSP
Kolar	Srinivasapura	1) Indiranagara near APMC yard	0.112	0.028	DEWATs
Kolar	Srinivasapura	2) Near Unikili Village	0.117	0.03	DEWATs
Kolar	Srinivasapura	3) Near Nallapalli	0.107	0.0214	DEWATs
Kolar	Srinivasapura	4) Near Byrapalli Village	0.057	0.0114	DEWATs
Kolar	Malur	Malur town,Kadadenahalli	4	1.6	SBR
Koppala	CMC, Gangavathi	chikka janthkal Road at Gangavathi	14	12.6	FAB Type
Mandya	Sriragapatna	Chandagalu road Ganjam, Srirangapatna	1.39	1.39	WSP
Mandya	Sriragapatna	Chandagalu road Ganjam, Srirangapatna	2.21	1.7	WSP
Mandya	Maddur	Hole AnjananeyaTemple	6	5.6	WSP
Mandya	Mandya	Yathagadahalli Road	9.62	9.52	OP
Mandya	Mandya	Chikkegowdana Doddi	8.9	8.9	WSP
Mandya	Malavalli	Goudgere	5.65	4.5	WSP
Mandya	Krishnarajpet	Sy. No 32, Hosaholalu	5	2	WSP
Mandya	Nagamangala	Gaddebhuvanahalli	3	1.8	WSP
Mangaluru	Subramanya	Back side of Subramanyeshwara college	2.6	2.4	Aerated Lagoon
Mysore	Nanjangudu	Goluru	7	7	WSP
Mysore	Bannuru	Chamanahalli	2.25	1.5	WSP
Mysore	T Narsipura	Near KSRTC Bus stand (Constructed)	5.5	3.67	SBR
Mysore	KR Nagar	Kantenahalli	1.44	1.44	WSP
Mysore	KR Nagar	Madhuvinahalli	1.45	1.45	WSP
Mysore	KR Nagar	Madhuvinahalli	2.5	0.9	WSP

Seven Bengaluru plants on the under-construction list in the National Green Tribunal reply, Annexure 4. Progress is as of 30 September 2024 where a percent was printed. Varthur status was not stated. A listed plant is not in service.

Town / plant	Capacity MLD	Status
Varthur	25	Not stated
Bilishivale	17	Under construction
Doddabettahally	7	Under construction
Jakkur	7	Under construction
Yelahanka	6	Under construction
Jakkur - Downstream	10	Under construction
Byrathikanne	13	Under construction

Works under construction are not water treated.

18.9 What this part does not do

It does not replace Edition To. It does not unfreeze the spine. It does not turn the 425 open controls into numbers. It does not treat a state foodgrain total as a district crop cell. It does not treat created canal capacity as water delivered. The completeness figure remains 89.34% against the 90% bar.

End of the post-Edition To addition. · G. L. Sudhakar · October 2026