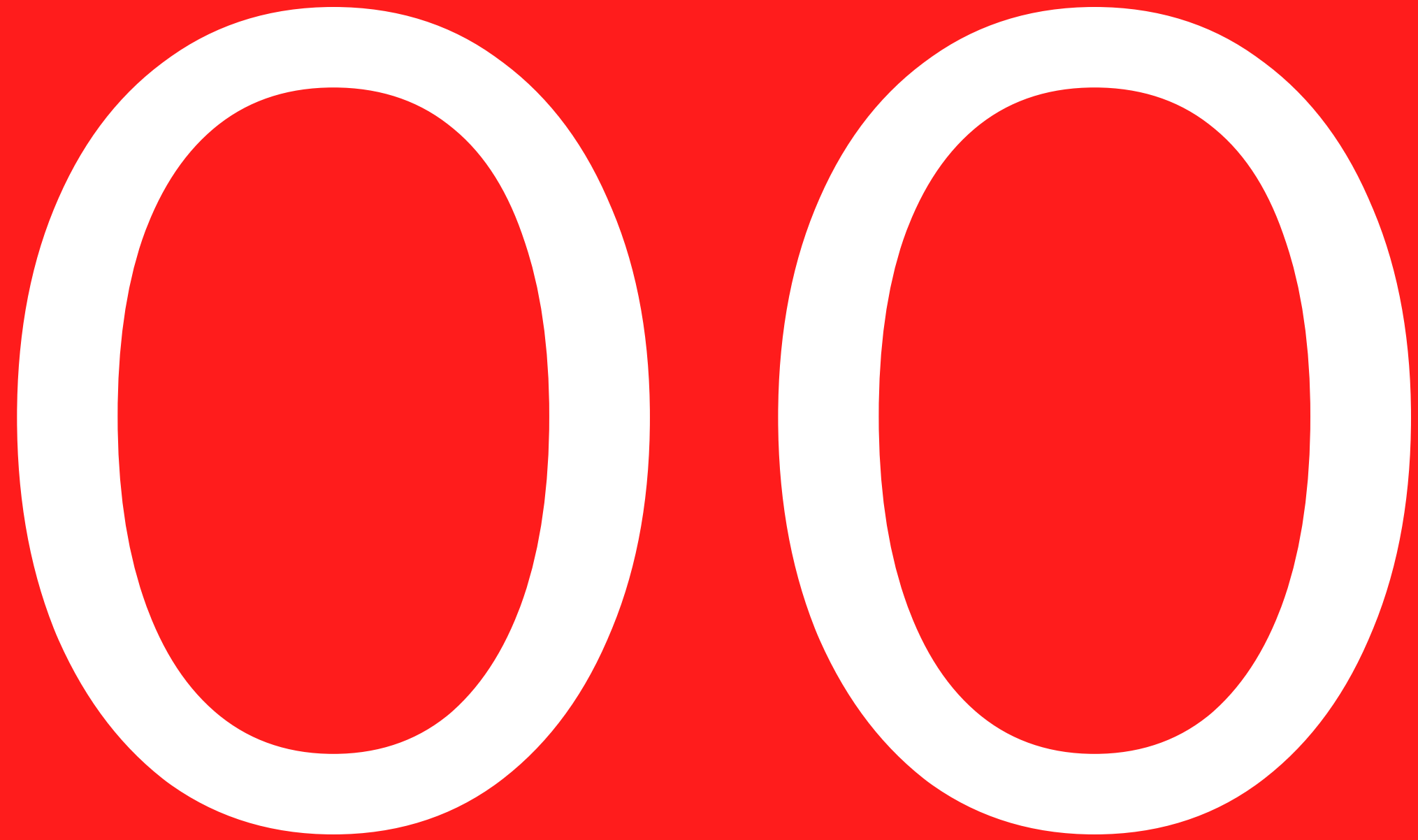


PUBLIC INFRASTRUCTURE, RIVER ECOLOGIES, BELONGINGS & THE CASE OF OWNERSHIP

PATNA INFRASTRUCTURE STUDY

J.P. GANGAPATH,

Commonly known as marine drive of Patna



**WHY THIS RESEARCH
MATTERS**

**What happens to ownership of a riverfront when
the people who hold it up are not the people
who plan it.**

CONTENTS

00 WHY THE RESEARCH MATTER

01 BACKGROUND, SITE & CONTEX

02 PILOTING FUTURES

03 HOW WE WORKED

04 PROCESS & THEMES

05 FINDINGS & INSIGHTS

06 SYNTHESIS & PLANNING

This document presents research conducted by the Centre for Social Design Pvt. Ltd. in partnership with Ink Social Design, Amsterdam, supported by the Embassy of the Kingdom of the Netherlands in India. It combines primary fieldwork and secondary research. Sources are listed in the annexure.

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Map of Patna with Dinapore, Bankipore & Patna City



OCT 2025 - MAR 2026

Internal working document

Karam Ali Chak Simil Murarpur

SYMBOLS and ABBREVIATIONS

Boundary—Division, District, Thana

What this research looks at ?

Patna's riverfront has been redeveloped at scale. A four-lane road, 20.5 km long, now runs along the southern edge of the Ganga. The road is built. The ghats it passes through are still in use.

The road: Built between 2013 and 2025. Connectivity-led. ₹3,831 crore.

The ghats: In active daily use, ritual, livelihood, last rites, recreation, fishing, farming on the Diara side.

The people: Boatmen, flower and samagri sellers, sanitation workers, Diyara farmers — already working that edge. Not part of the plan for the road.





Patna Sonpur Setu
दीघा सोनपुर सेतु



Pahleza
पहलेजा
Digha Pahleza JP Setu Rd

Piloting Ramchandra Temple
रामचौरा मन्दिर



Gandhi Maidan
गांधी मैदान



Mahavir Mandir Patna
महावीर मन्दिर पटना



Kumhrar
कुम्हार पार्क

Prakash
Narayan
National
Airport
जयप्रकाश
नारायण
इंटरनेशनल
एयरपोर्ट...

922

Patna
पटना

KANKARBAGH
कंकड़बाग

KUMHRAR
कुम्हार

22

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22

Internal working document

1

01

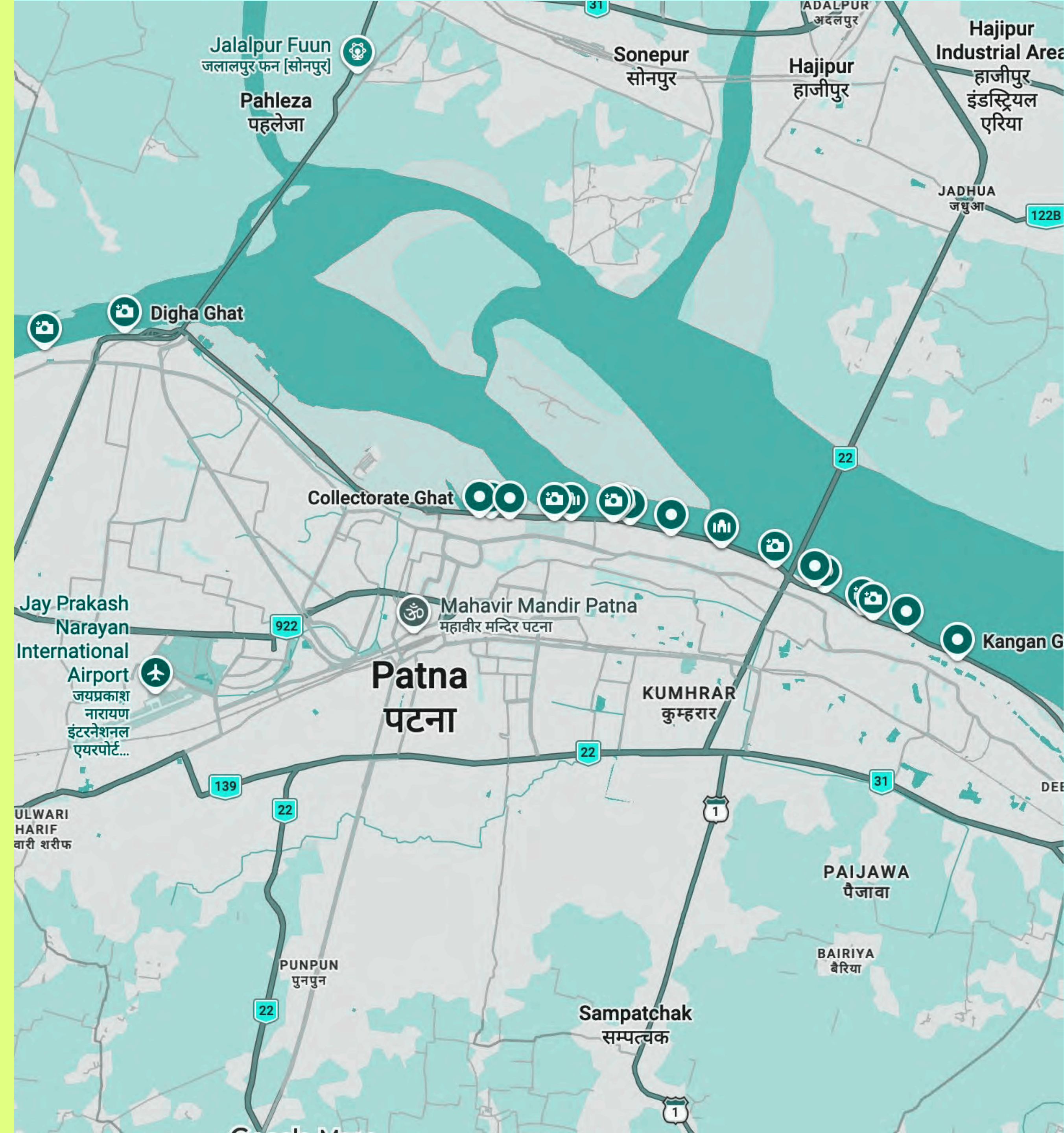
HISTORY, SITE & CONTEXT

Where the study is, and the few things
about the place that matter to read the
rest.

THE CONTEXT

The study runs along the Ganga Path between Digha Ghat and Didarganj, with field visits at Kali Ghat, Gandhi Ghat, Digha Ghat, the Diyara island, and Patna College Ghat.

- **South bank.** Patna sits entirely on the southern bank. Everything urban is south of the water.
- **The river.** Runs east to west along the city's northern edge.
- **The Diara.** A low alluvial belt across the river. Floods in monsoon, farmed in the dry months. Where the field meets the city.



PATNA IN FIVE FACTS.

● **City and capital.** Capital of Bihar and one of India's oldest continuously inhabited cities.

● **Population.** Roughly 2.5 million in the city; 3.5 million in the metropolitan area.

● **Geography.** Sits entirely on the south bank of the Ganga. The river is the city's northern edge.

● **Daily relationship.** Drinking water, ritual, livelihood, last rites, recreation. The Ganga is operational, not symbolic.

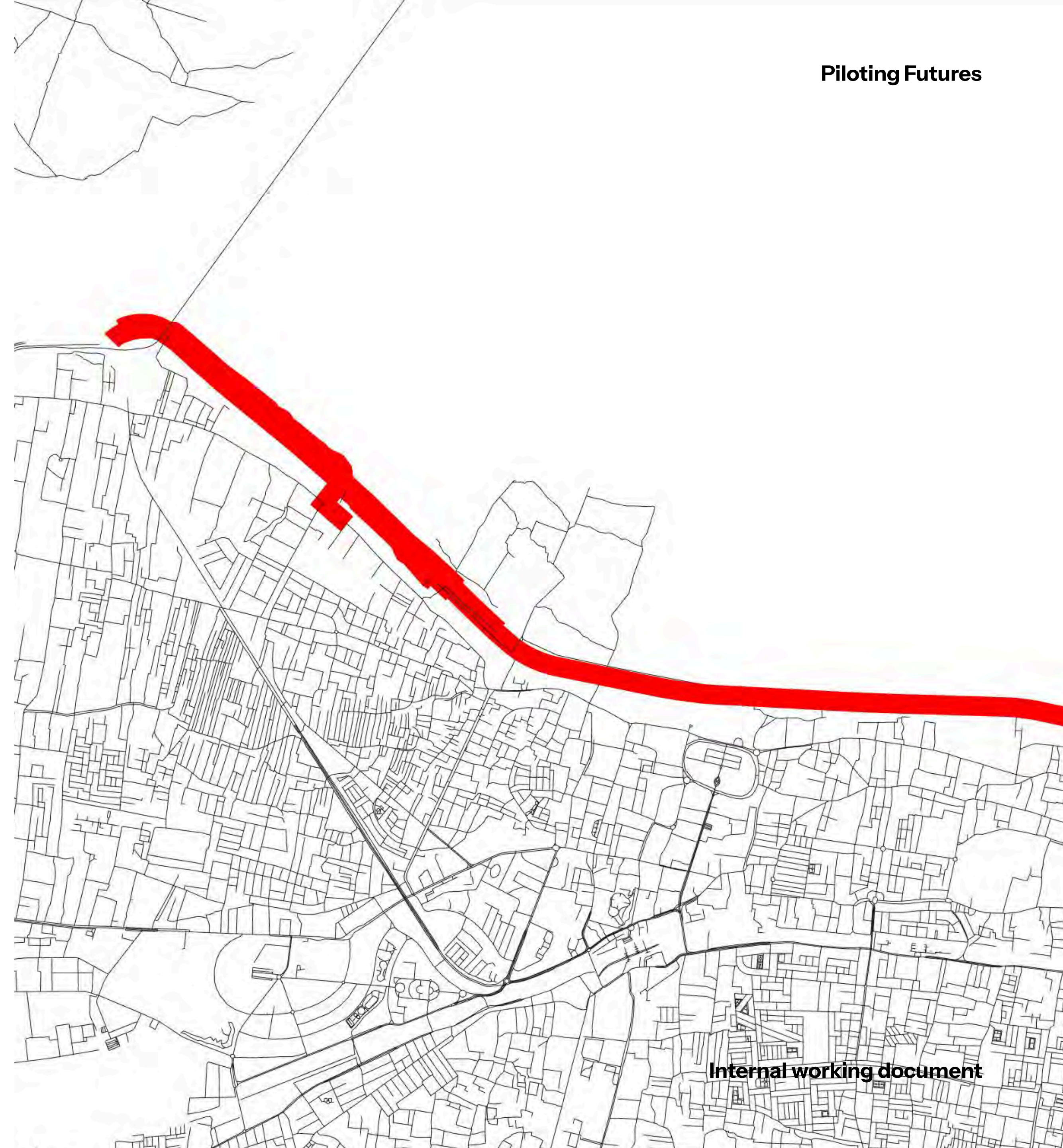
● **The Ganga Path.** A 20.5 km road built 2013–2025 along the southern edge. The project this study sits inside.



A SHORT HISTORY OF THE CITY AND THE RIVER.

Patna was Pataliputra. The site has been a city for more than two thousand years, and for all that time the Ganga has been its northern edge.

- **The river has moved.** Through the colonial and twentieth-century periods the channel shifted and rebuilt parts of the bank. The course today is not the course of fifty years ago.
- **What stays constant.** The city's orientation. The south bank is where the buildings are; the north bank is where the field begins.
- **What changes annually.** Where the water actually reaches. Each monsoon recalibrates which ghats are usable, which steps are dry, which fields survive.



02

GANGA AS A RIVER, AND ITS PLACE IN THE CITY.

OCT 2025 - MAR 2026

Why the riverfront is not, in Patna, a
piece of urban infrastructure, but a site
of daily relationship.

Internal working document

WHAT THE GANGA DOES IN PATNA, IN PRACTICE.

ELEMENT	DESCRIPTION
DRINKING WATER	Sourced from the river and its aquifer. The river is the city's water table.
LAST RITES	Cremation and immersion happen at the ghats. Almost every family in the city has a ghat their dead were taken to.
FESTIVAL	Chhath Puja is the largest of the year. The ghats are the festival site.
LIVELIHOOD	Fishing, ferry, samagri and flower trade, sanitation, agriculture on the Diara. Several families have done these for three generations on the same stretch of bank.
RECREATION	Evening visits, especially by college students and young families. The ghats are the city's third place.

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“
**GANGA IS MAI.
BUT I WON'T
TOUCHING THE
WATER IS NOT SAFE**”

SACREDNESS, IN THIS CONTEXT, IS NOT PROTECTION.

Nishant Ravi Ranjan, who runs a student-led conservation group at Patna College, made the point directly: the river's sacredness is also a source of its pollution.

Ritual waste, Flowers, idols, immersion remains, released into the river precisely because the river is sacred.

Awareness isn't the lever, His group did not tell people to stop. People understand the ecology and continue anyway.

Substitution is, They built a separate immersion pit so the ritual could continue without the river receiving it.

Underlying principle, Behaviour changes when there is a practical place to put what the ritual needs to release.

03

CULTURE, PEOPLE & MORPHOLOGY

Patna's people and form, kept to the
parts that the rest of the study pays
back.

PATNA AS A RECEIVING CITY.

Patna takes in migrants from across Bihar and beyond, from the agricultural districts to the north and west, from eastern UP, from Bengal, and from across the river itself.

Cross-river belonging, Several stakeholders came from across the Ganga and now work on the city side.

What follows for ownership, A riverfront that asks who belongs and excludes the rest will struggle to be cared for by anyone. Ownership depends partly on belonging.



Pineapple seller
Digha · third generation

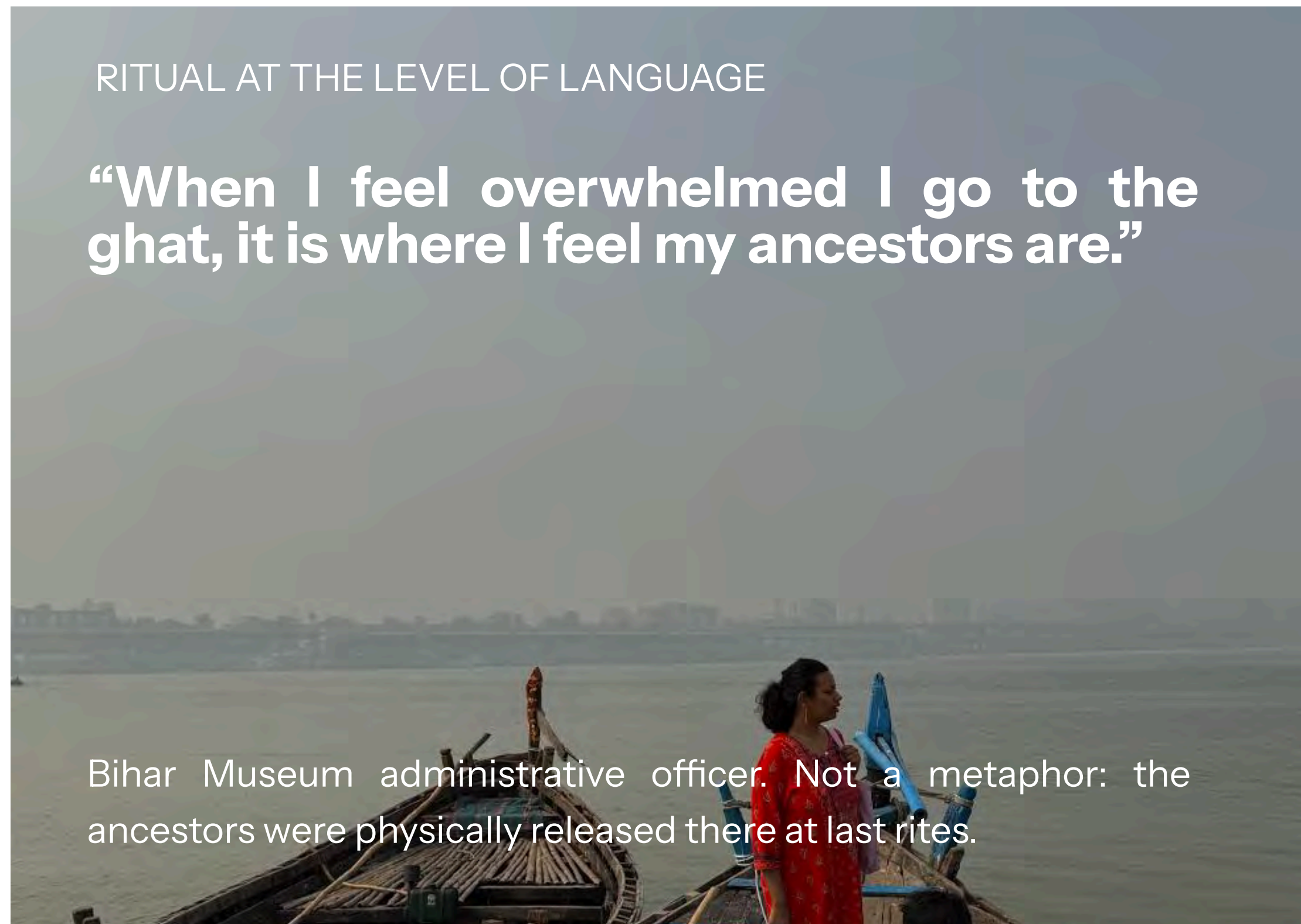


Diyara farmer
Family lease across the river



Kala khatta seller
Returned from Punjab

PATNA AND BIHARI CULTURE, BRIEFLY.



What follows for intervention: a planning process cannot assume residents have the time or framing to engage with the riverfront as a planning problem, unless engagement is built around the work they are already doing.

MORPHOLOGY, WITH THE RIVERFRONT AS CENTRE.

Patna's built form sits in a band parallel to the river. The Ganga Path now runs along its northern edge, between the city and the water.



CITY OF PATNA

JP GANGA PATH

DIARA

MORPHOLOGY, WITH THE RIVERFRONT AS CENTRE.

Patna's built form sits in a band parallel to the river. The Ganga Path now runs along its northern edge, between the city and the water.



2026

2016

2010

CITY OF PATNA

JP GANGA PATH

DIARA

OCT 2025 - MAR 2026

Internal working document

04

THE JAYPRAKASH NARAYAN GANGA PATH.

What the project is, where it runs,
what it cost, and what it set out to
do.

NAME	JP GANGA PATH (LOKNAYAK GANGA PATH) — LOCALLY, PATNA MARINE DRIVE.
LENGTH	20.5 KM, DIGHA GHAT (WEST) TO DIDARGANJ (EAST).
COST	APPROXIMATELY ₹3,831 CRORE.
STRUCTURE	FOUR-LANE EXPRESSWAY. 6.5 KM AT-GRADE; 14 KM ELEVATED ON EMBANKMENT UP TO 13 M HIGH.
AGENCY	BIHAR STATE ROAD CONSTRUCTION CORPORATION LIMITED (BSRCCL).
FOUNDATION STONE	11 OCTOBER 2013.
PHASE 1 · DIGHA–PMCH	6.5 KM — OPENED 24 JUNE 2022.
PHASE 2 · PMCH–GAI GHAT	5 KM — OPENED 14 AUGUST 2023.
PHASE 3 · GAI–KANGAN GHAT	OPERATIONAL FROM 11 JULY 2024.
FINAL · KANGAN–DIDARGANJ	INAUGURATED 10 APRIL 2025.
STATED BENEFIT	DIGHA TO DIDARGANJ CUT TO 20–25 MINUTES FROM A PREVIOUS 1.5–2 HOURS.

Patna's Marine Drive: A Symbol of Bihar's Rapid Urban Growth

Patna's Marine Drive, known locally as JP Ganga Path, is celebrated as a hub of urban development and social gathering. Residents praise the security and modernization efforts, while also calling for more opportunities. The scenic expressway hosts small businesses and Patna's vibrant culture.

Devdiscourse News Desk | Updated: 15-10-2025 11:44 IST | Created: 15-10-2025 11:44

WHAT THE ROAD WAS BUILT TO DO.

The screenshot shows a news article from The Times of India. The title is "Walk, eat & relax by the Ganges" by Faryal Rumi, dated May 03, 2025. The article describes Patna as a "gleaming new riverside retreat" with a "fusion of flavour, leisure and scenic charm" along the Ganga. It mentions a "dedicated food arena and recreational zone" and refers to the area as the city's "Marine Drive". The article includes a photo of a busy riverside area at night with many people and stalls.

The screenshot shows a news article from TNN dated May 2, 2022. The title is "Patna's Marine Drive will now be extended up to Bakhtiyarpur in east direction and Sherpur in west" by Madan Kumar. The article states that the Digha-Didarganj JP Ganga Path, also known as the Marine Drive, will be extended up to the Bakhtiyarpur-Tajpur road bridge near Athmalgola in the east and up to the proposed Shepur-Dighwara bridge over Ganga near Sherpur in the west. It includes a photo of officials at a site.

The screenshot shows a news article from News18 dated January 24, 2026. The title is "Patna Eway's Reel Madness: Youths Dance Around Flashing Bike To Priyanka-Bipasha's 'Teri Dulhan', Internet Split". The article reports that a group of youngsters was seen dancing around a motorcycle on a public road, specifically on Loknaya Ganga Path (Patna Marine Drive Expressway). The incident sparked a debate online, with some calling it reckless and others defending it. It includes a photo of a group of people dancing around a motorcycle at night.



Move traffic east-west, Built to relieve Ashok Rajpath in particular, and link Digha and Didarganj with a continuous fast road.

Link to the wider network, Connects to Atal Path, JP Setu, Mahatma Gandhi Setu, and the Patna Ring Road.

On transport terms, it worked, Travel time along the river has fallen by roughly an hour and a half. The road does what it set out to do.

WHAT THE ROAD WAS “NOT” BUILT TO DO.



News / Vendors Along JP Ganga Path Operate In Unhygienic Condi...

Vendors along JP Ganga Path operate in unhygienic conditions

Adwitiya Deb / TNN / May 20, 2026, 23:59 IST



Patna: The stretch along JP Ganga Path has been in a limbo for over four months, as the planned relocation of street vendors to the Digha vending zone continues to face delays. Though the Patna Municipal Corporation (PMC) had aimed to complete the project by early February and hand over the facility, vendors are still operating in unhygienic conditions along the riverbank.

Patna mayor Sita Sahu said efforts are underway to...

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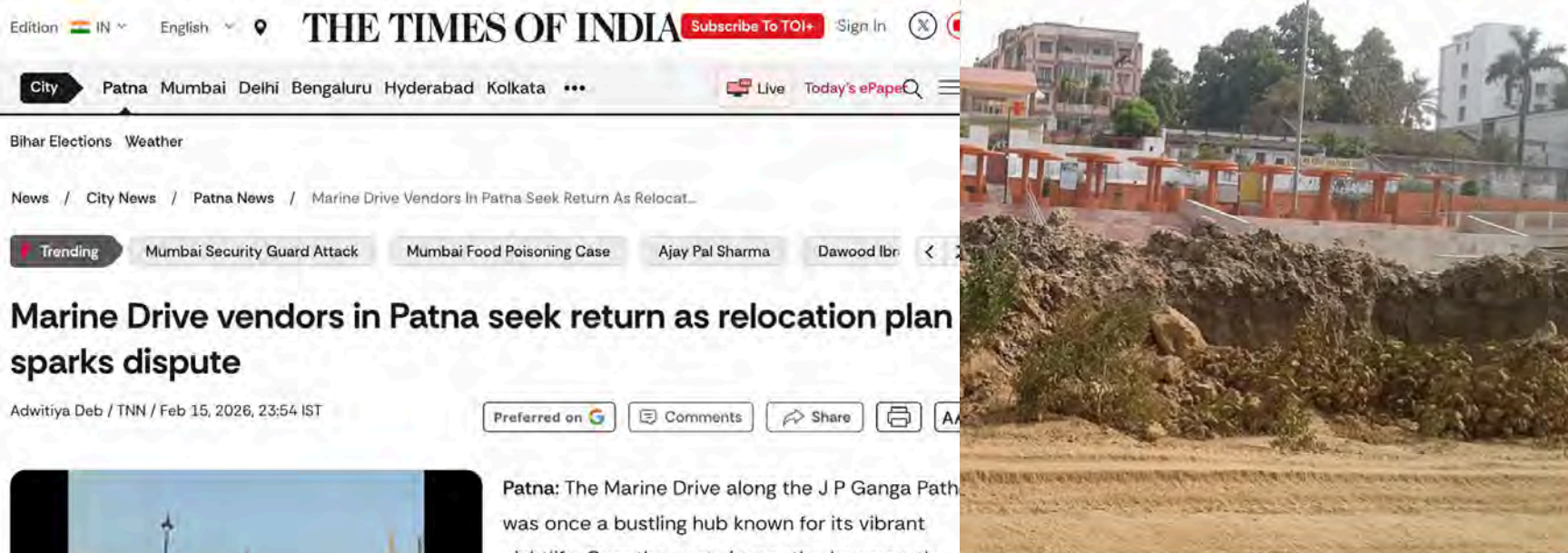
DownToEarth

Home Agriculture Water Waste Climate Air Africa Data Centre Video Gallery Food

Water

The Ganga is leaving Patna's ghats

As an ambitious Ganga renovation plan is underway, and ghats in Patna are being beautified, there is little attention being paid to the fact that river has moved kilometres away from the city



Marine Drive vendors in Patna seek return as relocation plan sparks dispute

Adwitiya Deb / TNN / Feb 15, 2026, 23:54 IST



Patna: The Marine Drive along the J P Ganga Path was once a bustling hub known for its vibrant nightlife. Over the past six months, however, the area has lost much of its charm after vendors were barred from setting up their stalls there following orders from higher authorities. The fast-food vendors who once brought the stretch to life went on a seven-day strike, demanding...

Ganga Pathway undergoes design change yet again, project cost swells

The ambitious Loknayak Ganga Pathway, an elevated bypass to the city through the southern bank of the river Ganga, will undergo another design modification in the wake of changing course of the river near Patna City. Now, another 2.90km stretch from Digha to Deedarganj of the 20.5km long four-lane pathway connecting Digha in the west to National Highway 31 in east, will be built on an elevated structure, said an official at the Bihar Road Development Corporation (RDC).

Feb 27, 2022 9:52 PM IST

By Subhash Pathak



Hindustan Times 100

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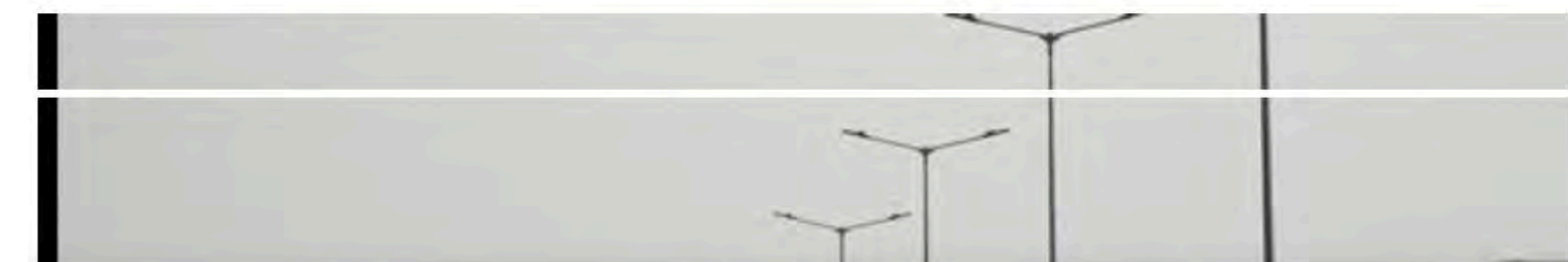
Smart Money IPL Points Table Sports Delhi News Century of Leadership Bengaluru News

Experts raise concern over govt's plan to develop roadside amenities along Ganga Path

A researcher on river water with Bihar State Pollution Control Board (BSPCB) said that the quantum of the flow of water in the river Ganga is declining over the years, while the level of pollutants is going up notwithstanding the claims of checking the flow of untreated water.

Published on: Feb 26, 2023 10:55 PM IST

By Subhash Pathak



Not designed as a riverfront, The ghats it passes through were not part of its design brief.

Not planned around vendors, The people who worked the bank before it are not in its operational plan.

Not consulted with the Diara, Boatmen, fishermen, and farmers on the north side are downstream of decisions they were not part of.

ONE CONCRETE CONSEQUENCE.

“THE LAND BETWEEN ROAD AND WATER WAS RAISED DURING CONSTRUCTION SO MACHINERY COULD REACH THE BANK. IT HAS STAYED RAISED.”

-anonymous Local



What stayed, The raised land remained. The level is now higher than the water.

What it means, Water no longer reaches the lower steps. The ghat is still where people offer; the river is not where they can reach it from.

The pattern, Engineering intent and ritual intent have come apart at a few feet of fill.

05

**PILOTING
FUTURES**

OCT 2025 - MAR 2026

This Delhi study is one of three city pilots, same lens,
different civic system.

Internal working document

How might we make the riverfront's existing self-organised practice visible to the bodies that govern it, so that the people already holding it up are recognised as the people who plan its next phase?

PROJECT OVERVIEW

This Delhi water study is one of three pilots in a larger programme titled Piloting Futures Through Social Design, jointly conducted by the Centre for Social Design (C4SD). The programme runs from October 2025 through September 2026.

Each pilot tests a different question about how social design can intervene in civic systems taking a specific city, a specific institutional partner, and a specific lived problem, and treating them as a single working unit.



C4SD

Centre for Social Design

COLLABORATORS

The study is being conducted in collaboration with:



Architecture Firm
Archohm Consults



is funded under the
Netherlands Embassy



partnership with
(Ink). Social Design. Netherlands

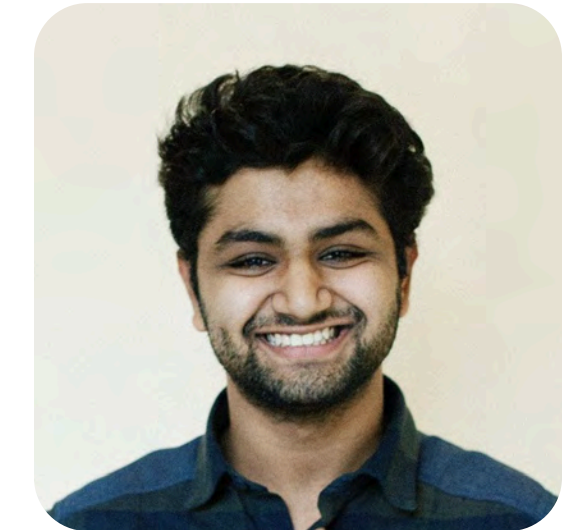
THE TEAM



Mayank Raj
Design + systems



Anna Noyons
Design + systems



Saansh Arora
Design + systems



Srishti Shankar
Research + Behaviour



Vedangi Rane
Research + Comms



Jugaadh Lamba
Urban Research



Twan
Design



Gatim Sachdeva
UI/UX & Technology



Mohd Amaan
Research

The project at different stages involved different people with expertise in separate fields which includes but is not limited to designers, researchers, behavioural scientists, architects, & engineers.

06

**HOW WE
WORKED**

Four kinds of research, used in combination. None is treated as sufficient on its own; each is used to test, qualify, or extend the others.

HOW WE WORKED

Four kinds of research, used in combination.

Research type	What it provides	How it is used here
Secondary research	Academic literature, policy, journalism on the Ganga Path and the Patna Master Plan.	Baseline against which the field is read; identifies what the record captures and what it does not.
Ethnographic field research	Direct observation of practice at the ghats and on the road, what people do, with what objects, at what rhythms.	Central method. Understanding how the riverfront is actually used, by whom, at what hours.
Observational mapping	Spatial documentation, where vendors set up, where boatmen tie up, where the road meets the steps, where water reaches.	Anchors what was heard to specific places. Lets observations be checked against the morphology.
Long-form resident interviews	Sustained conversations with individual stakeholders on their own terms.	Surfaces the lived reading of the riverfront, how those closest to it describe what is changing.

ETHNOGRAPHY

What it means here

Structured field visits to named ghats, with the team carrying a discussion guide. Interviews were planned around specific stakeholder types and conducted in the resident's tonality. The matrix asked stakeholders to mark, on a sketch, the area they considered theirs and the area in which they felt they had any power to act; these marks are part of the evidence base.

Techniques used

Walk-along observation, Walking the same stretches at different hours, to see how the rhythm shifts. The afternoon vendor disappearance, the evening youth arrival, the early-morning Diyara crossing.

Object documentation, Photographing the working objects, the boat, the samagri tray, the safai karamchari's broom, the marine drive bench, the kala khatta cart.

Mapping with residents, Asking stakeholders to mark on a sketch where their working area begins, ends, and where they feel responsible. The Power & Ownership matrix exercise.

Long-form conversation, Structured, in the resident's tonality. Several interviewees made clear that structured toolkits got in the way; the most useful exchanges happened verbally.

What this is not

No household surveys, no quantitative sampling, no claim to statistical representativeness. Figures cited, population, project cost, road length, phasing, come from secondary sources. Not classical participant observation either: the team has not taken up residence at any ghat; work is across repeated structured visits.

PARTICIPATORY TOOLS & METHODS.

Emoji Cards



Instant, gut-level reactions to images of the development.



PARTICIPATORY TOOLS & METHODS.

Scenario Tarot Cards

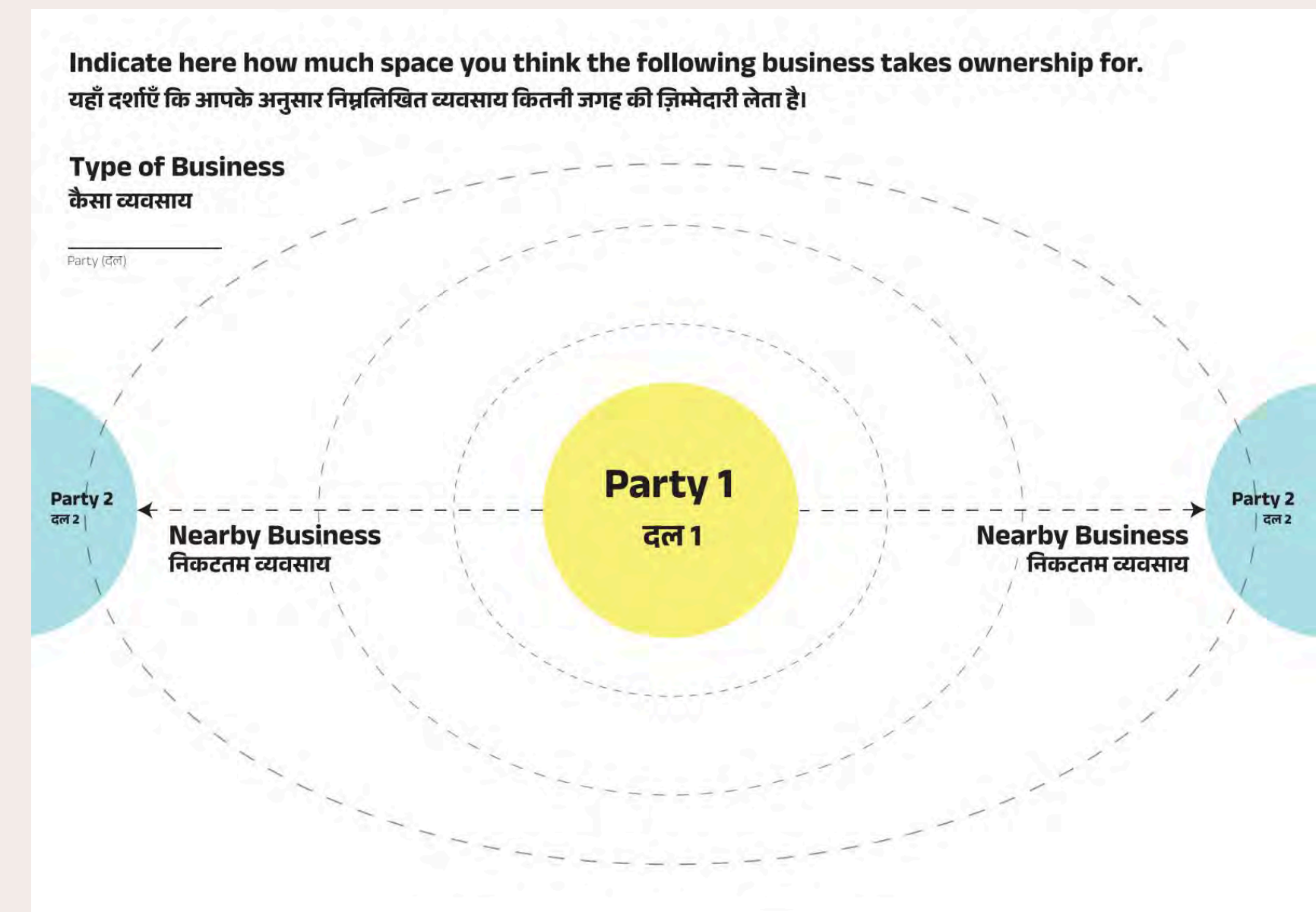
Illustrated prompts inviting respondents to project into possible futures.



PARTICIPATORY TOOLS & METHODS.

Power & Ownership Matrix

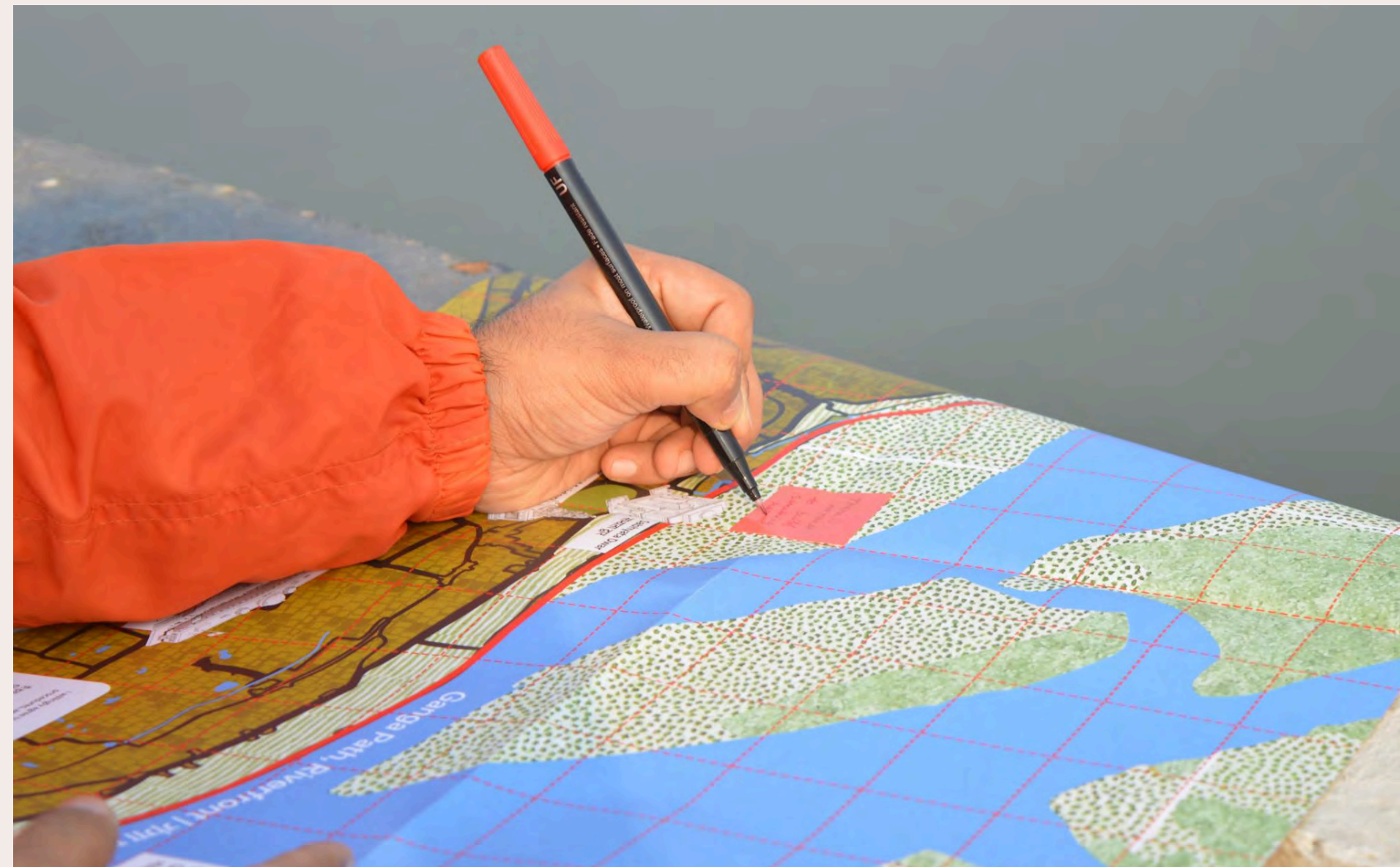
Mapping how far vendors consider the riverfront "theirs."



PARTICIPATORY TOOLS & METHODS.

MAP PARTICIPATORY RESEARCH TOOL

People mapping the things
they would like to have in
the city.



07

STAKEHOLDERS AT THE SITE

The people the study found on the riverfront. Each persona is drawn from named or composite field interviews, with their own observations.

THREE RINGS AROUND THE RIVER.

Stakeholders are organised by their daily relationship to the river, not by their formal status.

STAKEHOLDER /RING	WHO	DAILY RELATIONSHIP
PRIMARY	boatmen, fishermen, flower & samagri sellers, food vendors, safai karamchari, Diyara farmers, temple keepers.	Livelihood-dependent. If the river or road changes, their income changes the next morning.
SECONDARY	Residents who use the riverfront — temple-goers, evening walkers, students, families, mourners.	Use-dependent. Ritual, recreation, or significance; livelihood does not depend on it.
TERTIARY	Municipal staff (Nagar Nigam, BUIDCO, BSRCCCL), WRD, police, planners, occasional visitors.	Influence-dependent or pass-through. Their decisions shape it; they are not at it daily.



THE BOATMAN, **PRIMARY STAKEHOLDER**

COMPOSITE — KALI GHAT BOAT KEEPER;
SAVENDRA SAHNI, FISHERMAN AT DIGHA (20
YEARS, OWNS MULTIPLE BOATS).

- **Generational trade,** Several were the third generation. The trade is inherited, not entered.
- **Felt the river move,** The Ganga moved farther from the steps after construction. Mooring has become harder.
- **No formal voice in change,** Not consulted on the road's design, the bank's reshaping, or the maintenance that now governs both.

- **Felt the road's vibrancy,** The ghat became more active after Marine Drive opened. Footfall is up; busier in the evenings.
- **Trash from the bridge,** Reported being hit by waste thrown from the road above, a new pollution vector.
- **Quiet on the future,** No clear answer on what should change. The horizon is the next day's tide, not the next decade's bank.



THE FLOWER AND HINDU WORSHIP MATERIAL (PUJA SAMAGRI) SELLER. **PRIMARY STAKEHOLDER**

COMPOSITE — KALI GHAT SAMAGRI SELLER (20 YEARS ON THE SAME STEP, LEARNED FROM HIS MOTHER); FLOWER SELLER OUTSIDE THE MANDIR.

- **Twenty years on the same step,** The position is the business; moving it loses the customer base.
- **Strong emotion, no acted-on response,** Felt deeply about lost ritual access. Asked what the community did, had no answer.
- **Morning is the working window,** Sells before temple traffic ends. The road's peak is at other hours; the two clocks do not overlap.

- **Understood the development,** Could describe the construction in detail including the raising of land that cut the water off.
- **Hesitant about being named,** The vulnerability of an unlicensed, long-standing presence is real.
- **Continuity, without recognition,** Family-line work — not licensed, not allocated a pitch, not protected if the bank is restructured.



THE DIGHA GHAT VENDOR. **PRIMARY STAKEHOLDER**

COMPOSITE — PINEAPPLE SELLER (THIRD GENERATION); KALA KHATTA SELLER (RETURNED FROM PUNJAB, WORKS THROUGH NAGAR NIGAM); OTHER DIGHA STALL HOLDERS.

- **Allocated, then removed,** Government stalls at Digha were removed. Only a handful remain; most were closed during visits.
- **Self-organised network,** A WhatsApp group to share updates and alert each other when departments are in the area.
- **“Ganga is Mai. Don’t touch”,** The pineapple seller used the word; he also no longer bathes. Symbolic and practical have separated.

- **Sharp decline in income,** The pineapple seller reported almost no profit. Family trade continued; the business collapsed.
- **The network is how they learn,** What the department is doing reaches them through each other not from the department.
- **No formal channel back,** Three generations of presence, no recognised route to shape the next phase.



THE SAFAI KARAMCHARI DIDI. **PRIMARY STAKEHOLDER**

TWO WOMEN WORKING THE STRETCH BETWEEN KALI GHAT AND GANDHI GHAT. ONE FIVE YEARS IN, THE OTHER TWO.

- **Pride in the work,** Both took ownership of cleaning the Ganga. Described it in proprietary terms, this is their stretch.
- **So they burn it,** Trash is burned at the bank because it cannot be carried up. Health implications were never communicated.
- **Holding actions they did not cause,** Others consider cleaning the bank their job alone. They absorb the system's gap.

- **Two people, long stretch, no support,** Carrying waste up the steps to the bin is physically impossible for two women.
- **₹9,000 a month,** Improved from ₹6,000–7,000. Still low, and not commensurate with the stretch they hold.
- **Wary of being recorded,** Asked to confirm we were not media or government. The wariness is itself informative.



THE DIYARA FARMER. **PRIMARY STAKEHOLDER**

COMPOSITE — AKHILESH (LEASED LAND AT DIYARA GHAT);
FAMILY FARMERS ON THE ALLUVIAL ISLAND.

● **Family business across generations,** Whole families involved from the beginning. Their sons farm too.

● **The land is also the god,** Worship the land each morning; no footwear in the growing area. Income and reverence are inseparable.

● **Unhappy with the development,** Lease at ~₹20,000. No translation into protection, support, or recognition for their work.

● **Workday 5:30 am to 6:00 pm,** Reach the fields at dawn, leave at dusk. Lunch is brought to the land at midday.

● **Lost land to floods,** The land has been ‘cut’ several times in 10–15 years. Each loss reduces the holding.

● **Ganga is the full life-cycle,** Babies grow up around the river; remains are immersed in it. Not a feature of the work, its condition.



THE DISPLACED COMMUNITY. PRIMARY/SECONDARY STAKEHOLDER

NIT GHAT / ANTA GHAT — A HOUSEWIFE, A SHOP OWNER, A KABAADI WORKER, A CHAI STALL KEEPER.

- **Government-allotted housing,** None own their homes. They live with the constant possibility of being moved again.
- **Felt ownership of the ghat persists,** Went to the ghat at night when the housing was too hot. The relationship did not end with the residence.
- **Priorities elsewhere,** Immediate concerns are housing insecurity and amenities. Ownership is real but not the burning issue.

- **Water access intermittent,** Instances of no water for up to six months; fetched from long distances.
- **Respect the ghat despite hardship,** Reflected positively on how the space had changed. Respect is not contingent on comfort.
- **No role in maintenance,** Despite proximity, history, and felt ownership — no formal role in caring for the ghat next door.

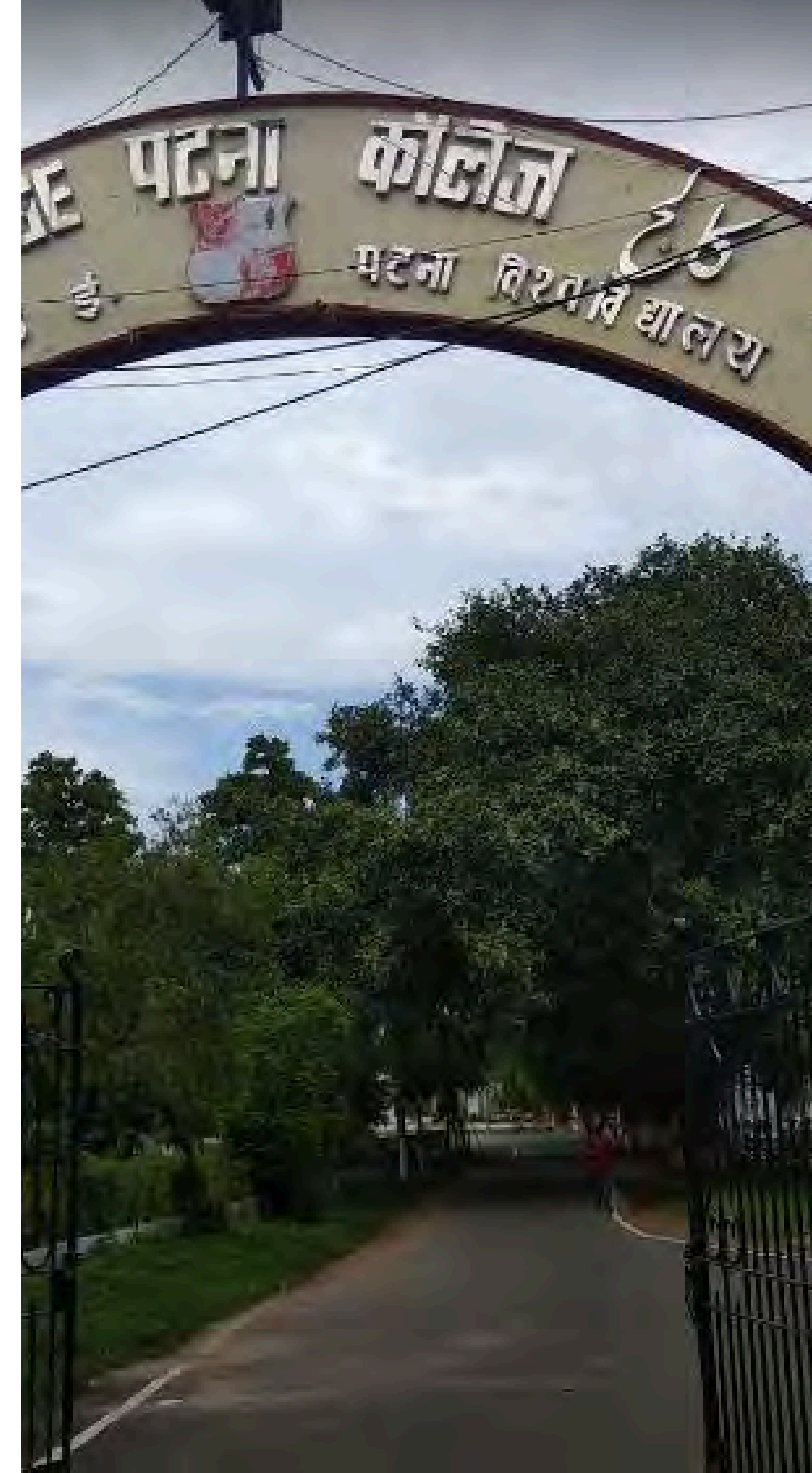


THE COLLEGE STUDENT. **SECONDARY STAKEHOLDER**

THREE PATNA COLLEGE STUDENTS (NEAR PATNA COLLEGE GHAT); ALSO STUDENTS AT NIT AND PATNA UNIVERSITY.

- **After-class third place**, Visit the ghats after classes. The ghats are where the friend circle gathers.
- **Safety as a recognised factor**, New ghats feel safer, partly because sanitation workers visibly intervene if waste is thrown.
- **Pass through; don't dwell**, Came, sat, left. No part of the riverfront felt theirs to occupy beyond an hour.

- **Value the new architecture**, Kangan Ghat in particular, cleanliness, design, festival activity made it feel safe and pleasant.
- **Memory, not livelihood**, Their relationship is biographical, not occupational, a different ownership from the primary ring.
- **Architecture as the working signal**, For them the new ghats read as cared-for. For primary stakeholders, the same architecture reads as exclusion.



THE ACADEMIC INFORMANT. **SECONDARY STAKEHOLDER**



Prof. Wasi Ahmad (Patna City mohalla)

Asymmetry. The Ganga, flowing east to west, has divided Pataliputra in two from the start; resources reach the two banks unevenly.

Hydrodynamics & legacy. Planners often lack contextual understanding of the river's flow. British infrastructure prioritised water reaching Kolkata over serving Patna.



Prof. Ziya Hassan (Patna College)

Behavioural nudges. Incentivisation, designed in socio-cultural context, can shift behaviour, audio-visual prompts during aarti could turn a daily moment into reflection.

The population's framing. Much of Patna comes from agricultural and labour backgrounds. Life is organised around work, not civic reflection.



**Bihar Museum officer
(Background in journalism · Patna Kalam)**

Consulting the right way. Speaking with people who live around the ghats, in their own tonality, is most effective. Toolkits can be a barrier.

Personal connection. She goes to the ghat when overwhelmed — the last rites of her ancestors are why the river holds family for her.

THE RECEIVING BODY. **TERTIARY STAKEHOLDER**



BUIDCO — built & maintains the road.

Holds planning authority for the Ganga Path. The bank below it is not formally in its brief.

BSRCCL — road construction.

Built the carriageway; specifies shopfront standardisation. Detailing carries through to experience.

Nagar Nigam — cleanliness & licensing.

Licenses some stalls, but has no working consultation route with the wider vendor population.

Smart City — urban character.

Holds the brief for identity at city scale. The riverfront does not read as a particular place.

Water Resources Dept. — the edge.

Manages the river edge. The raising of land between road and water is within its responsibility.

Police — festival & traffic.

Present at peaks, absent in the everyday. The bank's daily condition does not run through them.

08

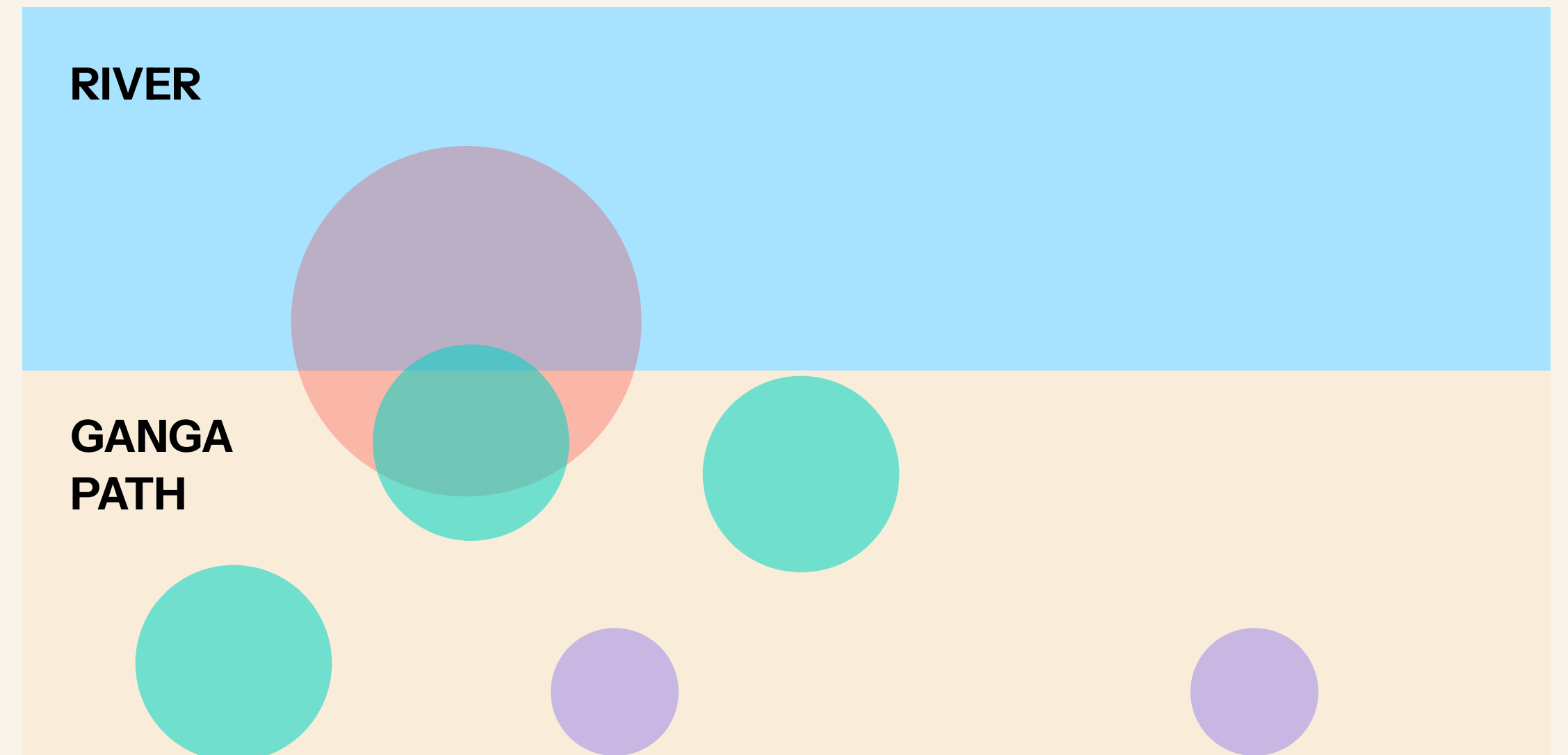
**RADIUS OF
OWNERSHIP**

The working theory the study uses to read what the field showed. Built from the idea of behaviour patterns within the limits of people radius on roads.

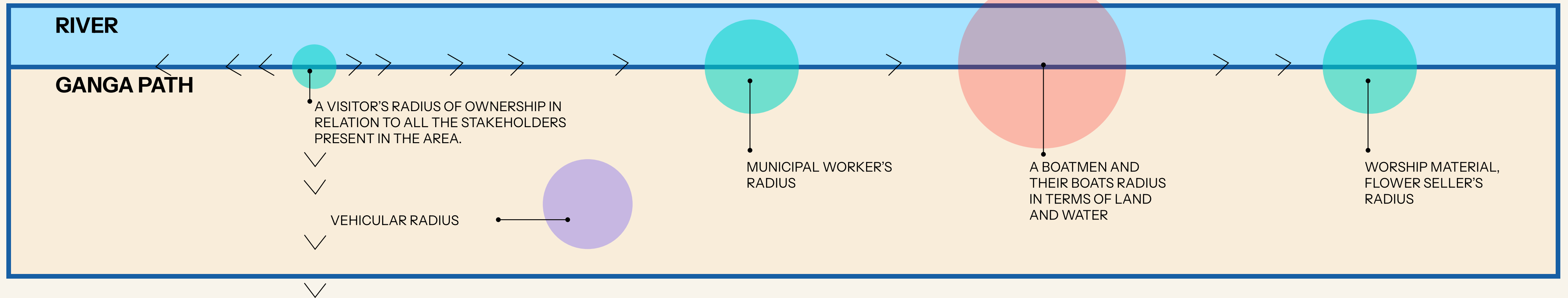
WHAT WE MEAN BY THE RADIUS OF OWNERSHIP.

Each person on the riverfront (or in general) carries, in practice, a physical area they actively care about.

● Humans ● Vehicles ● Boats



LARGER ECOSYSTEM OF RADIUS OF DIFFERENT STAKEHOLDERS



Ownership as a property of practice, not of title. Radii overlap; where they overlap badly, gaps in care appear — and those gaps are where intervention can land.

THREE HEADLINE VARIABLES.

Each radius is shaped by three things — what the working board calls the three variables of ownership.



Variable 01

Time.

When the person is at the place, and for how long. A radius active in the morning may not exist in the afternoon.

Variable 02

Power.

What the person can actually do to defend or shape their area. Power to enforce, not just to occupy.

Variable 03

Visibility.

Whether the person and their area are seen — by other actors, by the system, by planners. An invisible radius is one the formal system runs through without noticing.

TIME DECIDES WHICH RADIUS EXISTS AT WHICH HOUR.

The riverfront has a clock the road does not see. At any given hour it is run by a particular set of people.

Dawn · 5:30–7

**Diyara farmers cross.
Boatmen prepare.
Samagri sellers set up.**

Morning · 7–11

**Ritual peak. Temple
traffic. Flower and
offering trade.**

Midday · 11–3

**Vendors thin out.
Karamcharis pause.
The sun owns the
steps.**

Evening · 5–9

**Students, families,
food stalls. The second
shift.**

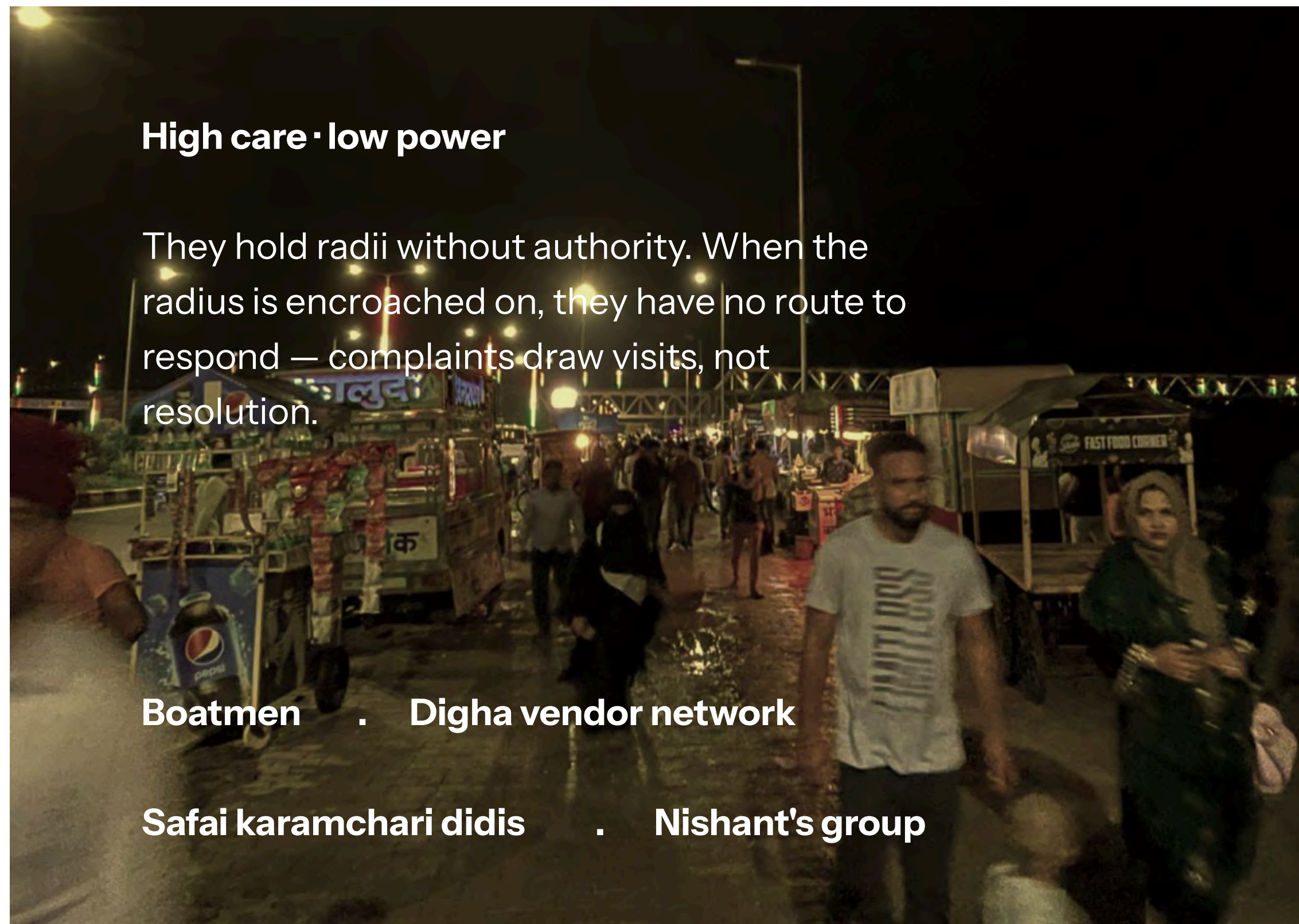
Festival

**Chhath, Aarti, market
days — overrides the
regular clock.**



POWER DECIDES WHETHER A RADIUS CAN HOLD.

Power is the practical capacity to defend a working area. The field showed how unevenly it maps onto care.



VISIBILITY DECIDES WHICH RADII THE SYSTEM CAN SEE.

Whether the radius shows up in the system's view — in the master plan, the licensing register, the maintenance schedule.

- **Invisible to the Ganga Path,** The Diyara farmers. The river's other side does not appear in the road's planning view.
- **Invisible to the embankment design,** The safai karamchari didis. The waste they cannot carry up has shaped the bank; the design does not acknowledge them.
- **Seen as person, invisible as stakeholder,** The flower seller at Kali Ghat. People walk past daily; the planning has no slot for him. Visibility and recognition have separated.

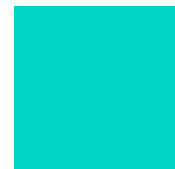


FOUR OPERATIONAL FACTORS.

Time, Power, Visibility are the headline. When operationalised for fieldwork, what to look for at a ghat or a stall, they break into four families.

Actor factors

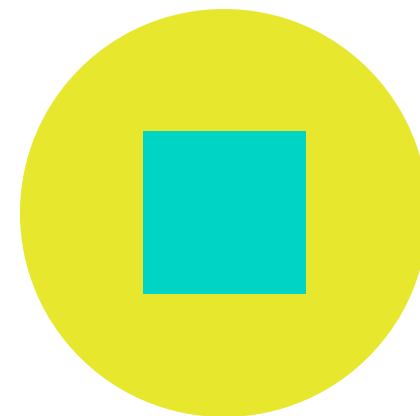
Who the person is, functionally.



Tenure — long-term / temporary / transient
Legitimacy — formal / informal / contested
Power to enforce their area

Spatial factors

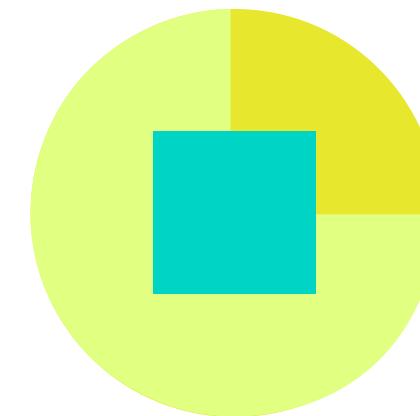
How the radius behaves in space.



Size — fixed / flexible / expanding
Fixed or fluid position
Intensity of overlap with other radii

Temporal factors

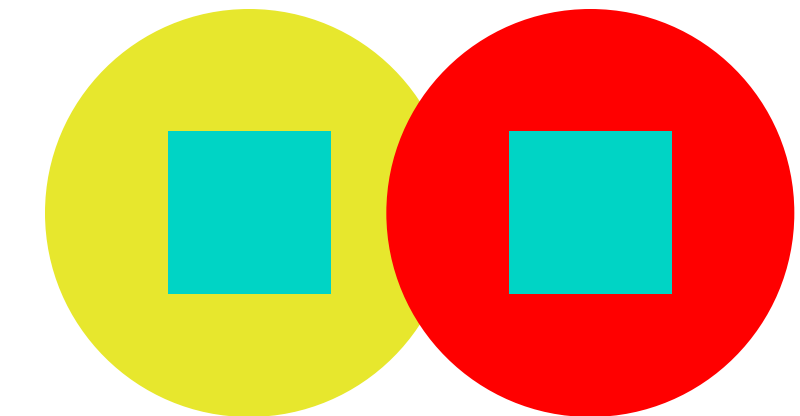
When the radius is active.



Time of day — peak / off-peak / night
Duration — minutes / hours / permanent
Seasonality — floods, festivals
Event triggers — market days, gatherings

Behavioural factors

What the person actually does.



Action — passing / lingering / occupying
Care — cleaning / maintaining / ignoring / damaging
Informal rules when no formal rule exists

THE ENCROACHMENT-AND-FEEDBACK MODEL.

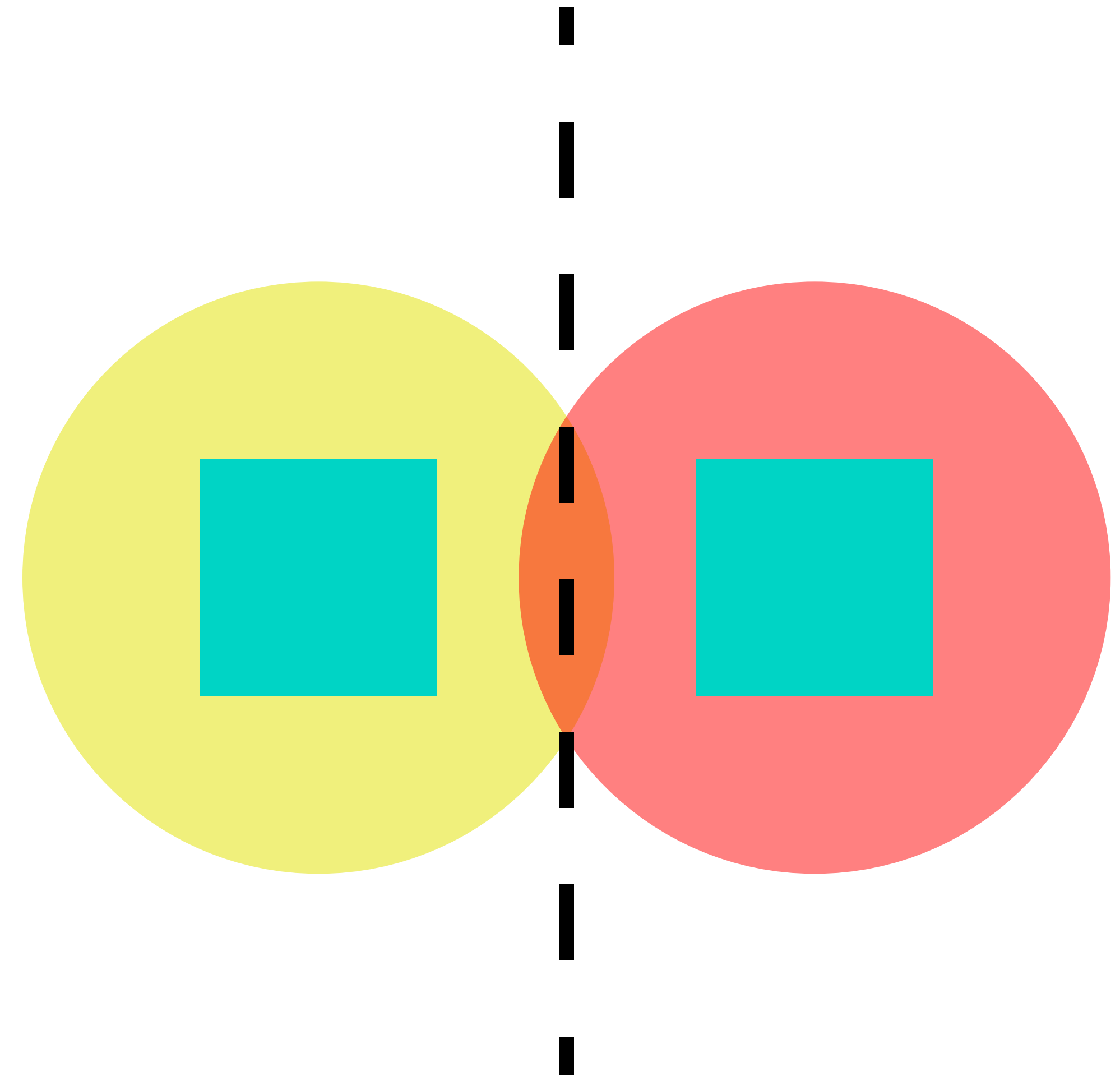
Around any primary radius sit secondary actors with mobile radii. Their radius floats through the place.

At the overlap, A mobile radius does something the primary did not consent to, throws, takes, occupies and leaves a gap.

Who absorbs it. The primary. The boatman cleans the trash; the karamchari burns it; the seller moves her display.

Gaps are the regular fabric and the opening.

A pit for offerings, a marked pitch, a recognised crossing, each closes one kind of gap. The design move follows the failure.



09

THEMES

What the field showed, organised under three themes
— ownership, infrastructure, youth. Each carries five
field-grounded insights.

HOW THE THEMES ARE ORGANISED.

Each theme carries five insights. Each insight is one observation from the field what was seen, by whom, where — followed by what it implies.



Theme 01

Ownership.

What ownership of the riverfront actually looks like for the people who hold it and where it is breaking.

Theme 02

Infrastructure.

What the development has done to ownership sometimes by accident, sometimes by design.

Theme 03

Youth.

What the riverfront does and does not do for the next generation that will use it.

THEME

01

OWNERSHIP

What ownership looks like for the people who hold the riverfront up, and where it is breaking.

A SELF-DRIVEN COMMUNITY ALREADY RUNS THE RIVERFRONT. THE SYSTEM DOES NOT SEE IT. INSIGHT 01

● **The network the system doesn't acknowledge,**

At Digha, vendors run a WhatsApp group — to coordinate, pass updates, alert each other when a department is around. When stalls were removed, the network is how they found out.

● **Other forms of the same pattern,** Student conservation funded at ₹40–200 a month. Diyara farmers organised by family lease. Two karamchari didis holding a long stretch with no backup.

● **What it produces,** The people already doing the work are scared of what the next phase will do to them, nothing in the system tells them they will still be doing it after.

“

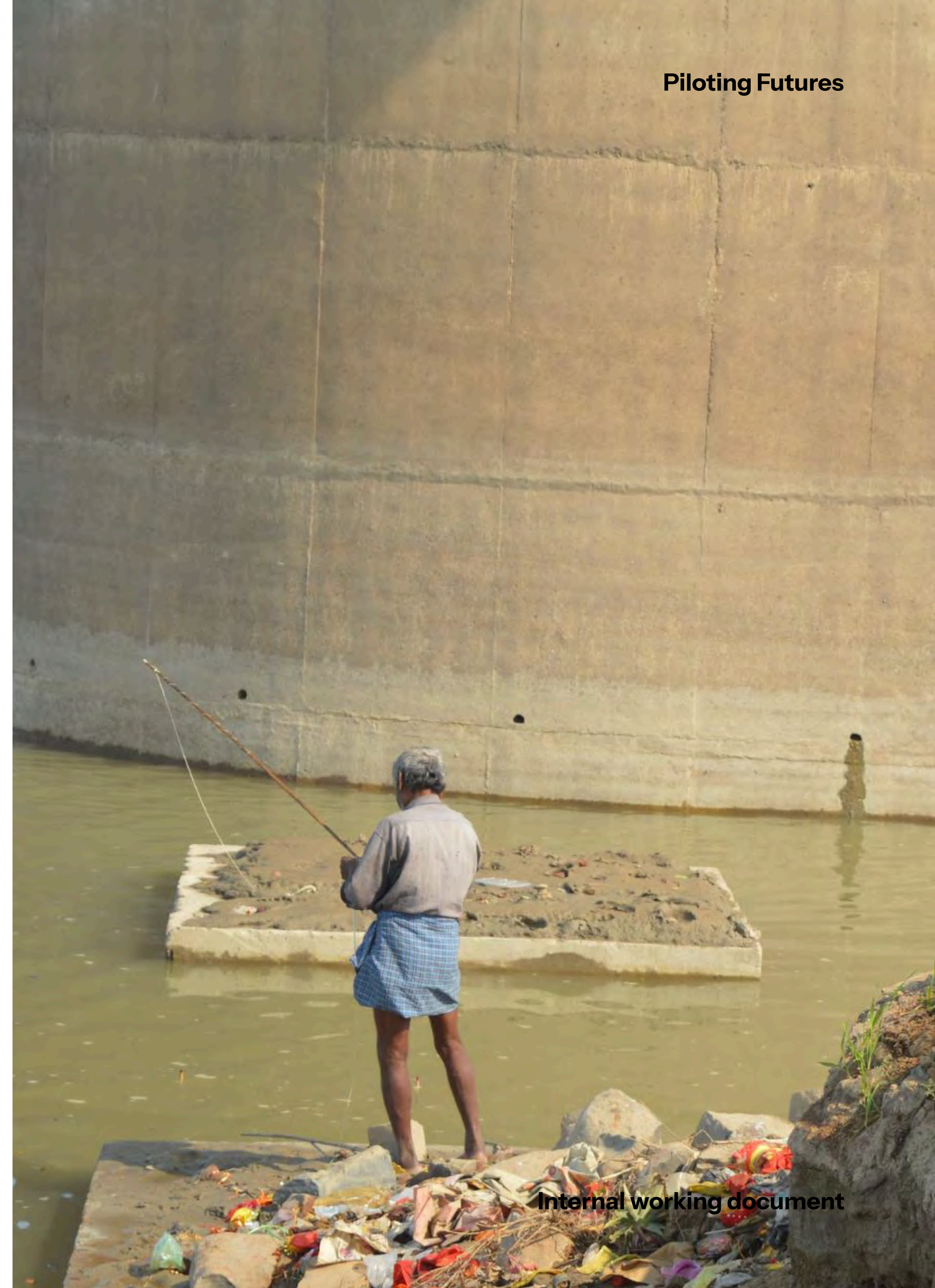
THEY DON'T ASK US. WE
TELL EACH OTHER.

”

PRIMARY STAKEHOLDERS RARELY ARTICULATE A VISION OF THE FUTURE. INSIGHT 02

● **Not absence of opinion,** Absence of a register in which the question makes sense. Their day is organised around tomorrow, not five years out.

● **The asking has to change,** Not ‘what do you want the future to be’ but ‘what would you change about today.’ The same person who has no answer to the first has a precise answer to the second.



GENERATIONAL LIVELIHOODS WITHOUT INFRASTRUCTURAL SUPPORT STOP VALUING THE ECOSYSTEM AROUND THEM.

INSIGHT 03

Three generations, no recognition, The pineapple seller's grandfather sold a few feet away; the samagri seller learned from his mother.

Pride in the trade is high, The work is what they are. Pride in the surrounding ecosystem is low, water, bank and steps have come apart from the work.

Why it matters, When a trade is held across three generations but ignored by every institutional layer, the river becomes a backdrop instead of the thing the trade exists for.



EMOTIONAL OWNERSHIP IS HIGH. IT IS NOT TRANSLATING INTO ACTION. INSIGHT 04

What emotional ownership looks like, The Bihar Museum officer goes to the ghat when overwhelmed. The Diyara farmer calls the Ganga the full life-cycle, cradle to immersion. The pineapple seller calls her Mai.

What acted-on ownership looks like, Few examples. Several said directly they had not done anything. The Kali Ghat samagri seller, pressed, had no community response.



IMMIGRANTS, WHO FORM MUCH OF THE WORKING RIVERFRONT, SIT OUTSIDE ANY SETTLED FRAMEWORK OF BELONGING.

INSIGHT 05

Belonging is not a soft term here, It is the practical question of whether the people working the riverfront can plan for the next year on it.

If they cannot, Deeper ownership is not available they cannot invest in a place that may not be theirs next month.

“ **Diyara farmer, Lost land in the last monsoon; no rehabilitation conversation**

NIT Ghat woman, Lives with the daily possibility of being moved again

Munna, 15, Stopped school; would resume when he went home

”

THEME

02

INFRASTRUCTURE

What the development has done to
ownership by accident and by design.

THE ROAD HAS BECOME A DIVIDING LINE.

Prof. Wasi Ahmad described the Ganga as already dividing Patna into north and south. The development has hardened that division.

INSIGHT 01

- **Diyara and city,** Connected by bridges, not by working relationship. The planning does not straddle the gap.
- **Schools, colleges, ghats,** Now sit on opposite sides of a four-lane carriageway that did not previously separate them.
- **A new pollution vector,** The Kali Ghat boat keeper described trash thrown from the bridge above landing on him.
- **What it does and doesn't do,** Routes traffic past the river. Has not connected the city to the river.



THE STANDARDISATION OF SHOPFRONTS REMOVES THE VISIBLE MARKS OF OWNERSHIP. INSIGHT 02

What gets lost, The thing that told you whose shop it was. A frontage that no longer carries the owner's mark is harder to treat as theirs.

What the shop becomes, A unit in a row instead of a place.

Downstream, Standardised frontages deteriorate at similar rates regardless of occupant, there is no marker that says this one is mine.



DISPLACEMENT DURING CONSTRUCTION BREAKS THE CONNECTION BACK TO PLACE.

INSIGHT 03

● **The paan shopkeeper,** Walked 2 km as a child to bathe. Now the Ganga is physically closer to his home — and he does not go.

● **The NIT Ghat women,** Retain felt ownership went there at night when the housing was too hot but have no working role in its maintenance.

● **What displacement breaks,** Not physical access. The daily rhythm of how the person used the place does not reconstitute by itself on return.



DISRUPTED RITUALS STOP BUILDING OWNERSHIP.

INSIGHT 04

● **Bathing access at Kali Ghat,** The raised land means the water no longer reaches the lower steps.

● **Evening boating during Chhath,** Ended after the 2017-18 capsizings; the festival's evening river-use has not returned.

● **What the development inherits,** When the ritual breaks, the ownership weakens. People come and treat the place as a viewing platform, not a site of practice.



A PLACE WITHOUT IDENTITY IS HARDER TO MAINTAIN. INSIGHT 05

What identity means here, Not heritage decoration. Whether the place reads as a particular place to the people who use it daily.

What's doing the work instead, Cleanliness. Students valued the new ghats partly for being clean — cleanliness is doing the work identity should have done.

When it doesn't, Maintenance becomes a generic municipal task instead of a specific local one.

Why it's fragile, The riverfront is held to a maintenance standard, not a place standard. The standard is enforceable; the place is not.



THEME

03

YOUTH

What the riverfront does and does not do
for the next generation that will use it.

THE RIVERFRONT HAS NO THIRD SPACE. [INSIGHT 01](#)

● **The same pattern, widely,** Young people came in the evening, stood a while, returned home. None described a space that felt theirs to occupy.

● **What the development produced,** A viewing platform. The youth have nowhere to dwell.

● **What it points to,** Not a programme, a recognised pocket whose dwelling is by young people. An open science centre, a youth-run café, a covered evening space.



THE ECOSYSTEM CLOSES TO WOMEN AND YOUNG GIRLS AFTER DARK. INSIGHT 02

● **What it has done,** Improved lighting and reduced some kinds of risk.

● **What it has not,** Produced the condition that would let girls use the riverfront the way college boys do alone, anywhere, any hour.

● **What that involves,** More than infrastructure: a sustained presence of other women, mixed-use stalls, recognised entry points where someone is visibly responsible.

● **What it points to,** The design has not yet been read for gender. Not security in the policing sense a sequence of populated, evening-active stretches women choose first.

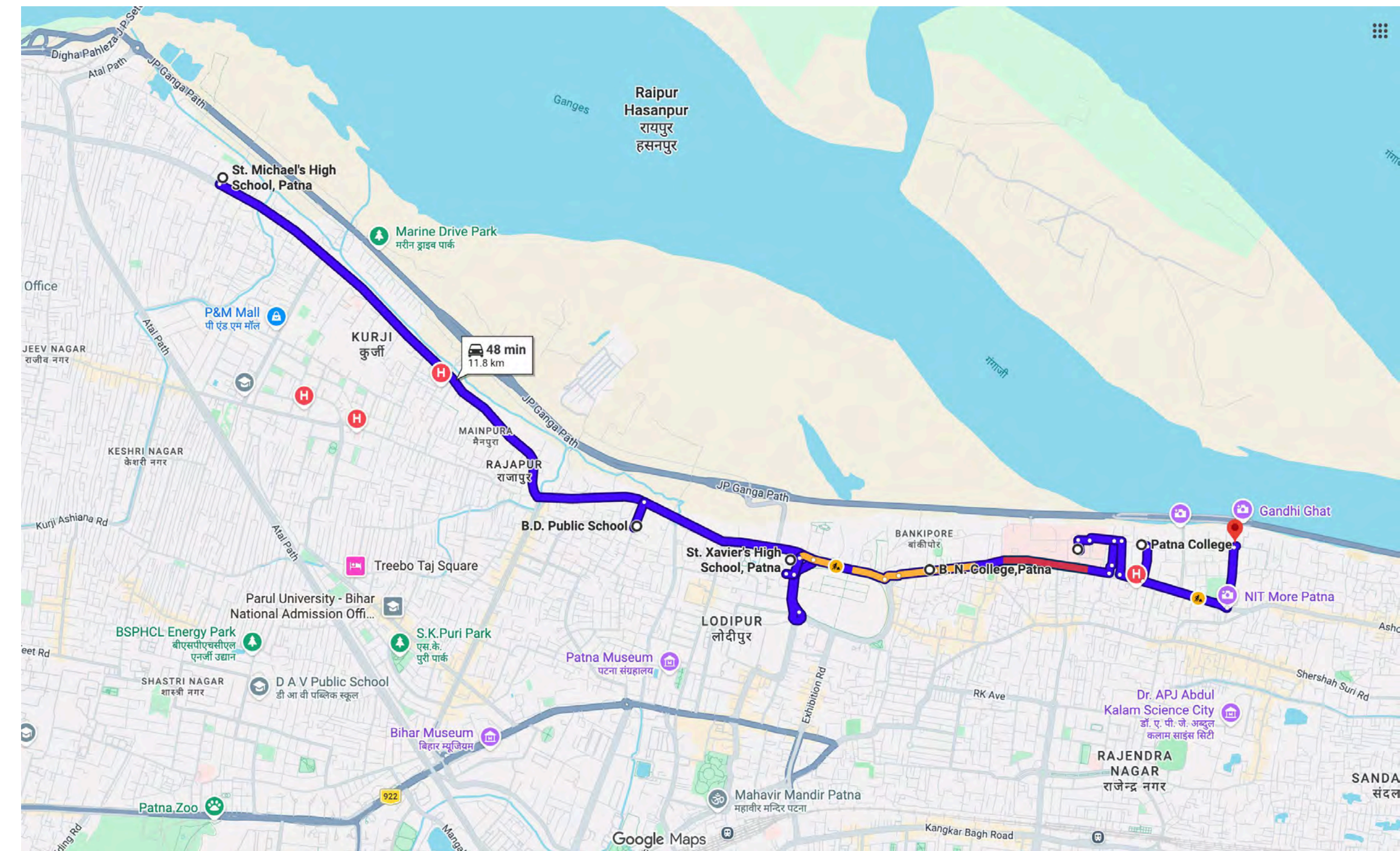


SCHOOLS AND COLLEGES SIT NEXT TO THE RIVERFRONT BUT FUNCTION AS SEPARATE ECOSYSTEMS. INSIGHT 03

Proximity unused, The institutions' coursework, projects, and programming do not run through the bank.

The exception, Nishant's conservation group — student-led, self-funded, outside the formal curriculum.

What it points to, A formal relationship could put thousands of hours of student attention onto the river every term. It runs on the goodwill of a few; it could be the standing condition.



SPORT ALREADY HAPPENS AT THE RIVERFRONT, INFORMALLY, WITHOUT GROUND THAT RECOGNISES IT.

INSIGHT 04

● **Cricket on the harder stretches. Boating as informal sport on calmer days. Kabaddi and football on the Diyara when the season allows.**

● **Use exists; recognition doesn't,** None of it is on a planned ground; none appears in the riverfront's brief. The same pattern as the third space and the vendor network.

● **What it points to,** A ground need not be elaborate. A marked patch with a working drainage edge, a recognised entry, and a maintenance schedule converts a tolerated use into a planned one.



YOUNG PEOPLE ARE ABSENT FROM HOW THE RIVERFRONT'S FUTURE IS DECIDED. INSIGHT 05

● **Almost no interviewee described being asked in any organised way. The young — not yet householders, earners, or in any stakeholder slot — fall outside standard consultation.**

● **What it points to,** A recognised route by which the next generation feeds in, student councils, college design briefs, a youth advisory of some form.

● **Without that route,** The riverfront will be planned for young people without their input and they will continue to pass through it rather than hold it.



10

**SYNTHESIS AND WAY
FORWARD.**

Three lenses that stitches across themes, and where
intervention could land.

THREE LENSES FOR READING THE THEMES.

Lens 01

Where responsibility sits.

Almost every theme separates into three layers, household or vendor, community, institution. The findings hold them apart, because the same action means different things at each layer.

“What would a riverfront look like if the people who hold it up were the people who planned it?”

“What would a near-at-hand action look like, in a person’s existing radius, that does not need them to organise into something new?”

Lens 02

Emotion vs. action.

Emotional ownership is high, especially in primary stakeholders; acted-on ownership is uneven, often low. Closing that gap is what most interventions are actually trying to do.

Lens 03

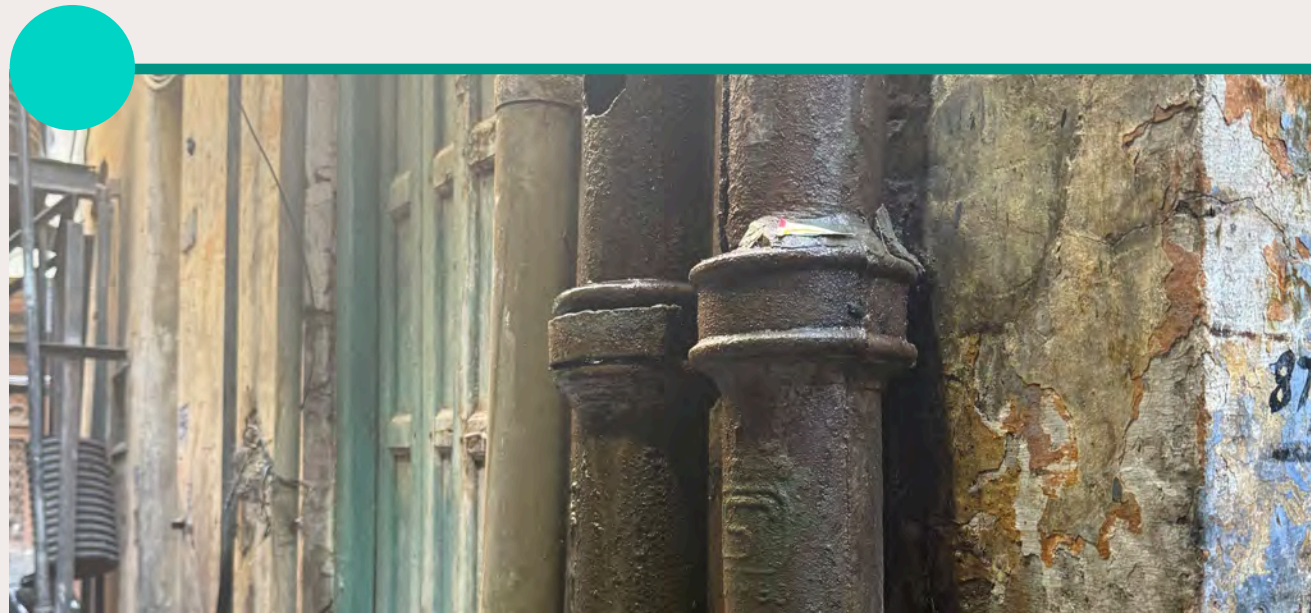
Visibility as intervention.

The vendor network, the karamcharis, the sport on the bank, the practice exists, the system cannot see it. Making the practice visible is itself a planning move, sometimes the most useful one.

“What would it take to plan the bank on its clock, while the road runs on its own?”

CRUCIAL POINTS FOR EFFECTIVE PLANNING

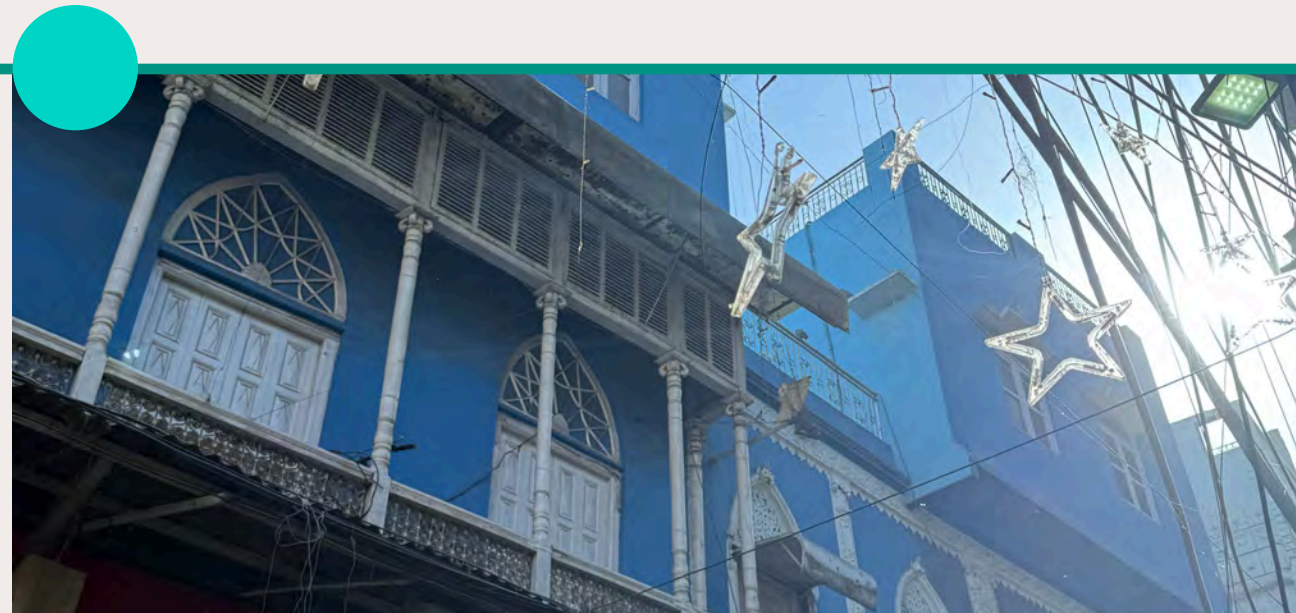
01



01 Recognition over imposition.

The redevelopment imposed a frontage where one was already being held. Standardised shopfronts, raised land, each is a case of the road making decisions on a bank that already had its own practice. Future phases have to begin from what is already being held, not from what the road would prefer were there.

02



02 Radii, not zones.

The bank is currently planned as zones vending zone, walking zone, ritual zone. The field showed it actually operates as radii, overlapping, working areas that move with the person and the hour. A planning that recognises radii will produce different decisions than a planning that recognises zones.

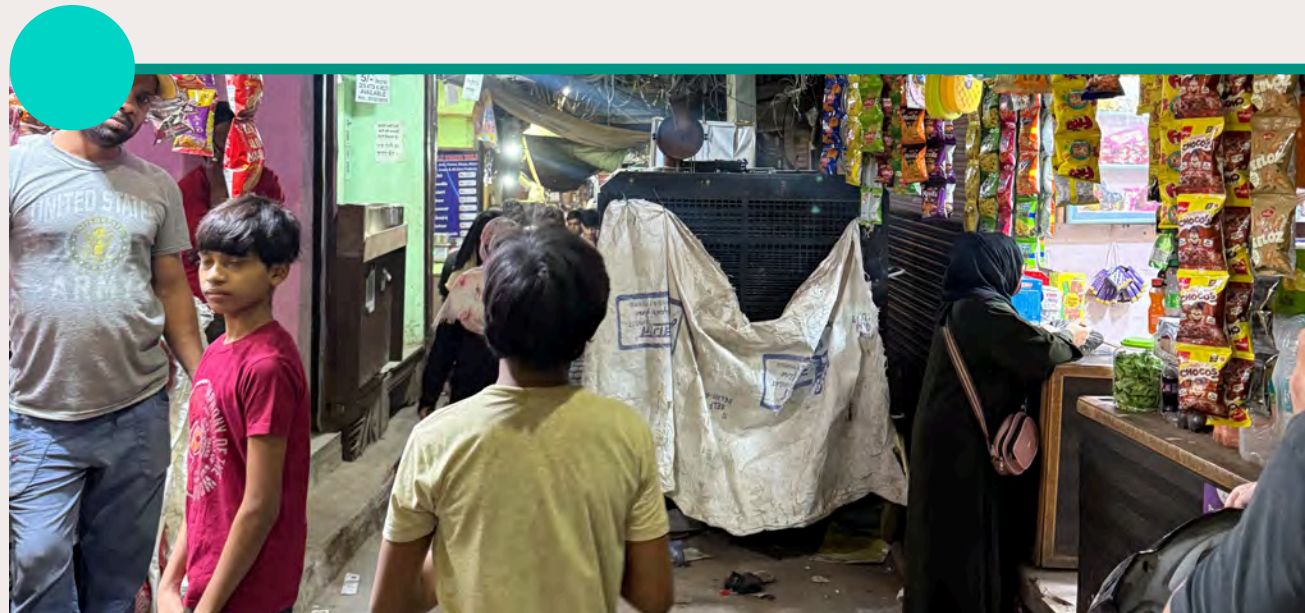
“

In Patna, the riverfront keeps moving long after the road stops. Through hours, across rituals, through livelihoods, across the water itself. The question is who has been holding it, and what the next phase will ask of them.

”

CRUCIAL POINTS FOR EFFECTIVE PLANNING

01



03 Belonging is not optional.

The working riverfront is migrant. Diyara farmers, returned migrants, displaced women, child labour. The next phase has to decide whether the bank is something people can build a life on or something they pass through. The road has already chosen its answer; the bank has not yet been asked.

02



04 The bodies that are not present.

The decisions that shape the bank are made by government bodies. None of them is on the bank every day. The next phase needs a route by which their decisions reach the bank, and the bank's daily condition reaches them, that does not depend on either side travelling to find the other.

“

If recognition and presence have come apart, the design question is what holds them together again and which body has to be the one to do it.

”



SYSTEMS MAPPING | ECOSYSTEM AND TENSIONS

PERSONA WISE

01

PRIMARY · WORKER

Safai Karamchari Didis

Two women responsible for cleaning the ghats. They carry strong pride in their work but no infrastructure to support it — left to burn waste on-site without awareness of the harm.

ECOSYSTEM



ECONOMY OF FLOWS



Income · ₹9,000/month

Up from ₹6–7K — still felt inadequate for the labor.



Labor · 2 people, large area

Physically overwhelming, no waste-management support.



Health cost

Burning plastic on-site — unrecognized respiratory harm.



Pride & dignity

Strong sense of ownership over the ghat's cleanliness.



Pollution into river

The cleaning labor inadvertently re-pollutes the Ganga.

TENSION MAP

Pride in work VS No infrastructure

They want to keep the ghat clean but lack the tools — so they burn waste, undoing the act of cleaning.

Cleaning the Ganga VS Polluting it further

Burning plastic releases toxins into air and ash into water — the system contradicts itself.

Wage rise VS Wage gap

Increase from ₹6K to ₹9K still doesn't match the labor's value or risk.

Trust the user VS Distrust authority

Repeated confirmation that the conversation wasn't connected to media or government — visible caution.

SYSTEMS MAPPING | ECOSYSTEM AND TENSIONS

PERSONA WISE

02

PRIMARY · WORKER

Farmers at Dihara Ghat

Generational farmers on the island stretch. Begin work at 5:30 AM. Their land is god, identity, and the only thing they have — and it has been steadily eaten away by erosion and flooding.

ECOSYSTEM



ECONOMY OF FLOWS

- ↓ **Crop income (declining)**
 Sharp drop over 10–15 years — visible in worn winter clothes.
- ↑ **Labor · pre-dawn, daily**
 5:30 AM starts, work passed to children.
- ↑ **Land lost to erosion**
 Cultivable area shrinking year on year, no compensation.
- ↓ **Inheritance & identity**
 Land as god — non-monetary capital carried through generations.
- ↑ **Lease payments (some)**
 Akhilesh leases land at ₹20,000 — pure cost, no security.

TENSION MAP

- Sacred land** VS **Eroding land**
 "The land is god" — but the god is being taken back by the river piece by piece.
- Ganga as life** VS **Ganga as threat**
 The same river that sustains the cycle of life is destroying the means to live.
- Generational stake** VS **Policy invisibility**
 Centuries of stewardship, but no voice in the development of the past 10–15 years.
- Continuing the work** VS **Visible decline**
 Children carry forward the same trade — into a system producing less every year.

SYSTEMS MAPPING | ECOSYSTEM AND TENSIONS

PERSONA WISE

03

PRIMARY · WORKER

Riverfront vendors

Composite of the pineapple seller, kala khatta seller, flower & puja samagri sellers. Generational and migrant vendors caught between vanishing footfall, removed stalls, and a clientele that no longer reliably pays.

ECOSYSTEM



ECONOMY OF FLOWS

- Sales (declining)**
Footfall pulled away by new walkway design — buyers walk, don't stop.
- Stock & setup cost**
Fruit, flowers, samagri — daily perishables to be sold the same day.
- Unpaid bills**
College students reportedly take goods without paying.
- Information (via WhatsApp)**
Strong informal coordination — updates, alerts, mutual aid.
- Lost stalls**
Government-allocated stalls removed; unclear if they'll return.

TENSION MAP

- Inherited trade** VS **Vanishing market**
Three-generation pineapple seller, kala khatta seller from Punjab — all returning to a market that no longer exists.
- Beautified walkway** VS **Lost customer flow**
The same design that pulls visitors in also pulls them away from where vendors sit.
- Visible to visitors** VS **Invisible to policy**
"Informal workers like him are rarely considered in policymaking" — yet they hold the everyday economy of the ghat.
- Self-organized** VS **No formal voice**
Strong WhatsApp networks exist, but never translate into policy presence.

SYSTEMS MAPPING | ECOSYSTEM AND TENSIONS

PERSONA WISE

04

SECONDARY · STUDENT-CONSERVATIONIST

Nishant Ravi Ranjan & the student conservation group

A student leading a 98% student-run conservation collective. Members contribute ₹40–200 from their own pockets to fund butterfly gardens, sparrow conservation, and heritage-tree tagging — refusing outside funding on principle.

ECOSYSTEM



ECONOMY OF FLOWS

- Member contributions · ₹40–200**
 Self-funded entirely from personal income — by principle, not necessity.
- Volunteer time**
 Conservation projects run alongside studies — no salaries.
- Pride & ownership**
 Refusing outside grants is itself the value — agency as currency.
- Ecological knowledge**
 Tree tagging, species tracking, mapping migratory patterns.
- Grief for what's gone**
 Mahendru Ghat, displaced dolphins — losses they carry.

TENSION MAP

- Lifeline (hospital) vs Ecological loss**
 Marine Drive saved real lives — and dispersed real ecosystems. He holds both without resolving.
- Pure self-funding vs Limited scale**
 Refusing outside money keeps the work clean but caps how big it can grow.
- Sacred = protected vs Sacred = polluting**
 Ritual reverence is both the reason the river is loved and the reason it's choked with offerings.
- Plant new saplings vs Protect heritage trees**
 Optics of "planting" vs the slower work of preserving 50+ year-old natives like the Patli.

SYSTEMS MAPPING | ECOSYSTEM AND TENSIONS

PERSONA WISE

05

TERTIARY · EXPERT

The urban-river expert

An expert lens on the Ganga as system. Sees the river as central to Bihar's cultural identity, and views recent infrastructure as a continuation of historic mis-planning — built without understanding hydrodynamics or local needs.

ECOSYSTEM



ECONOMY OF FLOWS

- Knowledge capital**
Hydrodynamics, ecology, urban-planning theory — high, underused.
- Influence into policy**
Critique exists, but doesn't enter the planning process.
- Historical reading**
Tracks long arcs — British-era infrastructure to present-day Marine Drive.
- Witness to loss**
Declining fish species, ecological degradation, narrowing river.
- Cross-cutting view**
Sees North–South divide, planner blind spots, cultural identity together.

TENSION MAP

- Planning** VS **Hydrodynamics**
Urban infrastructure designed without reading how the river actually flows — increasing flood vulnerability.
- Local needs** VS **Distant priorities**
Colonial design served Kolkata, modern design serves spectacle — neither serves Patna.
- Beautification** VS **Biodiversity**
Marine Drive looks finished and modern — the species count tells a different story.
- North Patna** VS **South Patna**
The river physically divides the city into unequal halves — development reinforces the gap.

THEMATIC ANALYSIS

*WHAT DOES THE SYNTHESIS OF
AFOREMENTIONED INSIGHTS TELL US?*

PRIMARY STAKEHOLDERS

Women residents, safai karamcharis, farmers, vendors, fishermen, boat-keepers, child workers — those whose livelihood, body, and identity are physically tethered to the river.

Main theme: Belonging without recognition

Across every primary stakeholder interviewed, the same structural pattern surfaces: their claim on the river is ancestral, embodied, daily — yet none of it is recognised by the institutions that now decide what the riverfront becomes. The river is Maa, god, inheritance, livelihood. The development is something done to the space they belong to, by people who do not see them as belonging.

Sub-themes uncovered in the research

1. Inheritance is felt, not legible. Devotion runs through three generations of vendors, twenty years of puja samagri selling, ten generations of farming. But the inheritance has no legal form the system reads. Women residents pray daily and hold "deep emotional ties to the river" — but live under "constant threat of displacement." Belonging is conditional and fragile; they are permitted to be near the river, not entitled to it. Symbolic claim is strong; structural claim is absent.

2. The body absorbs what the system avoids. Safai karamchari didis burn garbage on-site because no waste-management infrastructure was built for them. They take pride in the cleaning work — and pollute the river in the process of protecting it. The infrastructure gap is paid for in their bodies. This is the cruelest fault line in the data: development has placed responsibility on them without providing resources.

3. Wages have stagnated while expectations have risen. Safai karamchari pay (₹9,000/month, up from ₹6–7,000) is repeatedly described as inadequate. The pineapple vendor sees "a livelihood in decline" — government-allocated stalls removed with no clarity on reinstatement. Farmer Akhilesh leases land for ₹20,000 from another farmer, working a river that is "working against him." The post-Marine-Drive economy has not redistributed; it has only redirected.

4. Land is shrinking — literally and politically. Farmers at Dihara Ghat have "watched the land cut away — piece by piece" by flooding and erosion. Marine Drive has pushed the water further from the ghats. The land they claim is literally getting smaller and the land they can claim is politically getting smaller, simultaneously. Both losses register as the same loss.

5. Self-organisation exists; recognition does not. The Digha Ghat pineapple vendor has built informal WhatsApp networks to share updates among vendors. Stalls already coordinate; what is missing is a venue where that coordination is recognised by the policy that affects them. Claim is made through self-organisation, not recognition.

6. Aspiration is procedural, not visionary. When asked about the future, primary stakeholders rarely articulate a vision of the riverfront. They ask for: better wages, awareness, support systems, reinstatement of stalls, recognition. The implicit ask is "for the institutions they work for to actually back them — recognition before reimagination."

7. Children carry the cost forward. Munna, child vendor at Digha Ghat, works the ghat 6 months a year instead of attending school. Children of farmers continue the same work that is collapsing under their parents. Riverfront economics shape a child's present before they get a chance to shape their own future. This is the most direct evidence in the dataset of how the present forecloses the next generation.

8. The future, when asked, is met with silence. "When asked about the future, he falls quiet — unsure of what lies ahead." This phrase recurs in different forms across multiple primary interviews. Hope, where it exists at all, is cautious — never visionary.

SECONDARY STAKEHOLDERS

Lifelong residents, basti shopkeepers, college students, youth groups, student conservationists — those whose tie to the river is memory, ritual, and civic care rather than livelihood.

Main theme: Memory as ownership, disrupted by aesthetics

Secondary stakeholders carry the river through memory and family. They are not displaced economically the way primary stakeholders are — but they experience the development as a severance from a place that formed them. The disruption is not material loss; it is the loss of the meaning the space used to hold. Where primary stakeholders cannot afford the new riverfront, secondary stakeholders cannot recognise it.

Sub-themes uncovered in the research

1. Belonging is inherited through experience, not documents. A woman resident reads the new ghats as "stretches of cement, devoid of vibrancy." Her anger is at "misplaced priorities" — a development that "came at the cost of people and river." Implicit claim of belonging through ancestry — sitting at ghats reconnects her to grandparents. Recent development has severed this generational ownership.

2. Aesthetics have been delivered; meaning has been lost. Female youth users praise the new architecture — clean, safe, well-maintained. Kangan Ghat is called out by name. But the strong claim of belonging is now as users: "they feel it as theirs." This is exactly the user-base the design targeted. The development worked — but worked for a different population than the one it displaced.

3. Disengagement is the response to repeated failure. The paan shop owner — formerly a mechanic in Punjab — notes that nearby women in the basti were irritated when the topic was raised, "suggesting collective disengagement." When a community has voiced disruption enough times without resolution, silence becomes the next form of speech. Frustration that does not produce policy response eventually produces withdrawal.

4. Civic infrastructure is patchy in revealing ways. Three Patna College students use the space but flag concrete failures — "lack of dustbins, low civic sense." Vendor exploitation continues unchecked. The riverfront has been polished, not governed. The user experience is being managed; the user behaviour is not.

5. Student conservation is privately funded. Nishant Ravi Ranjan, a student-conservationist, runs his work on ₹40–200 of his own money — supporting heritage trees over 50 years old, protecting native species like Patli, building immersion pits for ritual waste. He has access to a kind of vehicle others don't — PMCH access cut from 1.5 hours to 7 minutes via the new road — but holds tension without resolving it. Ownership exists; it is just unrecognised and unfunded by the system that benefits from it.

6. Aspiration is reclamation, not transformation. Secondary stakeholders want the qualities of the present (safety, cleanliness, community feel) carried into the future — without losing what was lost in producing them. Reimagining, determination, pride-in-action. They are the only group that combines critique and hope in roughly equal measure.

7. The vendor–student power asymmetry is named. "Fringe and radical" students refuse to pay vendors, depending on a clientele "that doesn't honour the transaction." Conversation around the river has drifted into student politics and union elections — the riverfront is being used as a stage for civic life, not just as a destination. This is a politically significant finding: the space has become a venue for student organising, even when it was not designed to be.

8. The river is becoming a "lifeline" by accident. Cutting the journey to PMCH from 1.5 hours to 7 minutes via Marine Drive is, for some, a literal lifeline — and it sits in the same data as the displacement findings. The development is not bad; it is unevenly distributed. The same road that saves one user's father displaces another user's stall.

TERTIARY STAKEHOLDERS

Urban experts, environmental advocates, professors, filmmakers, ecologists, Environment Warriors — those whose tie to the river is knowledge, advocacy, and ecological stewardship.

Main theme: Ecological literacy missing from a development that needed it

Tertiary stakeholders read the development through what it failed to understand — the river itself. They are the only group with the language to name the systemic critique, and they hold that critique with measurable grief. Their pain point is not personal displacement; it is witnessing the displacement of a river that cannot speak for itself.

Sub-themes uncovered in the research

- 1. Planning misread the hydrodynamics.** An urban-river planning expert reads Marine Drive as "a textbook case of ecology-blind planning" — visible infrastructure disrupting invisible hydrodynamics. Drives biodiversity loss, increases flood risk. The development happened, but on the wrong terms.
- 2. The river was not a non-negotiable.** Their structural critique: the river should have been a structural divider — north vs south Patna with unequal access — but since the British era, riverfront infrastructure has served distant priorities. Cultural identity, they argue, "can't be recovered without ecological recovery." Future depends on planning that begins with the river's hydrodynamics, not around them. Restoration of biodiversity (fish species, river health) is non-negotiable, not nice-to-have.
- 3. Conservation work is generational.** A youth-group ecological-civic lens reports: they want a river they can return to — clean, alive, ritually meaningful. They are "asking to be part of the solution, in collaboration, not nostalgia." The conservation conversation that matters is the intergenerational one — not "what was lost" but "what will we have left." Open to engagement and ready to participate.
- 4. Non-human stakeholders are absent from policy.** Environment Warriors and filmmakers note the river is shaped by what most people don't see — dolphins, migrating birds, the wetlands, the Dolphin Research Centre. Critique is gentler but pointed: development conversations ignore the ecosystem that already exists. Belonging is earned through years of conservation work; the non-human stakeholders are in policy document names, but not in policy.
- 5. Aspiration is ecological continuity.** Protect what's already here before designing what's next — the most forward-leaning frame in the whole dataset, but built on retention rather than addition. The riverfront's future is on its biodiversity; the people quietly protecting it both share its visibility. Aspiration is ecological continuity, not aesthetic vision.
- 6. Some development has produced accidental ecologies.** Current development has measurably degraded the river — declining fish species, weakened ecology, livelihoods squeezed. But also: new wetlands have appeared as accidental side-effects. The Ganga reflects deeper failures in how river plans its public commons. Tertiary stakeholders are uniquely positioned to read both losses and unintended gains in the same data.
- 7. Pollution and ecological loss are felt impacts, not abstractions.** Disappearing fish, civic apathy, rituals like aarti happening in a dying river. Acknowledging that survival pressures shape civic behaviour; environmental responsibility is class-conditioned, not absent. The class lens is held carefully — they do not blame users for what the system has not made possible.
- 8. The river itself has become unevenly distributed.** "Note that current development pressures push wildlife to the edges — but also surface pockets of resilience (research centres, community protection). Impact is uneven; some species lost, some habitats holding on, much of it invisible to planners." This is the diagnostic sentence of the entire matrix. The damage is not uniform; the recovery is not uniform; the visibility of either is also not uniform.

HMW | THE QUESTIONS WE ASK....

FROM INSIGHT TO DIRECTION · GANGA RIVERFRONT, PATNA

How Might We...

A set of design questions grounded in the tensions surfaced by each stakeholder group. Each "How might we" points at a specific contradiction in the data — not a generic problem.

PRIMARY

Those who live by the river

Safai karamcharis, farmers, vendors, fishermen, child workers

HMW · 01

How might we make the act of cleaning the Ganga stop polluting the Ganga?

ROOTS IN: Safai didis burning plastic on-site; no waste infrastructure; respiratory and ecological harm undoing the labor.

HMW · 02

How might we redesign riverfront space so footfall reaches vendors instead of bypassing them?

ROOTS IN: Removed stalls, vanished customers, three-generation businesses in decline despite a busier walkway.

HMW · 03

How might we give informal workers a seat at the planning table without formalizing them out of existence?

ROOTS IN: WhatsApp networks already coordinate vendors; this self-organization never reaches policy.

HMW · 04

How might we protect generational stakes in land and livelihood from being eroded by the river or by development?

ROOTS IN: Dihara farmers losing land to floods; housing-insecure residents fearing displacement.

SECONDARY

Those who visit & remember

Lifelong residents, basti shopkeepers, youth groups, students, conservationists

HMW · 05

How might we bring vibrancy back to the ghats without losing the cleanliness and safety people now value?

ROOTS IN: "Stretches of cement" critique; youth simultaneously praise the safety of Kangan Ghat.

HMW · 06

How might we support self-funded grassroots conservation without compromising the agency that makes it work?

ROOTS IN: Nishant's group refuses outside grants on principle; ₹40–200 contributions are the value, not a constraint.

HMW · 07

How might we offer practical alternatives to ritual practices that pollute, without dismissing what makes them sacred?

ROOTS IN: Sacredness drives both reverence and ritual waste; separate immersion pits proposed as a substitute.

HMW · 08

How might we make basic civic infrastructure (dustbins, signage, awareness) feel like part of the ghat's identity, not an add-on?

ROOTS IN: Patna College students flag the absence of dustbins as a small but defining gap in current development.

TERTIARY

Those who study & advocate

Urban experts, environmental advocates, ecologists, filmmakers

HMW · 09

How might we make river hydrodynamics legible to urban planners before infrastructure decisions are made?

ROOTS IN: Expert critique that Indian urban planning routinely lacks river-flow understanding, increasing flood vulnerability.

HMW · 10

How might we use moments of mass attention (aarti, Chhath, festivals) as opportunities for environmental nudging?

ROOTS IN: Advocate suggestion of audio-visual prompts during aarti to spark reflection on responsibility toward the river.

HMW · 11

How might we protect ecological heritage — old trees, native species, accidental wetlands — alongside visible beautification?

ROOTS IN: Heritage trees over 50 years old, the Patli native species, new wetlands attracting migratory birds.

HMW · 12

How might we connect knowledge held by experts with the lived insight of vendors, farmers, and residents — so planning reads both?

ROOTS IN: North–South Patna inequality, colonial-era planning legacy, primary stakeholders excluded from decision-making.

OPPORTUNITY AREAS

WHAT EXACTLY DOES THE COMMUNITY NEED!

WHERE INTERVENTION COULD LAND · GANGA RIVERFRONT, PATNA

Four Opportunity Areas

Strategic spaces where the tensions across all three tiers converge — and where a single intervention can serve more than one stakeholder at once.

THE STRATEGIC FRAME

Across the three tiers, four patterns repeat: **loss of proximity**, **exclusion from planning**, **aesthetic without ecology**, and **latent ownership**. Each opportunity area below addresses one of these directly — turning a shared frustration into a shared design space.

01

PARTICIPATION INFRASTRUCTURE

From WhatsApp groups to policy presence

Vendors already coordinate via WhatsApp; students self-organize conservation; safai didis hold ground knowledge of waste. The **raw material of participation already exists** — it's just never connected to the planning process. Build lightweight bridges that carry informal voice into formal decisions, without forcing communities to formalize themselves.

LOOKS LIKE

Vendor councils, ghat-level monthly forums, structured feedback channels to Nagar Nigam.

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03 · 06 · 12

SERVES

Primary

Secondary

Tertiary

02

LIVELIHOOD-AWARE DESIGN

Footfall that flows back to the people who depend on it

The Marine Drive made the ghats busier but bypasses the vendors who used to depend on that crowd. Beautification has worked against the very economies that gave the ghats their texture. **Treat livelihood as a design parameter**, not a leftover — vendor stalls, ritual sellers, fishermen's access points designed into the riverfront from the start, not retrofitted after.

LOOKS LIKE

Vendor zones along the walkway, designated rest pockets where buyers naturally stop, market integration with footpath flow.

ANCHORED IN HMWS

02 · 04 · 05

SERVES

Primary

Secondary

03

RITUAL-ECOLOGY INTEGRATION

Sacred practice without ecological cost

The river is loved because it is sacred — and harmed because it is sacred. Telling people not to use the river fails; **offering practical, dignified substitutes** can succeed. Separate immersion pits, ritual-friendly disposal points, and audio-visual nudges during aarti turn moments of mass attention into moments of mass care.

LOOKS LIKE

Designated immersion pits, ritual-waste collection at festival sites, aarti-time visual reminders, support for the safai didis.

ANCHORED IN HMWS

01 · 07 · 10

SERVES

Primary

Secondary

Tertiary

04

ECOLOGICAL LITERACY IN PLANNING

Designing with the river, not despite it

The expert critique is precise: planning has not read the river. Heritage trees over fifty years old, native species like the Patli, accidental wetlands created by recent construction — all **tell ecological stories that planners can use** if they're surfaced into the design process. Make hydrodynamics, biodiversity, and historical ecology visible to the people drafting infrastructure.

LOOKS LIKE

Heritage-tree registries, ecology briefings for planners, partnerships between expert advocates and student conservationists.

ANCHORED IN HMWS

09 · 11 · 12

SERVES

Secondary

Tertiary