



EARTH5R

FREE PLAYBOOK

EARTH5R GUIDES · NO. 01

River Revival Playbook

How companies, cities and communities restore urban rivers in India.
Built from ten years of field work on the Mithi, Mula Mutha, Powai Lake and Yamuna.

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earth5r.org · 2026 edition

Most river cleanups fail within a season. This playbook is about the ones that don't.

Every monsoon, cities across India photograph volunteers pulling plastic out of a river. A few weeks later the river looks the same. The waste was never the whole problem. It was the part you could see.

Earth5R has spent a decade working on urban rivers and lakes: the Mithi in Mumbai, the Mula Mutha in Pune, Powai Lake, and the Yamuna in Delhi. Some of that work was a Sunday cleanup with forty volunteers. Some of it was a solar-powered recovery system funded at €0.6 million with United Nations Technology Innovation Labs, which removed 11,100 tonnes of waste before we handed it over.

This playbook puts what we learned in one place, written for the people who fund, approve and run river programmes: CSR heads, ESG teams, municipal officers and implementing NGOs.

How to use it

Chapters 1 to 3 explain the problem and the model. Chapters 4 to 7 show it working, on our own projects and in the reports of leading companies. Chapters 8 to 13 are the working tools: steps, a budget, a charter, indicators and a checklist, with free Word and Excel templates.

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A note on numbers. Every figure in this playbook comes from Earth5R's published case studies and project records on earth5r.org. Emissions figures are avoided emissions, estimated with stated factors. None of them are carbon credits.

Why urban rivers fail

A polluted urban river is not one problem. It is four problems arriving from four directions, and a cleanup that treats only one of them buys a clean week.



The Mithi River before intervention. It runs 17.8 km through the middle of Mumbai, from Vihar and Powai lakes to the sea at Mahim Creek. For decades it has worked as a drain. Photo: Earth5R.

1. Industrial effluent

Untreated discharge from small and medium units along the banks, carrying chemicals into the water and the sediment.

2. Municipal waste

Household garbage, untreated sewage and organic waste entering every day from settlements across the catchment.

3. Plastic

Single-use packaging, LDPE and HDPE, breaking into microplastics that move downstream into the creek and the sea.

4. Organic debris

Cattle-shed waste and invasive water hyacinth, which choke flow and add to blockages during the monsoon.

Why this matters to a company. A blocked river is a flood risk, not just an eyesore. On the Mithi, blocked channels raise flood risk across Kurla, Saki Naka and Bandra Kurla Complex every monsoon, and the 2005 floods made that link impossible to ignore. A river programme is climate resilience work for the city your staff live in.

The pattern we see again and again: a company funds a machine or a cleanup day, the visible plastic goes, and nobody pays for the slow work in the catchment that decides how much waste enters the river tomorrow. The rest of this playbook is about paying for both.

India's rivers by numbers

The scale of the problem, from official data. Useful context for any CSR committee deciding where river money should go.

EARTH5R · INDIA'S RIVERS BY NUMBERS

Most urban sewage still reaches rivers untreated

Only 28% of the sewage India's cities generate is actually treated. Waste you can see is the smaller half of the problem.

311

polluted river stretches on 279 rivers (CPCB, 2022)

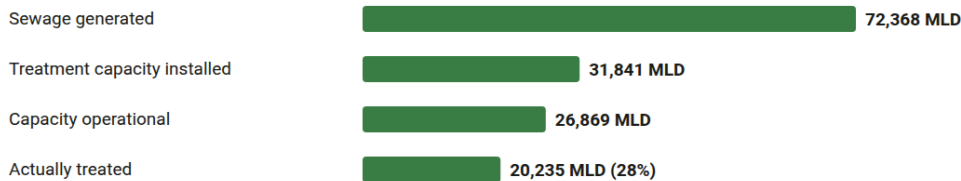
55

of them in Maharashtra, the most of any state

41.4 lakh t

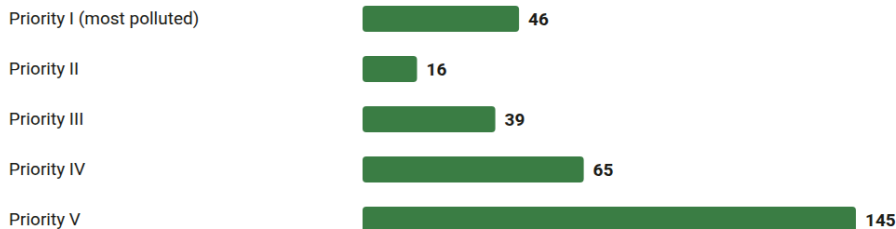
plastic waste generated a year (2022-23)

Urban sewage vs treatment, India



CPCB National Inventory of Sewage Treatment Plants, March 2021.

Polluted river stretches by priority class



CPCB, Polluted River Stretches for Restoration of Water Quality, 2022. Plastic waste: CPCB data via PIB, 23 March 2026.

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earth5r.org/guides/river-revival-playbook

Sewage is the bigger half.

Cities generate 72,368 MLD of sewage; 20,235 MLD is actually treated. Visible plastic is only part of what a river carries.

Maharashtra leads the list. 55

of India's 311 polluted stretches are in Maharashtra, the most of any state, in CPCB's 2022 assessment.

Public money is large. Namami

Gange has sanctioned 513 projects worth ₹42,019 crore. CSR works best alongside it, in the catchment and community.

Sources: CPCB, Polluted River Stretches for Restoration of Water Quality, 2022; CPCB, National Inventory of Sewage Treatment Plants, March 2021; CPCB data via PIB, 23 March 2026 (plastic waste 2022-23: 41,36,188 tonnes); PIB, 8 December 2025 (Namami Gange).

The Earth5R river model

Four layers, funded together. Take one away and the others stop working.

01

Intercept what is already in the water

A recovery system in the channel catches floating waste before it moves downstream. On the Mithi this was a solar-powered unit that ran with no grid or diesel input. On smaller rivers and lakes it is trained volunteers and waste pickers working a mapped stretch on a fixed schedule.

02

Train the catchment

The volume entering the river is decided in homes, shops and small businesses. Segregation at source, composting and upcycling training is the only layer that reduces tomorrow's load. It is also the layer that gets cut first, because it is slow and does not photograph well.

03

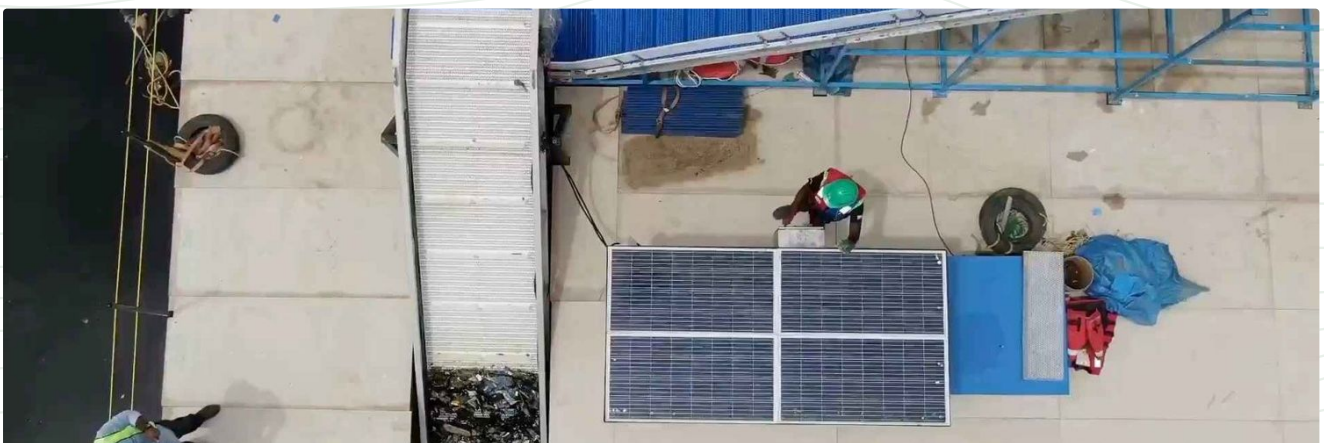
Give every fraction somewhere to go

High-value plastic goes to recycling. Low-value film and mixed plastic needs its own route, or it goes back to landfill and the cleanup becomes a relocation. Organic waste goes to compost. Paying residents and waste pickers for segregated material turns waste into something with a price.

04

Measure, then hand over

Drone surveys, waste audits and app-based logging make the results checkable rather than asserted. The programme is designed from day one to run without us: local operators trained, municipal integration built in, data systems that outlive the people who installed them.



The solar-powered recovery unit on the Mithi, seen from above. The solar array powers the whole interception and conveyance operation. Photo: Earth5R.

Mithi River, Mumbai

A recovery unit in the water, a circular economy programme on the bank, and 10,000 families trained in the catchment. October 2020 to November 2024.

11,100 t

waste removed from
the river

4,440 t

plastic recovered for
recycling or pyrolysis

10,000

families trained, plus
500 businesses

15,000

volunteers engaged

6,660 t

CO₂e avoided
(estimate, not
credits)

What was built

At the centre was a solar-powered plastic recovery unit, placed in the channel to catch floating debris and move it to the bank. There it was segregated, washed, dried and shredded. High-value plastic went to recycling as manufacturing feedstock. Low-value plastic that recycling cannot take went through EU-approved pyrolysis into industrial-grade oil.

The system averaged about 10 tonnes of waste a day, around 4 tonnes of it plastic. At full operation that is roughly 300 tonnes of waste and 120 tonnes of plastic a month.

Full case study: earth5r.org/mithi-river-cleaning-and-plastic-waste-management-case-study



The unit intercepting floating plastic in the channel.



Recovered material sorted on the bank.

Why the last stage matters. Most river plastic recovery fails where low-value film and mixed plastic has nowhere to go. Closing that loop is what made the daily rate sustainable rather than seasonal.

The part that happens before the waste reaches the water

A recovery unit treats what has already entered the river. The volume entering is decided in the catchment, so that is where the second half of the project worked. 10,000 families and 500 businesses were trained in segregation and circular economy practice, including composting organic waste to grow herbs and medicinal plants at home.

Participation was made worth people's while rather than asked for as a favour. Residents were paid for segregated plastic. Households were trained to upcycle waste into paper bags, lamps and handicrafts, earning income from material that used to go into the water.

Who delivered it

The project was supported by €0.6 million and delivered by Earth5R with United Nations Technology Innovation Labs, the Municipal Corporation of Greater Mumbai, Huhtamäki, the global packaging company, as funding partner, and RiverRecycle as river recovery technology partner. UNESCO India featured it as a Technology for Impact case study.

The structural lesson. River work needs four things that rarely sit in one organisation: technology, funding, municipal permission and community presence. Projects stall most often on the third, because site access on an urban river is granted, not bought.



Earth5R team with local waste collectors after plastic recovery training in the Mithi catchment, 2021.



Circular economy training with residents living in the river catchment.



Drone mapping before and during the project recorded waste hotspots and tracked change along the channel.

Built, proved, handed over

Earth5R designed and deployed the Mithi project and has since stepped back from operations, which continue under the delivery partners. That was the plan, not a withdrawal. A restoration model that depends on the organisation that built it has not been proved, only performed. For any funder, the question to ask of a river programme is simple: what happens when the funding partner leaves?

Mula Mutha, Pune

No machine, no big budget. Two hours every Sunday, for six years, with employee volunteers from a corporate partner and local citizens.

112 t

waste collected from the river

25,000

volunteer hours

151 t

CO₂e avoided (estimate)

₹5.61 lakh

circular economy value created

How it grew

Year	Milestone
1	Kick-off with 40 volunteers; art activities built in from the start
3	Over 30 tonnes of waste collected; the community starts to own it
5	₹4 lakh generated; 100 tonnes of waste diverted
6	150.52 tonnes of CO ₂ e avoided; sustained community engagement

What kept people coming back

- A fixed, small commitment: two hours every Sunday.
- A visible personal result: about 9 kg of waste collected per volunteer.
- Sports and art alongside the cleanup, so it felt like a community event, not a chore.
- Recognition: the programme was highlighted under UNESCO's Green Citizens programme and covered in the media.

CO₂e estimated at 1.34 t per tonne of mixed waste recycled, Earth5R's project-derived factor.



Employee volunteers at the Mula Mutha cleanup, Pune, 2016.



Volunteers removing nylon, cloth and plastic from the river, 2017.



Discarded cloth is one of the heaviest fractions on the Mula Mutha.

The lesson for CSR teams. Employee volunteering works on a river when it is regular, local and measured. A single "big day" builds a photo. A weekly slot, run for years, builds a result.

Powai Lake and the Yamuna

Two models that put waste pickers at the centre: most of the money goes to the people who do the work.

Powai Lake, Mumbai: four years of community cleanups

58 t

waste collected

78 t

 CO₂e avoided
(estimate)

29,120

volunteer hours

208

 education events,
reaching 50,000
residents

50+

 ragpickers earning
from the programme

Weekend cleanups on the lake shore, run with local citizens, companies, NSS student groups and partner NGOs. Every cleanup ended with a waste audit: the recovered waste laid out, sorted and counted, down to cigarette butts, multilayer wrappers and ritual offerings left in the water. That data feeds Earth5R's field records.

Where the money went

Paid to ragpickers	70%
Recycling costs	20%
Project maintenance	10%

The programme created ₹2.91 lakh in circular economy value.



A waste audit at Powai Lake: every item sorted and counted before it goes to recycling.



Bottle caps with saplings growing in them, and a small idol, recovered from the lake shore.

The Yamuna, Delhi: a partnership with a ragpicker on a raft

Earth5R volunteers crossed the Yamuna by boat to clean the far bank. Instead of carting the waste away, we partnered with a local ragpicker who already collects floating waste from the river on his raft. The segregated waste went to him to sell. The cleanup became income for the person who is on that river every day, long after the volunteers go home.

The principle: find who already makes a living from the river's waste, and design the programme around them.



A local ragpicker collecting floating waste on the Yamuna, 2018.

Best cases from TERRA: water and rivers

What five companies in the Above Average band of TERRA, Earth5R's ESG intelligence platform, report about their water and lake programmes.

Why these companies

TERRA scores listed Indian companies on what they disclose and what can be checked against data from the ground. Each company below sits in its **Above Average** band overall. We read their own reports for water, lake and watershed work that others can learn from.

What stood out. The strongest programmes work at village or lake scale with local partners, measure water in litres created rather than money spent, and, in the best cases, publish independent assessments that include what did not work.

Company	Programme	Reported outcome	Worth copying
Hindustan Unilever	Hindustan Unilever Foundation, Water for Public Good	4.5+ trillion litres of cumulative water potential; 2.7+ million tonnes of extra farm output; 125+ million person-days of work; 19,000 villages; figures independently assured to FY2024-25	Community-led village water budgeting with 13 civil society partners
Infosys	Lake rejuvenation	11 lake projects; 4.3 billion litres of additional water capacity, including Doddathoguru lake in Bengaluru	Urban lakes near its own campuses
Persistent Systems	Integrated Watershed Development, Persistent Foundation with BAIF	29 villages in Maharashtra and Goa; 495 acres; 257 lakh litres of water storage created (FY2025-26)	Water work combined with farming and dairy support
Dalmia Bharat	Dalmia Bharat Foundation water conservation	6,353 structures; 886 lakh KL harvested; 67,540 beneficiaries (FY2024-25)	Impact assessment with a control group
HCLTech	HCLFoundation Harit, "Wake the Lake" at Bidru Lake, Bengaluru, with United Way Bengaluru	20 percolation wells, 2,560 KL of rainwater harvesting potential; weekly fish catch up from 100-150 kg to 300-350 kg	An independent assessment that reports failures honestly

Sources: HUL web page "HUF: helping build a water-secure India"; Infosys ESG Report 2024-25, lake rejuvenation; Persistent Foundation Annual Report 2025-26; Dalmia Bharat Integrated Annual Report 2024-25; HCLFoundation impact assessment by PwC, June 2024. Figures as published by each company. Inclusion implies no partnership or endorsement. TERRA bands reflect overall ESG assessment.

Five lessons from the leaders' water work

1

Measure water, not spend.

HUL reports water potential in litres, extra farm output in tonnes and employment in person-days, and has them independently assured. A river or lake programme should report the change in the water body and in people's lives, not only the rupees released.

2

Test against a comparison group.

Dalmia Bharat's assessment by the CII Centre of Excellence for Sustainable Development compared villages with and without its work: only 30% of households in programme villages reported water availability problems, against 58% in the comparison group. 75% of respondents said the water structures were in good working condition.

3

Publish what failed.

HCLTech's assessment of its Bidru Lake project records that a Miyawaki forest planting "failed due to insufficient maintenance and damage by buffaloes". Honest reporting builds trust with boards and communities, and stops the same mistake being funded twice.

4

Plan maintenance before the ribbon is cut.

At Bidru Lake, the gram panchayat tenders lake maintenance to a local fisherman, whose catch and income rose after rejuvenation. A lake or river stretch needs someone with a reason to look after it every day.

5

Tie water to livelihoods.

Persistent's watershed work with BAIF supports farming and dairy alongside storage. In Earth5R's Mithi project, residents were paid for segregated plastic. Programmes that raise incomes are the ones communities keep running.



A waste audit at Powai Lake, Mumbai: evidence that can be compared with a baseline, 2023.

Ten steps to launch a river programme

The operating method behind our river work, in the order it has to happen.

01 Pick a stretch you can actually change

Start with a defined length of river or one lake, not "the river". Walk it, map it, and mark the hotspots where waste enters: drains, markets, settlements, bridges.

02 Take a baseline before anyone picks up a bottle

Drone survey or photo mapping, a first waste audit by type and weight, and a record of flooding and blockage points. Without a baseline, your results are an opinion.

03 Secure permission and site access

Meet the municipal ward office early. On an urban river, access is granted, not bought, and this is where most projects stall. Build the relationship before you need it.

04 Assemble the four partners

Technology (if you intercept at scale), funding, municipal authority and community presence. Earth5R's role is usually to bring these together, working with partner NGOs who are already trusted in the catchment.

05 Start in the catchment, not the channel

Door-to-door and building-level training on segregation, composting and upcycling. Schools, housing societies, shops and small businesses. This is the layer that reduces tomorrow's waste.



Volunteers segregating collected waste for an audit on the Powai Lake promenade. The first audit is your baseline.

06 Put a price on segregated waste

Pay residents and waste pickers for sorted material, through transparent, app-based payments where possible. People keep doing what pays. On the Mithi, paid collection turned waste into something with value.

07 Give every fraction a destination before you collect it

Line up recyclers for PET, HDPE and metals, a route for low-value film and mixed plastic, composting for organic waste, and safe disposal for hazardous items. If a fraction has nowhere to go, you are only moving it.

08 Run cleanups on a rhythm, with safety first

A fixed weekly or monthly slot beats one big day. Gloves, grabbers, safety vests and first aid for everyone. Nobody enters the water without protective gear and a trained lead.

09 Log everything as you go

Weight and type of waste, volunteer hours, households trained, income paid. Volunteers can log data on the Earth5R app on site, so the record is built during the work, not reconstructed afterwards.

10 Plan the handover from day one

Train local operators rather than contracting them, build the process into municipal systems, and make sure the data outlives your involvement. Decide at the start who runs it in year three.



Student volunteers setting up the Earth5R app to log cleanup data, Mumbai, 2023.



Sorting plastic by grade with waste collectors at the Mithi River, so each type reaches the right recycler.

Street hackathons. At some sites we set up temporary stalls by the river or lake where citizens proposed their own climate solutions. Some of those ideas were later used in Earth5R programmes elsewhere. People who help design a programme stay with it.

Budget template

A one-year river programme for an urban catchment, with the nine components published for the Mumbai river cleanup CSR project. Use it as a starting point and scale it to your stretch.

Component	What it pays for	₹
Awareness campaign	Workshops in schools, colleges and settlements; printed and digital material	10,00,000
Youth mobilisation	Student ambassadors, cleanup drives, hackathons, training	15,00,000
Collection stations	50 plastic collection points in high-footfall zones, with fill monitoring	20,00,000
Transport and logistics	Regular pickups with route planning and tracking	15,00,000
Paying community collectors	Training and payment by volume and quality of plastic collected	25,00,000
Crusher, baling unit and tools	Processing equipment and safety gear for workers	30,00,000
Tracking and data	Digital platform for waste recovery metrics and participant records	15,00,000
Monitoring and reporting	Monthly audits and impact reports	5,00,000
Reserve fund	Repairs, upgrades and unforeseen costs	10,00,000
Total of the nine components		1,45,00,000

Source: earth5r.org/mumbai-river-cleanup-csr-project. The plan aims for self-sustainability after year one through sale of processed plastic, sponsorship of collection stations, and community cooperatives that take over operations.

What your company can and cannot claim

You can report

- CSR spend under Schedule VII, item (iv): environmental sustainability, including the quality of water.
- Waste removed, recycled and composted, by type and weight.
- People trained, volunteer hours and income paid to community members.
- Avoided emissions, clearly labelled as estimates with the factor used.

You should not claim

- Carbon credits or offsets, unless credits were actually issued and retired.
- Avoided emissions against your own Scope 1, 2 or 3 targets.
- Water quality improvement without before-and-after testing.
- Results from years after your funding ended, as your own.

A river programme charter

Ten sections to complete before a river, lake or creek programme goes to your CSR committee. The editable version is a free Word download.

1. The stretch. River, lake or creek, start and end landmarks, length, ward and district. CPCB priority class if listed. Mapped waste entry points: drains, markets, settlements, bridges, industrial units. Flood and blockage points.

2. Baseline. Date and method of the baseline survey (drone, fixed-point photos or walk). First waste audit by weight and type. Water quality at fixed points by an accredited lab, if in scope. Households and businesses in the catchment.

3. Objectives and indicators. Two or three objectives with dates, output indicators (tonnes by type, households trained, volunteer hours) and outcome indicators (hotspot change, share recycled, income paid). Emissions only as estimated avoided emissions.

4. Partners and roles. Funder, implementing agency and its CSR Registration Number, municipal authority and permission reference, technology partner, community partners and an independent evaluator.

5. Where every fraction goes. Named routes for PET and HDPE, film and multilayer plastic, organic waste and water hyacinth, cloth, metals and glass, and hazardous items.

6. Safety. A trained lead per 10 to 15 volunteers, a named first-aider, the nearest hospital, protective gear, and safety training for waste pickers and workers.

7. Assets and ownership. Capital assets to be created, and who will hold them under Rule 7(4) of the CSR Rules. Who maintains them after handover.

8. Monitoring. Every cleanup: weights, hours and geotagged photos. Monthly: recycler receipts and income paid. Quarterly: hotspot survey and committee report. Annual: independent review against baseline.

9. Exit and handover. Who runs it after the funding period, how local operators are trained, how the municipal system takes over, and how the work pays for itself.

10. Approvals. Prepared by, reviewed by the CSR team, recommended by the CSR Committee, approved by the Board as part of the Annual Action Plan.



The Mithi channel in Mumbai. A charter starts with a clear map of the stretch and where waste enters it.

Measuring and reporting

If a result can't be checked, a CSR committee can't defend it. Decide what you will measure before the first cleanup.

Metric	How to capture it	How often
Waste removed, by type (kg)	Weighed on site after segregation; logged in the app	Every cleanup
Plastic sent to recycling or other routes (kg)	Recycler receipts and weighbridge slips	Monthly
Households and businesses trained	Attendance records with location	Monthly
Volunteer hours	Sign-in and sign-out, or app check-in	Every cleanup
Income paid to community members (₹)	Digital payment records	Monthly
Hotspot change along the stretch	Drone or fixed-point photo survey	Quarterly
Water quality (BOD, COD, DO)	Accredited lab testing at fixed points	Quarterly, if in scope

Emission factors we use

Earth5R's project-derived factors for avoided emissions:

Plastic recycled	1.5 t CO ₂ e per t
Mixed waste recycled	1.34 t CO ₂ e per t
Food waste composted	2.5 t CO ₂ e per t

Always report these as avoided emissions, estimated, with the factor stated next to the number.

Where it goes in your reporting

- **CSR annual report:** project under Schedule VII (iv), spend, location and outcomes.
- **BRSR Principle 6** (environment): supporting information on waste and water initiatives.
- **BRSR Principle 8** (inclusive development): community beneficiaries and livelihoods.
- **Sustainability report:** case study with verified figures and photographs.

Need help with the reporting side? See [Earth5R ESG and BRSR reporting services](#).



Waste audit at Powai Lake: cigarette butts, bottles and wrappers counted by type. Audits like this are part of Earth5R's 2.4 billion field data points.

An indicator bank for river and lake programmes

Choose two or three outcome indicators per project, record the baseline before work starts, and report against it every year.

Layer	Output indicators	Outcome indicators
Intercept	Tonnes removed by type; cleanups held; volunteer hours; stretch covered (km)	Visible waste at mapped hotspots versus baseline (fixed-point photos or drone survey)
Catchment	Households, shops and businesses trained; schools reached	Share of households segregating at source on follow-up visits; waste entering at drains versus baseline
Every fraction	Kilograms sent to recycling, composting and other routes, with receipts	Share of collected waste diverted from landfill; income paid to collectors and residents
Water	Structures built or restored; storage capacity created (litres)	BOD, COD and DO at fixed points, if in scope; groundwater levels; days of water availability
Ecology	Area of water hyacinth cleared; saplings planted and geotagged on banks	Sapling survival at 12 and 24 months; return of birds or fish, recorded by a consistent method
Handover	Local operators trained; municipal agreements signed	Months of operation without the funder or builder; cost recovered from sale of material
Climate	Tonnes recycled and composted	Estimated avoided emissions with the factor stated: plastic 1.5, mixed waste 1.34, food waste 2.5 t CO ₂ e per tonne

Keep the logs in one place. Earth5R's free River Programme Workbook has sheets for the budget, waste audits (with automatic totals and emissions estimates), monthly monitoring, hotspots and partners.



Logging cleanup data on the Earth5R app at a lake in Mumbai, 2023.

Five lessons from the field

What ten years on India's rivers and lakes taught us, in the order we learned it.

1**Fund the catchment, not just the machine.**

Equipment is easy to photograph and easy to approve. Community training is the only part that reduces the waste entering the river. Projects that fund the machine alone end up running the machine forever.

2**Pay for the work.**

At Powai, 70% of funds went to ragpickers. On the Mithi, residents were paid for segregated plastic. On the Yamuna, the waste went to the man on the raft. Programmes that pay the people closest to the river last longer than programmes that ask for goodwill.

3**Rhythm beats scale.**

Two hours every Sunday for six years on the Mula Mutha removed 112 tonnes of waste. A regular slot builds habit, skills and local ownership in a way a single large event cannot.

4**The partnership is the work.**

Technology, funding, municipal permission and community presence rarely sit in one organisation. Assembling them is not preparation for the project. It is most of the project.

5**Design for your own exit.**

A river programme has been proved only when it runs without the people who built it. On the Mithi, we handed over. That is the result we are proudest of.



Earth5R volunteers after crossing the Yamuna for a cleanup, Delhi, 2018.

Checklist for CSR committees

Ten questions to ask of any river or lake programme before you approve it. If the answers are vague, the results will be too.

- ☐ **Is there a baseline?** A mapped stretch, a first waste audit and hotspot photographs, dated before work starts.

- ☐ **Does it work in the catchment,** not only in the channel? How many households, shops and businesses will be trained?

- ☐ **Where does every fraction go?** Named recyclers, a route for low-value plastic, composting and hazardous waste handling.

- ☐ **Who gets paid?** What share of the budget reaches waste pickers and community members?

- ☐ **Is municipal permission in writing,** and is the ward office part of the plan?

- ☐ **Who are the partners,** and which partner NGO is already trusted in this catchment?

- ☐ **What is the safety plan** for volunteers and workers near water?

- ☐ **How will results be verified?** Weights, receipts, app logs, photo or drone surveys, and water testing if claimed.

- ☐ **Are emission figures labelled correctly,** as estimated avoided emissions with the factor stated, and not as credits?

- ☐ **What happens when our funding ends?** Who runs it in year three, and how is that written into the plan?

Planning a river or lake programme? Earth5R designs and measures river and coastal restoration programmes in India: baseline survey, recovery design, catchment training, monitoring and reporting, delivered with partner NGOs. [See the river cleanup CSR project.](#)

Glossary of river programme terms

Baseline. The dated record of a stretch before work starts: map, waste audit, photos and, if in scope, water quality.

BOD, COD and DO. Biochemical oxygen demand, chemical oxygen demand and dissolved oxygen: standard measures of water pollution. CPCB uses BOD to classify polluted stretches.

Catchment. The area whose drains, streets and homes feed waste and water into a river stretch.

CPCB priority class. CPCB groups polluted stretches from Priority I (most polluted) to Priority V, based on BOD.

Estimated avoided emissions. Emissions that recycling or composting is estimated to avoid, using a stated factor. Not carbon credits, and not a reduction in the company's own emissions.

EPR. Extended Producer Responsibility under the Plastic Waste Management Rules: producers, importers and brand owners must take back and process plastic packaging.

Hotspot. A mapped point where waste enters or collects: a drain outfall, market, bridge or settlement edge.

Interception. Catching floating waste in the channel before it moves downstream, by machine or trained crews.

Low-value plastic. Film, multilayer packaging and mixed plastic that recyclers rarely buy. It needs its own route, such as co-processing or pyrolysis.

MLD. Million litres per day, the unit for sewage generation and treatment capacity.

Namami Gange. The national programme for the Ganga and its tributaries, run by the National Mission for Clean Ganga.

Pyrolysis. Heating plastic without oxygen to break it into oil and gas. On the Mithi, it was used for low-value plastic that could not be recycled.

Schedule VII item (iv). The CSR category for environmental sustainability, including the quality of soil, air and water.

Waste audit. Sorting and counting what a cleanup collects by type, weight and, sometimes, brand.

Water hyacinth. An invasive floating plant that chokes urban lakes and rivers and adds to blockages in the monsoon.

Templates, infographics and how to share this playbook

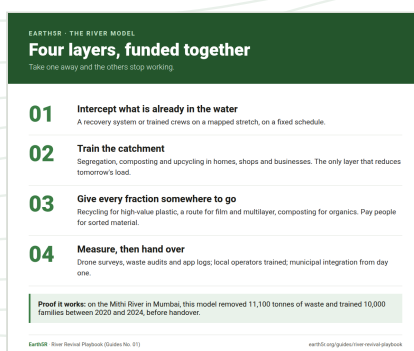
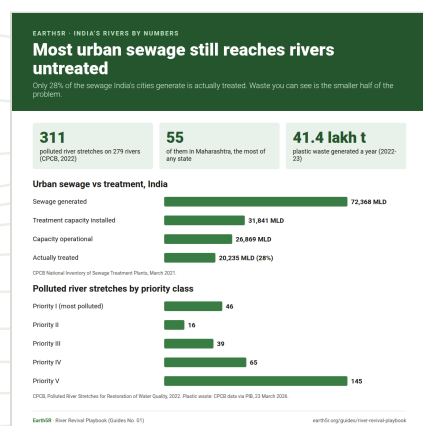
Everything below is free to use, adapt and republish on your own website or intranet, with credit and a link to this playbook.

Resource	What it is	Download
River Programme Charter (Word)	A ten-section charter: stretch, baseline, objectives, partners, fractions, safety, assets, monitoring, exit, approvals	earth5r.org/guides/river-revival-playbook
River Programme Workbook (Excel)	Budget, waste audit log with automatic totals and emissions estimates, monthly monitoring, hotspots, partners	Same page
Infographic: India's rivers by numbers	Polluted stretches, sewage treated and plastic waste	Same page, with embed code
Infographic: the four-layer river model	Intercept, train the catchment, route every fraction, measure and hand over	Same page, with embed code
Infographic: CSR committee checklist	Ten questions before you fund a river project	Same page, with embed code

How to cite this playbook.

Gupta, S. (2026). *River Revival Playbook: How Companies, Cities and Communities Restore Urban Rivers in India*. Earth5R Guides No. 01. Earth5R.
<https://earth5r.org/guides/river-revival-playbook/>

Share it. CSR teams, municipal officers, NGOs, universities and resident groups are welcome to link to this playbook, add it to reading lists, or embed the infographics. Please link to the playbook's page rather than the PDF, so readers always get the latest edition.



EARTH5R - CSR COMMITTEE CHECKLIST

10 questions before you fund a river project

If the answers are vague, the results will be too.

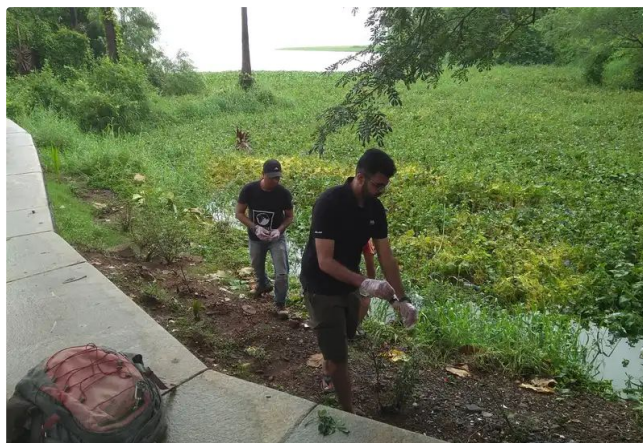
- 1 Is there a dated baseline: mapped stretch, first waste audit, hotspot photos?
- 2 Does it work in the catchment, not only in the channel?
- 3 Does every waste fraction have a named destination?
- 4 What share of the budget reaches waste pickers and residents?
- 5 Is municipal permission in writing, with the ward office in the plan?
- 6 Which partner NGO is already trusted in this catchment?
- 7 What is the safety plan near water?
- 8 How will results be verified: weights, receipts, app logs, surveys?
- 9 Are emissions labelled as estimated avoided emissions, never credits?
- 10 Who runs it in year three, and who owns the assets?

Earth5R - River Revival Playbook (Guides No. 01)

Rivers, lakes and the people who clean them



Recovering plastic from the Mithi River bank, Mumbai.



Clearing litter from a shore thick with water hyacinth, Powai Lake.



Employee volunteers at a Juhu beach cleanup, where the city's rivers meet the sea.



Volunteers with grabbers on the Mula Mutha riverbank, Pune.



Studying wrappers by brand and material after a Powai Lake cleanup.



Student volunteers with the day's collection at Powai Lake, 2023.

More photographs of Earth5R's CSR work with partner NGOs: earth5r.org/csr-ngo-work-gallery. All photographs © Earth5R.



EARTH5R

WORK WITH EARTH5R

Bring your river programme to life

Earth5R is a Mumbai-based environmental organisation working across 144 Indian cities and internationally. We connect companies with partner NGOs and delivery partners to run CSR projects in waste management, recycling and river restoration, and measure their ESG impact.

Planning a river, lake or coastal programme?

Tell us the stretch you have in mind and the financial year you are working towards. We will help you design it, check the measurement before it goes to your CSR committee, and bring in the right partners.

[Talk to Earth5R →](#)

Read more

- [Mithi River case study](#)
- [River cleanup CSR project](#)
- [Plastic waste management ESG solutions](#)
- [Earth5R CSR and ESG projects](#)
- [Photo gallery of our work](#)

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