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From *Nadi* to *Nala*: Hydronymy, watercourse neglect and semantic erasure of Champa river in Bhagalpur

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Abstract

This paper examines the historical transformation and contemporary marginalisation of the Champa watercourse in Bhagalpur, Bihar. It interprets Chandan, Andhari, Champa, and Jamuniya as reach-specific names within a single connected watercourse with Jamuniya being the terminal end that joins the Ganga. It combines textual-historical materials, Francis Buchanan's 1810-11 survey, the *Bihar District Gazetteers: Bhagalpur* (1962) [5], a 1966 Champa Nalla Bridge plaque, a Survey of India topographical sheet, along with civil society actions, published newspaper reporting, popular environmental advocacy blogposts and articles, recorded key-informant interview, and GPS-referenced field observations. The study reconstructs changes in the naming and public representation of the lower Chandan-linked drainage system and documents civic responses to its deterioration. It argues that the shift from river-oriented hydronyms to the label *nala* may have reduced recognition of the lower channel's ecological, historical, and civic status. The paper uses toponymic pejoration, the gradual lowering of a place's perceived value when the language associated with it acquires degrading association, in a limited sense. It identifies that the '*nala*' nomenclature could be one of the several factors leading to ecological decline, waste dumping, or municipal decisions. A case study of the Kankaithi municipal dumping site documents open accumulation of mixed waste immediately beside a seasonally water-bearing channel associated locally with the Andhari offshoot system. The paper concludes that restoration requires more than just the name correction. It proposes historical GIS reconstruction, official watercourse inventory, seasonal hydrological mapping, legacy-waste safeguards, pollution monitoring, and community participation are needed to reconnect the Chandan-Andhari-Champa system with Bhagalpur's environmental and cultural landscape.

Keywords: Champa River, Champa *Nala*, Bhagalpur, Anga, hydronymy, toponymic pejoration, civic mobilization, legacy waste, biomining, river restoration

1. Introduction

Urban watercourse degradation is commonly described through pollution, solid-waste accumulation, encroachment, declining flow, habitat loss, and drainage obstruction (Silva *et al.*, 2024; Sousa *et al.*, 2024; Friberg *et al.*, 2024) [12, 29, 30]. These material processes are fundamental to environmental analysis. Yet watercourses are also shaped by names. A hydronym influences how a channel is remembered, mapped, administratively represented, and valued in public life (Rose-Redwood *et al.*, 2010; Azaryahu, 2011) [2, 23]. When a historically known river becomes routinely described as a *nala*, its physical degradation may be accompanied by a less visible decline in civic and cultural recognition (Rose-Redwood *et al.*, 2010; Shree, 2020a, 2020b) [23, 25, 26].

This paper examines that possibility through the Champa watercourse landscape of Bhagalpur, Bihar. For the purposes of this study, Chandan, Andhari, Champa, and Jamuniya are interpreted as reach-specific names within a single, connected watercourse, rather than as wholly separate rivers. The watercourse changes name across localities; it is known upstream as Chandan *Nadi*, bifurcates in Banka at Birma village, one branch continues as Chandan while the left distributary branch is called Andhari which further up north in Champagnagar area is called Champa *Nala*, and near its lower confluence with the Ganga as Jamuniya *Nala*. This interpretation is supported by Buchanan's early nineteenth-century account of named and renamed branches (Buchanan, 1939) [7], the 1962 Gazetteer (Roy Chaudhury, 1962) [24], the Survey of India sheet (Survey of India, 2009), local toponymic continuity, and GPS-referenced field observation.

Because the system is a distributary, seasonally variable, and geomorphically dynamic, the exact alignment and continuity of every reach has been further tested through GIS reconstruction and monsoon-season survey.

Champa is associated in textual and historical tradition with ancient Anga and its capital, remembered as Malini and, in Puranic tradition, as Champa Malini (Roy Chaudhury, 1962, p. 36-37; Matsya Purana, as cited in Roy Chaudhury, 1962)^[16, 24]. Later documentary sources reveal a changed hydrographic vocabulary. Francis Buchanan's 1810-11 survey described the lower Chandan system through several named branches Andhela, Guriyani, Kankaythi, Pangjarmara, and Yamuniya (Buchanan, 1939)^[7]. By the twentieth century, the Bihar District Gazetteer used "*Champanala*" (Roy Chaudhury, 1962)^[24], a bridge plaque recorded "*Champa Nalla*" by July 1966 (Champa Nalla Bridge plaque, 1966), and the Survey of India later mapped lower reaches as "*Champa Nala*" and "*Yamuniya Nala*," while retaining "*ChananNadi*" upstream (Survey of India, 2009).

This paper examines how the changing language of water shaped the public and administrative visibility of the Champa system. It does not treat the shift from *nadi* to *nala* as a single or sufficient cause of channel degradation, pollution, or the municipal decision to dispose off waste at Kankaithi. Rather, it argues that the normalisation of *nala* may have weakened recognition of the river as a historically significant watercourse. This altered perception may have formed one cultural and administrative condition through which neglect became easier to normalise, alongside more direct drivers including altered flow, sedimentation, settlement growth, wastewater discharge, waste disposal, drainage engineering, and institutional fragmentation. The study asks five questions:

1. How did the naming and representation of the lower Chandan i.e. Andhri Champa Jamuniya system change between the early nineteenth century and the present?
2. What forms of continuity can be identified among historical hydronyms, modern place-names, and present channel alignments?
3. How may *nala* terminology shape public and institutional perceptions of historically significant watercourses?
4. How did civic organisations, regional journalism, and public scholarship respond to the Champa's decline before and after the Kankaithi dumpsite was selected?

2. Conceptual framework: Hydronymy and toponymic pejoration

In Hindi-Urdu and related north Indian vernacular contexts, *nadi* and *nala* have historically possessed broad and partly overlapping geographical usages, even though they carry different associations of scale, permanence, social standing and civic importance. In contemporary urban usage, *nala* frequently evokes an open drain, wastewater channel, or sewer-like drainage line. This modern association can reshape the social status of named watercourses even where earlier usage included natural channels, seasonal streams, ravines, or drainage lines (McGregor, 1993; Platts, 1884; Turner, 1966)^[17, 20, 32].

The paired expression *nadi-nala* can operate colloquially as an inclusive reference to watercourses of different sizes and forms. It should not be assumed, however, that the terms are interchangeable in every historical or administrative setting.

The analytical problem arises when a historically connected watercourse is known mainly through the narrowed urban sense of *nala*.

This paper uses the term toponymic pejoration for a simple process, a place-name begins to carry a lower or more negative social meaning than it originally had. A name that once referred neutrally to a locality, channel, or landscape may become associated with dirt, waste, neglect, danger, or failure. In the present case, the proper name *Champa* has not become an insult. Rather, the generic term attached to it *nala* has acquired strongly degraded associations in contemporary urban speech. When a historically significant watercourse is known primarily as "*Champa Nala*," people may see it first as a drain and only rarely as part of a larger river system with ecological and historical value.

The term is used in a limited sense. It does not mean that a name alone caused pollution, dumping, or channel degradation. Nor does it imply that every watercourse called a *nala* was once a significant river. It identifies a potential governance problem, that once a channel is understood mainly as a drain, it may be easier to overlook its floodplain function, ecological connection, historical identity, and claim to protection.

3. Sources, evidence categories, and methods

The study adopts a historical-geographical and field-based approach using several distinct categories of evidence. These categories are deliberately separated to avoid treating community testimony, advocacy material, news reporting, official records, and field observation as interchangeable.

3.1 Historical and cartographic sources

Textual and historical sources concerning Champa, Anga, Champa Malini, and the cultural geography of Bhagalpur are used as evidence of cultural and historical memory. They are not used as proof that a physically unchanged river channel has persisted across millennia. This distinction matters because the alluvial Ganga plain is geomorphically dynamic and channels may migrate, bifurcate, silt, flood, or be altered by human works.

Francis Buchanan's early nineteenth-century survey is used as a documentary hydrographic baseline. Buchanan recorded the Chandan and lower branches individually and described their downstream relations with the Ganga. His account is interpreted alongside the *Bihar District Gazetteers: Bhagalpur* (Roy Chaudhury, 1962)^[24], the 1966 Champa Nalla Bridge plaque, the Survey of India sheet G45O16/72K16 (Survey of India, 2009), and later official river-atlas material.

3.2 Field observation

GPS-referenced field verification was conducted at the Kankaithi dumpsite complex. Field records include the date of observation, georeferenced locations, photographs, and site notes documenting mixed municipal waste, standing water within a channel depression, waste immediately beside the watercourse, plastic accumulation, large waste heaps, nearby settlement land, and surrounding agricultural/vegetated land. The field evidence is observational and does not constitute laboratory analysis of water, sediment, groundwater, leachate, or air quality.

3.3 Civic-organisation documentation

The study uses organisational documentation supplied by

Peepal The Resilience Lab concerning public meetings, catchment engagement, and the "Run for Revival of River Champa" held between November 2017 and April 2018. These sources are used to document civic mobilisation and public environmental concern. They are not treated as a substitute for a formal hydrological catchment delineation, official municipal record, or quantified participation dataset.

3.4 Newspaper reporting, Public scholarship, and Qualitative Data Collection

The paper uses published *Dainik Jagran* articles from the November-December 2019 "Kahan Gum Ho Gayi Champa?" campaign as published newspaper sources. It also draws on a three-part essay series environmental advocacy blog published on the SANDRP platform, an environmental advocacy blog, in April 2020. The essays are used as publicly accessible analytical and advocacy-oriented writing on the Champa's degradation, historical identity, and potential rejuvenation. (Shukla, 2019; Shree, 2020a, 2020b, 2020c) [25, 26, 27, 28].

A recorded semi-structured key-informant interview was conducted by the first author with Shri Ashwini Kumar Singh, Deputy State Editor, *Dainik Jagran* Bihar, associated with the *Dainik Jagran* campaign, on **12.09.2025**. The interview addressed the campaign's origin, editorial rationale, reporting process, and public response. Shri Ashwini gave informed consent to be identified by name and professional role in academic writing. The interview is

cited as personal communication only for unpublished editorial context or clarification. Published campaign facts are cited to the relevant newspaper article, not to the personal communication.

In addition local testimony was gathered through semi structured open ended questions from the residents of Kankaithi village and the Dumpsite guard.

3.5 Historical-geographical correspondence

The analysis proceeds from the working historical-geographical interpretation that Chandan, Andhari, Champa, and Yamuniya are successive reach names within the lower drainage system, with names changing across localities. This interpretation is examined through documentary sequence, channel direction, relative location, hydronymic continuity, field observation, and cartographic evidence. It is not assumed that every historical reach has retained an unchanged modern course; the study recognises bifurcation, channel migration, siltation, seasonal flooding, and human modification in the Ganga floodplain. The study also compares Buchanan's Andhela and Kankaythi with the present Andhari channel and Kankaithi village. These links are treated as historically plausible correspondences of identical channel alignment. They rest on convergent evidence phonetic similarity, relative location, settlement continuity, drainage relationship, cartographic context, and field observation.

Table 1: Historical and contemporary hydronymic sequence

Name/form	Source and date	Position in connected system	Evidence and interpretation	Confidence
Champa / Champa Malini	Puranic and historical tradition	Cultural-historical river landscape	Long-standing association of Champa with Anga and its capital landscape; not direct proof of unchanged physical channel continuity	Medium
Chandan / ChananNadi	Buchanan, 1810-11; Survey of India	Upper/main parent reach	Upstream name of the connected lower system; documented by survey and cartography	High
Andhela / Andhari	Buchanan, 1810-11; local usage and field observation	Intermediate/Kankaithi-side reach	Andhela is a named branch in Buchanan; Andhari is a present local name. Their correspondence is supported by toponymic similarity, relative location, and field context	Medium-high
Champa / Champanala / Champa Nala	Gazetteer, 1962; bridge plaque, 1966; Survey of India	Lower Bhagalpur-Champanagar reach	Historical and modern name cluster for the town-adjacent reach	High for naming; medium for exact physical alignment
Guriyani	Buchanan, 1810-11	Intermediate historical reach	Buchanan's name for a reach receiving connection from another arm before joining Yamuniya	High
Yamuniya / YamuniyaNala	Buchanan; Survey of India	Terminal Ganga-facing reach	Persistent lower-system name near the Ganga confluence	High
Kankaythi / Kankaithi	Buchanan, 1810-11; present village name	Branch/locality within lower network	Historical branch name and present settlement-name continuity	Medium-high

4. Champa in historical and cultural memory

The historical importance of Champa is embedded in a broad textual tradition linking the riverine landscape of Bhagalpur with Anga. The *Atharvaveda* mentions the Angas (*Atharvaveda*, Book V, Hymn 22, Verse 14) [1], while Puranic genealogical traditions connect Anga with the wider political geography of eastern India (Mozumdar & Pusalker, 1951) [18]. The *Bihar District Gazetteer* states that Anga was "separated from Magadha by the river Champa" and identifies its capital as Malini, also called Champa Malini in the Puranas (Roy Chaudhury, 1962) [24].

The *Mahabharata* associates Champa with pilgrimage geography and the Anga royal tradition (*Mahabharata*, *Vana*

Parva, Chapter 85; *Anusasana Parva*, Chapter 42). Buddhist and Jaina narratives further place Champa within important urban and religious landscapes of northern India. Chinese pilgrim accounts, read through standard translations and later historical studies, reinforce Champa's place in the regional memory of settlement, trade, religious activity, and cultivated land (Beal, 1884; Legge, 1886; Cunningham, 1924; Basham, 1954) [3, 4, 9, 13].

These sources do not form one uniform historical record. They differ in chronology, genre, transmission, religious orientation, and purpose. Their relevance here is narrower; they preserve Champa as a culturally significant riverine and urban landscape.

5. Buchanan's hydrography and the lower Chandan system

Francis Buchanan surveyed the district of Bhagalpur for the East India Company in 1810-11. His account is particularly important because it records the lower Chandan system before the later administrative consolidation of local channels into the generalised label "Champa Nala." Buchanan's approach was hydrographic and topographic, he named channels, described bifurcations, and traced drainage relations toward the Ganga (Buchanan, 1939) [7].

Near Jatharnath, Buchanan recorded the Chandan dividing into two branches. The larger branch, Andhela, travelled north-westward, received a small channel from the other arm, changed its name to Guriyani, and later joined the Ganga arm called Yamuniya. The smaller branch retained the Chandan name briefly before dividing into Kankaythi and Pangjarmara, which were themselves subject to further division and seasonal disappearance into low-lying flood landscapes (Buchanan, 1939) [7].

Read together with later place-names and maps, Buchanan's account supports a reach-name interpretation of the system. The watercourse is not best understood as a group of wholly unrelated rivers; rather, it is a connected and branching lower drainage network whose name changes along its course. In the present study, the system is reconstructed as Chandan → Andhari → Champa/Champa Nala → Jamuniya/Yamuniya Nala → Ganga. "Andhari" is used locally around Kankaithi and is interpreted as a likely modern continuation or cognate of Buchanan's Andhela; "Champa" is the historically significant lower Bhagalpur reach; and "Yamuniya" is the Ganga-facing terminal name preserved both by Buchanan and the Survey of India (Buchanan, 1939; Survey of India, 2009) [7]. The reconstruction has been carried out through historically grounded network interpretation verified through remote sensing and ground truthing, keeping in mind the limitations of a dynamic floodplain where channels migrate, divide, silt, or reconnect over time.

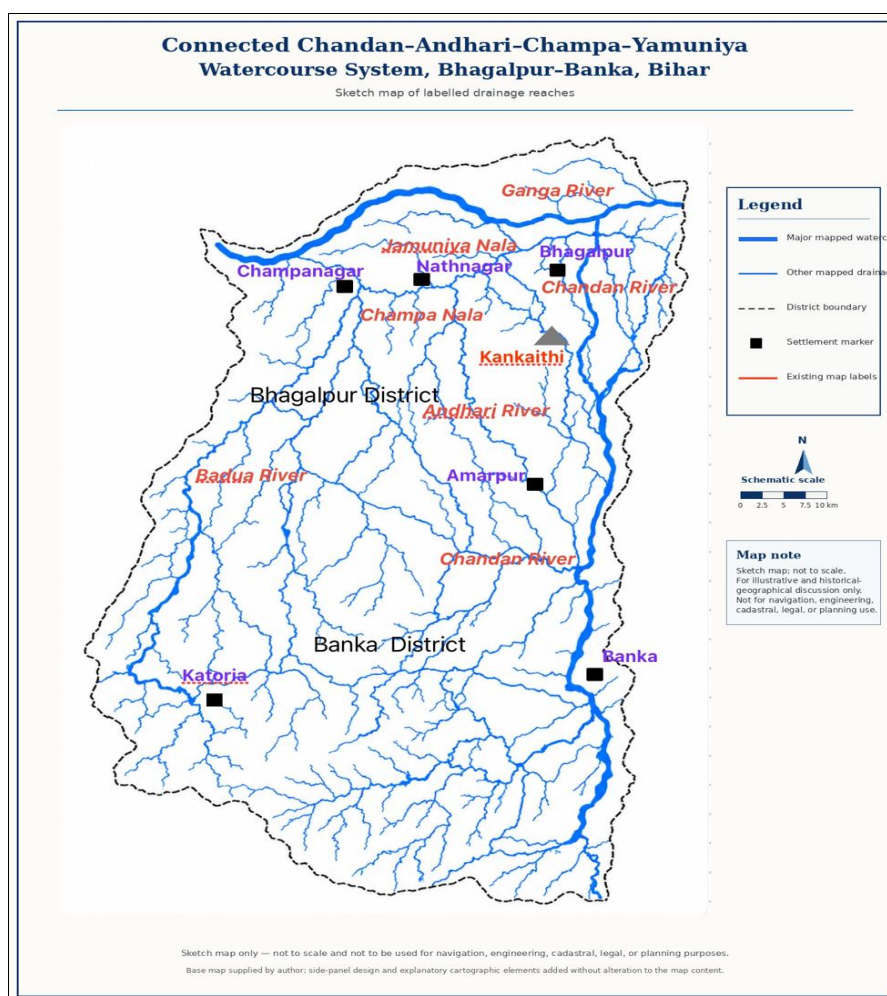


Fig 1: Schematic historical-geographical sketch of the connected Chandan-Andhari-Champa-Yamuniya watercourse system, Bhagalpur-Banka, Bihar

Buchanan did not use "Champa" as the operative hydrographic name for these lower branches. He documented a network of distinct channels and local hydronyms. This cautions against projecting a single modern "Champa River" line backward onto his network. At the same time, the survival of names resembling Andhela/Andhari and Kankaythi/Kankaithi suggests that elements of earlier nomenclature may persist in transformed

form in the present landscape (Buchanan, 1939). Buchanan also recorded the Baruya, later associated with Badua/Barua usage, as contributing through a related lower network. The picture that emerges is not of an isolated drain but of a distributary and confluence landscape in which hill streams, seasonal channels, flood depressions, stream branches and off-shoots, and the Ganga were historically interconnected (Buchanan, 1939) [7].

6. The 1962 Gazetteer, the 1966 plaque, and cartographic normalisation

P. C. Roy Chaudhury's *Bihar District Gazetteers: Bhagalpur* (1962) provides a crucial mid-twentieth-century documentary record of "Champanala." In its account of district rivers, the Gazetteer states: "One branch of the Chandan pours its water into the Ganga at Champanagar (Champanala), two miles west of the town Bhagalpur" (Roy Chaudhury, 1962, p. 4). This confirms that "Champanala" was a branch of Chandan entering the Ganga. The same volume records that Anga was "separated from Magadha by the river Champa" and identifies the capital as Malini, also called Champa Malini in the Puranas (Roy Chaudhury,

1962, p. 36). These passages show that historical river memory and modern *nala* nomenclature coexisted within the same official publication. The Gazetteer thus preserves a revealing duality, Champa appears as a river of historical geography, while "Champanala" appears as the accepted modern name of its lower, town-adjacent reach.

A bridge plaque provides a further item of material evidence. The plaque documents public-infrastructure use of "Champa Nalla" by July 1966. It also indicates, the bridge was in operation for a while requiring strengthening in 1966. It also shows that the *Nalla* terminology had become visible in an engineering and public-works context.



Fig 2: Plaque on the Champa Nalla Bridge, recording strengthening work by "C.M. Corporation P. Ltd." in July 1966. The plaque provides material evidence that the form "Champa Nalla" was publicly used in bridge and infrastructure nomenclature by 1966. Photograph from DainikJagaran series on River Champa

Survey of India sheet G45O16/72K16, surveyed in 1978-79 and published in 2009, labels lower reaches Champa *Nala* and Yamuniya *Nala*, while identifying an upstream reach as Chanan *Nadi* (Survey of India, 2009). The map demonstrates nomenclatural asymmetry; it does not by itself establish why the labels differed, whether the reaches had identical hydrological characteristics, or what their legal status

was. Together, these sources document a transition from Buchanan's nineteenth-century multi-channel hydrography to twentieth-century *nala/nalla*-based lower-reach nomenclature. This is a documented change in representation, not proof that naming alone produced environmental decline.

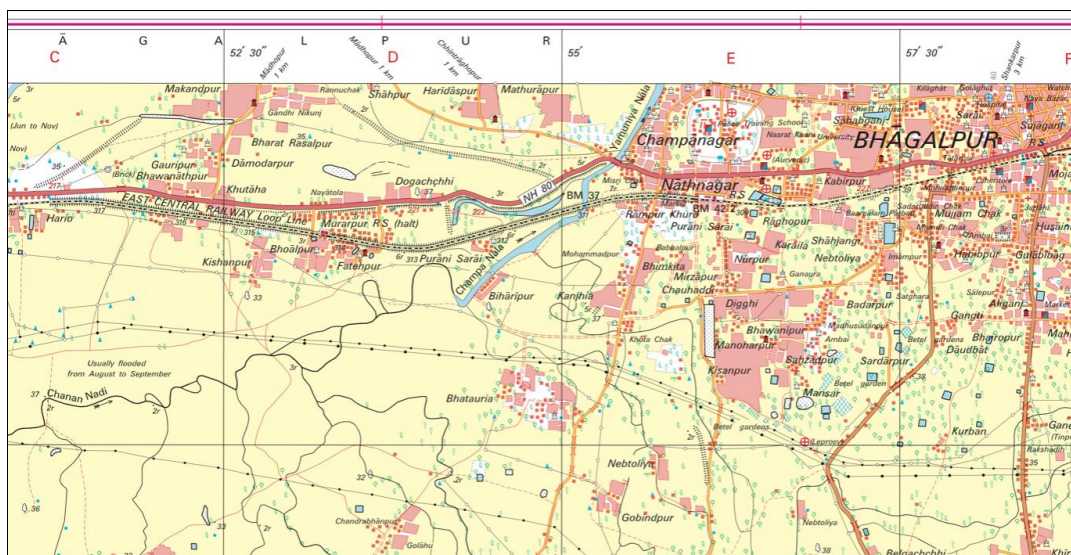


Fig 3: Survey of India sheet G45O16/72K16, surveyed in 1978-79 and published in 2009, labels lower reaches Champa Nala and Yamuniya Nala, while identifying an upstream reach as Chanan Nadi (Survey of India, 2009)

7. Civil Society Response and mobilisation

7.1 Peepal - The Resilience Lab and the river-revival agenda

According to organisational records and testimony supplied by Peepal The Resilience Lab, the organisation was among the first local civil-society groups to foreground the need to revive River Champa as a river system rather than treat it solely as an urban drainage line. Between November 2017 and March 2020, Peepal organised a series of public meetings on or near the banks of the Champa. These meetings brought local attention to the river's degraded condition, historical identity, and need for collective action (Peepal The Resilience Lab, 2017-2018).

Peepal also conducted qualitative, catchment-oriented field engagement with communities across the wider River Champa drainage landscape, extending beyond Bhagalpur's urban edge towards Deoghar, Katoria, and parts of Jamui and Munger. Discussions with residents, farmers, fishers, landholders, and local representatives documented place-based knowledge of seasonal flows, flooding, historical channels, streams, dahrs, embankments, water-control structures, and changing land use. This work was important in framing the Champa not as an isolated urban channel, but as part of a wider upland-to-Ganga drainage system. A separate GIS- and field-based study has undertaken the precise delineation and mapping of the catchment, drainage features, dams, weirs, bunds, and embankments.

In addition to documentary research and site-based observations, Peepal conducted qualitative, catchment-oriented field engagement with communities living within the wider River Champa drainage landscape. Through conversations with local residents, farmers, fishers, landholders, community representatives, and other knowledgeable persons, the engagement recorded place-based knowledge of seasonal flows, historical channel alignments, flooding, local names for streams and dahrs, water-control structures, embankments, and changes in land use and river condition.

This engagement extended beyond Bhagalpur's urban edge towards the hilly tracts of Deoghar and Katoria and parts of Jamui and Munger. It was significant because it situated the Champa not as an isolated town-side channel, but as part of a wider upland-to-Ganga drainage system shaped by upstream terrain, monsoon runoff, tributary and distributary connections, floodplain processes, and human interventions such as dams, weirs, bunds, and embankments. Field-based cultural evidence also indicated the continuing local use of the river name. For example, a signboard at Banbhokarnath Temple beside the Champa crossing at Nathnagar identifies the location as "Champa Nadi, Nathnagar" (Champa River, Nathnagar). The dated photograph, recorded on 4 June 2018, demonstrates that the watercourse retained a riverine identity in local place naming, even where "Champa Nala" had become common in contemporary usage.



Fig 4: A signboard at Banbhokarnath Temple beside the Champa crossing at Nathnagar identifies the location as "Champa Nadi, Nathnagar". Photograph by Author, 4 June 2018

On 8 April 2018, Peepal organised the "Run for Revival of River Champa," a mini-marathon from Bhagalpur City Centre to the bank of the Champa. Organisational accounts describe a large public turnout in support of river revival (Peepal The Resilience Lab, 2018). It demonstrates that sections of Bhagalpur's civil society had already identified the Champa's ecological decline and sought to recover its river identity.

The value of Peepal initiative lies in documenting civic mobilisation, public environmental concern, and catchment-scale thinking by 2017-18. It also shows that the river's civic identity remained active despite its administrative and cartographic association with the term *nala*.

The Champa Corridor in Bhagalpur's Waste Landscape
Local observers and civil-society actors report that urban waste disposal in Bhagalpur historically affected several low-lying and channel-side locations, including parts of the Champa corridor, before Kankaithi became the functional dumping location. Kankaithi should consequently be understood as part of a changing geography of municipal waste disposal, rather than as the beginning of waste-related pressures on the city's watercourses.

Between approximately 2013 and 2022, substantial garbage accumulation was reportedly visible in the Champa-side landscape near a principal entry corridor to Bhagalpur. Local accounts also identify domestic sewage, plastic waste, styrofoam, expanded-polystyrene packaging, wastewater discharge from dyeing and processing units in the Champanagar silk cluster as concerns affecting the corridor. These pressures have contributed to declining water quality, reduced channel conveyance, and waste retention in low-flow reaches. Civic efforts to recover the Champa's river identity should be viewed against this background. The evidence does not show that the term *nala* alone enabled waste disposal; rather, it shows that the channel came to be associated with waste, sewage, effluent concerns, and drainage obstruction even while it retained a historically and locally recognized riverine identity.

7.2 Bhagalpur's Waste Disposal Prior to Formal Dumpsite

Before Kankaithi became the city's functional dumping location, urban waste disposal was reported by local observers and civil-society actors to affect several low-lying

and channel-side locations, including parts of the Champa corridor. The available evidence indicates that waste accumulation and dumping near the Champa system preceded Kankaithi's operational use. Kankaithi was part of a shift in the geography of municipal disposal. Local observations indicate that, during much of the period from approximately 2013 to 2022, substantial garbage accumulation was visible near a principal entry corridor to Bhagalpur in the Champa-side landscape.

The Champa corridor also faced other reported pressures. Local accounts identify discharge from dyeing and processing units in the Champanagar silk cluster, domestic sewage, plastic waste, and single-use packaging including thermocol/styrofoam as major concerns. These materials may have contributed to water-quality deterioration, reduced channel conveyance, and accumulation of waste in low-flow reaches. The present study does not measure industrial effluent composition, sewage load, microplastic concentration, or hydraulic obstruction. It therefore treats these as plausible and widely reported pressure pathways requiring systematic testing through water-quality sampling, drain-outfall mapping, industrial discharge audits, and seasonal channel surveys.



Fig 5: The Garbage Accumulation on the bed of River Champa, Photograph by Author January 2018

The importance of this pre-Kankaithi phase is conceptual as well as environmental. A watercourse widely perceived as a *nala* may be treated as a receiving line for waste, sewage, and industrial discharge, even where it retains historical connection to a larger river system. The evidence does not show that nomenclature alone enabled these practices. It does show that civic mobilisation to recover the Champa's identity emerged in response to a landscape where waste, effluent, sewage, and drainage obstruction had become closely associated with the channel.

8. Public Media Campaigns and Environmental Advocacy for the Champa

In November 2019, the Bhagalpur edition of *Dainik Jagran* began the community-oriented series "*Kahan Gum Ho Gayi Champa?*" ("Where Has Champa Disappeared?"). The campaign title is itself significant, as it foregrounded *Champa* as a river whose presence and memory required

recovery, rather than treating the channel solely through the language of *nala*. The series brought together local testimony, historical references, field observations, and public discussion concerning the river's changing condition (Shukla, 2019) [28].

The first author conducted and recorded a semi-structured key-informant interview with a senior journalist associated with the initiation of the campaign. The participant provided informed consent for the interview to be used in this study. The interview offered contextual evidence on the campaign's origin, editorial rationale, field-reporting process, and public response. Information already available in the published *Dainik Jagran* series is cited to the relevant newspaper articles; the interview is used only to provide unpublished editorial context and clarification.

The public documentation of the Champa's decline was further extended through a three-part SANDRP blog series published in April 2020. The posts addressed the transformation of Champa from *nadi* to *nala*, its historical association with Anga and Champanagar, and possible directions for river rejuvenation (Shree, 2020a, 2020b, 2020c) [25, 26, 27].

Together, Peepal The Resilience Lab's activities in 2017-20, the *Dainik Jagran* campaign in 2019, and the SANDRP blog series demonstrate a sustained civic effort to restore the Champa's visibility as a river. These initiatives show that concerns about declining flow, pollution, waste accumulation, cultural memory, and administrative marginalisation had become matters of organised public concern before the current legacy-waste remediation agenda. Newspaper campaigns and environmental blogs serve as important public archives of river memory, local observation, and restoration priorities, identifying issues that require further hydrological, ecological, and governance investigation.

9. The Kankaithi Dumpsite-Andhari Watercourse Interface: Environmental Risks and Restoration Imperatives

9.1 Site selection, operational use, and terminology

The site at Kankaithi was identified for municipal waste disposal in 2018 and commissioned as a dumpsite (not as a sanitary landfill) in 2022. Available local administrative history indicates that the site was offered by Government of Bihar to Municipal Corporation. It was cleared, an excavation or pit was created, and waste disposal subsequently began clearly as a dumpsite. The distinction is substantive. A sanitary landfill implies designed containment, engineered cells, leachate management, controlled waste placement, environmental monitoring, and regulated post-closure procedures.

9.2 Field setting and observations

The Kankaithi-Andhari site is located in Jagdishpur, Bhagalpur district, Bihar, where the municipal dumpsite lies beside a seasonally water-bearing channel depression locally identified as part of the Andhari offshoot system. Field observation documented substantial accumulations of open mixed-waste with limited visible separation between waste and the water-bearing channel raising concern about

channel-side waste. The adjacent channel has been identified through satellite data and Google Earth as an offshoot of *AndhariNadi*. The waste boundary was effectively contiguous with the channel, with no meaningful vegetated or engineered riparian buffer separating major waste heaps from the channel margin. Observed conditions included extensive mounds of mixed refuse, scattered plastic, standing water, waste within the drainage corridor, an excavator engaged in waste handling or redistribution, nearby vegetation, village-side land, and agricultural land in close proximity.

The observed setting is consistent with an open dumping landscape rather than an engineered sanitary landfill. Within the photographed field area, no lined containment cells, covered waste storage, visible source segregation, material-recovery facility, or protective channel setback was evident. These findings describe observable site conditions.



Fig 6: Kankaithi municipal dumpsite, Jagdishpur. Field photograph, 3 May 2026. Photograph by the author.

Kankaithi village is immediately adjacent to the dumping-ground complex. Villagers reported foul odour associated with waste heaps. Agricultural land and tree-dominated vegetation occur close to the site. The apparent obstruction or constriction of the *Andhari* offshoot channel raises concerns for drainage conveyance, seasonal waterlogging, flood interaction, and downstream transport of plastic and other waste.

9.3 Legacy-waste remediation and proposed processing

The Kankaithi land is reported to be owned by the Government of Bihar and used by Bhagalpur Municipal Corporation (Bhagalpur Nagar Nigam) for municipal solid-waste disposal. Available local administrative history indicates land allocation in 2018 and operational use as a functional municipal dumping location after access arrangements were completed. The accumulated material at Kankaithi is subject to a legacy-waste remediation initiative under Bhagalpur Municipal Corporation. A Request for Proposal has been issued for bio-remediation and bio-mining of legacy waste at the site (Bhagalpur Municipal Corporation, n.d.). In general, biomining may involve excavation, aeration/stabilisation, mechanical screening, separation of recoverable fractions, refuse-derived fuel, fines, and inert material. An HPCL-linked compressed-biogas facility has also been proposed to manage legacy waste at Kankaithi. (Press Information Bureau, 2025; Dainik Jagran, 2026; Prabhat Khabar, 2026; Bhagalpur Index, 2025) ^[21]



Fig 7: Wider view of the Kankaithi dumpsite showing extensive legacy-waste heaps, an excavator, the channel-side waste. Field photograph, 3 May 2026. Photograph by the author

10. Discussion: civic memory, naming, and restoration

The historical-geographical record examined in this paper reveals that the transformation of the lower Chandan-linked landscape has been shaped by multiple, interacting processes. These include geomorphic change, seasonality, settlement growth, road and rail infrastructure, drainage modification, industrial and domestic wastewater, urban waste generation, and institutional fragmentation. This paper does not support a simplistic claim that a formerly pristine river became a drain only because of a change in name. Naming is one strand within this wider socio-ecological history. The central hydrological implication is that Chanda, Andhari, Champa, and Jamuniya should not be treated as separate or unrelated drainage features. Rather, they are reach-specific names within a single, connected watercourse system that is branching and seasonally variable. The differentiation of names across the system may also have encouraged fragmented administrative attention, the upstream Chanda is more readily recognised as a *nadi*, whereas the town-side Champa and terminal Jamuniya are represented as *nalas*, and the Andhari reach near Kankaithi has largely ceased to be recognised as part of a river system. A system-level approach is therefore essential for restoration, flood management, water-quality monitoring, and waste-siting decisions.

The chronology of civic engagement is broader than a single campaign. Peepal The Resilience Lab mobilised public participation in 2017-18; Dainik Jagran made the river's disappearance a public community issue in 2019; and the SANDRP essays connected the Champa case to wider debates on river ecology and rejuvenation (Peepal The Resilience Lab, 2017-2018; Shukla, 2019; Shree, 2020a, 2020b, 2020c) ^[25, 26, 27, 28]. These initiatives show that local civil society, regional journalism, and environmental advocacy writings recognised the Champa as an endangered watercourse. This chronology strengthens the case for restoration that addresses not only present waste infrastructure but also the longer history of waste, sewage, reported industrial effluent, channel obstruction, and declining public recognition in the Champa corridor.

Terminology remains relevant within this broader history. Buchanan recorded a hydrographic network of individually named branches. The 1962 Gazetteer normalised "*Champanala*" while identifying the feature as a Chanda branch entering the Ganga. The bridge plaque demonstrates public-infrastructure use of "*Champa Nalla*" by 1966. The Survey of India later formalised "*Champa Nala*" and "*Yamuniya Nala*" for lower reaches while retaining *nadi*

upstream. The contemporary Kankaithi site reveals why channel marginalisation matters in practice.

Hydronymic recovery should be one component of a broader heritagesensitive riverrestoration strategy. Such a strategy should reconnect historical documentation with present hydrology, municipal waste planning, flood-risk management, water-quality monitoring, and community health.

A restoration and remediation programme for the Andhari - Champa system should include:

1. **Historical GIS reconstruction:** Georeference Buchanan's channel descriptions, Survey of India sheets, cadastral maps, satellite imagery, and present drainage lines to reconstruct likely historical and modern alignments.
2. **Formal watercourse delineation:** Survey the Andhari channel, associated depressions, culverts, drainage links, flood-prone zones, and waste-contact points across dry-season and monsoon periods.
3. **No-dumping and riparian buffer zones:** Establish and enforce mapped protective setbacks between waste-management operations and active or seasonal channel corridors.
4. **Legacy-waste safeguards:** Require biomining contractors to manage runoff, dust, odour, fire risk, leachate, residual rejects, and transport routes through transparent monitoring.
5. **Water, sediment, soil, and groundwater monitoring:** Sample upstream, dumpsite-adjacent, and downstream locations, plus nearby wells/handpumps where ethically appropriate and technically feasible.
6. **Industrial and sewage-outfall inventory:** Map silk-cluster dyeing units, domestic drains, discharge points, and seasonal waste-accumulation locations; distinguish verified outfalls from community reports.
7. **Community-based exposure assessment:** Record odour, flies, smoke, waterlogging, agricultural impacts, drinking-water sources, livelihood history, and local perceptions through structured interviews.
8. **Waste-stream reform:** Ensure source segregation, decentralised organic-waste treatment, material recovery, and scientific processing so that remediation of old waste is not undermined by continuing fresh dumping.
9. **Heritage interpretation and civic engagement:** Use municipal maps, local signage, school materials, public events, local-media partnerships, and academic research and environmental communication to communicate the historical hydrology of Champa, Chandan, Yamuniya, Andhari, and Kankaithi.

11. Conclusion

The movement from Champa and Champa Malini in the cultural geography of Anga to "Champa Nala" on modern maps is neither solely a story of linguistic change nor solely one of physical degradation. It is a historical process in which changing hydronyms, administrative representation, reduced ecological visibility, civic mobilisation, and material neglect have become intertwined. The documentary record traces a meaningful transition: from a historically remembered riverine landscape and a differentiated network of named channels to public-infrastructure inscription and official cartographic representation in the language of nala. This process may be understood as toponymic pejoration, the gradual lowering of a watercourse's perceived status when the generic term attached to its name acquires degrading urban associations. In the Champa case, the issue

is not that the word nala independently caused the dumpsite, sewage discharge, or ecological decline. Rather, its normalisation may have weakened the river's public, cultural, and administrative standing, making it easier for the lower channel to be treated as marginal drainage infrastructure rather than as part of a connected river system. The restoration of Champa therefore requires both material intervention and representational recovery, protection of flows and channels, control of waste and pollution, and renewed recognition of the watercourse's historical and ecological identity. The establishment of the Kankaithi dumpsite beside the Andhari watercourse appears to have shifted, rather than resolved, the geography of municipal waste disposal. Earlier, garbage dumping along the banks and bed of the Champa at Champanagar was highly visible to residents and travellers using the main urban transport corridors. The transfer of disposal activity to Kankaithi moved this burden to an upstream reach of the Champa-linked system, at a location comparatively removed from the principal transport network and therefore less immediately visible to the wider public. This shift presents both a warning and an opportunity. Legacy-waste biomining and any future CBG facility can contribute to a transition away from passive dumping only if they are accompanied by rigorous channel protection, transparent monitoring, pollution assessment, source segregation, community participation, and recognition of the Andhari as a water body within a historically connected drainage landscape. Recovering the Champa's historical memory is not merely antiquarian, it is a practical step toward restoring a watercourse that remains part of Bhagalpur's environmental infrastructure and cultural geography.

The historical-geographical reconstruction developed in this paper indicates that Chandan, Andhari, Champa, and Yamuniya should not be managed as separate or unrelated features. Rather, they are reach-specific names within a connected lower drainage system that ultimately joins the Ganga, notwithstanding the branching, migration, and transformation of individual channels over time. This system-level perspective is essential for effective governance. Waste accumulation or channel obstruction in the Andhari-Kankaithi reach should not be treated solely as a local drainage concern, because its hydrological and ecological implications may extend through the wider Champa-Yamuniya corridor.

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