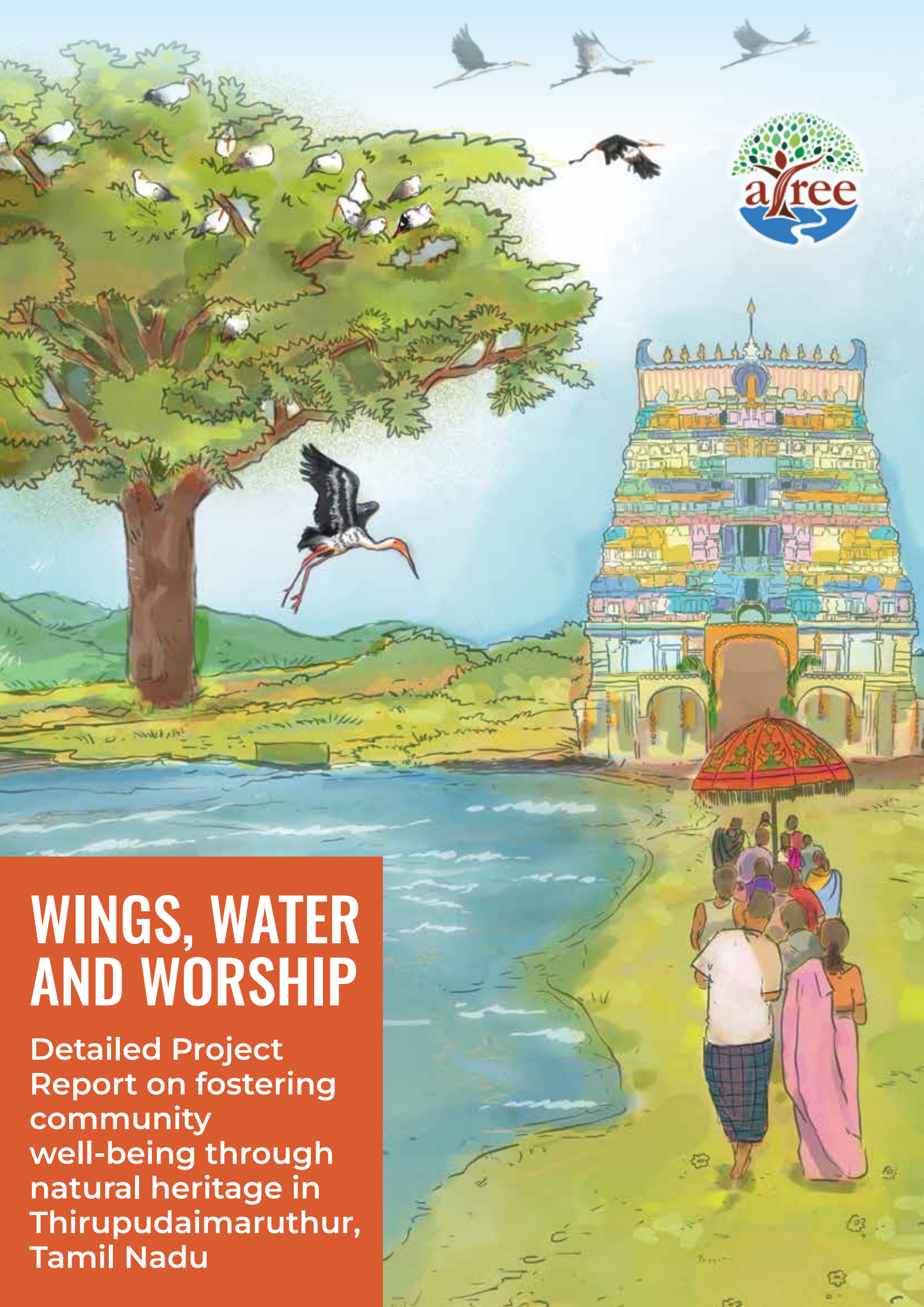
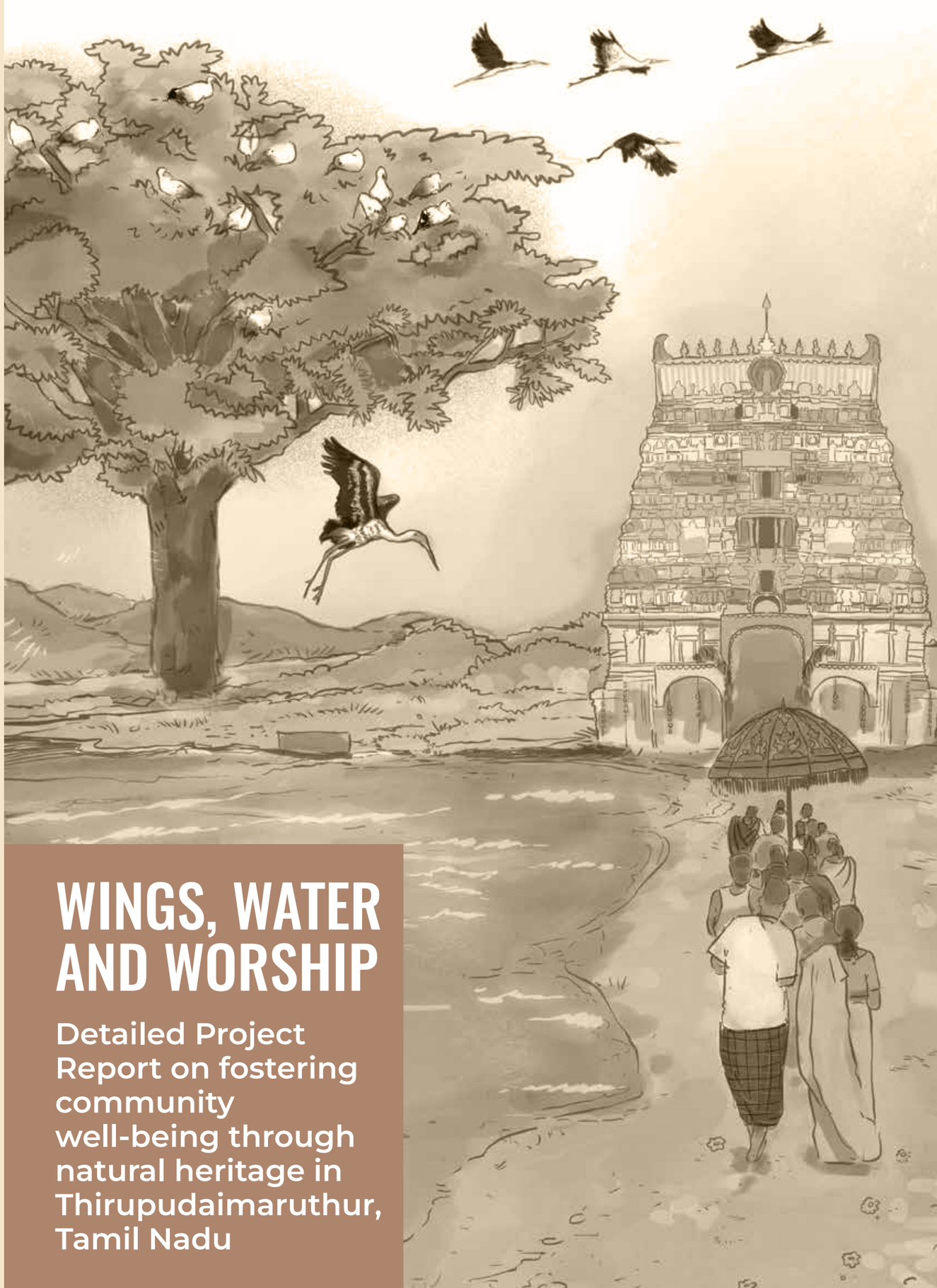


WINGS, WATER AND WORSHIP

Detailed Project Report on fostering community well-being through natural heritage in Thirupudaimaruthur, Tamil Nadu



WINGS, WATER AND WORSHIP

Detailed Project Report on fostering community well-being through natural heritage in Thirupudaimaruthur, Tamil Nadu

DECLARATION AND ETHICS STATEMENT

This report contains photographs and narratives based on personal interviews conducted with the full informed consent of the individuals featured. Consent was obtained in either oral or written form, according to the preference of the participants.

All interviews and photographs were collected following the ethical guidelines of the Ashoka Trust for Research in Ecology and the Environment (ATREE). Audio recordings were made only after participants granted explicit permission, and all such materials are stored securely to ensure confidentiality. Private identifiers, such as names, have been withheld to protect the identities and safety of all participants.

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This report has been made possible with funding from SurgoCap Partners and was facilitated by the Agasthyamalai Community Conservation Centre (ACCC) of ATREE.

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ACKNOWLEDGEMENTS

This report is the outcome of sustained collaboration and the shared commitment of many individuals. We extend our sincere gratitude to all those whose contributions made this work possible.

We are deeply indebted to the people of Thirupudaimaruthur, whose generosity and patience formed the foundation of this study. Their openness in sharing lived experiences, local histories, and ecological knowledge enriched every phase of our engagement.

We extend our heartfelt thanks to Narambunathan Anna for his unwavering support and for acting as a vital conduit between the research team and the community. His role in building trust was foundational to the project.

We are especially grateful to the Thirupudaimaruthur Panchayat for its dedicated institutional support. In particular, we acknowledge President Rani Subramanian, Vice-President S. Bala, Secretary E. Emalda Princy, and Motivator S. Shenbagavalli, whose facilitation was crucial in securing access to formal functions in the village.

We also thank the Self-Help Group (SHG) members, who extended their trust and shared valuable insights on women's collective action in the village. We remember with respect the late P. Essakkiammal, the bookkeeper who helped us understand the structure and functioning of SHGs in Thirupudaimaruthur.

We gratefully acknowledge Mercy Megala, Principal, and Muthulakshmi, Teacher, of Thirupudaimaruthur Primary School, for their contributions to our understanding of the local social landscape and its challenges.

We thank the Tirunelveli District Administration for its generous support and interest in the restoration of the Tamiraparani River, along with the Tamil Nadu Forest Department and the Hindu Religious and Charitable Endowments (HR&CE) Board for their assistance in this project.

Special thanks are due to Professor Ramachandran, folklorist and cultural historian, for sharing his deep expertise on Tirunelveli's traditional foodways, craft practices, and oral traditions. His insights brought valuable cultural depth to our analysis.

We are indebted to Professor María Arquero de Alarcón and her students from the Taubman College of Architecture and Urban Planning, University of Michigan, for their thoughtful engagement and perspectives on building interactive models for ecotourism.

We also thank Jaya Menon for her editorial review and constructive feedback, which strengthened the clarity and coherence of this report. In addition, we acknowledge Arun Kumar for video-documenting the Focus Group Discussions (FGD), providing an audiovisual complement to our field notes.

This project was made possible through the support of SurgoCap, whose commitment to research and social equity enabled us to undertake this work. We thank them for believing in the value of grounded, locally situated inquiry.

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EXECUTIVE SUMMARY

This report presents a detailed examination of how biodiversity conservation can be integrated with efforts to foster community well-being in Thirupudaimaruthur, a village panchayat in Tamil Nadu. Renowned for its nesting and roosting sites of various wetland bird species, the village is home to India's first conservation reserve, the Thirupudaimaruthur Bird Conservation Reserve (TBCR). In addition to its rich avifauna, the village also hosts the revered Narambunathar Swamy Temple, a 1,000-year-old Shaivite temple, and lies along the sacred Tamiraparani River, which serves as a vital source of water for agriculture-based livelihoods.

Currently, the village is facing critical livelihood challenges, particularly among women engaged in beedi rolling and others working in precarious daily-wage labour. These circumstances have created the impetus to explore a community-based ecotourism model as a means of enhancing livelihoods by leveraging the village's natural and cultural resources. However, for such a model to be sustainable, it is essential to address existing issues that impact both ecological and community health. These include poor solid waste management, inadequate sanitation and hygiene infrastructure, and pollution of the river, all of which pose long-term risks to the well-being of both people and the environment.

To develop this model, participatory research tools were employed, including structured in-depth interviews with community members and stakeholders, focus group discussions (FGDs), and surveys of tourists and pilgrims, to assess the feasibility of implementing community-based ecotourism in the village.

Drawing from these insights, the report outlines strategic action areas that include capacity building and awareness generation, integration of local knowledge, and infrastructural improvements. The outreach strategy was formulated in consultation with experts in sustainable tourism, waste management, water, sanitation, and hygiene (WASH), social and behavioural change, and biodiversity conservation. Finally, the report proposes a comprehensive budget for implementing these strategies as part of the Detailed Project Report (DPR).

ABBREVIATIONS

4

ACCC	Agasthyamalai Community Conservation Centre
ATREE	Ashoka Trust for Research in Ecology and the Environment
FC	Forward Caste
FGD	Focus Group Discussion
HR&CE	Hindu Religious and Charitable Endowments Department
IBA	Important Bird Area
ILO	International Labour Organization
IUCN	International Union for Conservation of Nature
M&E	Monitoring and Evaluation
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act, 2005
OBC	Other Backward Class
OC	Open Category
OD	Open Defecation
OECM	Other Effective Area-based Conservation Measures
PA	Protected Area
PDS	Public Distribution System
PF	Provident Fund
RVP	Ratnavel Pandian Colony
SBM	Swachh Bharat Mission
SDGs	Sustainable Development Goals
SEO	Social-Ecological Observatory
SHG	Self-Help Group
TBCR	Thirupudaimaruthur Bird Conservation Reserve
VWSC	Village Water Sanitation Committee
WASH	Water, Sanitation and Hygiene

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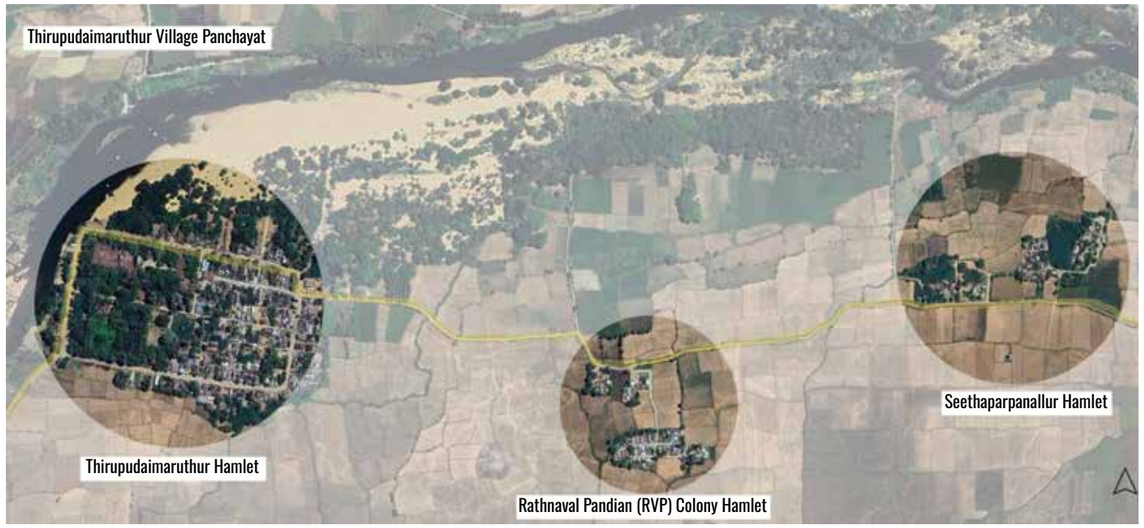
GLOSSARY

Annadhanam	A sacred offering of food.
Anganwadi	Government-run rural childcare and nutrition centre under the Integrated Child Development Services (ICDS) scheme.
Bambaram	Traditional spinning toy.
Beedi	A hand-rolled cigarette made with tobacco flakes wrapped in a *tendu* or ebony leaf *(Diospyros melanoxylon)*, commonly smoked in India.
E-seva	*electronic service*: a government platform offering citizens access to public services online or through service centres.
Kannamoochi	Tamil word for the hide-and-seek game.
Gilli Danda	A common game played in rural India using a long stick *(danda)* and a short, tapered stick *(gilli)*.
Kolam	Traditional decorative floor art made with rice flour or calcium carbonate.
Kovil	Hindu temple.
Mandapam	A pillared hall or pavilion found in Hindu temple architecture, particularly in South India.
Nandavanam	Temple garden or sacred grove.
Mahalir Thittam	Tamil Nadu government program promoting women's self-help groups and empowerment.
Padithurai	Bathing steps or access points by a river or a tank.
Pirandai	Veld grape plant *(Cissus quadrangularis)*.
Taluk	Sub-district administrative division.
Theppakulam	The temple tank used for religious and ceremonial purposes.
Theertham	Holy water offered to pilgrims in a temple.
Theerthavari	Ritual involving immersion in holy water.
Thaipusam	Tamil Hindu festival dedicated to Lord Murugan, observed during the Tamil month of *Thai*.
Vallarai	Indian pennywort plant *(Centella asiatica)*.
Velinattu paravai	Tamil term for migratory bird.

TERMINOLOGICAL CLARIFICATION ON THIRUPUDAIMARUTHUR

In this report, the term *Thirupudaimaruthur* may refer to either the village panchayat (the administrative jurisdiction) or the hamlet (the residential settlement). To maintain clarity, we use the terms *'village panchayat'* and *'hamlet'* consistently, depending on the context.



The three hamlets of the Thirupudaimaruthur village panchayat.

PARTICIPANT REFERENCE FORMAT

Participants cited in this report are identified using the format *(P#, Gender, Age, Occupation, Hamlet)*.

For example, *(P1, Female, 23, Student, R)* refers to Participant 1, a 23-year-old female student residing in Ratnavel Pandian Colony. The final letter denotes the participant's hamlet: R stands for Ratnavel Pandian Colony, T refers to Thirupudaimaruthur, and S indicates Seethaparapanallur.

This coding system is used consistently to maintain confidentiality and to provide locational context for each quote.

6

INTRODUCTION

The emphasis of ecotourism policy shall be on the active involvement of the local communities for their empowerment and socio-economic upliftment. The economic benefits of ecotourism shall be an incentive to the participating communities to conserve the natural heritage of Tamil Nadu.

Tamil Nadu Ecotourism Policy, Tamil Nadu Forest Department (2017)[1]

Ecotourism has emerged as an alternative model to conventional tourism. It is promoted as a means to address negative environmental impacts and to create opportunities for community empowerment. However, understanding the feasibility of ecotourism initiatives requires assessing the benefits shared with the local community and demands greater attention from a social-ecological point of view (Sproule, 1996; Kiss, 2004; Karanth and DeFries, 2010).

Despite its noble intentions, ecotourism must be mindful of its 'unanticipated consequences,' particularly the adverse effects of introducing new social and economic relationships into a place.[2] The collaboration in building this model must be rooted in experts who have experience in developing ecotourism, ensuring financial viability while also being equipped to resolve conflicts between individuals involved in ecotourism and those in the broader community.

Apart from the extent of benefits and livelihood opportunities for the community, the role of the community is not merely to engage as service providers in tourism but to establish and run a community-led model of tourism. This would mean community capacity-building is central to building community-led ecotourism, where the community has the ability to manage both socio-economic and environmental contexts (Moscardo, 2008; Aref and Redzuan, 2009). Alongside community development, it will ensure control and informed decisions concerning their livelihood. Ecological concerns and the relationship with economic viability are issues that need to be addressed in building a sustainable ecotourism model (Higham, 2007). The assessment should involve issues that arise due to increased waste generation and its burden on natural resources from the influx of tourists to a location. From a social and cultural perspective, it is essential to recognise that community-based ecotourism can lead to the commodification of local people and landscapes (Sonjai, et al. 2018), and the arrival of new visitors can disrupt the cultural and social structure of the community. Sometimes, a lack of control over tourist flows can overwhelm and disrupt communities' daily lives.

However, there are case studies in Protected Areas (PA); for instance, the Periyar Tiger Reserve in Kerala serves as a model where community engagement in biodiversity conservation has shown success. As noted by Chaudhari (2013), an environmental anthropologist, the reserve has undergone a shift in how local communities collaborate on conservation efforts while enhancing economic and social relationships. In this context, the local community possesses a strong sense of rights and access to the reserve, despite it being a protected area.

[1] https://cms.tn.gov.in/sites/default/files/documents/ecotourism_policy_2017.pdf. Accessed on July 31, 2024

[2] Sociologist Robert K. Merton, in his essay *"The Unanticipated Consequences of Purposive Social Action" (1936)*, discusses the unanticipated outcomes, both positive and negative, that need to be considered in any action.

Thirupudaimaruthur, where we propose a community-based ecotourism initiative, is located in the Tirunelveli District of Tamil Nadu. Lying on the banks of the Tamiraparani River, it is the nesting and roosting site for diverse species of birds, namely Painted Stork *(Mycteria leucocephala)*, Intermediate Egret *(Ardea intermedia)*, Little Egret *(Egretta garzetta)*, Cattle Egret *(Bubulcus ibis)*, and Spot-billed Pelican *(Pelecanus philippensis)*, making it ecologically and culturally significant.

In 2005, to safeguard the natural heritage of the panchayat, the late Supreme Court Judge Ratnavel Pandian, a native of Thirupudaimaruthur village, took the initiative to establish India's first bird conservation reserve. This pioneering effort aimed to protect the region's rich avian diversity and ensure the conservation of its unique ecosystem. The 2.84-hectare Thirupudaimaruthur Bird Conservation Reserve (TBCR) became the first community-based conservation reserve in India, allowing local people to participate actively in wildlife conservation and fostering a culture of stewardship within the community. The reserve promotes sustainable practices while ensuring the protection of the region's diverse bird species and their natural habitat.

A Painted Stork in its nest on a False Ashoka tree *(Polyalthia longifolia)* near the Conservation Reserve.

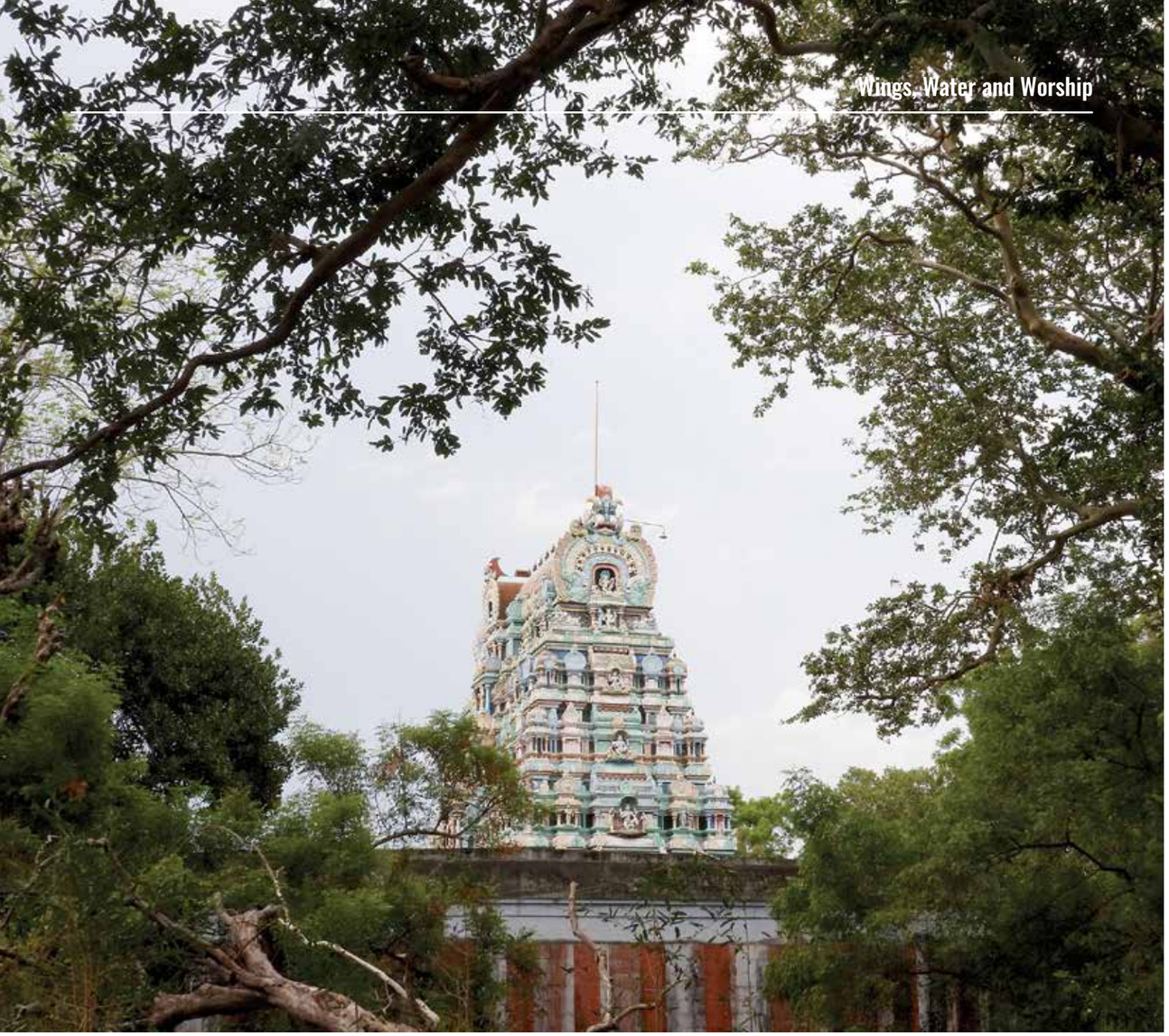
Spot-billed Pelicans nest in a tree in Thirupudaimaruthur hamlet.

With the introduction of models such as conservation and community reserves, there has been a noticeable shift in the approach to conservation in India. Previously, the fortress model dominated, in which local communities were seen as threats to biodiversity and were denied access to their traditional landscapes. In contrast, the current approach, post Wildlife (Protection) Amendment Act 2002, increasingly recognises the role of communities as active participants in conservation efforts (Rai, et al. 2021). This reserve falls under the Conservation Reserves of IUCN Category VI (Protected Area with Sustainable Use of Natural Resources), where the community co-manages the area with the Tamil Nadu Forest Department. The reserve is located on land managed by the Hindu Religious and Charitable Endowments (HR&CE) Department and is governed by the Tamil Nadu Forest Department.

Apart from the reserve, the village is known for its 1,000-year-old Narambunathar Swamy Temple. Located on the banks of the Tamiraparani River, it attracts pilgrims, historians, and architects for its religious significance as well as its murals and carvings (Deloche, 2011; Kannan, 2014). Interestingly, the Thirupudaimaruthur Bird Conservation Reserve (TBCR) falls within the temple *nandavanam* (temple garden) and is part of the Hindu Religious and Charitable Endowments Department (HR&CE).

Through an earlier project in 2023, which was commissioned by the Tamil Nadu government, a detailed project plan for the restoration of the social-ecological systems of the Tamiraparani River was developed by ATREE. As part of the project, the riverscape was divided into sub-systems, and sites were prioritised for restoration. These sites were envisioned as part of the Social-Ecological Observatories (SEO), a restoration framework based on a bottom-up approach that prioritises community engagement, with the administration serving in a facilitatory role.[3]

[3] Social-Ecological Observatories (SEO) are geographical sites that are examined from both social and ecological points of view.



Narambunathar Swamy Temple in the Thirupudaimaruthur hamlet.

Thirupudaimaruthur panchayat was identified as one of the pilot sites for SEO in the basin. The restoration framework included a combination of biophysical, economic, and socio-cultural factors in addressing river health. This holistic approach led the team to highlight the social and ecological concerns, as well as the rationale to delve deeper into the relationship between the two in the conservation of the environment.

Today, the village is facing critical concerns regarding livelihoods, especially for women involved in beedi rolling and those engaged in precarious daily wage labour. This has created the impetus for exploring the community-based ecotourism model as an instrument for livelihood enhancement, engaging the natural and cultural resources of the village. Ecotourism is now globally recognised as a 'powerful tool' for environmental conservation (Ministry of Tourism, Government of India, 2022).[4] A community-based model integrates nature and culture and broadens the scope of the community's role by bringing together economic, social, and ecological well-being while also enhancing sustainable livelihoods.

[4] https://tourism.gov.in/sites/default/files/2022-09/National%20Strategy%20for%20Ecotourism%202022.pdf. Accessed on July 31, 2024.

INTEGRATING CONSERVATION AND COMMUNITY

In recent decades, it has been contended that conservation and community are not opposed to each other (Kothari, et al. 1995). Thirupudaimaruthur stands as a testament that both nature conservation and cultural heritage can coexist seamlessly, demonstrating that ecological conservation can be integrated with the everyday lives of local communities. This unique balance is essential for creating sustainable models of conservation that respect both the environment and culture.

Conservation reserves and community conservation reserves under the Wildlife Protection Act, biodiversity heritage sites under the Biodiversity Act, 2002 and, more recently, Other Effective Area-based Conservation Measures (OECMs) are emerging as alternative frameworks that facilitate the integration of ecological preservation and community involvement. These models are designed to address the challenges of conserving biodiversity while ensuring that local communities actively participate in and benefit from conservation efforts. By recognising the value of both natural ecosystems and culture, these approaches offer a holistic view of sustainable conservation, helping to bridge the gap between environmental protection and socio-economic development. While these models have varying statutory status, true success lies in a bottom-up approach where the community is actively engaged. When there is a participatory view towards conservation, local people take ownership, leading to more effective and sustainable outcomes that balance their needs with conservation goals.

In India, the role of the community in conservation has evolved with the introduction of conservation reserves and community reserves. Here, local participation in biodiversity conservation is more involved, and the fortress model of conservation is being challenged. It is essential to understand how people perceive and engage with conservation efforts today. The implications of conservation reserves must be explored for both people and the environment, and importantly, the meaning of "community" in conservation must be critically analysed. For instance, earlier work in this context has shown that there are multiple interest groups within communities, marked by differential power relations, and thus communities cannot be viewed as homogenous entities (Agrawal and Gibson, 1999; Jones 2005). In this context, a political ecology framework is useful to understand people's relationship with the environment, where conservation and the impacts of environmental action are inherently seen as political and unequal (Adams and Hutton, 2007).

THIRUPUDAIMARUTHUR TODAY

Beedi rolling, a common occupation among women in the village, exposes them to harmful tobacco dust and smoke, leading to serious health issues such as tuberculosis, cancer, and anaemia. These risks, coupled with low income and a lack of job security, emphasise the need for alternative livelihoods to safeguard their health and well-being from occupational hazards. According to the International Labour Organisation (ILO), exposure to beedis, in addition to the diseases mentioned above, also increases the risk of certain types

of postural problems (such as neck and lower back pain), abdominal pain, eye problems, a burning sensation in the throat, cough, asthma, tuberculosis, bronchitis, excessive menstrual bleeding, irregular and painful menstrual cycles, leucorrhoea, anaemia, body aches associated with anaemia, and dizziness from constant exposure to tobacco dust. Furthermore, the harmful effects of tobacco dust inhalation amplify the risks for expectant women (Gupta and Asma, 2008).

Solid waste and wastewater management, sanitation, and hygiene, and river pollution indirectly affect the village's ecological health and its future in building sustainable community-based ecotourism. Here, public health relies on access to clean water, functional waste management, and pollution-free environments, all of which are tied to the health of humans and the local ecosystem. Ecological health, in turn, is influenced by how the community interacts with its environment, manages natural resources, and addresses waste management.

While community-based ecotourism holds potential as a supplementary income source, it cannot succeed unless foundational issues like environmental degradation, poor sanitation infrastructure, and waste mismanagement are resolved. This creates an urgent need to ensure an integrated approach that prioritises ecological restoration, public health improvements, and sustainable economic growth.

Hence, we propose a framework that connects public health, ecological health, and community-driven economic growth, ensuring that actions to improve one benefit the others, creating a holistic, resilient, and sustainable model. The pathways for this framework are co-developed with experts experienced in implementing and monitoring these actions at a rural scale. These collaborations are intended to include clear capacity-building provisions for the community, with an exit strategy in place for them.

For consultation on ecotourism and the establishment of a sustainable community-based ecotourism model, the ATREE team will collaborate with Suyatri Community Tourism, an organisation experienced in building sustainable ecotourism projects nationwide. Regarding solid waste management, sanitation, and hygiene workshops and campaigns, the collaboration will involve two organisations: the Indian Institute for Human Settlements (IIHS) and Sanitation First. For a behavioural change in sanitation and hygiene, and to facilitate tourism through storyboards and signboards, the Spaces + Dialogues team, a group of architects and design experts, will contribute to design and implementation. Finally, to ensure aid for injured birds in the reserve and to conduct workshops on bird conservation, the non-profit organisation Avian and Reptile Rehabilitation Centre (ARRC) will collaborate with the ATREE team.

Women rolling beedis as a Painted Stork nests in a tree behind the home.

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OVERARCHING GOAL

This initiative aims to establish a holistic, community-driven model that integrates ecological sustainability with community well-being in Thirupudaimaruthur.

At its core, the initiative promotes a community-led ecotourism framework that advances both conservation and sustainable local development while strengthening livelihoods and resilience. Central to this approach are efforts to restore river health, encourage environmental stewardship, and improve waste management systems. These goals are underpinned by the recognition that ecotourism cannot succeed without first addressing key challenges related to water, sanitation, and hygiene (WASH).

PATHWAYS TO SUSTAINABLE CONSERVATION AND LIVELIHOODS

- Build community capacity in conservation, wildlife rescue, and sustainable tourism management to ensure lasting ecological and economic outcomes.
- Establish a community-led ecotourism model that supports livelihood generation while protecting biodiversity and cultural heritage.
- Implement effective waste and water management systems to safeguard environmental and public health.
- Improve sanitation infrastructure and hygiene practices through active community engagement, enhancing both sustainability and the visitor experience.

BIOPHYSICAL AND CULTURAL SETTING

The study focused on Thirupudaimaruthur Village Panchayat located in Cheranmahadevi Taluk, Tirunelveli District, Tamil Nadu. Covering an area of 233.62 hectares, the village is situated at the confluence of the Tamiraparani and Ghadana rivers, with the Gadana being a tributary of the Tamiraparani. The Tamiraparani River, also known as Porunai, is a perennial river that originates from Agastyarkoodam Peak in the Pothigai Hills of the Western Ghats above Papanasam in Cheranmahadevi Taluk.

In Thirupudaimaruthur, the river serves as the lifeline of the community. The surrounding landscape with paddy fields and mature tree cover supports rich biodiversity, including a variety of bird species (refer to Appendix 8). Afforestation of the riverine area took place in seven phases beginning in the early 2000s, further enhancing the village's ecological richness. The nearest towns are Veeravanallur, 5 km away and Mukkudal, 3 km away.

The community is predominantly agrarian and primarily dependent on paddy and banana cultivation for its livelihoods. The region receives light rainfall during the southwest monsoon from June to August and moderate to heavy rainfall during the northeast monsoon from September to December.

Administratively, the village is divided into three hamlets, namely Thirupudaimaruthur, Ratnavel Pandian (RVP) Colony and Seethaparpanallur.

THIRUPUDAIMARUTHUR HAMLET

Thirupudaimaruthur is the largest hamlet, with a population of 1,124, comprising 486 males and 638 females. It is surrounded by the river, paddy fields, the temple *nandavanam* (sacred grove), and afforested areas, forming a landscape deeply intertwined with agriculture and biodiversity.

The hamlet contains several key public infrastructures, including the Panchayat Office, Public Library, Village Revenue Office, Public Distribution System (PDS) outlet, Government Primary School, Anganwadi (rural childcare and nutrition centre), Self-Help Group (SHG) Meeting Room, and a Community Hall. It is also home to the Thirupudaimaruthur Bird Conservation Reserve (TBCR) and the revered Narambunathar Temple, which plays a central role in the cultural and religious identity of the village.

The hamlet comprises caste groups such as Thevar (Other Backward Class – OBC), Karakattu Pillai (Open Category – OC), Saiva Pillaimar (OC), Yogeeswarar (OBC), Asari (Backward Class – BC), and Iyer (Forward Caste – FC), with Thevar forming a significant portion of the population. Most men are engaged in agriculture, primarily cultivating paddy and banana, while others take up work under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005 or seek employment in nearby towns. Women are mostly homemakers, though many support their families by participating in beedi rolling and MGNREGA work.

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Institutional mapping of Thirupudaimaruthur hamlet

Afforested zone River sand Built structures Agricultural fields Road/access

Institutional mapping of the RVP Colony Cluster

RATNAVEL PANDIAN COLONY (RVP) HAMLET

The Ratnavel Pandian Colony (RVP) hamlet was named after the late Justice Ratnavel Pandian. It has a population of 243 (112 males and 131 females) and is primarily inhabited by the SC communities, Pallar and Paraiyar.

The hamlet is surrounded by paddy fields and was established by reclaiming agricultural land. As a result, it is situated on a raised concrete platform within the fields. The community has limited infrastructure, with only an e-Seva office and a sub-anganwadi.

Most men and women in the hamlet are involved in agriculture and MGNREGA work, with women also engaged in beedi rolling as an additional source of income.

SEETHAPARPANALLUR

Seethaparpanallur is partially divided between the Thirupudaimaruthur Village Panchayat and the Harikesanallur Village Panchayat. It has a population of 112 (47 males and 65 females). Around 30 households in this hamlet fall under the Thirupudaimaruthur Panchayat, and all belong to the Thevar community.

Until 2024, the hamlet did not have a piped water supply and depended entirely on the river for drinking water, bathing, and other household needs. The lack of public infrastructure and proper roads remains a major challenge for residents, further limiting their access to essential services. The hamlet is surrounded by paddy fields on three sides and a river on the fourth.

Most men in the hamlet are engaged in agriculture or commute to nearby towns for work. Women are primarily involved in agriculture and beedi rolling, contributing to the household economy despite the limited opportunities available within the hamlet.

Institutional mapping of Seethaparpanallur Cluster

Afforested zone River sand Built structures Agricultural fields Road/access

Table 1: Comparative Profile of the Three Hamlets

Aspects	Thirupudaimaruthur	RVP Colony	Seethaparpanallur
Population	1,124 (486 ♂ and 638 ♀)	243 (112 ♂ and 131 ♀)	112 (47 ♂ and 65 ♀)
School and Anganwadi	Government Primary School and Anganwadi	Sub-Anganwadi	None
Community Toilets	Three community toilets	None	None
Other Public Institutions	Panchayat office, PDS outlet, Community Hall, Marriage Hall, SHG Building, MGNREGA Building, Library	e-Seva Centre	None
Pilgrim Institutions	Nine (including Narumbunathar Swamy Temple)	Two small temples	One small temple
Biodiversity Hotspots	Temple *nandavanam*, TBCR, Afforested areas	Afforested areas	None

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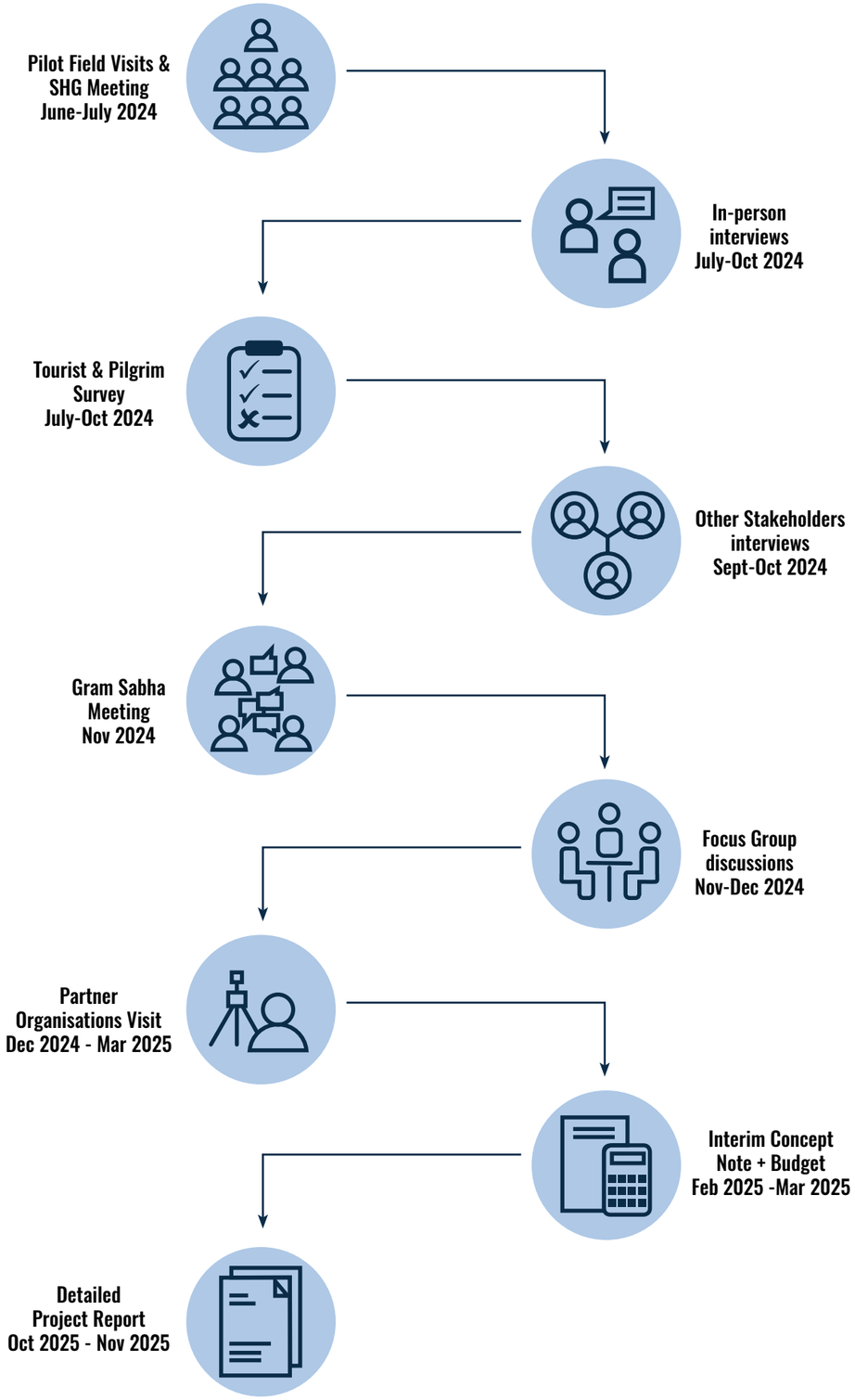
APPROACH

EXPLORATORY FIELD VISIT

On July 8, 2024, the team made its first visit to the field site, Thirupudaimaruthur Panchayat. Upon entering the area, two team members, both from the community, pointed out the nesting sites of Painted Storks *(Mycteria leucocephala)*, perched high in Mahua (Madhuca longifolia) trees, locally known as *Illupai maram*. In the same tree, Spot-billed Pelicans *(Pelecanus philippensis)* were nesting, and Indian Flying Fox bats *(Pteropus medius)* were roosting. The entire tree was covered in white-coloured guano (bird droppings), and the air was filled with a cacophony of bird calls.

Coincidentally, the team was informed of a Self-Help Group (SHG) meeting taking place at the Panchayat office, with around 30–40 women in attendance. The team took the opportunity to introduce the project to the group. The women expressed interest and shared concerns such as limited access to healthcare, infrequent public transport, and the unpleasant odour of bird guano near the government primary school. These concerns underscored key issues to be incorporated into the study. Moreover, this initial interaction proved crucial in building rapport with the community, which greatly aided the progress of the fieldwork.

At the SHG meeting, the team formally introduced the project.



The first phase of the project began in July 2024 with efforts to ensure inclusive participation from community members, representing all genders, classes, occupational groups, and castes.

In this process, S. Narambunathan, a former watcher at the reserve, proved to be a key figure. Having earned the community's trust over the years, he was highly respected and held in great esteem. He played a critical role in identifying respondents for in-depth interviews and facilitating community consent for participation, making him an indispensable part of the research process. Participatory tools were employed to assess the feasibility of a community-based ecotourism model and current waste management practices.

PRIMARY DATA COLLECTION AT THE HOUSEHOLD SCALE

Primary data was collected at the household level through structured interviews administered to 100 individuals across the Thirupudaimaruthur Panchayat. The interviews focused on participants' lives, aspirations, relationships with the river, local birdlife, the conservation reserve, and waste management practices. Women were generally more accessible for interviews, while men tended to be more reserved and reluctant to speak with female researchers. Male participants were interviewed either early in the morning before leaving for work or in the evening after returning home.

The 100 participants, drawn from a total population of 1,479, included a diverse mix of farmers, beedi rollers, MGNREGA workers, fishermen, small business owners, elderly residents, women, and youth. All three hamlets were represented in the sample.

The interviews covered social and cultural dimensions, including caste representation. As the Thevar community constitutes the dominant caste in the village, their representation in the sample was correspondingly higher. Participants from the Brahmin community and youth from the RVP Colony and Seethaparpanallur were underrepresented, primarily due to their low numbers and limited availability during the study period.

Conducting an interview with the tea-seller in Thirupudaimaruthur hamlet.

Table 2: Demographic Profile of Participants by Hamlets

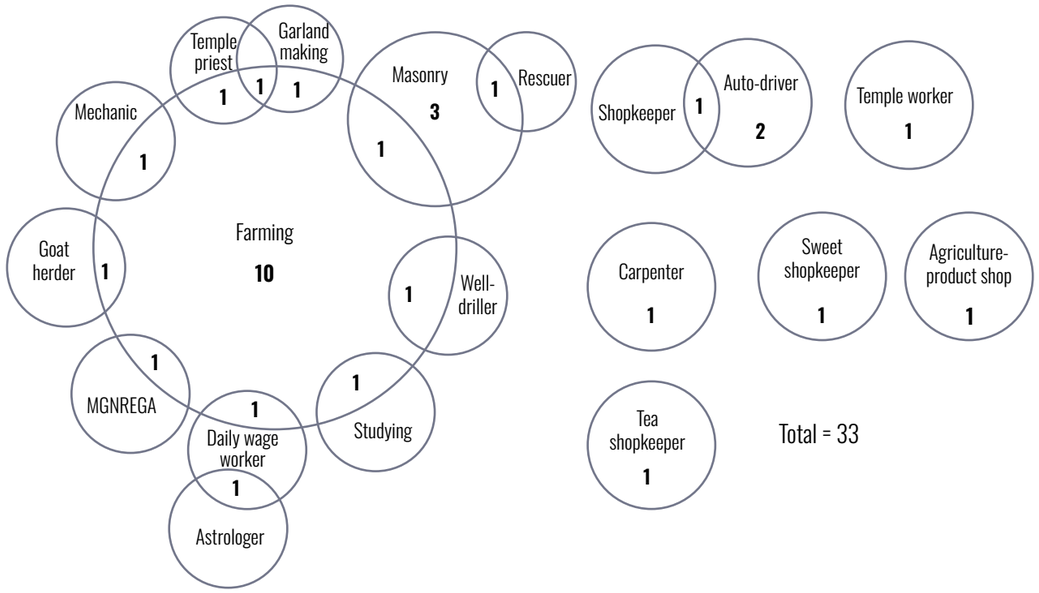
Hamlet	Male Youth (18-30 yrs)	Female Youth (18-30 yrs)	Male (31-70 yrs)	Female (31-70 yrs)	Male	Female	Total Participants
Thirupudaimaruthur	5	7	28	26	33	33	66
RVP Colony	0	6	6	9	6	15	21
Seethaparpanallur	2	0	2	9	4	9	13
Total	**7**	**13**	**36**	**44**	**43**	**57**	**100**

Table 3: Caste Profile of Participants by Hamlet

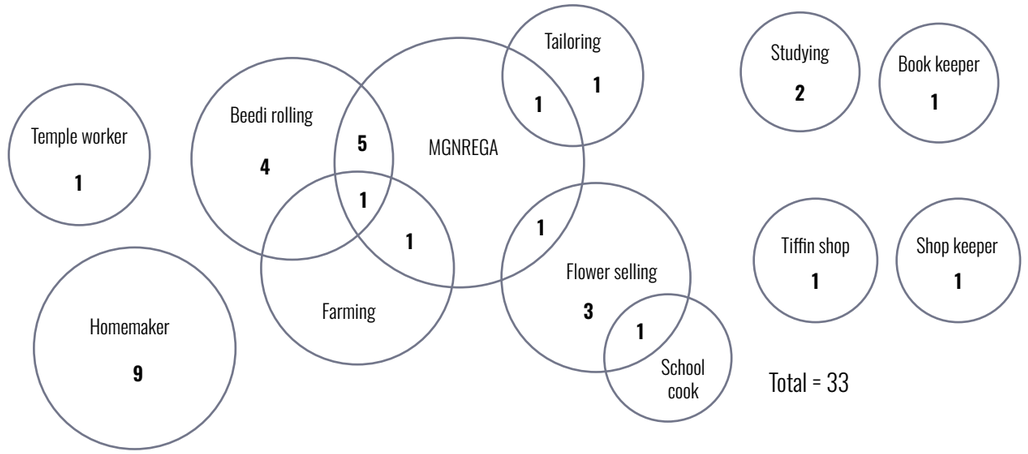
Hamlet	Caste	Male	Female	Total
Thirupudaimaruthur	Thevar	25	28	53
	Saiva Pillaimar	4	2	6
	Karakattu Pillai	1	1	2
	Yogeeswarar	1	1	2
	Asari	2	1	3
RVP Colony	Paraiyar	1	8	9
	Pallar	5	7	12
Seethaparpanallur	Thevar	4	9	13
Total		**43**	**57**	**100**

Occupation Profile of the Respondents for the Interview:

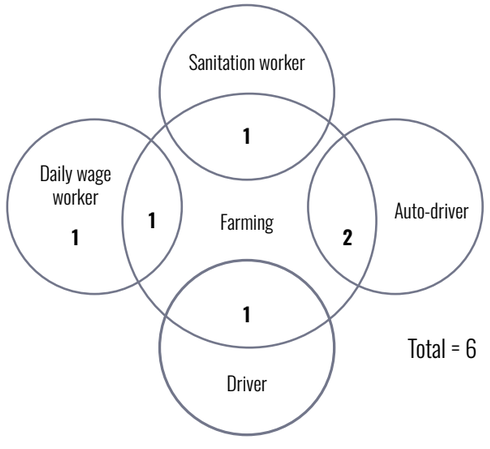
Thirupudaimaruthur Occupation Profile (Male)



Thirupudaimaruthur Occupation Profile (Female)

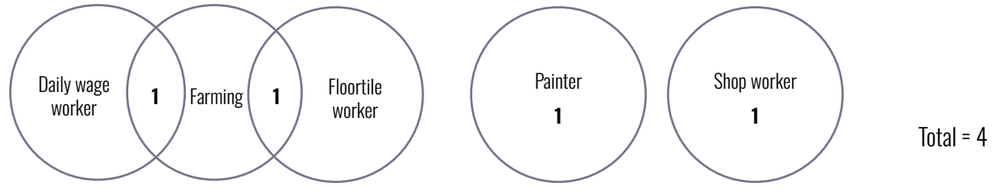


Ratnavel Pandian Colony Occupation Profile (Male)

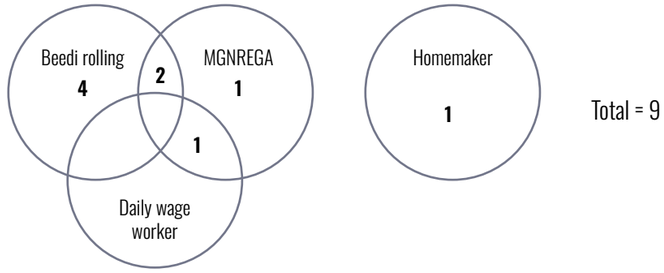


Ratnavel Pandian Colony Occupation Profile (Female)

Seethaparapanallur Occupation Profile (Male)



Seethaparapanallur Occupation Profile (Female)



In our in-depth interviews, we included the following activities:

Participatory Village Mapping: A visual representation of the village layout, resources, and key landmarks was created with input from the community.

Visual mapping of the village by a participant during the exercise.

A Day in the Life Of: This activity documented a typical day in the lives of community members in different roles, highlighting their daily experiences and interactions[5].

These activities helped gather comprehensive insights and co-create innovative solutions with the community to ensure the sustainability and success of the ecotourism model.

Card-Sorting: Participants were shown cards with pictures and asked to share their thoughts. The visual cues served to prompt responses and encourage them to reflect on and share aspects of their daily lives.

INSTITUTIONAL ENGAGEMENT

We conducted in-depth interviews with key stakeholders involved in the conservation and development of Thirupudaimaruthur village. These included office bearers from the Forest Department, Panchayat representatives, sanitation workers, and doctors from the Adyar Cancer Institute.

Moreover, to reach the community on a larger scale as well as higher-level officials, on November 23, 2024, ATREE's Agasthyamalai Community Conservation Centre (ACCC) presented a tentative proposal for community-based ecotourism during the Gram Sabha meeting held as part of Local Governance Day.

[5] For instance, one woman described her daily routine as beginning at 6:00 a.m. with house cleaning, followed by preparing breakfast and lunch for her children and husband. After dropping the children at school by 9:30 a.m., she continued with household chores such as washing vessels and clothes. Around noon, she bathed in the canal and had lunch, after which she worked on tailoring until 3:00 p.m. The late afternoon was spent watching television or speaking on the phone. She began preparing dinner around 7:00 p.m. and went to bed by 10:00 p.m.

The meeting was attended by several officials, including the Sub-Collector of Cheranmahadevi Revenue Division, the Tahsildar, and representatives from various government departments, Rural Development, Medical, Agriculture, Mahalir Thittam, and Veterinary. On the community side, attendees primarily included women and residents from the Thirupudaimaruthur hamlet.

The main agenda of the meeting was to discuss ongoing issues and activities at the village level. During the session, an outline for implementing a community-based ecotourism model was presented. We elaborated on the research process, and the community and team identified key sites for intervention and outlined the necessary steps for successful implementation. These interventions included waste management, river health, and improvements in public health within the community.

The initiative received appreciation from both officials and community members for its focus on sustainable development and ecotourism.

Project Coordinator M. Mathivanan addressed the Gram Sabha on 23 November 2024 with the ecotourism proposal.

Table 4: Institutional Engagement Overview

Institutional-Level Respondents	No. of People
Forest Department (Watcher, DFO)	2
Sanitation Workers	2
Panchayat Office Bearers (Secretary, President, Vice-President, Motivator)	4
Researchers from Other NGOs	2
Total	**10**

ENGAGEMENT WITH TOURISTS AND PILGRIMS

Over six months, semi-structured interviews were conducted with 24 individuals, including tourists and pilgrims, who visited Thirupudaimaruthur village. The objective was to gather insights into their experiences, perceptions of the bird reserve, and interest in prospective community-based ecotourism initiatives.

INCLUSIVE STAKEHOLDER ENGAGEMENT

Between October and November 2024, Focus Group Discussions (FGDs) were conducted with community members, local service providers, and key stakeholders to gather perspectives on waste management and the potential for implementing a community-based ecotourism model in Thirupudaimaruthur.

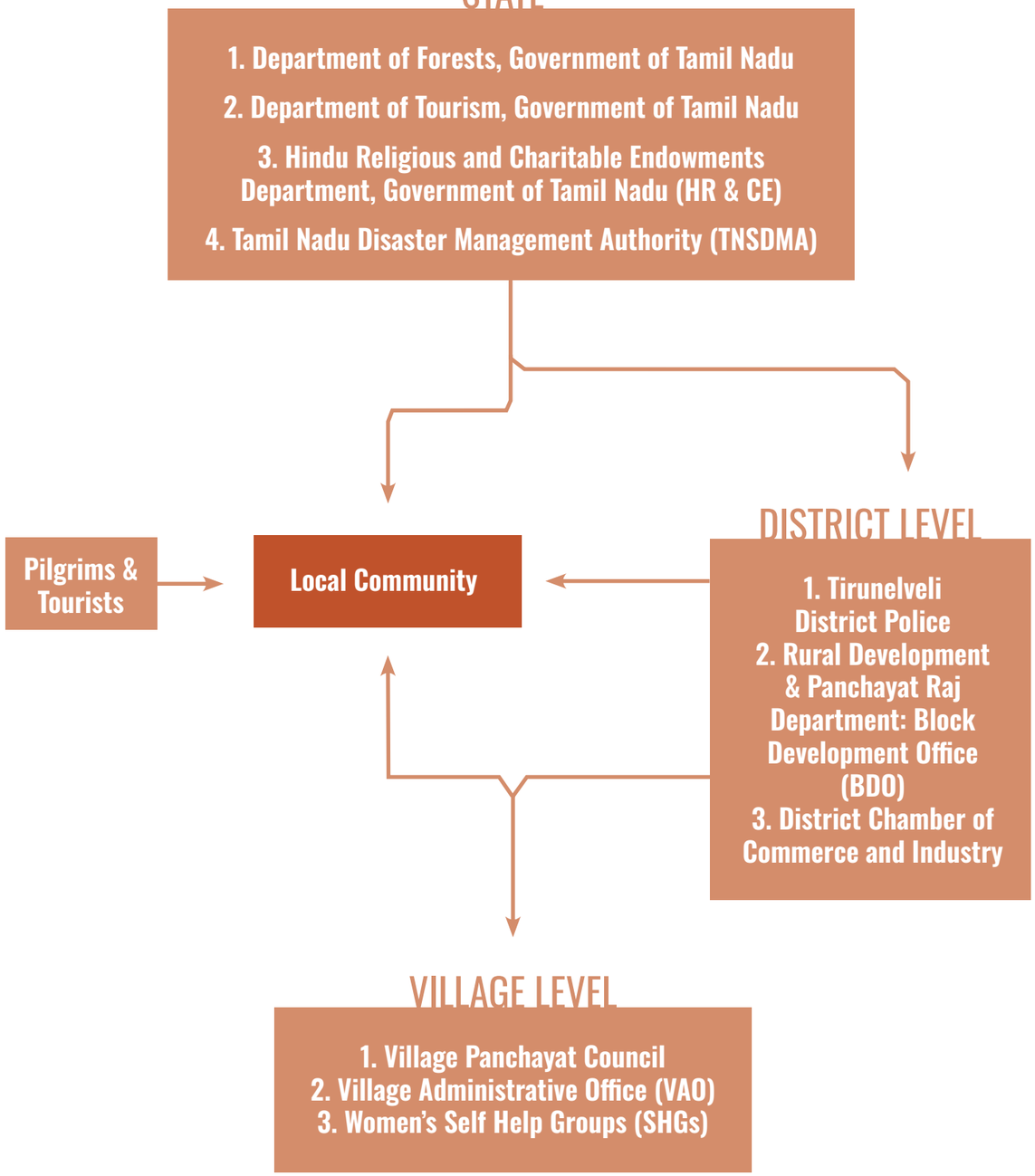
Three FGDs were organised, engaging representatives from the general community, the Panchayat, the Forest Department, and individuals identified as prospective service providers. The objective was to assess the extent of collective interest and community alignment regarding the proposed ecotourism initiative.

These discussions were held on 24 November, 30 November, and 1 December 2024 at the Panchayat Office in the Thirupudaimaruthur hamlet. All three hamlets within the village were represented. However, participation from the Seethaparpanallur hamlet presented certain logistical challenges, primarily due to the smaller population and the prevalence of daily wage labour, which made it difficult for individuals to travel and attend group sessions. To ensure inclusive participation, repeated efforts were made to convey the purpose of the discussions and to assure participants that their privacy, perspectives, and consent would be respected throughout the process.

Focus Group Discussion at Thirupudaimaruthur Panchayat office.

STAKEHOLDER MAPPING

10



11

COLLABORATIONS

We intend to engage with partner organisations for expert consultation on ecotourism, avian rehabilitation, social behaviour change, waste and water management, sanitation, and hygiene. These collaborations with domain specialists are integral to our strategy, ensuring that all planned interventions are contextually appropriate, technically sound, and effectively aligned with the overarching goals of this project.

INDIAN INSTITUTE FOR HUMAN SETTLEMENTS (IIHS)
The Indian Institute for Human Settlements (https://iihs.co.in) is a national education and research institution committed to addressing the challenges of India's urban transition through interdisciplinary research, practice, and capacity building. In this project, IIHS supported the development of solid waste management strategies and infrastructure planning, aligning with their mission to promote sustainable human settlements.

SANITATION FIRST
Sanitation First (https://www.sanitationfirstindia.org) is an NGO dedicated to improving sanitation and hygiene in underserved communities through behaviour change, infrastructure, and capacity-building initiatives. Their contribution to this project will include designing WaSH (Water, Sanitation and Hygiene) workshops, delivering public awareness campaigns, and offering a baseline assessment toolkit to guide community sanitation efforts.

SPACES + DIALOGUES
Spaces and Dialogues is a design collective focused on community-engaged spatial practices, using visual communication and environmental storytelling. They contributed to the project by creating signboards and warning signage that blended local context with accessible design, supporting both ecological awareness and visitor orientation.

SUYATRI COMMUNITY TOURISM
Suyatri Community Tourism is a travel organisation focused on mindful and regenerative travel experiences rooted in local culture, ecology, and community participation. Their consultation shaped the ecotourism strategy in this report, helping articulate a model grounded in sustainable, community-led practices.

AVIAN AND REPTILE REHABILITATION CENTRE (ARRC)
The Avian and Reptile Rehabilitation Centre (https://www.wildarrc.org/), based in Bengaluru, specialises in the rescue, rehabilitation, and conservation of wildlife. Their support was instrumental in designing field-level interventions for responding to bird injuries within the Thirupudaimaruthur Bird Conservation Reserve.

LEARNINGS

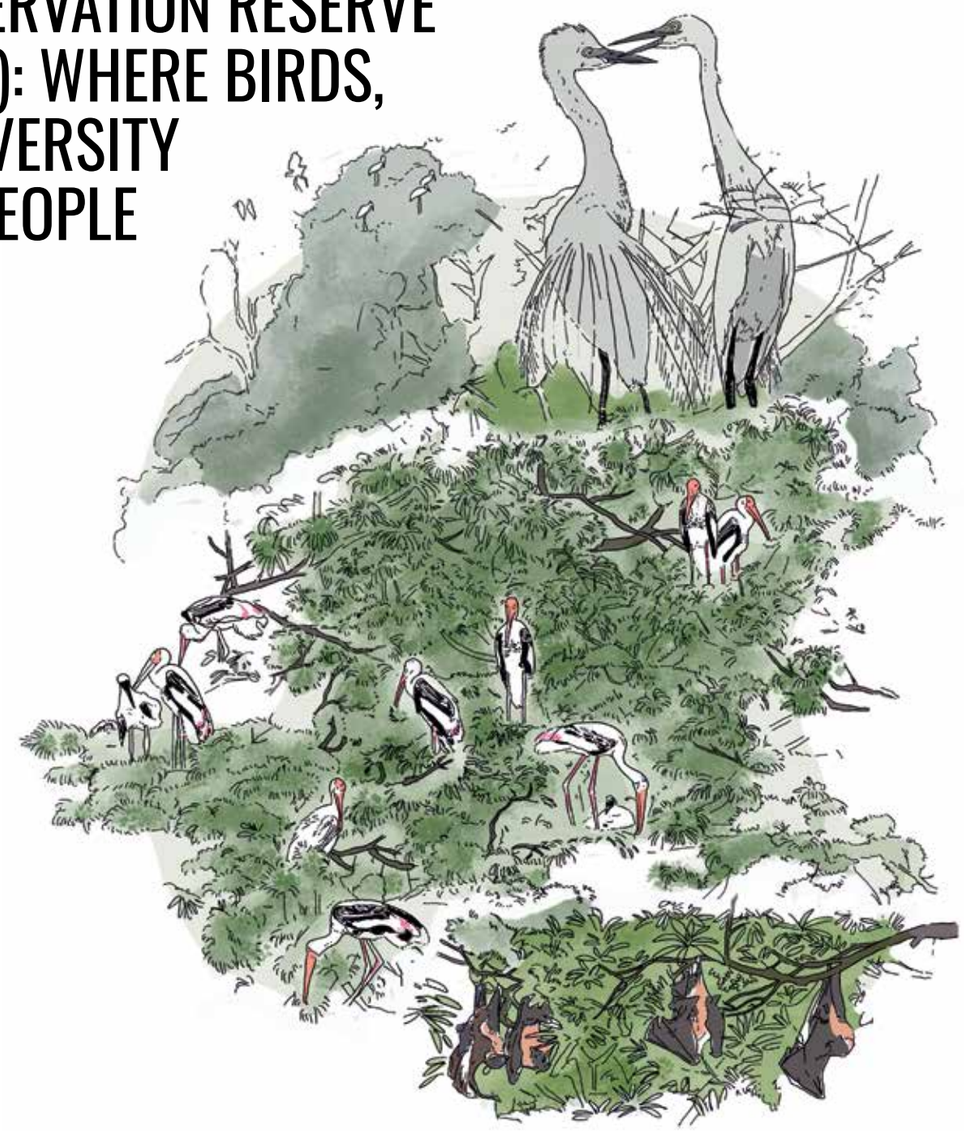
12

Thirupudaimaruthur Panchayat is renowned for its rich biodiversity, cultural heritage, and the Tamiraparani River, which flows through the village.

The focus is on how the community interacts with biodiversity, the river, and the temple. Furthermore, it examines the existing livelihoods in the village and the challenges to building a community-based ecotourism model.

12.1

THIRUPUDAIMARUTHUR BIRD CONSERVATION RESERVE (TBCR): WHERE BIRDS, BIODIVERSITY AND PEOPLE MEET



Established in 2005 under the guidance of the late Supreme Court Judge Ratnavel Pandian, the Thirupudaimaruthur Bird Conservation Reserve (TBCR) was created to safeguard the village's natural heritage. Encompassing 2.84 hectares, the reserve comprises temple land belonging to the Narumbunathar Swamy temple and falls under the jurisdiction of the Hindu Religious and Charitable Endowments Department.

TBCR is the second Important Bird Area (IBA) identified in Tirunelveli district, following Koonthankulam Bird Sanctuary (Sekhsaria, 2021).[6] As a designated reserve, it plays a vital role in the conservation of local biodiversity, including avian, bat, and plant species, while simultaneously serving as an active site of pilgrimage. This dual function results in regular interactions between human and non-human species.

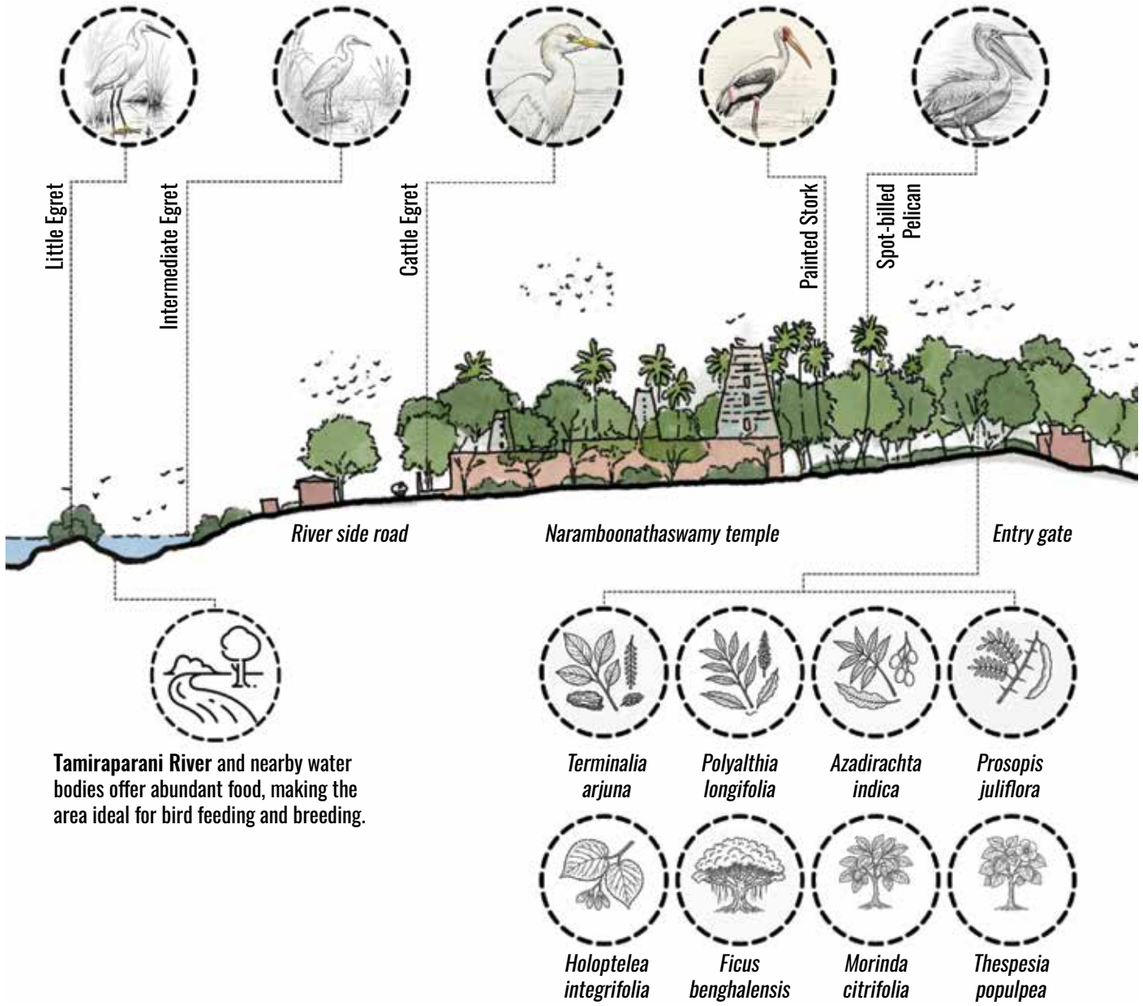
Historically, a small portion of agricultural land within the reserve was cultivated with flowers for temple rituals. This practice was discontinued following the death of Judge Ratnavel Pandian. Interviews with residents indicate that, due to the limited size of the plot, there is little community interest in resuming flower cultivation.

WHY DO BIRDS COME HERE?

Birds such as the Spot-billed Pelican, Painted Stork, Little Egret, Cattle Egret, and Intermediate Egret visit, breed, and roost in the Thirupudaimaruthur hamlet annually, owing to several ecological factors. The tall, mature trees in the village offer ideal roosting and nesting sites that remain undisturbed by the local community. Surrounding forests and paddy fields provide ample nesting materials, while the Tamiraparani River, along with nearby lakes and canals, ensures a reliable and abundant food supply. These conditions make the area particularly conducive to feeding and breeding for the birds.

[6] https://www.thehindu.com/features/magazine/Pankaj-Sekhsaria-captures-the-essence-of-Tamirabarani/article59841270.ece
Accessed on 22 January 2025.

Wings, Water and Worship



Painted storks roosting on a mahua tree inside the temple premises.

LOCAL ECOLOGICAL KNOWLEDGE ABOUT BIRDS

Most residents are generally aware of the various bird species that visit their village each year. However, the residents of Thirupudaimaruthur hamlet exhibit a deeper familiarity and affinity with these birds, having observed their roosting and breeding behaviours over several decades. In contrast, residents of RVP Colony and Seethaparapanallur typically encounter the birds only during visits to Thirupudaimaruthur, resulting in comparatively lower levels of awareness and connection.

State-installed signboards leading to the village.

Wings, Water and Worship

In a population little over 1000 people, 14 out of 70 respondents from Thirupudaimaruthur hamlet noted that the birds nest in large, mature trees and, consequently, expressed interest in planting more trees to support bird conservation efforts.

Nearly fifty per cent (44 out of 100) of the respondents were able to identify specific bird species by name. However, all respondents were familiar with the Painted Stork, Spot-billed Pelican, and various Egret species. They were also able to recognise the Indian Flying Fox (bats) by their distinctive features, as a large bat roost exists near the bird nesting site. While most residents were aware that the birds arrive around the end of the Tamil month of Thai (February) and depart during the month of Aadi (August), 83 out of 100 respondents believed that the birds migrate from Australia and referred to them as “velinattu paravai” (foreign birds). However, these are resident birds that move locally between different sites with the larger region.

The birds come to the village because there are a large number of trees and an abundant food supply for their young. They feed their young ones from the river. When they fly, the water splashes onto the ground as if it is raining. Earlier, the birds were found only at the temple and near the *theppakulam*, but now they are seen on every tree.

P93, Male, 62, Farming, T

I don’t cut the trees in my backyard despite all the complaints I receive about the stench from bird droppings. My guests, including my father-in-law, refuse to drink water at my home during the rainy season because of the smell. But still, my family tolerates both the odour and the complaints.

Panchayat Vice President, Male, 41

Birds are regarded as harbingers of good fortune and rain, and are a source of collective pride, according to 73 out of 100 respondents. The influx of tourists, photographers, and visitors engaged in observing and documenting the birds is perceived as contributing positively to the village’s recognition and socio-cultural capital.

Community awareness of bird conservation and the reserve has been significantly shaped by the efforts of the late judge. He is widely credited with initiating and reinforcing key conservation measures, including the prohibition of bird hunting and restrictions on the use of firecrackers. Signboards and media coverage, particularly in newspapers, have also played a role in informing residents of the reserve’s existence.

PERCEIVED INCONVENIENCE FROM BIRDS

The strong stench and associated health concerns from guano, particularly during the rainy season, are regarded as significant inconveniences by 45 out of 70 respondents from the hamlet. The persistent odour disrupts daily activities, with some residents reporting symptoms such as nausea and general discomfort.

Bird guano, especially in and around the school premises, is perceived as a health hazard. Several mature trees within the school compound host nesting birds annually. However, the accumulation of guano and the resulting odour have reportedly caused illness among children, including symptoms such as nausea, diarrhoea, and fever. In response, school authorities have pruned the trees to discourage bird nesting. Additionally, some residents have raised concerns about occasional crop damage caused by the birds during harvest periods.

WINGS AND WISDOM: COMMUNITY PRACTICES THAT WORK

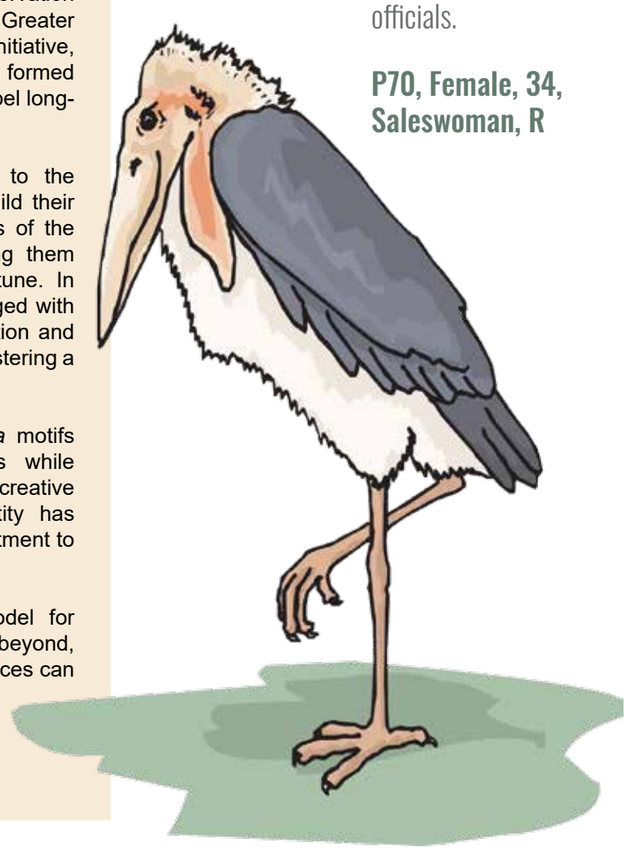
In Assam, the *Hargila Army*, an all-women-led conservation group, is working to protect the endangered Greater Adjutant Stork, locally known as *Hargila*. This initiative, led by wildlife biologist Dr. Purnima Burman, was formed to rescue injured birds, raise awareness, and dispel long-held superstitions associated with the species.

Community involvement has been central to the success of this effort, as the storks typically build their nests on private land. Initially, local perceptions of the birds were largely negative, with many viewing them as carriers of disease and symbols of misfortune. In response, the women of the *Hargila Army* engaged with their communities through environmental education and advocacy, gradually transforming attitudes and fostering a sense of stewardship.

Notably, the women have integrated *Hargila* motifs into traditional textiles, promoting awareness while also generating livelihood opportunities. This creative integration of conservation with cultural identity has helped shift mindsets and bring long-term commitment to species protection.

The initiative is now recognised as a model for community-led conservation in India and beyond, showing how local leadership and inclusive practices can effectively protect biodiversity.

Source: Cornell Lab of Ornithology
https://www.youtube.com/watch?v=yeYV4UjsdxM



My kids vomit and don't eat dinner after school these days. The bird guano is not good for children. I don't know how they manage to sit in that stench and study at school. I've complained to the headmistress, and she asked me to escalate the matter to higher officials.

P70, Female, 34, Saleswoman, R

Initially, the Forest Department used to foster injured storks and other birds. They had a few cages and would feed the injured birds with fish. But these days, they have stopped it entirely. Ten days ago, I found an injured stork and called the watcher in our village. He said that he doesn't have any medication and would have to care for the bird using his own money. So the injured bird was found dead after a few days, as no one fostered it.

P98, Male, 36, Mason, T

Trees are pruned to prevent birds from roosting inside the school complex.

COEXISTENCE AND CONSERVATION PRACTICES

From our community engagement and observations, conservation is largely understood as coexistence with birds and other life forms.

The influence of the late judge, along with the Forest Department and the gram panchayat, has been instrumental in promoting the restricted use of firecrackers, particularly in Thirupudaimaruthur hamlet, as a means to protect birds. Approximately 52 out of 70 respondents from the hamlet reported adhering to this restriction, although firecrackers continue to be used during festivals in RVP Colony and Seethaparpanallur. The restriction is widely seen by residents as one of the most effective community-based measures for bird conservation. Additionally, the hunting of birds, once practised in the area, has ceased since the establishment of the reserve.

While general awareness about the birds exists, the depth of knowledge and active engagement in conservation remains limited. A few years ago, some residents of Thirupudaimaruthur were personally recognised by the District Magistrate of Tirunelveli for their environmental stewardship and for nurturing birds in their backyards.

Earlier, efforts to rescue and care for injured storks were more common, particularly under the leadership and encouragement of the late judge. Following the forest department's involvement, community participation in rescue activities diminished, constrained by regulatory restrictions.

There are also concerns regarding the risks involved in handling injured birds, including the possibility of disease transmission. Without formal training, well-intentioned rescue efforts may inadvertently cause harm to the birds. However, the lack of adequate funding and support from the Forest Department continues to be a barrier to sustained conservation work. It is therefore crucial to provide training for interested community members in bird rehabilitation and conservation, while also ensuring the necessary financial and institutional support is in place to strengthen and sustain these efforts.

A juvenile stork that was found dead near the *theppakulam*.

I have been to the bird sanctuary many times. Sometimes, the birds fall and get hurt. I would aid the fallen birds with bandages and cloth, and catch fish to feed them.

P73, Male, 35, Coolie and Lifeguard, T

LOCAL AND VISITOR ENGAGEMENT WITH THE RESERVE

Awareness of the reserve is relatively widespread, with 80 out of 100 respondents acknowledging its existence. However, a detailed understanding of the reserve's purpose, historical background, and spatial boundaries remains limited. Only 16 respondents were able to accurately identify the official boundaries of the reserve, which encompass the area surrounding the *theppakulam* (sacred tank) and the temple premises. Notably, a significant proportion of respondents believed that the entire village falls within the reserve, indicating a need for improved spatial awareness of its designated extent.

These patterns suggest that, although the reserve is physically accessible, it remains underutilised by residents as a space for recreation, education, or ecological engagement, particularly among women. There is a clear

My daughter saw the birds and asked me why they were coming here. She called it a Painted stork. She told me it catches and eats fish. If these birds drop the fish bones after eating, they might stab our feet and make them bleed.

P66, Female, 29, Homemaker, R

A pilgrim family shares a moment watching the storks.

opportunity to promote inclusive and participatory approaches that encourage broader community interaction with the reserve, thereby enhancing both conservation outcomes and social relevance.

Although a small number of residents have shared information about birds with children, most do not engage in such conversations. Only 4 out of 100 respondents reported speaking with their children about birds, though children's curiosity is sometimes sparked by sightings. In one instance, a child's observation of a Painted Stork prompted a conversation about bird behaviour and safety. Others recalled learning about birds from children who had watched nature documentaries. However, this form of intergenerational knowledge transfer appears to be limited. Increasing children's exposure to bird-related knowledge may offer a meaningful pathway toward fostering long-term conservation awareness.

THE PRESENT CONDITION OF THE RESERVE

The two sections of the reserve, the *theppakulam* side and the temple side, are separated by a road locally known as School Street. This road, along with the presence of electric poles, a community toilet, and a dilapidated guest house, contributes to the physical fragmentation of the reserve. The electric poles pose a significant risk, especially to juvenile storks, which are susceptible to electrocution. These infrastructural elements highlight the ongoing challenges of preserving ecological integrity within a conservation landscape that is closely interwoven with human habitation.

The section of the reserve adjacent to the theppakulam (temple tank) is poorly maintained. Damaged gates have led to unrestricted access, allowing people to litter and burn waste in the area, which negatively affects both birds and bats. These practices highlight the urgent need for improved awareness and stricter enforcement of waste management measures. The mandapam within the reserve is sometimes used by residents as a resting place during hot afternoons, highlighting the need to balance community use with conservation priorities.

The theppakulam itself is in a degraded state and holds water only during the rainy season. Its ecological function is further compromised by eutrophication, as invasive duckweed and water hyacinth cover much of the surface. Together, the poor maintenance of the tank and the surrounding reserve areas diminishes the overall habitat quality for both aquatic and terrestrial species, pointing to the need for integrated restoration efforts.

Moreover, awareness that the temple premises fall within the designated reserve remains limited. Since the temple functions as a prominent pilgrimage site, the area is subject to frequent littering, open burning of waste, and the feeding of monkeys, all of which pose ecological concerns. The temple's marriage hall generates considerable waste, and it is common for vehicles to be parked within the compound for convenience. These activities not only undermine the ecological objectives of the reserve but also illustrate the broader challenge of managing multifunctional spaces that serve both religious and conservation purposes. This underscores the need for context-sensitive governance strategies that integrate environmental protection with the cultural and social functions of the site.

I had been inside the BCR for MGNREGA work, but was not aware that it was a conservation reserve. One day, an elderly woman set fire to the waste and debris collected during the MGNREGA activities, near the community toilet opposite the BCR. The smoke disturbed the birds and bats, causing them to fly away. We managed to put out the fire using water from the river.

P4, Female, 42, Homemaker, S

Above: The theppakulam after Cyclone Fengal in December 2024.

Below: Entry point to the reserve from the theppakulam side.

OF STONE AND SPIRIT: THE TEMPLE THAT HOLDS A THOUSAND STORIES

12.2

Wings, Water and Worship

The Narumbunathar Swamy Temple in Thirupudaimaruthur hamlet is a 12th-century shrine dedicated to Lord Shiva. The name *Tiruppudaimarudur* reflects its sacred significance, with tiru denoting holiness and *pudaimarudur* referring to a village near a Sivalinga placed under a Marudu *(Terminalia arjuna)* tree. Steeped in history, the temple has fulfilled multiple roles beyond its primary function as a place of worship. At various points in time, it has served as a court of justice, a centre for learning, a public record office, and a patron of arts and culture. In 1975, it was brought under the administration of the Hindu Religious and Charitable Endowments Department (HR&CE).

Architecturally and artistically significant, the temple houses 17th-century Nayak-era murals that adorn its inner walls, showcasing intricate craftsmanship (Sekhsaria, 2015). The life-size paintings on different levels of the main gopuram depict scenes from Hindu mythology and offer glimpses into historical ways of life. These murals are valuable cultural artefacts that preserve visual narratives linking the past with the present.

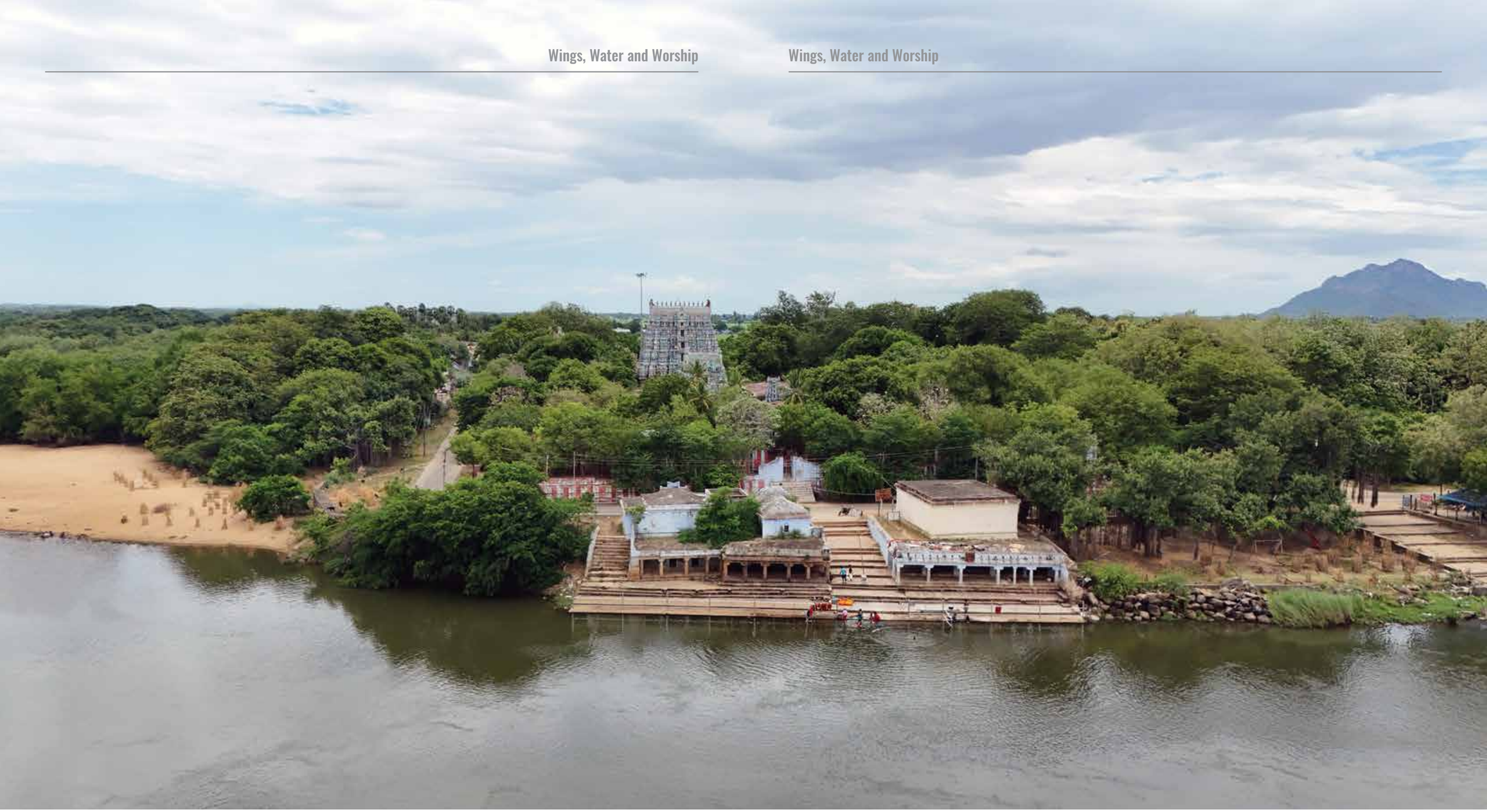
Due to their fragile condition, public access to these paintings is currently restricted to prevent damage. However, a carefully curated walk designed to showcase these artworks could become a valuable addition to ecotourism initiatives. Such an experience would allow visitors to appreciate the temple's artistic heritage while ensuring the continued conservation of the murals.

Temple footfall increases on auspicious occasions, particularly during the annual Thaipusam festival. Approximately 3,000 to 3,500 pilgrims visit Thirupudaimaruthur each year to witness the chariot procession associated with the festival. Fortunately, this event does not coincide with the bird nesting season, as the large crowds and movement of chariots would otherwise pose a disturbance to the birds.

As one of the largest Shiva temples in southern Tamil Nadu, the Narumbunathar Swamy Temple remains an enduring symbol of devotion, heritage, and community life, offering not only spiritual significance but also a rich cultural and historical experience for pilgrims and visitors alike.

Life-size mural painting on one of the tiers of the main gopuram.

Wings, Water and Worship



The Narambunathar Swamy Temple situated along the banks of the Tamiraparani River.

ECOLOGICAL IMPORTANCE AND BIODIVERSITY CONSERVATION

The temple premises form part of the Thirupudaimaruthur Bird Conservation Reserve (TBCR), a protected area that supports mature tree species and hosts a rich array of biodiversity. Both the temple complex and the *nandavanam* (sacred garden) provide refuge to various species of birds and bats, including Schneider's leaf-nosed bats *(Hipposideros speoris)* and Indian flying foxes *(Pteropus giganteus)*, highlighting the ecological significance of the site.

Given this biodiversity, it is essential to safeguard the nandavanam through targeted conservation efforts. However, activities such as littering, car parking, feeding monkeys, and pollution present growing threats to this delicate ecosystem. Discouraging these practices within the temple complex will help protect wildlife while ensuring a peaceful and respectful environment for devotees, reinforcing the temple's dual role as a sanctuary of both spiritual and ecological value.

The ACCC-ATREE initiative is contributing to the restoration of the *nandavanam* through nature education and biodiversity monitoring, including the tagging of trees with QR codes to engage visitors and foster awareness.

People scanning the QR code on tagged trees in the Nandavanam.

COMMUNITY PERCEPTION OF THE TEMPLE

Thirupudaimaruthur Panchayat residents take immense pride in the Narumbunathar Swamy Temple, often highlighting its role as a major attraction that draws visitors from various places. The temple is widely regarded as a cultural and religious landmark, valued for its historical significance and the sense of identity it provides to the community.

However, despite this strong sense of attachment, concerns have been raised regarding hygiene and sanitation within the temple premises. The lack of attention to cleanliness may be attributed to a limited awareness of the health implications and long-term maintenance needs of the temple.

WASTE AND CLEANLINESS CHALLENGES

The Narumbunathar Swamy Temple, like many major temples, generates a significant amount of ritual waste from daily offerings, festivals, and religious ceremonies. Items such as flowers, garlands, turmeric, camphor, oil, food remnants, and cloth are regularly discarded following rituals. While these offerings carry deep religious significance, their improper disposal has serious environmental implications.

A common practice is to dispose of ritual waste in the river. However, over time, this practice has contributed to severe pollution, effectively turning the river into a dumping ground for both organic and non-biodegradable waste. The accumulation of these materials degrades water quality, disrupts aquatic ecosystems, and adversely impacts communities that rely on the river for water and livelihoods. In addition to river pollution, the burning of accumulated ritual waste has become a widespread but ineffective strategy for managing excess materials, often contributing to air pollution and health risks.

A significant source of waste within the temple complex is the marriage hall, where large gatherings and religious activities are frequently held. The high volume of footfall results in the accumulation of discarded items, particularly food waste and packaging materials. In the absence of a proper waste disposal system or a structured cleaning process, this area often remains littered.

Littering in and around the temple is a widely acknowledged issue, with 90 out of 100 respondents recognising it as a concern. However, rather than taking personal responsibility, most respondents expect temple staff, sanitation workers, or MGNREGA workers to manage the cleaning. This

A large amount of garbage tends to accumulate at both the front and back of the temple. Visitors often discard food plates, plastic items, banana leaves, and other waste. We clean and wash the temple premises during auspicious occasions such as weddings. After these events, we collect and dispose of the waste, including plastic cups, banana leaves, and similar materials.

Sanitary worker, 49, Female

When someone dies in the village, garlands and other ritual items are discarded as waste. A lot of garbage ends up accumulating in the temple.

Panchayat Motivator, 34, Female

Ritual offerings and associated waste were discarded near the riverbank.

passive approach has contributed to the continued accumulation of waste, as cleaning efforts tend to be reactive rather than preventive. In the absence of a collective sense of ownership over the temple's cleanliness, maintaining hygiene remains a persistent challenge.

Post-wedding litter accumulation was seen around the temple marriage hall premises.

RITUAL, RESOLVE AND REVERENCE: INSIDE THAIPUSAM

Thaipusam is a celebration of devotion, community, and heritage in Thirupudaimaruthur. It is a ten-day festival deeply rooted in long-standing traditions and marked by active community participation.

In 2025, the festival was celebrated from the 2nd to the 11th of February. The initial days serve as preparation for the main event on the 11th, when thousands of people gather to commemorate the victory of Lord Murugan over Surapadman. The days leading up to the main event, known as *Theerthavari*, feature daily deity processions through the Thirupudaimaruthur hamlet. The deities are adorned with traditional gold jewellery that has been safeguarded by the temple for generations. The palanquin used in the procession is elaborately decorated with flowers and is primarily attended by local community members, with relatively few outsiders visiting the temple during this period.

Above: Decorated and lit temple entrance on the eve of Thaipusam.

Below: Village procession ahead of the main Thaipusam day.

Ritual offering during the Maavilakku ceremony.

MAJOR CEREMONIES AND RITUALS

The Thaipusam festival in Thirupudaimaruthur is marked by a sequence of ceremonial events rooted in local tradition. These rituals, observed over several days, reflect the community's devotion and longstanding cultural practices.

Maavilakku Ceremony

On the evening of the seventh day of the festival, a women-only *Maavilakku* ceremony is held at the Gomathi Amman *Sannadhi* inside the temple. Women of all ages participate, beginning with the preparation of the traditional ritual offering known as *maavilakku*. The *vilakku* (lamp) is made from a dough of rice flour, jaggery, and ghee, and is consumed as prasadam after the ritual. The ceremony signifies thanksgiving and is believed to bring prosperity to the family.

Chariot Procession

On the ninth day of the festival, the grand chariot procession takes place in the Thirupudaimaruthur hamlet. It features two chariots carrying the deities Shiva and Gomathi, respectively. This revered tradition is performed with great fervour, as community members pull the chariots accompanied by ritual chants. Approximately 250 to 300 individuals participate in the procession, including priests, residents, and pilgrims.

To facilitate the procession, tree branches obstructing the path were pruned, and electric wires that posed challenges were either temporarily disconnected or manually lifted using long sticks. The Tamil Nadu Electricity Board (TNEB) took precautionary measures by temporarily removing and folding all overhead electric wires in the village to prevent any disruptions. Safety protocols were followed, with the presence of an ambulance, police personnel, and fire and rescue teams throughout the event.

Theerthavari

The final day of the festival, known as *Theerthavari*, is the main event and draws large crowds from nearby villages and towns. This year, an estimated 3,000 to 3,500 people visited Thirupudaimaruthur to witness and participate in the celebrations.

The entire village gathered around the temple and along the riverbank to take part in the rituals and festivities. The hamlet came alive with rows of stalls offering traditional foods, toys, and crafts. Makeshift stalls were set up along West Car Street and North Car Street, primarily operated by traders from nearby towns and districts who return annually for Thaipusam.

The community pulling the chariot through the village streets.

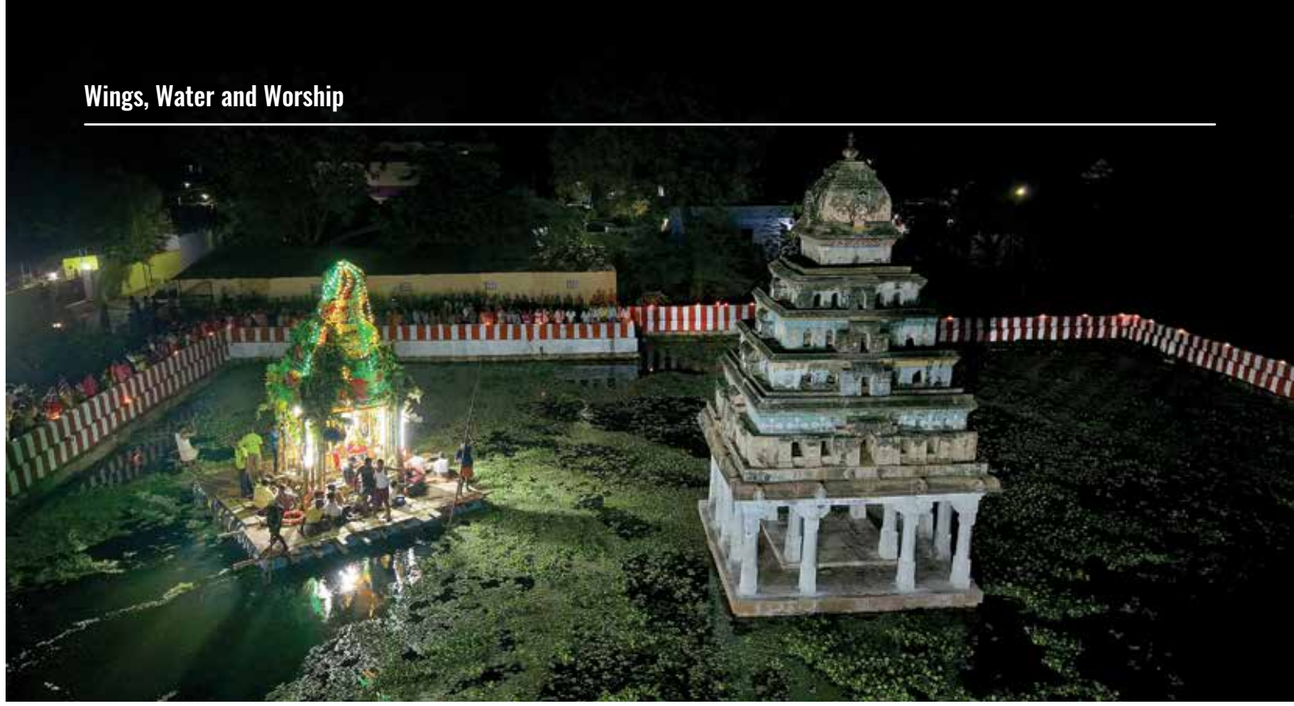
Rescue personnel stationed during the main day of the festival.

The Tamiraparani River plays a vital role in the rituals of the Thaipusam festival. On the day of the main event, devotees offer prayers and take a holy dip in the river, believing it to cleanse the soul and absolve sins. Each year, thousands of people participate in this sacred ritual at an auspicious time.

To ensure safety, fire and rescue personnel were stationed along the river, equipped with life buoys, ropes, and life jackets. Pilgrims were guided to remain within designated safe zones, as the river's depth varies each year. Two teams from the Fire and Rescue Department operated in shifts, maintaining round-the-clock vigilance to prevent any untoward incidents.

In the evening, the *theppakulam* is illuminated for the Theppam procession, during which seven rounds on the sacred tank symbolise the arrival of Lord Murugan in the village. This ritual is primarily attended by community members from all three hamlets.

A traditional food stall set up on the main day of the festival.



Theppakulam procession underway on the evening of the main celebration.

CONCERNS AND CHALLENGES

The lack of structured waste management and sanitation facilities remains a pressing concern during the festival. Currently, there is no organised solid waste management plan in place. Ritual waste, plastic, and food remnants are often piled up and burned within the temple premises, contributing to air and environmental pollution. Used garlands, banana leaves, and plastic covers were observed being discarded in front of the temple entrance and along the riverside.

During *Theerthavari*, many devotees collected river water as *theertham*, despite visible contamination from plastic and ritual waste. In some instances, leftover rice from the *annadhanam* was fed to fish in the river. These practices highlight the urgent need to monitor water quality before and after the festival to assess its impact on aquatic life and the overall health of the river ecosystem.

Stagnant water and uncovered drains within the temple premises.

Moreover, the festival lacked adequate toilet facilities. The only available toilets were located inside the community marriage hall within the temple complex, comprising just two units shared by both pilgrims and priests, with no separate facilities for men and women. Those unable to access these toilets had to rely on poorly maintained community facilities. The lack of sanitation infrastructure was particularly concerning, as young girls were observed relieving themselves in dark and unsafe areas due to the unavailability of accessible and hygienic toilets.

In addition, several women stall keepers were seen using the river for bathing and changing sarees in a nearby dilapidated mandapam. However, due to the lack of privacy, many women remained in wet clothes after completing the Theerthavari ritual.

The Hindu Religious and Charitable Endowments (HR&CE) Department hired 15 local men, primarily construction workers, to assist with temple duties during the festival. Drinking water facilities were made available for pilgrims, priests, and volunteers within the temple complex, and mosquito repellent was sprayed during the festival as part of basic health and safety measures.

Food waste scattered around the temple premises after the main event.

Aerial view showing waste scattered along the village streets.

Food stalls and distribution centres were set up across Thirupudaimaruthur during the festival, but none had designated dustbins for waste disposal. While some centres used eco-friendly areca leaf plates, others relied on plastic plates and glasses. In the absence of a proper waste collection system, these items were frequently littered across the area, contributing to environmental pollution and hygiene concerns.

A dedicated sanitation worker took the initiative to collect food and plastic waste in drums, which were later picked up by a piggery owner from Mukkudal. The owner segregated the waste, using the food scraps for the piggery, burning the plastic, and compensating the sanitation worker for their efforts. This informal waste management system has been in place for the past two years. However, beyond such individual initiatives, waste disposal remains a significant challenge.

Waste continued to accumulate outside the marriage hall, and some vendors resorted to burning paper waste at night. Despite the strong sense of devotion and community service, the festival faced notable waste management issues. For example, free buttermilk distribution centres, known locally as *moor pandhal*, provided much-needed relief to attendees, but the use of plastic cups led to widespread littering along the streets.

Informal clearing of accumulated waste after the festival.

On the morning of Thaipusam, sanitation workers actively cleaned the streets, collecting waste and loading it onto trucks. However, the festival lacked a structured and systematic waste disposal plan, resulting in ad hoc and temporary cleanup efforts rather than long-term solutions.

THIRUPUDAIMARUTHUR'S LIFELINE: RIVER TAMIRAPARANI

12.3

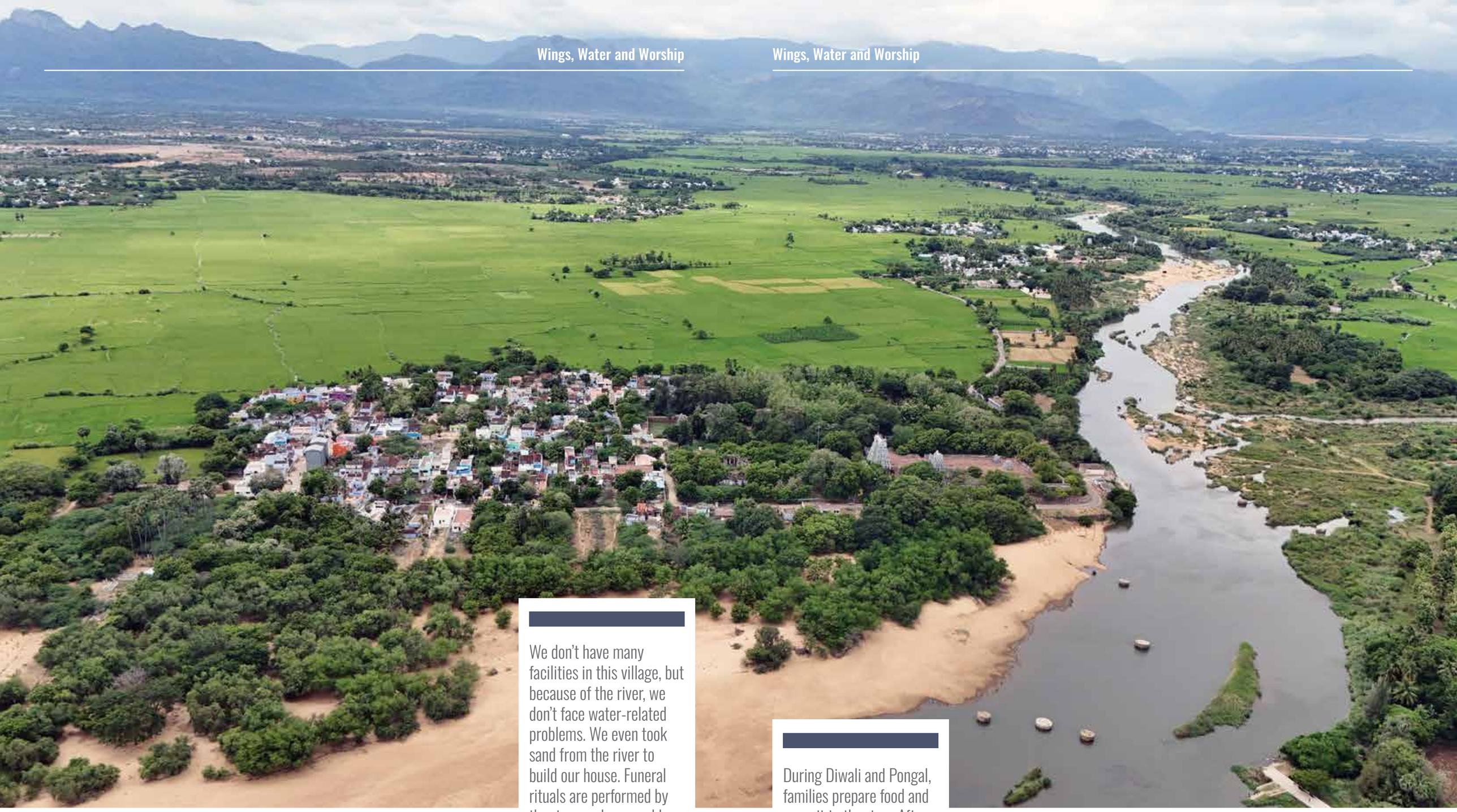
The Tamiraparani River is widely regarded as a lifeline, offering not only vital physical resources but also shaping the cultural identity of Thirupudaimaruthur. The village heronry owes its richness in bird diversity to the river's ecosystem. As previously noted, the village is located at the confluence of the Gadananathi tributary and the Tamiraparani River, creating a strikingly scenic landscape. The presence of the Narumbunathar Swamy Temple adds to this cultural and aesthetic appeal, presenting a unique blend of natural beauty and spiritual significance.

Residents consistently affirm the river's essential role in daily life, supporting bathing, washing, drinking water needs, and agriculture. Beyond meeting these basic requirements, the river also contributes to public health and economic well-being. Ten per cent of respondents noted that bathing in the river reduces their electricity expenses by eliminating the need to operate water pumps. Additionally, 62 out of 100 respondents mentioned that bathing in the river, particularly during summer, provides relief from extreme heat.

The river holds particular importance for residents of Seethaparpanallur hamlet, where access to potable water was limited until recently. Eighty out of 100 respondents described the river as the only redeeming feature in an otherwise infrastructure-poor village panchayat. Despite concerns about pollution and maintenance, the community views the river as indispensable.

Tourists and visitors, regardless of their primary reason for coming to the village, also spend time along the riverbank and consider it a key attraction. Moreover, the river serves additional purposes such as providing water for bathing cattle and goats, further illustrating its multifaceted significance to both humans and animals.

Wings, Water and Worship



We don't have many facilities in this village, but because of the river, we don't face water-related problems. We even took sand from the river to build our house. Funeral rituals are performed by the river, and we would not want to conduct them anywhere else.

P4, Female, 42, Beedi worker, Seethaparpanallur

During Diwali and Pongal, families prepare food and carry it to the river. After bathing, they eat together and rest on the sand.

P62, Female, 64, Homemaker, RVP Colony

CULTURAL AND RELIGIOUS SIGNIFICANCE

The Narumbunathar Swamy Temple, located along the banks of the Tamiraparani River, holds profound cultural and religious significance for the local community. Pilgrims gather in large numbers each year to perform rituals such as Tarpanam, a rite conducted in honour of deceased ancestors. Thirty out of 100 respondents highlighted the river's special importance during festivals like Pongal and Diwali, when families prepare food, bathe in the river, and spend time together along its peaceful banks.

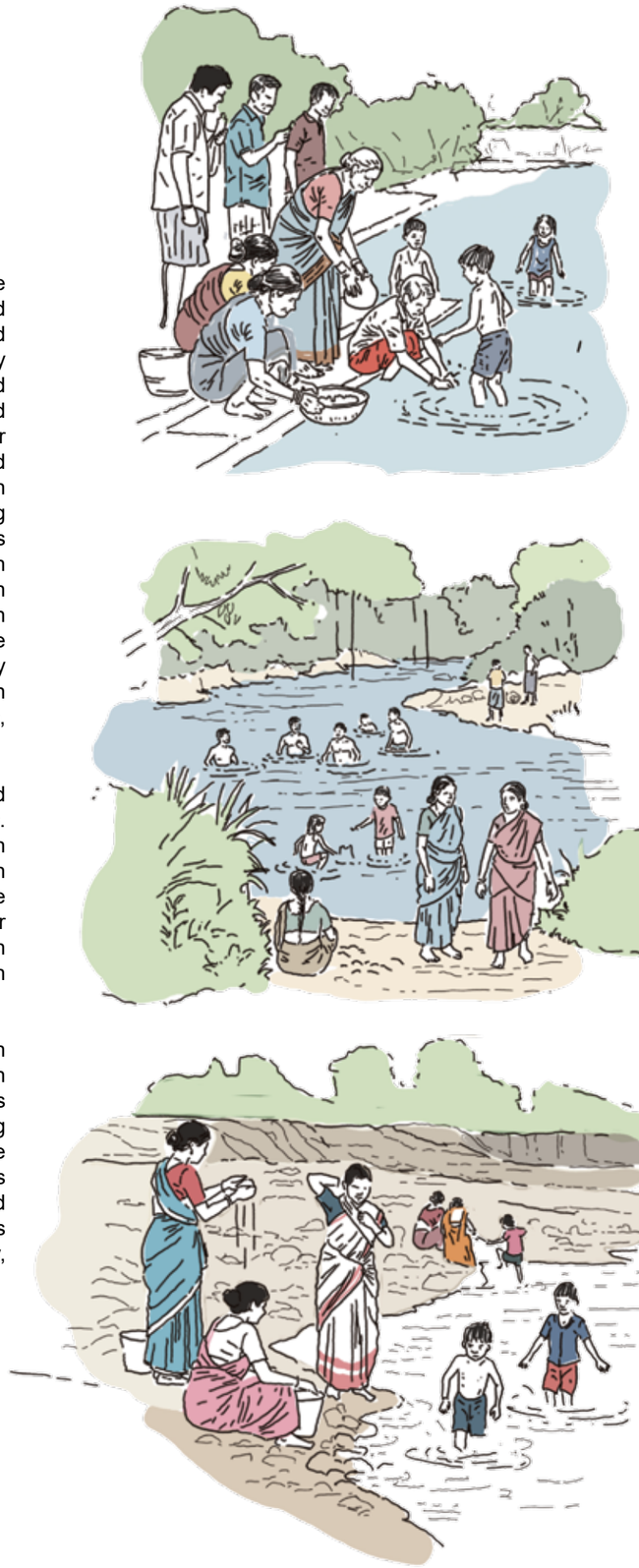
Despite the river's increasing ecological deterioration, it continues to be regarded as sacred, particularly by residents of the village. Several respondents also emphasised the river's cultural relevance in funerary practices, reinforcing its enduring role in the spiritual and ceremonial life of the village.

ACCESS TO THE RIVER

Access to the river varies across the three hamlets within the village panchayat, shaped by infrastructural, social, and gender-based factors. In Thirupudaimaruthur hamlet, many young women, including newly married women, recent migrants, mothers, and college students, do not access the river daily due to domestic responsibilities and other constraints. In contrast, older women frequently use the river for bathing, washing clothes, and socialising. Since the men's bathing ghat (padithurai) area was seen prone to drowning, both men and women now share the women's padithurai, though damaged, for river access. This shared use has led to occasional tensions, particularly when tourists or visitors intrude upon the designated women's bathing space, compromising privacy.

In the RVP Colony, most women avoid visiting the river alone due to safety concerns. The riverbank is not visible from the main road and is surrounded by dense vegetation resulting from afforestation, creating a sense of isolation. As a result, many women prefer to bathe at home or in designated areas such as the vaikaal, or canal, whereas most men continue to bathe and change by the river.

In Seethaparpanallur, nearly all women continue to use the river for bathing, given the limited access to private bathrooms and the absence of designated bathing spaces like a canal. Exceptions are made only in cases of urgency. These variations reflect the differing degrees of access and restriction experienced by residents across the hamlets, influenced by geography, infrastructure, and social norms.



Access to river across hamlets

Earlier, there was a lot of sand, and it was easy to see the river. But now, the area is overgrown with plants and shrubs, and I can no longer see the river. This makes me feel unsafe to bathe alone.

P1, Female, 23, Student, R

Ritual waste scattered along the riverbank of the Tamiraparani.

RIVER HEALTH

Over time, the Tamiraparani River has undergone significant changes. Flooding events have shifted their course and washed away sand deposits, impacting both the surrounding land and agricultural activity. What was once a broad river with extensive sandbanks has narrowed considerably. The unchecked growth of invasive species such as *Ipomoea carnea* (locally known as rubber chedi) has further reduced the spread of water, diminished visibility, and heightened safety concerns. Some residents believe that these plants stagnate the water, hindering its natural flow and contributing to a decline in water quality.

Many residents recall that over the past 30 years, the river has transformed from a clear, free-flowing water body into one marked by murkiness and reduced suitability for daily use. Around 20 out of 100 respondents reported an increase in skin-related ailments such as itching and rashes, particularly during summer months when river use is high.

Compounding these concerns is the increasing pollution of the river, particularly from ritual waste generated by the Narumbunathar Swamy Temple. Rituals performed along the riverbank often involve offerings like flower garlands and grains, many of which are discarded directly into the water. As a result, it is common to find such waste floating on the river's surface.

Sanitary waste disposal in and around the river is also a pressing issue. Women frequently discard sanitary napkins on their way to bathe, with burning or direct dumping into the river seen as the only viable options due to the lack of proper disposal infrastructure. These practices have raised serious concerns about the river's ecological health and the public health risks faced by the local community.

Above: Rusted Forest Department sign announcing a sand-mining ban.

Below: Defunct water filtration tanks in the river.

The river has undergone significant changes, with its width decreasing over time. It used to be wide and full of sand, but excessive sand extraction has altered its course. Now, the riverbank is overgrown with vegetation, which makes us feel uneasy about bathing at night.

P65, Male, 35,
Farmer and Lorry Driver, R

Pilgrims discarding ritual waste at the women's bathing steps (padithurai).

Observations indicate that open defecation continues along the sandbanks of the Tamiraparani River, particularly near the Thirupudaimaruthur hamlet. In addition to local practices, tourists and visitors contribute to the river's degradation by discarding plastic, clothing, food waste, and sanitary items along its banks. Residents report that these behaviours have significantly deteriorated the condition of the river over time.

The accumulation of such waste has led to increased algal blooms, elevated levels of faecal coliform bacteria, and higher concentrations of phosphates, often attributed to pesticide runoff. These changes have adversely impacted the river's ecosystems. Many residents express frustration that their concerns and efforts to mitigate these issues are frequently overlooked by outsiders, resulting in a sense of helplessness and neglect.

Consequently, some residents are now hesitant to bathe in the river, especially in areas that have become overgrown with vegetation. Concerns about water quality are mounting, with 70 out of 100 respondents stating that the river water no longer retains its original taste or purity.

POTABILITY OF WATER

The entire village panchayat depends on the Tamiraparani River as its primary source of drinking water. Water is pumped from the river through infiltration wells and stored in overhead tanks, where bleaching powder is added by the panchayat for disinfection. However, the filtration system was damaged during the December 2023 flood and has yet to be repaired. Even before the floods, the infiltration wells often became non-functional during periods of heavy rain or flooding, forcing residents to collect water directly from the river for household use.

At present, the treated water is distributed to all three hamlets via a network of pipelines and is also accessible through street taps.

Street-side tap used as a primary water source in Settaparapanallur.

There is a water shortage in the village during the rainy season. My husband fetches ten pitchers of water a day, and I also bring another ten. Altogether, our household requires around twenty pitchers daily. We collect this water either from the tap outside the temple or directly from the river.

P5, Female, 40, Tiffin shop owner, T

Table 5: Water Quality Assessment (Dated: 29 March 2025)

Parameter	Thirupudaimaruthur
Colour	Green
Odour	Yes
Depth (m)	1.9 - 2.4
Rate of Flow (m/s)	0.28 - 0.50
Temperature (°C)	28.3 - 28.4
Barometric Pressure (mmHg)	756.8 - 756.9
Turbidity (NTU)	1.85 - 2.04
Dissolved Oxygen (%)	97.6 - 98.1
Dissolved Oxygen (mg/L)	7.6 - 7.62
Electrical Conductivity (µS/cm)	50.7 - 59.7
Total Dissolved Solids (mg/L)	33 - 36
pH	7.84 - 7.89
Nitrates (mg/L)	0.09
Phosphates (mg/L)	Over range

Mostly, outsiders come at noon, a time when residents are not around to warn them of the danger. People also dump clothes, glass, banana leaves, and other waste on the riverbanks. If we try to caution them about the risk of drowning, they say, 'This is public property, and you have no right to stop us.

P29, Female, 50, Beedi worker, T

DROWNING HAZARD IN THE RIVER

The river and the village community are adversely affected whenever tourists or visitors drown due to negligence or the absence of immediate rescue measures. So far, there have been 24 reported drowning incidents in the river. Tourists, often unfamiliar with the river's depth and current, frequently ignore warning signs and advice from residents. This leads to frequent fatal accidents, especially in areas known for strong currents or whirlpools. Most of these incidents occur during summer afternoons, when fewer people are present to intervene or provide assistance.

Some residents have taken an active role in rescuing people from the river despite lacking formal support or recognition. One local rescuer emphasised the urgent need for proper equipment, such as boats and lifebuoys, to support rescue efforts. They also highlighted the importance of receiving formal recognition and authority. Without it, their safety warnings are often ignored, which limits the effectiveness of their efforts to protect visitors.

Police should be stationed to warn tourists who are swimming in the river. They will not listen to any villager, even if that person is appointed to help. We used to write the number of deaths on a warning signboard, but that did not stop people. I think they will listen to the police.

Panchayat President, 46, Female

Warning signboard near the women's padithurai, cautioning against drowning in the river.

12.4 LIFE ALONG THE TAMIRAPARANI

This section explores the existing livelihood patterns in Thirupudaimaruthur and highlights the importance of creating alternative or supplementary income-generating opportunities to ensure long-term sustainability.

AGRICULTURE

Agriculture (known locally as *vyavasayam*) remains the primary source of livelihood in Thirupudaimaruthur. The Tamiraparani River plays a vital role in sustaining agricultural practices by providing a reliable source of water for irrigation. Both men and women in the community are actively involved in various stages of cultivation, including transplanting seedlings, weeding, applying pesticides, and harvesting crops.

Wings, Water and Worship

Landholdings in the village range from 1 to 20 acres. While some farmers cultivate their land, others lease plots or work as daily wage labourers on neighbouring farms.

Paddy and bananas are the dominant crops grown in the village. Paddy is typically grown twice a year, with each crop cycle lasting approximately 120 days, whereas banana plants take up to a year to mature. The use of chemical fertilisers is common, with inputs such as TAP (triamide phosphoryl), urea, potassium, and nitrate being widely applied to enhance crop yield. Additionally, some households with fields adjacent to the river cultivate marigold (*Tagetes erecta*) flowers for supplementary income.

Paddy Fields in Thirupudaimaruthur.

Above: Livestock is an important component of agricultural livelihoods.

Below: A farmer ploughing the field in Thirupudaimaruthur.

Table 6: Land Use Pattern in Thirupudaimaruthur (Source: People's Biodiversity Register)

Land Use	Area (in hectares)
Forests	2.84
Non-agricultural land	1.08
Barren and uncultivable land	12.825
Permanent pastures and grazing lands	—
Land under miscellaneous tree crops	—
Cultivable wastelands	—
Fallow lands other than the current fallows	—
Current fallows	133.8
Net area sown	**233.62**

BEEDI ROLLING

Beedi rolling (known locally as *beedi uruitrathu*) is predominantly considered a form of women's work, largely because it does not involve physically demanding outdoor labour. However, it remains a highly labour-intensive activity, typically carried out within or around the home. Nationally, over 4.9 million individuals are employed in the beedi manufacturing sector, with women comprising approximately 90 per cent of the workforce, primarily as contract-based beedi rollers (Ministry of Health and Family Welfare, 2008).

In Thirupudaimaruthur, beedi rolling continues to serve as a significant source of livelihood for many women, offering flexible hours within the domestic space. Although the occupation is associated with considerable health risks, including exposure to tobacco dust, leading to respiratory issues, heart disease, and increased cancer risk, it persists due to the lack of viable alternatives. Notably, only one male respondent in the village reported engaging in beedi rolling, typically seen as an option for men unable to secure other forms of employment.

In Thirupudaimaruthur, beedi rolling is widely regarded as one of the few viable livelihood options, particularly for women. Among the 100 respondents surveyed, 27 out of 58 women reported being engaged in beedi rolling. The primary appeal of this occupation lies in its ability to provide a source of income from within the home, along with flexible working hours that accommodate household responsibilities.

Beedi workers in the village fall into two categories: those registered with tobacco or beedi companies, and those who remain unregistered, rolling beedis for local kirana (grocery) stores. Despite the low income and associated health risks, the work remains a mainstay for many households due to the absence of alternative employment opportunities.

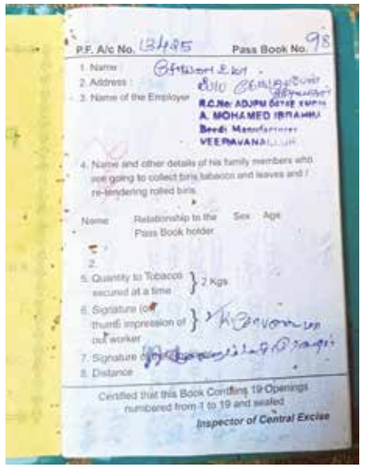
I suffer from back pain. I know beedi rolling causes cancer and other diseases. But beedi rolling is our livelihood.

P24, Female, 42, Beedi roller and MGNREGA worker, R

Women rolling beedies on their home verandahs.

Table 7: Comparison of Registered and Unregistered Beedi Workers

Aspect	Registered Beedi Worker	Unregistered Beedi Worker
Remuneration	₹ 120 for 1000 rolled beedis	₹ 120 for 1000 rolled beedis
Work Log	Logbook maintained by the company; used to document output and calculate years of service.	No logbook; work is done based on personal need and schedule.
Social Benefits	Eligible for pension and Provident Fund (PF) after 12 completed work logbooks.	No social benefits.
Healthcare	Free healthcare at the Central Government Hospital for Beedi Workers in Mukkudal.	Not eligible for dedicated healthcare.
Children's Education	Scholarship available.	No scholarship benefits.
Retirement Age	52 years.	No fixed retirement age.
Raw Material Supply	Provided under contract by beedi contractors (Mukkudal, Veeravanallur).	Procured independently from local shopkeepers.
Payment System	Paid a piece rate under formal contracts.	Paid a piece rate informally.



Logbook of a registered beedi worker.

Some people told me that beedi rolling causes many diseases, but beedi rolling is our livelihood. So we can't stop beedi rolling. When I go to farming work, I don't roll beedi.

P28, Female, 45, Beedi roller, R

Women engaged in beedi rolling are typically paid on a piece-rate basis, submitting their finished products either daily or on weekends, depending on the quantity produced and their available time. Registered workers visit designated beedi collection centres once every two days or up to twice a week. These centres are located in nearby towns such as Veeravanallur, which is 5 kilometres from Thirupudaimaruthur, and Mukkudal, which is 3 kilometres away.[7] However, due to the absence of direct bus services to Mukkudal, women often rely on personal two-wheelers or walk to the location. Concerns about safety and the lack of reliable public transportation, especially during evening hours, further limit their mobility and access to alternative livelihood opportunities.

Despite its importance as a source of income for women in the village, beedi rolling is associated with serious occupational health risks. Women often spend between 10 to 16 hours a day rolling beedis, resulting in prolonged exposure to tobacco dust and physical strain. Among the 100 respondents, 10 women, five from Thirupudaimaruthur and two from RVP Colony, had discontinued beedi rolling due to ageing, childbirth, or health problems such as back pain and allergic reactions. In some cases, children discouraged their mothers from continuing in the occupation.

While 90 per cent of the respondents were aware of the health hazards, including respiratory conditions, allergies, and musculoskeletal disorders, many continued the work due to the lack of alternative options. None of the women reported using protective gear such as gloves or masks, and awareness of occupational safety practices was minimal.

Although several legal provisions exist in India to protect beedi workers, including health and social security benefits, none of the respondents were availing themselves of these entitlements. This reveals a significant gap in both awareness and access to formal welfare mechanisms for those employed in the informal sector.

Arm and leg pain, skin problems, musculoskeletal disorders, headaches, migraine, eye irritation, numbness in fingers, gynaecological problems... They inhale it directly, so they are affected by asthma, allergies, colds, and coughs.

Doctor, Cancer Institute, Adyar, Chennai

[7] Buses to Veeravanallur arrive at intervals of roughly two hours, with morning timings at 7.00 a.m., 9.30 a.m., and 12.00 p.m., and evening services at 5.30 p.m., 6.00 p.m., and 8.00 p.m.

Table 8: Indian Acts for the Protection of Beedi Workers

Act	Purpose and Key Provisions
The Beedi and Cigar Workers (Conditions of Employment) Act, 1966	Enacted to safeguard the rights of beedi and cigar workers, particularly regarding employment conditions. The Act regulates aspects such as working hours, wages, provision of annual leave with pay, maternity benefits, and restrictions on night work for women. It also covers the rejection process of beedis or cigars and mandates suitable workplace amenities.[8]
The Beedi Workers Welfare Cess Act, 1976	Introduced to generate funds for the welfare of beedi workers through a cess levied on manufactured beedis. The excise duty imposed ranges between ten paise and fifty paise per thousand beedis. The amount is subject to periodic revision by the central government through official notification.[9]
The Beedi Workers Welfare Fund Act, 1978	Provides a framework for delivering welfare measures to workers engaged in hazardous beedi production.[10] Administered by the state governments, the Act supports public health and sanitation, access to potable water, housing, recreational facilities, and education for beedi worker families.[11]

Under the Ministry of Labour and Employment, beedi rolling workers are eligible for financial assistance for the education of their children. The scholarship scheme for the wards of beedi, cine, and non-coal mine workers offers support ranging from ₹1,000 to ₹25,000 per student per annum. These scholarships can be accessed through the National Scholarship Portal (NSP).[12] Women suffering from health issues related to beedi rolling are also entitled to free treatment at the government beedi hospital in Mukkudal.

The Chennai Cancer Centre told us that cancer and heart disease are caused by beedi rolling. So, I was appointed to teach tailoring. I taught tailoring to 40 members in 45 days in my village.

P6, Female, 29, Tailor, T

[8] https://www.indiacode.nic.in/bitstream/123456789/1675/1/a1966_____32.pdf. Accessed on 14 November 2024.
[9] https://labour.gov.in/sites/default/files/thebeediworkerswelfarecessact1976.pdf. Accessed on 14 November 2024
[10] https://www.researchgate.net/profile/Fehmina-Khalique/publication/330761910_Understanding_Social_Welfare_Schemes_for_Beedi_Workers_of_Allahabad_District_A_Conceptual_Study/links/5cd98cdb92851c4eab9bb6d7/Understanding-Social-Welfare-Schemes-for-Beedi-Workers-of-Allahabad-District-A-Conceptual-Study.pdf. Accessed on 13 November 2024
[11] https://www.vvgnli.gov.in/sites/default/files/TheBeediWorkersWelfareFundAct1976_0.pdf. Accessed on 14 November 2024.
[12] https://scholarships.gov.in/public/schemeGuidelines/Labour_Ministry_Guidelines_of_scholarhsips%20schemes.pdf. Accessed on 13 November 2024.
[13] https://www.thehindu.com/news/cities/chennai/women-beedi-rollers-move-to-alternative-livelihoods/article66378257.ece . Accessed on 28 July, 2024.

The Beedi Workers' Hospital in Mukkudal.

TAILORING AS A SAFER ALTERNATIVE TO BEEDI ROLLING

Due to the health hazards linked to beedi rolling, alternative livelihood options have been explored by both local women and external organisations.[13] Two doctors from the Cancer Institute, Adyar, Chennai, supported women in transitioning away from beedi rolling by introducing training in tailoring, wig-making, and coir production.

In February 2024, the Cancer Institute appointed a woman from the village to train forty women in tailoring over 45 days. While the training was well received, none of the women from Seethaparpanallur participated. When asked, they said they were unaware of the training. However, the village president, doctors, and trainer all stated that information about the program had been shared. About half the trained women have now taken up tailoring as a livelihood. Attendance at the wig-making training in April was low,

mainly because participants were busy with their children during the summer holidays. Many women said they would be more willing to attend if the training were conducted within the village rather than in Mukkudal.

MGNREGA EMPLOYMENT

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme is implemented by the District Programme Coordinator (DPC).[14] Activities under this scheme include the excavation and renovation of ponds and temple tanks, desilting of water channels, strengthening of irrigation bunds, and initiatives for soil and water conservation and flood protection.

In Thirupudaimaruthur, many men and women take up MGNREGA work. It offers higher wages than beedi rolling, requires fewer working hours, and allows women to work in groups outside the home, fostering social interaction. However, regular work under MGNREGA is not always available. The village lacks ponds, which limits the range of projects. Currently, the only work available under the scheme involves maintaining riverside plantations, which includes planting saplings, watering them, and general upkeep. Wages for this work range between ₹290 and ₹310 per day. However, the opportunity is not extended to all, and those selected typically receive work for only around ten days.

Women participating in MGNREGA work in Thirupudaimaruthur.

There are many programs to train in tailoring, but they are not willing to get trained. Free tailoring machines are also available through schemes and some through village groups.

Doctor, Male, Cancer Institute, Adyar

[7] The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), enacted by the Parliament of India in September 2005 and implemented from February 2, 2006, guarantees at least 100 days of wage employment in a financial year to every adult willing to undertake unskilled manual labour.

12.5

WHAT HAPPENS TO WASTE: THE VILLAGE STATUS QUO

Waste littering is frequently observed throughout the village.

Effective waste generation and management practices are fundamental to the development of an environmentally responsible society. Findings from field observations and primary data collection in Thirupudaimaruthur Panchayat indicate that current waste disposal mechanisms remain inadequate and only partially effective. Beyond household waste, a significant proportion of waste is generated from ritual and festival-related activities in and around the Narumbunathar Swamy Temple, making it one of the principal sources of environmental burden in the area.

WHAT HAPPENS TO WASTE?

Through our interviews, we learned that the community primarily views household waste as consisting of kitchen scraps, plastic wrappers from milk packets, spices, and snacks, flower remnants from garland-making and rituals, and leftover beedi leaves. It was common to observe such waste scattered around the village, much of which ultimately accumulated near the riverside. Broken alcohol bottles were frequently found along roadsides, in fallow lands, and along the riverbank, often causing accidental injuries to those walking barefoot.

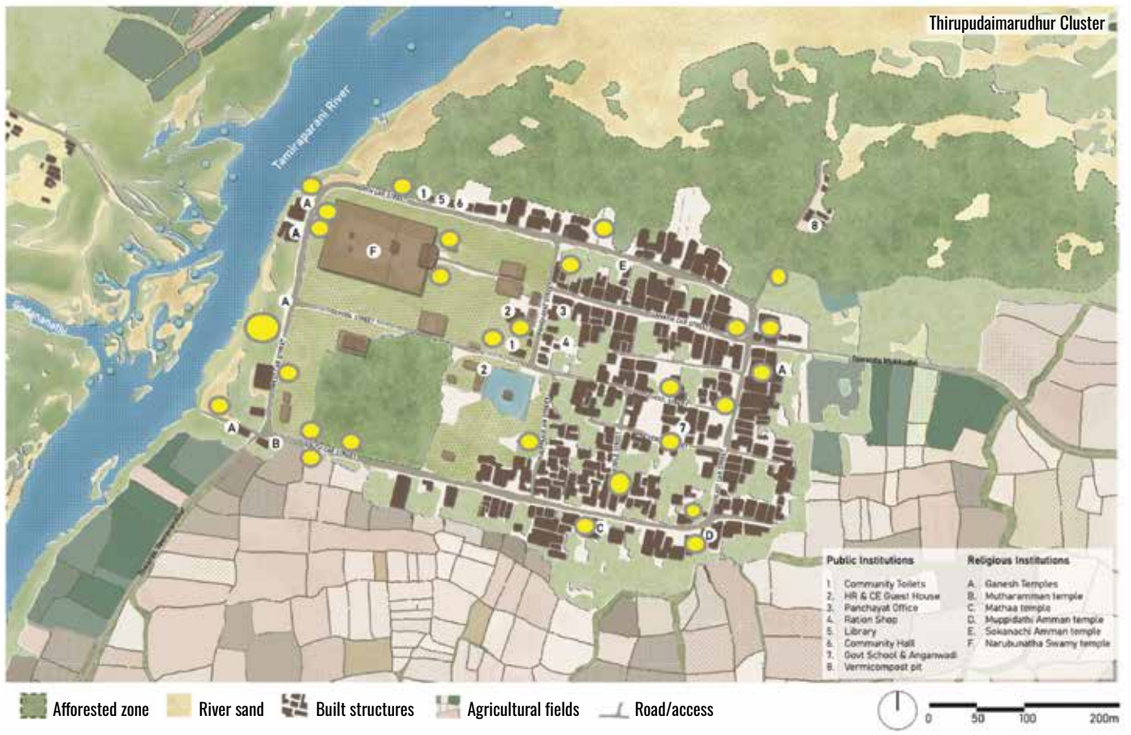
I have not personally seen bottles near the riverside, but I have heard about them from my husband. However, broken bottles are often found in our farmland, and the shards sometimes get stuck in our feet.

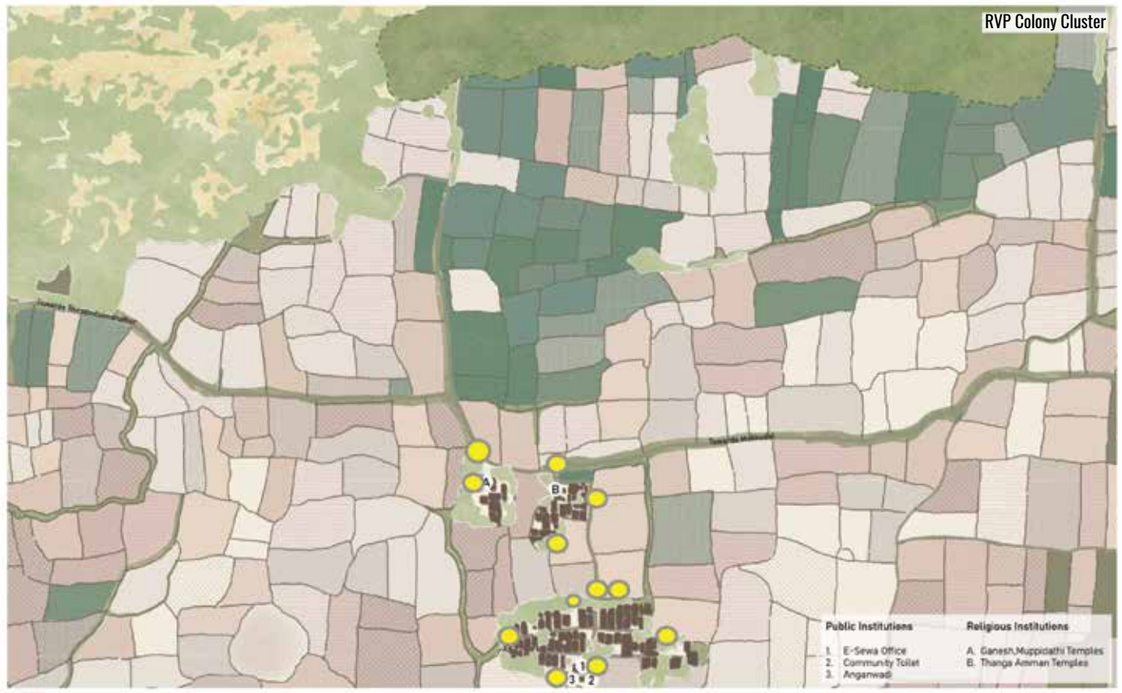
P41, Female, 51, Homemaker, T

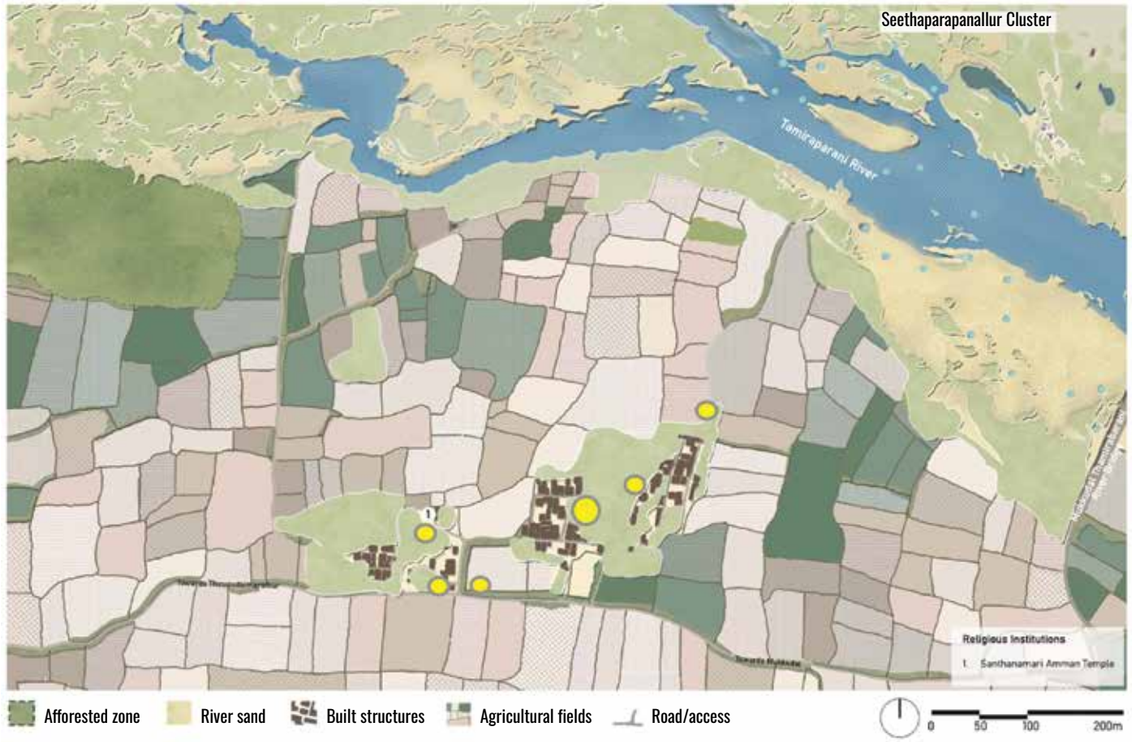
Bars of harsh washing soap and their discarded packaging scattered along the riverbank.

SPATIAL MAPPING OF WASTE LITTERING IN THIRUPUDAIMARUTHUR

Based on field observations and community inputs, zones with frequent waste littering across the three hamlets of Thirupudaimaruthur are indicated by yellow circles.







Wall painting promoting composting practices outside the Self-Help Group (SHG) meeting building.

WASTE SEGREGATION

While the segregation of biodegradable and non-biodegradable waste is widely publicised through posters on village walls, and despite the panchayat emphasising its importance during community meetings, the adoption of waste segregation at the household level remains limited.

Our findings indicate that 76 out of 100 respondents did not segregate their household waste before handing it over to sanitation workers. Consequently, the sanitation workers are required to segregate waste at designated sites within the village manually. However, it was observed that the current vermicomposting site is located in a flood-prone area, and there are no identified alternative locations within the village to which the segregation site can be relocated.

Dilapidated waste segregation facility located in Thirupudaimaruthur.

Flooded waste segregation site observed on December 13, 2024, in Thirupudaimaruthur.

Interviews revealed that while the community is broadly aware of different types of waste, there is a prevailing belief that the responsibility for segregation lies solely with the sanitation workers.

During the Focus Group Discussion (FGD), the Panchayat Secretary emphasised that effective implementation of waste segregation would require immediate penalties for non-compliance. One participant proposed that waste should not be collected from households that fail to segregate; however, others expressed concern that this could lead to indiscriminate dumping on the streets.

There was also uncertainty about who should be responsible for monitoring violations and collecting fines. It was suggested that individuals from outside the community, dressed in official attire, might be more effective, as residents are less likely to heed local panchayat members. The Panchayat President proposed installing surveillance cameras in the village to deter littering.

Additional recommendations included placing colour-coded dustbins for waste segregation in multiple locations and conducting behavioural interventions. It was noted, however, that even the presence of dustbins has not always led to proper usage. Sanitation workers pointed out that many residents lack basic knowledge of how to segregate waste correctly. One respondent suggested using visual aids such as instructional videos to enhance public understanding. Others called for more frequent awareness programs and community meetings to promote waste segregation practices.

Some people use sanitary napkins and discard them on the roads or in public toilets. At times, I have had to collect them without gloves. An officer once took a photograph and showed it at a union meeting, stating that such practices must be stopped.

Sanitation Worker, Female, 49

About a month ago, the sanitation workers asked me to segregate waste. Since I do tailoring, I collect cloth scraps and either store them in a bag or use them to make pillows. But I don't segregate other types of waste because I believe it is their job.

P30, Female, 28, Beedi roller and Tailor, S

Wings, Water and Worship

BEHIND INDORE'S CLEAN SWEEP: BETTER WASTE PRACTICES

Since 2017, Indore, the largest city in Madhya Pradesh, has consistently ranked as the cleanest city in India in the Swachh Survekshan surveys. This success is attributed to the complete segregation of waste at source, systematic door-to-door collection, and the decentralised treatment of wet waste.

In Indore, all collected waste is sent for processing and treatment. Dry waste is transported to material recovery facilities, while wet waste is converted into bio-CNG, which is used to fuel the city's public transport. The initiative began with a pilot program in two municipal wards, focusing on full collection and segregation. Within six to eight months, the model was scaled to 85 wards.

Community participation has been central to the success of this model. Waste is segregated into six categories at the household level. Partitioned vehicles collect the waste separately and transport it to recovery facilities. There, the waste is weighed and further sorted into 18 categories based on size, composition, and reusability.

Indore's waste-to-energy approach minimises landfill use and contributes to sustainable public infrastructure by generating fuel from waste.

Source: Down to Earth
https://www.downtoearth.org.in/waste/the-cleanest-cities-of-india-indore-tops-the-chart-81067

POOR WASTE DISPOSAL PRACTICES

Interviews conducted in Ratnavel Pandian Colony and Seethaparpanallur hamlets revealed that waste collection services in these areas are more irregular compared to the Thirupudaimaruthur hamlet. As a result, residents frequently resort to burning waste or discarding it along roadsides and in vacant plots. For example, only 2 out of 15 respondents in Seethaparpanallur reported handing over their household waste to sanitation workers. In the absence of reliable waste disposal mechanisms, burning waste has become a common practice.

Waste being collected at Thirupudaimaruthur hamlet.

In contrast, the Thirupudaimaruthur hamlet benefits from a more consistent and timely waste collection system. As a result, most residents depend on sanitation workers for the disposal of household waste.

However, observations revealed that the burning of collected waste was a common practice across the panchayat. Contradictory statements were frequently encountered among stakeholders, with instances of waste burning being denied at the panchayat level despite visible evidence to the contrary.

Burned waste observed in the village.

My mother collects coconut shells to sell for money. Electronic waste, such as non-functional mixer grinders, is exchanged for utensils, and neem seeds are also collected and sold to traders. Plastic bottles, however, are typically given away for free.

P1, Female, 23, Student, R

Compost area at a street corner in Thirupudaimaruthur hamlet.

Moreover, irregular waste collection and the poor maintenance of public garbage bins present ongoing challenges in the village. Burning household waste is a common practice, with plastic, cloth, and sanitary napkins frequently observed being incinerated in open areas. More than 50 out of 100 respondents acknowledged burning at least some portion of their household waste. There was no evidence of regular composting practices within the residential areas of the village.

The improper disposal of sanitary napkins has emerged as a significant concern for the community. The widespread stigma surrounding menstrual waste disposal, as noted in broader literature (Newton, 2012), remains prevalent. Among the younger generation, sanitary napkins are commonly used, and disposal methods vary, ranging from burning behind the house, burying along the riverbank, or flushing into private or community toilets. In many cases, mothers are responsible for disposing of their daughters' sanitary waste.

During the FGDs, the proposal to install an incinerator for sanitary waste disposal received strong support. Respondents suggested that awareness and training on the use of the incinerator could be conducted through SHG (Self-Help Group) and Gram Sabha meetings. Suitable locations proposed for placing the incinerator included the area near the community hall in Thirupudaimaruthur and the E-sewa toilet facility in RVP.

UPCYCLING OF WASTE

It is noteworthy that over 80 out of 100 respondents reported engaging in some form of household waste recycling. Commonly recycled items include coconut shells, old electronic appliances, and broken utensils, which are either sold for money or exchanged for usable household items.

PADS WITH PURPOSE: ECO-FEMME'S MENSTRUAL MOVEMENT

Eco Femme is a women-led social enterprise that produces and distributes organic, washable cloth pads. Founded in 2010 by Australia-based Kathy Walking and Jessamijn Miedema, the initiative is based in Auroville and integrates the employment of rural women with a focus on environmental sustainability. Over time, Eco Femme has evolved in response to a growing understanding of menstrual health and the development of the menstrual health ecosystem in India and globally.

In addition to manufacturing cloth pads, Eco Femme conducts menstrual awareness campaigns to promote informed and positive menstrual health practices. *The Pad for Pad* programme provides free cloth pads and menstrual health education to adolescent girls aged 10 to 19 from low-income backgrounds. *The Pad for Sisters* programme makes cloth pads accessible to economically disadvantaged women over the age of 19 who would not otherwise be able to afford them.

Both initiatives aim to foster a sense of dignity and community around menstruation in India.

Source: Eco-Femme
https://ecofemme.org/

I go to the river during my periods because the napkin dump area is located beside the community toilet. I heard about the dump area from my sister. Many people throw the napkins near the tree and fence, so the dog drags them and throws them on the road.

P6, Female, 29, Tailor, T

BEYOND THE TOILET: THE PERSISTENCE OF OPEN DEFECATION

In alignment with Sustainable Development Goal (SDG) Target 6.2, the Government of India launched the Swachh Bharat Mission–Grameen Phase I on October 2, 2014, with the primary objective of making the country Open Defecation Free (ODF).[15] Despite the official declaration of the country as Open Defecation Free (ODF) in 2019, several reports from across India have raised concerns about the accuracy and validity of this claim.[16]

[15] The 2030 United Nations' Sustainable Development Goals (SDGs) Target 6.2 states 'access to adequate and equitable sanitation and hygiene for all and end to open defecation, paying special attention to the needs of women and girls and those in vulnerable situations'. https://sdgs.un.org/goals/goal6#targets_and_indicators. Accessed on 21 Feb, 2025.

[16] https://washdata.org/sites/default/files/2021-07/jmp-2021-wash-households.pdf Accessed on 24 Feb 2025. https://www.thehindu.com/news/national/tamil-nadu/mission-to-ensure-sustainable-sanitation-in-all-villages-at-critical-stage-in-tamil-nadu/article66017115.ece. Accessed on 24 Feb 2025.

In the Thirupudaimaruthur village panchayat, open defecation (OD) remains a significant concern for public health, human dignity, and gender equity. Interviews and Focus Group Discussions (FGDs) with the community reveal that the practice is driven by a complex interplay of economic, infrastructural, and behavioural factors. Contrary to ground realities, the village received the 'Model Village Award' for cleanliness at the district level in 2022.

The village panchayat was declared Open Defecation Free (ODF) in 2015, and this status was reaffirmed during the 2024 Gram Sabha meeting. However, the certification lacks proper evaluation and on-the-ground verification. Despite the construction of 133 household toilets under the Swachh Bharat Mission, several challenges persist. Many household toilets remain non-functional, subsidy amounts have not kept pace with inflation, and deteriorating community toilets have forced residents to continue practising open defecation along the riverside.

The signboard states that the village panchayat has been declared Open Defecation Free (ODF) since 4 November 2015.

There is a community toilet in Thirupudaimaruthur, yet people still defecate in the open. We see a lot of human waste while cleaning the village as part of MGNREGA work. However, within a week of cleaning, the village is littered with waste again.

P18, Female, 40, Beedi roller, S

In the FGDs conducted to understand solid waste generation concerns, respondents emphasised that financial hardship was a major barrier to constructing household toilets. They proposed that even a functional community toilet would be welcome, as it could help reduce open defecation in the village. However, sanitation workers strongly felt that people would continue the practice regardless. In another FGD, respondents noted that some community members have private toilets at home but use them to store fuelwood and other items.

Additionally, the FGD revealed that despite the availability of private toilets, many men continue to practice open defecation out of habit. The toilets at the Panchayat e-Seva Centre in RVP Colony also lack a regular water supply, which further limits their usability.

Table 9: Number of Individual Household Toilets Constructed under Swachh Bharat Mission (SBM)

SBM Phase	Thirupudaimaruthur	RVP Colony	Seethaparpanallur	Total
Phase I (2014–2019)	67	22	9	98
Phase II (2020–2025)	32	1	2	35
Total	99	23	11	133

To combat open defecation (OD), the Swachh Bharat Mission-Grameen (SBM) provides an incentive of ₹12,000 for the construction of individual household latrines (Jal Shakti, 2022). However, the actual cost of building a functional toilet in the village exceeds this amount, prompting households to supplement the subsidy with personal savings. For families with limited financial resources, this additional requirement acts as a deterrent. As a result, those unable to mobilise extra funds are often left without access to household toilets, perpetuating the practice of open defecation. In some cases, delays in the sanctioning of paperwork further hinder access to subsidies.

In the RVP Colony, the challenge extends beyond financial constraints to spatial limitations. Many homes lack the additional land required to construct toilets, rendering residents ineligible for subsidies. Consequently, open defecation remains the only available option.

Even when toilets are constructed, their use is not always assured. Some households in the RVP Colony have repurposed their toilets as storage spaces or chicken coops, reflecting the competing demands on limited household space. This highlights the importance of addressing behavioural and cultural dimensions of sanitation interventions focused solely on infrastructure may fall short without parallel efforts to promote behavioural change.

To address the issue of open defecation and the lack of land or financial resources for private toilets, three community toilet facilities have been

Community toilet complex located near the TBCR premises in Thirupudaimaruthur hamlet.

established in the Thirupudaimaruthur hamlet. However, one is currently non-functional, another is operational but in a dilapidated condition, and the third, located in the interior of the village, remains inaccessible to tourists and visitors. Without consistent maintenance, water supply, and sanitation management, these shared facilities quickly deteriorate, forcing users to return to open defecation.

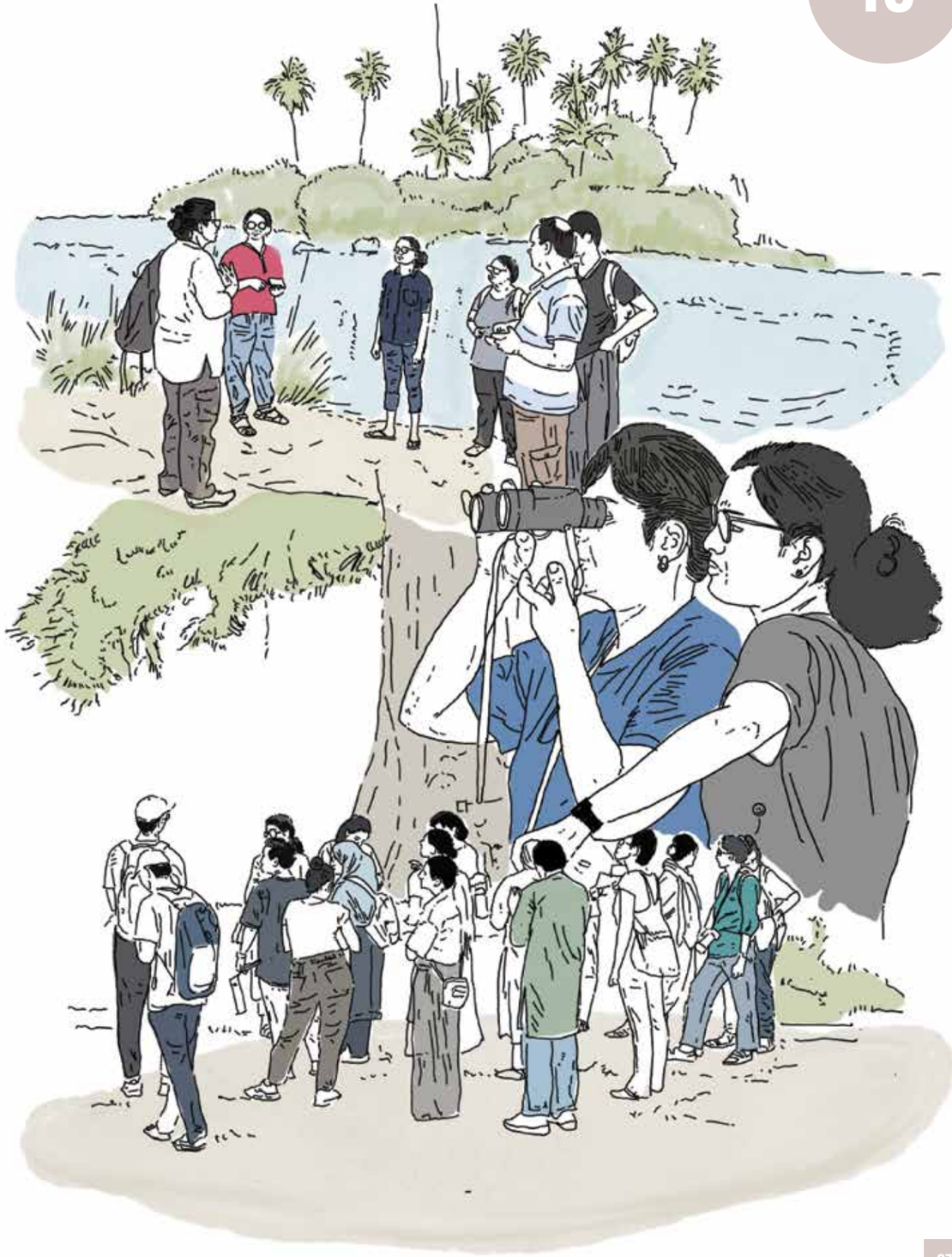
Community toilets are currently absent in both the RVP Colony and Seethaparpanallur hamlets. Focus Group Discussions (FGDs) revealed that access to such shared facilities would significantly reduce the incidence of open defecation in these areas.

A total of 2,178 square feet of panchayat land has been identified in the Seethaparpanallur hamlet for the construction of community toilets. However, no suitable panchayat land is currently available for this purpose in the RVP Colony. Before initiating construction, it is essential to assess the community's willingness to take ownership of the operation and maintenance of these facilities, in collaboration with partner organisations.

Non-functional community toilet located near the river in Thirupudaimaruthur hamlet.

FEASIBILITY OF ECOTOURISM

13



Focus Group Discussion on the feasibility of community-based ecotourism in Thirupudaimaruthur.

INSIGHTS FROM THE COMMUNITY

During conversations and shared discussions on co-developing a community-based ecotourism model, participants in all three FGDs consistently identified the forested area, reserve, river, and Narumbunathar Swamy Temple as the main attractions of the village. The community also expressed strong support for community-based ecotourism, recognising its potential for local income generation.

During the three focus group discussions (FGDs), the community was shown a short documentary on community-based ecotourism initiatives from another region in the country. Drawing inspiration from the model, participants shared a range of ideas for services and experiences that could be offered to tourists, with an emphasis on showcasing the village's rich cultural and natural heritage.

The respondents envisioned a vibrant, community-led tourism model that would offer authentic local cuisine, cultural experiences, and essential services to visitors. Among the proposed services were home-cooked meals and homestay accommodations within the village. They also suggested that the currently dilapidated guesthouse within the reserve, if renovated along with parts of the temple complex, could serve as a lodging facility.

Thirupudaimaruthur is part of the well-known Panchabhuta Temple circuit, which includes Athalanallur, Arikeshavanallur, Mukkudal, and Veeravanallur. The community noted that pilgrims, heritage enthusiasts, and artists could stay in the village and use it as a base for day visits to the nearby temples.

Temple guesthouse in Thirupudaimaruthur.

Changing rooms near the the river in a dilapidated condition

The community also proposed introducing nominal user fees for services such as access to community toilets and dress-changing facilities near the river. The deployment of a designated caretaker or watchman to monitor and prevent the disposal of clothing and other waste into the river was suggested as a viable livelihood opportunity.

Furthermore, community members identified several cultural and recreational experiences that could be developed into income-generating activities. These include demonstrations and participation in traditional games such as *kilianthatu*, *bambaram* (spinning top), *kannambuchi* (hide and seek), and skipping, as well as bullock-cart rides, kolam art exhibitions, and local culinary contests. These activities were viewed as both culturally enriching and economically beneficial components of a community-based ecotourism model.

Drawing from traditional village cuisine, respondents proposed offering dishes prepared using pirandai (Cissus quadrangularis), vallarai (Centella asiatica), and banana stalk. These ingredients are nutritionally rich and reflect the region's authentic flavours, which tourists may associate with wholesome, health-oriented food offerings.

A glimpse of the recent traditional food preparation competition held in the village.

A comparable initiative was previously attempted by an organisation that established a small shop in the village. However, the effort did not succeed, largely due to the absence of clear operational guidelines, particularly concerning alcohol consumption, a factor of significance in this temple town. This underlines the importance of culturally appropriate planning when designing community-based ecotourism activities.

INSTITUTIONALISING TOURISM

To institutionalise tourism in the village, respondents across the focus group discussions highlighted the need to establish a dedicated tourism committee. However, they noted that members should receive financial remuneration, as participation in meetings and committee responsibilities would reduce their availability for regular livelihood activities. Consequently, a voluntary framework may not be viable for sustaining committee operations.

When asked about involving youth in the tourism initiative, responses were mixed. While some supported their inclusion, others expressed scepticism, citing limited youth engagement in current village-level functions and development activities.

Effective governance will be critical to the successful implementation and long-term sustainability of the ecotourism model. Several infrastructural and logistical concerns were raised, including irregular bus services and unreliable transport facilities. The absence of designated spaces and necessary amenities for homestay accommodations was also noted. One external participant observed that several traditional homes in the village, though currently unoccupied, could be repurposed for homestays with appropriate renovations.

Respondents also stressed the importance of language training, particularly in English, to enable residents to offer basic hospitality services. Lastly, the availability of government funding was deemed essential to support the development and maintenance of a community-based ecotourism model.

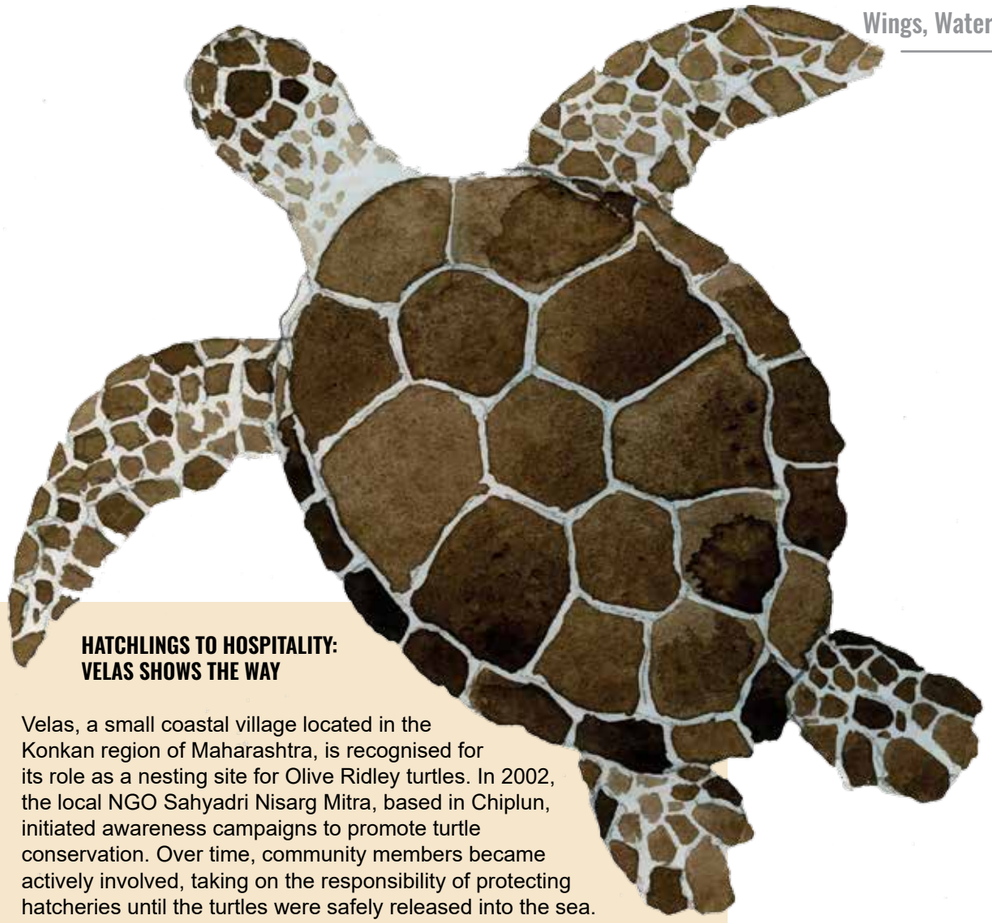
Pilgrims gather and offer rituals by the river throughout the year.

INSIGHTS FROM TOURISTS

To support the development of a community-based ecotourism model, a survey was conducted with non-resident visitors to Thirupudaimaruthur. The respondents included pilgrims, individuals from nearby villages and towns, and biodiversity enthusiasts.

Of the 24 individuals surveyed, more than 15 reported that their visit was primarily for religious purposes.In addition to temple visits, the Tamiraparani River serves multiple functions for visitors. Pilgrims use the river for ritual practices, while others from nearby areas engage in activities such as bathing, washing clothes, and recreational use. These varied visitor profiles offer valuable insights for designing ecotourism experiences that balance cultural, spiritual, and ecological interests.

All respondents reported relying on privately owned vehicles or hired transport to access the village, citing inadequate public transportation as a key constraint. Ten respondents specifically identified the lack of reliable bus services as a major challenge, limiting their travel options and necessitating dependence on private means. Women respondents noted that they preferred to travel in groups to ensure personal safety.



HATCHLINGS TO HOSPITALITY: VELAS SHOWS THE WAY

Velas, a small coastal village located in the Konkan region of Maharashtra, is recognised for its role as a nesting site for Olive Ridley turtles. In 2002, the local NGO Sahyadri Nisarg Mitra, based in Chiplun, initiated awareness campaigns to promote turtle conservation. Over time, community members became actively involved, taking on the responsibility of protecting hatcheries until the turtles were safely released into the sea.

Subsequently, the Mangrove Foundation collaborated with Sahyadri Nisarg Mitra to establish a successful community-based ecotourism model. Under this initiative, residents assumed roles as beach managers, homestay providers, and nature guides, offering structured experiences to visitors who came to observe the hatchling release.

A major highlight of this model is the annual Turtle Festival, held at the end of March, which attracts visitors from across the country. In addition to turtle conservation, the initiative has expanded to include other elements of local biodiversity, thereby diversifying the ecotourism offerings. To ensure quality service delivery, the partner organisations conducted hospitality training programmes aimed at integrating local ecological knowledge with conservation messaging for tourists.

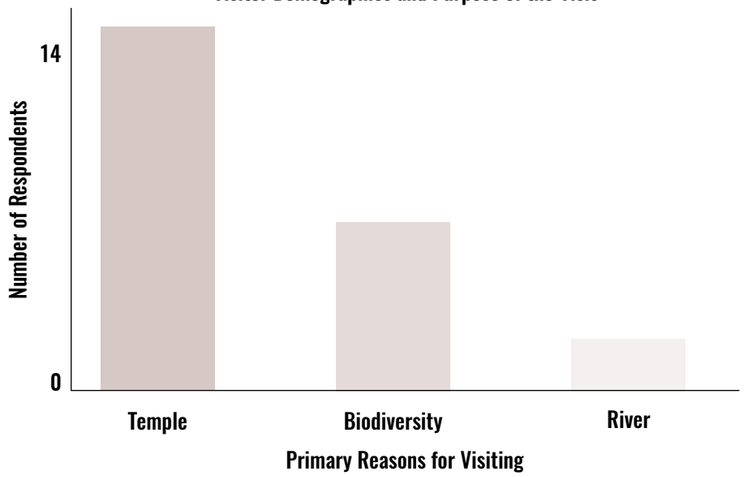
Source: Scroll. in https://youtu.be/p3j9BbKMWqY?si=aljh37oBo56bCf_s

Wings, Water and Worship

With regard to infrastructure, respondents expressed the need for improved navigation through signboards, enhanced public sanitation facilities, availability of shops and eateries, designated parking areas, and access to basic medical services. Simultaneously, visitors highlighted concerns about inadequate waste management in the village. They cautioned that, without proper planning and infrastructure, the development of ecotourism could lead to significant environmental and logistical challenges.

Community engagement, primarily through Focus Group Discussions (FGDs), revealed several perceived co-benefits of introducing tourism in the village. Respondents noted that tourism could incentivise environmental cleanliness, with one participant suggesting that the presence of visitors might prompt the removal of invasive species such as *Prosopis juliflora* (locally known as *karvela maram*), which has proliferated across the village landscape. Tourism was also seen as a potential catalyst for raising awareness about open defecation along the riverbanks, thereby encouraging improved hygiene practices. Moreover, participants identified opportunities for local employment generation, including through schemes like MGNREGA. Nevertheless, some respondents expressed concern that a rise in tourist footfall could result in increased waste generation, highlighting the need for robust waste management planning.

Visitor Demographics and Purpose of the Visit



POTENTIAL CURATED EXPERIENCES

Wings, Water and Worship

These experiences were ideated by the community during FGDs as potential services that would be curated for tourists.

FISHING AND CAMPING: CURATING AN IMMERSIVE, AROMATIC ECOTOURISM EXPERIENCE ALONG THE TAMIRAPARANI

Situated along the banks of the Tamiraparani River in Thirupudaimaruthur, the proposed fishing and camping initiative is conceptualised as a model of low-impact, multisensory ecotourism that integrates principles of environmental sustainability, cultural immersion, and community-led stewardship. The campsite infrastructure will incorporate biodegradable materials and non-intrusive fire arrangements, thereby ensuring minimal ecological disturbance to the riparian ecosystem.

The evening programming will feature structured storytelling sessions, drawing on the region's rich corpus of riverine folklore and ecological history, to foster place-based cultural and environmental awareness among visitors. Culinary components will be grounded in traditional methods, with meals prepared over open fires using native herbs, smoked river fish, and regionally cultivated grains, thereby offering participants a sensorial engagement with local cuisine. The initiative of guided fishing experiences will be led by local fisherfolk, who will introduce visitors to sustainable methods of cast-netting and hand-line methods. These sessions will serve not merely as recreational activities but as platforms for ecological education, emphasising species diversity and environmental knowledge that characterises traditional fishing practices. All programme components will be framed within a rigorous conservation ethic, with facilitators trained to incorporate ecological messaging throughout the visitor experience.

Women drawing kolam at an event in Thirupudaimaruthur.

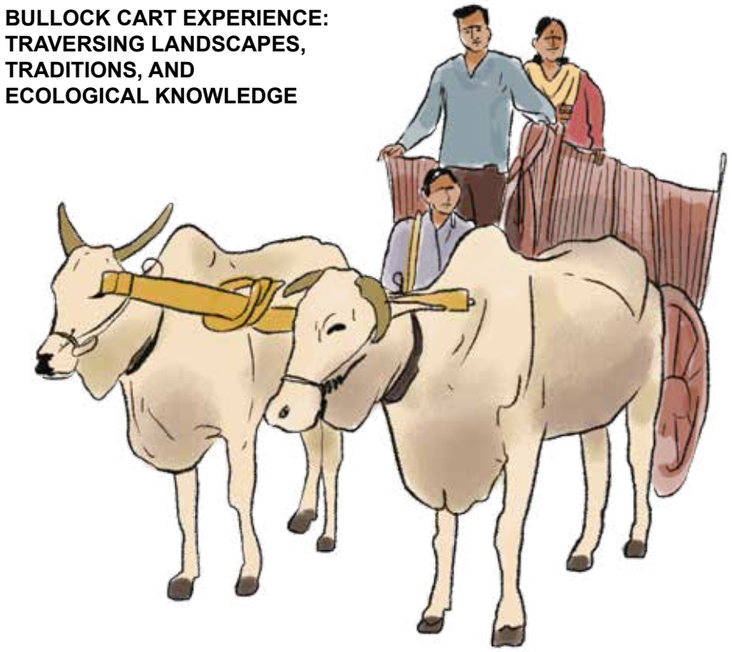
KOLAM: WHERE ART MEETS AGRICULTURE

As part of the proposed eco-cultural experience, interactive sessions will be designed to engage visitors in the traditional practice of kolam, the intricate floor designs created using rice flour, emblematic of Tamil domestic and ritual life. These sessions will extend beyond technical instruction to critically explore the cultural, agricultural, and ecological dimensions of the art form. Rooted in the temporal rhythms of agrarian life, kolam is traditionally drawn at the thresholds of homes to mark seasonal transitions, honour festivals, and structure daily rituals. As an ecologically mindful practice, it utilises biodegradable materials, mostly rice flour, that sustain non-human life forms such as ants and birds. Through hands-on participation and interpretive dialogue, visitors will gain an appreciation for how artistic expression, ecological ethics, and agricultural temporality are interwoven in the fabric of everyday village life, positioning Kolam as both a visual tradition and a living system of knowledge.

FLAVOURS OF THE SOIL: COOKING WITH THE WOMEN OF THE VILLAGE

As part of the immersive ecotourism experience, participatory cooking workshops will be facilitated by women, offering visitors a direct engagement with the region's culinary traditions. Centred on seasonal and locally sourced ingredients, these sessions will highlight age-old recipes that reflect the intimate relationship between food, land, and livelihood. Participants will gain hands-on experience preparing dishes featuring millets, greens that are collected from within the landscape, native pulses, and hand-pounded spices, each recipe carrying embedded narratives of ecological knowledge, nutritional wisdom, and cultural continuity. These workshops aim not only to showcase indigenous food systems but also to serve as platforms for cultural exchange, women's economic empowerment, and food as a medium of identity and memory.

BULLOCK CART EXPERIENCE: TRAVERSING LANDSCAPES, TRADITIONS, AND ECOLOGICAL KNOWLEDGE



This initiative invites visitors to engage with the cultural and ecological landscapes of the region through immersive, slow-paced experiences grounded in traditional modes of mobility and local knowledge. Guests may choose to accompany village trackers in a day-long engagement that reveals the nuances of reading the land, including interpreting animal tracks and recognising bird calls. In doing so, participants' deeper respect for human–nature relationships shaped by observation, adaptation, and coexistence.

Alternatively, bullock cart rides along scenic village trails offer a sustainable and reflective mode of exploration. Traversing groves, agricultural fields, temple tanks, and communal spaces, these rides, narrated by local elders or farmers, will interweave stories of land, labour, and lore. Each journey serves not only as a means of travel but as a narrative passage through the rhythms, memories, and practices that define everyday life in the village.

IN RHYTHM WITH THE VILLAGE: CELEBRATING THE TAMIL FESTIVAL CALENDAR

The initiative will offer visitors the opportunity to engage meaningfully with the cultural life of the village through participation in key Tamil festivals such as Pongal and Thaipusam if the festivals overlap with a visit to the village.. These celebrations embody the community's deep-rooted connection to agriculture, seasonal cycles, and spiritual practice.

During Pongal, guests may witness or participate in harvest rituals, including the preparation of freshly harvested rice in earthen pots, the adornment of cattle, and the creation of intricate kolam designs, each act symbolising gratitude and renewal. Thaipusam processions, often marked by music, devotional expression, and rituals, reveal the layered dimensions of personal and collective spirituality.

By engaging with these festivals not merely as spectators but as participants, visitors will gain insight into the rhythms and values that structure village life.

A chariot procession during the Thaipusam festival.

EXPERIENCE ART AND CRAFT TRADITIONS

As part of the cultural immersion programme, visitors will embark on a curated day trip across Thirupudaimaruthur to explore the region's rich and diverse artistic traditions. The journey will include guided interactions with local artisans, such as potters, kolam practitioners, and traditional weavers, who will share the histories, techniques, and cultural meanings embedded in their crafts. These engagements will offer insights into the aesthetic forms, social functions, and intergenerational knowledge systems that sustain these practices.

Beyond passive observation, visitors will be encouraged to document their experiences through sketching, photography, or reflective narration. In doing so, they become active participants in the recognition, preservation, and transmission of intangible cultural heritage, deepening their understanding of how artistic expression serves as a living archive of memory, identity, and community.

Within a 15 km radius of Thirupudaimaruthur, the arts and crafts include:

Pottery in Karukurichi

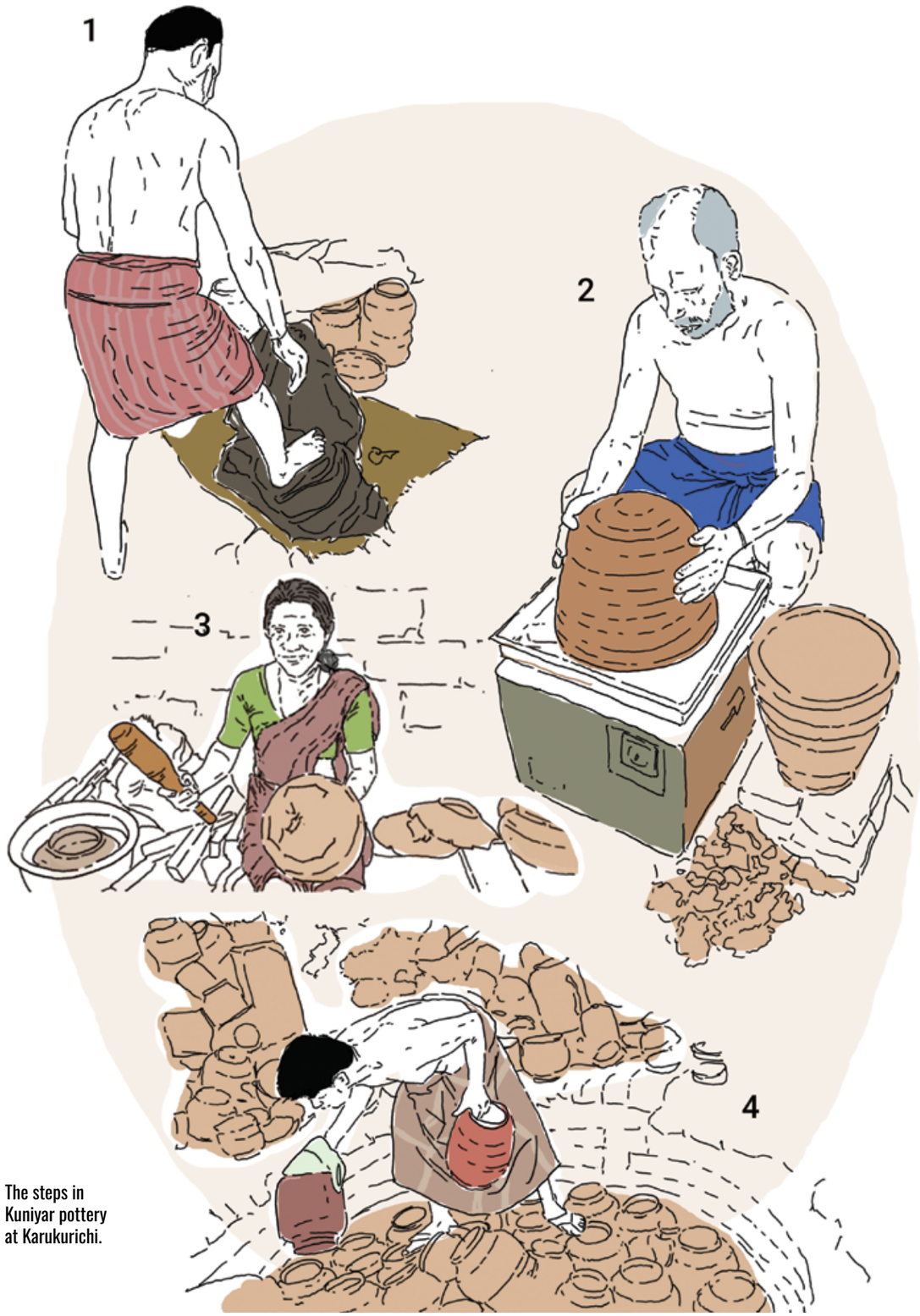
The ancient pottery tradition, known as Kunniyur pottery, is practised in Karukurichi, located 11 km from Thirupudaimaruthur. This art form has been passed down through generations, and approximately twenty-five families in the area are currently engaged in the craft. Its distinctive characteristics and cultural significance have earned it a Geographical Indication (GI) tag. Kunniyur pottery is particularly noted for the production of flower pots, mud refrigerators, and religious figures.

The pottery-making process begins with the collection of clay from fifteen ponds in Puthur (7.7 km away) and Malayankulam (15.2 km away). The clay is often stored for use over an entire year. To prepare it, the soil is moistened by sprinkling water and then trampled by foot to achieve the required malleable consistency.

Although the government supplied machinery five years ago to improve clay consistency, most artisans continue the traditional method of trampling the soil manually. Once prepared, the clay is shaped on a wheel known locally as a *sailaa*. Traditionally, bamboo wheels were used, but these are no longer in practice.

Pottery production involves multiple stages. Initially, the body of a pot is formed without the base and left to dry for one to two days, depending on weather conditions. The base is then attached, and handles are fixed using a device called a *thiruval*. To enhance appearance, red soil sourced from Panboli, Sengottai, is applied for a natural sheen. The pots are then sun-dried and fired in a kiln, locally referred to as a *sullai*.

Products are sold to buyers worldwide, primarily through agents. While government subsidies are available, artisans still incur significant production costs, impacting overall profitability.



The steps in Kuniyar pottery at Karukurichi.

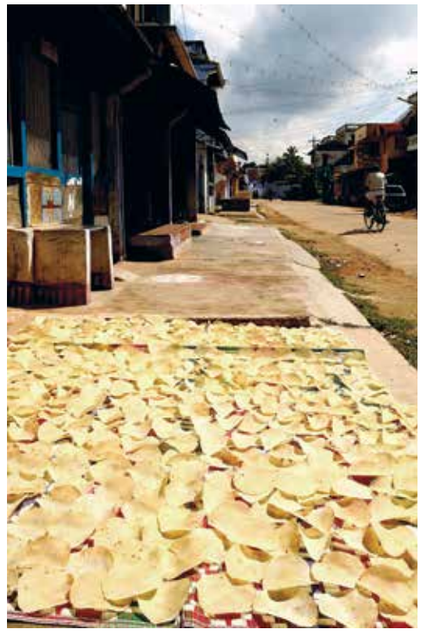
Appalam-Making in Kallidaikurichi

Kallidaikurichi, situated on the banks of the Tamiraparani, is celebrated across Tamil Nadu for its appalam-making tradition, which has become integral to the cultural identity of the town. For generations, appalam has been prepared in the *agraharams*, the traditional Brahmin quarters of the settlement, where women, often working collectively in courtyards, sustained both household economies and a craft that came to define the town's reputation.

The making of appalam here retains its artisanal essence despite gradual mechanisation. Urad dal is the primary base, ground and blended with spices, kneaded into a pliable dough, and hand-rolled into thin discs. These are dried in carefully managed cycles of shade and sunlight to achieve the crisp texture for which Kallidaikurichi appalam is renowned. Variants such as *milagu* (pepper), *jeeragam* (cumin), *rettai* (double-layered), and *arisi* (rice-based) appalam display the community's inventiveness. The unique flavour and brittleness are often attributed to the mineral quality of Tamiraparani water and the region's dry climate.

Today, appalam-making remains largely a household enterprise, supported by agents and small traders who link local production to wider markets. Some families have moved towards small-scale branding and packaged sales, yet much of the labour continues to be done manually, ensuring the craft's authenticity. Thus, a cultural emblem of Kallidaikurichi, preserving the bond between community, craft, and place.

Appalam drying-process in Kallidaikurichi (Source:https://lakshmisharath.com/india-through-my-eyes-drying-appalams-or-papads-on-the-doorstep-3/)



Mat weaving in Pattamadai.

Pattamadai Pai in Veeravanallur and Pattamadai

The mat weaving practice, famously known as pattamadi pai in Pattamadi, has been passed down through five generations. These mats have been granted a Geographical Indication (GI) tag for their unique cultural value, giving the artisans a distinct identity in the marketplace.

The primary raw material for weaving these mats is sedge *(Cyperus pangorei)*, sourced from Karur. The Craft Council of India (CCI) supplies this material to the weavers in installments, with monthly payments made by the artisans. A CCI representative plays a key role in supporting the community, including facilitating participation in exhibitions in cities such as Chennai and Delhi. The weavers are also supported by the Mat Weavers' Society, which helps them market and sell their finished products. Recently, they have received additional support from NABARD (National Bank for Agriculture and Rural Development) to rebuild their community weaving spaces.

Weavers use both traditional handlooms and electronic jacquard handloom machines. The process begins by soaking the sedge, locally known as korai, for two days. Once soaked, the material is cleaned to remove waste matter, locally called seengi. The cleaned sedge is then dried in the sun and bundled. For dyeing, water is boiled in a pot, colouring powder is added, and the sedge is boiled in this mixture for about thirty minutes. After dyeing, the material is dried again and tied into bundles, ready for weaving.

The weaving process involves knotting threads onto a plank on the loom, pulling them tight, and securing them to another plank. Once the threads are firmly fixed and checked for alignment, the korai strands are inserted

A woman weaves a mat in Pattamadai.

between them and woven into a mat. These mats are especially popular during weddings, often customised with names, couple portraits, or symbolic designs.

In earlier years, the artisans also produced modern-use items such as wallets and bags, but this practice has declined due to a lack of design training for broader markets. The community has requested the CCI to provide such training so production of these products can resume. To reach a wider audience, the weavers also sell their mats online through the iTokri platform (https://itokri.com/search?q=korai).

Traditional wooden toys for children and carved idols at Ambasamudram.

Kadasal Toy Making at Ambasamudram

The traditional craft of Kadasal toy making, locally known as *Ambasamudram Choppu Saman*, has been practised for over 300 years and remains an important part of the cultural heritage of the Tirunelveli region. The artisans produce miniature wooden kitchen utensils, spinning tops, carts, walkers, musical instruments, and decorative items. These products are especially popular during the pilgrimage season.

The toys are eco-friendly and made from seasoned teak, rosewood, rubberwood, or eucalyptus. Artisans use non-toxic vegetable dyes and lac resin for colouring, and screw pine (*thalampoo*) leaves for polishing the finished pieces.

The process begins with selecting and seasoning the wood to remove moisture and prevent cracks. The wood is then shaped using chisels, knives, and lathes, followed by detailed carving to define contours and features. The surface is smoothed with sandpaper before a base coat is applied. Then colours are added using natural or synthetic pigments, often inspired by temple art, flora, fauna, and rural life. The finished items are polished to enhance appearance and durability.

Today, fewer than 100 families continue the tradition. Artisans face challenges such as low income and limited market access. The Ambasamudram artisans' association has applied for a Geographical Indication (GI) tag to improve recognition. Market access initiatives include local craft stores in Tirunelveli, as well as occasional participation in exhibitions.

An artisan at work crafting a vilakku.

***Vagaikulathu Kuthuvilakku* at Vagaikulam**

The *Vagaikulathu Kuthuvilakku* is a traditional brass oil lamp made by artisans in Vagaikulam, Tamil Nadu. These lamps are used in temples, households, and cultural ceremonies, and symbolise light, prosperity, and auspicious beginnings. The design of the lamps follows the specifications outlined in the Agama Shastras, which define proportions, motifs, and symbolism.

The primary raw material, high-quality brass, is sourced from regional metal markets. The process begins with mould preparation, traditionally using clay. Brass is melted in a furnace and poured into the moulds to form the lamp components. Once cooled, the parts are refined and shaped using hand tools and lathes to ensure symmetry and precision.

The characteristic features of the *Vagaikulathu Kuthuvilakku* include a tiered central stem, multiple spouts for wicks, and decorative motifs such as birds, deities, or floral designs. The individual parts are assembled with careful alignment for stability. The surface is then polished using natural agents such as tamarind paste or with modern polishing tools. In some cases, gold or silver plating is applied for ceremonial use.

Vagaikulam remains one of the key lamp-making centres in Tamil Nadu. The craft continues to rely on generational skills, although artisans have expressed the need for improved polishing equipment and better access to export markets.

Traditional *Vagaikulathu Kuthuvilakku* on display.

Saurashtra sari weaving at Veeravanallur

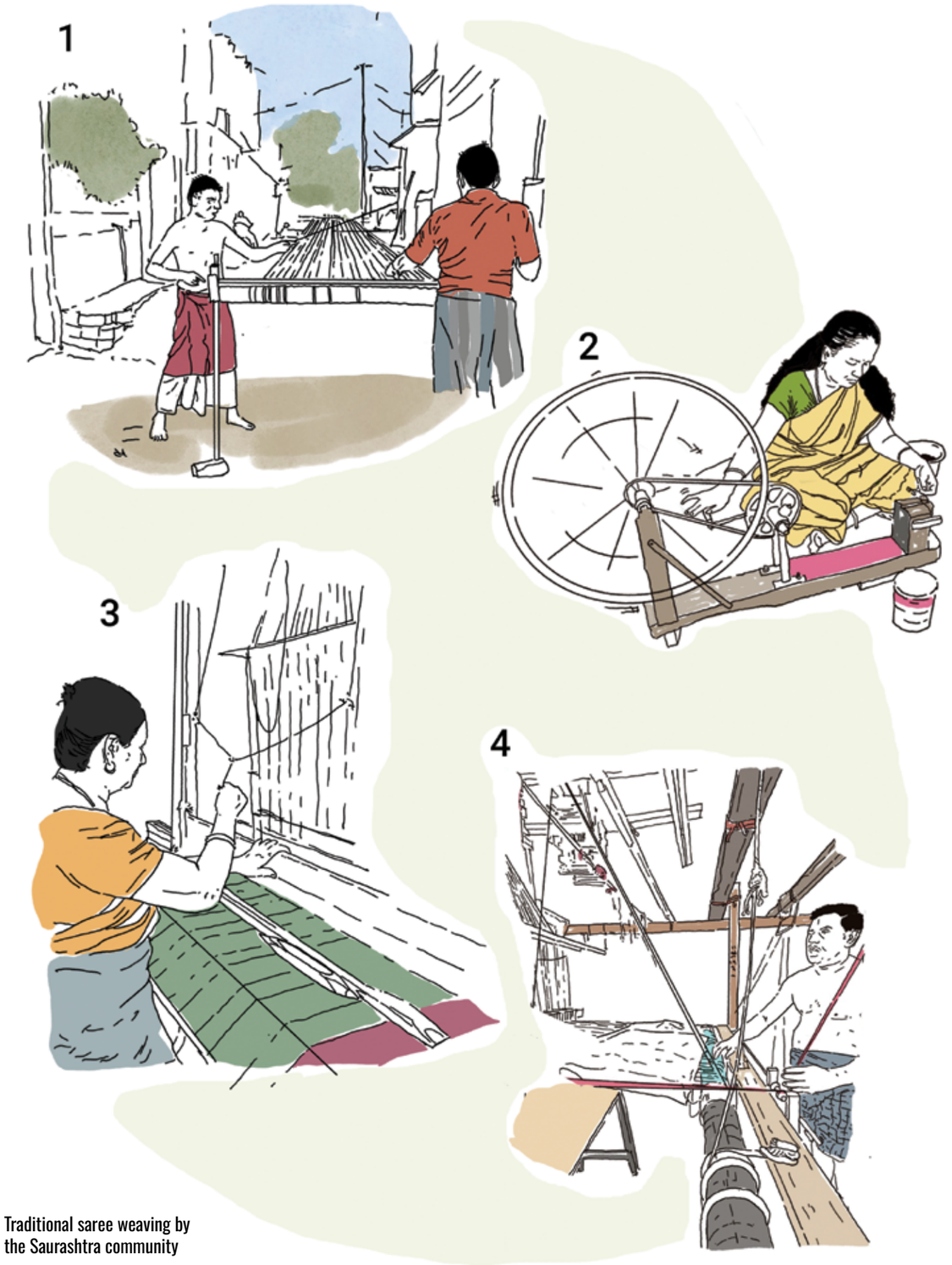
In Veeravanallur, saree weaving is a traditional craft practised by the Saurashtra community, which migrated from Gujarat generations ago and settled in this town.

The art of saree weaving is an intricate and time-consuming process, often taking weeks to produce a single saree. It begins with sourcing yarn from regions such as Thanjavur and Kumbakonam. The silk thread is first dyed, and after drying for four to five days, boiled rice water is applied to the thread to strengthen it for weaving. This process, known as *paavu*, typically requires the collaborative effort of the community. The threads are stretched and wrapped around a palm tree, then separated and bundled in preparation for weaving. The sarees are woven by hand using a loom called a *kaithari* (handloom). Great care is taken to build intricate patterns into the fabric, with each weave contributing to the final design.

Once completed, the sarees are handed over either to societies or to agents, depending on who originally supplied the yarn used in the weaving.

However, in recent years, many families in the town have abandoned the weaving profession due to insufficient income. Some weavers express that, although the profit margins are low, they continue in the hope of receiving a monthly pension after retirement. Additionally, children from these weaving families are eligible for scholarships through the Tamil Nadu Unorganised Workers Welfare Board.

By integrating saree weaving experiences into the local ecotourism initiative, visitors can directly support weavers through on-site purchases, skill demonstrations, and cultural interactions, thereby helping to sustain this heritage craft and improve the artisans' livelihoods.



Traditional saree weaving by the Saurashtra community

Wings, Water and Worship

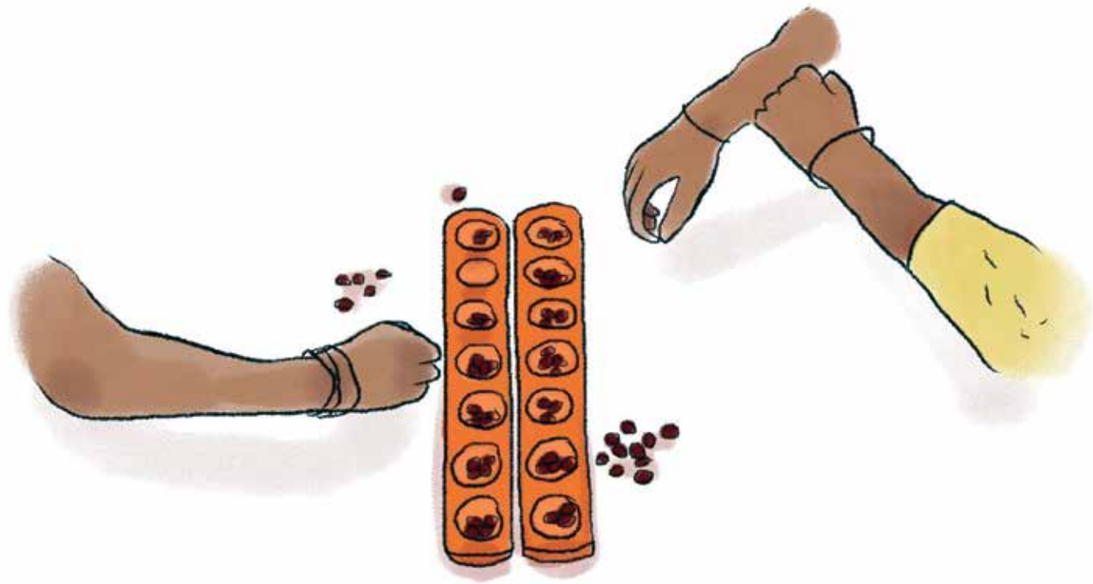
A DAY IN THE FIELDS: IMMERSING IN AGRARIAN RHYTHMS AND RURAL KNOWLEDGE

This experiential module offers visitors the opportunity to spend a day alongside local farmers, actively participating in seasonal agricultural tasks such as seedling transplantation, weeding, or crop harvesting. Through direct engagement with the land, guests will gain a deeper understanding of the temporal rhythms that shape rural life, particularly the reliance on monsoon-timed cycles and the ecological knowledge embedded in traditional farming practices.

By fostering embodied learning and dialogue, this activity cultivates a grounded appreciation for farming livelihoods, while also opening space for reflection on contemporary issues such as food sovereignty, ecological resilience, and the evolving aspirations of rural communities in a changing agrarian landscape.

TRADITIONAL GAMES: PLAYGROUNDS OF MEMORY AND MOVEMENT

This component of the programme invites visitors to participate in interactive sessions focused on traditional village games that once enlivened courtyards, open fields, and dusty lanes. Games such as *pallanguzhi*, a strategic seed-based board game typically played by women and elders; *Kabaddi*, a vigorous contact sport that demands strength, agility, and teamwork; *Uriyadi*, a festive game involving blindfolded attempts to break hanging pots; and *Gilli-danda*,



a game of coordination and precision using wooden sticks, will be featured as active expressions of rural leisure culture. Each of these games reflects specific aspects of social interaction, physical skill, and community-based recreation.

A special feature is *bambram*, the traditional spinning top game, where participants will learn to wind and launch wooden tops crafted by local artisans. By engaging in these practices, visitors will gain an appreciation for forms of play that are physical, communal, and embedded within the cultural fabric of village life, while also contributing to the revival and continuity of intergenerational traditions.

TRAILS[17]

Eco-Heritage Trail

The Eco-Heritage Trail covers approximately one kilometre and is best experienced in the early hours of the day, between 6:00 am and 8:30 am, when both birds and the temple are at their most active. Starting from the entrance of the Narumbunathar Temple, the walk immediately immerses you in the quiet charm of Thirupudaimaruthur's cultural and natural heritage. The sacred Nandavanam grove, adjacent to the temple, is alive with the calls of birds greeting the morning sun. Tall native trees provide shade as well as habitat for colonies of fruit bats returning from nocturnal foraging and for flocks of painted storks, spot-billed pelicans, and egrets busy with nesting activities during the breeding season.

[15] These trails are developed with the assistance of Dr. A Thanigavel, the biodiversity specialist at ACCC.

Eco-Heritage Trail

Best time to visit:
6 am and 8:30 am

Duration:
45 to 60 minutes

Morning is the ideal time to watch wetland birds flying in from the nearby river to feed their young. Local guides point out bird species and explain their nesting habits, while the sound of evocative chants creates a serene background. The gentle light also makes it easier to appreciate the detailed stone carvings and Tamil inscriptions within the temple precincts. The *raja gopurams* reveal centuries-old murals depicting mythological and historical scenes.

As you move along the trail, the harmony between the cultural and ecological landscape becomes clear. The sacred grove has been protected for generations due to religious customs, ensuring that it remains a safe refuge for biodiversity. In turn, the grove enhances the temple environment, offering tranquillity and a sense of seclusion.

Completing the trail at a leisurely pace takes about 45 to 60 minutes, allowing time to pause for birdwatching, photography, and quiet reflection. For visitors, this is not only a walk through history and nature but also an intimate introduction to the rhythms of village life, where cultural tradition and ecological stewardship are woven into the start of each day.

Riparian Trail

The Riparian Trail extends for approximately two kilometres along the banks of the River Tamiraparani, offering visitors a close and uninterrupted view of the life that the river sustains. This trail is best enjoyed in the early morning, between 6:30 am and 9:00 am, when the light is gentle, temperatures are pleasant, and bird activity along the sandbanks is at its peak.

Riparian Trail

Best time to visit:
6:30 am and 9 am

Duration:
60 to 90 minutes

Starting from the edge of the village, the walk follows the natural curve of the river, where the sight of flowing water sets a calm and reflective tone for the journey.

The sandbanks provide excellent vantage points for observing wetland birds at close range. Painted Storks, Spot-billed Pelicans and egrets stand motionless in the shallows, waiting to strike at fish. Guides often carry binoculars to help visitors appreciate the detail in the birds' plumage and behaviour.

The river is home to a variety of aquatic life, most notably the Tamiraparani barb (*Dawkinsia tambraparniei*), a freshwater fish species found only in this river system. Interpreters explain the ecological significance of this fish, its role in maintaining the river's biodiversity, and the conservation challenges it faces. Along the way, visitors encounter local fishermen engaged in their daily routines. These interactions offer authentic insights into traditional fishing techniques, seasonal patterns of the river, and how shifts in water flow, sand mining, and pollution have altered the river's ecology and affected livelihoods.

The riparian vegetation along the trail is equally compelling. Native trees and shrubs stabilise the riverbank, reducing erosion and providing shelter for insects, amphibians, and reptiles. These smaller creatures form an important part of the river's food chain and are vital for maintaining its ecological health.

The entire walk typically takes 60 to 90 minutes at a relaxed pace, allowing visitors to stop for birdwatching, photography, and conversations with the fishing community. The Riparian Trail is not only a scenic experience but also a learning journey that deepens understanding of how natural resources, biodiversity, and human livelihoods are intricately linked.

Bird Watch Trail

Best time to visit:
6 am and 9 am

Duration:
120 to 150 minutes

Bird Watch Trail

The Bird Watch Trail is the most extensive of the three routes, tracing a full circuit through Thirupudaimaruthur and offering an intimate encounter with its avian diversity, agricultural traditions, and riverside ecology. Covering the entire village landscape, this trail is best experienced in the early morning between 6:00 am and 9:00 am, when bird activity is high, farmers are active in the fields, and the light is ideal for photography and observation.

The walk begins in the paddy fields of the Ratnavel Pandian Colony hamlet, where the first light of day reveals Asian palm-swifts gliding overhead, cattle egrets following the plough, and smaller species such as the paddyfield pipit, ashy prinia, and yellow-throated sparrow moving through the crops. This is also the time to witness the rhythm of village farming life, with men and women working together in the fields, tending to seedlings or harvesting grain depending on the season.

After the paddy is harvested, the stubble fields become grazing grounds for the native Thenpandi cattle, a breed found only in the southern region of Tamil Nadu. Along this stretch, the trail introduces visitors to the medicinal plants that grow on the field margins, with the opportunity for a hands-on session in preparing herbal tea from freshly gathered leaves. Irrigation canals that crisscross the fields are home to a miniature world of crabs, dragonflies, frogs, and spiders, with guides explaining their roles in the agro-ecosystem and pointing out agricultural pests that are part of the food web for many birds.

As the fields give way to the riparian forest along the River Tamiraparani, the air cools under a canopy of afforested trees. These trees serve multiple purposes: they provide shade for people, fodder for cattle, and a protective barrier that reduces sand erosion during floods. Birdwatchers can spot baya weavers constructing intricate nests that hang from the branches, wetland birds feeding along the riverbank, and bats swooping down to drink from the water's surface. The presence of fishermen casting their nets adds another

layer to the experience, connecting the biodiversity of the river to the livelihoods it sustains.

The trail concludes at the Narumbunathar Temple, where visitors encounter a blend of natural and cultural heritage. The temple grounds shelter a heronry that comes alive with the calls of nesting birds. The temple's architecture, stone carvings, and paintings provide a fitting finale, linking the day's observations of wildlife and village life to a deep historical and spiritual context.

Completing the Bird Watch Trail typically takes two to two-and-a-half hours, allowing time for bird spotting, photography, interactive sessions with farmers, and moments of quiet reflection. For visitors, it is an opportunity not only to observe a remarkable diversity of species but also to understand how this biodiversity is woven into the daily lives and traditions of the community.

BIODIVERSITY FESTIVAL

To create a lasting impact on biodiversity conservation and rural livelihoods, ecotourism must move beyond passive sightseeing and offer immersive, meaningful experiences.

An annual biodiversity festival could serve as a platform for tourists to participate in conservation efforts firsthand, making their visit both educational and impactful. Such a festival would also strengthen environmental awareness, foster accountability among visitors, and empower local service providers by giving them direct experience in managing and curating ecotourism activities.

Table 10: Proposed Itinerary for a Three-Day Package during the Biodiversity Festival

Day	Time	Activity	Focus/Experience
Day 1 – Nature and Culture Immersion	Early Morning	Bird Walk	Spot key waterbirds; meet local stewards who protect nesting sites.
		Traditional Breakfast	Enjoy breakfast in the mandapam with a view of nesting birds.
	Forenoon	Riparian Walk	Discover riparian biodiversity and ecological restoration at the Tamiraparani River.
		Bullock Cart Ride & Agricultural Immersion	Ride through village landscapes; hands-on paddy field activities (sowing, harvesting).
	Afternoon	Fishing Experience	Learn traditional fishing techniques.
		Community Culinary Engagement	Participate in cooking and food-sharing practices that foster sustainability and social cohesion.
	Evening	Temple Heritage Walk	Explore Puchabuta temples, architecture, and cultural legacy.
Day 2 – Arts, Crafts, and Community Engagement	Early Morning	Bird Walk & Riparian Experience	Observe bird species and learn restoration practices.
		Traditional Breakfast	Seasonal dishes in an open-air setting.
	Forenoon	Art & Craft Tour	Visit artisans of palm leaf weaving, terracotta pottery, and wooden toys; hands-on sessions and storytelling.
		Traditional Sattu Soru Lunch	Nutritious packed meal in a *tokku* for field visits.
	Afternoon	Farm-to-Plate Cooking Experience	Engage in crop-to-plate cooking with the local community.
	Evening	Extended Kolam Workshop	Explore advanced Kolam styles with deeper community participation.
	Night	Outdoor Movie Screening & Packed Dinner	Documentary on bird heritage and riverine landscapes; traditional packed dinner under the stars.
Day 3 – Heritage Celebrations	Early Morning	Bird Walk & Agricultural Immersion	Combine birdwatching with farming practices.
		Traditional Breakfast	Local cuisine highlighting seasonal produce.
	Forenoon	Heritage Exploration	Visit temples, riverfronts, and cultural landmarks.
		Community Workshops	Eco-challenges such as tree planting, composting, and waste audits.
	Afternoon	Culinary Heritage Tour	Learn traditional food preparation and preservation methods.
	Evening	Farewell Dinner & Cultural Night	Grand feast with traditional music and dance celebrating local heritage.
Day 1 – Nature and Cultural Immersion	Evening	Kolam Workshop competition.	Hands-on workshop on Kolam styles (*sikku*, *padi*, *puli*, *kambi*, *poo*), ending with a community
	Night	Folklore Performances & Traditional Dinner	Celebrate avian heritage and culture through music, dance, and storytelling.

Wings, Water and Worship

TRADITIONAL FOOD

Breakfast

Kambangali (Pearl Millet Dish)
A fermented porridge made from pearl millet flour, Kambangali, is traditionally served for breakfast in Tamil farming communities. It is cooling, highly nutritious, and often eaten with buttermilk or seasoned curd to provide energy for a day of fieldwork.

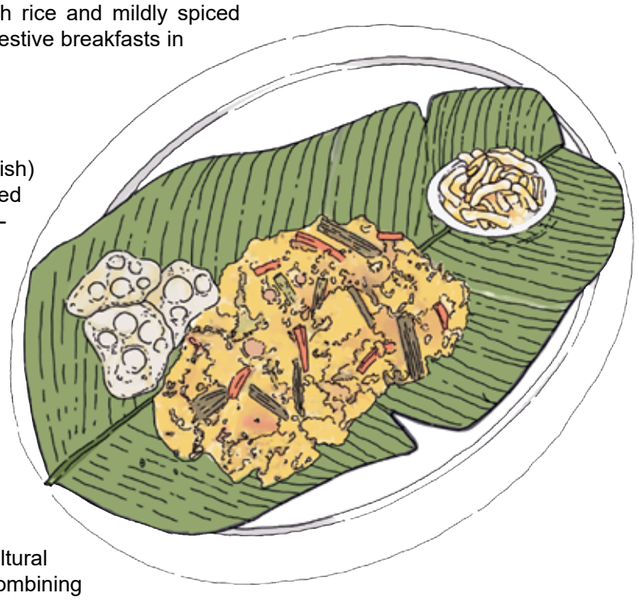
Cape Kali (Finger Millet Dish)
Made from ragi (finger millet) flour, Cape Kali is a soft, thick porridge tycally eaten with spicy chutneys or pickles. Rich in calcium and iron, it has long been valued as a strength-giving breakfast.

Ulunthankali (Urad Dal Dish)
A dense, sticky preparation made by slow-cooking urad dal flour with jaggery and gingelly oil, Ulunthankali is considered both a breakfast and a strengthening tonic. Traditionally given to adolescent girls and postpartum mothers, it supports bone health and hormonal balance.

Sodhi Kulambu
A light, coconut milk-based gravy made with mixed vegetables and gentle spices, Sodhi Kulambu is often served with rice and mildly spiced accompaniments. It is particularly associated with festive breakfasts in southern Tamil households.

Lunch

Ulunthu Soru (Urad Dal Rice) with *Karuvattu* (Dry Fish)
Ulunthu Soru combines rice with urad dal, tempered spices, and coconut, offering a comforting, protein-rich base. When paired with karuvattu (dry fish) curry, it becomes a flavourful, wholesome rural lunch.



Karuvattu Kuzhambu (Dry Fish Gravy)
A tamarind-based gravy simmered with sun-dried fish, onions, garlic, and regional spices, this dish is known for its robust umami and spicy-sour profile. It is commonly eaten with rice and simple vegetable sides.

Padappu Soru
Traditionally prepared during collective agricultural events or rituals, Padappu Soru is a one-pot meal combining rice, pulses, and seasonal vegetables. It symbolises sharing and community labour, often cooked in large quantities in open courtyards.

Kootanchoru
A hearty mixed rice dish made with a medley of vegetables, greens, pulses, and spices. Kootanchoru embodies the essence of rural sustainability, often prepared as a wholesome, balanced meal in a single pot.

Beverages

Panakaram (Tamarind and Jaggery Beverage)
A traditional cooling drink prepared with tamarind juice, jaggery, dry ginger, and cardamom. Panakaram is especially consumed during summer and festive days like Panguni Uthiram for its detoxifying and hydrating properties.

Olichikutam
A digestive herbal decoction or light drink made with locally sourced roots, herbs, or spices. It is typically consumed after heavy meals to aid digestion and balance body heat.

Sweets

Porivilangai Urundai (Roasted Rice Ball)
A hard, energy-dense sweet made from roasted rice flour, lentils, and jaggery, this dish is shaped into firm balls and has a long shelf life. Traditionally consumed during travel or festivals, it reflec ts Tamil ingenuity in food preservation.

Munthiri Kothu (Green Gram Sweet Balls)
These are clusters of green gram sweet balls, coated in rice flour and deep-fried. Infused with jaggery and cardamom, Munthiri Kothu is especially popular during festive occasions in southern Tamil Nadu.

Motagam (Vella Kozhukattai)
A steamed rice dumpling filled with jaggery and grated coconut, Motagam is a traditional offering to deities during pujas. The soft outer layer and sweet interior make it both nourishing and sacred.

Manoharam
Made by mixing crispy fried rice flour sticks (thenkuzhal) with jaggery syrup, Manoharam forms crunchy, mildly sweet clusters. It is commonly distributed during weddings and religious functions.

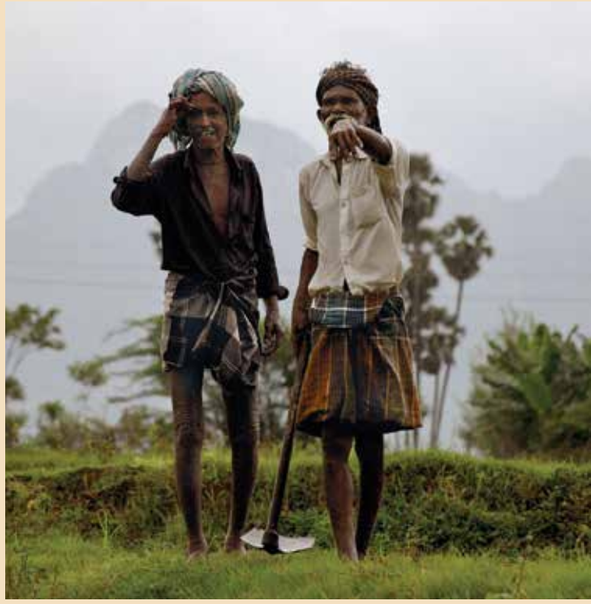
Adhirasam (Indian Doughnut)
A deep-fried sweet made with rice flour and jaggery, Adhirasam has a chewy texture and rich flavour. It is a staple sweet during Tamil festivals such as Deepavali and Pongal.

Maavilakku
A rice flour and jaggery offering shaped into a lamp, Maavilakku is both a sweet and a sacred ritual object. It is lit during specific pujas, symbolising devotion and auspicious beginnings.

GREENPRINT FOR THIRUPUDAIMARUTHUR

TOWARDS A SUSTAINABLE COMMUNITY-BASED ECOTOURISM MODEL

14



The goal is to establish an ecotourism model that is ecologically sustainable, economically viable, and socially inclusive.

Thirupudaimaruthur faces critical challenges, including poor solid waste management, inadequate sanitation, menstrual hygiene gaps, and ineffective wastewater systems. These issues affect not only public health and environmental quality but also reduce the village's potential as a meaningful ecotourism destination by diminishing the visitor experience.

To address these concerns, this initiative, developed in collaboration with Sanitation First and the Indian Institute of Human Settlements (IIHS), seeks to integrate WASH (Water, Sanitation, and Hygiene) priorities with sustainable infrastructure, biodiversity conservation, and community-led resource management.

The project empowers Self-Help Groups (SHGs) and aligns with national missions such as the Swachh Bharat Mission (SBM) and Jal Jeevan Mission. Key interventions include waste segregation, restoration of the temple tank, and provision of safe drinking water in schools and Anganwadi centres.

To scale these efforts, the project will mobilise public funds, Corporate Social Responsibility (CSR) contributions, and district administration support. Sustainable implementation will depend on policy alignment, participatory governance, and integrated financing, building a strong foundation for long-term impact.

THREE PILLARS OF THE ECOTOURISM MODEL

14.1

To address these challenges holistically, the initiative is structured around three key pillars.

ECOLOGICAL HEALTH

Protect and restore natural ecosystems to support biodiversity, promote eco-friendly practices, and build ecological awareness among residents and visitors.

EMPOWERED COMMUNITY VENTURES

Strengthen local skills and livelihoods through tourism-based enterprises, and highlight traditional knowledge and culture to create authentic visitor experiences.

PUBLIC HEALTH

Improve water, sanitation, and waste systems through community-led WASH initiatives, and ensure hygiene and well-being through targeted infrastructure and behaviour change.

SUSTAINABLE ECOTOURISM WITH MINIMAL ENVIRONMENTAL IMPACT

OUTCOMES

1. Co-build the Model with the Community

Collaboratively design the ecotourism model by integrating local knowledge with expert inputs.

Build awareness and capacity in WASH (Water, Sanitation, and Hygiene), biodiversity, and ecotourism to enable meaningful community participation.

Empower local sanitation workers and Self-Help Groups (SHGs) to take on leadership roles in water conservation and hygiene initiatives.

Strengthen local committees such as the Village Ecotourism Committee (VEC) and the Village Water and Sanitation Committee (VWSC) to drive the co-creation process.

2. Elevate to Exemplary Status

Develop a model rooted in ecological sensitivity, cultural authenticity, and local ownership.

Promote biodiversity conservation and ecological health as central elements of the visitor experience.

Integrate seasonal ultra-local cuisine, traditional arts, and cultural practices into the tourism offering.

3. Socialise the Model through Outreach and Capacity Building

Host workshops on traditional crafts, heritage walks, and village routines to immerse visitors in local life.

Build partnerships with tour operators, conservation organisations, and eco-conscious travellers to expand reach and support.

Engage expert consultants in WASH, biodiversity, sustainable tourism, and behavioural change to guide capacity-building efforts.

Install informative signage to promote sustainable practices in water, sanitation, hygiene, biodiversity, and heritage preservation.

4. Decentralise Operations and Governance

Enable community-led waste management, sanitation, and ecotourism operations through strengthened local committees.

Renovate and manage guesthouses, homestays, and sanitation infrastructure through village-level institutions.

Develop solid waste sorting units, water treatment systems, and DEWATS facilities to be operated and maintained locally.

Co-develop behavioural change communication strategies to foster long-term community stewardship.

5. Handover to the Community

Transition ownership by embedding skills, systems, and leadership within the community.

Foster entrepreneurship through sustainable tourism models that support livelihoods.

Encourage replication through model infrastructure such as low-cost household toilets and community-led sanitation drives.

Phase out external support while ensuring community readiness to manage, sustain, and adapt the ecotourism initiative independently.

Wings, Water and Worship

ECOLOGICAL HEALTH

1. BUILDING CAPACITIES FOR CONSERVATION

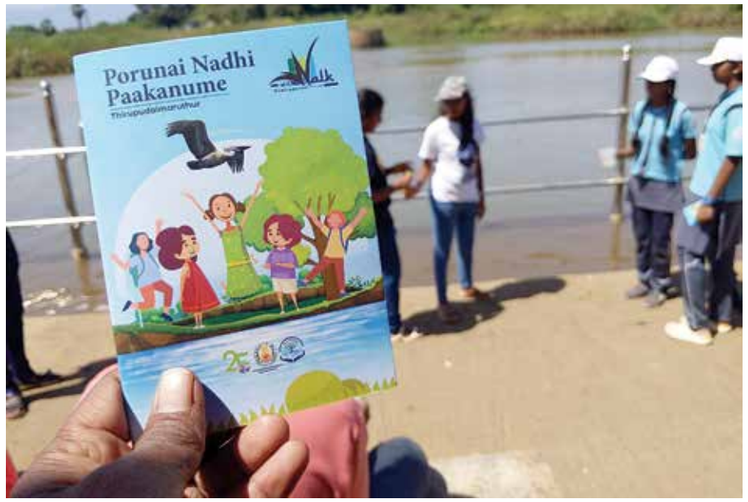
Interactions with the community revealed a strong interest in acquiring and sharing knowledge on biodiversity with visitors to the village. This enthusiasm was demonstrated during earlier activities conducted by ATREE, including the Tamiraparani Bird Count, the Nandhavanam Trail, and biodiversity walks, which highlighted both curiosity and willingness to engage. Building on this interest and linking it to local ecotourism requires a structured pathway that develops capacity by training selected community members as nature guides. Such an initiative will strengthen conservation efforts, promote sustainable tourism, and help address misconceptions about biodiversity.

Community Engagement and Nature Guide Development

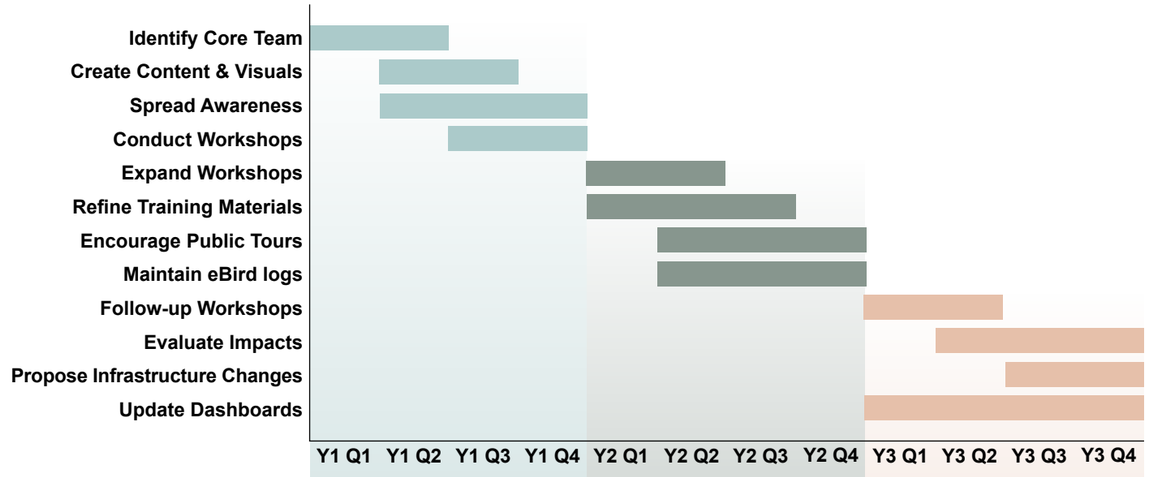
Community livelihoods are predominantly based on agriculture and livestock rearing, supported by strong knowledge of plant biodiversity and livestock management. However, a preliminary assessment revealed limited awareness of bird biodiversity, indicating opportunities to enhance understanding through scientific inputs and structured learning.

To strengthen community-based biodiversity documentation, residents will be trained to use platforms such as eBird and iNaturalist, while schools and youth groups will be engaged in citizen science initiatives. Educational materials such as booklets, posters, and digital guides, along with interpretation boards at key birding sites, will support this effort. A community-led biodiversity database, validated through partnerships with researchers and conservation organisations, will build confidence and align with the ongoing People's Biodiversity Register (PBR) work by ATREE.

An interactive guidebook on Thirupudaimaruthur for children, designed by ATREE's Agasthyamalai Community Conservation Centre (ACCC).



A structured training programme for nature guides will further enhance community capacity to promote eco-friendly tourism. The programme will focus on bird identification, storytelling, and sustainable tourism practices, supported by field exposure, mentorship from experienced ornithologists, and partnerships that expand opportunities for guided eco-tourism experiences.



Phase One (Year One)

Lay groundwork for biodiversity awareness and guide development.

Identify core team (ACCC members, educators, experts).

Prepare presentations and visual aids (using PBR and eBird data).

Spread awareness through SHGs, panchayat, temple, and local events.

Conduct workshops on biodiversity awareness, monitoring, and reporting.

Phase Two (Year Two)

Expand workshops and strengthen the guide network.

Refine training materials based on feedback.

Support experienced participants to lead tours (wetlands, sacred groves, biodiversity hotspots).

Collaborate with trained guides to maintain eBird logs and records of local sightings.

Phase Three (Year Three)

Conduct refresher workshops and ensure sustained data collection.

Integrate ecotourism into village planning.

Deliver short, consolidated workshops for new participants.

Evaluate impacts on livelihoods and biodiversity using PBR/ eBird data.

Share quarterly updates via community dashboards.

Children as Green Ambassadors

In 2011, children in Vagaikulam Bird Sanctuary, Tirunelveli District, led by ATREE's biodiversity awareness programme, became stewards of Vagaikulam's wetlands (Vagaikulam Bird Sanctuary - towards new opportunities). When trees were cut incessantly, the children alerted the community, sparking a protest and a legal battle for effective conservation measures. Despite the delay in official declaration as a Biodiversity Heritage Site, the wetland thrives, and bird populations have doubled in the landscape.

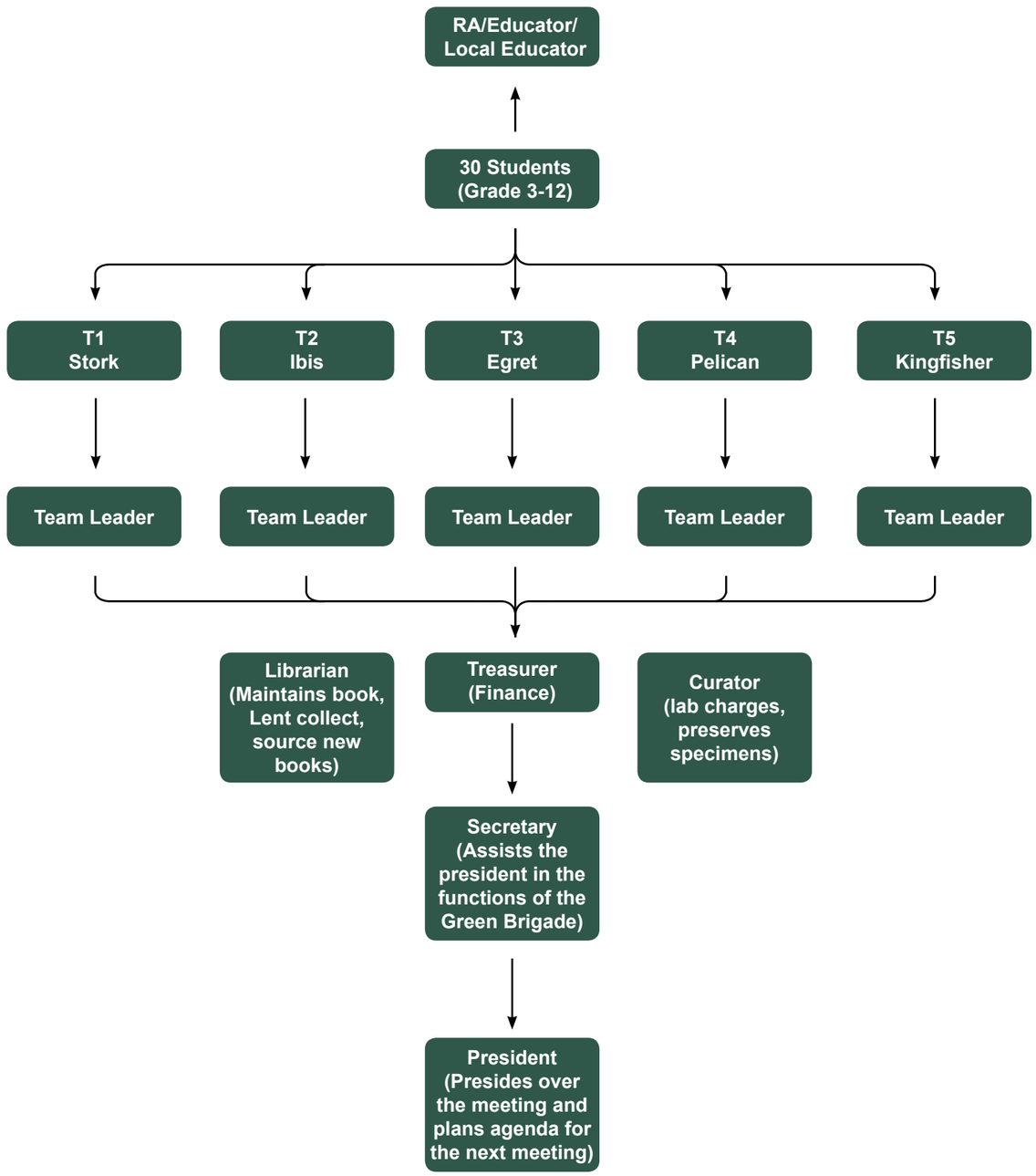
These children, now conservation advocates, prove that early biodiversity education empowers communities to protect ecosystems. ATREE's efforts not only safeguarded Vagaikulam but also nurtured a generation committed to ecological stewardship, demonstrating the lasting impact of grassroots awareness on conservation success.

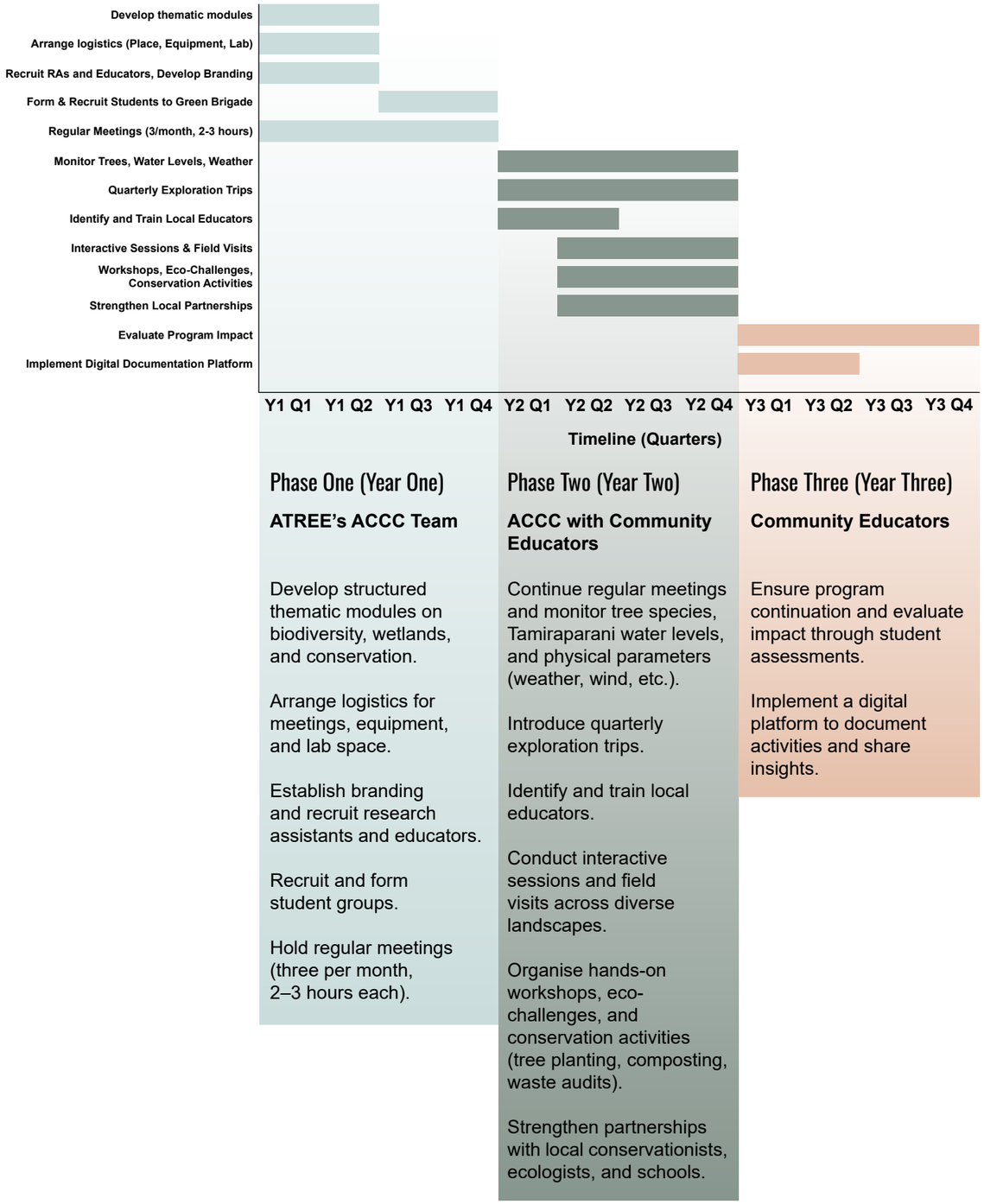
Similarly, to cultivate eco-conscious children in Thirupudaimaruthur village panchayat who would understand local biodiversity, climate change, and sustainability, we are proposing a conservation-education program that would empower children to take active roles in environmental conservation, especially bird conservation, through structured learning, field visits, and hands-on activities on ecology. The major role of this program will be to safeguard the bird population in the village and raise awareness for the local community.

Each quarter, there will be 9 events, each including thematic field exposure visits and local campaigns to raise awareness about biodiversity conservation and local environmental threats. At the end of the third year, a two-day, one-night camping program will be organised. From this point on, a revenue model will be introduced to invite schools to participate in these camping events.

https://www.youtube.com/watch?si=5svelAGc3i9Pz_Zg&v=VYrOUIxA-ds&feature=youtu.be

Green Brigade Structure





Wings, Water and Worship

2. NATURAL AND CULTURAL HERITAGE CONSERVATION

The Thirupudaimaruthur Biodiversity Conservation Reserve (TBCR) presents an important opportunity to position ecotourism as a vehicle for both conservation and community development. Its landscapes embody the deep linkages between nature and culture, where sacred groves, traditional knowledge, and biodiversity are preserved through collective memory and lived practices. Realising this potential requires addressing existing infrastructure and management gaps while embedding ecological sensitivity into visitor experiences and community participation.

Positioning the Thirupudaimaruthur as a Vibrant Ecotourism Destination

To strengthen the Thirupudaimaruthur Biodiversity Conservation Reserve (TBCR) as an ecotourism hub, it is essential to address critical infrastructure and management gaps while embedding ecological sensitivity into visitor experiences.

At present, unregulated human activities, including littering and ritual waste disposal, are adversely affecting both biodiversity and the cultural aesthetics of the temple precinct. Waste generated from temple activities and the adjacent marriage hall, particularly food and ritual offerings, contributes significantly to pollution and requires systematic management interventions. The burning of waste and indiscriminate dumping further compound environmental and public health concerns.

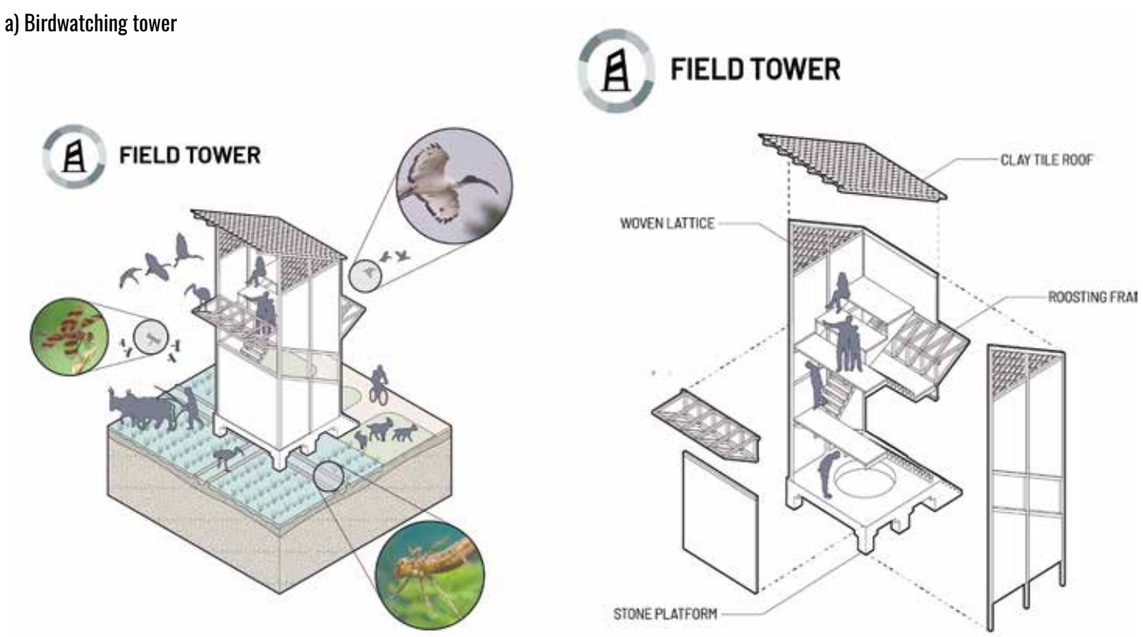
The Forest Department guest house within TBCR, currently in a state of disrepair, requires urgent restoration to provide safe and functional accommodation for visitors. The practice of feeding monkeys within the temple complex has altered their natural behaviour and increased the risk of human-wildlife conflict. This issue can be mitigated through targeted social behaviour change communication supported by interpretive signage and storyboards within the temple premises.

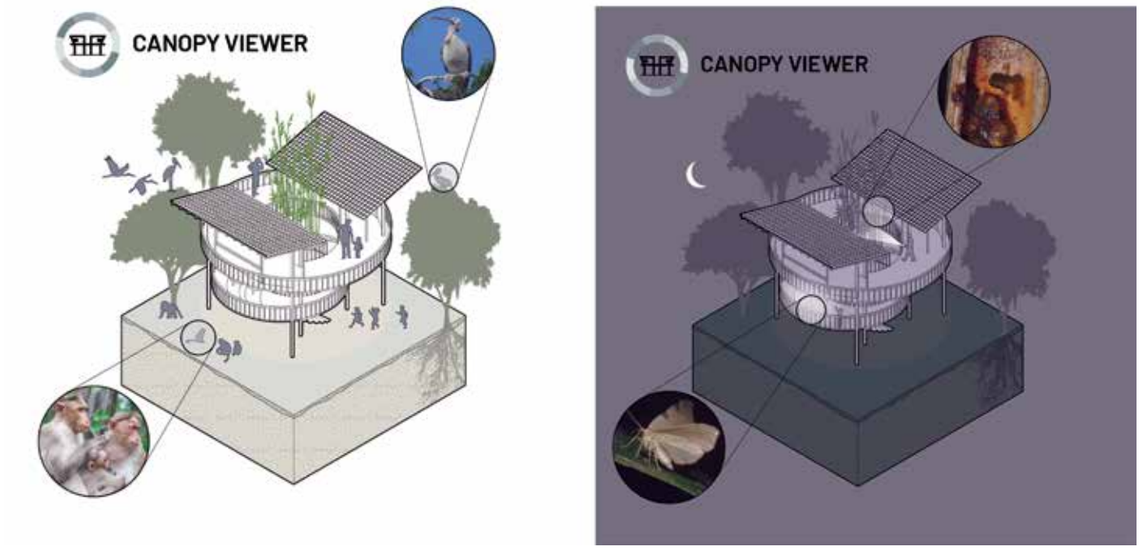
During festivals and auspicious occasions, vehicle parking inside the temple compound encroaches upon ecologically sensitive areas. Establishing a designated parking zone outside the temple premises, supported by signage, barriers, and enforcement of penalties, is essential to prevent further degradation. Restoration of the Theppakulam tank is also a priority, as it provides critical ecosystem services such as rainwater harvesting and groundwater recharge, while enhancing the site's cultural and ecological value.

To elevate TBCR's profile as a responsible ecotourism destination, eco-sensitive and low-cost infrastructure has been explored. These structures were conceptualised with locally available and environmentally sustainable materials. Preliminary design work for these elements was undertaken by students of the Taubman College of Architecture and Urban Planning, University of Michigan.

Preliminary designs by the students of Taubman College of Architecture and Urban Planning, University of Michigan

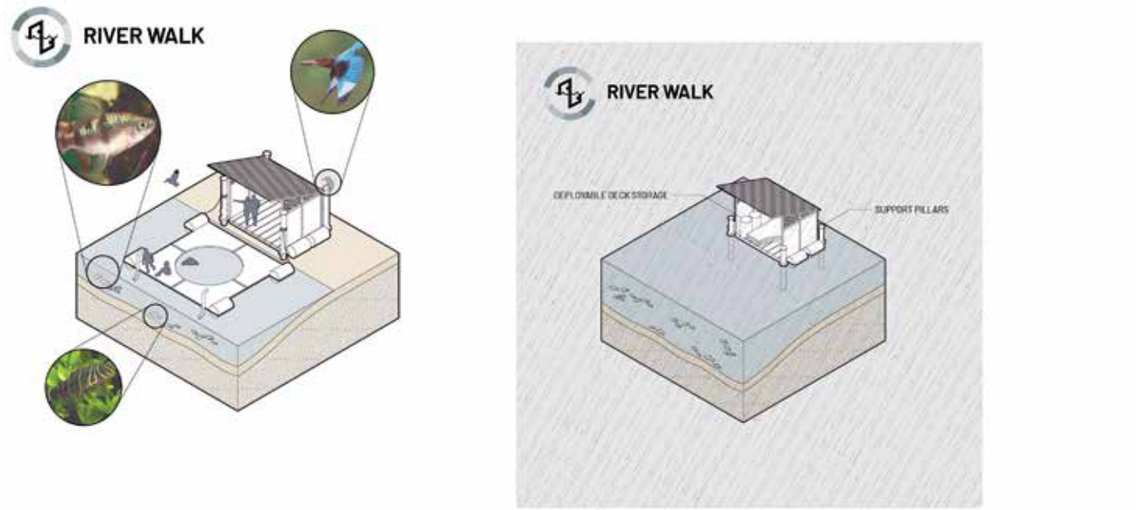
a) Birdwatching tower

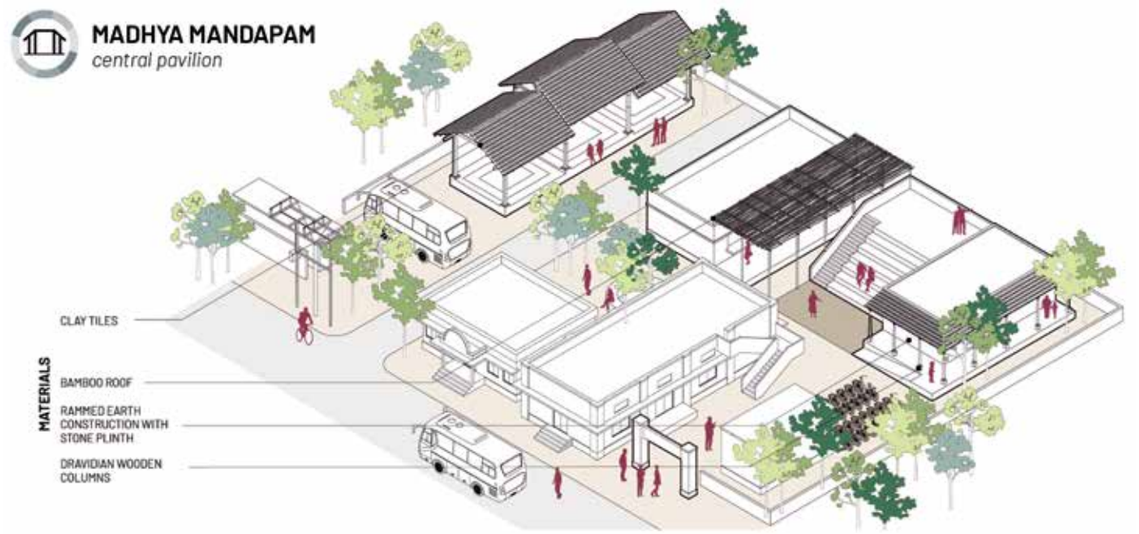




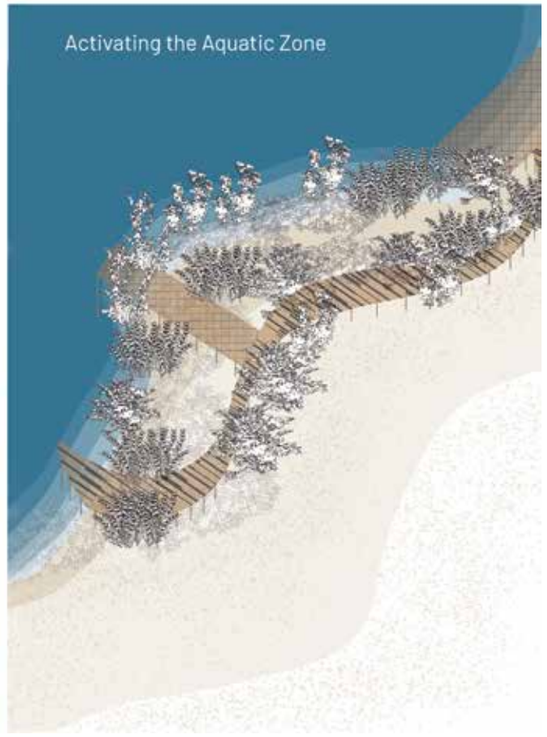
b) Canopy viewer

c) Platform for viewing the river

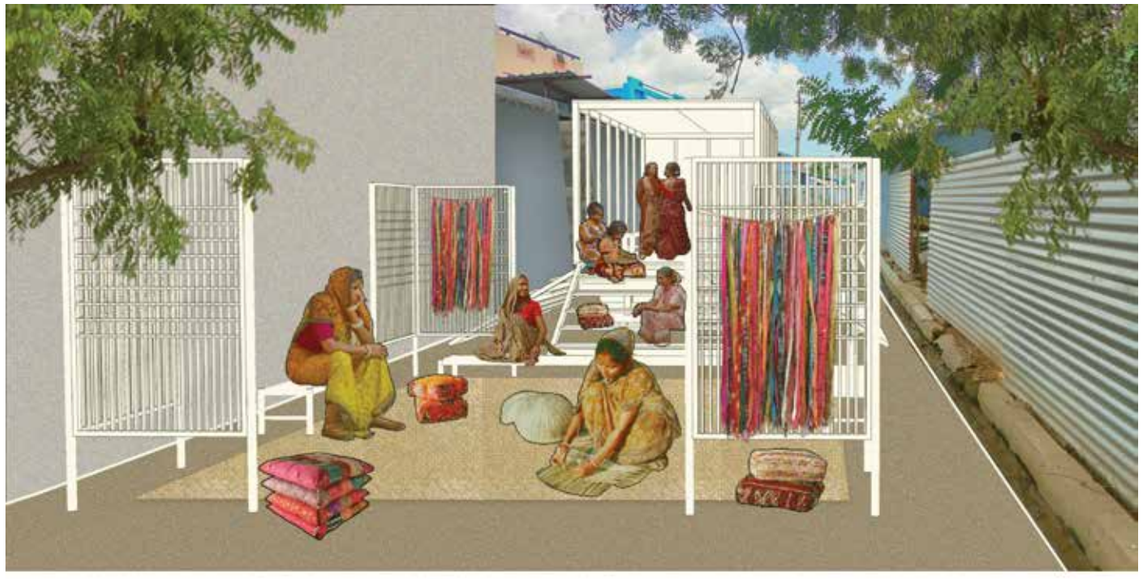


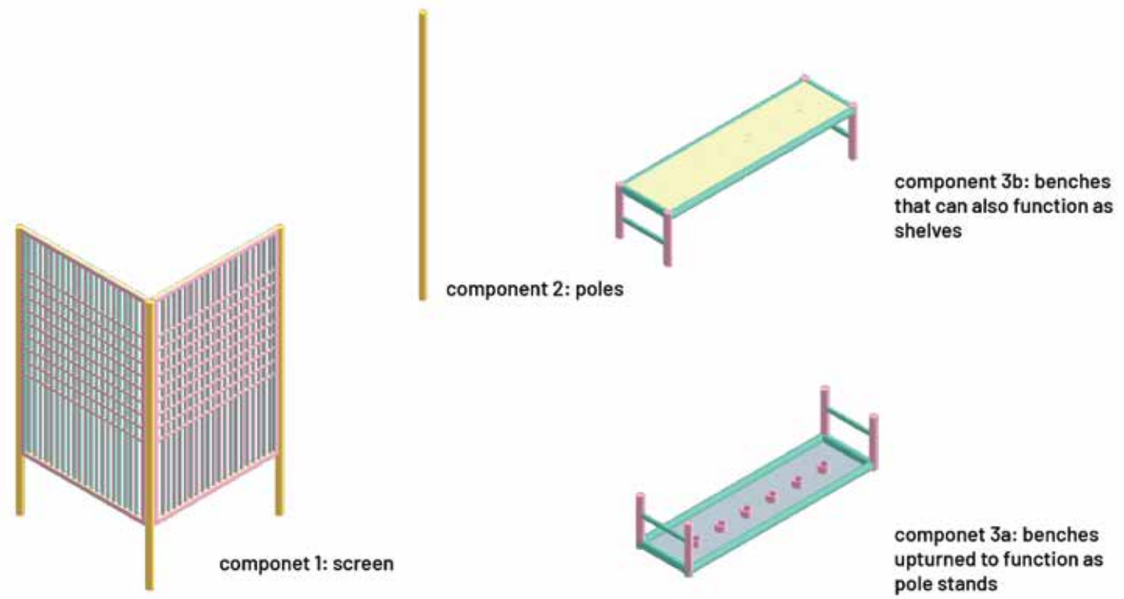


(d) Pavilion design for enhanced visitor experience.

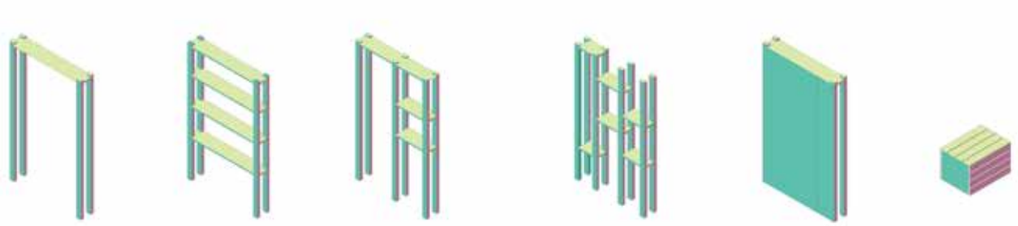


(e) Built structures for walking trails in the village.

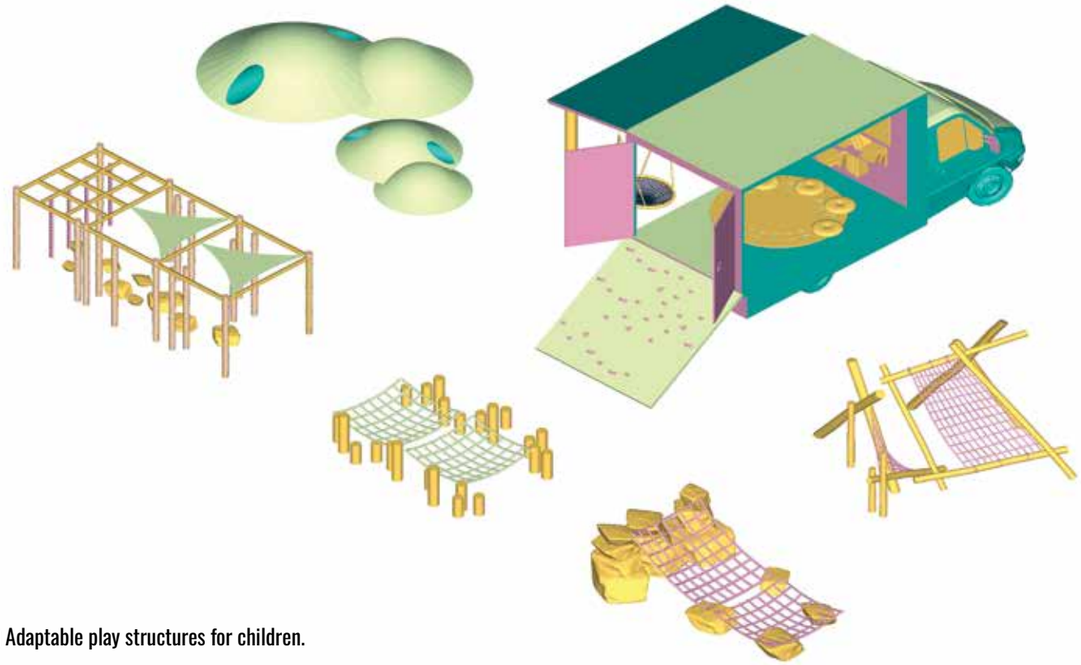




(f) Adaptable structure for women to engage int selling handicrafts.

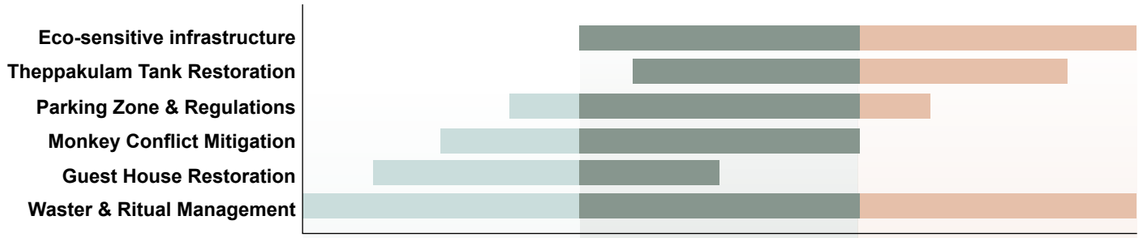


(f) Adaptable structure for community members to socialise.



(g) Adaptable play structures for children.

By addressing these issues holistically and introducing context-sensitive infrastructure, TBCR can significantly enhance its conservation value while creating a meaningful and sustainable ecotourism experience for visitors.



Phase One (Year One)

Establish ecological safeguards and address urgent infrastructure needs

Introduce systematic waste management in temple and marriage hall precincts (segregation, collection, disposal).

Launch an awareness campaign on ritual waste management and the reduction of littering.

Install interpretive signage and storyboards discouraging monkey feeding and highlighting biodiversity value.

Identify and establish a designated vehicle parking zone outside the temple compound; put up barriers and signage.

Undertake urgent repairs and restoration of the Forest Department guest house to provide safe accommodation.

Phase Two (Year Two)

Strengthen ecological resilience and create visitor-friendly infrastructure

Restore the Theppakulam tank to enhance ecosystem services (rainwater harvesting, groundwater recharge).

Expand community engagement workshops on human–wildlife coexistence.

Finalise eco-sensitive designs for birdwatching towers and play structures using sustainable materials.

Construct the first set of birdwatching towers and pilot a children's play structure in the village.

Train temple staff and local volunteers in visitor management, conflict mitigation, and ecological monitoring.

Phase Three (Year Three)

Position TBCR as a model ecotourism hub and ensure long-term sustainability

Operationalise eco-infrastructure: additional birdwatching towers, play structures, and a fully restored guest house.

Launch guided ecotourism packages (birdwalks, riparian walks, cultural heritage tours) with trained local guides.

Establish the annual Biodiversity Festival as a flagship conservation and cultural event.

Enforce parking, waste management, and anti-feeding regulations through community monitoring committees.

Develop TBCR branding as a responsible ecotourism destination in Tamil Nadu.

Conduct an impact assessment on biodiversity conservation, visitor experience, and local livelihoods.

3. TRAINING LOCAL RESPONDERS FOR BIRD RESCUE

It is critical to build frontline workers to safely respond to and rehabilitate injured birds, fostering a network of community-based first responders for bird rescue and care.

Fostering Community-led Bird Rescue and Care

Wetland birds, such as the Painted Stork and the Spot-billed Pelican, are currently classified as Near Threatened on the IUCN Red List. Many young birds face injuries, as weak nestlings and juveniles are often hurt during their first flight attempts. While the local community was once actively involved in rescue and rehabilitation efforts, participation has declined significantly in recent years. A more holistic approach to waterbird conservation is therefore required, one that integrates community education, timely medical intervention, and infrastructure development. The proposed measures aim to revitalise community engagement and ensure long-term support for the protection and rehabilitation of these vulnerable bird species.

This effort will be strengthened through dedicated training sessions. In-person educational workshops will be conducted in Tamil for local communities, conservationists, and forest officials, focusing on waterbird conservation, basic first aid, habitat management, and strategies to minimise human disturbance. To extend support beyond the workshops, remote assistance and access to online resources will be provided for ongoing guidance and troubleshooting. To ensure a consistent and effective response to waterbird emergencies, protocols for the safe rescue, medical care, and rehabilitation of waterbirds will be thoroughly documented and standardised. Each rescued bird will be carefully tracked, with detailed records maintained on treatment, recovery progress, and eventual release. A network of trained volunteers will be established to administer first aid, guided by standardised protocols and emergency response mechanisms to improve survival rates. Collaboration with local veterinary hospitals and wildlife experts will further strengthen treatment and rehabilitation outcomes.

Rehabilitation efforts will be supported by trained caregivers who provide species-specific diets, enrichment activities, and tailored care, including the hand-rearing of orphaned nestlings. Quarantine procedures and disease management protocols will be enforced to prevent infections and ensure the well-being of all birds under care.

To house birds during recovery, species-appropriate designs for transport cages, temporary holding enclosures, and rehabilitation aviaries will be developed. These designs will include adequate space, perching, feeding areas, and flight-conditioning zones suited to the needs of different species. Durable, low-maintenance materials will be recommended to ensure long-term sustainability. Enrichment strategies will be incorporated into aviary design to encourage the recovery of natural behaviours and facilitate a successful transition back to the wild.

A comprehensive assessment will be undertaken to identify key threats to waterbirds, including habitat destruction, pollution, poaching, predation

by feral dogs and monkeys, and disturbances caused by human activity. Based on these findings, strategic conservation measures, including habitat restoration, conflict mitigation, and targeted public awareness campaigns, will be developed. Collaboration with local authorities, conservation organisations, and policymakers will be critical to designing and implementing community-driven initiatives that support long-term protection. Advocacy for the enforcement of existing environmental regulations will also be prioritised to safeguard the riverine ecosystem and its diverse avian populations.

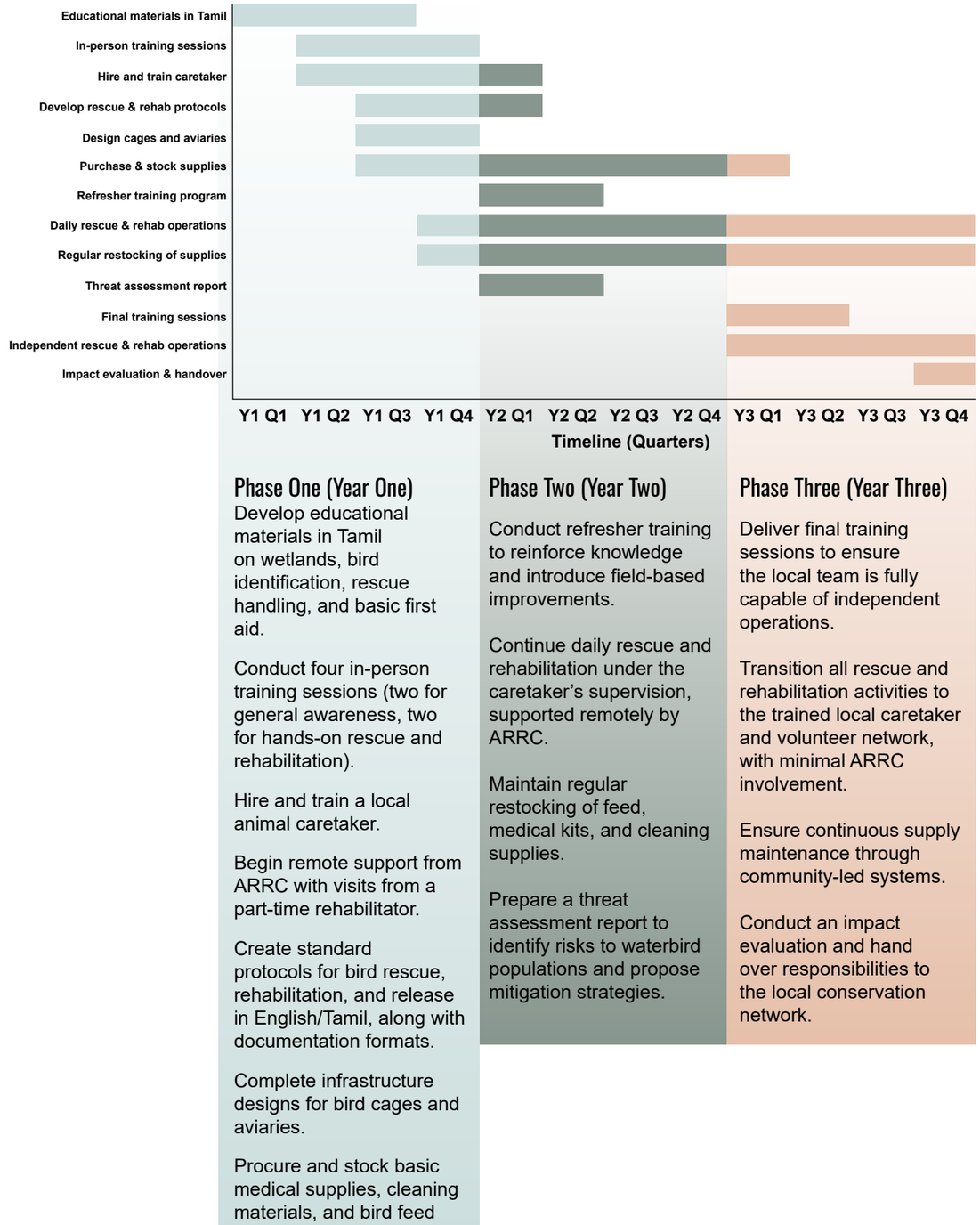
Table 11: Proposed Capacity-Building Sessions for Wetlandbird Conservation[18]

Session	Target Audience	Key Topics for Capacity Building
I	Open to all community members	Importance of wetland ecosystems Threats and protective measures Ecosystem services and conservation Tangible benefits of ecosystems to communities
II	Open to all community members	Identifying local and migratory birds Wildlife Protection Act overview Life cycle of Painted Storks and Spot-billed Pelicans Identifying hatchlings, nestlings, fledglings, and young adults Use of binoculars and ethical wildlife photography Dos and don'ts around birds and visitors
III	Individuals interested in bird rescue and rehabilitation	Identifying birds in distress and knowing when to intervene Dos and don'ts of handling Safe capture techniques Transport and temporary housing methods Recognising hyperthermia Weighing birds safely Case documentation Hygiene and handler safety Quarantine protocols
IV	Individuals interested in advanced rescue and rehabilitation	Basic bird anatomy Identifying and assessing wounds Communicating with veterinarians Hand-rearing and feeding methods Nutrition and growth cycle of young birds Imprinting and taming: techniques to avoid imprinting Stopping active bleeding Pain management basics Dressing and bandaging techniques Immobilising fractures during transport Fluid therapy and safe oral administration

[18] The proposed sessions have been developed by the Avian and Reptile Rehabilitation Centre (ARRC) and will be jointly facilitated in collaboration with ATREE's ACCC team.

Table 12: Proposed Outdoor Aviary Dimensions

Aviary Type	Dimensions (L × W × H)	Purpose
Large Aviary	30 ft × 15 ft × 12 ft	Unlimited activity and flight conditioning
Small Aviary	10 ft × 8 ft × 6 ft	Limited activity, recovery from wounds, rehabilitation



Phase One (Year One)

Develop educational materials in Tamil on wetlands, bird identification, rescue handling, and basic first aid.

Conduct four in-person training sessions (two for general awareness, two for hands-on rescue and rehabilitation).

Hire and train a local animal caretaker.

Begin remote support from ARRC with visits from a part-time rehabilitator.

Create standard protocols for bird rescue, rehabilitation, and release in English/Tamil, along with documentation formats.

Complete infrastructure designs for bird cages and aviaries.

Procure and stock basic medical supplies, cleaning materials, and bird feed (with replenishment as needed).

Phase Two (Year Two)

Conduct refresher training to reinforce knowledge and introduce field-based improvements.

Continue daily rescue and rehabilitation under the caretaker's supervision, supported remotely by ARRC.

Maintain regular restocking of feed, medical kits, and cleaning supplies.

Prepare a threat assessment report to identify risks to waterbird populations and propose mitigation strategies.

Phase Three (Year Three)

Deliver final training sessions to ensure the local team is fully capable of independent operations.

Transition all rescue and rehabilitation activities to the trained local caretaker and volunteer network, with minimal ARRC involvement.

Ensure continuous supply maintenance through community-led systems.

Conduct an impact evaluation and hand over responsibilities to the local conservation network.

4. SUSTAINABLE VISITOR ENGAGEMENT & ECOLOGICAL SENSITIVITY

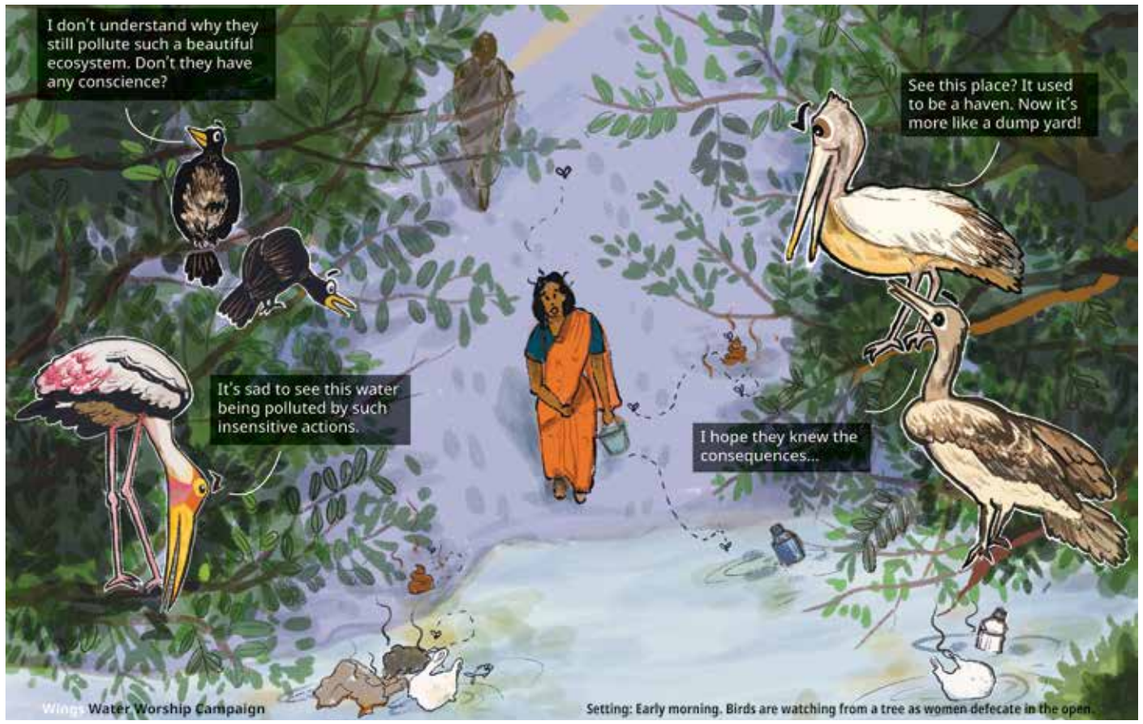
Safeguarding the integrity of fragile ecosystems and promoting sustainable tourism begins with encouraging tourists to become allies in conservation by respecting local customs, wildlife, and ecological boundaries.

Storyboards and Signage for Social Behaviour Change

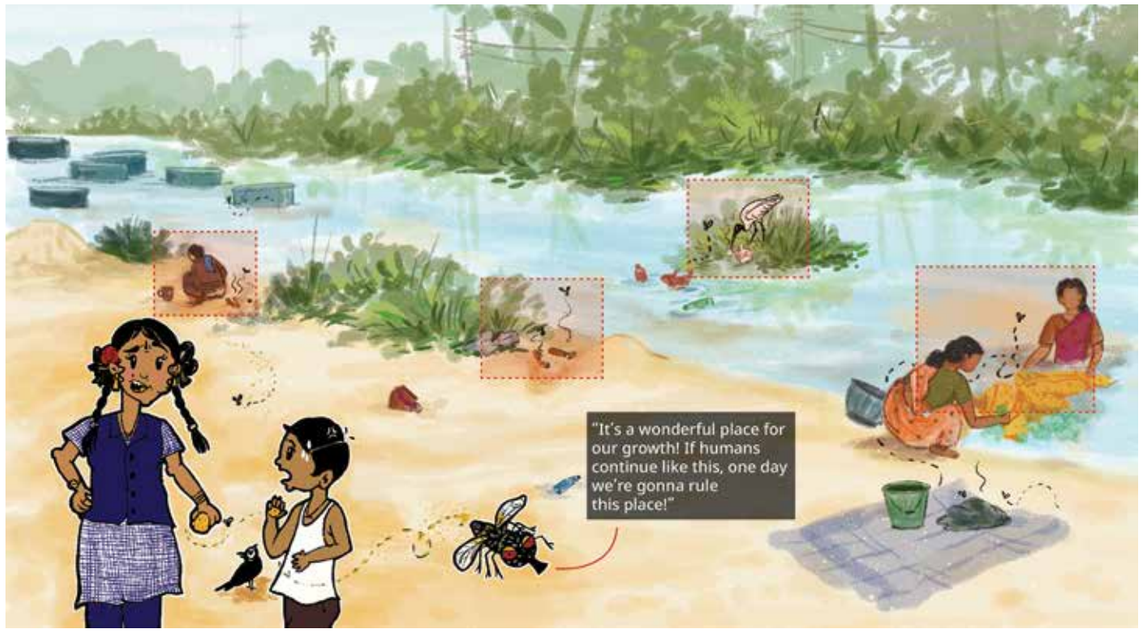
Storyboards and signboards will be used as communication tools to drive behavioural change in Thirupudaimaruthur. These tools will help communities visualise future scenarios, imagining their homes, public spaces, and surroundings after the implementation of community-based ecotourism with effective solid and wastewater management systems. Digital storyboards will illustrate "before" and "after" scenarios, showcasing the journey and highlighting transformed streets, riverbanks, and public areas with sustainable sanitation, hygiene, and eco-friendly practices.

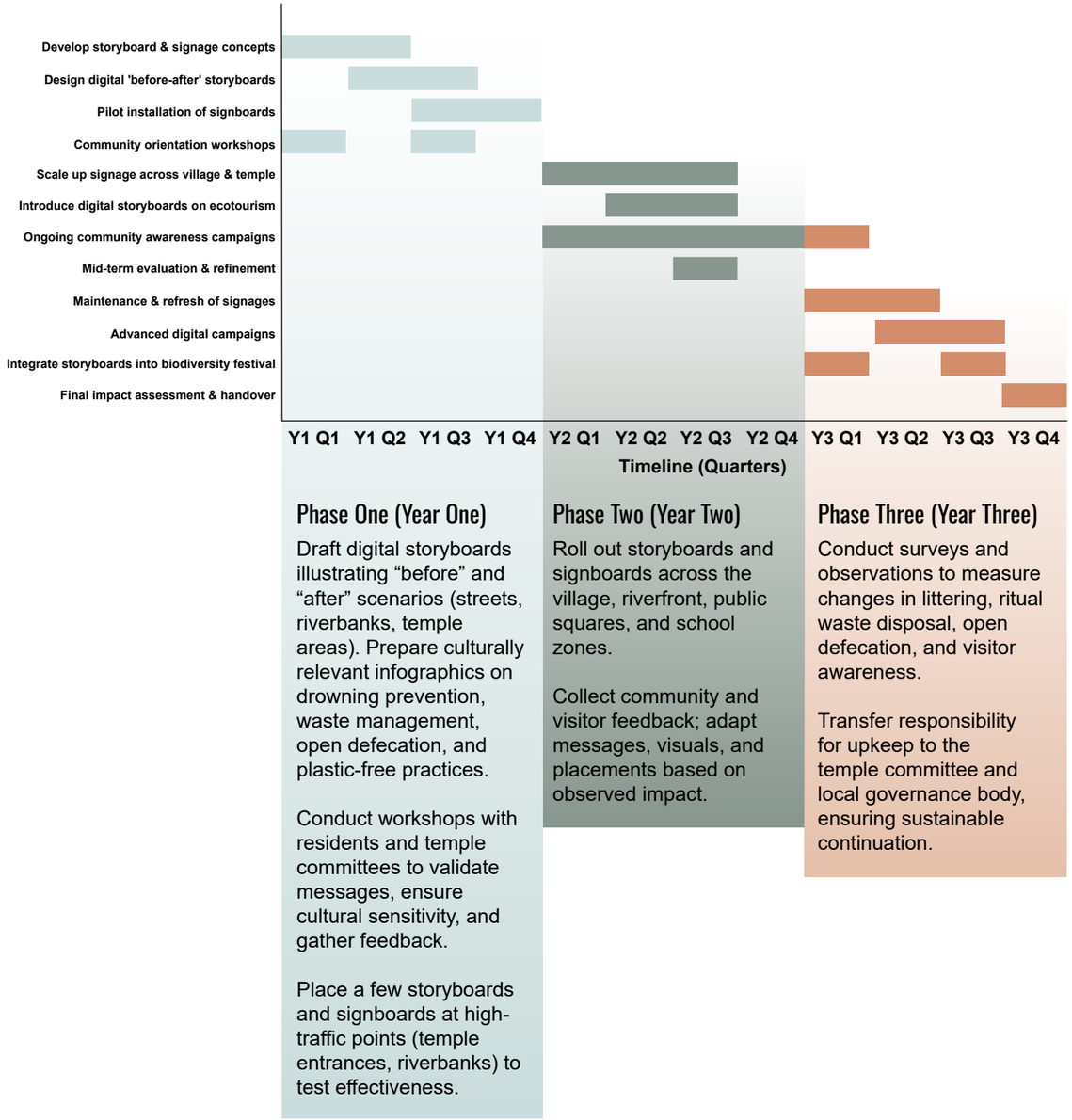
Additionally, signboards and information boards featuring infographics on the village's ecological and cultural heritage will educate communities and visitors on key issues such as drowning prevention, open defecation, waste management, and adapting to plastic-free zones. These visually engaging and easy-to-understand tools will be strategically placed throughout the village to promote appreciation of natural and cultural heritage. Signage will promote awareness, encourage action, and reinforce positive behavioural changes that enhance community health, hygiene, and environmental conservation.

An example of a signboard designed by Spaces + Dialogues for Thirupudaimaruthur.



Examples of signboards designed by Spaces + Dialogues for Thirupudaimaruthur.





Phase One (Year One)

Draft digital storyboards illustrating “before” and “after” scenarios (streets, riverbanks, temple areas). Prepare culturally relevant infographics on drowning prevention, waste management, open defecation, and plastic-free practices.

Conduct workshops with residents and temple committees to validate messages, ensure cultural sensitivity, and gather feedback.

Place a few storyboards and signboards at high-traffic points (temple entrances, riverbanks) to test effectiveness.

Phase Two (Year Two)

Roll out storyboards and signboards across the village, riverfront, public squares, and school zones.

Collect community and visitor feedback; adapt messages, visuals, and placements based on observed impact.

Phase Three (Year Three)

Conduct surveys and observations to measure changes in littering, ritual waste disposal, open defecation, and visitor awareness.

Transfer responsibility for upkeep to the temple committee and local governance body, ensuring sustainable continuation.

EMPOWERED COMMUNITY VENTURES

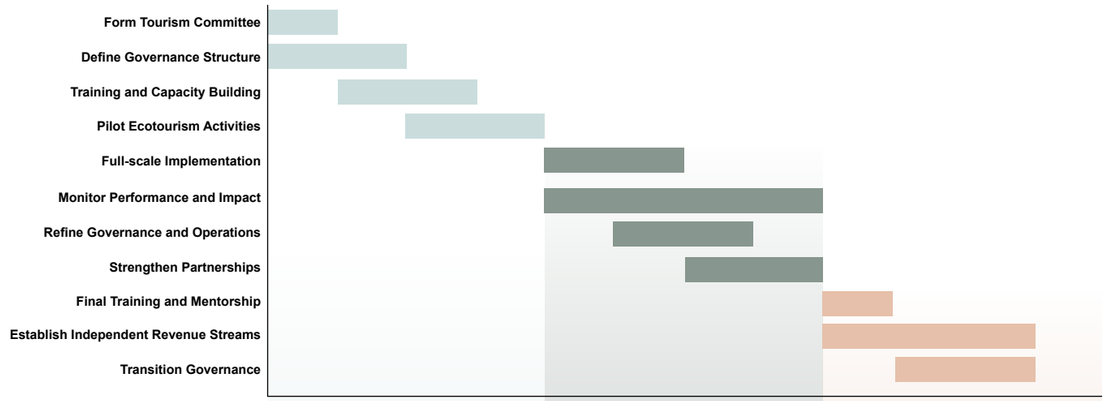
1. BUILDING A BUSINESS MODEL

Empowered community ventures form the backbone of a green business model that blends sustainability with local enterprise. By aligning ecological stewardship with income generation, these ventures support both community well-being and environmental resilience.

It will be developed in collaboration with an ecotourism consultant to balance ecological conservation, cultural preservation, and community welfare.

Formation and Functioning of a Community Ecotourism Committee (CEC)

Establishing a Community Ecotourism Committee within the local panchayat provides a sustainable governance structure for community-based ecotourism. Through this body, decision-making can remain inclusive and transparent, guided by the ecotourism consultant and supported by NGO members involved in planning, implementation, and management. A Tourism Committee Guidebook, prepared by the consultant, outlines roles, responsibilities, and mechanisms for equitable benefit- and loss-sharing. To ensure continuity, a portion of tourism revenues may be allocated to maintain office functions, with terms and conditions defined in consultation with the committee.



Phase One (Year One)

Form the Tourism Committee through a community-driven process and onboard members.

Define governance structures with clear roles, responsibilities, financial mechanisms, and operational guidelines.

Conduct training and capacity-building workshops on tourism management, financial accountability, visitor handling, and conservation awareness.

Pilot ecotourism activities by running trial experiences to test governance and refine operations based on feedback.

Phase Two (Year Two)

Launch full-scale ecotourism activities with an official pricing model and revenue-sharing framework.

Monitor performance and assess impact through visitor feedback, financial sustainability, and ecological evaluations.

Refine governance and operations, adapting guidelines for budget allocation and addressing operational challenges.

Strengthen partnerships with tourism operators, conservation agencies, and government bodies for long-term support.

Phase Three (Year Three)

Provide final training and mentorship to ensure committee members can manage operations independently.

Establish independent revenue streams through entry fees, local partnerships, and grants.

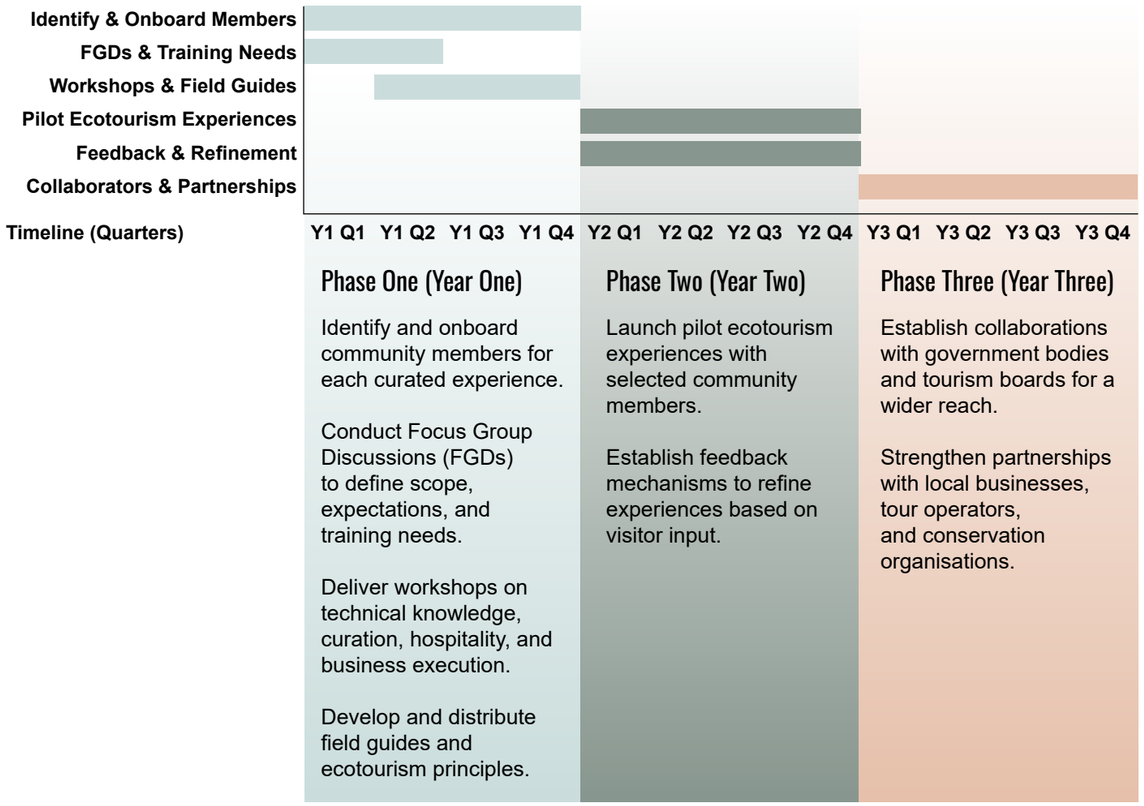
Transition governance fully and hand over responsibility to the community while the consultant exits, ensuring long-term self-sufficiency.

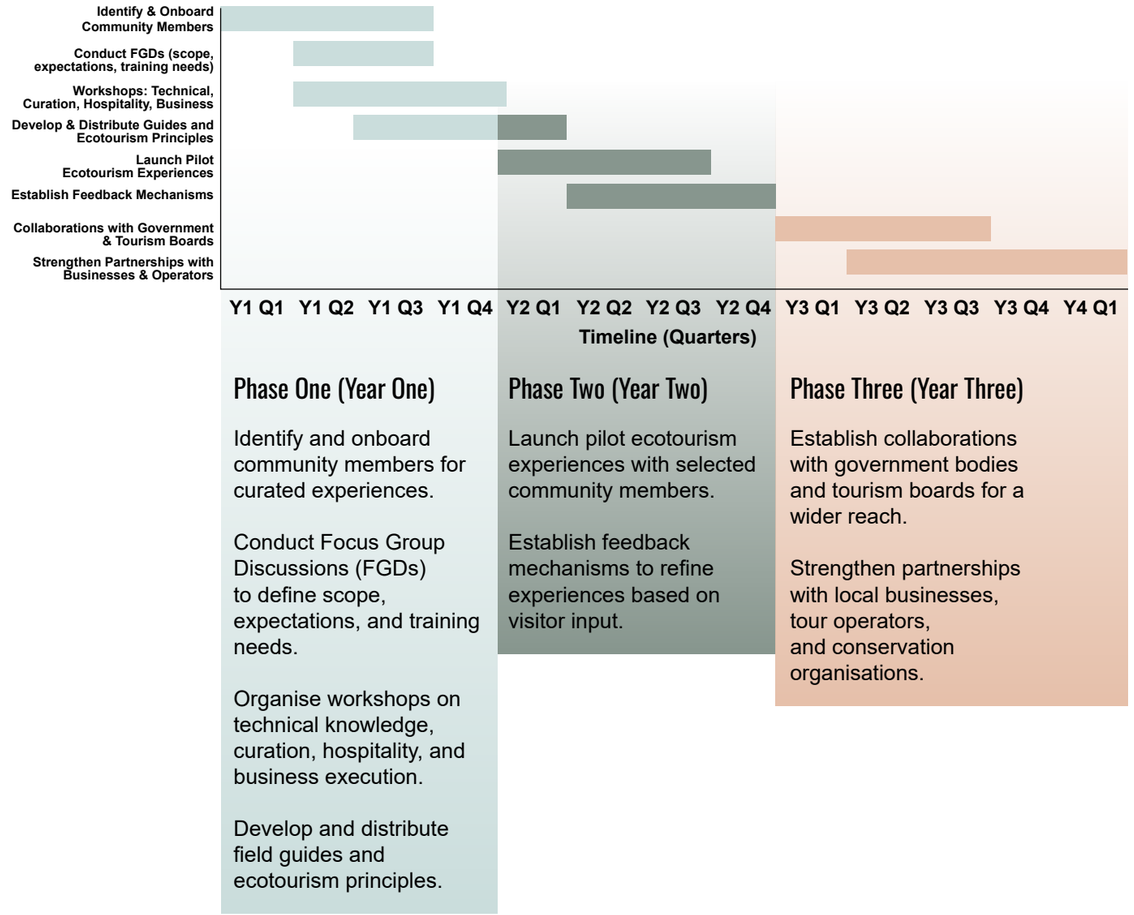
Skill Development of Service Providers

There are potential service providers interested in managing and operating the ecotourism model in the village; however, a clear skills gap exists in technical knowledge, curation, hospitality, and business execution. To ensure the model's long-term success and sustainability, capacity building and skills development must be prioritised for these providers.

Community participation will be ensured by selecting participants through consensus and community acceptability. Individuals will be matched with curated experiences using Ecotourism Documentation to align opportunities with their skills and interests. Tasks and services will be mapped according to individual or group capabilities, followed by structured mentorship and training to address identified gaps.

Pilot ecotourism experiences will then be launched with selected service providers and prototyped during the Biodiversity Festival. Feedback mechanisms will be integrated to refine and improve the experiences based on visitor input.





2. Seasonal And Weekend River Rescue Responders

Drowning represents a critical safety concern within the Thirupudaimaruthur Village Panchayat and constitutes a potential risk to the development of ecotourism, as the majority of reported casualties have been visitors and tourists. Establishing a community-based rescue responder system is essential, as it would simultaneously enhance visitor safety and generate local employment opportunities through a formalised River Watch initiative. The initiative aims to build local capacity by equipping trained responders with the skills and resources required for effective rescue operations. Preliminary discussions with the Tirunelveli District Administration are already in progress to facilitate structured training programmes and ensure the provision of appropriate rescue equipment.

PUBLIC HEALTH

SUSTAINABLE SANITATION AND WASTE PRACTICES FOR HEALTHY COMMUNITIES

Effective waste management, hygiene, and infrastructure are foundational to both community well-being and ecological sustainability. This section outlines integrated approaches that promote clean living environments, reduce pollution, and foster responsible habits through inclusive and practical solutions.

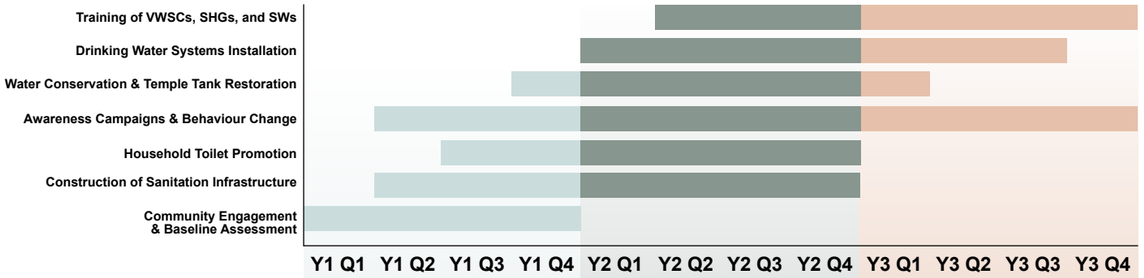
Improved Sanitation and Hygiene

Sanitation and hygiene standards in Thirupudaimaruthur can be strengthened through comprehensive, community-focused interventions. Climate-resilient sanitation infrastructure will be developed, including well-maintained community toilets equipped with incinerators for sanitary napkin disposal, Decentralised Wastewater Treatment Systems (DEWATS), and septic tanks. A sanitary complex will provide accessible, clean, and hygienic facilities for the community, pilgrims, and visitors. To ensure sustainability, the initiative will also promote the adoption of low-cost household toilets by showcasing practical model designs that address both economic and behavioural barriers.

Open defecation remains a critical concern, driven by economic, structural, and behavioural factors. Many residents still resort to open defecation, particularly near the riverside, due to financial constraints, limited land availability, or the underutilisation of existing toilets. To address these challenges, baseline assessments will be conducted at the household, institutional, and panchayat levels, with attention to gendered aspects of sanitation practices. Partner organisations, in collaboration with the ATREE team, will design targeted awareness campaigns informed by these assessments. In parallel, new community toilets will be constructed on land identified by the panchayat, with measures to ensure regular maintenance, reliable water supply, and shared community responsibility.

Water conservation and management form an equally essential component. Efforts will include restoring the temple tank and curated trail with native vegetation to enhance groundwater recharge, support biodiversity, and promote ecological sustainability. To improve access to safe drinking water, the initiative will install water filters, establish soap banks, and set up water ATMs at schools, Anganwadis, and temples. Appropriate water treatment systems will also be installed to ensure affordable and uninterrupted access to clean drinking water.

Finally, training and empowering Village Water and Sanitation Committees (VWSCs) and Self-Help Groups (SHGs) will foster community-led water conservation and sanitation initiatives. Sanitation workers will receive specialised training on safety measures, health-seeking behaviour, and menstrual hygiene to improve occupational health and reduce risks associated with improper handling of sanitary waste.



Phase One (Year One)

Construct community toilets with incinerators, Decentralised Wastewater Treatment Systems (DEWATS), and septic tanks

Build a sanitary complex for the community, pilgrims, and visitors

Conduct baseline assessments at household, institutional, and panchayat levels (including gendered aspects)

Develop targeted awareness campaigns on sanitation and hygiene practices

Phase Two (Year Two)

Construct new community toilets on land identified by the panchayat

Ensure regular maintenance, consistent water supply, and community responsibility

Restore the temple tank and curated trail with native vegetation to enhance recharge and biodiversity

Install water filters, soap banks, and water ATMs at schools, Anganwadis, and temples

Set up appropriate water treatment systems for continuous clean drinking water

Train Village Water and Sanitation Committees (VWSCs) and Self-Help Groups (SHGs) in community-driven sanitation and water conservation

Provide specialised training to sanitation workers on safety, menstrual hygiene, and health-seeking behaviour

Phase Three (Year Three)

Establish collaborations with government bodies and tourism boards for a wider reach.

Strengthen partnerships with local businesses, tour operators, and conservation organisations.

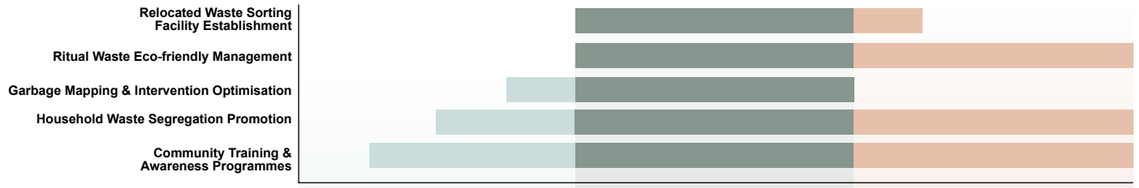
Towards an Inclusive and Effective Waste Management Plan

In recognition of the persistent challenges in solid waste generation and management in Thirupudaimaruthur, the strategy is to implement an inclusive and effective waste management plan. A central component will be the relocation and establishment of an efficient solid waste sorting, recycling, and value-addition facility, as the existing site is frequently affected by flooding. The relocated facility will prioritise proper segregation and promote resource recovery. In addition, targeted practices for the sustainable management of ritual-based waste, particularly from the temple, will be introduced to reduce environmental pollution through eco-friendly disposal methods.

Structured awareness programmes will be critical in building household capacities for waste segregation and in shifting current attitudes and practices, where segregation is largely perceived as the responsibility of sanitation workers. Despite publicity efforts through district administration posters and panchayat meetings, household-level segregation remains inadequately practised, resulting in widespread littering along roadsides, riversides, and public spaces, with serious public health and environmental consequences.

To address these challenges, the initiative will conduct systematic garbage mapping in the hamlets of Thirupudaimaruthur, Ratnavel Pandian Colony, and Seethaparpanallur to identify problem areas and design targeted interventions. Marked bins for biodegradable and non-biodegradable waste will be strategically placed, supported by behavioural interventions, community training sessions, and educational videos. Together, these measures will foster greater community responsibility and significantly strengthen waste management practices in the village.

Women engaged in washing clothes by the river.



Phase One (Year One)

Identify and secure land away from flood-prone areas

Construct and equip a sorting, recycling, and value-addition centre

Train sanitation workers in segregation and eco-friendly handling

Launch structured awareness programmes

Conduct household training on waste segregation

Develop and distribute educational videos and materials

Phase Two (Year Two)

Introduce targeted disposal systems for ritual-based waste at temples

Initiate eco-friendly methods for biodegradable waste

Place marked bins across hamlets

Conduct systematic garbage mapping in Thirupudaimaruthur, Ratnavel Pandian Colony, and Seethaparpanallur

Use mapping to design targeted interventions and track progress

Phase Three (Year Three)

Expand awareness campaigns with a focus on behaviour change

Conduct refresher training for households and sanitation workers

Integrate waste management into school and panchayat activities

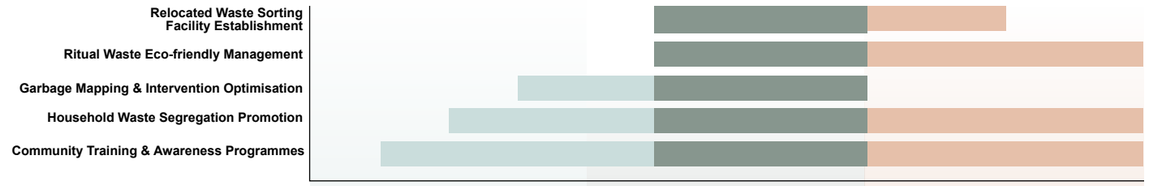
Establish routine audits of facility performance

Secure partnerships with recycling companies and district administration for long-term sustainability

Dignified and Sustainable Menstrual Care

Menstrual hygiene management in Thirupudaimaruthur will be significantly improved through targeted initiatives addressing both practical and social aspects. The initiative will organise dedicated training sessions and distribute hygiene kits to women and school children, aiming to enhance personal hygiene practices and mitigate environmental risks resulting from improper disposal methods. Current disposal practices, including burning sanitary napkins behind homes, burying them near river shores, or flushing them into toilets, pose significant public health and environmental risks. Additionally, the prevailing social stigma surrounding menstrual waste disposal contributes to inadequate handling practices, further burdening sanitation workers who manage sanitary waste.

To address these issues, incinerators will be installed within community toilet facilities across the village. Self-Help Groups (SHGs) will be trained and will provide community members with the essential knowledge and skills required to effectively operate and maintain these incinerators. This integrated approach seeks to alleviate health and environmental concerns, foster active community participation, and progressively reduce the social stigma associated with menstrual hygiene management.



Phase One (Year One)

Conduct a baseline study on menstrual hygiene practices and disposal methods.

Organise training sessions for women, adolescent girls, and schoolchildren on menstrual hygiene and safe disposal practices.

Distribute hygiene kits to women and schoolchildren.

Begin awareness campaigns to reduce stigma around menstruation.

Phase Two (Year Two)

Install incinerators in community toilet facilities across the village.

Train Self-Help Groups (SHGs) and sanitation workers in safe operation and maintenance of incinerators.

Conduct refresher workshops on hygiene management, disposal, and environmental safety.

Launch community monitoring and feedback systems.

Phase Three (Year Three)

Strengthen SHG-led operations for sustainable management of incinerators.

Expand awareness campaigns to address stigma and promote community responsibility.

Conduct evaluations on health and environmental impacts.

Institutionalise menstrual hygiene management practices within panchayat governance structures for long-term sustainability.

BUDGET

14.2

ECOLOGICAL HEALTH

BUDGET COST: ₹1,40,44,674

BUDGET CATEGORY		YEAR 1						YEAR 2						YEAR 3					
1. SALARY & CONSULTANCY																			
S.No.	Cost Head	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes
a	PROJECT STAFF																		
1.a.1	SRA	No. of resources x No. of months x Salary per month	1	12	₹ 60,000	₹ 7,20,000	Partial salary drawn from the budget	No. of resources x No. of months x Salary per month	1	12	₹ 66,000	₹ 7,92,000	Partial salary drawn from the budget.	No. of resources x x No. of months Salary per month	1	12	₹ 72,600	₹ 8,71,200	Partial salary drawn from the budget.
1.a.2	RA	No. of resources x No. of months x Salary per month	2	12	₹ 40,000	₹ 9,60,000		No. of resources x No. of months x Salary per month	2	12	₹ 44,000	₹ 10,56,000		No. of resources x No. of months x Salary per month	2	12	₹ 48,400	₹ 11,61,600	
SUB TOTAL SALARY & CONSULTANCY			3			₹ 16,80,000			3			₹ 18,48,000			3			₹ 20,32,800	
2. PROGRAM/PROJECT ACTIVITY COST																			
S. No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
a	TRAINING / WORKSHOP COSTS FOR GREEN AMBASSADOR																		
2.a.1	Local Educators							No. of resources x No. of months x Salary per month	2	12	₹ 15,000	₹ 3,60,000	Unit refers to no. of months	No. of resources x No. of months x Salary per month	1	12	₹ 24,000	₹ 2,88,000	Units refer to no. of months
2.a.2	Field Assistants							Quantity = No. of Workshops x No. of Trainers Units= Days	1	36	₹ 1,000	₹ 36,000	Unit refers to the no. of workshops	Quantity = No. of Workshops x No. of Trainers Units= Days	1	36	₹ 1,000	₹ 36,000	Unit refers to the no. of workshops
2.a.3	Food expenses							Quantity = Number of Trainees x No. of days x Cost of food per day	50	36	₹ 200	₹ 3,60,000	Unit refers to the no. of days	Quantity = No. of Trainees x No. of days x Cost of food per day	50	36	₹ 200	₹ 3,60,000	Unit refers to the no. of days
2.a.4	Room Rental	No. of Days x Rental per month		12	₹ 5,000	₹ 60,000	Unit refers to the no. of months	No. of Days x Rental per day		15	₹ 250	₹ 3,750	Unit refers to the no. of days	No. of Days x Rental per day		6	₹ 250	₹ 1,500	Unit refers to the no. of days
2.a.5	Field Trip							No. of field trips x Cost per trip		4	₹ 35,000	₹ 1,40,000	Unit refers to the no. of field trips	No. of field trips x Cost per trip		4	₹ 35,000	₹ 1,40,000	Unit refers to the no. of field trips
2.a.6	Camp							No.of camp x Cost per event		1	₹ 1,00,000	₹ 1,00,000	Unit refers to the no. of camps	No.of camp xt Cost per event		1	₹ 1,00,000	₹ 1,00,000	Unit refers to the no. of days
2.a.7	Conclave							No.of conclave x Cost per event		1	₹ 1,00,000	₹ 1,00,000	Unit refers to the no. of conclaves	No.of conclave x Cost per event		1	₹ 1,00,000	₹ 1,00,000	Unit refers to the no. of conclaves
2.a.8	Maintenance Charges			12	₹ 2,000	₹ 24,000	Units refer to no. of months												

Wings, Water and Worship

S. No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
a	TRAINING / WORKSHOP COSTS FOR BIRD RESCUE																		
2.a.1	Trainer (in-person sessions)	Quantity = No. of Workshops x No. of Trainers Units x Cost per session	1	7	₹ 7,500	₹ 52,500	Unit refers to the no. of workshops. The workshop consists of four-hour sessions.	Quantity = No. of Workshops x No. of Trainers Units x Cost per session	1	7	₹ 7,500	₹ 52,500	Unit refers to no. of workshops. The workshop consists of four-hour sessions.	Quantity = No. of Workshops x No. of Trainers Units x Cost per session	1	7	₹ 4,000	₹ 28,000	Units refer to the no. of workshops. The workshop will be telephonic in nature.
2.a.2	Rehabilitator (Part-time)	No. of resources x No. of months x Salary per month	1	12	₹ 10,000	₹ 1,20,000	Unit refers to the no. of months.	No. of resources x No. of months x Salary per month	1	12	₹ 11,000	₹ 1,32,000	Unit refers to the no of months	No. of resources x No. of months. x Salary per month	1	12	₹ 12,100	₹ 1,45,200	Unit refers to the no. of months.
2.a.3	Field Staff	No. of resources x No. of months x Salary per month	1	6	₹ 20,000	₹ 1,20,000	Unit refers to the no. of months	No. of resources x No. of months x Salary per month	1	6	₹ 22,000	₹ 1,32,000		No. of resources x No. of months x Salary per month	1	6	₹ 24,200	₹ 1,45,200	
2.a.4	Honorarium For Trainees	Quantity = Number of Trainees x No. of days x Cost per day	10	7	₹ 500	₹ 35,000	Unit refers to the no. of days	Quantity = Number of Trainees x No. of days x Cost per day	10	7	₹ 500	₹ 35,000	Unit refers to the no. of days	Quantity = Number of Trainees x No. of days x Cost per day	10	7	₹ 500	₹ 35,000	Unit refers to the no. of days.
2.a.5	Food Expenses	Quantity = Number of Trainees x No. of days x Cost of food per day	20	7	₹ 200	₹ 28,000	Unit refers to the no. of days	Quantity = Number of Trainees x No. of days x Cost of food per day	20	7	₹ 200	₹ 28,000	Unit refers to to the no. of days	Quantity = Number of Trainees x No. of days x Cost of food per day	20	7	₹ 200	₹ 28,000	Unit refers to the no. of days.
2.a.6	Venue Rental	No. of Days x Rental per day		7	₹ 250	₹ 1,750	Unit refers to the no. of days	No. of Days x Rental per day		7	₹ 250	₹ 1,750	Unit refers to the no. days	No. of Days x Rental per day		7	₹ 250	₹ 1,750	Unit refers to the no. of days.
2.a.7	Travel Expenses for trainers	Quantity = No. of people Units = Travels	2	7	₹ 3,000	₹ 42,000	Unit refers to the no. of travels	Quantity = No. of people Units = Travels	2	7	₹ 3,000	₹ 42,000	Unit refers to to the no. of travels	Quantity = No. of people Units = Travels	2	7	₹ 3,000	₹ 42,000	Unit refers to the no. of travels.
2.a.8	Accommodation Expenses for trainers	Quantity = No. of people Units x No. of days = Accomodation	2	7	₹ 1,500	₹ 21,000	Unit refers to the no. of days	Quantity = No. of people Units x No. of days = Accomodation	2	7	₹ 1,500	₹ 21,000	Unit refers to the no. of days	Quantity = No. of people Units x No. of days = Accomodation	2	7	₹ 1,500	₹ 21,000	Unit refers to the no. days.
2.a.9	Workshop Preparation Materials	LUMPSUM				₹ 35,000	Designing/ updating slides, posters, printing brochures and checklists	LUMPSUM				₹ 35,000	Designing/ updating slides, posters, printing brochures & checklists	LUMPSUM				₹ 35,000.00	Designing/ updating slides posters, printing brochures and checklists
2.a.10	Course Material in Tamil	LUMPSUM			₹ 2,50,000	₹ 2,50,000													
2.a.11	Field Equipment			10	₹ 10,000	₹ 1,00,000	Binoculars												

Wings, Water and Worship

S. No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
2.a.12	Threat Assessment and Conservation Measures	LUMPSUM			₹ 50,000	₹ 50,000													
2.a.13	Protocol Document (In English)	LUMPSUM			₹ 1,50,000	₹ 1,50,000													
2.a.14	Data Monitoring and Updation	LUMPSUM			₹ 20,000	₹ 20,000	PBR documentation and printing				₹ 20,000	₹ 20,000	PBR documentation and printing				₹ 20,000	₹ 20,000	PBR documentation and printing
b	**VENUE RENOVATION COSTS**																		
2.b.1	Room Renovation	LUMPSUM			₹ 50,000	₹ 50,000													
2.b.2	Tables and Chairs	LUMPSUM			₹ 30,000	₹ 30,000													
2.b.3	Poster and Frames	LUMPSUM			₹ 20,000	₹ 20,000													
c	**PROJECT EQUIPMENT COSTS**																		
2.c.1	Binoculars (students)			10	₹ 10,000	₹ 1,00,000	Unit refers to the no. of km.			420	₹ 10	₹ 4,200	Unit refers to the no. of km.			168	₹ 10	₹ 1,680	
2.c.2	Binoculars (educators)			5	₹ 25,000	₹ 1,25,000				1	₹ 1,00,000	₹ 1,00,000		LUMPSUM		1	₹ 1,00,000	₹ 1,00,000	
2.c.3	Laptop			1	₹ 80,000	₹ 80,000													
2.c.4	Project/Interactive Board			1	₹ 1,00,000	₹ 1,00,000													
2.c.5	Microscope			2	₹ 1,25,000	₹ 2,50,000													
2.c.6	Journaling Binocular			5	₹ 30,000	₹ 1,50,000													
2.c.7	Spotting Scope			2	₹ 1,00,000	₹ 2,00,000													
2.c.8	Spotting Tripod			2	₹ 50,000	₹ 1,00,000													
2.c.9	Easel			1	₹ 10,000	₹ 10,000													
2.c.10	Drawing Material for Students	LUMPSUM				₹ 1,00,000	Brushes, Drawing, Journals, Colour etc												
2.c.11	Cabinet	LUMPSUM		1	₹ 50,000	₹ 50,000	For books and specimens												
2.c.12	Specimen Books	LUMPSUM				₹ 10,000													
2.c.13	Chemicals	LUMPSUM			₹ 10,000	₹ 10,000	For basic water testing												
2.c.14	Water Parameter Multimeter			1	₹ 6,00,000	₹ 6,00,000	Unit refers to a set												
2.c.15	Pocket Weather Meter			1	₹ 1,00,000	₹ 1,00,000													
2.c.16	Thermometer, Ph Meter, Secchi Disc			5	₹ 3,000	₹ 15,000	Unit refers to a set												
2.c.17	Weather Station			1	₹ 1,60,000	₹ 1,60,000													
d	**EDUCATION MATERIALS DEVELOPEMENT**																		
2.d.1	Content Development	LUMPSUM			₹ 1,50,000	₹ 1,50,000													
2.d.2	Print	LUMPSUM			₹ 2,00,000	₹ 2,00,000													
2.d.3	Library Books	LUMPSUM			₹ 1,00,000	₹ 1,00,000	Wildlife, Nature Books												
2.d.4	Magazine Subscriptions	LUMPSUM			₹ 20,000	₹ 20,000													
2.d.5	Uniform Materials			50	₹ 1,350	₹ 67,500	Badges, Tshirt, Cap												

Wings, Water and Worship

e	**INFRASTRUCTURAL ADDITIONS AND RENOVATIONS**																	
2.e.1	Parking Area	LUMPSUM			₹ 1,50,000	₹ 1,50,000												
2.e.2	Signboards	LUMPSUM			₹ 3,00,000	₹ 3,00,000												
2.e.3	TBCR Gate Repair	LUMPSUM			₹ 50,000	₹ 50,000												
2.e.4	Guest House Repair	LUMPSUM			₹ 3,00,000	₹ 3,00,000												
2.e.5	Cage for injured birds	LUMPSUM			₹ 50,000	₹ 50,000												
f	**REHABILITATION AND TREATMENT**																	
2.f.1	Medical Supplies	LUMPSUM			₹ 50,000	₹ 50,000		LUMPSUM			₹ 50,000	₹ 50,000		LUMPSUM			₹ 50,000	₹ 50,000	
2.f.2	Rehabilitation Supplies	LUMPSUM			₹ 1,00,000	₹ 1,00,000		LUMPSUM			₹ 1,00,000	₹ 1,00,000		LUMPSUM			₹ 1,00,000	₹ 1,00,000	
2.f.3	Feed	LUMPSUM			₹ 1,00,000	₹ 1,00,000		LUMPSUM			₹ 1,00,000	₹ 1,00,000		LUMPSUM			₹ 1,00,000	₹ 1,00,000	
2.f.4	On-site caretaker	No. of resources x No. of months x Salary/month	1	12	₹ 15,000	₹ 1,80,000		No. of resources x No. of months x Salary per month	1	12	₹ 16,500	₹ 1,98,000		No. of resources x No. of months x Salary per month	1	12	₹ 18,150	₹ 2,17,800	
g	**OUTREACH COSTS**																	
2.g.1	Community Outreach and Promotion	LUMPSUM			₹ 75,000	₹ 50,000	Local advertising and social media campaign	LUMPSUM				₹ 1,00,000	Local advertising and social media campaign	LUMPSUM	—	—	—	₹ 1,00,000	Local advertising and social media campaign
h	**FIELD IMPLEMENTATION COSTS**																	
2.h.1	Local Travel			1400	₹ 10	₹ 14,000	Unit refers to the no. of km.			1400	₹ 10	₹ 14,000	Unit refers to the no. of km.			1400	₹ 10	₹ 14,000	Unit refers to the no. of km.

SUB TOTAL (PROJECT ACTIVITY COSTS)	**₹ 52,75,750**	**₹ 22,65,200**	**₹ 22,10,130**
4. BUDGET	**₹ 69,55,750**	**₹ 41,13,200**	**₹ 42,42,930**
5. CONTINGENCY (5%)	**₹ 3,47,787.50**	**₹ 2,05,660**	**₹ 2,12,146.50**
TOTAL PROJECT COST	**₹ 73,03,537.50**	**₹ 43,18,860**	**₹ 24,22,276.50**

BUDGET

EMPOWERED COMMUNITY VENTURES

BUDGET COST: ₹1,26,62,734.69

BUDGET CATEGORY		YEAR 1						YEAR 2						YEAR 3					
1. SALARY & CONSULTANCY																			
S.No.	Cost Head	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes
a	PROJECT STAFF																		
1.a.1	SRA	No. of resources x No. of months x Salary per month	1	3	₹ 1,00,000	₹ 3,00,000	Partial salary drawn from the budget.	No. of resources x No. of months x Salary per month	1	3	₹ 1,10,000	₹ 3,30,000	Partial salary drawn from the budget.	No. of resources x No. of months x Salary per month	1	3	₹ 1,21,000	₹ 3,63,000	Partial salary drawn from the budget.
1.a.2	RA	No. of resources x No. of months x Salary per month	1	12	₹ 40,000	₹ 4,80,000		No. of resources x No. of months x Salary per month	1	12	₹ 44,000	₹ 5,28,000		No. of resources x No. of months x Salary per month	1	12	₹ 48,400	₹ 5,80,800	
b	PROJECT CONSULTANTS																		
1.b.1	Tourism Consultant	No. of resources x No. of months x Salary per month	1	3	₹ 1,75,000	₹ 5,25,000		No. of resources x No. of months x Salary per month	1	3	₹ 1,92,500	₹ 5,77,500		No. of resources x No. of months x Salary per month	1	3	₹ 2,11,750	₹ 6,35,250	
1.b.2	Assistant Consultants	No. of resources x No. of months x Salary per month	1	3	₹ 80,000	₹ 2,40,000		No. of resources x No. of months x Salary per month	1	3	₹ 88,000	₹ 2,64,000		No. of resources x No. of months x	1	3	₹ 96,800	₹ 2,90,400	
1.b.3	Field Staff	No. of resources x No. of months x Salary per month	1	3	₹ 20,000	₹ 60,000		No. of resources x No. of months x Salary per month	1	3	₹ 22,000	₹ 66,000		No. of resources x No. of months x Salary per month	1	3	₹ 24,200	₹ 72,600	
b	SUPPORT STAFF																		
1.c.1	Sr. Accounts Officer	No. of Months x Salary per month	1	0.37	₹ 95,000	₹ 35,150		No. of Months x Salary per month	1	0.37	₹ 1,04,500	₹ 38,665		No. of Months x Salary per month	1	0.37	₹ 1,14,950	₹ 42,531.50	
1.c.2	Accounts Assistant	No. of Months x Salary per month	1	0.37	₹ 50,000	₹ 18,500		No. of Months x Salary per month	1	0.37	₹ 55,000	₹ 20,350		No. of Months x Salary per month	1	0.37	₹ 60,500	₹ 22,385	
1.c.3	Sr. Comm. Officer	No. of Months x Salary per month	1	0.21	₹ 1,40,000	₹ 29,400		No. of Months x Salary per month	1	0.21	₹ 1,54,000	₹ 32,340		No. of Months x Salary per month	1	0.21	₹ 1,69,400	₹ 35,574	
1.c.4	IT Systems Engineer	No. of Months x Salary per month	1	0.16	₹ 72,000	₹ 11,520		No. of Months x Salary per month	1	0.16	₹ 79,200	₹ 12,672		No. of Months x Salary per month	1	0.16	₹ 87,120	₹ 13,939.20	
1.c.5	Sr. Manager Human Resources	No. of Months x Salary per month	1	0.21	₹ 1,20,000	₹ 25,200		No. of Months x Salary per month	1	0.21	₹ 1,32,000	₹ 27,720		No. of Months x Salary per month	1	0.21	₹ 1,45,200	₹ 30,492	
1.c.6	Sr. Manager Donor Relations	No. of Months x Salary per month	1	0.26	₹ 1,80,000	₹ 46,800		No. of Months x Salary per month	1	0.26	₹ 1,98,000	₹ 51,480		No. of Months x Salary per month	1	0.26	₹ 2,17,800	₹ 56,628	
1.c.7	Assistant Donor Relations	No. of Months x Salary per month	1	0.26	₹ 45,000	₹ 11,700		No. of Months x Salary per month	1	0.26	₹ 49,500	₹ 12,870		No. of Months x Salary per month	1	0.26	₹ 54,450	₹ 14,157	
	SUB TOTAL (SALARY & CONSULTANCY)		**12**			**₹ 17,83,270**			**12**			**₹ 19,61,597**		**12**			**₹ 21,57,756.70**		
2. PROGRAM/PROJECT ACTIVITY COST																			
S.No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
a.	TRAINING/WORKSHOP COSTS																		

S.No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
2.a.1	Chief Trainer	Quantity = No. of Workshops x No. of Trainers Units = Days	1	10	₹ 60,000	₹ 6,00,000	Unit refers to the no. of workshops. In the first year, one workshop consists of 5 days x ₹ 12,000 / day	Quantity = No. of Workshops x No. of Trainers Units = Days	1	5	₹ 36,000	₹ 1,80,000	Unit refers to the no. of workshops. In the second year, one workshop consists of 3 days x ₹ 12,000/ day	Quantity = No. of Workshops x No. of Trainers Units = Days	1	3	₹ 24,000	₹ 72,000	Unit refers to the no. of workshops. In the third year, one workshop consists of 2 days x ₹ 12,000 / day
2.a.2	Assistant Trainer	Quantity = No. of Workshops x No. of Trainers Units = Days	1	10	₹ 17,500	₹ 1,75,000	Unit refers to the no. of workshops. In the first year, one workshop consists of 5 days x ₹ 3,500 / day	Quantity = No. of Workshops x No of Trainers Units = Days	1	5	₹ 10,500	₹ 52,500	Unit refers to the no. of workshops. In the first year, one workshop consists of 3 days x ₹ 3,500 / day	Quantity = No. of Workshops x No of Trainers Units = Days	1	3	₹ 7,000	₹ 21,000	Unit refers to the no. of workshops. In the first year, one workshop consists of 2 days x ₹ 3,500 / day
2.a.3	Honorarium For Trainees	Quantity = No. of Trainees x No. of days x Cost per day	20	50	₹ 500	₹ 5,00,000	Unit refers to the no. of days	Quantity = No. of Trainees x No. of days x Cost per day	20	15	₹ 500	₹ 1,50,000	Unit refers to the no. of days	Quantity = No. of Trainees x No. of days x Cost per day	20	6	₹ 500	₹ 60,000	Unit refers to the no. of days
2.a.4	Food Expenses	Quantity = No. of Trainees x No. of days x Cost of food per day	20	50	₹ 200	₹ 2,00,000	Unit refers to the no. of days	Quantity = No. of Trainees x No. of days x Cost of food per day	20	15	₹ 200	₹ 60,000	Unit refers to the no. of days	Quantity = No. of Trainees x No. of days x Cost of food per day	20	6	₹ 200	₹ 24,000	Unit refers to the no. of days
2.a.5	Venue Rental	No. of Days x Rental per day		50	₹ 250	₹ 12,500	Unit refers to the no. of days	No. of Days x Rental per day		15	₹ 250	₹ 3,750	Unit refers to the no. of days	No. of Days x Rental per day		6	₹ 250	₹ 1,500	Unit refers to the no. of days
2.a.6	Travel Expenses for Trainers	Quantity = No. of people Units = Travels	2	10	₹ 3,000	₹ 60,000	Unit refers to the no. of travels	Quantity = No. of people Units = Travels	2	5	₹3,000	₹ 30,000	Unit refers to the no. of travels	Quantity = No. of people Units = Travels	2	6	₹3,000	₹ 36,000	Unite refers to the no. of travels
2.a.7	Accommodation Expenses for trainers	Quantity = No. of people Units x No. of days = Accomodation	2	50	₹ 1,500	₹ 1,50,000	Unit refers to the no. of days	Quantity = No. of people Units x No. of days = Accomodation	2	15	₹ 1,500	₹ 45,000	Unit refers to the no. of days Units x No. of days = Accomodation	Quantity = No. of people	2	6	₹ 1,500	₹ 18,000	Unit refers to the no. of days
2.a.8	Printing & Stationery	LUMPSUM				₹ 25,000		LUMPSUM				₹ 25,000		LUMPSUM				₹ 25,000	
b	**OUTREACH COSTS**																		
2.b.1	Branding & Comm.	LUMPSUM				₹ 1,00,000		LUMPSUM				₹ 1,00,000		LUMPSUM				₹ 1,00,000	Guidelines and instructions for interior design, design of materials such as a toilet kit, design of home stays, etc.
2.b.2	Digital Media Campaigns							LUMPSUM				₹ 3,60,000		LUMPSUM				₹ 3,60,000	
2.b.3	Trade fairs and B 2 B															3	₹ 5,00,000	₹ 15,00,000	Attending trade fairs and b2b meetings in various cities
2.b.4	Souvenirs								50		₹ 1,000	₹ 50,000			50		₹ 1,000	₹ 50,000	Design and production of keychains, mugs, eco-friendly bags

Wings, Water and Worship

S.No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
2.b.5	Promotional Materials							LUMPSUM				₹ 1,00,000		LUMPSUM				₹ 1,00,000	Brochures, flyers etc.
2.b.6	Launch Events and FAM Trips													LUMPSUM				₹ 5,00,000	Trips for tour operators, bloggers and tour influencers.
c	**FIELD IMPLEMENTATION COSTS**																		
2.c.1	Local Travel			1400	₹ 10.00	₹ 14,000	Unit refers to the no. of km.			420	₹ 10	₹ 4,200	Unit refers to the no. of km.			168	₹ 10	₹ 1,680	Unit refers to the no. of km.
2.c.2	Equipment Repair & Maintenance	LUMPSUM			₹ 1,00,000	₹ 1,00,000		LUMPSUM		1	₹ 1,00,000	₹ 1,00,000		LUMPSUM		1	₹ 1,00,000	₹ 1,00,000	
d	**UTILITY/MAINTENANCE COSTS (Field Office)**																		
2.d.1	Electricity	LUMPSUM/ No. of Months x Cost per month	1	12	₹ 9,000	₹ 1,08,000		LUMPSUM/ No. of Months x Cost per month	1	12	₹ 9,000	₹ 1,08,000		LUMPSUM/ No. of Months x Cost per month	1	12	₹ 9,000	₹ 1,08,000	
2.d.2	Phone	LUMPSUM/ No. of Months x Cost per month	1	3	₹ 3,000	₹ 9,000		LUMPSUM/ No. of Months x Cost per month	1	3	₹ 3,000	₹ 9,000		LUMPSUM/ No. of Months x Cost per month	1	3	₹ 3,000	₹ 9,000	
2.d.3	Other Utilities (Internet)	LUMPSUM/ No. of Months x Cost per month	1	12	₹ 2,000	₹ 24,000		LUMPSUM/ No. of Months x Cost per month	1	12	₹ 2,000	₹ 24,000		LUMPSUM/ No. of Months x Cost per month	1	12	₹ 2,000	₹ 24,000	
2.d.4	Operations cost	LUMPSUM	1	12	₹ 15,000	₹ 1,80,000		LUMPSUM	1	12	₹ 15,000.	₹ 1,80,000		LUMPSUM	1	12	₹ 15,000	₹ 1,80,000	
e	**KNOWLEDGE PRODUCT DEVELOPMENT**																		
2.e.1	Video, photo and written documentation of tours and stories.	LUMPSUM				₹ 3,00,000		LUMPSUM				₹ 3,00,000		LUMPSUM				₹ 3,00,000	Professional photography, videography, and storytelling content.
2.e.2	Information Management			30	₹ 1,500	₹ 45,000			—	30	₹ 1,500	₹ 45,000				30	₹ 1,500	₹ 45,000	
g	**CERTIFICATION & ASSESSMENTS**																		
2.g.1	External Financial Auditor			2	₹ 8,000	₹ 16,000				2	₹ 8,000	₹ 16,000				2	₹ 8,000	₹ 16,000	
	SUB TOTAL (PROJECT ACTIVITY COSTS)					**₹ 26,18,500**						**₹ 19,42,450**						**₹ 36,51,180**	
	4. BUDGET					**₹ 44,01,770**						**₹ 39,04,047**						**₹ 58,08,936.70**	
	5. CONTINGENCY (5%)					**₹ 2,20,088.50**						**₹ 1,95,202.35**						**₹ 2,90,446.84**	
	TOTAL PROJECT COST					**₹ 46,21,858.50**						**₹ 40,99,249.35**						**₹ 39,41,626.84**	

BUDGET

PUBLIC HEALTH

BUDGET COST: ₹3,94,44,646

BUDGET CATEGORY		YEAR 1						YEAR 2						YEAR 3					
1. SALARY & CONSULTANCY																			
S.No.	Cost Head	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes	Instructions	No. of Resources	No. of Months	Cost per month per resource	Total Cost	Budget Notes
a	PROJECT STAFF																		
1.a.1	SRA	No. of resources x No. of months x Salary per month	1	3	₹ 1,00,000	₹ 3,00,000	Partial salary drawn from the budget	No. of resources x No. of months x Salary per month	1	3	₹ 1,10,000	₹ 3,30,000	Partial salary drawn from the budget.	No. of resources x x No. of months Salary per month	1	3	₹ 1,21,000	₹ 3,63,000	Partial salary drawn from the budget.
1.a.2	RA	No. of resources x No. of months x Salary per month	1	12	₹ 40,000	₹ 4,80,000		No. of resources x No. of months x Salary per month	1	12	₹ 44,000	₹ 5,28,000		No. of resources x No. of months x Salary per month	1	12	₹ 48,400	₹ 5,80,800	
b	PROJECT CONSULTANTS																		
1.b.1	Trainer	No. of resources x No. of months x Salary per month	1	6	₹ 70,000	₹ 4,20,000		No. of resources x No. of months x Salary per month	1	6	₹ 77,000	₹ 4,62,000		No. of resources x No. of months x Salary per month	1	6	₹ 84,700	₹ 5,08,200	
1.b.2	Field Staff	No. of resources x No. of months x Salary per month	1	6	₹ 20,000	₹ 1,20,000		No. of resources x No. of months x Salary per month	1	6	₹ 22,000	₹ 1,32,000		No. of resources x No. of months x Salary per month	1	6	₹ 24,200	₹ 1,45,200	
1.b.3	Monitoring and Evaluation Consultant	No. of resources x No. of months x Salary per month	1	2	₹ 50,000	₹ 1,00,000		No. of resources x No. of months x Salary per month	1	2	₹ 50,000	₹ 1,00,000		No. of resources x No. of months x Salary per month	1	2	₹ 50,000	₹ 1,00,000	
SUB TOTAL (SALARY & CONSULTANCY)			**5**			**₹ 14,20,000**			**5**			**₹ 15,52,000**			**5**			**₹ 16,97,200**	
2. PROGRAM/PROJECT ACTIVITY COST																			
S. No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
a	BASELINE SURVEY																		
2.a.1	Household Survey	LUMPSUM			₹ 2,00,000	₹ 2,00,000													
2.a.2	Conduct PRA for Community Mapping	LUMPSUM			₹ 75,000	₹ 75,000													
2.a.3	Database Establishment	LUMPSUM			₹ 25,000	₹ 25,000													
b	OUTREACH COSTS																		
2.b.1	Branding & Communications	LUMPSUM			—	₹ 1,00,000		LUMPSUM			—	₹ 1,00,000		LUMPSUM			—	₹ 1,00,000	
c	INFRASTRUCTURE DEVELOPMENT																		
2.c.1	Solid Waste Facility	LUMPSUM			₹ 35,00,000	₹ 35,00,000													
2.c.2	Sanitary Complex	LUMPSUM			₹ 20,00,000	₹ 20,00,000	For pilgrims and visitors												

Wings, Water and Worship

2. PROGRAM/PROJECT ACTIVITY COST

S. No.	Description	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes	Quantity	No. of Resources	No. of Units	Cost per Unit	Total Cost	Budget Notes
c	**INFRASTRUCTURE DEVELOPMENT**																		
2.c.3	Individual Household Toilet Construction	LUMPSUM			₹ 63,94,880	₹ 63,94,880													
2.c.4	Community Toilets	LUMPSUM		2	₹ 37,50,000	₹ 75,00,000	These would be equipped with DEWATS and Septic Tanks												
2.c.5	Water Treatment Unit	LUMPSUM		2	₹ 27,50,000	₹ 55,00,000	Used water sampling, sampling, flow measurement kit and greywater treatment unit of 5 KLD												
2.c.6	Drinking Water Quality Management	LUMPSUM			₹ 36,00,000	₹ 36,00,000	Drinking water test kits and water ATM supply of 3000 LPH RO plant												
2.c.7	Temple Tank Restoration	LUMPSUM			₹ 15,00,000	₹ 15,00,000													
2.c.8	Open Well Restoration	LUMPSUM			₹ 4,00,000	₹ 4,00,000													
d	**CAPACITY BUILDING AND TRAINING WORKSHOPS**																		
2.d.1	Household Capacity Building			30	₹ 1,00,000	₹ 1,00,000	Waste Segregation and Awareness Program				₹ 1,00,000	₹ 1,00,000	Waste Segregation and Awareness Program				₹ 1,00,000	₹ 1,00,000	Waste Segregation and Awareness Program
2.d.2	Sanitation			30	₹ 3,000	₹ 90,000	Health seeking behaviour and menstrual hygiene at the block level. Unit refers to the number of days			30	₹ 3,000	₹ 90,000	Health seeking behaviour and menstrual hygiene at the block level. Unit refers to the number of days						
2.d.3	Menstrual Health and Hygiene Kit			1000	₹ 1,000	₹ 10,00,000	Unit refers to the number of women in the panchayat												
2.d.4	Soap Bank	LUMPSUM			₹ 1,00,000	₹ 1,00,000	For school, temple and anganwadi												
2.d.5	Honorarium For Sanitation Workers	"Quantity = Number of sanitation workers X No. of days X Cost / day	5	25	₹ 500	₹ 62,500	Unit refers to the no. of days	"Quantity = Number of sanitation workers X No. of days X Cost per day	5	25	₹ 500.00	₹ 62,500	Unit refers to the no. of days X Cost per day	"Quantity = Number of sanitation workers X No. of days	5	25	₹ 500	₹ 62,500	Unit refers to the number of days
2.d.5	Venue Rental	No. of Days X Rental /day		50	₹ 250	₹ 12,500	Unit refers to the no. of days	No. of Days X Rental per day		15	₹ 250.00	₹ 3,750	Unit refers to the no. of days	No. of Days X Rental per day	—	6	₹ 250	₹ 1,500	Unit refers to the no. of days
2.d.8	Printing & Stationery	LUMPSUM				₹ 25,000		LUMPSUM				₹ 25,000		LUMPSUM				₹ 25,000	
e	**FIELD IMPLEMENTATION COSTS**																		
2.e.1	Local Travel			1400	₹ 10	₹ 14,000	Unit refers to the no. of km.	.		1400	₹ 10.00	₹ 14,000	Unit refers to the no. of km.			1400	₹ 10	₹ 14,000	Unit refers to the no. of km.
	SUB TOTAL (PROJECT ACTIVITY COSTS)					**₹ 3,21,98,880**						**₹ 3,95,250**						**₹ 3,03,000**	
4. BUDGET						**₹ 3,36,18,880**						**₹ 19,47,250**						**₹ 20,00,200**	
5. CONTINGENCY (5%)						**₹ 16,80,944**						**₹ 97,362.50**						**₹ 1,00,010**	
TOTAL PROJECT COST						**₹ 3,52,99,824**						**₹ 20,44,612.50**						**₹ 21,00,210**	

MONITORING AND EVALUATION FRAMEWORK

14.3

Table 13: Proposed Itinerary for a Three-Day Package during the Biodiversity Festival

Component	What to Monitor	Impact Indicators	Data Sources/ Tools/Activities	Frequency	Stakeholders
Ecological Health	Strengthen biodiversity conservation and ecological monitoring	No. of trained community nature guides	Training attendance records	Quarterly/Annual	ATREE-ACCC team, Forest Department
		No. of biodiversity ecords uploaded on eBird/iNaturalist	eBird/iNaturalist logs PBR datasets		
		No. of school children/youth engaged as “Green Ambassadors”	School/Youth group activity logs		
		No. of awareness events conducted	Event reports		
	Enhance the cultural -ecological value of TBCR through visitor-sensitive management	No. of interpretive signages/ storyboards installed	Photographic documentation	Bi-annual	Temple Committee, Panchayat, Forest Department, ATREE
		Reduction in ritual waste within temple precincts	Facility audits of waste collection records		
		Restoration of Theppakulam tank (measured by water storage capacity and biodiversity presence)	Tank restoration monitoring reports		
		No. of eco-sensitive structures built (towers /play areas)			
		Visitor satisfaction	Visitor surveys		
	Build local capacities for bird rescue and rehabilitation	No. of people trained in bird rescue and rehabilitation	Training session reports	Quarterly	ARRC, ATREE
		No. of rescue cases successfully managed	Rescue and rehabilitation records		
		Functionality of aviaries and cages	Facility audits		
		Survival/release rates of rescued birds	Annual threat assessment document		
	Foster behavioural change among visitors and residents	Reduction in littering and waste dumping in public/temple spaces	Observational surveys	Quarterly	Panchayat, Temple Committee, ATREE
		Percentage of visitors aware of biodiversity and eco-guidelines	Visitor exit interviews		
		No. of behaviour change campaigns conducted	Campaign reports		

Wings, Water and Worship

Component	What to Monitor	Impact Indicators	Data Sources/ Tools/Activities	Frequency	Stakeholders
Empowered Community Ventures	Institutionalise governance and sustainable ecotourism business models	Functionality of Community Ecotourism Committee (CEC)	CEC meeting minutes	Quarterly/Annual	CEC, Panchayat, Ecotourism Consultant
		No. of tourism packages developed and sold	Financial records		
		Tourism revenue generated	Visitor booking records		
		Partnerships established (govt/tour operators)	Partnership MoUs		
	Enhance the capacity of local service providers in ecotourism	No. of service providers trained	Training attendance	Bi-annual	ATREE, Ecotourism Consultant
		Quality of services (measured by visitor feedback)	Feedback surveys		
		Improvement in the income levels of providers	Income records monitoring reports		
Public Health	Improve sanitation, hygiene, and water security	No. of toilets constructed/ renovated	Baseline and follow-up surveys	Quarterly/Annual	Panchayat, VWSCs, ATREE, IIHS, Sanitation First
		Percentage of households adopting household toilets	Infrastructure audits		
		Reduction in open defecation	VWSC reports		
		Functionality of DEWATS/septic tanks	Water quality testing results		

Component	What to Monitor	Impact Indicators	Data Sources/ Tools/Activities	Frequency	Stakeholders
Public Health		Access to safe drinking water (households, schools)	Water quality testing results		
		No. of VWSC/ SHG members trained	Training session reports		
	Implement inclusive waste management	Functionality of the relocated waste facility	Waste facility records	Bi-annual	Panchayat, Sanitation Workers, ATREE, IIHS, Sanitation First
		No. of households practising segregation	Household surveys		
		Reduction in roadside/river litter	Mapping exercises		
		No. of awareness campaigns conducted	Awareness campaign reports		
	Promote dignified menstrual hygiene practices	No. of incinerators installed and functional	Facility records	Quarterly, Annual	SHGs, Panchayat, ATREE, IIHS, Sanitation First
		No. of SHGs trained	Training attendance		
		Reduction in stigma indicators (qualitative surveys)	Survey reports		

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CONCLUSION

In 2022, the background exploration of the social and ecological relationship in Thirupudaimaruthur through the TamiraSES project led to the envisioning of this initiative. The village, one of the Social-Ecological Observatories (SEOs) in the Tamiraparani river basin, offered insights into both the challenges and opportunities for building a sustainable relationship between community livelihoods and environmental conservation.

Over the past year (July 2024 to July 2025), the project examined the feasibility of community-based tourism as a pathway to foster community well-being through natural resources. The nesting of large wetland birds in the village, including in the backyards of homes, illustrates the community's peaceful coexistence with these species. This highlights the importance of integrating biodiversity conservation with livelihoods rather than treating them as separate domains.

KEY FINDINGS

The report highlights the complex and interconnected relationship between environmental conservation and community life in the landscape. While the region is rich in biodiversity and known for its cultural and historical significance, the study also revealed pressing challenges from both ecological and public health perspectives. These include the decline of safe and viable livelihoods, limited access to clean drinking water, and inadequate waste management, sanitation, and hygiene practices.

The findings point to the urgent need for alternative livelihoods that provide safe working conditions and a steady income. The community has also demonstrated willingness and enthusiasm to build a sustainable ecotourism model that benefits both people and the environment. Addressing these concerns, which range from individual behaviours to institutional support, will require collaborations with organisations that bring expertise in specific areas. Strengthening river health, improving waste and water management, and promoting environmental stewardship are central strategies to enhance livelihoods and resilience while creating a community-led framework for conservation and sustainable development.

WAY FORWARD

With over two decades of experience in the region, the ATREE-ACCC team plays a key role in developing strategies that integrate ecological health, public health, and community ventures. The project proposes a phased three-year strategy, supported by an estimated budget and established partnerships, to bring this ecotourism model to reality. To build community capacity in conservation and wildlife rescue, ATREE, in collaboration with ARRC, will conduct a series of workshops for residents and volunteers interested in providing first aid to birds.

The process begins with Kabani Tourism as a partner in creating a community-led sustainable ecotourism model that ensures long-term ecological and economic benefits. This approach prioritises biodiversity conservation as its core value while highlighting the unique appeal of the landscape. Efforts also include the implementation of efficient waste and water

management systems, improvements in sanitation infrastructure, and the promotion of hygiene practices through active community participation. These actions are intended to protect both environmental and public health while also enhancing the visitor experience. Collaborations with Sanitation First and IIHS are already underway, with both organisations having completed field visits and shared initial assessments and implementation plans. Context-specific signboards will be installed across the three hamlets to encourage positive changes in sanitation practices.

Together, these collaborative initiatives provide the foundation for a resilient and community-driven ecotourism model that protects ecological integrity while also improving local livelihoods and well-being for future generations.

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APPENDICES

APPENDIX 1: CONSENT FORM

This document is the English version of the consent form provided to interview respondents. After reviewing the form, respondents either signed it or, in certain cases, granted oral consent.

I, ..., voluntarily agree to participate in this research study.
By signing below, I acknowledge that I have read and understood the following statements:

I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences.

I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.

I have had the purpose and nature of the study explained to me, and I have had the opportunity to ask questions about the study.

I understand that participation involves engaging in community engagement and different activities.

I understand that I will not benefit directly from participating in this research.

I agree to my interview being audio-recorded, if necessary.

I understand that all information I provide for this study will be treated confidentially.

I understand that in any report on the results of this research, my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview that may reveal my identity or the identity of others I mention.

I understand that if I inform the researcher that I or someone else is at risk of harm, the researcher may have to report this to the relevant authorities. They will discuss this with me first, but may be required to report with or without my permission.

I understand that signed consent forms, transcripts, and original audio recordings will be retained at the Agasthyamalai Community-Based Conservation Centre, Manimuthar.

I understand that under freedom of information legislation, I am entitled to access the information I have provided at any time while it is in storage as specified above.

I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

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Signature of Participant Date

I believe the participant is giving informed consent to participate in this study.

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Signature of Researcher Date

The following is the Tamil translation of the consent form that was administered to interview respondents.

ஒப்புதல் படிவம்

திருப்புடைமருதூர் சமூகம் சார்ந்த சுற்றுச்சூழல் சுற்றுலா திட்டம் ஆராய்ச்சி ஆய்வில் பங்கேற்க ஒப்புதல்

இந்த ஆராய்ச்சி ஆய்வில் பங்கேற்க நான் ஒத்துக் கொள்கிறேன்.

நான் இப்போது பங்கேற்க ஒப்புக்கொண்டாலும், எந்த நேரத்திலும் உரையாடலில் இருந்து விலகலாம் அல்லது எந்த விதமான விளைவுகளும், பாதிப்புகளும் இல்லாமல் கேள்விகளுக்கு பதிலளிக்க மறுக்கலாம் என்பதை நான் புரிந்துகொள்கிறேன்.

நான் கூறிய தகவல்களை பயன்படுத்துவதற்கான அனுமதியை என்னால் திரும்பப்பெற என்பதை புரிந்துகொள்கிறேன்.

இந்த ஆய்வுபடிப்பை பற்றி நான் தெளிவாக தெரிந்துக் கொள்ளவும் மற்றும் அது குறித்த கேள்விகள் கேட்கும் உரிமையையையும் பெற்றுள்ளேன் என்பதை புரிந்து கொள்கிறேன்.

இந்த நேர்காணல் மக்கள் பங்களிப்பு மற்றும் அது சார்ந்த மற்ற நிகழ்வுகளையும் உள்ளடக்கியிருக்கும் என்பதை புரிந்து கொள்கிறேன்.

இந்த ஆராய்ச்சியில் பங்கேற்பதன் மூலம் எனக்கு நேரடியாகப் பலன் எதுவும் கிடையாது என்பதை நான் புரிந்துகொள்கிறேன்.

நேர்காணலின் ஒலிப்பதிவு தேவைப்பட்டால் பதிவு செய்ய ஒப்புக்கொள்கிறேன்.

இந்த ஆய்வுக்காக நான் வழங்கும் அனைத்து தகவல்களும் ரகசியமாக இருக்கும் என்பதை புரிந்துகொள்கிறேன்.

இந்த ஆராய்ச்சியின் முடிவுகள் குறித்த எந்த அறிக்கையிலும் எனது அடையாளம் பெயரில்லாததாகவே இருக்கும் என்பதை நான் புரிந்துகொள்கிறேன்.

கையொப்பமிடப்பட்ட ஒப்புதல் படிவங்கள், ஆவணங்கள் மற்றும் அசல் ஆடியோ பதிவுகள் அகஸ்தியமலை மக்கள்சார் இயற்கைவள காப்பு மையம் மணிமுத்தாறில் வைக்கப்படும் என்பதை நான் புரிந்துகொள்கிறேன்.

தகவல் சுதந்திரச் சட்டத்தின் கீழ், மேலே குறிப்பிட்டபடி சேமிப்பில் இருக்கும் போது எந்த நேரத்திலும் நான் வழங்கிய தகவலை அணுகுவதற்கு உரிமை எனக்கு உள்ளது என்பதை நான் புரிந்துகொள்கிறேன்.

ஆராய்ச்சிக்கு பின் இது குறித்த விவரங்களை அறிந்து கொள்ளும் சுதந்திரத்தை நான் பெற்றிருக்கிறேன் என்பதை புரிந்து கொள்கிறேன்.

…….. ……

பங்கேற்பாளரின் கையொப்பம தேதி

இந்த ஆய்வில் பங்கேற்க பங்கேற்பாளர் தகவலறிந்த சம்மதத்தை அளிக்கிறார் என்று நான் நம்புகிறேன்

…….. ……

ஆய்வாளரின் கையொப்பம் தேதி

APPENDIX 2: PARTICIPANT INTERVIEW GUIDE

Section A: Perceptions of the Bird Conservation Reserve (BCR) and Bird Conservation

1. How and why did the people of Thirupudaimaruthur accept the reserve in the village?
2. How has the relationship between people changed over the years with the BCR land?
3. What are the existing conservation efforts to mitigate threats to the reserve?
4. How are different stakeholders involved in such initiatives?
5. How are the lives of people impacted by coexisting with the birds?
6. How do barriers or enablers related to gender, class, or caste affect conservation initiatives?

Section B: Understanding Communities

1. What are the daily occupations of residents, and how do they go about their daily lives?
2. What significance does the river hold for different communities within the village?
3. What are the subtle dynamics and interactions between different castes and genders?
4. What challenges do people face that impact their daily lives and environment?
5. What are the impacts of residents and tourists on the river?
6. What are the residents' perceptions of waste?
7. How do residents manage and dispose of waste?

Section C: Introduction to the Project (Researcher Script)

1. Introduce the research team:
"Hello, we are a group of researchers from ACCC, Manimuthar. We want to learn how people in the village connect with their surroundings and community. As part of our study, we also want to see if ecotourism led by the community can work here. This means that the people of the village themselves would plan and run activities for visitors. Ecotourism is about enjoying nature, like plants, birds, and animals, while also protecting the environment."

2. Inform participants about consent:
"Before we begin, we need your consent (please refer to the consent form).
Your identity will be kept confidential, and you may stop participating at any time if you feel uncomfortable."

3. Collect demographic details:
Name
Age
Occupation
Marital Status
Family Size

4. Ice-breaker questions:
How long have you been in Thirupudaimaruthur?
Have you travelled anywhere else and stayed as a tourist

5. Bird conservation specific questions:
Do you know about the bird species that visit the village? What do they do here, and how long do they stay?
During which season do they usually visit the village?
Do you talk to your children about birds? (if applicable)
How are people's lives impacted by coexisting with the birds?
What practices does the village follow for the welfare of birds?

6. TBCR-specific questions:
1. Do you know where the BCR is in the village? Can you tell me something about it?
2. Do you or anyone in your family visit the TBCR? If yes, for what reasons?
3. How was the land used by residents before the TBCR was established?
4. How and why did the people of Thirupudaimaruthur accept the reserve in the village?
5. Do you think people's relationship with the TBCR land has changed over the years?
6. Do you think the TBCR can be improved? If so, what is not working?
7. What conservation efforts currently exist to mitigate threats to the reserve?
8. How are different stakeholders involved in these efforts?

Section D: Activities

Activity 1: Participatory Village Mapping

Ask respondents to draw or sketch a map, or anything that represents their village.
If hesitant, encourage them and offer to draw with them.
Follow-up questions:
1. Why did you draw this particular feature?
2. What made you think of it?
3. Do you have any memories of this place you could share with us?
4. Probe further if the drawing includes birds, trees, temples, or rivers.

Activity 2: Day in the Life Of

Ask respondents to describe a typical day.
Follow-up questions:
1. What challenges do you face that impact your daily life and environment?
2. How often do you go to the river? When do you go? What significance does the river hold for you and your family?
3. What do you think about the present condition of the river? (If they mention water pollution, probe further.)
4. What do you think about outsiders and tourists visiting the river? What do you think are the impacts of tourists and visitors on the river?

Activity 3: Card Sorting Activity (awareness of waste types and disposal practices)

1. What does "waste" mean to you?
2. How much and what kinds of waste are generated in your household? (Include number of household members.)
3. How do you manage different kinds of waste?
4. How does waste disposal take place in your home?
5. Does your household segregate waste? If yes, on what basis?
6. What kinds of waste are collected from your house?
7. What do you do if the waste is not collected?
8. How many dustbins are in your home? Where do you keep them, and what kinds of bins do you use?
9. Do you exchange waste for something else (e.g., fertiliser, utensils, money)?

APPENDIX 3: STAKEHOLDERS' INTERVIEW GUIDE

A. District Forest Officer

1. What is your assessment of the current condition of the Thirupudaimaruthur Bird Conservation Reserve (TBCR) in the village?
2. How would you characterise your interactions with the Thirupudaimaruthur community? In your view, how do residents perceive the TBCR and bird conservation?
3. In what ways can community members be involved in bird conservation in the village? Have there been any recent issues related to the protection of the conservation reserve?
4. 'How would you describe the coordination between the Forest Department, the Hindu Religious and Charitable Endowments (HR&CE) Department, and the panchayat? Please comment on the Village Forest Committee (VFC), the Eco-Development Committee (EDC), and the TBCR Management Plan.
5. What funds have been allocated to the BCR and the village?
6. What is your view on establishing community-based ecotourism?
7. Are there any current or planned initiatives for the village or the BCR?
8. Are there successful models of community-based ecotourism within your jurisdiction or experience?
9. Specifically for Thirupudaimaruthur, what is the feasibility of community-based ecotourism? What is the status of the Eco-Tourism Committee and the BCR Management Plan?
10. What risks or considerations should be addressed before initiating an ecotourism project here?

B. Sanitation Workers

1. Please introduce yourself and your household.
2. Have you received training for this occupation?
3. What facilities or equipment are provided for your work?
4. Please describe a typical workday. What is the waste-collection schedule?
5. What quantities of waste are collected and processed in the village?
6. Please describe the waste-collection process. How is collected waste handled or disposed of?
7. What impact has vermicomposting had on waste processing?
8. Are there seasonal or periodic variations in waste volumes?
9. Given that MGNREGA ("100 days") work is currently non-functional or irregular, how has this affected your work?
10. Following the Swachh Bharat Abhiyan, what changes, if any, have occurred in your work?
11. In your view, what rules and regulations govern waste collection in this village?
12. Please describe your most challenging workday or experience. Note any incidents that caused discomfort or risk.
13. Do you derive any income from upcycling or the sale of recyclables?
14. How would you characterise public attitudes toward waste?
15. Have you received complaints regarding waste collection? If so, please describe.
16. What improvements are needed in waste management?
17. How would you describe coordination with stakeholders such as the panchayat, schools, the HR&CE Department, and the Rural Development Department?

C. Motivator

1. Please introduce yourself and your household.
2. What does a typical workday look like?
3. How would you characterise your interactions with the Thirupudaimaruthur community?
4. What are your roles and responsibilities as a motivator?
5. Have you received training for this role?
6. What is the waste-collection schedule? (Obtain photographs of the waste register.)
7. What quantities of waste are collected and processed in the village?
8. Please describe the waste-collection process. How is collected waste handled or disposed of?

9. What impact has vermicomposting had on waste processing?
10. Are there seasonal or periodic variations in waste volumes?
11. Given that MGNREGA (“100 days”) work is currently non-functional or irregular, how has this affected sanitation and hygiene in the village?
12. How would you describe coordination with stakeholders such as the panchayat, self-help groups (SHGs), and the Rural Development Department?

D. Former Forest Watcher

1. What has been your experience in protecting the conservation reserve?
2. How would you characterise your interactions with the Thirupudaimaruthur community?
3. What is your view on establishing community-based ecotourism in Thirupudaimaruthur?

E. Current Forest Watcher

1. Please introduce yourself and your household.
2. What does a typical workday look like?
3. How would you characterise your interactions with the Thirupudaimaruthur community?
4. In what ways are residents involved in bird conservation in the village?
5. What human activities or concerns are affecting the birds and the BCR?
6. What are the main obstacles to bird conservation? Have there been any recent issues related to the protection of the conservation reserve?
7. How are bird-rescue operations carried out here?
8. How would you describe the coordination between the Forest Department, the HR&CE Department, and the panchayat?
9. What funds have been allocated to the BCR and the village?
10. What is the current status of the VFC, the EDC, the Eco-Tourism Committee (ETC), and the TBCR Management Plan?
11. What is your view on establishing community-based ecotourism in this village?
12. What risks or considerations should be addressed before initiating an ecotourism project here?

F. School Headmistress and Staff

1. Please introduce yourself and your household.
2. How would you describe your experience of running the school? What improvements would you prioritise?
3. What are the principal challenges in running this school, and how might they be addressed?
4. How do you envision the school in the next 5–10 years?
5. How would you characterise your interactions with the Thirupudaimaruthur community? How do you perceive residents’ views on the TBCR and bird conservation?
6. Many parents have reported children falling ill due to guano and associated odour.
7. In your view, what measures could address this?
8. In what ways can residents be involved in bird conservation in the village?
9. What is your assessment of establishing community-based ecotourism?
10. Specifically for Thirupudaimaruthur, what is your view on community-based ecotourism?

G. Panchayat Secretary

1. Please introduce yourself.
2. What does a typical workday look like?
3. What are your responsibilities and duties?
4. How do you view your role?
5. What is the waste-collection schedule?
6. What quantities of waste are collected and processed in the village?

7. Please describe the waste-collection process. How is collected waste handled or disposed of?
8. In your view, what rules and regulations govern waste collection in this village?
9. What impact has vermicomposting had on waste processing?
10. Are there seasonal or periodic variations in waste volumes?
11. If the vermicomposting area needs to be relocated, which area would be suitable?
12. It is understood that SHGs previously managed waste. What is your view on reassigning this responsibility to SHGs now?
13. What facilities and training are provided to sanitation workers?
14. Why is the community toilet in the RVP colony currently non-functional?
15. What is the role of the Rural Development Department at the panchayat level?
16. Following the Swachh Bharat Abhiyan, what changes, if any, have occurred in the village?
17. Given that MGNREGA work is currently non-functional or irregular, how has this affected sanitation and hygiene in the village?
18. Do you maintain data on households with toilets?
19. As MGNREGA works are often prioritised for villages with ponds, how was MGNREGA sanctioned here this year?
20. How do you assess the scope for MGNREGA works next year?
21. Are you aware that the Adyar Cancer Institute trained 40 women in tailoring as an alternative livelihood? What is your assessment of this initiative? (It is noted that none from Seethaparapanallur participated.
22. A college team last year documented the village and screened a documentary for residents. How was this initiative received locally?
23. What is your view on establishing community-based ecotourism?
24. Specifically for Thirupudaimaruthur, what is your view on community-based ecotourism?

H. Panchayat President

1. What does a typical workday look like?
2. What are your responsibilities and duties?
3. How do you view your role?
4. What is the waste-collection schedule?
5. What quantities of waste are collected and processed in the village?
6. Please describe the waste-collection process. How is collected waste handled or disposed of?
7. In your view, what rules and regulations govern waste collection in this village?
8. What impact has vermicomposting had on waste processing?
9. Are there seasonal or periodic variations in waste volumes?
10. If the vermicomposting area needs to be relocated, which area would be suitable?
11. It is understood that SHGs previously managed waste. What is your view on reassigning this responsibility to SHGs now?
12. What facilities and training are provided to sanitation workers?
13. Following the Swachh Bharat Abhiyan, what changes, if any, have occurred in the village?
14. Given that MGNREGA work is currently non-functional or irregular, how has this affected sanitation and hygiene in the village? As MGNREGA works are often prioritised for villages with ponds, how was MGNREGA sanctioned here this year?
15. How do you assess the scope for MGNREGA works next year?
16. Are you aware that the Adyar Cancer Institute trained 40 women in tailoring as an alternative livelihood? What is your assessment of this initiative? (It is noted that none from Seethaparapanallur participated.
17. A college team last year documented the village and screened a documentary for residents. How was this initiative received locally?
18. What is your view on establishing community-based ecotourism?
19. Specifically for Thirupudaimaruthur, what is your view on community-based ecotourism?
20. What factors hinder the extension of basic infrastructure to Seethaparapanallur?
21. Many parents have reported children falling ill due to guano and associated odour. What measures could address this?

I. Doctors

1. What factors led you to select the Thirupudaimaruthur panchayat for training?
2. Do you have statistics or reports on the occupational hazards of beedi rolling?
3. How would you describe your experience working with women during the training?
4. What aspects of engagement worked well, and what did not?
5. How important are alternative livelihoods for beedi workers?
6. Participation was limited (none from Seethaparapanallur and a few from the RVP colony). What is your assessment of this?
7. Please provide details on any wig-making initiatives.
8. Please share references or contacts for the beedi hospital.
9. How do you evaluate the effectiveness of alternative livelihood training programmes?
10. Many women do not take up tailoring as a career post-training, and dropout rates are noted. What measures could improve retention and transition to work?
11. Some participants reported being unable to afford sewing machines. What support mechanisms could address such constraints?
12. Are you aware of the TBCR in the village, and have you visited it?
13. What is your assessment of establishing community-based ecotourism?

APPENDIX 4: TOURIST SURVEY QUESTIONNAIRE

1. Demographic details (tick/enter where applicable):
Age
Gender (optional / prefer not to say)
Place of residence (City/State/Country)
Occupation
2. What is the primary purpose of your visit to the village?
3. Are you travelling alone or with others? (If with others, please specify who and how many.)
4. How did you reach the village? (Mode(s) of transport)
5. Have you visited the village before? If yes, how often?
6. How did you learn about the village?
7. How would you describe your overall experience so far?
8. What improvements would you suggest for the village?
9. If given the opportunity, would you like to stay in the village and experience village life? (Yes/No/Maybe)
10. If yes, how many days would you like to stay, and how much would you be willing to spend on this experience?
11. What kind of experience(s) do you expect or prefer?
12. Would you visit this place for ecotourism? If yes, what would you like to experience?

APPENDIX 5: WASTE MAPPING EXERCISE

A. Research Tools

1. Observation
2. Open-ended interviews
3. Surveys

2. Assessment of Present Waste Management (Field Audit)

1. Locate points of waste disposal and littering in the village.
2. Evaluate the condition and placement of waste-collection bins in the village.
3. Identify the different types and sources of waste generated in the village

C. Waste Management Capacity (Open-Ended Interviews)

1. What is the current model of waste management under the panchayat? Who is involved in waste disposal and management?
2. How is waste segregated at the village level?
3. Where is the collected waste transported after leaving the village?
4. What are the current barriers to effective waste management
5. What is the present amount of waste collected in the panchayat?
6. What are the different types of waste generated in the panchayat?
7. What is the cost of managing waste in the village? (e.g., sanitation worker salaries, MGNREGA “100-days” workers, maintenance costs for disposal)
8. Have sanitation workers received any training? If yes, please describe.
9. How do ritual practices generate waste?
10. What campaigns or measures on waste management are ongoing? (e.g., central/state government initiatives and 11. schemes)
11. How would you describe residents’ perspectives or attitudes toward waste?
12. Do you have any suggestions to improve waste management in the village?
13. Map the user journey of different waste-disposal pathways in the village.

APPENDIX 6: FOCUS GROUP DISCUSSION (FGD) GUIDE

A. Objectives

1. Assess residents’ perceptions of ecotourism and its potential to enhance household income.
2. Identify key infrastructure and capacity-building needs to enable community-based ecotourism, waste management, sanitation and hygiene practices, and conservation.

B. Introduction and Icebreaker

1. Welcome and introductions.
2. Ground rules for the Focus Group Discussion (FGd)

C. Documentary Screening on Velas Turtle Festival and Tamil Nadu Tourism

1. How did you feel after watching the videos? What did you understand about ecotourism?
2. Do you think ecotourism could be beneficial for your village? Why or why not?
3. Do you think ecotourism would affect your lifestyle, culture, or environment? If yes, how?
4. What kinds of tourists would you like to welcome to the village?
5. What services or experiences could the village offer to visitors? (Used photos as prompts.)
6. How should potential service providers be identified and skill-trained?
7. What is your opinion on forming a Tourism Committee?
8. Which places in the village could visitors be taken to? (e.g., temple, river corridor, etc.)

D. Screening of Case Studies: Hargila Army and Rural Waste Management in Maharashtra

1. Where could incinerators for sanitary waste be installed in the village?
2. How can households be incentivised to segregate waste at home
3. It was suggested that the community toilet for the RVP colony be located near the bus stop, and that the facility for Seethaparapanallur be near the Ganesh temple on land belonging to both panchayats. What are your views on these locations?
4. How can open defecation be reduced in the village?
5. How can residents participate in caring for injured birds?

APPENDIX 7: OVERALL DEMOGRAPHICS

A. Caste Profile

Hamlet	Caste	No of households
Thirupudaimaruthur	Thevar (OBC)	300
Small Aviary	Karakattu pillai (OC)	25
	Saiva Pillaimar (OC)	15
	Yogeeswarar (OBC)	8
	Asari (BC)	5
	Iyer (FC)	2
RVP Colony	Paraiyar (SC)	50
	Pallar (SC)	50
Seethaparpanallur	Thevar (OBC)	30
Total		485

B. Population Profile

Hamlet	Male	Female	Total
Thirupudaimaruthur	486	638	1124
RVP	112	131	243
Seethaparpanallur	47	65	112
Total Population	645	834	1479

APPENDIX 8: NESTING TREES OF WETLAND BIRDS IN THIRUPUDAIMARUTHUR

Tree species	Counts	Painted Stork	Spot-billed Pelican	Cattle Egret	Median Egret	Total
Albizia lebbeck	1	18	0	0	0	18
Azadirachta indica	6	23	0	21	2	46
Ficus benghalensis	4	52	0	0	0	52
Holoptelea integrifolia	2	8	0	8	6	22
Madhuca longifolia	6	42	4	0	0	46
Morinda pubescens	1	3	0	0	0	3
Polyalthia longifolia	6	32	12	0	4	48
Pongamia pinnata	1	4	0	2	2	8
Prosopis juliflora	10	8	0	445	20	473
Syzygium cumini	2	18	0	0	0	18
Tectona grandis	4	22	0	4	0	26
Terminalia arjuna	6	58	8	0	0	66
Total	49	288	24	480	34	826

Source: People's Biodiversity Register 2023

APPENDIX 9: THAIPUSAM FESTIVAL SCHEDULE (2025)

Thaipusam schedule prepared by the Temple Committee for the general public.

APPENDIX 10: SELF-HELP GROUP LIST

S. No.	SHG Name	Number of Members
1	Gomathi Amman Group	14
2	Thangamman Group	13
3	Piriyam Group	14
4	M.M. Mandram	12
5	Gokulam Group	12
6	Sokkanatchi Group	12
7	Rudra Group	13
8	Vetri Karangal Group	5
9	Mootha Kudimakkal Group	5
10	Senthooram Group	13
11	Sakthi Group	14
12	Muppidathi Amman Mootha Kudimakkal Group	5
13	Roja Mootha Kudimakkal Group	5
14	Mullai Matruthiranali Group	5
15	Om Sakthi Group	17
16	Mutharamman Elakku Group	12
17	Vinayagar Mootha Kudimakkal Group	5
Total		176

APPENDIX 11: PEOPLE'S BIODIVERSITY REGISTER 2023 (SELECTED)

A. Fruit Trees

S. No.	Plant name	Scientific name	Tamil name
1	Amla	*Phyllanthus emblica*	Nelli
2	Banana	*Musa paradisiaca*	Vazhai
3	Coconut	*Cocos nucifera*	Thennai
4	Fig (Cluster Fig)	*Ficus racemosa*	Athi
5	Guava	*Psidium guajava*	Koiya
6	Lemon	*Citrus limon*	Elumichai
7	Mango	*Mangifera indica*	Maamaram
8	Manila tamarind	*Pithecellobium dulce*	Kodikka Puli
9	Papaya	*Carica papaya*	Pappali
10	Pomegranate	*Punica granatum*	Maadulai
11	Sapota (Sapodilla)	*Manilkara zapota*	Sapota
12	Syzygium (Jamun)	*Syzygium cumini*	Naval
13	Tamarind	*Tamarindus indica*	Puli
14	Jackfruit	*Artocarpus heterophyllus*	Pala

B. Timber Plants

S. No.	Scientific name	Tamil name
1	*Strychnos nux-vomica*	Etti
2	*Mangifera indica*	Maamaram
3	*Melia azadirachta*	Malai vembu
4	*Eucalyptus globulus*	Nilagiri
5	*Morinda coreia*	Nuna maram
6	*Areca catechu*	Paakku
7	*Borassus flabellifer*	Panai
8	*Thespesia populnea*	Poovarasu
9	*Tamarindus indica*	Puliya maram
10	*Pongamia pinnata*	Punga maram
11	*Butea monosperma*	Purasu
12	*Casuarina equisetifolia*	Savukku
13	*Tectona grandis*	Thekku
14	*Cocos nucifera*	Thennai maram
15	*Albizia amara*	Thurinji
16	*Albizia lebbeck*	Vaagai
17	*Prosopis juliflora*	Velikathan maram
18	*Azadirachta indica*	Veppa maram
19	*Pterocarpus santalinus*	Semmaram

C. Wild Aquatic Plant Species

S. No.	Scientific name	Tamil name
1	*Pistia stratiotes*	Akasha-t-tamarai
2	*Pontederia crassipes*	Vengaya thamarai
3	*Marsilea quadrifolia*	Aalaik keerai

D. Wild Plant Species

S. No.	Scientific name	Tamil name
1	*Acacia leucophloea*	Vallai vellan
2	*Albizia amara*	Thurinjai
3	*Artocarpus heterophyllus*	Pala maram
4	*Azadirachta indica*	Vembu
5	*Bambusa* sp.	Moongil
6	*Madhuca longifolia* (syn. *Bassia latifolia*)	Iluppai
7	*Carissa carandas*	Kilakkai
8	*Senna auriculata* (syn. *Cassia auriculata*)	Aavaram poo
9	*Coccinia grandis*	Kova kodi
10	*Datura metel*	Umathangai
11	*Dodonaea viscosa*	Virali
12	*Eucalyptus globulus*	Nilagiri
13	*Ficus benghalensis*	Ala maram
14	*Ficus microcarpa*	Kaatu athi
15	*Ficus racemosa*	Athi maram
16	*Ficus religiosa*	Arasa maram
17	*Flueggea virosa*	Pulathi palam
18	*Melia azadirachta*	Malai vembu
19	*Phoenix dactylifera*	Echa maram
20	*Phyllanthus emblica*	Nelli
21	*Pterocarpus marsupium*	Vengai
22	*Pterocarpus santalinus*	Semmaram
23	*Santalum album*	Santhanam
24	*Senna fistula* (syn. *Cassia fistula*)	Sarakkontrai
25	*Solanum torvum*	Sundai
26	*Streblus asper*	Ayani
27	*Strychnos nux-vomica*	Etti
28	Syzygium cumini	Naval
29	*Tamarindus indica*	Puliya maram
30	*Tectona grandis*	Thekku
3	*Thespesia populnea*	Poovarasu
32	*Vachellia nilotica*	Karu vellan
33	*Wrightia tinctoria*	Veppalai
34	*Ziziphus mauritiana*	Elanthai
35	*Flueggea leucopyrus*	Poolaththi
36	*Agave* sp.	Velikaththalai

E. Common Birds of Thirupudaimaruthur

S. No.	Common name	Scientific name
1	Ashy Prinia	*Prinia socialis*
2	Ashy-crowned Sparrow-Lark	*Eremopterix griseus*
3	Asian Koel	*Eudynamys scolopaceus*
4	Asian Palm Swift	*Cypsiurus balasiensis*
5	Baya Weaver	*Ploceus philippinus*
6	Black Drongo	*Dicrurus macrocercus*
7	Black-crowned Night-Heron	*Nycticorax nycticorax*
8	Black-headed Ibis	*Threskiornis melanocephalus*
9	Black-rumped Flameback	*Dinopium benghalense*
10	Black-winged Stilt	*Himantopus himantopus*
11	Blue-tailed Bee-eater	*Merops philippinus*
12	Brahminy Kite	*Haliastur indus*
13	Brahminy Starling	*Sturnia pagodarum*
14	Brown-headed Barbet	*Psilopogon zeylanicus*
15	Cattle Egret	*Bubulcus ibis*
16	Chestnut-tailed Starling	*Sturnia malabarica*
17	Common Hawk -Cuckoo	*Hierococcyx varius*
18	Common Kingfisher	*Alcedo atthis*
19	Common Myna	*Acridotheres tristis*
20	Common Tailorbird	*Orthotomus sutorius*
21	Coppersmith Barbet	*Psilopogon haemacephalus*
22	Eurasian Collared-Dove	*Streptopelia decaocto*
23	Eurasian Coot	*Fulica atra*
24	Glossy Ibis	*Plegadis falcinellus*
25	Gray Francolin	*Ortygornis pondicerianus*
26	Great Egret	*Ardea alba*
27	Greater Coucal	*Centropus sinensis*
28	Green Bee-eater	*Merops orientalis*
29	House Crow	*Corvus splendens*
30	House Sparrow	*Passer domesticus*
31	Indian Cormorant	*Phalacrocorax fuscicollis*
32	Indian Golden Oriole	*Oriolus kundoo*
33	Indian Peafowl	*Pavo cristatus*
34	Indian Pond-Heron	*Ardeola grayii*
35	Indian Roller	*Coracias benghalensis*
36	Intermediate Egret	*Ardea intermedia*
37	Jerdon's Bushlark	*Mirafra affinis*
38	Knob-billed Duck	*Sarkidiornis melanotos*
39	Large-billed Crow	*Corvus macrorhynchos*
40	Laughing Dove	*Streptopelia senegalensis*

S. No.	Common name	Scientific name
41	Little Cormorant	*Microcarbo niger*
42	Little Egret	*Egretta garzetta*
43	Little Grebe	*Tachybaptus ruficollis*
44	Oriental Darter	*Anhinga melanogaster*
45	Oriental Honey-buzzard	*Pernis ptilorhynchus*
46	Oriental Magpie -Robin	*Copsychus saularis*
47	Oriental Skylark	*Alauda gulgula*
48	Paddyfield Pipit	*Anthus rufulus*
49	Painted Stork	*Mycteria leucocephala*
50	Pale-billed Flowerpecker	*Dicaeum erythrorhynchos*
51	Pied Kingfisher	*Megaceryle rudis*
52	Plain Prinia	*Prinia inornata*
53	Plum-headed Parakeet	*Psittacula cyanocephala*
54	Purple Heron	*Ardea purpurea*
55	Purple Sunbird	*Cinnyris asiaticus*
56	Purple-rumped Sunbird	*Leptocoma zeylonica*
57	Red-naped Ibis	*Pseudibis papillosa*
58	Red-vented Bulbul	*Pycnonotus cafer*
59	Red-wattled Lapwing	*Vanellus indicus*
60	Rock Pigeon	*Columba livia*
61	Rose-ringed Parakeet	*Psittacula krameri*
62	Rosy Starling	*Pastor roseus*
63	Rufous Treepie	*Dendrocitta vagabunda*
64	Shikra	*Accipiter badius*
65	Spot-billed Pelican	*Pelecanus philippensis*
66	Spotted Dove	*Streptopelia chinensis*
67	Tricoloured Munia	*Lonchura malacca*
68	White-breasted Waterhen	*Amaurornis phoenicurus*
69	White-browed Wagtail	*Motacilla maderaspatensis*
70	White-throated Kingfisher	*Halcyon smyrnensis*
71	Yellow-billed Babbler	*Argya affinis*
72	Yellow-throated Sparrow (Chestnut -shouldered Petronia)	*Gymnoris xanthocollis*
73	Zitting Cisticola	*Cisticola juncidis*

APPENDIX 12: LOCAL CALENDARS

A. Festival Calendar

Month (English)	Tamil Month(s)	Date/ Period	Festival	Notes
January	Margazhi – Thai	Jan 14	Pongal	Harvest festival
		Jan 15	Mattu Pongal	Pongal for cattle
		Jan 16	Farmer's Day	Honouring farmers
		End Jan / Early Feb	Pradosham	Shiva temple observance
February	Thai – Maasi	End Feb / Early Mar	Pradosham	Shiva temple observance
		Thai Amavasya	Amavasya (new moon)	Observed in the Thai month
		Thai month	Thaipoosam	Major Tamil festival
March	Maasi – Panguni	End Mar / Early Apr	Maha Shivaratri	Night-long Shiva worship
		End Mar / Early Apr	Pradosham	Shiva temple observance
March	Matha Kovil Kodai	Local temple festival		
April	Panguni – Chithirai	Apr 14	Tamil New Year	Beginning of the Tamil year
		End Apr / Early May	Pradosham	Shiva temple observance
May	Chithirai – Vaigasi	End May	Kovil Kodai	Mutharamman, Muppidathi Amman, Sokanatchiamman
		Biennial	Ananchiyamman Kovil Kodai	Once in two years
		End May / Early Jun	Pradosham	Shiva temple observance
June	Vaigasi – Aani	End Jun / Early Jul	Pradosham	Shiva temple observance
July	Aani – Aadi	End Jul / Early Aug	Pradosham	Shiva temple observance
August	Aadi – Avani	August	Krishna Janmashtami	Birth of Lord Krishna
		End Aug	Sumangali Pooja	Ritual for married women
		Aadi Amavasya	Amavasya (new moon)	Rituals for ancestors
		End Aug / Early Sep	Pradosham	Shiva temple observance
September	Avani – Purattasi	September	Ganesh Chaturthi	Festival for Lord Ganesha
		End Sep / Early Oct	Pradosham	Shiva temple observance
October	Purattasi – Aippasi	October	Ayudha Puja, Saraswati Puja	Part of Navaratri

A. Festival Calendar

Month (English)	Tamil Month(s)	Date/ Period	Festival	Notes
		End Oct / Early Nov	Diwali	Festival of Lights
		Purattasi Amavasya	Amavasya (new moon)	Rituals for ancestors
		End Oct / Early Nov	Pradosham	Shiva temple observance
November	Aippasi – Karthigai	End Nov / Early Dec	Pradosham	Shiva temple observance
		December	Karthigai Deepam	Festival of Lights for Lord Shiva
December	Karthigai – Margazhi	End Dec / Early Jan	Pradosham	Shiva temple observance

Note: Pradosham (only in Shiva temples); Amavasya (new moon rituals), Annual temple festivals (Kovil Kodai)

B. Seasonal Calendar

Month (English)	Tamil Month(s)	Season	Birdlife Activity	Agricultural Activity	River Condition
January – February	Margazhi – Thai	Winter	Arrival of some migratory birds at the end of February	Replanting crops, weed removal; harvest begins at the end of the Thai month, depending on crop type	Occasional flooding
March – April	Masi – Panguni	Summer	All migratory and resident birds arrive; early nest building; egg laying	Harvest in the Masi month	—
May – June	Chithirai – Vaigasi	Summer	Egg hatching; care of juveniles	Ploughing in Vaigasi; sowing seeds in late May; replanting crops	—
July – August	Aani – Aadi	Summer & SW Monsoon	Juveniles attempting first flights; most migratory birds depart in July	Weed removal; harvesting of some crop varieties	—
September – October	Aavani – Purattasi	SW & NE Monsoon	—	Harvest of some crops; short gap before next planting	Occasional flooding in September
November – December	Aippasi – Karthigai	NE Monsoon & Winter	—	Ploughing in Karthigai; sowing seeds	Flooding in December

APPENDIX 13: WASTE AUDIT TOOLKIT RESOURCES RECEIVED FROM SANITATION FIRST

Waste Management by Thirupudaimaruthur Gram Panchayat

1. Name of the Gram Panchayat :
2. Name of the Revenue village :
3. Total no. of hamlets :
4. Name of village/hamlets :1.
   2.
   3.
5. Block :
6. Taluk :
7. District :
8. Total number of households and population in each hamlet

Name of village/hamlets	Total no. of households	Population		
		Male	Female	Total
Thirupudaimarudur				
RVP colony				
Seethaparapnallur				

9. Potential waste generating units in the Panchayat

Units	Type of units	No. of Units
Households	Fully Concrete Semi Concrete Titled Thatched	
Commercial	Provision Medical Shop Tiffin centres Manufacturing unit (small scale) Sweet/bakery shop Electricals and electronics Hardware Garments Vegetable market Carpentry Construction Others specify	
Petty business	Tea stall Petty shop Mechanic shop Others specify	
Common access areas	Marriage hall Community hall SHG buildings PHCs/Sub Centre Private clinic	

Meat market	Mutton Stall Chicken Stall Fish Stall Others specify	
Temples		
Agriculture	Wet land (ac) Dry land (ac)	
Fish culture if any		

10. Livestock population and waste generated

Livestock	Total Population	Type of waste generated
Cow		
Buffalo		
Bullocks		
Sheep		
Goat		
Poultry		
Donkey/Horse		
Any other Specify		

11. Type of solid waste generated and storage

Sl. No	Category	Quantity generated in week (kg)	Metal bins	Plastic bins	Concrete bins	Oil drums	Others specify
1	Paper						
2	Plastic and rubber						
3	Vegetable						
4	Food waste						
5	Meat waste						
6	Crop residues						
7	Animal waste						
8	Medical waste						
9	Sanitary waste						
10	Glass and ceramic						
11	Aluminium						
12	Wood						
13	Textile						
14	Garden waste						
15	Construction debris						
16	Packing & processing						
17	e-Waste						
18	Others Specify						

12. Disposal of solid wastes at the community

Sl. No	Methods	Yes	No
1	Collected in polyethene bags		
2	Thrown in open areas		
3	Thrown in common places		
4	Dumped in pits		
5	Disposed in centralized bins		
6	Disposed in segregated bins		
7	Disposed in concrete bins		
8	Dumped/thrown in water bodies		

13. Method of waste collection

Sl. No	Collections methods	Yes	No
1	Door-to-door collection		
2	E-vehicle		
3	Manually operated tri-wheelers		
4	Push trolly/carts		

14. Waste disposal methods adopted by the Panchayat

Sl. No	Waste disposal after collection	Yes	No
1	Segregation at the collection point		
2	Incineration		
3	Landfill		
4	Sanitary landfill		
5	Compositing		
6	Vermicomposting		
7	Recycling		

15. Waste processing yard

15.1 Is there a waste processing yard in the panchayat? Yes No

15.2 If yes, where is it located?

15.3 What are the facilities available in the waste processing yard?

15.4 How many workers are involved in waste processing?

15.5 Waste handling methods?

Wet
Dry

Child faeces
Sanitary wastes

16. Sanitation workers details

No. of sanitation workers	Male:	Female:
Nature of employment	Regular	
	Contract	
	Paid by community	
Nature of work	Sweeping	
	Waste Collection	
	Others	
Are they doing periodical health check up	Yes	No
Are they part of any functional SHGs	Yes	No
Are they given hygiene training	Yes	No
Are they given source segregation training	Yes	No
Are they aware of the importance of PPE	Yes	No
Have they attended any waste management training	Yes	No
Training needs for the Sanitation Workers		

17. Wastewater water generation and disposal methods

Type of wastewater generated	Yes	No
Grey water		
Sewage		
Cattle shed		
Agriculture land		
Storm water		
Others specify		

Wastewater disposal facilities	Availability		Functional status		
	Yes	No	Fully functional	Partially functional	Defunct
Individual soak pits					
Twin leach pit					
Septic tank					
Community soak pit					
Community septic tank					
Open drain					
DEWATS					

APPENDIX 14: TENTATIVE PROPOSALS FROM PARTNER ORGANISATIONS

A. Indian Institute of Human Settlements (IIHS)

Preamble:

This concept note has been developed based on the initial information provided by ATREE. A detailed proposal will be formulated in collaboration with ATREE upon their agreement with the proposed activities. Both the scope of activities and the budget are flexible and can be adjusted based on the baseline assessment and ATREE's concurrence.

1. Background

Thirupudaimaruthur, a village located in Tamil Nadu's Tirunelveli district, is celebrated for its cultural and ecological richness. The Narumbunatha Swamy Temple, a 1,200-year-old Shiva temple, draws numerous pilgrims, while the Thirupudaimaruthur Bird Sanctuary along the Tamirabarani River supports diverse bird species. The village has a population of 1,479 people living in three hamlets: Thirupudaimaruthur Main Village (1,124), RVP Colony (243), and Seethaprapanallur (112). Despite these assets, the village faces significant public health and environmental challenges that require immediate attention. The lack of household toilets and inadequate community sanitation facilities force many residents to resort to open defecation, leading to hygiene and health concerns. The poor maintenance of existing community toilets and the absence of individual household toilets in certain hamlets exacerbate these issues. Untreated greywater is improperly disposed of, polluting the soil and water bodies. Moreover, residents often drink untreated water, increasing the risk of waterborne diseases. These critical issues underline the urgent need for targeted interventions to improve sanitation, water management, and public health.

2. Scope

This project is designed to tackle the pressing public health and environmental issues in Thirupudaimaruthur by implementing sustainable Water, Sanitation, and Hygiene (WASH) practices. The initiative focuses on creating robust community involvement, particularly empowering Self-Help Groups (SHGs) to lead efforts in infrastructure development, resource management, and sustainable growth. The project will improve community facilities and introduce model low-cost individual household toilets as a demonstration of feasibility. These models will serve as a catalyst to mobilize funding from the Panchayat for the construction of similar toilets for other eligible families, thereby amplifying the initiative's reach and impact. The overall scope includes refurbishing and maintaining community toilets, establishing decentralized greywater treatment systems, establishing a water treatment plant, and, if need be, water ATMs for accessible potable water, in addition to building the capacity of SHGs to sustain these efforts and ensuring long-term community ownership.

3. Objectives

The project will focus on the following:

- To enhance and maintain sanitation facilities through active community participation, ensuring their effective use and long-term sustainability.
- To promote the adoption of low-cost household toilets by showcasing model designs, encouraging widespread implementation within the community.
- To develop and implement efficient greywater treatment and reuse systems, supporting sustainable water management practices.
- To improve access to safe drinking water by establishing water treatment systems and water ATMs, providing a reliable and affordable solution.
- To strengthen the capacity of Self-Help Groups (SHGs) to manage and sustain WASH initiatives, fostering long-term ownership and success.

4. Proposed Strategy

4.1 Key Strategies

- **Sustainable Infrastructure Development:** Strengthen community sanitation by refurbishing existing facilities and constructing model low-cost household toilets. Establish sustainable systems for potable water supply and greywater management to ensure long-term functionality.
- **Community-Led Ownership and Capacity Building:** Empower and equip Self-Help Groups (SHGs) to take leadership in managing WASH initiatives. Provide training and resources to enhance their capacity for effective implementation and long-term sustainability.
- **Phased and Scalable Implementation:** Adopt a structured approach by addressing immediate sanitation and water needs first. Demonstrate viable household toilet models to encourage community adoption. Scale up interventions in collaboration with the Panchayat to ensure broader impact and sustainability.

4.2 Implementation Approach

- **Assessment:** Assess the current sanitation situation, water accessibility, and waste management needs to identify gaps and categorize the households eligible for individual toilets. This will also include conducting water quality tests to understand the quality of drinking water and assessing the level of treatment needed to make it safe.

- **Community Engagement:** Organize community meetings for participatory planning of the scheduled activities. Awareness campaigns and meetings will be organized regularly to ensure that the community is aware of good WASH practices and the problems caused by poor practices.

- **Infrastructure Development:**
  - Refurbish and maintain community toilets.
  - Construct and demonstrate model low-cost individual household toilets.
  - Install decentralized greywater treatment systems, establish a water treatment plant, and water ATMs.

- **Capacity Building of SHGs:** Train SHGs in WASH practices, infrastructure management, and financial skills to ensure the sustenance of the initiative.

- **Leveraging Government Funds:** Utilize project funds for the initial infrastructure of household toilets and obtain the support of the village Panchayat to mobilize government grants/subsidies for the rest of the families through advocacy.

- **Monitor Progress:** Regularly review progress, refine strategies, and address emerging challenges.

5. Proposed Activities

- **Assessment:**

Review the available baseline.
Conduct a field assessment to identify the gaps related to WASH infrastructure and services, including testing of water quality – physical, chemical, and biological.

- **Sanitation Facilities:**
  - *Community Toilets:* Refurbish existing community toilets to improve usability and hygiene and establish maintenance systems led by local SHGs to ensure regular upkeep.
  - *Household Toilets:* Construct low-cost gender-friendly model toilets for sustainably designed individual households. The team will advocate with the Panchayat to provide financial support for building similar toilets for other eligible families and provide technical support for the construction.

Greywater Management:

- Based on the assessment, identify the sites for greywater management and install suitable greywater treatment systems.
- Educate families about the benefits of reusing treated greywater for farming and gardening and promote resource conservation.

Drinking Water Access:

- Based on the water quality test report and potable water demand, select an effective water treatment system and connect it to the water supply system in the village Panchayat to ensure that the entire community has access to safe drinking water. A water ATM can be installed for better distribution. The business model for the water treatment and distribution system will be worked out.

Capacity Building:

- Organize training sessions for SHGs on topics such as sanitation management, water safety, and financial skills. Equip them to lead and sustain WASH initiatives in the community.
- Conduct periodic refresher courses to enhance skills and address the challenges faced by SHGs.

Community Engagement:

- Engage the community for participatory planning, implementation, and monitoring of the activities. The project team will organize awareness campaigns, workshops, and events to educate villagers on the importance of sanitation, clean water, and sustainable practices.
- Create platforms for community members to share their concerns and suggestions, ensuring inclusive decision-making.

6. Monitoring Plan

To ensure the project's success and sustainability, a simple yet effective monitoring system will be implemented. This plan will leverage minimal human resources and engage the community actively to promote ownership and accountability.

6.1 Regular Reviews

- Organize monthly review meetings with project staff and SHG representatives to discuss progress, challenges, and immediate needs. These meetings will include sharing updates on sanitation facility maintenance, greywater systems, and water ATM functionality.
- Conduct monthly walkthroughs with SHG members and local volunteers to inspect infrastructure and identify areas requiring immediate attention.

6.2 Community Feedback Meetings

- Conduct quarterly community meetings where villagers can share their experiences, provide feedback on the facilities, and suggest improvements. This participatory approach will ensure that the project evolves based on community needs and expectations.
- Place suggestion boxes near community toilets and water ATMs to collect ongoing feedback anonymously from users.

6.3 Community Monitoring Committees

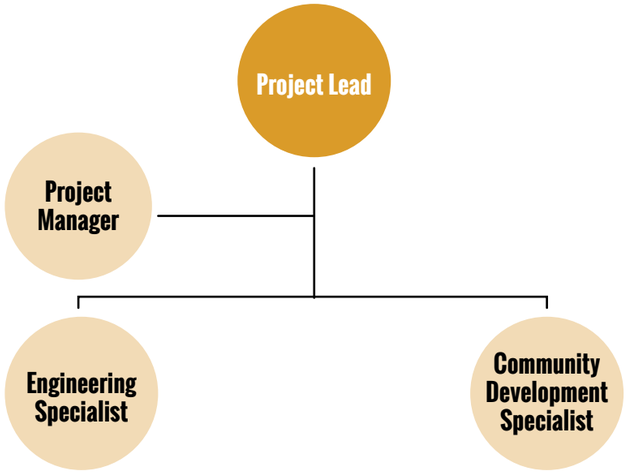
- Establish small committees comprising SHG members, village elders, and youth volunteers to oversee the day-to-day maintenance and management of sanitation and water facilities.
- These committees will conduct regular inspections, record findings, and report issues during the monthly reviews.

This monitoring system ensures continuous tracking of progress while empowering the community to take responsibility for maintaining and sustaining the facilities, fostering long-term success.

7. Risk and Mitigation Strategies

Risk	Mitigation Strategy
Low community participation	Build trust and engagement through culturally relevant awareness campaigns tailored to the needs and aspirations of the community. Leverage village meetings, local leaders, and SHGs to communicate the importance of the initiatives. Offer small, community-based incentives such as public recognition or awards for active participation.
Delays in procurement or construction	Identify and engage local vendors and contractors early in the like planning phase to ensure reliable partnerships. Procure materials in advance and maintain a small inventory of essential items to avoid delays. Establish a local oversight committee comprising SHG members to monitor and expedite construction activities.
Lack of support from the Panchayat	Involve Panchayat representatives from the project's inception. Schedule regular coordination meetings to discuss progress and address concerns. Highlight the mutual benefits of the project, such as improved village reputation and enhanced resource management, to align the Panchayat's goals with the initiative.
Technical challenges in greywater management and water ATM operation	Provide hands-on training for SHG members and local youth on the operation and maintenance of installed systems.

8. Project Team



9. Project Timeline

The proposed project will span five months and will be divided into three key phases:

- Planning and Preparation
- Implementation, Monitoring, and Evaluation
- Consolidation and Handover

10. Proposed Draft Budget

The estimated budget excludes GST. The budget covers personnel, logistics, and programme expenses. The proposed budget is presented below.

No.	Outcomes	Amount
1	Sustainable management of CTPT/IHHL (CTPT Renovation, CTPT Construction, and Demonstration of Individual HH Toilet)	₹ 63,94,880
2	Sustainable management of used water (Used water sampling, flow measurement kit, and greywater treatment unit 5 KLD – 2 nos)	₹ 55,74,880
3	Sustainable management of water (Drinking water quality test kits for community testing, water quality testing lab charges – base, mid, and endline [10 locations], and Water ATM supply of 3,000 LPH RO plant)	₹ 36,42,880
4	Strengthened institutional capacity of VP for management of WSS (Community Engagement and Capacity Building)	₹ 4,00,000
Total		**₹ 1,60,12,640**

B. Sanitation First

Enhancing WASH and Solid Waste Management Facilities and Practices for Sustainable Ecotourism and Biodiversity Conservation in Thirupudaimaruthur Gram Panchayat, Tirunelveli, Tamil Nadu

1. Background

Thirupudaimaruthur Gram Panchayat, located in Papakudi Block of Tirunelveli District, Tamil Nadu, is renowned for its rich biodiversity and ecotourism potential due to its proximity to significant natural habitats and religious sites. However, the region faces considerable challenges in solid waste management, personal sanitation, and menstrual hygiene, which affect both public health and environmental sustainability. These issues also impact the village's appeal as an ecotourism destination and pose a threat to biodiversity conservation efforts.

The existing waste-sorting facility is located in a flood-prone area, necessitating relocation and infrastructure development. Additionally, sanitation workers and households require capacity-building initiatives to enhance waste segregation and disposal practices. Schools and Anganwadi centres need improved sanitation facilities, access to clean drinking water, and soap banks. Addressing these challenges through sustainable interventions will not only improve sanitation but also contribute to preserving biodiversity, strengthening ecotourism, and ensuring climate resilience through climate literacy, soil health conservation, biochar production, and water resource management.

2. The Context

Enhancing Ecotourism, Biodiversity Conservation, Sanitation, and Water Conservation through the Solid Waste Management Initiative in Thirupudaimaruthur Gram Panchayat is strategically designed to improve environmental sustainability, enhance sanitation infrastructure, promote water conservation, and strengthen ecotourism potential while addressing development priorities.

This initiative aligns with the United Nations' Sustainable Development Goals (SDGs) by promoting sustainable water and sanitation management (SDG 6), fostering inclusive and resilient human settlements (SDG 11), ensuring sustainable consumption and waste reduction (SDG 12), and contributing to the conservation of terrestrial ecosystems (SDG 15). Additionally, the initiative includes the constitution of Eco-Clubs for youth to promote climate literacy, soil health conservation through biochar production and application, and responsible natural resource management. The formation of Village Water and Sanitation Committees (VWSCs) ensures community-driven water conservation, sustainable water resource management, and sanitation improvements. By integrating solid waste management, biodiversity conservation, water conservation, and personal sanitation measures, the initiative advances multiple SDG targets that aim to create healthier communities and safeguard natural ecosystems.

The initiative supports key national programmes, particularly the Swachh Bharat Mission (SBM), which emphasises sustainable solid waste management, elimination of open defecation, and improved sanitation and hygiene practices. The initiative aligns with both SBM-Urban and SBM-Gramin, enhancing waste management strategies at the local level. Additionally, it reinforces the National Rural Health Mission (NRHM) by promoting menstrual hygiene awareness, safe sanitation practices, and improved access to clean drinking water. The inclusion of Jal Jeevan Mission principles ensures that safe and potable drinking water is available in schools and Anganwadi centres, further supporting public health and hygiene. Moreover, the project aligns with the National Biodiversity Action Plan (NBAP) by mitigating environmental pollution, promoting groundwater recharge, conserving soil health through biochar application, and protecting local flora and fauna, which are crucial for sustaining biodiversity and climate resilience.

Tamil Nadu's Solid Waste Management Policy promotes decentralised and community-driven waste management solutions, a key component of this initiative. Furthermore, the Menstrual Hygiene Scheme in Tamil Nadu encourages safe menstrual hygiene practices, which the initiative supports through awareness programmes and the distribution of sustainable sanitary products. Additionally, the project strengthens water conservation efforts by restoring temple tanks and rejuvenating open wells, reducing pollution, promoting waste segregation and recycling, and strengthening

climate-resilient ecological systems. These efforts align with Tamil Nadu's Ecotourism Promotion Policies. By improving cleanliness, sustainable water management, and environmental conservation in Thirupudaimaruthur, the initiative will enhance the region's appeal as a responsible tourism destination while preserving its natural and cultural heritage.

3. About the Organisation

Sanitation First (www.sanitationfirstindia.org), registered in India as *Wherever the Need India Services*, is a sister organisation of Sanitation First UK (now *The Cycle UK*). It works in the area of environmental sustainability, water, sanitation, and hygiene for vulnerable communities, leaving no one behind. Since 2007, it has supported over 600,000 beneficiaries and their families in eight states and two union territories.

Our vision is gender equity for a thriving planet. We aim to be a catalyst of change that elevates women and thereby helps to build a better world. This is achieved through our three main pillars of work – Water, Women, and World.

Sanitation First, leveraging over six years of research and field trials with academic partners such as Cornell University, USA, Tamil Nadu Agricultural University, and Annamalai University, India, has demonstrated the effectiveness of using Prosopis-based biochar along with enriched compost in improving crop yield (up to 35%), soil health, and water-use efficiency. Currently, Sanitation First has its Prosopis biochar production and field application unit in Ponthampully village of Kamuthi Block in Ramanathapuram, which also serves as a demo plot for training and capacity building of farmers and women in making and applying biochar. This initiative will create sustainable livelihoods, restore ecological balance, and contribute to global climate goals. With donor support, this model can become a scalable solution for other vulnerable communities.

4. Highlights

- Over 5,000 family ecosan toilets, conserving over 1.12 million litres of water and converting human waste into 5.4 tonnes of pathogen-free compost each year, including Asia's first container-based sanitation infrastructure in Puducherry and Cuddalore.
- Over 250 school sanitation complexes, built as per WHO-UNICEF standards, and change rooms with manual incinerators for sustainable menstrual health in schools.
- Developed Tiruvallur's first Smart++ Anganwadi and has been constructing/renovating multiple Anganwadis in Tiruvallur, Virudhunagar, and Chennai.
- Award-winning *Happy Periods Curriculum* on adolescent health and well-being with over 175,000 government school students, teachers, and parents as trainees.
- India's first project on Endometriosis and other menstrual disorders among vulnerable women.
- Trained over 5,000 sanitation workers in hygiene, safety, health-seeking behaviour, and saying no to drugs.
- Conducted climate literacy and SDG awareness training and developed child cabinets in schools of Tamil Nadu.
- Research project on the reuse of humanure as agricultural input with the prestigious Cornell University, USA, and Tamil Nadu Agricultural University.
- Working in the aspirational districts of Virudhunagar and Ramanathapuram on empowering women-led institutions to lead on water budgeting, source sustainability, and water quality monitoring.

5. Awards & Recognition

- Community Social Responsibility Award, ICDS Tiruvallur, 2024
- Big Green Heroes Award, Big FM, 2024
- Award of Appreciation, School Education Department, Chengalpattu, 2024
- Indian Chamber of Commerce – 5th & 6th Social Impact Awards, 2020, 2023 & 2024
- Imagine Award of Excellence, Rotary Club of Madras, 2023
- Independence Day Award, District Administration of Tiruvallur, 2023
- MHM Champions Award, National MHM Summit, Chennai – 2019 & 2022
- Social Change Maker Award – Best Service Provider for Government Schools, Tamil Nadu – 2019
- Top 3 Finalist in the All-India Swachhovation Contest, conducted by the WSSCC (UNOPS in its previous avatar) & Ministry of Water & Sanitation, Government of India, October 2018
- Swachh Bharat Excellence Award, Government of Puducherry – 2018

6. Integrating Biochar for Climate Resilience and Soil Restoration

Sanitation First, leveraging over six years of rigorous research and extensive field trials in collaboration with renowned academic institutions such as Cornell University (USA), Tamil Nadu Agricultural University, and Annamalai University (India), has successfully demonstrated the transformative impact of Prosopis-based biochar combined with enriched compost. This innovative approach has been proven to enhance crop yields by up to 35%, improve soil health, increase carbon sequestration, and significantly boost water-use efficiency, making it a game-changer in sustainable agriculture and climate resilience.

This technology shall be adopted in Thirupudaimaruthur as a critical component of soil health conservation and climate mitigation. The project will integrate Prosopis-based or any other field stock for biochar production and field application as a localised solution, following the successful model of Sanitation First's Prosopis biochar production and training unit in Ponthampully village, Kamuthi Block, Ramanathapuram. This unit shall serve as a centre of excellence for training and capacity building, equipping farmers, women, and youth with the skills to produce and apply biochar effectively.

By incorporating biochar production into the Eco-Clubs and VWSCs, this initiative will foster long-term ecological restoration, improve soil fertility, and enhance agricultural resilience. The localised production and application of biochar will further reduce open burning of *Prosopis juliflora* and agricultural residues, thereby lowering carbon emissions, mitigating climate change, and enhancing groundwater recharge. This aligns with the broader objective of promoting climate-smart agricultural practices in Thirupudaimaruthur.

With strategic donor support, this model has the potential to be scaled and replicated across other vulnerable communities, offering a cost-effective and environmentally sustainable solution to enhance food security, soil restoration, and climate resilience. By investing in this initiative, stakeholders can drive long-term economic empowerment, ecological regeneration, and tangible progress towards global climate goals.

This multi-tiered approach will ensure that the initiative is well integrated into broader frameworks, facilitating long-term sustainability, environmental resilience, and socio-economic benefits for local communities.

7. Goal and Objectives

The overall goal is to implement an integrated solid waste management, personal sanitation, and biodiversity conservation initiative in Thirupudaimaruthur Gram Panchayat, ensuring environmental sustainability, ecotourism enhancement, and improved health outcomes. This goal will be accomplished through the following objectives.

8. Major Objectives with Activities

I. Infrastructure Development
- Establish an efficient solid waste sorting, recycling, and value addition facility to minimise waste accumulation and promote resource recovery.
- Construct climate-resilient sanitation infrastructure, including community toilets with incinerators (DEWATS & septic tank) and a sanitary complex to enhance access to safe sanitation for pilgrims and visitors.

II. Water Conservation & Management

- Restore the temple tank and implement tree plantation to improve groundwater recharge, enhance biodiversity, and promote ecological sustainability.
- Rejuvenate open wells in the temple premises to ensure a reliable water source for temple and community use.

III. Capacity Building & Training

- Enhance household capacity on waste segregation and sustainable waste management through structured awareness programmes.
- Train sanitation workers on safety measures, health-seeking behaviour, and menstrual hygiene to improve occupational health and sanitation service efficiency.
- Promote menstrual hygiene management by training women and school children and distributing hygiene kits to ensure better personal health and environmental cleanliness.
- Strengthen the role of youth in environmental conservation by establishing and building the capacity of Eco-Clubs to lead local sustainability initiatives.
- Train and empower Village Water & Sanitation Committees (VWSCs) to manage water conservation efforts, sanitation initiatives, and biochar application for soil enhancement.

IV. Temple & Community Waste Management

- Develop and implement sustainable temple waste management practices to prevent environmental pollution and promote eco-friendly disposal.
- Introduce biochar production and application to improve waste-to-resource management, soil fertility, and climate resilience in the community.

V. Provision of Essential Supplies

- Ensure access to safe drinking water and hygiene materials by distributing water filters and soap banks to schools, Anganwadis, and temples.

VI. Awareness & Outreach

- Increase community engagement through IEC and branding initiatives to promote sustainable WASH behaviours, solid waste management, and environmental stewardship.

VII. Project Operations & Support

- Ensure efficient project implementation through adequate staffing, administrative support, and logistics for field teams and coordination activities.
- Establish a robust monitoring and evaluation framework to track progress, measure impact, and ensure the sustainability of WASH and waste management interventions.

9. Implementation Process with Timeline (Two Years)

Year 1: Planning, Infrastructure Development, and Capacity Building

Project Initiation (Month 1–3)

- Conduct stakeholder consultations with temple authorities, local government, and community leaders.
- Establish a project management team and hire key staff.
- Conduct baseline surveys and needs assessments.
- Secure necessary approvals and partnerships.
- Develop detailed infrastructure designs and procurement plans.
- Design training modules and IEC materials.

Infrastructure Development & Water Conservation (Month 4–9)

- Construct a solid waste sorting, recycling, and value addition facility.
- Begin construction of community toilets (DEWATS & septic tank) and the sanitary complex.
- Start temple tank restoration and tree plantation activities.
- Initiate rejuvenation of open wells within temple premises.
- Procure and install waste management equipment.
- Conduct community awareness programmes on water conservation and sanitation.

Capacity Building & Training (Month 10–12)

- Conduct training for sanitation workers on safety, health-seeking behaviour, and menstrual hygiene.
- Organise household awareness sessions on waste segregation and sustainable waste disposal.
- Form and train Eco-Clubs for youth involvement in environmental conservation.
- Establish and train Village Water & Sanitation Committees (VWSCs).
- Launch temple waste management initiatives and train temple staff on proper waste disposal.

Year 2: Scaling Up, Sustainability, and Monitoring

Expansion & Awareness Campaigns (Month 13–18)

- Implement IEC campaigns on WASH and solid waste management in schools and community spaces.
- Expand biochar production and application in agricultural and community spaces.
- Monitor and optimise operations of the waste sorting and recycling facility.
- Distribute water filters and soap banks to schools, Anganwadis, and temples.
- Strengthen Eco-Clubs and VWSCs by organising exchange visits and leadership training.

Monitoring, Evaluation, and Sustainability Planning (Month 19–24)

- Conduct mid-term impact assessments and feedback sessions with beneficiaries.
- Implement corrective measures based on community feedback.
- Develop a long-term sustainability and exit strategy for continued project impact.
- Strengthen local ownership by transferring management responsibilities to trained VWSCs and temple committees.
- Conduct final impact assessments and documentation of best practices.
- Organise a project completion workshop and share learnings with stakeholders.

10. Expected Results

Output

- Established a fully operational solid waste sorting, recycling, and value addition facility.
- Constructed and operationalised community toilets with DEWATS and septic tank systems.
- Restored temple tanks and rejuvenated open wells, improving water retention and usage.
- Trained sanitation workers, households, and community groups in waste management, water conservation, and hygiene practices.
- Formed and strengthened Eco-Clubs to promote environmental stewardship.
- Established and trained VWSCs to lead community-driven water and sanitation initiatives.

Outcome

- Increased waste segregation, recycling, and composting adoption among households and temples.
- Improved hygiene and sanitation facilities benefiting pilgrims, visitors, and local residents.
- Increased groundwater recharge and access to clean water due to temple tank and well rejuvenation efforts.
- Greater community participation in waste disposal, menstrual hygiene management, and sanitation maintenance.
- VWSCs and Eco-Clubs actively leading WASH and environmental conservation activities.

Impact

- Reduced pollution and improved ecological balance through effective waste and water management interventions.
- Decreased incidence of waterborne diseases and improved community health due to better sanitation and hygiene practices.
- Enhanced community resilience to climate-related challenges through sustainable water and waste management solutions.
- Increased participation of women in hygiene education and decision-making in sanitation and water management committees.
- Developed a replicable model for WASH and waste management integration in temple-based and rural communities.

11. Resources Needed

Human Resource	Material	Money	Others
Facilitators and community mobilisers	Construction materials	Funding	Land for waste sorting facility
Expert trainers	Waste bins and sorting equipment		Community meeting spaces
Collaboration with local leaders and other stakeholders	Training materials/curricula		
Engineers	Monitoring tools for waste segregation		
Biochar expert	Demonstration materials		
	Protective gear and safety equipment		
	Eco-friendly disposal techniques		
	IEC materials and visual aids		
	Sanitary pads and hygiene kits for students		
	Water filters		
	Soap donations and storage units		

12. Logical Framework Analysis (LFA)

Project Elements	Indicators	Means of Verification	Assumptions
Goal: Enhance environmental sustainability, public health, and community resilience through integrated WASH and waste management solutions.	Reduction in waste pollution levels by 40% in target areas. Decrease in waterborne diseases by 30%.	Environmental assessments, health reports, and water quality testing.	Community participation remains high. Local authorities support sustainability efforts.
Outcomes			
Improved waste management practices among households, temples, and community spaces.	70% of households and temples practising proper waste segregation.	Waste audit reports, household surveys.	Continuous support from temple committees and local governing bodies.
Increased access to improved sanitation and hygiene facilities.	80% utilisation rate of newly constructed sanitation facilities.	Facility usage reports, community surveys.	Regular maintenance is ensured.
Strengthened local governance in water and sanitation management.	Functionality of Village Water & Sanitation Committees (VWSCs) with active participation of members.	Meeting records, training reports.	Active participation from committee members.
Outputs			
Solid waste sorting, recycling, and value addition facility established.	Facility operational and managing over 5 tons of waste monthly.	Facility records, recycling reports.	Sufficient demand for recyclable materials.
Sanitation infrastructure developed and functional.	Construction of two community toilets and one sanitary complex.	Infrastructure completion reports.	Proper utilisation and maintenance by users.
Water bodies restored and rejuvenated.	Temple tanks and one open well restored.	Site visits, hydrological assessments.	No severe environmental degradation.
Community members trained on waste management and hygiene.	400+ households trained.	Training attendance records, pre- and post-survey results.	Willingness of participants to adopt new practices.
Temple waste management system implemented.	75% of temple waste composted or recycled.	Temple waste audit, monitoring reports.	Continued engagement from temple authorities.
Activities			
Conduct awareness campaigns on waste segregation and hygiene practices.	10 awareness programmes conducted.	Event reports, participant feedback.	Community members are receptive to training.
Train sanitation workers on safety and hygiene practices.	100 sanitation workers trained.	Training records, post-training evaluations.	Trained workers apply knowledge effectively.
Distribute water filters and soap banks to schools and Anganwadis.	Schools and Anganwadis equipped with safe water and hygiene supplies.	Distribution logs, school feedback reports.	Institutions ensure proper usage and maintenance.
Establish and strengthen Eco-Clubs for youth engagement.	3 Eco-Clubs actively participating.	Club activity logs, participant feedback.	Youth show continued interest in environmental actions.
Form and train Village Water & Sanitation Committees (VWSCs).	3 VWSCs established and functional.	Committee meeting minutes, progress reports.	Leadership within VWSCs remains active.
Conduct biochar production training and field application.	50+ farmers trained on biochar use.	Training evaluations, field impact reports.	Farmers adopt biochar practices in agriculture.

13. Monitoring & Evaluation Plan

- Quarterly progress reviews to assess infrastructure development and training outcomes.
- Annual impact assessments to measure improvements in waste management and water conservation.
- Community feedback surveys to track behavioural changes and the adoption of sustainable practices.
- Performance tracking of Eco-Clubs and VWSCs to ensure sustained engagement.
- Final project evaluation to document lessons learned and develop a replication model for other regions.

Wings, Water and Worship

14. Budget

Nos.	Budget Component	Estimated Cost (₹)
1	Baseline Survey using Qualitative and Quantitative Methods	
1.1	Household survey (complete enumeration)	2,00,000
1.2	Conduct PRA for community mapping	75,000
1.3	Establish database	25,000
Sub Total		**3,00,000**
2	Infrastructure Development	
2.1	Solid waste sorting, recycling, and value addition facility	35,00,000
2.2	Construction of two community toilets with incinerators (one with DEWATS and another with a septic tank)	75,00,000
2.3	Construction of a sanitary complex for pilgrims and visitors	20,00,000
Sub Total		**1,30,00,000**
3	Water Conservation and Management	
3.1	Temple tank restoration and tree plantation	15,00,000
3.2	Rejuvenation of open wells in the temple premises	4,00,000
Sub Total		**19,00,000**
4	Capacity Building and Training	
4.1	Household capacity building (waste segregation and awareness programmes)	3,00,000
4.2	Training for sanitation workers on safety, health-seeking behaviour, and menstrual hygiene at the block level	2,00,000
4.3	Personal hygiene and menstrual health and hygiene training and kit distribution for the community	3,00,000
4.4	Formation and capacity building of Eco-Clubs	50,000
4.5	Village Water & Sanitation Committees (VWSCs) training and capacity building	50,000
4.6	Water filter and soap bank distribution for schools, Anganwadis, and temples	1,00,000
Sub Total		**10,00,000**

Nos.	Budget Component	Estimated Cost (₹)
5	Temple and Community Waste Management	
5.1	Temple waste management	8,00,000
5.2	Biochar production and application (unit setup, training, and field trials)	5,00,000
Sub Total		**13,00,000**
6	Awareness and Outreach	
6.1	IEC and branding	5,00,000
Sub Total		**5,00,000**
7	Project Operations & Support	
7.1	Staff salaries (Project Manager, Project Coordinators, Field Staff, Trainers)	33,60,000
7.2	Administrative costs (office rent, utilities, communication)	3,00,000
7.3	Transportation and logistics	5,00,000
7.4	Monitoring and evaluation	3,00,000
Sub Total		**44,60,000**
Total Estimated Budget		**2,24,60,000**
8	Overhead and management cost (10%)	22,46,000
Grand Total		**2,47,06,000**

C. Suyatri Community Tourism

Proposed Community-Based Eco-Tourism Project – Thirupadaimaruthur, Tirunelveli District, Tamil Nadu

1. Introduction

Thirupadaimaruthur, a quaint and historically significant village in Tamil Nadu's Tirunelveli district, is renowned for its deep cultural heritage and natural beauty. The village is home to the Narumbunatha Swamy Temple, a revered Shiva temple with intricate architectural details dating back to the Pandya and Nayak dynasties. Situated along the banks of the Thamirabarani River, the village thrives as a close-knit community, predominantly comprising Tamil-speaking Hindu families. With a relatively high literacy rate for a rural settlement, Thirupadaimaruthur is a harmonious blend of tradition and modernity.

Economy and Livelihood
The economy of Thirupadaimaruthur is primarily agrarian, with rice, bananas, and other crops flourishing on the fertile riverbanks of the Thamirabarani. Apart from farming, the community engages in small-scale trade, temple-related services, and traditional crafts. The village benefits from its proximity to Kallidaikurichi and Manimuthar, areas known for their handloom weaving (notably sarees), mat-making, papermaking, and traditional sweets like Tirunelveli halwa. Additionally, many residents commute to nearby towns for employment in education, government services, and small businesses.

Ecological and Cultural Significance – A Harmony of Heritage and Biodiversity
Thirupadaimaruthur stands out as a unique eco-cultural destination, combining architectural grandeur with rich biodiversity. The Narumbunatha Swamy Temple, dedicated to Lord Shiva, holds spiritual and historical significance, with the village deriving its name from the sacred Marutham tree.

The village is also an ecological hotspot, thanks to its lush landscapes, wetlands, and the Thamirabarani River, which supports an array of bird species. Recognised as one of the best bird-watching destinations in South India, the Thirupadaimaruthur Conservation Reserve is a well-known bird sanctuary that attracts ornithologists and nature lovers alike. The wetlands, temple ponds, and riparian zones provide an ideal habitat for both resident and migratory birds, making it a significant eco-tourism destination.

Sacred Bond Between Culture and Birdlife
Thirupadaimaruthur holds a unique cultural connection with birds, a legacy deeply rooted in the Narumbunatha Swamy Temple. According to local legends, birds have worshipped Lord Shiva here for centuries, reinforcing the village's spiritual link with avian life. The region's traditional water management practices, including temple ponds and irrigation systems, have further contributed to the sustained presence of diverse bird species in the area.

By promoting community-based eco-tourism, Thirupadaimaruthur has the potential to emerge as a model for sustainable tourism, where visitors can experience a blend of history, spirituality, nature, and local livelihoods while fostering conservation efforts and community empowerment.

2. Problem Statement

Lack of Ecosystem Awareness
One of the fundamental challenges in implementing eco-tourism projects is the lack of awareness about ecosystems among local communities, tourists, and even policymakers. Many people do not fully understand the delicate balance between natural habitats, wildlife, and human activities. This lack of awareness leads to unsustainable practices that degrade biodiversity and disrupt ecological functions. Without proper education and sensitisation, communities may unknowingly harm their own environment, reducing the long-term sustainability of eco-tourism initiatives.

Cultural and Heritage Preservation – Challenges and Expenses
Preserving cultural and heritage sites, including temples, traditional crafts, and historical landmarks, requires constant maintenance and funding. Many ancient structures and traditions are at risk due to a lack of awareness, neglect, insufficient funding, and modernisation pressures. Restoration efforts, proper documentation, and regular upkeep demand financial resources that local communities often struggle to secure.

Bird Preservation Through Local Communities
Many rural communities live in close connection with bird habitats, often unaware of their role in protecting bird species and maintaining biodiversity. Unregulated tourism, habitat destruction, pesticide use, and changing agricultural practices have led to a decline in bird populations in many regions. By involving local communities in bird conservation through eco-tourism initiatives, bird-watching guides, community-driven conservation programmes, and sustainable agricultural practices, it is possible to create economic benefits while ensuring long-term bird preservation. Empowering locals to take ownership of conservation efforts can also instil a sense of pride and responsibility in protecting their natural surroundings.

Lack of Alternative Tourism Models to Promote Eco-Tourism
The current tourism industry is largely dominated by mass tourism models, which prioritise high visitor numbers and rapid commercial gains over sustainability. There is a lack of well-established eco-tourism alternatives that showcase the benefits of low-impact, community-based tourism. Developing nature-based experiences, heritage walks, cultural immersion programmes, and conservation tourism can help demonstrate how tourism can be both profitable and environmentally responsible. However, such models require proper planning, community participation, infrastructure development, and promotional efforts to gain traction.
Impact of Resource-Intensive Tourism on Bird Habitats
Conventional tourism, which often relies on large resorts, heavy infrastructure, and high resource consumption, has significant negative effects on bird habitats. Practices such as unregulated construction, water extraction, waste mismanagement, and excessive noise pollution disturb nesting grounds, feeding areas, and migratory routes. As bird habitats shrink due to human activity, species decline or move away, disrupting the ecological balance. Sustainable eco-tourism models must focus on low-impact tourism infrastructure, controlled visitor numbers, and conservation efforts to minimise these adverse effects.

Economic Crisis in Rural Villages and Migration to Cities
The traditional rural economy in India, including agriculture, dairy farming, handloom weaving, and handicrafts, is under severe strain due to multiple socio-economic and environmental factors.

Key Challenges in Rural Livelihoods
1. Climate Change Effects – Unpredictable rainfall, droughts, and soil degradation have made traditional farming less reliable, reducing agricultural productivity.
2. Lack of Steady Employment – Unlike urban areas, rural jobs are often seasonal, leading to periods of unemployment and financial instability.
3. Low Wages and Limited Growth – Most rural jobs, especially in agriculture and manual labour, offer low wages and little opportunity for skill development or income growth.
4. Lack of Value Addition – Many rural products, such as raw agricultural produce, are sold at low prices due to limited processing, branding, or direct market access, reducing profitability.

5. Limited Access to Finance and Resources – Small farmers and artisans struggle to obtain loans, subsidies, and market linkages, restricting their ability to scale up or invest in better practices.

Rural-to-Urban Migration and Its Consequences

Due to these economic hardships, migration from villages to cities has become a growing trend. However, most of the jobs available for rural migrants in urban areas are low-paying, labour-intensive, and often exploitative. Many end up in construction, domestic work, or factory jobs, with poor living conditions and little upward mobility.

Tamil Nadu, like many other states, faces a major challenge in sustaining rural economies. With a large rural population primarily dependent on agriculture and dairy, the crisis in these sectors has led to increasing urban migration. Without interventions such as skill development, rural entrepreneurship, sustainable tourism, and improved market access, this trend will continue, leading to the decline of rural communities and overcrowding in urban centres.

3. Proposed Solution – Community-Led Eco-Tourism

The proposed project aims to address a multidimensional challenge through a systemic approach, integrating innovation and entrepreneurship to create a resilient ecosystem while ensuring conservation. By providing sustainable economic opportunities within rural areas, the initiative also addresses the issue of migration, which is often driven by the lack of livelihood options in villages.

Preventing Rural-to-Urban Migration

A major reason for rural-to-urban migration is the lack of stable income sources in villages. Young people, in particular, leave in search of jobs in cities, leading to workforce depletion in rural areas and overcrowding in urban centres. This project directly counters this trend by:

- Creating Sustainable Local Livelihoods – Community-led eco-tourism generates income through guided tours, homestays, handicrafts, and organic farm experiences. This ensures steady earnings, reducing the need for villagers to seek work in cities.
- Empowering Women and Youth – By involving women and young people in tourism activities such as hospitality, storytelling, and craft-making, the project provides new employment opportunities that make staying in the village economically viable.
- Skill Development and Entrepreneurship – Training programmes equip locals with skills in eco-tourism, hospitality management, digital marketing, and sustainable farming, fostering entrepreneurship and self-sufficiency.
- Enhancing Community Infrastructure – The development of eco-tourism-friendly infrastructure (such as nature trails, visitor centres, and homestays) improves the quality of life in villages, making them more attractive for residents to stay and thrive.
- Reviving Traditional Knowledge and Practices – The project promotes the value of indigenous skills, knowledge, crafts, and ecological practices, turning them into economic assets rather than allowing them to disappear due to migration.

Community-Led Eco-Tourism in Thirupadaimaruthur
This initiative promotes sustainable tourism while empowering local communities by integrating conservation efforts with sustainable travel. Visitors engage with the region's natural beauty and cultural heritage in ways that benefit the community.

Key components of the model include:
Environmental Conservation and Awareness – Implementing sustainable practices that protect biodiversity while educating visitors and locals.

- Community Participation and Capacity Building – Training locals in hospitality, guiding, conservation, hygiene, cleanliness, and eco-tourism management.
- Experiential and Immersive Tourism – Offering activities such as guided nature walks, birdwatching, organic farming experiences, and heritage site visits.
- Cultural Preservation and Economic Growth – Showcasing traditional knowledge, crafts, and culinary practices, creating direct income opportunities for locals.

By engaging the community in tourism-related activities, this initiative safeguards Thirupadaimaruthur's unique natural and cultural assets while preventing distress migration. Instead of abandoning their villages, locals can build a sustainable future in their own communities, ensuring long-term social and economic stability.

Goal of the Project

The overall goal of the Thirupadaimaruthur community-based eco-tourism project is to promote sustainable tourism that conserves the region's biodiversity, preserves cultural heritage, and enhances local livelihoods. By integrating nature conservation with community-based sustainable tourism, the project aims to create economic opportunities for the community while fostering environmental awareness among visitors. This initiative ensures a balanced approach to tourism that benefits both people and nature.

Objectives

- Environmental Conservation – Protect and restore the biodiversity of the Thamirabarani River ecosystem, including bird habitats and native flora and fauna.
- Sustainable Community-Based Tourism Model – Create a new model of sustainable, community-based tourism that can be replicated in similar geographies or villages.
- Community Empowerment – Involve and enable the community by providing sustainable income opportunities for local residents through eco-friendly tourism activities such as guided nature walks, homestays, handicrafts, and organic farming experiences.
- Cultural Preservation – Promote and safeguard Thirupadaimaruthur's rich cultural heritage, including its historic temples, folklore, and traditional practices, through storytelling and community-led experiences.
- Sustainable Tourism Development – Establish eco-friendly infrastructure, low-impact accommodations, and responsible tourism practices that minimise environmental degradation.
- Education and Awareness – Create awareness among visitors and locals about conservation, traditional knowledge, and sustainable living through workshops, guided tours, and interactive programmes.
- Women and Youth Involvement – Encourage the active participation of women and young people in tourism-related enterprises, enhancing skill development and leadership opportunities.
- Revenue Diversification – Develop alternative income sources such as eco-tours, bird-watching trails, agro-tourism, and cultural performances to ensure financial sustainability for the community.
- Collaboration and Policy Advocacy – Partner with government agencies, NGOs, and conservation groups to strengthen eco-tourism policies and ensure long-term environmental protection.

Key Outputs

- 5 Women Self-Help Groups (SHGs) formed.
- 500 women entrepreneurs (direct beneficiaries) involved in offering sustainable tourism products and services.
- 1, total beneficiaries (indirect beneficiaries through the creation of a tourism ecosystem).
- 120 days of structured training delivered across 2 years (covering hospitality, tourism management, conservation, marketing, and entrepreneurship).
- 100% increase in household income through tourism and allied activities (within three years of project implementation).
- 15 operational homestays and 3 community-managed eco-lodges established.

Target Population

The programme involves rural SHG women, youth, and other stakeholders in leadership and ownership roles. Leadership and entrepreneurial skills among these sections of society are strengthened through capacity enhancement programmes, ensuring the empowerment of youth and women while promoting gender mainstreaming.

The project will involve:
i) SHG women and youth (especially rural families)
ii) Local artisans, cultural groups, and other tourism service providers
iii) Local self-government institutions
iv) Students and researchers
v) Tourists – domestic and international

Implementation Model

Build–Collaborate–Transfer is the proposed model. This design, hand-holding, and transfer model has already been successfully implemented in several community-led initiatives.

ATREE will build the project with *Suyatri Community Tourism*, collaborate with various stakeholders to further develop it, and handhold the process to ensure the required quality and market access. The developed project will be transferred to the community after three years of successful operation.

Build:

Identification of potential projects and partners through ATREE's existing list of partners and meetings with panchayats, Women Self-Help Groups, etc., will be the first step. A detailed participatory resource mapping will be conducted at the village level, and these resources will be developed into authentic tourism packages and products.

Community mobilisation and capacity-building will take place at this stage to enable effective management of quality tourism programmes in their respective villages. The necessary infrastructure for tourism—such as homestays, campsites, and human resources—will also be identified and trained. Exposure visits to similar successful projects will be organised.

Collaborate:

A multi-stakeholder approach will be adopted by collaborating with relevant local bodies and building an inclusive ecosystem that contributes to the development of the location at various levels.

Expertise will be brought in for technology access, finance, value-added products, and design. Convergence with various government departments and schemes will also be pursued at this stage.

A proper management structure, creation of enterprises/cooperatives, and preparation of quality standards and Standard Operating Procedures (SOPs) will be established.

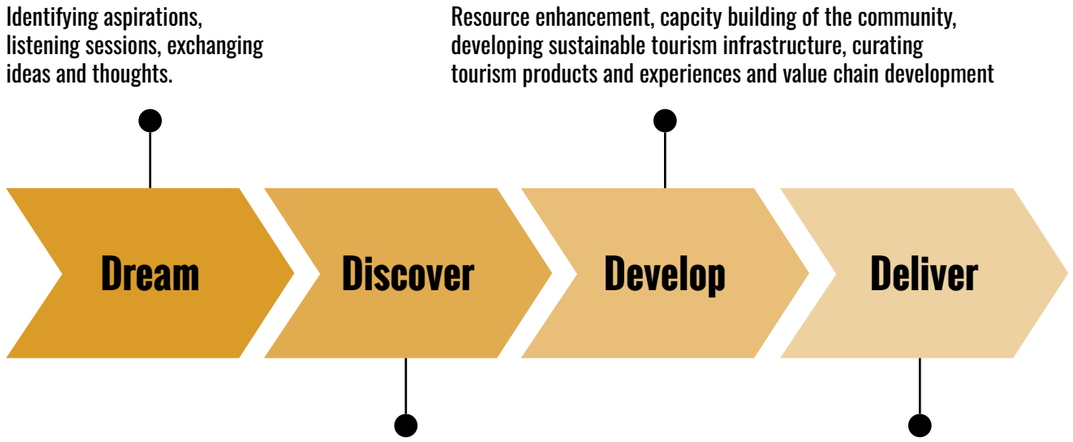
Transfer:

ATREE will prepare an exit plan with a gradual handover of management and operations to the community, while continuing to provide support for operations, marketing, and promotions for two years post-transfer. This transition will take place after ensuring quality standards, building an effective ecosystem, establishing sustainable market linkages, and completing branding and promotion activities.

Strategy of Intervention

- Develop new tourism programmes and experiences that truly reflect the uniqueness of the community and the place. Homestays, cultural exchanges, foraging and culinary workshops, nature expeditions, and cycling tours will provide immersive experiences.
- Explore potential ways to integrate the community's unique offerings with the mainstream tourism industry and incorporate local expertise into existing tourism plans and projects.
- Leverage existing groups and committees to build a strong leadership team for the initiatives.
- Build a network of women entrepreneurs in tourism across the state to exchange knowledge, learnings, challenges, and ideas.
- Leveraging SHGs to implement tourism entrepreneurship at an ecosystem level will be a first-of-its-kind approach in the country.

4. Methodology For Setting The Proposed Project



5. Participatory Process

The project proposes a participatory approach, where the community is involved in every stage of project design and development, and is represented in key decision-making processes and project management.

Business Model

The project proposes to build a multi-stakeholder model with sectoral convergence. It will bring together the expertise and experience of various agencies to deliver:

- Access to finance for developing infrastructure
- Access to social capital
- Design and technical support
- Infrastructure development
- Access to a network of rural women-led start-ups
- Skill enhancement and value chain development
- Marketing linkages
- Convergence of various government schemes for infrastructure creation and improvement of existing facilities

Revenue Streams

The project will generate direct revenue for community members through activities such as operating homestays and other accommodation units, offering food services, serving as guides for expeditions, and conducting workshops and local events.

Indirect revenue will be generated by integrating women's small enterprises into the tourism value chain — through the sale of handicrafts, souvenirs, transport services, value-added food products, and local agricultural or wild produce.

6. Market Potential

Post-COVID tourism witnessed significant changes in the market. A lot of tourists are now looking for authentic village experiences. Tamil Nadu Tourism shows record significant growth in the recent past. The proposed location also has good potential in terms of connectivity, etc.

Global Tourism Market Trend by Booking.com

Several market surveys confirm that demand for community-based tourism and authentic experiences is increasing significantly. Some surveys also say that the availability of such programmes is very limited. For example, a survey conducted by Booking.com reveals that 75% of global travellers say that they want to travel more sustainably over the next 12 months, and 43% would feel guilty when they make less sustainable travel choices. When it comes to motivators among those who want to travel more sustainably, 32% want to do so because they believe it's the right thing to do. There is also consensus amongst travellers on adopting the "buy local" mantra on vacation and using their currency for making good. Forty-three percent of the travellers favoured purchases from small and local buyers. These are all opportunities the proposed project could tap to bring income to SHG members.

7. Key Activities

The training and capacity-building program covers operations, finance, resource mapping, culinary skills, naturalist and cultural guide training, product development, value chain creation, storytelling for digital media, and other relevant workshops as required for the community at their respective locations.

Exposure Visits – As an extension of the capacity-building activity, groups of women will have exposure visits to other locations where similar project models are in operation to exchange ideas and learnings. This also helps in boosting their confidence and creating a network of women who are collectively leading tourism in the state.

Product Development – Innovative and authentic tourism products are important for the success of the project. The project proposes to develop such tourism products in a participatory manner. Research and documentation are also important in this area.

Handholding – Handholding ensures the smooth functioning and quality control of the developed projects. This includes developing Standard Operating Procedures (SOPs), creating management structures, collecting customer feedback, and conducting regular monitoring and evaluation.

Branding & Marketing / Information Materials – Focus will be on intangible branding through service quality, community storytelling, and informative materials. Digital strategies include promotional videos, website development, and social media campaigns, alongside blogger FAM trips. Information materials will include coffee-table books/photo books, postcards, brochures, and leaflets to be physically printed and distributed.

8. Project Activities

Timeline and Key Deliverables

Year	Quarter	Key Deliverables
Year 1	Quarter 1	Research, feasibility study, and preparation of a master plan for sustainable tourism in the project area.
		High-level development plan for sustainable tourism in the project landscape.
		Identification of projects.
		Community mobilisation and identification of a lead group.
		Detailed resource mapping.
		Development of Detailed Project Report (DPR).
		Convergence of government schemes for matching funds.
	Quarter 2	Initiating training and capacity-building workshops.
		Exposure visits.
		Initiating the development of tourism products and services.
		Upgradation of museum / enhancement of the existing exhibition space using audio-visuals, VR, etc.
		Setting up accommodation units.
	Quarter 3	Continuation of activities from Quarter 2.
		Development of SOPs and processes.
		Creation of enterprises.
		Initiating the repository of information materials for promotions — coffee table books, recipe books, and brochures.
	Quarter 4	Continuation and consolidation of all activities from previous quarters.
Year 2	Quarter 1	Completion of training and workshops.
		Key tourism products and services ready.
		Completion of information materials and brochures.
		Marketing campaigns.
	Quarter 2	Completion of any pending activities.
		Initiating branding activities — logo, promotional videos, design, and printing of information materials.
		Workshops for souvenir creation.
		Marketing campaigns.

| Year | Quarter | Key Deliverables |

	Quarter 3	Continued marketing and promotional activities.
		Monitoring of product implementation.
	Quarter 4	Official launch of the programme.
		Pilot period for executing tourism products and services.
		Full-fledged marketing and promotions.
		Setting up a review mechanism.
Year 3		Hand-holding period.
		Continuous review and feedback.
		Quality control.
		Capacity building as required.
		Marketing and promotions.
		Preparation for exit.
		Handover processes.
		Continuation of market linkages.

(i). High-Level Development Plan for Sustainable Tourism in the Project Landscape (Research and Master Plan Preparation)

The development plan will be devised based on study inputs. The current tourism scenario's performance in terms of sustainability, development constraints, and government plans and strategies to aid sustainable tourism will be understood.

The knowledge base developed from the rapid situational analysis will be used to prepare a high-level sustainable tourism development plan for the project landscape.

This plan will:

- Provide clear guidance for aligning policies, business operations, and investments to achieve sustainable tourism in the project area.
- Empower and inspire stakeholders (especially Local Self Governments) to plan better and act effectively.
- Include large-scale zonation mapping for sustainable use.
- Have demonstration potential for replication by other Local Self Governments in Tamil Nadu.

The study will employ quantitative, qualitative, and mixed-methods approaches. Extensive fieldwork will be undertaken for data collection, ensuring stakeholder views are represented.

A SWOT analysis will inform the report, which will recommend governance and policy frameworks for socially, environmentally, and economically sustainable tourism.

Key Elements:
- Inputs to make existing service providers more efficient and aligned with sustainability principles.
- Mechanisms to prevent tourism from turning into unsustainable mass tourism.
- Clear zonation with destination management principles and a precautionary approach where tourism must be restricted.
- Minimal infrastructure creation to ensure sustainability.
- Tourism encouraged as a supplementary income source, especially for women and farmers.
- Introduction of carbon-neutral tourism interventions.
- Waste management and segregation at source; target of a Zero Waste Tourist Destination.
- Preservation of culture, community, and nature as key values.
- Use of existing infrastructure wherever possible.
- Inclusion of climate resilience and disaster mitigation planning.

Activities	Timeline
Consultations with stakeholders	Month 1
Research and data collection	Month 2–3
Draft plan preparation and stakeholder review	Month 4
Final High-Level Sustainable Tourism Development Plan	Month 5

(ii) Participatory Resource Mapping of the Project Area

Participatory resource mapping will document geographical, cultural, ecological, and man-made attractions to identify new tourism products and services. This will guide the development of a sustainable community tourism model.

The process will include stakeholder consultations (youth, women, SHGs, LSG members, SMEs) to ensure ownership and inclusivity.

Volunteers will be trained to validate and document tourism opportunities, which will then be developed into authentic community tourism products and packages.

Activities	Timeline
Initial feasibility analysis by project team	Month 1
Stakeholder consultation and orientation workshop	Month 2
Rapid assessment with volunteers	Month 3
Volunteers' workshop	Month 4
Documenting tourism possibilities	Month 5
Resource mapping document	Month 6
Draft products, services, and packages	Month 7
Detailed plan of action	Month 8

9. Sustainable Tourism Piloting in the Project Area – Implementation

Tourism development will focus on community benefits, environmental conservation, and local ownership. Homestays, storytelling, guided treks, and small-scale entrepreneurship will form the backbone of local tourism. Community-owned enterprises will prioritise gender inclusion, indigenous participation, and minimal environmental impact.

10. Offsetting Carbon Footprint & Conserving Biodiversity

Tourism activities will be designed to ensure carbon neutrality and minimal ecological footprint.

Key actions include:
- Creation of a community/travellers' forest with the support of the Panchayat, EDC, Biodiversity Committee, and Nature Clubs.
- Mapping and conservation of sacred groves as part of the tourist experience.
- Establishment of a Biodiversity Management Committee (BMC) to document, monitor, and evaluate carbon footprint reduction.
- Promotion of sustainable energy and waste management models among tourism providers.

Activities	Timeline
Identification of service providers	Month 1–2
Development of tourism products and packages	Month 3–5
Community events calendar preparation (festival calendar)	Month 6
Draft Destination Management, Monitoring, and Evaluation Framework	Month 7
Destination Management Committee formation	Month 8
Capacity-building training programmes	Month 9–12
Pilot phase (trial tourists)	Month 13–15
Fine-tuning of services	Month 16–18
Full tourist operation	Month 19–24
Carbon offsetting and biodiversity conservation actions	Ongoing
Partnerships with public, private, and civil society actors	Ongoing

11. Capacity Building for Human Resource Development

Training needs will be assessed, and modules will be created for various stakeholders — homestay owners, local guides, taxi drivers, micro-entrepreneurs, chefs, and farmers.

Exposure visits to successful models will be organised, and expert practitioners from other destinations will be invited as facilitators.

Activities	Timeline
Destination Management Committee training	Q1
Exposure visit	Q2
Training for homestay providers	Q2–Q3
Training for guides and interpreters	Q3
Training for drivers	Q3
Water, energy, and waste management training	Q3
Communication skills and language training	Q4
Tourism awareness and intercultural sensitivity	Q4
Hospitality (kitchen, service, housekeeping, hygiene)	Q4
First aid training	Q4
Environmental conservation and teamwork	Q4
Motivation and gender awareness	Q4
Developing naturalists and biodiversity registers	Q4
Waste management and train-the-trainer programme	Q4

12. Marketing

Project partner Suyatri / Kabani has established marketing linkages with global and national tour operators. The project will initially be integrated into Suyatri's marketing plan, ensuring early visibility and guaranteed tourist flow.

Key actions:
- Dedicated website and social media channels.
- Marketing training for local tourism management groups.
- Volunteer training in photo, video, and digital content creation.
- Documentation of visitor profiles and market trends.
- Development of short videos and photo stories highlighting niche tourism products.

Probable Tourism Products

1. Village walks
2. Heritage walk along river and temple
3. Participation in seasonal farming
4. Wellness experiences
5. Weekend cycling and camping tours
6. Bird watching and documentation
7. Trekking
8. Cooking demonstrations
9. Natural stream and pool-based activities
10. Family tours
11. Summer camps for children
12. Weaving, pottery, and craft workshops
13. Storytelling sessions by elders

Activities	Timeline
Web page for the project	Month 1
Social media setup (Instagram, Facebook, etc.)	Month 2
Leaflet design and printing	Month 3
Standee design and printing	Month 3
Creation of short videos and photo documentation	Month 4
Tourism trade fair participation	Month 6–12
Marketing of destinations and packages	Ongoing
Marketing training	Ongoing

Measurable Indicators

Activities	Timeline
Measurable Area	Anticipated Value
Number of direct beneficiaries	800
Tourism as additional income (% of total household income)	To be assessed
Community events with tourist participation	To be tracked quarterly
Sustainable energy interventions by service providers	Target: 10 enterprises
Homestays developed	15
Tented accommodations developed	3
Local guides / storytellers trained	20
Auto / taxi operators engaged	10
Trekking routes outside forest area	5
Trekking routes within buffer zones	3
Average number of days per overnight visitor	2.5–3 days

Wings, Water and Worship

13. Overall Project Timeline (3-year Plan)

Activities	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
High-Level Development Plan For Sustainable Tourism In The Project Landscape (Research And Preparation Of Plan/Master Plan)	✓	✓	✓									
Consultations With Stakeholders	✓	✓	✓									
Initial Feasibility Analysis By The Project Team			✓									
Stakeholder Consultation And Orientation Workshop			✓									
Rapid Assessment With Volunteers	✓	✓	✓									
Volunteers Workshop	✓											
Documenting Tourism Possibilities		✓	✓									
Resource Map		✓										
Draft Products Services, And Packages			✓									
Detailed Plan Of Action	✓											
Identification Of Service Providers Such As Home Stays, Etc.	✓											
Development Of Market-Based Tourism Products And Services					✓			✓		✓		
Preparation Of The Festival And Agriculture Calendar And Its Documentation	✓	✓										
Destination Management/ Monitoring Framework		✓	✓									
Monitoring Committee Formation				✓								
Capacity Building Programmes												
Destination Management Committee												
Exposure Visits		✓										
Trial Run With Tourists				✓								
Training For Homestay Providers		✓										

Activities	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Training For Guides And Interpreters			✓									
Training For Drivers				✓								
Water, Energy, And Waste Management Training		✓										
Communication Skills And Language Training			✓									
Tourism Awareness		✓										
Intercultural Sensitivity And Tourist Behaviour			✓									
Hospitality-Kitchen, Service, Housekeeping, Hygiene			✓									
First Aid			✓									
Environmental Conservation			✓									
Hospitality-Service		✓			✓							
Teamwork And Motivation				✓								
Gender Awareness		✓										
Refreshment Training		✓				✓			✓			✓
Developing Naturalists & Bio-Diversity Register Creation					✓							
Train The Trainer Program					✓							
Web Page For The Project						✓						
Social Media (Instagram, Facebook And Other Media)							✓	✓	✓	✓	✓	
Leaflets Design And Printing					✓							
Creation Of Short Video And Photo Documentation		✓	✓	✓		✓		✓	✓		✓	
Tourism Trade Fair Participation			✓		✓				✓		✓	
Marketing Destination And Packages			✓	✓	✓	✓	✓	✓	✓	✓	✓	

14. Personnel for the Project

Role	Description
1. Team Leader	Provides overall strategic guidance, coordination, and supervision of all project activities.
2. Project Manager	Responsible for day-to-day operations, planning, budgeting, and reporting.
3. Field Coordinators	Facilitate on-ground implementation, stakeholder meetings, and monitoring activities.
4. Volunteers	Support logistics, data collection, awareness campaigns, and tourist engagement.

15. Projected Impacts

Economic Impact
- Creates additional sources of direct income for 500 beneficiaries and indirect income for 1,000 beneficiaries, building economic resilience.
- Achieves a 40% increase in average family income of people involved in community tourism.
- Expected income growth:
- ₹15,000–₹18,000 monthly income (Year 3).
- ₹18,,000–₹21,000 monthly income (Year 5).
- Generates self-employment opportunities for over 500 individuals under the project.
- Creates avenues for entrepreneurship and contribution to the local economy.
- Ensures equitable distribution of economic benefits and fair pay for community members.

Socio-Cultural Impact
- Creates dignified jobs leveraging the community's traditional knowledge and skills.
- Builds ownership within the community and strengthens social cohesion.
- Positions locals as proud ambassadors of their culture.
- Brings women to the forefront in leadership and managerial roles.
- Preserves and promotes the community's cultural heritage.
- Celebrates diversity and promotes inclusivity across social groups.

Environmental Impact
- Promotes earth-friendly practices through all stages of the tourism value chain.
- Encourages efficient use of energy and adoption of environmentally responsible alternatives from infrastructure design to tourist transport.
- Preserves traditional ecological knowledge — including indigenous medicinal plants, foraging practices, and natural ecosystem understanding.
- Promotes vernacular architecture that harmonises with the landscape and reduces ecological footprint.

16. Potential For Replication / Adaptation And Scalability

- The project's success lies in its systematic approach, starting with extensive community engagement in every stage of project design and resource mapping.
- The community-owned accommodation units, blending traditional and modern styles, will serve as replicable models complemented by diversified tourism products and eco-friendly practices.
- The initiative prioritises environmental sustainability, social inclusivity, and cultural sensitivity through codes of conduct and awareness campaigns.
- It preserves traditional knowledge systems related to food security, seed resilience, vernacular architecture, and biodiversity conservation.
- Coordinated efforts with government departments, CSR programmes, and market linkages enhance long-term viability.
- The model can be adapted to other rural and temple-based communities, supporting economic empowerment, cultural preservation, and climate resilience.
- Small-scale enterprises focusing on forest foraging, herbal medicine, and craft-based products will diversify income and strengthen community entrepreneurship.
- Workshops and cultural performances (music, theatre, storytelling) will create additional income streams and attract responsible tourists.
- The project's impact can extend to neighbouring villages, promoting interlinked eco-tourism circuits and regional economic growth.

17. Observations And Learnings

- Community Participation: Involvement of all stakeholders — from decision-making to management — is key to project sustainability.
- Awareness Creation: Awareness among travellers, agencies, and host communities on sustainable practices, ecological restoration, and conservation is essential.
- Capacity Building: Building community capacity ensures quality, operational efficiency, and a sense of ownership; this is a gradual process.
- Resilience: Tourism must remain a supplementary source of income, reducing vulnerability by diversifying livelihood options.
- Inclusivity: Conscious mechanisms should ensure equitable access to benefits — e.g., guide training, integrating small enterprises, and creating village development funds accessible to all.
- Continuous Monitoring: A review committee must track progress, measure outcomes, and adjust strategies regularly.
- Marketing Mechanism: Proper branding and storytelling are critical to attract the right audience. Gradual market establishment requires consistent quality control and communication.
- Hand-Holding: At least 2–3 years of guided support is necessary to align community practices with tourist expectations, including SOPs, skill upgrades, and quality assurance.

18. Challenges And Risks

- Internal Conflicts: Managing diverse interests and potential differences within the community.
- Community Trust: Building confidence and ownership among residents takes time.
- Pressure from Mass Tourism: Quick-profit models can threaten the ethics and sustainability of community-based initiatives.
- Inclusivity Barriers: Class, caste, and social hierarchies may challenge equal participation.
- Marketing Limitations: Lack of early marketing and visitor inflow can reduce community confidence.
- Quality vs. Quantity: Over-commercialisation can harm community reputation; prioritising quality over volume is essential.

19. Marketing

Project partner Suyatri / Kabani has established marketing linkages with global and national tour operators. The project will initially be integrated into Suyatri's marketing plan, ensuring early visibility and guaranteed tourist flow.

Key actions:
- Dedicated website and social media channels.
- Marketing training for local tourism management groups.
- Volunteer training in photo, video, and digital content creation.
- Documentation of visitor profiles and market trends.
- Development of short videos and photo stories highlighting niche tourism products.

D. Avian and Reptile Rehabilitation Centre

WATER BIRD CONSERVATION IN THIRUPPUDAIMARUDUR

Project Proposal By
Avian and Reptile Rehabilitation Centre

Background

Thiruppudaimarudur in Tirunelveli district, located on the west bank of the Tamiraparani River, is renowned for its heronries. In 2005, it was designated as India's first Conservation Reserve, highlighting its ecological significance. While more than 70 species of birds are observed in this area, one of the highlights is that four species of large water birds — Median Egret, Cattle Egret, Spot-billed Pelican, and Painted Stork — make their nests in the trees located inside the villages. Even more fascinating is the fact that some of these species are migratory, traveling vast distances to return to these very villages to lay eggs and raise their young. Such coexistence between wild birds and human communities is seen in only a handful of places worldwide, making Thiruppudaimarudur a true ecological treasure.

This distinctive nesting behavior presents both challenges and opportunities for conservation. While human activities can pose threats such as habitat disturbance, the proximity to people also allows for community-driven conservation efforts and educational outreach. Additionally, the uniqueness of this bird-human coexistence attracts tourists, creating an opportunity for eco-tourism initiatives that can support conservation efforts while providing economic benefits to local communities.

This project aims to establish a comprehensive conservation program to protect and rehabilitate these water birds by providing medical aid, implementing effective rescue and rehabilitation strategies, and conducting educational workshops.

Scope of Work

- Conservation and Rescue Capacity Building through Training Sessions
- Conduct in-person educational sessions in Tamil for local communities, conservationists, and forest officials to raise awareness on water bird conservation, basic first aid, habitat management, and minimizing human disturbances.
- Provide remote support and online resources for ongoing learning and troubleshooting.
- A total of four sessions are planned. The first two sessions can be attended by larger groups of people for general information and will be conducted in collaboration with the ATREE team. Sessions III and IV will be specific to people who are interested in taking a more active role in the rescue and rehabilitation of birds.

Session I: *Wetland Ecosystems* – Importance, threats, and measures to protect. Introducing the concept of ecosystem services and conservation. Tangible benefits of ecosystems to communities – ecotourism, opportunities, and revenue avenues.

Session II: *Identifying Birds* – English and local language. Understanding local and migratory birds, Wildlife Protection Act, life cycle of Painted Storks and Pelicans, identifying hatchlings, nestlings, fledglings, and young adults. Introduction to binoculars, ethical wildlife photography, and dos and don'ts around birds and visitors.

Session III: *First Response* – Identifying birds in distress, knowing when to intervene, dos and don'ts. How to capture a bird safely in the field, transport it, and house it temporarily. How to recognize hyperthermia, weigh an animal, and document a case. Importance of maintaining hygiene and handler safety, and understanding why and when to quarantine.

Session IV: *Basic First Aid* – Basic anatomy of birds, identifying wounds, and recognizing the extent of injuries. How to communicate with a veterinarian. How to raise birds — correct feeding methods, importance of adequate nutrition, and growth cycles of young birds.

Introducing the concepts of imprinting and taming, and techniques to avoid imprinting. How to stop active bleeding, manage pain, perform basic dressing techniques, and immobilize fractures during transport. Understanding the importance of fluid therapy and administering oral fluids.

Rescue, Rehabilitation, and Release Procedures

- Document and standardize protocols for the safe rescue, medical care, and rehabilitation of water birds.
- Maintain detailed records of all rescued birds, their treatment, progress, and releases.
- Establish partnerships with local conservation organizations and government agencies to support long-term rehabilitation efforts.

Bird Rescue and First Aid

- Develop a network of trained volunteers capable of administering first aid to injured birds.
- Create standard first aid protocols and emergency response mechanisms to improve survival rates of rescued birds.
- Collaborate with local veterinary hospitals and wildlife experts to enhance medical treatment and rehabilitation efforts.

Rescued Birds Aviary and Cage Design

- Propose detailed designs for transport cages, temporary holding enclosures, and rehabilitation aviaries suitable for different species of water birds.
- Ensure aviary designs meet species-specific requirements, including appropriate space, perching, feeding areas, and flight conditioning zones.
- Approximate size of outdoor aviaries:
  - 30 ft × 15 ft × 12 ft for unlimited activity.
  - 10 ft × 8 ft × 6 ft for limited activity, recovering from wounds, etc.
- Recommend durable and easy-to-maintain materials for cages and aviaries to ensure long-term sustainability.
- Implement enrichment strategies within rehabilitation enclosures to help birds regain natural behaviors before release.

Rehabilitation and Treatment

- Provide species-specific diets and enrichment activities to promote recovery and natural behaviors.
- Employ rehabilitators and trained caregivers to oversee rehabilitation efforts, including hand-rearing orphaned nestlings.
- Establish quarantine and disease management protocols to prevent the spread of infections.
- The on-site paravet/caregiver will receive guidance from ARRC both remotely and through frequent on-site visits. They will:
  - Identify animals in distress.
  - Transport animals to a nearby vet or another appropriate facility.
  - House animals to minimize stress.
  - Feed animals appropriately.
  - Identify wounds and injuries, stop bleeding, perform basic dressing.
  - Manage pain, administer fluids, and immobilize fractures externally.
  - In case of orphaned chicks, raise them, get them to self-feed, and house them until they fledge.

Water Bird Threats Assessment and Mitigation Strategies

- Identify primary threats to water birds, including habitat destruction, pollution, poaching, dog and monkey conflicts, and human disturbances.
- Develop strategic conservation measures such as habitat restoration and public awareness campaigns.
- Collaborate with local authorities, conservation groups, and policymakers to implement community-driven conservation initiatives.
- Advocate for the enforcement of policies that safeguard this ecosystem and its avian inhabitants.

Wings, Water and Worship

Project Timeline and Budget

Main Category	Subcategory	Description	Resources Needed	Timeline	Y1 B	Y2 B	Y3 B	Total Budget
Capacity Building	Develop course material in Tamil	1. Understanding wetland ecosystems and their importance, threats, and protection measures. 2. Basic identification of bird species found in the area — young, sub-adults, and adults. 3. First response when a bird falls — importance of simple data collection. 4. Stress and shock that birds undergo when handled. 5. Safe capture, restraint, and transport. 6. Identification of distress reasons — basic quarantine protocol. 7. Basic husbandry and feeding techniques. 8. Nutritional support and correct growth patterns. 9. Identifying wounds and other injuries. 10. Basic first aid.	SME, Visual Designer, Translator	4 months from commencement; additional modules by Jan of Year 2	2,00,000	50,000	—	2,50,000
	Conduct in-person sessions	4 sessions: 2 generic (usable in other wetland areas) and 2 on handling, rescue, and rehabilitation.	Two trainers (Tamil-speaking + SME)	6 months from commencement; refresher courses annually	50,000	40,000	40,000	1,30,000
	Remote telephonic support	Ongoing support throughout	—	Throughout	10,000	10,000	10,000	30,000
	Subtotal				**4,10,000**			
Protocols Development	Protocol document (English)	Rescue, rehabilitation, and release protocols	SME, Veterinarian	6 months	1,00,000	—	—	1,00,000
	Forms for documentation (Tamil/English)	Forms for rescue, treatment, handover, and release	SME, Veterinarian, Translator	7 months; revisions by Jan of next year	50,000	—	—	50,000
	Subtotal				**1,50,000**			
Infrastructure Design	Aviaries and housing cages	Design document (English)	SME, Engineer	8 months	50,000	—	—	50,000
Rehabilitation and Treatment	Medical supplies	Basic medical supplies	Veterinarian, Rehabilitator	December of commencement year; replenished annually	50,000	50,000	50,000	1,50,000
	Rehabilitation supplies	Basic rehabilitation and cleaning supplies	Veterinarian, Rehabilitator	Annual replenishment	1,00,000	1,00,000	1,00,000	3,00,000

Wings, Water and Worship

Project Timeline and Budget (continued)

Main Category	Subcategory	Description	Resources Needed	Timeline	Y1 B	Y2 B	Y3 B	Total Budget
	Feed	Formulated food and fish (estimated placeholder)	Veterinarian, Rehabilitator	Replenished weekly	1,00,000	1,00,000	1,00,000	3,00,000
	On-site Animal Caretaker (1 local)	Caretaker for daily operations	1 Caretaker	—	1,80,000	1,92,000	2,16,000	5,88,000
	ARRC Rehabilitator (part-time)	Supervision and training	Rehabilitator	Visits as needed	1,00,000	75,000	75,000	2,50,000
	Subtotal				15,88,000			
Threat Assessment & Conservation Measures	Assess threats and mitigation strategies	Report in English	SME	End of Year 2	—	50,000	—	50,000
Operational and Administrative Costs	Travel, overhead, project management, monitoring, and evaluation	Ongoing costs	Project Coordinator, Manager, SME	Ongoing	1,00,000	75,000	75,000	2,50,000
	Subtotal				2,50,000			
Total Project Cost					24,98,000			

Note: Rehabilitation and treatment costs are highly dependent on the number of animals needing care and the skill levels of local caretakers.

Expected Outcomes

- Enhanced local capacity for the conservation of water birds.
- Established network of first responders and caregivers.
- Standardized protocols and resources.
- Sustainable infrastructure and long-term support for rescue operations.
- Improved bird survival and rehabilitation success rates.
- Strengthened community stewardship and engagement.
- Growth of eco-tourism and sustainable livelihood opportunities.
- Improved conservation policies and habitat protection measures.

Conclusion

This initiative will foster a well-rounded approach to water bird conservation by integrating education, medical intervention, infrastructure development, and policy advocacy. The proposed measures will contribute significantly to the protection and rehabilitation of water bird species. This project bridges science, compassion, and community engagement — ensuring that the skies over Thiruppudaimarudur continue to echo with the calls of pelicans, storks, and egrets for generations to come, serving as a model for similar efforts elsewhere.

D. Spaces + Dialogues

Envisioning Thiruppudaimaruthur: Wayfinding, Signage, and Awareness

Abstract

Thiruppudaimaruthur, a historic temple village, holds immense cultural, ecological, and artisanal significance. However, inadequate signage, limited awareness of hygiene and environmental conservation, and an unstructured visitor experience pose challenges for both residents and tourists. This project aims to create an integrated signage and information system to enhance navigation, engagement, and awareness. The initiative seeks to improve accessibility, promote responsible tourism, and foster community participation, serving as a scalable model for similar heritage villages.

Context

Thiruppudaimaruthur is a village steeped in history, ecological richness, and traditional craftsmanship. Despite its cultural and natural wealth, the lack of a structured system for visitor guidance and awareness limits its potential as a sustainable tourism and heritage conservation site. This project envisions a well-organized and informative signage system that integrates cultural, ecological, and practical elements to improve visitor experience while preserving the village's unique identity. Through responsible tourism and active community engagement, the initiative aims to create a cleaner, more accessible, and sustainable environment.

Objective

The project aims to promote hygiene and a healthy lifestyle among residents while ensuring the sustainable management of water resources and preventing pollution. By fostering environmental stewardship, it seeks to protect nature for future generations through the development of effective and engaging communication tools that raise awareness about water, sanitation, and hygiene (WASH).

As part of its **first phase**, the project will focus on key WASH initiatives to improve public health and environmental sustainability. Key interventions include:

- Installation of clear and informative signages promoting sanitation and hygiene practices.
- Awareness campaigns to encourage toilet usage and discourage open defecation.
- Identification and signage for public sanitation facilities to enhance accessibility.
- Community engagement initiatives to ensure sustainable water management and hygiene education.

This phase serves as a foundation for long-term improvements in public health and environmental conservation, contributing to a cleaner, healthier, and more sustainable village environment.

The Team

This initiative is led by a team of experienced architects and artists dedicated to environmental and community-based projects:

- **Ashya K. Suresh**, Architect/Artist (CA/2021/139753, Avani Institute of Design, 2020)
- **Bhaskar K A**, Principal Architect (CA/2018/90696, CEPT University, College of Engineering Trivandrum)
- **Rajiv Babu**, Principal Architect (CA/2021/91325, CEPT University, College of Engineering Trivandrum)
- **Neethu P. S**, Principal Architect (CA/2018/96191, CEPT University, Rajiv Gandhi Institute of Technology, Kottayam)

Achievements of the Team

The team has a strong background in design excellence and community-driven projects. Their notable accomplishments include winning the Silver Leaf Award for Interior Non-Residential Project at the **IIA Kerala State Awards 2023**, and

being shortlisted for the Vanitha Veedu Architecture Awards 2023 for the Conservation Category. The team also won the **public design competition for the Water Metro Terminal at Vyttila, Cochin, conducted by KMRL in 2017**, and were **runners-up in the Streets for People Challenge 2021**, an initiative of the Smart City Mission and Ministry of Housing and Urban Affairs. Special recognition was also received for their participation in the international Re School 2018 design competition by Volume Zero. Additionally, Ashya Suresh was **among 13 contemporary women artists** in Kerala who created a wall mural at Manaveeyam Veedhi, Trivandrum, for Keraleeyam 2023.

Scope of Work

The project focuses on creating visually engaging and easy-to-understand communication tools to spread awareness regarding water conservation, sanitation, and hygiene.

A key component of this initiative is a comic strip series designed to quickly and effectively communicate best practices in hygiene and environmental protection. These stories will be accessible and relatable, ensuring that the messages reach a broad audience, including children and the elderly. Alongside the comic strip, visual materials such as infographics, posters, and signage will be strategically placed throughout the village to reinforce key messages and encourage positive behavioral changes.

Implementation Plan

The project can be carried out in phases within the village, starting with the research and development of communication strategies. The next step will be the design and prototyping phase, where visual materials and comic strips will be refined. Following this, the community will be engaged in awareness initiatives. Once the materials are finalized, they can be installed and distributed across the village. To ensure sustained impact, a monitoring and assessment phase will be conducted to evaluate the effectiveness of the campaign and implement necessary improvements.

Timeline

A detailed budget will be developed to cover the costs of design, printing, community engagement, and logistics. The timeline will be structured into four phases:

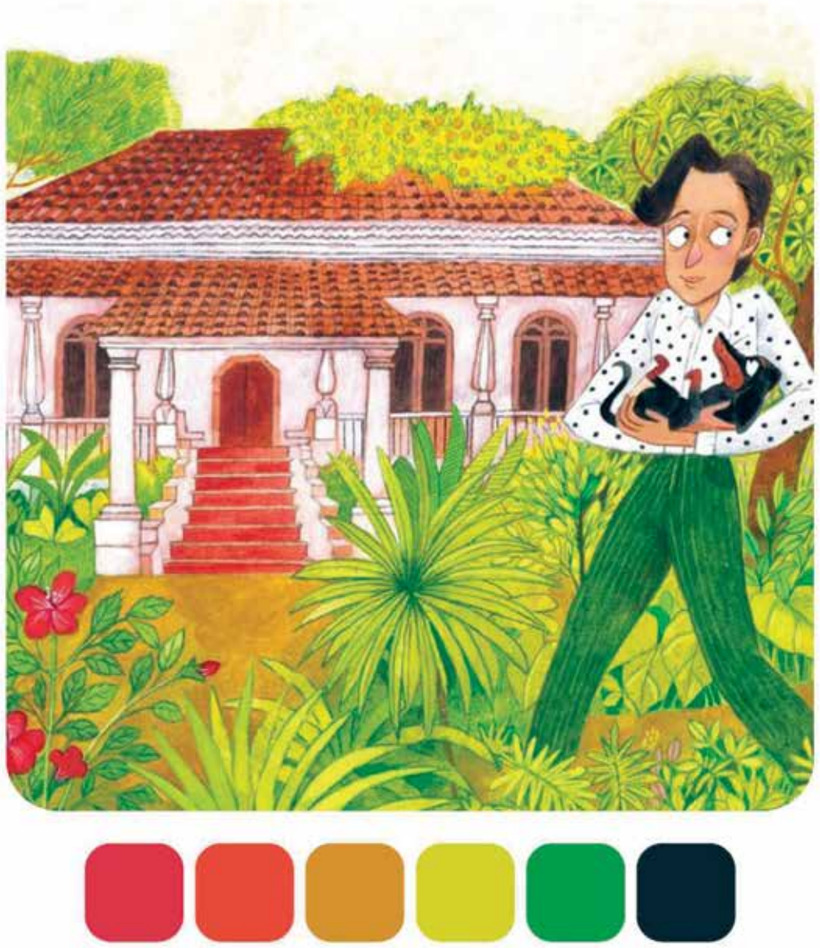
1. Phase 1: Research and development.
2. Phase 2: Design and prototyping.
3. Phase 3: Community engagement and material installation.
4. Phase 4: Monitoring and impact assessment

Mood boards & Color palette

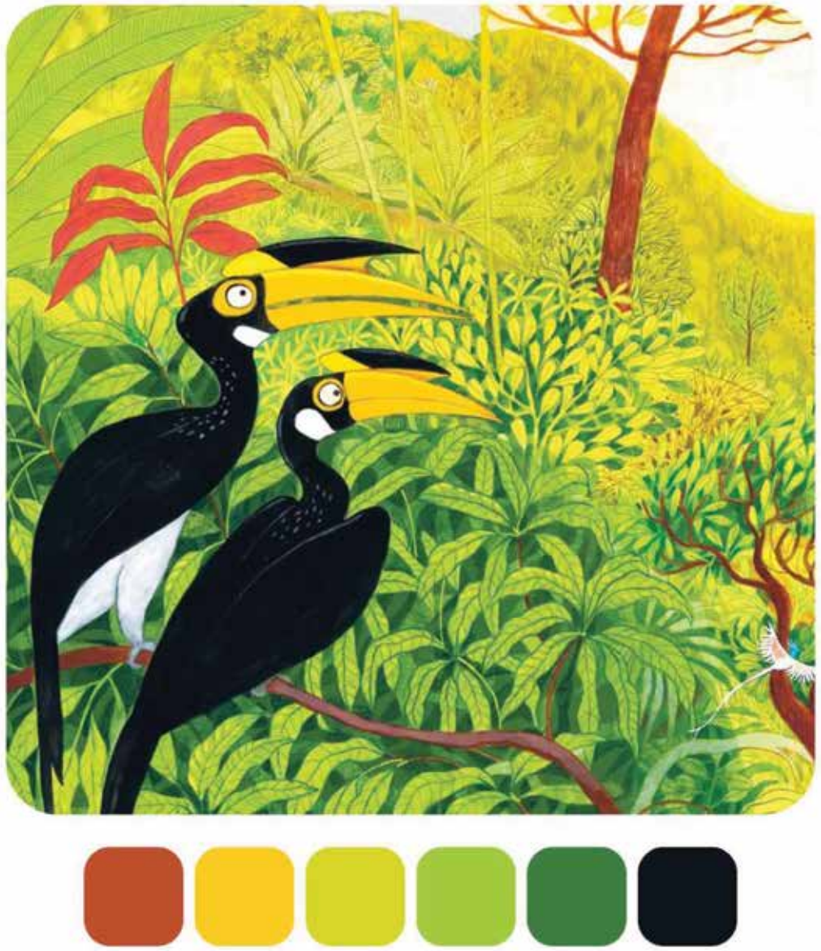
Credits
Priya Kuriyan
Padmasree Murali
Suresh Eriyat

The illustration will use pastel colors with detailed visuals of landscapes and people, incorporating bilingual text in Tamil and English. The materials will raise awareness on water, sanitation, and hygiene through engaging comic strips and informative content, ensuring accessibility for the local community.

Wings, Water and Worship

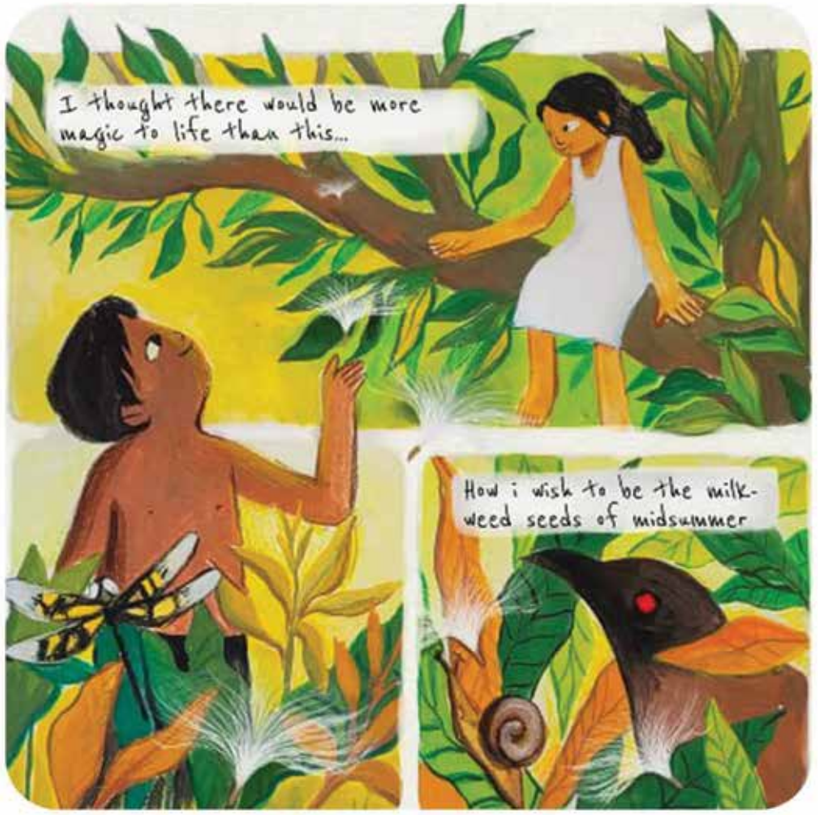


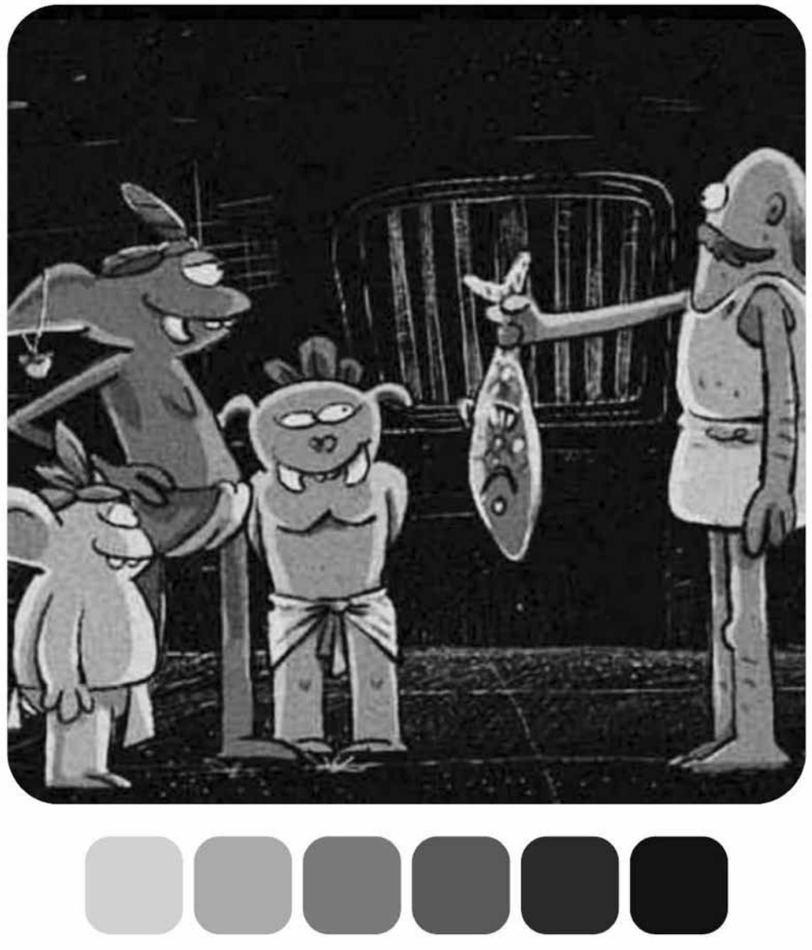
The illustration would emphasize nature, birds, and the landscape, viewed from their perspective.



It can also be a small comic strip consisting of three images, with text highlighting the problem or a conversation between people. These can be shared on digital media or used as wall paintings to engage the community.

Wings, Water and Worship





A monochrome illustration can be created for quick implementation, offering a simple yet effective visual approach. ***Mythical*** - comic

A concept in which a character from Thirupudaimarathur engages in a conversation with the reader, highlighting the unique traits and culture of the village.

Our thoughts & scribbles

Credits
The team

Reversing the worlds through sarcasm, pointing out key facts while giving more emphasis to the details. - Open defecation and personal hygiene

Wings, Water and Worship

A unique character, along with the girls of Thirupudaimarathur, will tell engaging stories, showcasing the culture and essence of the village. - Open defecation and personal hygiene viewed from their perspective.

A comical story designed for children and schools, aimed at promoting the protection and preservation of the environment and local culture.

Conclusion

This pilot project in Thirupudaimarathur is a step towards a cleaner, healthier, and environmentally conscious community. By leveraging visual storytelling and community engagement, the initiative aims to foster long-term positive change in hygiene practices, water conservation, and pollution prevention. Through collaborative efforts, this model can be replicated in other rural communities facing similar challenges.

Campaign 'WWW'
Wings, Water & Worship

Thiruppudaimaruthur, a site of significant cultural and religious heritage, faces increasing pressure on its natural resources, particularly its biodiversity and water resources. Simultaneously, the delicate balance between pilgrimage, cultural traditions, and environmental sustainability needs careful consideration. To address these interconnected challenges, we propose "Campaign WWW - Wings, Water, Worship," a community-focused initiative designed to raise awareness and promote responsible stewardship of Thiruppudaimaruthur's unique ecosystem and cultural heritage.

Campaign WWW centers around three core themes:

Wings (Biodiversity): This component will highlight the rich biodiversity of Thiruppudaimaruthur, focusing on its avian population, flora, and fauna. It will emphasize the importance of preserving these natural assets and the interconnectedness of all living things. Issues such as habitat loss, pollution, and the impact of human activities on local ecosystems will be addressed.

Water: This element will concentrate on the critical role of water resources in Thiruppudaimaruthur. It will explore issues related to water conservation, sustainable water management practices, and the importance of protecting water quality. The campaign will also address the impact of water scarcity and pollution on both the environment and the community.

Worship (Cultural Heritage): This aspect will celebrate the rich cultural and pilgrim heritage of Thiruppudaimaruthur. It will emphasize the importance of respecting sacred sites, preserving traditions, and promoting responsible tourism. The campaign will explore the intersection of faith, culture, and environmental stewardship, highlighting the role of the community in safeguarding their heritage.

The heart of these comics lies in its relatable characters, drawn directly from the vibrant tapestry of village life. Two young protagonists, full of youthful curiosity and mischief, guide the narrative, offering a fresh perspective on the challenges faced by their community. Supporting them is a cast of secondary characters, each a recognizable archetype from the village, adding depth and humor to the stories. The comics tackle important issues with a satirical edge, often poking fun at human foibles and societal norms. Adding a touch of the divine, even God makes an appearance from time to time, weighing in on the earthly matters and further amplifying the comedic and thought-provoking nature of these tales.

Arulmozhi, a vibrant and outspoken teenager, is anything but a typical youth. With a sharp mind and an even sharper tongue, she possesses an uncanny ability to see through the complexities of village life, often articulating the very issues and problems that adults conveniently overlook or choose to ignore. Her fearless nature allows her to speak truth to power, pointing out uncomfortable truths and challenging the status quo with a candor that belies her age. More than just a voice for the younger generation, Arulmozhi acts as a mirror, reflecting back to the community the realities they often fail to acknowledge.

Keywords: Hygiene, Resources, Conservation, Health

Aari is a gentle soul, a sweet and curious boy whose heart beats in rhythm with the natural world. He possesses a deep sensitivity, particularly towards the delicate balance of his village's biodiversity. Aari's fascination with nature is boundless; his eyes are always wide with wonder, absorbing the intricate details of the world around him. He's a constant companion to the birds and animals of the village, often found wandering through the fields and forests, observing the intricate dance of life with a quiet reverence.

Keywords: Nature sensitivity, protection, biodiversity

Concept sketch
Sub: Worship - Hygiene

Precedents

SuperAmma Campaign Website
https://www.superamma.org/

Video: SuperAmma Campaign
https://www.superamma.org/download/SuperAmma-short.zip

Video: Film
https://www.superamma.org/download/Hand-Film.zip

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LIST OF MAPS