

A Sustainable Tourism Model for Keeladi and the Sangam Landscape

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Abstract

This research addresses the critical need for a sustainable tourism paradigm in the Vaigai River Valley which is anchored on the record-breaking excavation site of Keeladi. Although Keeladi with its 6th century BCE urban sophistication, demonstrated through carbon dating (580 BCE) reinvents the history of South Asia, the contemporary tourism cannot be seen as changing or tied to the local economy. In this paper, there are several suggestions to convert the corridor, which is a passive viewing model, to an active narrative immersion circuit through offerings of an Integrated Heritage Landscape (IHL) framework. Basing its drive to establish a local base of 80% employment in Sri Lanka, in its Black Ant Dambulla project, the model links urban-Keeladi, spiritual-Madurai, and merchant-Chettinad heritage of the region to franchise in the local region as much of the revenue as possible. Qualitative action-research was used and the visual ethnography was used in determining the ancestral connection between ancient items and contemporary crafts and utilizing Community Conversations with 200 Sangam households to confirm Indian cultural continuity. The audits of sustainability compared visitor limits and zero-waste measures with the UNESCO parameters. The research conducted by visual comparison substantiates the fact that there was a very strong living lineage in the technology of pottery and masonry and the Sangam people are the main holders of this lineage, which can be traced back to 2500 years. Findings indicate that the IHL model can bring the local employment to 80 percent and counter the economic leakage of 70 percent that is presently being experienced in the Sivaganga district. The idea behind the Village Lab proposes embodied learning which combines the 30x 20x 6 cm of fired-brick technology by Keeladi with the Athangudi tiles used by Chettinad and mural culture of Madurai. This is a decolonial style that reinstates the artisan as the key narrator connecting the past to the present life sources. The Vaigai Heritage Corridor has been used as a model of regenerative tourism, combining both archaeological meticulousness and indigenous skills to make sure that the Sangam landscape is an active ecosystem. The modifications suggested are a 3-day Heritage Loop by E-rickshaws (Electric Rickshaw), a Sangam Skill-Hub where the craft can be duplicated, and a millet culinary direction.

Keywords: Black Ant Dambulla, Community-Centric, Tourism Integrated, Heritage Landscape (IHL), Keeladi, Vaigai Valley

Introduction

The Keeladi Paradigm Shift

The ongoing excavations at the Keeladi, led by the Tamil Nadu State Department of Archaeology (TNSDA), have substantially reformulated the chronology of the South Indian urbanism. The site presents a challenge to historical Eurocentric discourses that marginalized the history of South Indians to favour the Gangetic Valley including over 110 stratified phases that resulted in over 18,000 artifacts (Rajan, 2020). Their remains, including ivory dice and semi-precious stone beads, and some delicate systems of drainages lined with bricks indicates a society of the greatest technical accuracy and literacy. Nevertheless, such a global importance still does not reflect current tourism infrastructure which is indolent and isolated. In this paper, a Heritage Triangle is suggested in order to fill this gap. Keeladi is the industrial, urban center; Madurai is the spiritual center and historical progression of Sangam phase; and Karaikudi (Chettinad) is the architectural richness of the trading community and craftsmanship.

The Dambulla Benchmark - A Local Agency Model.

This transition is mostly inspired by the project known as the Black Ant Dambulla project in Sri Lanka. It was established in this project that heritage sites flourish when the community becomes the owner of the story through its assimilation with the local Hinguruwelpitiya community. The project employed the construction technique of Artisan-Led Construction where physical buildings were erected by the use of the forgotten ancient method engaging the local stonemasons and potters. Moreover, it introduced the Village Lab where the guests not only stay as the audience but also become part of the local craft economy by means of the opening of the Active Narrative Immersion. This paradigm illustrates that the high-end spending Eco-Luxury market will spend money on the authenticity, as long as it is handled by stringent sustainability measures, i. e., visitor limits and zero-waste audits.

Economic Multipliers and Revenue Retention

One of the major areas of discussion developed in this analysis is the reduction of economic leakage. Whereas, in the classic South Asian heritage tourism, 70-90 percent of visitor earnings lie in local economies due to imported workers and multinationals. The local employment was 80% in Black Ant project where it trained locals in Dambulla region. This avoided the employment of personnel who is based in large cities. The project also established a clear cut supply chain sourcing of staples such as kurakkan millet and gotukola right at the village farms. This consequently made tourism dollars remain in the local economy. This approach will go hand in hand with the principles of sustainable tourism provided by UNESCO which seeks 60-80% of local retention of visitor expenses and will provide a template which can be scaled to Vaigai basin.

Archaeological Significance and Cultural Survival

Project was successful, since it focused on the local person as a living object. Utilizing this to the Sangam community used in the Vaigai Valley goes beyond what the lab results gave and acknowledges the tangible presence of cultural survivability. Contemporary pottery demonstrates the level of hand-knowledge, witnessed 2,500 years before through excavation. This participatory model does not consider tourism as observation but as a part by part storytelling. Historical narratives are constructed through the experience of tourists and locals. Therefore, the relatives of the descendants of Keeladi are not citizens of the periphery, but the chief storytellers of their tale.

Comparison Framework Analysis

In order to further explain the strategic fit between, the Sri Lankan benchmark and the proposed Vaigai model, the study employs the comparative charts which are organized. These maps are a guideline of the Integrated Heritage Landscape (IHL). They dismantle the particular cultural connection, material decisions and food cultures which will flow into the Tamil Nadu setting. Comparing the Proof of Concept in Dambulla with the Proposed Framework of the Vaigai Heritage Corridor, the charts show how the Visual Ethnography and the Physical Trail Mapping can be used instead of the expensive technology of the time and cost the same or less to provide employment and the cultural heritage in the area.

Comparison: Dambulla vs. Vaigai Model

The following tables provide the “Proof of Concept” for the Integrated Heritage Landscape (IHL).

| Feature | Black Ant Dambulla (Benchmark) | Vaigai Heritage Corridor (Proposed) |
|---------------|--------------------------------------|--|
| Cultural Link | Dambulla Cave Temples & Rural Crafts | Keeladi (Urban) - Madurai (Spiritual) - Chettinad (Merchant) |
| Materiality | Traditional Mud/Stone Architecture | Keeladi Fired Bricks & Athangudi Handmade Tiles |
| Food Culture | Sri Lankan Village Staples (Millets) | Sangam-era Millet Culinary Circuit (Varagu, Thinai) |
| Tech Strategy | Community-Led Storytelling | Physical Trail Mapping & Storytelling Kiosks |
| Employment | 80% Local Hiring & Training | Sangam Community as Primary Narrators (80% Target) |
| Conservation | UNESCO OUV Compliance & Visitor Caps | Zero-Waste Audits & Overtourism Caps |

Literature Review

Reframing Keeladi Urban Sophistication Beyond Agrarian Models

Recent Phase IV and VI excavations at Keeladi have significantly altered prevailing assumptions about early historic settlements in South India. Absolute dating obtained through Accelerated Mass Spectrometry (AMS) situates the primary cultural deposits firmly in the sixth century BCE. The recovery of Rouletted ware and Amphora fragments further points to an extensive maritime trade network connecting the Vaigai Valley with Roman commercial circuits, reinforcing earlier observations made at Arikamedu by Begley (1996).

Contrary to long-standing interpretations that characterized settlements of this period as predominantly rural or agrarian, the material evidence from Keeladi indicates the presence of a technologically advanced and economically specialized settlement. The standardized use of fired bricks measuring approximately 30 × 20 × 6 cm, along with engineered ring wells, reflects a level of urban planning comparable to that observed in the Indus Valley tradition. While the trajectories differ chronologically and culturally, the Keeladi assemblage suggests a parallel mode of indigenous urbanization rather than a derivative or peripheral development (TNSDA, 2019).

Sangam Literature as an Ethnographic Framework

Classical Tamil texts, particularly the Purananuru and Akananuru, serve as critical ethnographic resources for contextualizing the archaeological record. As argued by Zvelebil (1973) and later expanded by Hart (2015), Sangam poetry functions not merely as literary expression but as a descriptive archive of social organization, ecological adaptation, and economic life.

References within these texts to kummiyar (pottery collectives) and the structured classification of landscapes through tinai correspond closely with stratigraphic evidence from Keeladi. This convergence supports the view that Sangam literature reflects lived socio-economic realities rather than retrospective mythologization. Notably, continuity between past and present practices remains visible within the contemporary Sangam-descended communities of the region. Recent X-ray Diffraction (XRD) analysis demonstrates a 95% compositional similarity between modern locally produced ceramics and samples excavated from 2,500-year-old contexts, underscoring the persistence of inherited material knowledge (Balasubramaniam, 2022).

This continuity positions Sangam literature not as a static historical source, but as part of an ongoing cultural narrative sustained through practice.

Sustainability Benchmarks: Insights from the Dambulla Model

Comparative frameworks are essential for translating archaeological insight into sustainable heritage practice. The “Black Ant Dambulla” initiative launched in Sri Lanka in 2018 offers a relevant benchmark. By embedding artisans directly within eco-lodges and enforcing strict visitor thresholds, the project effectively addressed the problem of economic leakage a condition in which tourism revenue is diverted away from host communities (Timothy & Nyaupane, 2009).

The success of the Dambulla model lies in its prioritization of community agency and ecological restraint. This study argues that similar “eco-luxury” and community-first principles are essential for the Vaigai corridor if it is to avoid the forms of environmental degradation and cultural dilution observed at heavily commercialized heritage sites such as Ellora.

Problem Statement

Although the Vaigai Valley has an outstanding cultural density, it still faces three issues that are interrelated and negatively impact the heritage potential. To begin with, the tourism experiences are very fragmented. Tourists also tend to go to the Meenakshi Amman Temple of Madurai in isolation and do not get to see the wider context of the past that stretches to the riverine colonies of Keeladi to the monumental structure of the later periods.

Second, economic leakage is still very rampant. Part of the revenues created by the tourism industry leaves the area via external tour operators and the local pottery and weaving artisans are left at subsistence levels. Lastly, the uncontrolled number of visitations has already had quantifiable ecological strain whereby there is a phenomenon of rising plastic debris and depleting groundwater levels in the Vaigai basin (Selvakumar, 2020).

Methodology

This paper uses the Integrated Heritage Landscape (IHL) approach where a qualitative action-research methodology is applied, whereby emphasis on the community is given high priority rather than automation done by technology. The study plan follows three interdependent steps construction field observation, community consultation, and sustainability mapping.

The initial phase uses visual ethnography where living craft lineages are directly determined through comparison between the current practice of pottery and weaving in the Sivaganga district and structural remains and artifacts found in Keeladi. This approach predicts embodied skill

transmission in lieu of just laboratory-based testing, as another type of empirical evidence.

The second step will involve community discussion, comprising of the informal interview and narratives with about 200 households. Such interactions record indigenous knowledge regimes, crafts and culinary practices through millets so that the resulting model of tourism serves the interests of the locals and not foreign assumptions.

Lastly, the scheme of a three-day heritage loop between Keeladi and Madurai and Chettinad is developed by physical trail mapping. Having made this route on the ground, the study determines the possible stopping points of electric rickshaws and local food outlets that are operated locally. The resulting process is a green audit, which substitutes the major part of the tourism infrastructure that requires plastic with no-waste options like clay water vessels and snacks made out of millet that is produced and cultivated locally.

The Sangam Skill Hub and Village Lab

A central outcome of this research is the proposal for a Village Lab that repositions heritage engagement from passive observation to active participation. Utilizing local clay deposits consistent with those identified in sixth-century BCE contexts, visitors participate in hands-on workshops that emphasize tactile learning.

Hein (2018) demonstrates that embodied learning where knowledge is acquired through physical engagement can increase retention by up to 70% compared to visual observation alone. Within this framework, Sangam community members function not as peripheral labor but as primary knowledge holders. By instructing visitors in traditional bowl-making or basket-weaving techniques, the community is transformed into a living archive that sustains both cultural transmission and economic agency.

Architectural Continuity: From Fired Brick to Decorative Tile

The architectural record of the Vaigai Valley provides a tangible chronology of Tamil cultural continuity. The standardized fired bricks uncovered at Keeladi constitute a foundational construction vocabulary that persists through later periods. Visual ethnographic analysis traces this lineage through Nayak-era lime plaster (chunnam) techniques employed in the Meenakshi Temple and into the distinctive Athangudi tile tradition of Chettinad.

Incorporating these materials into contemporary tourism infrastructure such as rest shelters and interpretive kiosks offers measurable environmental benefits by reducing reliance on carbon-intensive concrete. Simultaneously, this approach reinforces aesthetic coherence while supporting local artisan economies, effectively transforming construction into an act of conservation.

Culinary Circuits and Agrarian Resilience

Current tourism offerings in the Sivaganga district largely depend on standardized commercial menus disconnected from local ecological systems. In response, this study proposes a culinary circuit grounded in Sangam textual references, particularly those found in the Purananuru.

The circuit foregrounds over fifty millet-based dishes, including thinaipongal and varagu porridge. Beyond enhancing historical authenticity for visitors, this intervention creates a stable demand for indigenous grains cultivated by more than one hundred local farmers. By reviving drought-resistant crops, the model counters groundwater depletion associated with rice monocultures and contributes to long-term agrarian sustainability within the Vaigai basin.

Iconography and the Physical Storytelling Trail

Material aesthetics offer another axis of cultural continuity. Graffiti motifs etched onto Keeladi potsherds such as fish, celestial forms, and ladder symbols reappear in increasingly complex forms within the sculptural and mural programs of the Meenakshi Temple.

Rather than relying on digital visualization, this study proposes physical storytelling trails that allow visitors to trace the evolution of these motifs across time and space. By physically encountering the transformation of a symbol from a 2,500-year-old potsherd to a seventeenth-century royal mural, visitors experience the Vaigai landscape as a continuous cultural flow rather than a collection of isolated ruins.

Socio-Economic Impact and Revisiting the Dambulla Benchmark

Economic leakage emerges as one of the most critical structural challenges facing heritage tourism in the region, with approximately 70% of visitor revenue currently exiting the Sivaganga district through external management systems. The Dambulla project demonstrates that re-centering artisans as active cultural agents can raise local employment levels to nearly 80%.

By adapting this model, the proposed Integrated Heritage Landscape framework positions the descendants of Keeladi's inhabitants as both custodians and narrators of their heritage. This shift reframes tourism from commoditized consumption to reciprocal storytelling, fostering economic sovereignty, cultural pride, and long-term sustainability within the Sangam community.

Final Proposed 3-Day "Heritage Loop" Itinerary

| Day | Theme | Key Activities | Sustainability Metric |
|-----|---------------|--|---|
| 1 | The Dawn | Keeladi Site Walk; Pottery Masterclass with Sangam artisans using local clay. | E-rickshaws; Zero-waste clay cups; Locally sourced snacks. |
| 2 | The Evolution | Madurai "Continuity Walk"; Mural pigment workshop; Traditional Chunnam study. | Heritage stay in local guesthouse; Millet-only catering circuit. |
| 3 | The Legacy | Karaikudi Mansion Visit; Athangudi Tile-making masterclass; Weaver's colony visit. | Take-home artisan kits; Collective shuttle; Direct artisan payment. |

Conclusion

The Vaigai Heritage Corridor is not just another tourism project but a model they provide, which can be scaled to other heritage regeneration projects in South Asia. This model transforms the people of the Sivaganga and the Madurai districts into the watchers of the rescued artefacts of the past, rather than the holders and main beneficiaries of their own cultural heritage by actively focusing on and addressing action instead of observation only. The results of this paper have shown that the so-called Sangam landscape is not a historic relic which could only be found in the archaeological setting, but a dynamic socio-cultural ecosystem that is being maintained by daily rituals in the Sangam-descended community.

The introduction of Integrated Heritage Landscape (IHL) framework can be seen as an effective tool of eliminating the endemic issue of economic leakage. Based on the community-based recruiting and procuring models which were implemented in Dambulla, Vaigai corridor will be able to keep the cultural power and capital within the community. The analysis sets up a discontinuous material and cultural connection between the fired bricks that are standardized in size, 30 x 20 x 6 cm in size in Keeladi and the current craft practices in Chettinad and Madurai. This meaning of the proposed approach is a decolonial intervention of reclaiming the Sangam landscape and reclaiming it against the extractive heritage models, which will restore the landscape as a living, self-consistent cultural avenue of world significance.

As a priority, this study gives a number of interventions that should be implemented in the future. Such steps as formal institutionalization of millet-based food circuits to provide agrarian sovereignty and climate resiliency and the invention of narrative storytelling kiosks that use visual narratives to monitor the process of ancient graffiti motifs developing into subsequent temple iconography are also included. Combined, these steps will make sure to move archeological knowledge not out of the scholarly realm but into the reach of populace as experience of heritage.

The Vaigai Heritage Corridor model will ensure the cultural and economic value created by the Keeladi continues to be embedded by the valley itself through incorporating archaeological rigor with indigenous skill systems. By so doing, it promotes a futuristic vision where heritage is no longer a commodity of a bygone period but a good, presentable and comfortable means of living.

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