



# Documentation of Traditional Knowledge Systems (TKS) in Devaliya

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## Abstract

### Objectives:

The study focuses on identifying and preserving the rich cultural fabric layer of Devaliya by documenting both the physical landmarks and the living traditions surrounding it. The paper explores how Traditional Knowledge Systems (TKS) continue to shape the way a community is living and sustaining life in the physical realm, particularly in the face of urban modernization and gentrification. By safeguarding the unique stories, customs, and the nature – human practices, this research aims to protect Devaliya's cultural layer.

### Method:

An immersive three months field study was conducted using qualitative, ethnographic and oral techniques. These included living with the villager, observing their daily lives, mapping the community's physical and ecological features, and carrying out in depth interviews with local stakeholders. Visual documentation and participatory activities with roughly thirty villagers enriched the findings and a well-rounded understanding of the cultural layer in Devaliya.

### Findings:

The study captured a varied range of cultural elements – from Mistri architectural knowledge and traditional crafts to rituals and traditions surrounding the nature and culture. The findings reveal how traditional knowledge systems play an important role in developing community resilience helping them adapt to the challenges of the nature. Dry climate practices like Sukhi Kheti and a shared system of rainwater harvesting stands out as practical, sustainable methods of human nature and culture equilibrium. The research also highlights the need to protect and revitalize this knowledge as there is a decline in these traditions due to modernization and gentrification.

### Novelty:

This study aims to understand and portray heritage in a very holistic framework - bringing together the architecture, ecology and traditions in a single context of a village in Kutch. It offers a new and practical approach towards the pressing need of promoting the heritage of rural communities as a foundation of sustainable growth and development.

## Keywords:

*Traditional Knowledge Systems; Cultural Heritage; Rural Sustainability; Architecture; Ecology; Community Practices*

## **Introduction:**

Devaliya is a small village near Anjar taluka in the Kutch district of Gujarat state with around 900 people as the total population (as per the 2011 census). Situated under a small geographic area of the district, it has a rich layer of culture, traditions and, heritage. Historically inhabited by the Mistri community - Kutch Gurjar Kshatriya, Devaliya narrates a story of communities who learned to live in harmony with the region's dry, desert terrain. Their knowledge systems in architecture, handicrafts, agriculture and religion, all stem from deeply rooted traditional knowledges revealing how closely interwoven culture and nature can be.

However, the earthquakes of 1956 and 2001, severely disrupted the living practices of these traditions. The events devastated both the physical and cultural fabric of the village, pushing many to abandon traditional construction methods in favour of modern materials. Economic shifts and gentrification compounded the change, accelerating the decline of the TKS that had long been passed down through generations. Today, Devaliya stands as a resilient yet vulnerable example of cultural endurance. It holds immense heritage value but faces threats from modernization, environmental change and a fading chain of intergenerational knowledge sharing.

The paper aims to document and analyse Devaliya's cultural and ecological heritage while highlighting the role of Traditional Knowledge Systems in shaping the village's sustainable living systems. Through this study, the goal is to preserve the unique practices of the community while uncovering valuable lessons for heritage-based sustainability frameworks in similar settings.

## **Methodology:**

The study used both qualitative research and participatory method to fully understand Devaliya's cultural and environmental heritage. The followings tools were central to the research –

### 1. Participatory approach:

Data were collected by observing the people of Devaliya in their natural environment. Direct observation in the field has the benefit of providing relative data about people, connections, interactions, and the environment. Researchers are intensely involved in this process of field study, not only as observers but also as participants. In this way, researchers are to live in a comfortable environment with the villagers, allowing them to feel comfortable and have detailed discussions.

### 2. Ethnographic study in the field:

Ethnography is a broad observation of social groups and linkages, as well as the cultural values of the communities as a whole. The entire community was objectively observed to understand the different aspects of their daily lives.

### 3. Qualitative Interviews:

In a qualitative interview, the villagers were asked direct closed-end questions. Qualitative interviews were casual, conversational, structured, or a combination of all three. This gives the researchers a wealth of data to study. This also helped collect relational data.

### 4. Locating and marking the built:

Structures of local and historic importance were marked using this method. The process uses direct observations of the researcher with approximate sketches and analytical drawings.

### 5. Literature Review:

Existing research on Kutch's cultural and ecological past was reviewed to provide background context. Studies on earthquake resilience, traditional construction, and biodiversity conservation were particularly useful in understanding the region's challenges and heritage opportunities.

## **Traditional Knowledge Systems of Devaliya:**

TKS in Devaliya is not limited to one aspect of life – they span across agriculture, architecture and culture, all tailored to the community's needs and functions. These systems are deeply embedded in their daily lives, passed down from one generation to another to support and build community resilience.

### **1. Traditional Ecological Knowledge Systems**

Traditional ecological knowledge is the inherent understanding of natural resources and environmental management. It is specific to the location and the context of the given region and area. It is defined by the relationship between plants and animals, between the culture and the landscape of the geographical location. The knowledge regarding the management and maintenance of the land, water, plants, and animals as practiced by the communities. The practices of the community are dependent on these natural resources available to them in the vicinity of their settlements.

Devaliya's agricultural practices reflect a deep understanding of the region's arid climate. By adapting sukhi kheti (dry farming) in farming, the community cultivates drought – resistant crops like bajra, jeera, and til. Water conservation is the central premise, with techniques like rooftop rain water harvesting and shared step wells – creating a human nature culture relationship. Natural grain storage methods using neem leaves and cow dung ash demonstrate sustainable food preservation techniques.

### **2. Traditional Technical Knowledge Systems**

This refers to the tools and techniques used for the practice of various traditional arts and crafts. Specially designed with a lot of efforts and thought processes to carry out a task skilfully. Traditional technical knowledge systems include skills in traditional construction practices for housing, roads, and other design materials. It encompasses a wide range of traditional tools and appliances which are curated as the required functions.

Devaliya's traditional architecture, developed by the Mistri community, uses local materials like sandstone, timber and clay tiles to build climate responsive and breathable structures. Thick walls, sloped roofs with shaded courtyards are the key design features which maintain thermal comfort. These structures also exhibit earthquake resilience, highlighting a long-standing adaptation to the region's earthquake risks.

### **3. Traditional Value and Ethics Knowledge Systems**

Practices that reflect the norms and values of the community - the dos and don'ts. They refer to the acknowledgment of a sacred species or spaces which have associated values with the community's culture. They may be seasonally based practices that dictate the working system or procedure of a process. They may reflect those values that are communally significant in the area.

Devaliy's art, craft, rituals, traditions and festivals are vibrant expressions of the community's strong values and respect for the natural ecology. Little rituals like water worship connects the culture with nature. The embroidery skills of the Meghwal women showcases sustainable creativity and a collective practice of nature culture worship.

## **Key Findings:**

The built heritage of Devaliya, dictated by the traditional Mistri houses, with lime plastered stone masonry and wooden beams stand strong against the earthquake waves even today. They represent a model of sustainable building design which becomes an integral part of their culture to not only survive but thrive. The public places like the temple plazas and the community chabutras serve as nodes of spiritual, social and ecological intersections.

The oral traditions carry their migration histories, drought survival practices, and the earthquake (disaster) memories. These stories in time create a cultural identity – shaping the relationship between nature and culture. Music and dances become the medium to express collective joy and cultural continuity.

The ecological practices like planting of neem and lemon tree in the courtyards added to the biodiversity while serving medicinal and spiritual purposes. The community managed rain water harvest system showed a harmonious balance between ecology and human need.

The challenge is to ensure that the modern building materials like cement and steel do not replace the traditional methods and, in the process, undermine ecological wisdom passed down as heritage to ensure cultural continuity.

### **Results:**

The research helped in developing a comprehensive resource inventory of Devaliya's heritage – tangible and intangible, cultural and natural, helping in laying a groundwork for further conservation efforts.

1. **A Biocultural Register:** A biocultural register was designed by mapping the village's heritage - cultural assets, ecological resources, and traditional practices. This register can serve as a reference for policymakers, researchers and conservationists, providing everyone with a baseline data for promoting and managing heritage.
2. **Identifying Endangered Practices:** This study helped in identifying and documenting several art craft traditions (such as the Meghwal style of embroidery) which require urgent attention to be conserved as many of these crafts are now only practised by the elders, with the knowledge not passed down to their youngsters. Recommendation to preserve these practices through educational background and policy changes in systems.
3. **Governance Integration:** A gram panchayat led heritage management system was proposed with the emphasis of incorporating the TKS at local governance policies. These included for the gram panchayat to formally recognize traditional practices (such as construction guidelines, festivities traditions) in the development plans and to allocate resources for conserving them.
4. **Capacity Building:** Skills development based training modules were proposed for community leaders and local artisans, aiding them to gain access to markets ensuring economic viability of the traditional craft.
5. **Educational Initiatives:** Heritage programs in schools was proposed to be introduced to enable heritage awareness in younger generations. Integration of the local history, traditional art and craft, and the ecological knowledge into the curriculum and extracurricular activities will foster a sense of pride and responsibility among the youths. These engagements are intended to nurture future custodians of Devaliya's TKS.

### **Discussions:**

The study determines the symbiotic relationship between the Traditional Knowledge Systems and Devaliya's cultural identity, demonstrating how conserving and preserving these systems can help the community address modern day challenges like climate change, resource scarcity, and cultural homogenization. Gram panchayats play a crucial role in facilitating communities to participate in heritage managements and it has emerged as one of the pivotal factors for sustainable conservation in such communities where community led documentation and identification of heritage reinforces the notion of heritage as not just the tangible (built or artifact of the past), but also a form of living heritage that can be mobilized for resilience and development [2]. Just by empowering the local governance to acknowledge and integrate heritage management in their systems, the community can safeguard its Traditional Knowledge Systems against external pressures.

Furthermore, by integrating this into the mainstream development plans of the village, it offers dual benefits – safeguarding cultural heritage while promoting ecological and economic resilience. By adapting traditional architectural techniques in new housing can improve climate responsiveness and disaster resilience. In the same way, the revival of the various indigenous agricultural practices will also enhance the soil and water conservation in this time of resource depletion and varied climatic factors. It also promotes a potential for heritage-based livelihood opportunities – like heritage tourism which can be centred around Devaliya's unique traditional knowledge systems – natural and cultural. This case of Devaliya highlights how protecting the

traditional knowledge is not a backward-looking endeavour, but rather a forward-looking strategy to achieve sustainable development, which is culturally rooted, and community driven, that further aligns with the international frameworks that emphasize the integration of cultural heritage into sustainable development goals [3].

### **Conclusion:**

Devaliya's heritage offers a valuable lesson in sustainability and resilience which is deeply rooted in the traditional knowledge systems. It is crucial to document and conserve these systems to maintain the community's identity and to encourage community led development. It becomes essential to integrate these traditional knowledge systems in various sectors of education and governance to ensure its longevity and to engage youth in the preservation and continuity process of the same.

All future efforts should prioritize collaborations with the local governing body, and academic institutions for heritage management. These collaborations can provide technical expertise, funding, and a broader aspect of heritage preservation in Devaliya. Creating economic opportunities linked to heritage – such as guided village tours, art craft markets, cultural and communal festivals – will help incentivise community engagement and strengthen the community's economic and social standings.

This model for rural heritage management in Devaliya can inspire other communities to embrace their own traditional knowledge systems as tools for resilience and development. The lessons from this case highlight the universal relevance of integrating cultural heritage with contemporary sustainability frameworks, demonstrating that traditional wisdom and modern progress need not be at odds. Communities that successfully marry the two can achieve a more inclusive and robust form of development, as evidenced by Devaliya's experience [7].

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