

Cultural and Economic Aspect of Juju Dhau: A Survey Study on Societal Practices at Khwopa

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ABSTRACT

The traditional Nepalese delicacy Juju Dhau (known as “king yogurt” in Nepal Bhasa) holds a distinctive flavor and profound cultural significance, especially within the Newari communities of Bhaktapur. Traditionally crafted in clay pots that absorb moisture and insulated with rice husks, the preparation method has persisted across generations, preserving its unique taste and cultural relevance despite shifts in food preferences and advancements in dairy production technology. Beyond its culinary appeal, Juju Dhau has considerable economic value, contributing to Bhaktapur’s economy and providing employment opportunities for many locals. This delicacy has also transcended its traditional roots, gaining popularity among a broader audience and promoting Newari cultural heritage. Despite its significance, there has been limited academic exploration of Juju Dhau’s impact on both cultural identity and economic growth. This study addresses this gap by investigating how Newari cultural practices, exemplified by Juju Dhau, serve as a source of income for the local population. Employing field observations, document analysis, and interviews, the research underscores the critical role of cultural identity as both a symbol and a financial resource for the community.

Keywords: Juju Dhau, Culture, Bhaktapur, Newar

1. Introduction

Juju Dhau, a yogurt made from high-quality water buffalo milk with added cardamom powder and traditionally prepared in earthen pots, represents the rich cultural heritage of Bhaktapur, Nepal. *Juju Dhau* is characterized by minimal water and high-fat content,

unlike conventional yogurt, offering exceptional flavor and durability. The expertise in preparing *Juju Dhau* has been passed down through generations, maintaining its authenticity and connection to both nature and the history of Bhaktapur's people. As a distinctive cultural symbol, *Juju Dhau* holds Bhaktapur's key identity and heritage. This study was conducted in Bhaktapur Municipality, also known as Khwopa, a culturally significant city in Nepal.

According to UNESCO (2003), "intangible cultural heritage" encompasses practices, knowledge, skills, and expressions adopted by communities as integral to their cultural heritage. This heritage passed down over time, adapts to environmental and historical contexts, fostering a sense of identity and cultural continuity. *Juju Dhau*, as an intangible cultural asset, embodies this definition, reflecting the dynamic interaction between Bhaktapur's people and their environment.

Yogurt, or "curd," is a fermented dairy product created from milk and specific bacteria (such as *Lactobacillus bulgaricus* and *Streptococcus thermophilus*), with fermentation being one of humanity's oldest methods for preserving dairy. Fermented milk production has ancient origins, dating back roughly 10,000–15,000 years when humans began shifting from gathering to agricultural practices (Tamime & Robinson, 2007). In *Juju Dhau* production, unglazed clay pots enable moisture and air circulation, supporting optimal fermentation conditions that impart a unique flavor and cooling effect, even in warm weather, earning it the title "King of Yogurt."

Anthropologist Binodraj Sharma elaborates that "Juju" is an honorific term in the Newar language, conveying love and respect, while *Juju Dhau* translates to "the most delicious curd." Recognized as Bhaktapur's specialty, *Juju Dhau* has attracted visitors from afar, drawn by its unique taste and cultural significance. This yogurt is deeply intertwined with Bhaktapur's history, as cultural traditions suggest milk and curd were already popular by the Licchavi era (400-750 AD), gaining even greater significance under the Malla dynasty (1201-1779 AD) when curd specialists, known as "*Dhaubhadel*," emerged.

While initially reserved for special occasions, *Juju Dhau* is now available in local dairies and restaurants, showcasing its evolution from a ceremonial delicacy to an everyday treat (Warlow & Prajapati, 2008). The economic impact of such cultural products is significant, as Dhakal (2023) notes: "Traditional arts, crafts, knowledge, skills, and technology stimulate economic activity, especially during cultural festivals, enhancing the local economy and contributing to national economic cycles."

This study investigates the role of *Juju Dhau* as an intangible cultural heritage in Bhaktapur's economic development. Through field observations, document analysis, and interviews, this research seeks to understand how cultural heritage products like *Juju Dhau* contribute to economic sustainability and community identity.

Methodology

This study was carried out in Nepal's culturally significant city of Bhaktapur Municipality, originally known as Khwopa.

Data Collection Techniques

The research methodology integrated non-participant observation, document analysis, and interviews.

- I. **Non-Participant Observation:** Non-participant observation was conducted on *Juju Dhau* preparation and its role within Bhaktapur's cultural and economic framework for data reliability. Observing the yogurt-making process, interactions among the artisans, and the cultural practices surrounding *Juju Dhau* allowed for a more nuanced insight into its significance. This technique facilitated a contextual understanding without influencing the observed behaviors, providing a naturalistic view of the cultural practices.
- II. **Document Analysis:** Historical texts, municipal records, and relevant literature on Nepalese cultural products were examined to contextualize *Juju Dhau* within Bhaktapur's historical evolution and current economic impact. This approach enabled the triangulation of observational data with documented sources, enhancing the depth and reliability of the study.
- III. **Interviews:** Semi-structured interviews were carried out with local artisans, vendors, community leaders, and cultural experts to capture a wide range of perspectives on the socio-economic impact of *Juju Dhau*. The semi-structured format provides structural flexibility, allowing respondents to discuss their experiences and views while enabling the interviewer to explore emerging themes in depth. These interviews were integral to understanding the role of traditional knowledge transfer in sustaining *Juju Dhau* production and its economic implications.

Sampling Method

A purposive sampling technique was applied to select participants, specifically targeting individuals who hold in-depth knowledge of *Juju Dhau* production, distribution, and its cultural value. This sampling approach was chosen to ensure that the study engaged with knowledgeable informants, maximizing the relevance and richness of the data collected.

Data Analysis

Data collected through observations, document analysis, and interviews were systematically analyzed by comparing field findings with existing literature and cultural theories. The analytical process involved identifying recurrent themes, cross-referencing them with historical records, and interpreting their implications based on cultural identity and economic development theories. By integrating theoretical frameworks with empirical data, the study aimed to draw a comprehensive understanding of how

Juju Dhau, as an intangible cultural heritage, contributes to the local economy and culture preservation.

Result:

Symbolism and Ritual Use of Dhau in Newar Culture

In Newar culture, *dhau* (curd) is deeply embedded in rituals and symbolizes auspiciousness, purity, and prosperity. The use of *dhau* is diverse, from special offerings to daily rituals. For instance, *Dhaupatu*, two small brass or clay cups filled with curd, are placed on a *svastika* (a symbol of prosperity and good fortune) as an offering in significant religious ceremonies (Wegner, 2023). According to Binodraj Sharma these paired cups, traditionally known as *Jodhaupatu*, represent the union of Shiva and Shakti (Mahadev and Parvati), underscoring the symbolic duality of male and female energies within the Newar belief system.

Newars have various *sagans* (blessings) intended to bring good fortune, including *Dhau Sagan* (curd blessing), *Khen Sagan* (boiled egg blessing), *Kapa Sagan* (cloth blessing), *Mari Sagan* (sweets blessing), and *Si Sagan* (fruit blessing). The placement of *dhau* on the forehead, known as *Dhau Sagan*, symbolizes a wish for prosperity, akin to the shine of the moon, as *dhau* resembles the moon's shape and whiteness (Gonga, 1119 NS). This *dhau* mark is traditionally placed on the right side of the forehead for males and the left for females, signifying their unity as a single entity (Sharma, personal communication, 2018).

Dhau also holds prominence in the Newar life cycle, playing a significant role in the sixteen sacraments, as well as in daily and seasonal festivities. It is a customary part of *Ma ya Khwa Soyagu Din* (Mother's Day), *Bwa ya Khwa Soyagu Din* (Father's Day), *Kija Puja* during *Swonti Nakha* (Tihar), and even in ceremonies when a person leaves home for work or returns from abroad. During these events, *dhau* is served as a symbol of auspiciousness and good wishes (Nepali, 2015).

Ceremonial Functions and Dietary Practices

Feeding a pregnant woman with curd and beaten rice, known as *Dhau-bajee Nake Wanegu*, is a traditional Newar ceremony resembling a baby shower. This ritual, where family members from the woman's side provide *dhau-baji* (yogurt and flattened rice), is believed to nourish both mother and unborn child, ensuring the child is prepared for birth. If the mother does not receive this offering, it is believed that the child may be reluctant to enter the world (Nepali, 2015).

In musical and apprenticeship rituals, *dhau* is used symbolically. During *Pirāne pūjā*, which concludes music apprenticeships, a Guru (spiritual teacher) places *dhau-bāji* paste (a mixture of yogurt and beaten rice) on the central hole of a *Nāsahpvah* metal plate to retain the presence of the divine in the music (Wegner, 2023). Similarly, on birthdays, *dhaubāji* is distributed to neighbors as a gesture of goodwill, containing

symbolic ingredients like sesame *laddu* and radish, to represent well-being and abundance.

The Role of Dhau in Death Rituals and Taboos

Dhau is integral even in rituals after death, underscoring its spiritual significance in Newar society. During Tihar, it is served with a boiled egg as an auspicious symbol. The conclusion of any Newari feast involves a serving of *dhau*, often given as a palate cleanser, particularly after rich or spicy dishes (Shrestha, 2000). When presented with a pot of curd, guests traditionally give a small monetary offering, symbolizing good fortune.

Dhau is also subject to specific taboos, particularly following the death of a father. The Newar avoids consuming curd for a year after a father’s death, while milk is similarly restricted after a mother’s passed away. This mythological belief is rooted in the symbolic association of the father with curd and the mother with milk, as discussed by cultural anthropologist Tejesworbabu Gong (personal communication, 2020).

Historical Caste Practices and Changes

Historically, *Nay* (butchers), who were considered untouchables, two types of *dhau* were produced: *kachigu dhau* (from raw milk) and another type from boiled milk. While *kachigu dhau* was sold to other castes, the curd from boiled milk was reserved for the *Nay* caste. This practice, restricted by caste hierarchy, ceased following the end of the Malla dynasty. Today, people from all caste backgrounds freely pursue various professions, and *Nay* butchers have expanded to selling a range of goods, including fruits and vegetables (Sharma, personal communication, 2018). Thus, *dhau* in Newar culture is taken as more than a food item; it is a powerful cultural symbol intertwined with blessings, rites of passage, taboos, and historical caste practices. Its significance spans from birth to death, embodying purity, good fortune, and continuity of tradition (Lowdin, 1998).

Table 1:

The key events, their descriptions, dates, and the significance of dhau (curd) in each context.

Event/Tradition	Description	Date of Celebration	Significance of <i>Dhau</i> (Curd)
<i>Dhau-baji</i> Feeding Ceremony	Family of pregnant woman brings <i>dhau</i> (yogurt) and <i>bajee</i> (beaten rice) as a ceremonial offering a few weeks before delivery to ensure blessings for the unborn child.	Few weeks before delivery	Symbolizes nourishment for the mother and blessings for the unborn child; tradition suggests the unborn child expects to be "fed" before birth.

<i>Pirane Puja</i>	Ceremony concluding a music apprenticeship, where the Achaju or Guruju uses a paste of <i>dhau</i> and <i>baji</i> to block the <i>Nasahpva</i> flight hole in a metal plate, symbolically keeping the god from drifting away.	Upon completion of apprenticeship	<i>Dhau-bajee</i> paste signifies reverence and spiritual connection, securing blessings and divine presence in the musical art.
Birthday Celebrations	Distribution of <i>dhaubaji</i> paste (yogurt, beaten rice, sesame laddu, pea seeds, and radish) within the community to celebrate a child's birthday.	Birthday of a child	Marks community inclusiveness and neighborly bonds; <i>dhau</i> is seen as an offering of prosperity and goodwill for the child's future.
Taboo Period (Death of Father)	<i>Dhau</i> is not consumed for one year following the death of one's father.	One year after father's death	Symbolic of honor and remembrance; abstaining from <i>dhau</i> reflects the mourner's respect, as the curd represents the father's presence in family memory.
<i>Macha Ja Nakegu</i> (Rice-Feeding Ceremony)	Ceremony introducing solid food to a baby; curd and milk are avoided initially until this ritual.	Early childhood	Marks the baby's transition to solid food, symbolizing the shift from mother's milk to the next stages of growth and nourishment.

This table organizes the cultural uses and symbolic meanings of *dhau* in Newar traditions, showing its importance across different life stages and ceremonial contexts.

3.2 Nourishing and Medicinal Values of Curd

Curd holds significant cultural and health-related importance, particularly in agricultural societies. For instance, during the physically demanding labor of rice planting, the Newar community celebrates Asar 15 (mid-June in the Gregorian calendar) as a day dedicated to consuming curd. This practice reflects the belief that curd aids in digestion, especially following heavy meals. Scientifically, curd contains

beneficial bacteria that enhance digestive processes and boost immunity. Additionally, its calcium content contributes to bone health.

Research underscores the value of curd as a probiotic as live microbial feed supplements that improve the microbial balance in the host, resulting in numerous health benefits. These benefits include enhanced gut microbial balance, immune system stimulation, and reductions in blood cholesterol levels and the risks of cancer, cardiovascular diseases, diarrhea, and osteoporosis (Gautam, 2006).

Traditional beliefs further attribute curd with the ability to regulate blood pressure and lower cholesterol. In Ayurvedic medicine, curd is employed as a remedy for various conditions. Regular consumption is also thought to reduce susceptibility to colds, reinforcing its recognition as a potent natural medicine. Thus, curd is not only a dietary staple but also a source of nourishment and medicinal value in both cultural and scientific contexts.

3.3 Method of Making Curd

The method of preparing curd in Bhaktapur is unique and owes much of its success to the thorough, age-old process by which it is made. The quality of raw materials and the environment also play crucial roles.

The process begins with boiling the milk in an iron pot. To enhance the taste, various dry fruits like cardamom, nuts, and chestnuts are added. Binod Raj Sharma (personal conversation, 2018) says that Some powder of *yala* (black cardamom) or *sukumel* (yellow cardamom) in the boiling milk according to the need. People may mix *yala* and *sukumel*. Newar culture *sukumel* is taken as male and *yala* is taken as female. Curd with the powder of *sukumel* is harder in texture while that added with *yala* is softer in texture.

Due to the scarcity of firewood, gas is now used for boiling. Boiling the milk increases its thickness and improves its flavor, resulting in a richer yogurt. The earthen pot is thoroughly cleaned, warmed over a fire, and placed on a mattress. The boiled milk is typically boiled two or three times. The boiled milk is poured in the clay pots and kept for cooling down. A spoonful of fermented milk or curd is then added in the lukewarm milk (about 42 degree Celsius) which act as a starter culture. The milk pots are covered with rice-husk and cloths to maintain warmth for three to four hours, allowing the culture to proceed. Speaking with practitioners who have successfully managed this trade for nearly a century, it is evident that their success is based on experience rather than following a strict recipe. For example, they use their judgment to gauge the optimal temperature for making curd.

3.4 Traditional and Modern Practices of Curd Production in Newar Culture

Omprasad *Dhaubadel* (personal conversation, 2018) provides insights into the historical and cultural significance of curd production among the *Dhaubadel* caste.

Historically, the *Dhaubadel* caste was tasked with preparing curd for the Malla kings (1201–1779 AD) and their courtiers. Over time, curd production expanded beyond this group, with castes such as Timila, Pakwan, Sainju, Pradhananga, Hada, and Kayastha also engaging in this craft. Today, curd-making is no longer confined to specific castes; it has evolved into a family business for many, and there are no social restrictions on who can produce or consume curd. *Dhaubadel* further noted that many curd-making businesses trace their origins back at least three generations, emphasizing the cultural heritage embedded in this practice.

In Newar culture, curd holds a special place, consumed primarily during feasts, festivals, and significant occasions rather than as a daily staple. The economic growth and increasing purchasing power of people have made curd more accessible, allowing it to be consumed beyond traditional contexts. The iconic "*Juju Dhau*" (King's Curd), in particular, has gained widespread popularity. Its appeal has grown with the rising influx of local and foreign tourists, as well as the increasing population of immigrants in the Kathmandu Valley, contributing to heightened demand.

Field observations indicate that curd-making businesses are widely dispersed across urban areas, particularly in the Kathmandu Valley. Many curd producers also manage their distribution, ensuring freshness and quality. The increasing demand for curd has not only sustained traditional production practices but has also allowed the business to expand, meeting the growing needs of both local residents and visitors.

Curd Production as an Economic Activity in Bhaktapur

Curd production, deeply intertwined with Bhaktapur's cultural and economic fabric, supports self-employment and contributes significantly to local livelihoods. Seasonal festivals and ceremonies create opportunities for enhanced income, while innovations such as milk-boiling machines offer prospects for greater efficiency and profitability. This traditional craft not only preserves cultural heritage but also fosters economic sustainability for many families in Bhaktapur.

According to the *Juju Dhau* Entrepreneurs' Association, Bhaktapur hosts 62 registered entrepreneurs engaged in this traditional craft. Each entrepreneur typically involves an average of three family members, suggesting that at least 165 individuals are directly self-employed in this industry. Furthermore, numerous unregistered curd makers also contribute to the local economy, though their exact numbers remain undocumented.

The scale of production varies among curd makers. Of the 62 entrepreneurs, ten families are categorized as large-scale producers, collectively generating approximately 400–500 liters of curd daily. The remaining producers average between 50–100 liters each, resulting in a total daily output of around 8,000 liters of curd in Bhaktapur. This translates to a daily working capital of approximately Rs. 15 lakhs (\$11,200), underscoring the economic importance of curd production in the region.

Case Study: Sagar Kusatha

Sagar Kusatha, a 48-year-old curd entrepreneur, operates his business alongside his wife, two sons, and a hired helper. He processes 150 liters of raw milk daily, yielding approximately 112 liters of curd after accounting for a 25% loss due to boiling for fermentation.

Sagar Kusatha's Curd Business Balance Sheet

Monthly Income Statement(In Rs.)

S.N.	Particular	Amount
1.	Sales (28000*30)	840000
2.	COGS (21225*30)	(636750)
3.	GP	0
4.	Depreciation	0
5.	Administrative cost	0
6.	Earning before interest and tax	203250
7.	Interest	0
8.	Earning before tax	203250
9.	Tax	0
10.	Net after tax(monthly)	203250
11.	Annual profit(203250*12)	2,439,000

This balance sheet reflects a sustainable and profitable operation with no current liabilities and a steady yearly saving of Rs. 2,439,000.

Seasonal Demand and Economic Potential

The demand for *Juju Dhau* peaks during local festivals such as *Mohani* (Dashain) in September, *Swonti* (Tihar) in October, and *Biska* in May, as well as during ceremonial occasions like weddings and *Bratabanda* (a rite of passage for boys). These periods provide opportunities for increased earnings, with demand often exceeding supply. Starting a curd-making venture requires an initial investment of Rs. 2,00,000 for essential equipment, such as gas ovens, cylinders, boiling vessels, and a refrigerator. Alternatively, a milk-boiling machine costing Rs. 1,60,000 can streamline production and reduce long-term operational costs.

Challenges during Peak Demand

During peak seasons, entrepreneurs like Ram Krishna Dumaru work tirelessly to meet the heightened demand. Ram Krishna, along with his family of six, often produces and sells 100–150 pots of curd daily, compared to his regular output of 10–15 pots. Customers frequently place advance orders during festivals, fearing shortages. Similarly, Chandra Gopal Sainju, a 52-year-old entrepreneur, processes 80 liters of

milk daily to produce 60 liters of curd, earning Rs. 3,000–4,000 daily under normal conditions. During festivals, his earnings triples or quadruple, highlighting the seasonal profitability of this business.

Sustainability and Profitability

The profit margin for independent curd makers ranges from 20–25%. Despite fluctuations in demand, curd production remains a lucrative venture for many families in Bhaktapur. Entrepreneurs like 40-year-old Bimal Duwal, who recently joined the industry while maintaining his family's agricultural tradition, manage to earn Rs. 1,400 daily by processing 40 liters of milk into 30 liters of curd, which is sold directly to consumers.

Table 2: Summary of Curd Business

Curd as an Economic Source in Bhaktapur

Aspect	Details
Number of Entrepreneurs	62 registered curd makers in Bhaktapur (source: <i>Juju Dhau</i> Entrepreneurs' Association).
Employment	At least 165 individuals directly involved (assuming 3 family members per entrepreneur).
Production Scale	- 10 large producers: 400-500 liters/day.
- Remaining producers: 50-100 liters/day.	
- Total: ~8,000 liters/day.	
Daily Capital Handling	Rs. 15 lakhs.
Sagar Kusatha (Male, 48)	- Processes 150 liters of milk/day.
- Daily expenses: Rs. 28,000.	
- Daily profit: Rs. 6,675.	
- Monthly savings: Rs. 1 lakh.	
Festivals and Demand	- Festivals like Dashain, Tihar, and Biska see demand rise 4 times.
- Advance orders common to avoid shortages.	
Initial Investment	- Rs. 2 lakhs for gas ovens, cylinders, vessels, refrigerator.
- Rs. 1.6 lakhs for a milk-boiling machine.	
Ram Krishna Dumar	- Family of six works round the clock during festivals.
- Sells 100-150 pots/day (usual: 10-15 pots).	
Chandra Gopal Sainju (Male, 52)	- Processes 80 liters milk/day, yielding 60 liters curd.
- Normal earnings: Rs. 3,000-4,000/day.	
- Festival income: 3-4 times higher.	
Profit Margins	20-25% for independent curd makers.
Bimal Duwal (Male, 40)	- Produces 30 liters of curd daily (from 40 liters of milk).
- Daily income: Rs. 1,400.	
Curd's Cultural Relevance	High demand during weddings, feasts, and festivals.
Integral to Bhaktapur's economy and cultural identity.	

Source: Author's computation

Tourism and Curd: A Cultural and Economic Nexus in Bhaktapur

The symbiotic relationship between tourism and *Juju Dhau* production in Bhaktapur underscores the significance of local heritage in driving economic and cultural growth. By blending traditional culinary practices with modern innovations, Bhaktapur has successfully positioned *Juju Dhau* as a cornerstone of its tourism identity. This interplay not only supports local livelihoods but also reinforces the city's cultural legacy, ensuring that Bhaktapur remains a vibrant and unique destination for visitors worldwide.

Cultural Significance of *Juju Dhau* in Tourism

Intangible heritage elements, such as symbols, meanings, and practices, contribute significantly to the emotional and sentimental attachment of visitors to a destination (Petronela, 2016). The unique method of making *Juju Dhau*, passed down through generations, is an intangible heritage that enhances the cultural identity of Bhaktapur (UNESCO, 2003). Tourists visiting Bhaktapur often engage with this culinary tradition, viewing it as an essential part of the local experience.

Beyond its role as a delicacy, *Juju Dhau* carries cultural significance. It is customary for visitors to take it as a gift for friends and relatives, symbolizing their connection to Bhaktapur. Additionally, the yogurt is commonly offered as a welcoming gesture to tourists, embedding it into the social fabric of hospitality in the city (Shahi, 2012). Such practices align with the broader trend of culinary tourism, where local food serves as both a cultural expression and a tourist attraction (Richards, 2012).

Economic Contributions of *Juju Dhau*

The integration of local food into tourism not only enriches the visitor experience but also fosters economic growth. According to Shahi (2012), utilizing local food products can stimulate the agricultural sector, create employment, and contribute to overall revenue generation. In Bhaktapur, *Juju Dhau* has become a staple product in restaurants, tea shops, and food vendors, particularly in tourist hubs such as Siddhapukhu, Chamhasing, and Durbar Square.

Approximately 70% of Indian tourists visiting Bhaktapur consume *Juju Dhau*, with Chinese tourists also showing a strong preference, referring to it affectionately as "Swanai" (Bhele, 2023). Its popularity has made it a must-have dessert, with tourists frequently ending their meals with this iconic yogurt. This demand has created a steady market for local producers and enhanced Bhaktapur's culinary tourism appeal.

Innovation and Market Expansion

Recent innovations in the presentation and packaging of *Juju Dhau* have significantly boosted its marketability. Products such as *Cup Dhau*, served in tea-glass-sized clay pots, and *Matka Dhau*, made in sturdy pitcher-shaped clay pots,

cater to modern consumer preferences for portability and convenience. *Cup Dhau*, in particular, has gained immense popularity, with daily demand reaching 4,000 to 5,000 units and doubling during holidays. These innovations not only ensure the product's cultural relevance but also expand its reach, making it accessible and appealing to a broader audience.

The design of *Matka Dhau* further enhances its usability, with its durability ensuring safe transportation and encouraging reuse. Such adaptations bridge traditional practices with contemporary consumer needs, solidifying *Juju Dhau*'s position as both a cultural artifact and a commercially viable product (Shahi, 2012).

Challenges

The production and promotion of *Juju Dhau*, a significant cultural and economic artifact of Bhaktapur, face numerous challenges, many of which threaten its sustainability and heritage value. These issues span from resource constraints and quality concerns to socio-economic and technological barriers, underscoring the need for strategic interventions to preserve and promote this tradition.

Quality and Resource Constraints

Local entrepreneurs face persistent difficulties in sourcing high-quality raw materials essential for producing premium-grade curd. The scarcity of high-quality milk is a major concern, often forcing producers to use powdered milk to maintain production volumes. While powdered milk ensures adequate milk concentration for curd making, its use compromises the traditional authenticity of *Juju Dhau*. In some instances, additives like caustic soda are used to prevent bacterial growth, further impacting the quality and health standards of the product (Maharjan, 2018).

Moreover, the limited availability of suitable clay for crafting traditional pots, known as *hakucha* and *siugu* cha, has become a pressing issue. Urbanization has reduced access to local clay sources, forcing artisans to procure clay from distant locations like Sankhu, Kathmandu. As Krishna Prasad Prajapati, a seasoned potter, explains, "Places suitable for collecting clay are now full of buildings. We are compelled to buy clay from Sankhu, which increases transportation and production costs." The rising expenses associated with clay procurement threaten the affordability of the traditional clay pots that are integral to *Juju Dhau*'s cultural identity.

Socio-Economic Barriers

The curd-making profession, deeply rooted in Bhaktapur's heritage, is increasingly losing its appeal among the younger generation. Cultural perceptions prioritize white-collar jobs over manual labor, perpetuating a stigma around physical, labor-intensive work like curd production. As a result, fewer individuals are willing to engage in this demanding profession, which involves boiling milk in iron vessels over

smoky firewood, working in confined spaces, and enduring physical exhaustion during peak seasons and festivals.

Despite the potential for starting curd-making ventures with minimal investment, traditional practices remain labor-intensive, deterring younger generations from embracing this craft. Ramsundar Bhele, a local entrepreneur, notes that modernizing the curd-making process through innovative technologies could mitigate these challenges and attract young talent. However, the adoption of such technologies requires financial investment and training, which remain largely inaccessible to small-scale producers.

Technological and Market Competition

Traditional curd producers in Bhaktapur struggle with the absence of modern preservation and storage technologies. Unlike commercial dairy products, which are packaged and preserved for mass distribution, locally made *Juju Dhau* relies on natural methods that limit its shelf life. This restricts its market reach and poses challenges in maintaining product quality during transportation.

Furthermore, the growing availability of commercial dairy products, which are marketed as hygienic and affordable, intensifies competition. While these products lack the artisanal flavor and authenticity of *Juju Dhau*, their convenience and accessibility appeal to a broader consumer base, undermining the market share of traditional curd makers.

Labor-Intensive Production and Festival Demands

The process of making *Juju Dhau* is inherently labor-intensive, involving tasks such as milk collection, preparation of firewood, and the manual boiling and fermentation of milk. During festivals and peak tourist seasons, producers often work tirelessly, sacrificing rest to meet the surge in demand. Such working conditions exacerbate physical fatigue and reduce the attractiveness of the profession for potential newcomers. The lack of modern machinery to streamline these processes compounds the difficulty of sustaining production during high-demand periods.

Implications for Sustainability

These challenges collectively highlight the precarious position of *Juju Dhau* production in Bhaktapur. The rising costs of production, combined with quality compromises and socio-economic barriers, threaten the long-term viability of this traditional craft. Without targeted government intervention and community-driven initiatives, the preservation of *Juju Dhau* as an intangible heritage remains uncertain. As Maharjan (2018) argues, government support is crucial to empower local communities, enabling them to sustain their traditional practices while adapting to modern demands.

To address these challenges, strategic measures are required, including

investment in modern preservation technologies, subsidies for raw materials, and educational campaigns to elevate the societal perception of curd-making. By addressing these systemic issues, Bhaktapur can ensure that *Juju Dhau* remains a vibrant symbol of its cultural heritage, contributing to the local economy and attracting tourists for generations to come.

Conclusion

We studied *Juju Dhau*, the finest food products in human history, in aspects of culture and economy. The Newar community, renowned for its rich cultural heritage, celebrates numerous festivals each month where curd plays an integral role. Feasts and festivals among the Newars are incomplete without the presence of curd, which holds significant cultural and ceremonial importance. Regardless of economic status, every family partakes in curd consumption during special occasions, contributing to the cultural fabric and economic vitality of the community.

Traditionally, the production of *Juju Dhau* was limited to special events, but today, its availability has expanded to local shops and restaurants, catering to locals and tourists alike. This increased accessibility has boosted its popularity manifold, leading to higher consumption rates among native residents and international visitors in Bhaktapur.

Issues such as the scarcity of good quality milk, the disinterest of the younger generation in pursuing traditional professions due to preferences for office-based jobs, and the dwindling availability of suitable clay for making pots due to urbanization pose significant hurdles. Bhaktapur is facing the pressure of urbanization and globalizations and development. However, there is an immense integration of heritage into social and cultural life.

Future perspective

The study highlights several future perspectives for preserving the cultural and economic significance of *Juju Dhau* in Bhaktapur. Future research could focus on integrating modern technologies into the production process to enhance quality, streamline operations, and extend shelf life while maintaining traditional authenticity. Exploring the role of local government policies and community-led initiatives could address critical challenges such as resource scarcity, urbanization, and market competition. Additionally, innovative approaches to engage younger generations, such as skill development programs and campaigns to de-stigmatize manual labor, could revitalize the profession. Expanding *Juju Dhau*'s market reach through improved branding, packaging innovations, and export opportunities offers another avenue for growth. Finally, studies on sustainable practices, particularly in raw material procurement and waste management, could mitigate environmental impacts and ensure long-term viability. These efforts collectively have the potential to preserve *Juju*

Dhau as an intangible heritage and promote its recognition on a global scale.

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