



Livelihood Transformation and Sustainable Development of Local Communities at the Huong Son Historic and Scenic Complex, Hanoi, Vietnam

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ABSTRACT: The Huong Son Historic and Scenic Complex, widely known as Chua Huong (Perfume Pagoda), is both a major pilgrimage-tourism destination and the living space of a resident community whose livelihoods have long depended on agriculture, forest-related activities, local products and small-scale household production. Rapid tourism growth has restructured this livelihood system, most visibly through the expansion of boat-rowing and related visitor services along the Yen Stream. This study examines whether that transition can be regarded as sustainable when assessed beyond income growth alone. It applies the Sustainable Livelihoods Framework of Chambers and Conway (1992), Scoones (1998) and DFID (1999), complemented by perspectives on heritage tourism, community participation and cultural capital. The study uses a qualitative design combining document analysis, comparative analysis and non-participant field observation. Findings indicate that tourism has strengthened financial, physical and selected forms of human capital by generating service income, infrastructure and new skills. At the same time, it has increased exposure to seasonal shocks, encouraged dependence on a narrow set of tourism activities, placed indirect pressure on the Yen Stream and limestone-karst landscape, and created risks of erosion of place-specific agricultural and ecological knowledge. The transition is therefore better understood as a reconfiguration of livelihood capitals involving gains, losses and trade-offs rather than as a linear shift from an inferior livelihood system to a superior one. The study proposes a complementary livelihood strategy that combines tourism with local agriculture and specialty products, safeguards indigenous knowledge, manages environmental carrying capacity, strengthens substantive community participation and introduces monitoring indicators that connect livelihood outcomes with heritage conservation. The Huong Son case illustrates how sustainable-livelihood analysis can be adapted to inhabited heritage landscapes where natural, cultural and economic resources are closely intertwined.

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I. INTRODUCTION

Heritage landscapes that remain inhabited present a distinctive development problem. Their historical, spiritual and environmental values require protection, yet the same values attract visitors, generate income and reshape the livelihoods of people who live in and around the heritage area. International sustainable-development thinking increasingly treats culture as an enabling resource for development rather than as a sector detached from economic and social policy. The Hangzhou Declaration, for example, places culture at the centre of sustainable development and stresses the need to integrate cultural considerations into development strategies (UNESCO, 2013). For heritage management, this creates a dual responsibility: conserving the integrity and authenticity of heritage while ensuring that the benefits and costs associated with tourism are distributed in ways that sustain the communities most directly

connected with the site. Recent Vietnam-based evidence likewise indicates that tourism-development dimensions can shape the effectiveness of heritage conservation, reinforcing the need to evaluate development and conservation as interdependent rather than separate policy objectives (Hung & Tuyen, 2026).

The Huong Son Historic and Scenic Complex in Hanoi, popularly known as Chua Huong or Perfume Pagoda, provides a particularly revealing case. The complex combines limestone-karst scenery, waterways, caves, temples, pagodas and Buddhist worship spaces and was ranked a Special National Relic under Decision No. 2082/QĐ-TTg of 25 December 2017 (Prime Minister of Vietnam, 2017). It is also one of Vietnam's major pilgrimage destinations. According to the sources synthesized in this study, the complex received more than four million visits during 2020-2025, while the first five days of the 2026 festival season recorded 135,895 visitors, 138% more than the same period of the previous year (Nhan Dan, 2025; Hanoi Department of Culture and Sports, 2026). The concentration of demand within a short spring-festival window makes Huong Son not only an important tourism economy but also a highly seasonal livelihood environment.

The resident community has historically relied on wet-rice cultivation, apricot cultivation, non-timber forest products and small-scale household production. Tourism growth has altered that structure. The most visible change is the expansion of hand-rowed passenger transport on the Yen Stream, with close to 4,000 boats reported during peak periods (Dai Dinh, 2026). Around that activity, a wider tourism-service ecosystem has developed, including food and beverage services, accommodation, retail, parking, guiding, ticketing and newer technology-related functions. This change has increased opportunities for cash income and service employment, but it has also increased livelihood dependence on visitor flows and created new forms of pressure on the environment and local knowledge systems.

Existing sustainable-livelihood research warns against evaluating such change only through higher income. Chambers and Conway (1992), Scoones (1998) and DFID (1999) conceptualize livelihood sustainability in terms of the capabilities, assets, strategies and resilience that allow households and communities to cope with shocks while maintaining the resource base on which future livelihoods depend. Tourism research similarly suggests that tourism is often most resilient when it complements rather than displaces other livelihood strategies (Tao & Wall, 2009). In heritage settings, this question is further complicated because the resource base that supports tourism is itself culturally and environmentally sensitive. Natural capital, cultural capital and community participation therefore become part of the livelihood question rather than external concerns.

Despite the policy importance of Huong Son, the available discussion has tended to focus on festival organization, visitor management, heritage conservation or tourism development as separate issues. Less attention has been paid to the mechanism through which tourism reorganizes different forms of livelihood capital within the resident community and to the trade-offs produced by that reorganization. A second gap concerns sustainability assessment: rising tourism income can coexist with greater seasonality, environmental vulnerability or loss of indigenous knowledge. A third gap concerns governance: increasingly sophisticated visitor-management technologies do not automatically ensure substantive community participation in decisions that affect livelihood access and benefit distribution.

Accordingly, this study addresses three research questions: (RQ1) how has tourism development reconfigured the livelihood system of the Huong Son resident community? (RQ2) What gains, losses and trade-offs are visible when traditional and tourism-based livelihoods are compared across the five livelihood capitals? (RQ3) What policy and governance conditions are required for livelihood development to remain compatible with heritage conservation and environmental sustainability? The study contributes by applying the five-capital framework to an inhabited Special National Relic where natural and cultural resources are closely intertwined, and by translating that analysis into a set of practical livelihood, environmental and governance recommendations. The objective is not to estimate causal effects at household level, but to clarify the structure of livelihood transformation and identify conditions under which tourism can function as a complementary rather than substitutive development strategy.

II. THEORETICAL BACKGROUND AND RESEARCH METHODS

2.1. Sustainable livelihoods and the five-capital framework

Chambers and Conway (1992) define a livelihood as the capabilities, assets and activities required for a means of living and describe sustainability in terms of the ability to cope with and recover from stresses and shocks while maintaining or enhancing capabilities and assets without undermining the natural resource base. This definition is especially relevant to Huong Son because the assets that support resident livelihoods - land, water, forest, landscape, mobility routes and local knowledge - also support the cultural and tourism value of the heritage landscape.

Scoones (1998) operationalizes livelihood analysis through five interrelated forms of capital. Natural capital includes land, water, forest, biodiversity and landscape; human capital includes skills, knowledge, labour capacity and health; social capital includes networks, organizations and relations of trust; physical capital includes infrastructure, equipment and productive assets; and financial capital includes income, savings, credit and other monetary resources. DFID (1999) situates these assets within a broader system consisting of vulnerability context, transforming structures and processes, livelihood strategies and livelihood outcomes. The framework is therefore useful not only for describing what resources households possess, but also for examining how policy, markets, shocks and institutions alter access to those resources.

For the Huong Son case, the analytical value of the framework lies in its ability to expose trade-offs. Tourism may strengthen financial capital by increasing cash income and physical capital through investment in boats, landing areas and service facilities. At the same time, it may place indirect pressure on natural capital, change the character of social relations, and substitute tourism-service skills for older forms of ecological and agricultural knowledge. A livelihood transition should therefore be considered sustainable only if gains in some capitals do not systematically erode the capitals necessary for resilience, heritage integrity and intergenerational continuity.

2.2. Heritage tourism, community livelihoods and cultural capital

The relationship between tourism and community livelihoods is not adequately captured by the assumption that more visitors automatically produce more sustainable development. Tao and Wall (2009) argue that tourism is most useful as a sustainable livelihood strategy when it is integrated into a diversified household portfolio rather than allowed to displace established livelihood activities. This logic is directly relevant to Huong Son, where tourism income is attractive but strongly seasonal and exposed to disruptions in pilgrim flows, public-health conditions, weather and management policy. Evidence from Vietnam's craft-based tourism also suggests that locally embedded cultural production can support distinctive tourism when traditional knowledge, community participation and market development are connected rather than separated (Pham et al., 2025).

Sustainable-tourism guidance developed by UNEP and WTO (2005) emphasizes the simultaneous pursuit of economic, socio-cultural and environmental objectives. In heritage destinations, the requirement is even more demanding because tourism depends on the preservation of the heritage resource itself. Throsby (2001) conceptualizes cultural capital as an asset whose value must be sustained over time. From this perspective, the local knowledge, ritual landscape, hand-rowing traditions, agricultural specialties and place-specific ecological practices of Huong Son are not peripheral to tourism; they are part of the resource system that gives the destination its distinctiveness. Recent studies in Vietnam further show that high-quality heritage interpretation can encourage responsible tourist behaviour (Ha et al., 2026), while tourism-development conditions are closely connected with conservation effectiveness in heritage settings (Hung & Tuyen, 2026).

Community participation is equally important. Jamal and Getz (1995) show that tourism planning in community settings depends on collaboration among public authorities, enterprises, residents and destination-management actors. Participation is substantive when local people can influence planning, implementation and benefit distribution, not merely when they supply labour. Evidence from heritage-tourism contexts also indicates that economic benefits may be accompanied by higher living costs, restricted resource access and unequal benefit distribution (Liu et al., 2022). The pro-poor tourism perspective therefore asks who gains, through which mechanisms and with what net effects, rather than treating aggregate tourism growth as a sufficient development outcome (Ashley et al., 2001). Heritage-communication research in Hanoi similarly demonstrates the value of structured local-community feedback for evaluating and improving heritage communication, which supports treating residents as active participants in destination governance rather than only service providers (Phuong & Lam, 2025).

The Trang An Landscape Complex offers a useful Vietnamese comparison because both destinations combine limestone-karst landscapes, waterways and boat-based visitor movement. The source used in the present study reports approximately 4,580 people engaged in rowing services at Trang An, with substantial seasonal income variation and declining agricultural land in several core-zone communes (Bui Quang Ninh, 2021). The comparison does not imply that Huong Son and Trang An are identical; rather, it provides a contextual reference for examining how tourism affects financial and physical capital while creating different forms of pressure on natural and social capital.

2.3. Analytical framework

The study combines the Sustainable Livelihoods Framework with heritage-tourism and cultural-capital perspectives through three analytical layers. First, traditional and tourism-based livelihoods are compared across natural, human, social, physical and financial capital. Second, those capitals are interpreted within a vulnerability context characterized by strong seasonality, exposure to external shocks and the regulatory requirements of a Special National Relic. Third, livelihood outcomes are assessed against three sustainability conditions: economic resilience, environmental-landscape integrity and socio-cultural continuity. This structure makes it possible to distinguish between livelihood growth and livelihood sustainability and to identify where gains in one capital create risks in another.

2.4. Research design, materials and analytical procedure

This article uses a qualitative case-study design. The primary method is document analysis, supported by comparative analysis and non-participant field observation. The documentary corpus contains four groups of material: foundational scholarship on sustainable livelihoods, heritage tourism, community participation and sustainable development; Vietnamese legal and policy documents relevant to cultural heritage and Huong Son; official information and statistical reports from competent state agencies; and mainstream reporting that documents local livelihood practices, tourism operations and festival management. The legal and policy materials include the 2024 Law on Cultural Heritage and Decision No. 2082/QĐ-TTg on the ranking of Special National Relics (National Assembly of Vietnam, 2024; Prime Minister of Vietnam, 2017).

Comparative analysis is applied in two ways. Internally, the study compares the characteristics of traditional livelihoods - agriculture, apricot cultivation, forest-related activities and household production - with tourism-based livelihoods such as boat-rowing, accommodation, food services, retail and tourism-support functions. Both groups are assessed using the same five-capital structure. Externally, selected evidence from Trang An is used as a contextual comparison to distinguish general patterns of tourism-driven livelihood transition from characteristics that are more specific to Huong Son.

Non-participant field observation and spatial description are used to ground the documentary analysis in the physical organization of the destination, especially the Yen Stream waterway, boat landings and the sequence of pilgrimage and sightseeing routes. Observation is used descriptively rather than as a standalone ethnographic dataset. The analytical procedure proceeds from source classification to coding by livelihood capital, identification of gains and vulnerabilities, comparison between livelihood groups, and synthesis into sustainability and governance implications.

The study does not include a large-scale random household survey and does not estimate household-level causal effects. Income figures and workforce numbers drawn from secondary sources should therefore be interpreted as indicative evidence of scale rather than as precise estimates of the distribution of income across all resident households. This limitation is incorporated into the interpretation of the findings and motivates the future research directions proposed in Section 5.3.

III. RESEARCH FINDINGS

3.1. Study setting and the livelihood context of Huong Son

The Huong Son Historic and Scenic Complex is located in present-day Huong Son commune, Hanoi. According to the administrative information used in this study, the commune was formed through the merger of former local units and has a natural area of approximately 69.11 km² and a population of 52,634 (Hanoi Online, 2025). The heritage landscape combines limestone-karst formations, streams, caves and a long-established system of Buddhist and devotional sites. Its spatial organization gives the Yen Stream a particularly important role: visitors generally depend on the waterway as the principal access corridor before continuing to higher sites by road, walking route or cable car.

This access pattern has direct livelihood consequences. Boat transport is not a peripheral visitor service but a structurally embedded element in the tourism value chain. The reported scale of close to 4,000 boats during peak periods means that rowing connects a large number of resident households directly to visitor demand (Dai Dinh, 2026). At the same time, the visitor economy remains highly seasonal. The 2026 festival ran from 18 February to 11 May, and recent management measures included electronic ticketing, QR authentication, AI-supported surveillance, drone monitoring and mandatory life jackets (Hanoi Department of Culture and Sports, 2026). These changes improve safety and operational control but do not remove the basic livelihood problem created by seasonal concentration.

Local development policy increasingly positions tourism and services as the economic pillar of Huong Son, with an orientation toward a service share above 70% and the expansion of tourism products into the May-December period (Nhan Dan, 2025; Ministry of Culture, Sports and Tourism, 2026). The policy objective is therefore not only to increase visitor volume but also to extend the tourism season. For livelihood analysis, this is important because year-round demand would affect financial stability, labour allocation, skill requirements and pressure on the heritage environment differently from a short festival-based economy.

3.2. Traditional livelihood system and place-based assets

Before tourism became the dominant growth sector, resident livelihoods were organized mainly around small-scale agro-forestry activities. Wet-rice cultivation, ponds and streams, limestone hills and local fruit cultivation formed the natural-capital base. The Chua Huong apricot is especially significant because it combines agricultural and symbolic value. The source synthesized in this study reports annual output of approximately 320-350 tonnes, with prices varying according to grade and sales channel (Thuong Truong, n.d.). Its livelihood value therefore extends beyond farm income: it is also a place-linked product associated with the identity and visitor image of Huong Son.

Traditional human capital consists of knowledge accumulated through long-term adaptation to local ecological conditions, including cultivation techniques, care of apricot trees and experience with non-timber forest products. Such knowledge is slow to accumulate and difficult to replace once intergenerational transmission weakens. This is an important distinction from many tourism-service skills, which can be acquired through shorter training cycles. The transition toward tourism therefore changes not only occupations but also the composition and time horizon of human capital. This logic is consistent with Vietnamese evidence showing that traditional production knowledge can become a differentiated tourism resource when cultural value and livelihood value are developed together (Pham et al., 2025).

Traditional social capital is expressed through village relations, mutual assistance and community conventions connected with shared landscapes and religious spaces. Physical capital is comparatively modest, centred on household-scale tools and production assets, while financial capital is characterized by lower cash income and slower accumulation. The traditional system is therefore economically constrained but diversified across several locally embedded activities. Its resilience derives less from high income than from the continued availability of land, ecological knowledge and multiple forms of household production.

3.3. Tourism-driven livelihood transformation

Tourism has reorganized the livelihood system most clearly through the transformation of boat-rowing from a local transport practice into a specialized visitor service. Because water access is embedded in the visitor journey, rowing has become a major source of tourism income for residents. At the same time, the hand-rowed form has acquired cultural significance of its own, illustrating how a livelihood activity can simultaneously function as service work, mobility infrastructure and a component of destination identity.

Around boat-rowing, a broader tourism-service economy has developed. Accommodation, food and beverage services, sale of ritual goods and local products, parking, transport support and guiding generate additional income opportunities. More recent festival-management systems have created new tasks involving electronic ticketing, digital monitoring and technology-supported security. Tourism has therefore expanded both financial capital and selected forms of human capital by rewarding service, communication and digital skills that were less important in the traditional livelihood system.

The transition, however, is not evenly beneficial across time. Tourism earnings are concentrated around the festival season, while traditional agricultural activities follow different seasonal cycles. The stronger the shift from mixed livelihood portfolios toward tourism-only dependence, the more household income becomes exposed to visitor fluctuations. The policy intention to maintain organic agriculture alongside tourism indicates recognition of this risk, but the economic attractiveness of peak-season tourism continues to create incentives for younger workers to leave agricultural activities. The resulting tension is between short-term income maximization and long-term livelihood diversification.

3.4. Comparative analysis across the five livelihood capitals

Livelihood capital	Traditional livelihoods	Tourism-based livelihoods
Natural capital	Land, water, apricot orchards and forest-related resources are directly used for production; extraction is small-scale but livelihoods depend strongly on ecological quality.	Tourism reduces some direct dependence on extractive activities, but mass visitation creates indirect pressure through waste, noise, water-quality risks and stress on the Yen Stream and limestone-karst landscape.
Human capital	Place-specific agricultural and ecological knowledge accumulated over generations; strong local specificity but vulnerable to loss if transmission declines.	Service, communication and digital-operation skills expand; skills may be acquired more quickly but can become narrowly tied to the festival economy.
Social capital	Village institutions, mutual assistance and shared conventions governing common spaces and resources.	Rowing groups, service networks and cooperatives develop, but market competition may increasingly shape relations among households and service groups.
Physical capital	Household-scale agricultural tools and modest production assets with relatively low capital requirements.	Boats, landing areas, accommodation, service facilities, transport infrastructure and digital management systems require larger investment and maintenance.
Financial capital	Lower cash income and slower accumulation, but income sources are linked to several activities and agricultural cycles.	Higher peak-season income potential and stronger cash-flow generation, but substantial seasonality and greater exposure to visitor shocks.

Table 1. Comparison of traditional and tourism-based livelihoods across the five livelihood capitals. Source: synthesized by the authors from the study evidence.

Table 1 shows that tourism does not uniformly increase every form of livelihood capital. The clearest gains occur in financial and physical capital and, to a lesser extent, in human capital associated with services and technology. The strongest uncertainties concern natural and social capital, where tourism creates indirect environmental pressure and changes the structure of community interaction. The transition is therefore a reallocation of assets and risks rather than a simple replacement of low-value work with high-value work.

The comparison with Trang An reinforces this interpretation while also showing why local specificity matters. At Trang An, part of the natural-capital loss reported in the comparison case was visible through declining agricultural land area (Bui Quang Ninh, 2021). At Huong Son, the principal natural-capital risks identified in the available evidence are more diffuse, particularly pressure on the Yen Stream and the broader limestone-karst landscape from high visitor concentration. Such impacts are harder to monitor because no single land-use indicator captures their progression. This increases the importance of water-quality, waste, visitor-density and boat-operation indicators in destination management.

IV. DISCUSSION

4.1. Livelihood growth is not equivalent to livelihood sustainability

The main analytical finding is that the tourism transition at Huong Son is double-edged. Tourism creates opportunities that the traditional livelihood system could not provide at the same scale: higher cash income, greater investment in service infrastructure and access to new skills. Yet the Sustainable Livelihoods Framework requires a broader test. A livelihood system is sustainable when it can withstand shocks, maintain the assets on which future livelihood options depend and avoid undermining the resource base. On that basis, tourism-led growth at Huong Son should be understood as conditionally beneficial rather than inherently sustainable.

This finding supports Tao and Wall's (2009) argument that tourism is more resilient when it complements a diversified livelihood portfolio. The key distinction is between diversification and substitution. If tourism income supplements agriculture, specialty products and other activities, it can reduce vulnerability by widening income sources. If tourism becomes the dominant or exclusive source of household cash income, however, the community becomes more exposed to fluctuations in visitor demand and policy. Sustainable policy should therefore seek a portfolio effect rather than an occupational monoculture.

4.2. Seasonality and dependency as the central financial vulnerability

Huong Son's early-spring pilgrimage cycle creates a structural form of seasonality. High earnings can be generated over a relatively short period, but the same concentration increases sensitivity to weather events, public-health emergencies, changes in pilgrimage behaviour or festival-management rules. The policy objective of expanding experiential, ecological and adventure tourism into the May-December period directly addresses this problem by attempting to smooth demand across the year (Ministry of Culture, Sports and Tourism, 2026).

However, season extension alone is not equivalent to livelihood diversification. Year-round tourism may reduce seasonal volatility but could also deepen overall dependence on the tourism sector if agricultural and local-product livelihoods continue to weaken. The more robust approach is therefore two-dimensional: diversify tourism products and seasons while also sustaining non-tourism livelihood components that can function as alternative or supplementary income sources.

4.3. Indigenous knowledge, natural capital and the heritage resource base

The potential erosion of apricot-cultivation knowledge and other place-specific practices should be interpreted as both a livelihood and a heritage issue. Throsby's (2001) cultural-capital perspective is useful here because it treats inherited cultural knowledge as an asset that can be depleted if not maintained. Local agricultural knowledge, the symbolic value of the Chua Huong apricot and the cultural identity associated with hand-rowed boat services contribute to the distinctiveness of the destination. Losing those assets would reduce household livelihood options and simultaneously weaken the cultural content of tourism. This interpretation is also compatible with research on traditional craft-based tourism in Vietnam, where the continued value of local skills depends on linking cultural transmission with viable tourism-based demand rather than allowing tourism growth to detach products from their knowledge base (Pham et al., 2025).

Natural capital presents a related problem. Tourism-based livelihoods may use less land or forest material directly, but visitor concentration creates indirect ecological impacts. The Yen Stream and limestone-karst landscape function both as environmental assets and as components of the tourism experience. Degradation would therefore threaten the very economic activities that depend on visitor demand. This circular relationship means that environmental management is not an external conservation cost; it is part of livelihood protection.

Because the Huong Son evidence points to diffuse environmental pressure rather than a single measurable conversion of land, carrying-capacity management should rely on a basket of indicators: water quality, waste generation and removal, visitor density at sensitive points, number and frequency of boat movements, bank erosion and compliance with safety and environmental standards. Such indicators would allow management to connect visitor growth with the condition of the asset base that supports both tourism and traditional livelihoods. Visitor-management policy should also include interpretation and behavioural measures, because recent evidence from the Imperial Citadel of Hue indicates that interpretation quality can strengthen responsible tourist behaviour in heritage settings (Ha et al., 2026).

4.4. Community participation and the limits of management modernization

The recent use of electronic ticketing, AI-assisted surveillance, QR authentication and drone monitoring shows that Huong Son has made substantial progress in visitor-management technology. These tools can improve safety, transparency and operational efficiency. They do not, however, resolve questions about who participates in decision-making, how benefits are distributed or how changes in rules affect the livelihood autonomy of rowing households and small service providers. Research on digital preservation of Vietnamese cultural heritage likewise cautions that digital tools should extend documentation, interpretation and access while remaining complementary to the original heritage resource and its cultural context (Phuong, 2026).

Jamal and Getz (1995) emphasize that collaboration in tourism planning requires meaningful involvement of local stakeholders. This implies that modernization should be accompanied by institutional channels through which residents can review proposed changes, raise concerns, access relevant information and contribute to decisions concerning service organization, environmental

regulation and benefit sharing. Otherwise, a technologically sophisticated management system may coexist with weak community voice. A practical way to institutionalize this principle is to treat resident feedback as a recurring source of governance evidence, consistent with the community-feedback approach applied in Vietnamese heritage communication research (Phuong & Lam, 2025). The practical implication is that two modernization agendas must advance together: modernization of destination operations and modernization of livelihood governance. The first concerns safety, ticketing, traffic and monitoring; the second concerns diversification, training, participation, benefit distribution and protection of local knowledge. Treating the first as a substitute for the second would leave the main livelihood vulnerabilities largely unchanged.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

This study examined livelihood transformation at the Huong Son Historic and Scenic Complex through the Sustainable Livelihoods Framework, complemented by heritage-tourism, community-participation and cultural-capital perspectives. The evidence indicates a substantial shift from a livelihood system based primarily on agriculture, local ecological resources and household production toward one in which boat-rowing and tourism services play a central role.

The transition has generated important gains. Tourism has increased opportunities for financial accumulation, stimulated investment in physical infrastructure and created new human-capital requirements in service delivery and digital management. These gains help explain the strong attraction of tourism-based work and the local policy orientation toward a service-led economy.

At the same time, the five-capital comparison shows that the transition cannot be interpreted as a simple improvement. Greater financial capital is accompanied by exposure to seasonality and tourism shocks; new human capital may grow alongside the erosion of indigenous agricultural knowledge; physical investment can expand while environmental pressure intensifies; and new service networks can develop as community relations become more market-oriented. Sustainable livelihood development at Huong Son therefore depends on how these trade-offs are governed.

The central policy principle emerging from the analysis is complementarity. Tourism should strengthen, not eliminate, the wider livelihood portfolio of the resident community. Heritage conservation, environmental protection and community participation are not constraints external to livelihood development; they are conditions for maintaining the asset base on which tourism and local livelihoods jointly depend. This integrated orientation is consistent with recent Vietnamese research emphasizing that tourism development and heritage conservation outcomes should be evaluated together rather than as competing objectives (Hung & Tuyen, 2026).

5.2. Policy and practical recommendations

Priority area	Recommended action	Monitoring evidence
Livelihood diversification	Support mixed household portfolios combining tourism services with apricot cultivation, local agricultural products and appropriate traditional activities.	Share of households with multiple income sources; off-season income sources; continuity of local production.
Indigenous knowledge and skills	Establish intergenerational transmission, local-product development and training that combines traditional knowledge with tourism, language and digital-service skills.	Participation in training; number of local knowledge holders involved; continuity of apricot and local-product practices.
Environmental carrying capacity	Monitor and regulate visitor and boat concentration at sensitive periods; strengthen waste, water-quality and bank-protection measures.	Water-quality indicators; waste volumes; visitor density; boat-operation data; incidents and compliance.
Community participation	Institutionalize regular consultation with rowing households, growers, service providers and community representatives before major management changes.	Consultation frequency; participation rates; issues resolved; access to planning and management information.
Integrated evaluation	Evaluate tourism policy through economic, social, cultural and environmental indicators rather than visitor numbers and revenue alone.	Household livelihood resilience; trained local workforce; local benefit retention; heritage/environment condition indicators.

Table 2. Recommended policy directions and monitoring evidence. Source: proposed by the authors based on the research findings.

First, livelihood policy should encourage complementarity rather than substitution. Households should be supported in maintaining more than one source of livelihood, combining tourism services with apricot cultivation, local agricultural products and other feasible place-based activities. This approach reduces exposure to a single season and preserves productive knowledge that can also contribute to tourism differentiation. Where appropriate, local agricultural products and craft knowledge can also be incorporated into distinctive tourism experiences, following the broader Vietnamese evidence that traditional production values can support destination differentiation and local benefit creation (Pham et al., 2025).

Second, indigenous knowledge should be treated as a form of human and cultural capital requiring active transmission. Local authorities and destination managers can support training and documentation related to apricot cultivation, local products and traditional rowing practices, while simultaneously providing residents with service, foreign-language and digital skills needed in the evolving tourism economy. The objective is not to freeze traditional occupations but to enable local residents to adapt without losing control of the knowledge that gives Huong Son its distinctive character.

Third, environmental carrying capacity should be incorporated into livelihood management. The quality of the Yen Stream and the limestone-karst landscape should be monitored through operational indicators that can trigger management responses during peak periods. Visitor numbers, boat movements, waste, water quality and sensitive-site pressure should be assessed together rather than independently. Environmental protection should be understood as protection of the productive asset base of both tourism and traditional livelihoods. Environmental controls should be complemented by visitor interpretation and communication measures designed to encourage responsible behaviour, an approach supported by recent empirical evidence from Vietnamese heritage tourism (Ha et al., 2026). Digital tools used for monitoring, communication and heritage documentation should follow a complementary-use principle so that technological modernization supports, rather than substitutes for, the conservation of the physical and cultural resource base (Phuong, 2026).

Fourth, community participation should be formalized within destination governance. Regular consultation mechanisms should include rowing households, apricot growers, small service providers and other resident groups, with particular attention to groups whose livelihoods may be affected by changes in ticketing, operating procedures, environmental regulations or spatial management. Participation should occur before major decisions, not only after policies have been implemented. The consultation system should also generate a documented feedback cycle in which community comments are recorded, reviewed and used to adjust interpretation, visitor management and benefit-sharing arrangements (Phuong & Lam, 2025).

Fifth, evaluation of Huong Son tourism development should move beyond visitor counts and aggregate revenue. A sustainable-livelihood monitoring system should include household livelihood diversification, stability of off-season income, participation of local workers, continuity of traditional skills, local benefit retention, environmental indicators and the condition of heritage assets. Such a system would allow economic growth targets to be assessed against the long-term capacity of the community and landscape to regenerate.

5.3. Limitations and directions for future research

The study is qualitative and relies primarily on documentary evidence, comparative analysis and non-participant observation. It does not provide a statistically representative household survey and cannot determine the precise distribution of tourism benefits and livelihood risks among different villages, income groups, age groups or occupational categories. Secondary-source income figures and workforce estimates should therefore be interpreted as indicators of scale rather than exact population parameters.

Future research should conduct household-level surveys across Huong Son to quantify livelihood portfolios, seasonal income, tourism dependence and access to the five livelihood capitals. Comparative analysis by livelihood type, age, gender and degree of tourism participation would make it possible to assess distributional effects that the present study cannot resolve. Longitudinal work would also be valuable for determining whether attempts to extend the tourism season actually reduce vulnerability or instead deepen dependence on tourism.

Further studies should integrate livelihood data with environmental monitoring, particularly water quality, waste, visitor concentration and boat-operation intensity along the Yen Stream. A broader comparative design including Trang An and other pilgrimage or scenic heritage destinations could test whether the trade-offs identified at Huong Son represent a common pattern across inhabited heritage landscapes in Vietnam and Southeast Asia.

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