

Guidelines for Developing Health Tourism through Forest Bathing Activities with Community Participation in Ban Pa-Ngiew, Chiang Mai Province, and Ban Huai-Phueng Border Community, Mae Hong Son Province

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Abstract

This study aimed to (1) analyze the community context and compare the potential and success factors of health tourism through forest bathing with community participation in 2 communities, and (2) propose a model for forest bathing health tourism and guidelines for developing forest bathing health tourism with community participation. The study employed a Participatory Action Research (PAR) methodology, collaborating with community members and researchers to design practical activities that would lead to the establishment of forest bathing tourism in Ban Pa-Ngiew, Chiang Mai Province (30 individuals/households), and Ban Huai-Phueng, Mae Hong Son Province (34 individuals/households). Data were collected through focus group discussions and behavioral observations, and analyzed across 8 key dimensions: natural resource capital, cultural and local wisdom capital, human and social capital, physical infrastructure, economic capital and products, potential for forest bathing activities, community participation, and opportunities arising from external factors. Data analysis utilized the SWOT framework and TOWS matrix to compare strengths and success factors for community-based forest bathing tourism in both communities. The findings indicate that several key factors shape the development of forest bathing tourism in the 2 study communities. Natural resource capital, with Ban Pa-Ngiew offering environments conducive to restorative and recreational experiences, while Ban Huai-Phueng is more suitable for outdoor and holistic health activities. Cultural and local wisdom capital further differentiates the communities: Ban Pa-Ngiew emphasizes artistic traditions and local cultural expressions, whereas Ban Huai-Phueng highlights ritual practices and health-related ways of living, allowing for culturally tailored tourism activities. In terms of human and social capital, Ban Pa-Ngiew benefits from stronger readiness in human resources and skill sets,

while Ban Huai-Phueng exhibits strong leadership and social cohesion but requires enhancement in tourism service capacity. With respect to physical infrastructure, Ban Huai-Phueng is comparatively better equipped, whereas Ban Pa-Ngiew needs improvements in road access and the systematic development of homestay programs. For economic capital and local products, Ban Huai-Phueng offers more diverse products but lacks certification, while Ban Pa-Ngiew remains in the early stages of product development and income generation. Regarding the potential for forest bathing activities, Ban Pa-Ngiew aligns with restorative and healing-focused experiences, whereas Ban Huai-Phueng emphasizes outdoor activities that support mental and spiritual well-being. Community participation is more structured and formalized in Ban Pa-Ngiew, while Ban Huai-Phueng lacks an organized tourism management system. Finally, external opportunities differ, with Ban Pa-Ngiew benefiting from government support and Ban Huai-Phueng showing strong potential in marketing and product branding. Drawing from these findings, the study proposes a “Participatory Forest Bathing Tourism Model” is proposed to drive economic development and promote sustainability, consisting of 5 core components: (1) leveraging local natural and cultural resources, (2) designing holistic health-promoting activities, (3) ensuring active community participation, (4) enhancing community members’ capacities, and (5) establishing contemporary marketing and communication mechanisms. The study further offers policy recommendations to support biological-based community tourism in alignment with the United Nations Sustainable Development Goals (SDGs), specifically SDG 1 (No Poverty), SDG 3 (Good Health and Well-being), SDG 8 (Decent Work and Economic Growth), and SDG 15 (Life on Land). Overall, the results demonstrate that forest bathing extends beyond a natural therapeutic practice, serving as an innovative, community-centered strategy that harmonizes economic, social, and environmental development to advance sustainable local well-being.

Keywords: Forest Bathing, Biological-based Tourism, Participatory Action Research, Community Development, Sustainability

Introduction

Community economic development through wellness tourism has emerged as a strategic approach for enhancing local quality of life and generating sustainable income. Regions endowed with rich natural and cultural capital, such as Chiang Mai and Mae Hong Son provinces, are particularly well-suited for implementing this approach.

Forest bathing (Shinrin-yoku), an emerging wellness tourism practice that has recently garnered increasing attention in Thailand, originated in Japan and emphasizes deliberate immersion in nature through the 5 senses—sight, smell, taste, hearing, and touch to promote holistic physical, mental, and spiritual well-being

(Weng et al., 2024; Mazzarino et al., 2024). Empirical evidence indicates that forest bathing can enhance heart rate variability, strengthen immune function, lower blood pressure, improve mood, and support cognitive development, analytical thinking, and problem-solving abilities (Soutelo et al., 2024; Vermeesch et al., 2024). However, this activity is not yet widely recognized within the academic community.

In the Thai context, Ban Pa-Ngiew (Mae On District, Chiang Mai) and Ban Huay-Phueng (Mueang District, Mae Hong Son) are communities with significant natural and cultural assets and strong connections to forest ecosystems. Ban Pa-Ngiew, predominantly inhabited by Karen S'gaw people, demonstrates extensive experience in community forest management and ethnobotanical knowledge. Ban Huay-Phueng, a border community of the Kayah ethnic group, maintains a lifestyle closely integrated with the surrounding natural environment - have resulted in distinct patterns of behavior, cultural practices, and levels of community resilience. Additionally, each community faces unique challenges, including forest burning and monoculture agricultural practices, which further shape their approaches to natural resource management and community development.

Accordingly, this study employs a participatory action research (PAR) approach to systematically analyze the key factors influencing forest bathing activities in these communities and to develop context-specific, sustainable models that integrate ecological, social, and economic dimensions. Emphasizing a community-centered framework, the study aims to establish an innovative and replicable wellness tourism model that can serve as a paradigm for sustainable local development in Thailand.

Objectives

1. To analyze the community context and compare the potential and success factors of health tourism through forest bathing with community participation in 2 communities.
2. To propose a model for forest bathing health tourism and guidelines for developing forest bathing health tourism with community participation.

Literature Review

The theories applied as conceptual frameworks and for analysis include forest bathing, community capital, and SWOT and TOWS matrix analysis.

Forest bathing originates from the Japanese term “Shinrin-yoku” (森林浴), which literally means “immersing oneself in the atmosphere of the forest.” It emerged in Japan in the late 1980s–1990s to promote both mental and physical health through forest exposure (Plevin, 2018). During forest bathing, participants intentionally slow their movements, walk at a leisurely pace in the forest, and engage all 5 senses: hearing, sight, touch, smell, and sometimes taste to deeply connect with nature. Physiologically, forest bathing affects the autonomic nervous

system by increasing parasympathetic activity and decreasing sympathetic activity, thereby promoting a “rest” state rather than alertness (Wen, 2019).

Effects on hormones and immunity have also been observed: studies indicate that forest bathing reduces stress hormones such as cortisol and increases the number and activity of natural killer (NK) cells, contributing to enhanced immune function (Li, 2022).

Regarding psychological restoration, forest bathing aligns with the Attention Restoration Theory (ART) and Stress Reduction Theory. Natural environments induce a state of “soft fascination,” which restores attention and alleviates mental fatigue (McCutcheon, 2022). Forests also emit phytoncides/plant-derived volatile organic compounds, which may have antimicrobial properties and positively affect the immune system when inhaled (Bherer, 2023).

Key practices of forest bathing emphasize mindful engagement with nature to enhance health and well-being. Recommended durations are generally under 3 hours. Activities include observing and listening to the forest, walking slowly, sitting or lying down mindfully, meditative breathing, drawing nature scenes, or even hugging trees to relieve stress. Guidelines include: (1) Turning off mobile phones. (2) Avoiding verbal communication that may disturb others. (3) Walking slowly and deliberately. (4) Mindful sitting or resting with deep, rhythmic breathing. (5) Not removing any natural objects from the forest. (6) Proper disposal of waste generated by participants. (7) Preparing physically before entering the forest (e.g., using restrooms, drinking water). (8) Proper care and return of rented or borrowed community equipment. (9) Adhering strictly to forest or community regulations.

Community Capital Theory explains the resources and capacities of a community that can be leveraged for sustainable development. Flora et al. (2004) categorize community capital into 7 types, known as the Community Capitals Framework (CCF): (1) Human Capital: knowledge, skills, health, and abilities of community members. (2) Social Capital: networks, trust, and collaboration within the community. (3) Cultural Capital: values, traditions, and community identity. (4) Natural Capital: natural resources, such as forests, water, and soil. (5) Built Capital: infrastructure such as roads, buildings, and schools. (6) Financial Capital: funds, income sources, and access to financial resources. (7) Political/Organizational Capital: decision-making power, governance, and access to information.

The CCF enables comprehensive assessment of community potential, guiding sustainable development planning while understanding the interconnections among various types of capital.

SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats) is a framework used to evaluate the internal and external factors affecting an organization, project, or initiative. Internal factors include strengths and weaknesses, while external factors include opportunities and threats. SWOT helps leaders or organizations gain

a clear overview of the current situation and develop appropriate strategies, such as leveraging strengths, capitalizing on opportunities, mitigating weaknesses, and addressing threats (Kenton, 2025).

TOWS Matrix (Wehrich, 1982) builds upon SWOT by structuring the analysis into a matrix to derive proactive strategic directions. It links internal and external factors to generate strategies: SO (Strengths-Opportunities): Using strengths to capitalize on opportunities. ST (Strengths-Threats): Using strengths to mitigate threats. WO (Weaknesses-Opportunities): Addressing weaknesses to exploit opportunities. WT (Weaknesses-Threats): Reducing weaknesses and avoiding threats.

Effective use of SWOT/TOWS involves clearly defining objectives, collecting diverse and reliable data, translating SWOT results into TOWS strategies, and periodically reviewing analyses as internal and external conditions change (Nguyen & Truong, 2022).

Related Research indicates that combining SWOT/TOWS with community capital analysis can support sustainable tourism development and improve community quality of life. For instance:

Phothiphit (2024) studied sustainable cultural tourism strategies in Kanchanaburi Province and identified four key strategies: tourism site management, marketing development, tourism route creation, and community networking. Kobkitpanichphon and Tatsiniyom (2022) analyzed opportunities and strategies for natural hot spring health tourism in Chiang Mai, finding strengths in natural resources, weaknesses in tourism standards, opportunities in health tourism development, and threats such as COVID-19, recommending collaboration among government, private sector, and communities. Ratanapongtra et al. (2016) proposed strategies for heritage tourism in Ayutthaya, emphasizing heritage resource promotion, personnel development, marketing, community participation, and infrastructure. Koedsawat (2021) studied participatory cultural tourism strategies at Wat Chaiyo Worawihan, Ang Thong, identifying five strategic areas: cultural tourism development, strengthening community economy, service and promotion enhancement, citizen participation, and tourism management system improvement.

This study applies Forest Bathing, Community Capital Theory, and SWOT/TOWS analysis as conceptual frameworks for sustainable tourism development. Forest Bathing (Shinrin-yoku) promotes physical and mental well-being through mindful engagement with natural environments, reducing stress, enhancing immunity, and restoring attention. Community Capital Theory provides a holistic assessment of community resources - including human, social, cultural, natural, built, financial, and political capitals - guiding sustainable development planning. SWOT and TOWS analyses identify internal strengths and weaknesses and external opportunities and threats, facilitating the formulation of strategic actions to enhance community tourism initiatives. Integrating these frameworks supports evidence-based, community-centered strategies that leverage local resources, promote health and well-being, and foster sustainable economic and social outcomes.

Research Methodology

This study investigates community-related factors, including demographics, lifestyles, economic conditions, social structures, natural forest environments, and other relevant community attributes. Distinct from previous research, the study employs a qualitative approach through participatory community research, aiming to identify factors that enhance local economic potential via community-based tourism, specifically in the form of “forest bathing”. In the Ban Pa-Ngiew community, Chiang Mai Province, 30 households/individuals participated in the activity, while in Ban Huai-Phueng, Mae Hong Son Province, 34 households/individuals took part. The research follows 4 main steps: (1) Stakeholder Analysis and Recruitment of Community Researchers: Researchers engage with key stakeholders, including local residents, community leaders (village heads), ethnic group leaders, and various community groups such as farmers, community forest members, and occupational groups. Community researchers are recruited to actively participate in the research process, fostering a community-driven approach and facilitating the implementation of the project. (2) Community Potential Assessment: Together with community researchers, the research team collects data on demographics, lifestyles, economy, social structures, and natural forest environments. The data are analyzed using SWOT analysis to evaluate the community’s strengths, weaknesses, opportunities, and threats. (3) Development of Community-Based Ecotourism Activities - “Forest Bathing” (Ab Pa): In collaboration with Ban Pa-Ngiew and Ban Huai-Phueng communities, researchers design and implement “forest bathing” activities aimed at promoting and enhancing local economic development through ecotourism. And (4) Analysis of Key Factors for Ecotourism Implementation: The study identifies and analyzes critical factors influencing the implementation of “forest bathing” activities across different community contexts. Research Instruments and Data Analysis: Data collection was conducted using a Participatory Action Research (PAR) approach, in which community members actively participated as co-researchers in 10 activities per community. The study employed multiple methods, including individual interviews, focus group discussions, and behavioral observations, to ensure the credibility and validity of the data. The collected data were systematically analyzed using SWOT Analysis and the TOWS Matrix. Furthermore, the quality and validity of the research instruments were carefully reviewed by the participating community members to ensure that they accurately reflected the lived realities of the community to identify strategic opportunities for community economic development through ecotourism.

Research Findings

Community Profile of Ban Pa-Ngiew: Ban Pa-Ngiew is a rural community situated in Village No.4, Tha Nuea Subdistrict, Mae On District, Chiang Mai. Established in 1894 by the Pa-Ngiew (Karen) ethnic group, the community has gradually evolved from subsistence agriculture to diversified and sustainable livelihood strategies.

1. Geographic and Climatic Characteristics: The community covers approximately 8,637.94 rai, consisting of protected forest, utilizable forest, residential areas, and farmland. The topography is primarily valley plains, with an elevation of 520 meters above sea level. The main water source is Huai-Lord, which contributes to the Tha River. Rainfall is concentrated from March to October. Average maximum temperature reaches 41°C in April, while the minimum drops to 6°C in January.

2. Historical Background: A Pa-Ngiew ethnic group migrating from Mae Hong Son Province. Traditionally, residents relied on rice cultivation and forest foraging. From the 1960s onward, economic crops such as tobacco and peanuts were introduced, eventually transitioning to baby corn. Due to land limitations within the national park, the community now emphasizes sustainable agriculture.

3. Socio-Cultural Characteristics: The community has 296 residents across 74 households. Most inhabitants belong to the Pa-Ngiew (Karen Sa-Ko) ethnic group. Cultural practices, including the Phi-Khun-Narm ritual, reflect a deep respect for nature. The working-age population constitutes the majority, followed by children and elderly members. Local knowledge is preserved in herbal medicine, traditional weaving, and basketry. Children attend schools outside the community, primarily Tha Nuea Wittaya School.

4. Natural Resources and Environment: Ban Pa-Ngiew's community forest spans approximately 7,936.64 rai (1,269 hectares), with rich biodiversity including teak, takian, and rare medicinal plants. Wildlife species include muntjac, deer, wild boar, and peafowl. The community collaborates with the Mae Fah Luang Foundation in forest conservation and participates in carbon credit programs by monitoring tree biomass for carbon sequestration.

5. Economy and Livelihoods: The average household income is approximately 231,220 THB per year, with expenses averaging 177,896 THB, allowing an annual savings of 53,325 THB. Primary occupations include agriculture, cultivating crops such as baby corn, rice, cherry tomatoes, bell peppers, and yardlong beans. Secondary activities include livestock raising (chickens, pigs, cattle, buffaloes) and community-based tourism, including homestays and handicraft sales.

6. Infrastructure: The village has paved main roads and concrete access roads, electricity, and mountain water supply to all households. Mobile phone coverage is partial, with some signal black spots. Waste management is provided by the Tha Nuea Subdistrict Administrative Organization, though systematic waste separation is not yet implemented.

7. Conclusion: Ban Pa-Ngiew exemplifies a rural community successfully integrating natural resource conservation, cultural preservation, and economic development. With additional support in education, tourism,

and skill development, the community has high potential to enhance sustainable livelihoods and improve overall quality of life.

Activities in the Community Forest Bathing “Yu-Wo-Glow” Program within 2 hours:

1. Blood Pressure Check Point: Participants will have their blood pressure measured both before and after the activity. A welcome herbal drink and one bottle of water will be provided. Additionally, participants will receive a signature dish of sticky rice wrapped in banana leaves, known as “Yu-Wo-Glow.”
2. Forest Bathing Start Point: Participants prepare their body, focus the mind, and release tension through a practice inspired by traditional Rue-Si-Dad-Ton stretching exercises.
3. Drawing Point: For those who enjoy expressing themselves through art, this point offers an opportunity to paint and relax.
4. Rest and Foot Soaking Point: Along the Huai-Lord stream, participants can pause to relax, take a nap, listen to forest sounds, and soak their feet in the cool flowing water.
5. Sa-Ko-Tha-Nua Weaving Learning Point: At this learning station, participants will practice concentration and mindfulness while engaging in the creation of woven keychains.
6. Pga K’nyau Weaving Learning Point: Participants can learn to weave traditional “Talew” baskets, practicing focus and patience.
7. Tree Name Learning Point in Pga K’nyau Language: Throughout the one-hour forest bathing trail, participants will learn about forest tree species, their local Pga K’nyau names, and the uses of more than 50 types of trees.
8. Carbon Credit Learning Point: Participants will gain insights into community forest management practices under carbon credit initiatives, which provide communities with funding to support forest conservation independently.
9. Herbal Learning Point: At the community herb plot, participants will learn about various local herbs, their names, and medicinal properties, all growing naturally within the Pa-Ngiew Community Forest.
10. Superstition learning point: If you don't believe, don't be disrespectful. Superstition rituals with "Ho-Chao-Thi, Worship the Water Spirit".
11. Forest Hug Point: The final stop before post-activity blood pressure measurement features a 150 year-old Ta-Kian tree, considered by the community to be inhabited by a protective spirit. Participants are invited to embrace the tree, expressing personal thoughts, stress, or emotions, allowing the tree to symbolically receive and absorb them.

Community Profile of Ban Huai-Phueng: located in Mueang District, Mae Hong Son Province, Thailand, is an ethnic Kayah/Karenni (Red Karen) community with a rich cultural heritage and a strong connection to the forest environment. Established in 1971, the community exemplifies a self-sufficient lifestyle, traditional knowledge preservation, and sustainable interaction with natural resources. This study provides a comprehensive overview of its geography, social structure, culture, economy, and infrastructure. The community consists of 1,129 residents in 345 households, all practicing Buddhism alongside traditional animist beliefs.

1. **Geographic and Environmental Characteristics:** The village is located in the northernmost valley of Mueang Mae Hong Son District, near the Shan State border of Myanmar. The terrain is predominantly mountainous with limited flatlands, and the climate is hot and humid with mist throughout the year. The village is elevated approximately 550 meters above sea level. Summers are hot, the rainy season is heavy especially in August, and winters are cold due to the northeast monsoon.

2. **Transportation and Infrastructure:** Access is via paved, winding mountain roads. Electricity and mountain water supply reach all households. Mobile phone coverage is nearly complete except in some forested areas.

3. **Social Structure and Education:** Approximately 60% of the population is of working age, with 39.41% consisting of children and elderly dependents. Ban Huai-Phueng School provides education from kindergarten to grade 6, with 69 students and 8 teachers. However, the school faces shortages of teachers, technological resources, and maintenance budgets.

4. **Livelihoods and Economy:** Most residents practice subsistence agriculture, growing upland rice, garlic, corn, coffee, cocoa, and various vegetables. Forest resources, such as wild honey, are also collected. The community has traditional skills in weaving, basketry, and local alcohol fermentation. Life is simple and closely integrated with nature.

5. **Culture, Traditions, and Beliefs:** The Red Karen community preserves deep-rooted cultural and spiritual practices. Two major traditional festivals are observed annually:

“E-Do-Po-Mi” Festival (October–November) – honors ancestors, calls for blessings for descendants, includes rituals like rice-wrapping, stair drumming to drive away evil spirits, night dancing around the fire, and food offerings to wandering spirits.

“I-Lu” Festival (Karenni New Year) (April) – celebrates the New Year and venerates deities and ancestors. Central rituals include selecting and decorating the sacred “I-Lu” pole, performing dances, pouring traditional herbal water, and fortune-telling.

Traditional beliefs emphasize the connection between humans, nature, and ancestors, reflecting a philosophy of living harmoniously with the environment.

6. Social Challenges: Educational resources and infrastructure require further support.

7. Conclusion: Ban Huai-Phueng is a culturally rich and ecologically integrated Red Karen community, sustaining traditional knowledge and practices while maintaining a self-sufficient lifestyle. Despite challenges in education, resources, and social issues, the community retains its ethnic identity and offers opportunities for cultural preservation, community-based tourism, and sustainable development.

After conducting a SWOT and TOWS matrix analysis, the results compared the strengths and success factors for community-based tourism in forest bathing between the communities as follows.

Activities in the Community Forest Bathing “Tee-Nee-Mor” Program within 3 hours:

1. “Kayah” Cultural Learning Point: Participants will learn about the way of life, spirituality, beliefs, and faith of the Kayah people. This includes traditional basket weaving techniques passed down by elders and the craft of broom making.

2. Fern Field Point: A lush green area ideal for photography, allowing participants to capture scenic landscapes.

3. Elephant Bathing / Elephant Belly Pool Point: Known in the Kayah language as “Cho- Tae-Chae,” this concave hillside area resembles an elephant’s belly and is believed to have been a resting place for elephants in the past. Participants can pause here to enjoy a herbal drink provided by the community.

4. Forest Bathing Start Point: Participants prepare their body, focus the mind, and release tension through Rue-Si-Dad-Ton inspired stretching exercises.

5. Sitting Monkey Hill Gate Point: Called “Cho Yo Ao Nae” in Tai-Yai and Kayah languages, it is believed that passing through this gate ensures protection from harm.

6. Scenic Viewpoint for Wildlife Observation: A 180-degree viewpoint where participants can observe monkeys, gibbons, langurs, and other primates.

7. Hammock Rest Point: For participants who wish to pause and nap for about 30 minutes while listening to natural forest sounds.

8. Kayah Broom Making Learning Point: Participants will practice concentration and mindfulness while learning to make traditional brooms.

9. Forest Hug Point: This point features large, welcoming trees believed by the Kayah community to be inhabited by spirits. Participants are invited to embrace the trees with love, expressing personal thoughts, stress, or emotions to be symbolically received by the trees.

10. Sinkhole Point: At the edge of a large sinkhole, participants can pause to observe this natural phenomenon, reflecting on its formation and asking the question: “What caused this?”

11. Terraced Rice Field Viewpoint: This area offers a panoramic view of terraced rice fields. Participants can enjoy traditional Kayah meals while listening to the sound of flowing water. Local community products are available for purchase, supporting sustainable development and the livelihood of the community.

Table 1 Comparative analysis of community-based forest bathing tourism potential and success factors: Ban Pa-Ngiew vs. Ban Huai-Phueng

Dimension	Ban Pa-Ngiew	Ban Huai-Phueng	Comparative Analysis
Natural Resources	<ul style="list-style-type: none"> - Community forest covering 7,936 rai, used for both conservation and sustainable utilization - Lam Huai Lhod stream flows year-round with clear water - Cool climate throughout the year; no history of forest fires 	<ul style="list-style-type: none"> - Rich natural forest - Frequent fog and pristine air - Presence of wild bees and a balanced ecosystem 	Both communities possess strong natural resources. Ban Pa-Ngiew is suitable for restoration and recreational activities, while Ban Huai-Phueng is ideal for outdoor activities and holistic health experiences.
Cultural Capital and Local Wisdom	<ul style="list-style-type: none"> - Local traditions, e.g., forest ordination and spirit offerings for water sources - Unique handwoven textiles and basketry - Community herbalists with extensive knowledge 	<ul style="list-style-type: none"> - Ethnic group-specific rituals, e.g., “Edo Pormi” and “I Lu” - Herbal knowledge, traditional liqueurs, honey production - Simple lifestyle aligned with holistic health 	Ban Pa-Ngiew emphasizes artistic and local traditions, while Ban Huai-Phueng focuses on ritual practices and lifestyle connected to health. Activities can thus be tailored to distinct cultural experiences.
Human and Social Capital	<ul style="list-style-type: none"> - Community members possess herbal knowledge and volunteer spirit - Strong group cohesion with in-kind and financial contributions - Basic skill development already undertaken 	<ul style="list-style-type: none"> - Strong local leadership - Peaceful and respectful community culture - Lack of tourism service personnel 	Ban Pa-Ngiew is well-prepared in terms of human resources and skills. Ban Huai-Phueng has strong leadership and social discipline but requires development in tourism service skills.

Table 1 (continued)

Dimension	Ban Pa-Ngiew	Ban Huai-Phueng	Comparative Analysis
Physical Infrastructure	<ul style="list-style-type: none"> - Disused learning center can be repurposed as a tourist hub - Electricity, water, and roads reach the village - No systematic homestay yet; last stretch of road is gravel 	<ul style="list-style-type: none"> - Asphalt road access, although winding - Community enterprise building and public hall suitable for activities - Complete electricity, water, and mobile network 	Ban Huai-Phueng benefits from better infrastructure. Ban Pa-Ngiew needs road improvements and development of a systematic homestay program.
Economic Capital and Products	<ul style="list-style-type: none"> - Beginning to generate income from activities - Developing products such as tea and herbal massage services 	<ul style="list-style-type: none"> - Organic agricultural products (highland rice, garlic) - Herbal products, infused liquors, wine, honey - Products not yet certified (e.g., FDA, GMP) 	Ban Huai-Phueng offers greater product diversity but lacks certification. Ban Pa-Ngiew is in the early stages of product development and income generation.
Forest Bathing Activity Potential	<ul style="list-style-type: none"> - Quiet, shaded forest trails - Suitable for restorative activities such as forest healing and retreats 	<ul style="list-style-type: none"> - Terrain suitable for yoga, hiking, and meditation - Spiritual rituals supporting mental health 	Ban Pa-Ngiew focuses on restorative and healing activities. Ban Huai-Phueng emphasizes outdoor activities connected to mental and spiritual well-being.
Community Participation	<ul style="list-style-type: none"> - Involved in all steps with in-cash and in-kind. - Clear working groups and community rules 	<ul style="list-style-type: none"> - Volunteer-based cooperation - Lack of systematic tourist management 	Ban Pa-Ngiew demonstrates structured community participation. Ban Huai-Phueng lacks formal tourism management systems.
External Opportunities	<ul style="list-style-type: none"> - Supported by Royal Project and various government agencies - Access to health tourism trends 	<ul style="list-style-type: none"> - Strategic location as a border rest stop (Thailand-Myanmar) - Opportunity to develop OTOP-branded health-related products 	Ban Pa-Ngiew benefits from government support, whereas Ban Huai-Phueng has marketing and product branding potential.
Weaknesses / Constraints	<ul style="list-style-type: none"> - Insufficient accommodation and health services for tourists - Limited mobile network coverage - Limited language and marketing skills 	<ul style="list-style-type: none"> - Lack of standardized homestay infrastructure - No systematic tourism management plan - Limited service skills and language proficiency 	Ban Pa-Ngiew faces issues with accommodation and communication, while Ban Huai-Phueng needs to develop management systems and service capacity.

Note Based on SWOT and TOWS matrix analysis

In summary, Ban Pa-Ngiew is well-suited for restorative and health-focused forest bathing tourism with clear community participation, while Ban Huai-Phueng has potential for outdoor and wellness-based activities, with opportunities for local product development, but requires improvements in tourism management and service capacity.

Table 2 Strategies for achieving success in 2 communities

Aspect	Ban Pa-Ngiew	Ban Huai-Phueng
Distinct Strengths	Well-preserved community forest; traditional herbal knowledge; participatory management	Ethnic cultural heritage; spiritual way of life; tranquil, pollution-free environment
Main Weaknesses	Lack of standardized homestays; insufficient service skills	Lack of planning and tourism management systems; weak ethnic identity branding
Pathways to Success	Develop health and wellness trails integrating cultural elements; organize retreat activities within the community forest	Promote spiritual wellness tourism through ethnic rituals; enhance branding with traditional wisdom
Potential for Expansion	Target market: retreat seekers, digital detox participants, forest therapy enthusiasts	Target market: holistic and spiritual health tourists
Management Readiness	Established working team, existing plans, and development guidelines	Lack of clear plans; requires development of management systems in collaboration with stakeholders

Note Based on SWOT and TOWS matrix analysis

Based on these insights, a “Participatory Forest Bathing Model” was proposed, comprising 5 core components: Leveraging local natural and cultural resources Designing holistic health-promoting activities Ensuring meaningful community participation Enhancing the capacities of community members Establishing contemporary marketing and communication mechanisms This model provides a framework for the development of forest bathing practices that can be applied in practice.

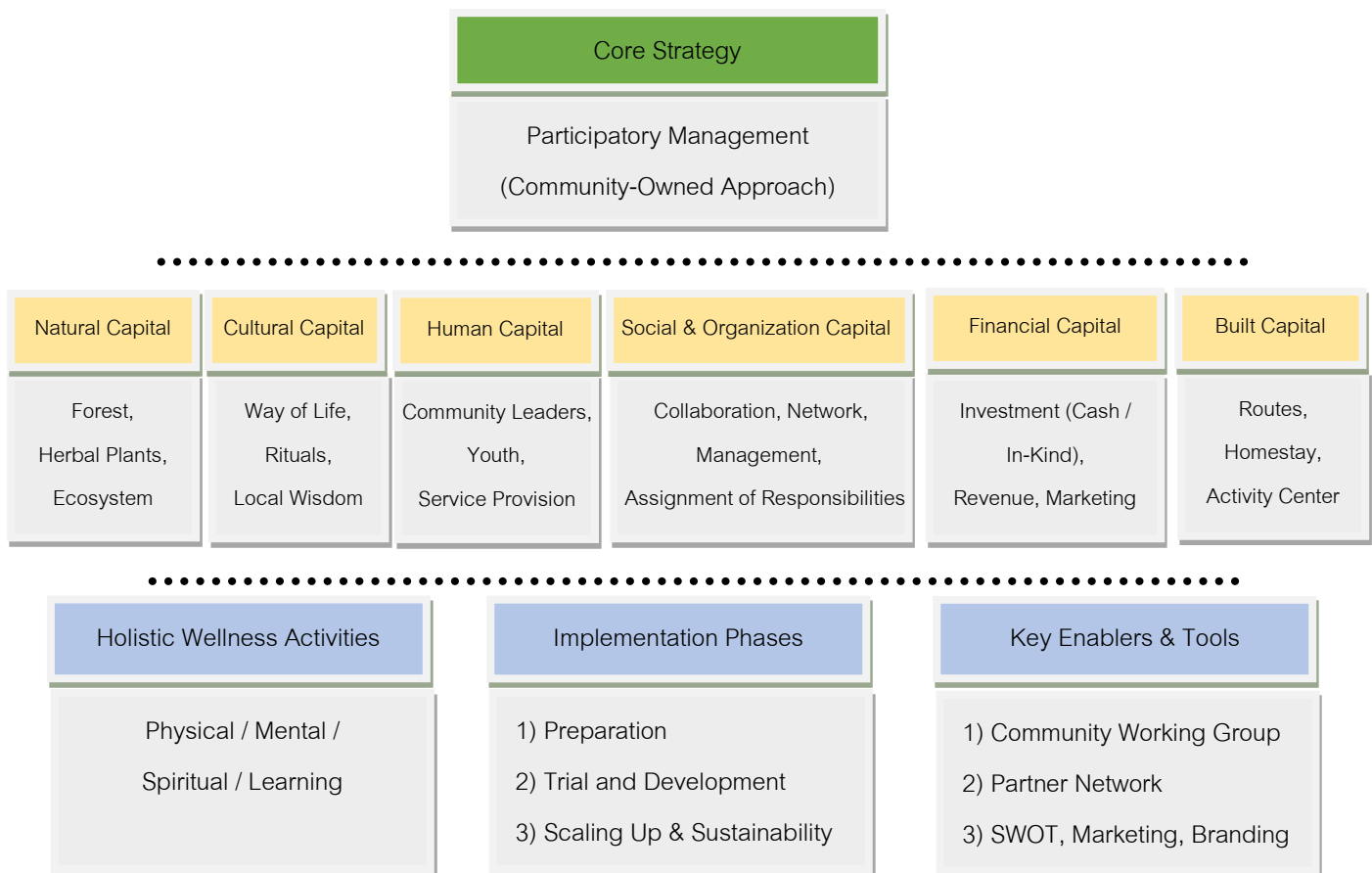


Figure 1 Model of sustainable community-based ecotourism activities 'forest bathing'

Figure 1 Describe:

1. The core strategy is Participatory Management, which serves as the heart of the model.
2. The six key capitals that the community must possess and continuously develop are: natural capital, cultural capital, human capital, social capital, economic capital, and physical capital.
3. The community implements Holistic Wellness activities, designed to address physical, mental, spiritual, and learning needs, following a three-phase implementation process and supported by appropriate mechanisms and tools.

Policy Recommendations

Under the challenges of economic conditions, security issues, and humanitarian concerns affecting communities - particularly ethnic and border (marginalized) communities - most of these communities possess resources that are essential components of a comprehensive community-based tourism model. These resources are often unseen and pristine but require continuous capacity development. A participatory management strategy should serve as the core approach, with operational processes guided by the application of this model. The government should implement supportive measures, such as:

1. Supporting the development of community-based ecotourism activities, such as forest bathing, health-oriented homestays, and herbal tourism.
2. Developing standardized criteria for forest bathing tourism sites to enhance consumer confidence.
3. Promoting budget allocation for community capacity building, including skills in service, language, marketing, and management.
4. Linking performance evaluation to governmental agencies through clear KPIs to support border communities effectively.
5. Developing online marketing platforms to facilitate tourist access to services while enabling communities to manage these platforms independently.
6. Encouraging tax incentives, such as providing tax benefits to tourists who use standardized forest bathing services.

Conclusions, Discussion and Suggestions

1. Community Context and Comparative Analysis:

Ban Pa-Ngiew: Suitable for restorative, health-focused forest bathing; strong participation and structured management.

Ban Huai-Phueng: Potential for outdoor and spiritual wellness tourism; requires development of tourism management and service capacity.

2. Model and Guidelines for Development:

A Participatory Forest Bathing Model was developed, comprising five core components:

- 1) Leveraging local natural and cultural resources
- 2) Designing holistic health-promoting activities
- 3) Ensuring meaningful community participation
- 4) Enhancing community members' skills and capacities
- 5) Establishing modern marketing and communication mechanisms

Policy recommendations include government support for ecotourism, standardization of forest bathing sites, capacity-building programs, performance evaluation mechanisms, online marketing platforms, and tax incentives for tourists.

The proposed model provides a sustainable framework for community-based forest bathing tourism, allowing both communities to generate income, preserve cultural heritage, and conserve natural resources. Ban Pa-Ngiew is ready for immediate development in restorative tourism, while Ban Huai-Phueng requires systematic planning and capacity-building initiatives to maximize potential.

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