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## Enhancing Rice Cultivation Efficiency of Farmers in the Bueng Boraphet Wetland Area, Nakhon Sawan Province, Thailand

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### Abstract

**Background:** Agricultural areas surrounding Bueng Boraphet, Nakhon Sawan Province, Thailand, lie outside the irrigation zone, where rice cultivation depends largely on rainfall during the wet season and off-season cropping throughout the year. These conditions complicate water-use assessment and create challenges for sustainable resource management. Major constraints to rice production include water scarcity, high input costs—particularly for fertilizers—limited technical knowledge, improper fertilizer use, frequent pest and disease outbreaks, inefficient weed control, and crop residue burning that degrades soil quality. Collectively, these problems reduce productivity, heighten environmental stress, and undermine long-term sustainability.

**Objectives and Methodology:** This research aimed to enhance rice cultivation efficiency in a 200-rai (32-hectare) pilot area in Wang Mahakon and Thap Krit Sub-districts through participatory action research (PAR). The study integrated site-specific fertilizer management (SSF) with alternate wetting and drying (AWD) water management to optimize both productivity and resource use. The participatory process involved nine key steps: (1) situational analysis and community planning; (2) participatory tools such as “Happiness Compass” and “Smart A4” to identify local needs; (3) establishment of community-led demonstration plots; (4) inter-community learning through study visits; (5) integration of expert knowledge and local wisdom; (6) mutual learning via field visits; (7) participatory feedback and data verification; (8) determination of appropriate field technologies; and (9) soil analysis and fertilizer application based on analytical results.

**Results and Findings:** Results showed that the integrated AWD–SSF system performed significantly better than traditional broadcasting in continuously flooded fields. In transplanted rice plots, the number of tillers per clump averaged 19.94, compared to 4.42 in traditional plots—a nearly fourfold increase—especially within 45 days after planting. This improvement stemmed from enhanced soil aeration during dry intervals, stimulating root and shoot development. Intermittent drying also activated soil microbes, improving nutrient availability and plant vigor. Although both systems showed natural self-thinning around 75 days after planting, overall growth and resilience remained superior in the improved plots.

Water consumption in traditional fields averaged 1,351 cubic meters per rai (8,444 m<sup>3</sup>/ha) per crop cycle, requiring five irrigation events. Under AWD, water use dropped to 810–910 m<sup>3</sup>/rai (5,060–5,690 m<sup>3</sup>/ha) with only three irrigation events—representing a 32–40% reduction. Yields increased from 742.32 kg/rai (4.64 t/ha) to 812.33 kg/rai (5.08 t/ha), surpassing the national average and indicating a 9.4% productivity gain. This improvement was attributed to

balanced soil fertility management and the avoidance of straw burning, which helped maintain organic matter and nutrient balance.

Economic analysis revealed that net returns rose from 2,212.54 THB ( $\approx$ 68 USD) to 2,709.91 THB ( $\approx$ 83 USD) per rai. Although seedling costs were slightly higher, total expenses declined due to lower fertilizer and fuel use coupled with higher yields. The benefit–cost ratio improved from 1.41 to 1.49, strengthening farmers’ incentive to adopt the practice. The transplanting method also improved weed control—water retention during the first month suppressed weed growth by about 70%, and unwanted rice varieties (“weedy rice”) were reduced by 80% through manual removal.

The participatory process produced transformative community outcomes. Farmers gained a clearer understanding of production costs, input management, and sustainable practices. Participatory tools like the Happiness Compass encouraged reflection and context-based planning, fostering genuine behavioral change. Demonstration plots became “living laboratories,” where farmers observed biological, economic, and social impacts firsthand.

At the socio-economic level, farmers reduced unnecessary expenditures on fertilizers and fuel while improving grain quality and net income. Environmentally, AWD significantly conserved water and reduced chemical runoff, mitigating pollution and supporting the ecological balance of the Bueng Boraphet wetland. Socially, collective learning and leadership were strengthened through the formation of groups such as the Low-Carbon Bueng Boraphet Community Enterprise and Cost-Reduction Learning Groups, which continued collaboration with local agencies and served as community knowledge hubs.

The demonstration sites have since evolved into community learning centers, where experienced farmers act as trainers. In recognition of this success, Nakhon Sawan Province issued Provincial Order No. 3387/2567 to establish a steering committee for continued promotion of AWD-based rice farming in the Bueng Boraphet model area. The initiative has inspired inter-subdistrict collaboration through the Water Users and Low-Cost Rice Growers Network, facilitating knowledge sharing and scaling to neighboring areas. The outcomes have also been incorporated into youth training and environmental education curricula, ensuring long-term capacity building and intergenerational learning.

**Conclusions:** Ultimately, this participatory research established a new paradigm for community-based sustainable agriculture. By linking productivity, cost efficiency, environmental stewardship, and quality of life, it strengthened both human and social capital—the essential foundations of sustainability. The Bueng Boraphet experience demonstrates that when local communities actively engage in planning, experimentation, and evaluation, academic innovations such as AWD and SSF can be effectively localized, generating enduring economic, social, and ecological benefits across Thailand’s rainfed rice regions.

**Keywords:** Nakhon Sawan Province, Rice cultivation, Wetland, Alternate wetting and drying, Soil analysis



## IoT Technology Proactive Disaster Prevention Prototype in 999 Herbal Learning Center, High-Tech Khok Nong Na Bamboo Garden for Developing Livelihoods in Laokhwan District, Kanchanaburi Province, Thailand

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### Abstract

**Background and Objectives:** Nongsano Subdistrict, Lao Khwan District, Kanchanaburi Province, Thailand, is a recurring disaster area frequently affected by droughts and windstorms, which cause severe damage to agricultural yields and livelihoods. In response to these challenges, this research transformed the arid land into the 999 Herbal Learning Center, High-Tech Khok Nong Na Bamboo Garden for Developing Livelihoods—a model area integrating Internet of Things (IoT) technology for natural disaster prevention and sustainable agricultural development. The project aimed to demonstrate how modern technology, combined with the Khok Nong Na model and New Theory Agriculture principles, could restore degraded land, improve self-reliance, and strengthen local livelihoods.

**Methodology:** The project employed a participatory action research (PAR) approach to engage local farmers, community leaders, and administrative organizations in technology-driven adaptation for disaster resilience. The process consisted of five key stages:

1) Design and Development of IoT Systems for Disaster Prevention: IoT technologies were developed and installed to monitor and mitigate environmental risks. These included (a) a disaster warning system using the Blynk mobile application, (b) a cloud-attraction system for artificial rainfall induction, (c) a misting system to reduce dust and atmospheric temperature, (d) a drip irrigation system for soil cooling and drought prevention, and (e) a water-level monitoring system to prevent reservoir depletion. An Ecowitt automatic weather station was also installed to record real-time weather data for comparison with IoT sensor data, ensuring accurate environmental tracking.

2) Web Application Development: A web-based dashboard was created to display real-time weather data from the learning center, integrated with radar information from the Thai Meteorological Department's platform (weather.tmd.go.th). The system enables both local residents and the general public to access up-to-date environmental data, facilitating timely responses to sudden climatic changes.

3) Knowledge Transfer and Capacity Building: Training sessions and workshops were conducted to transfer knowledge about IoT applications for disaster prevention to community leaders, subdistrict and district administrators, and local farmers. These sessions raised awareness about the potential of technology to mitigate drought and wind damage while promoting the adoption of modern agricultural innovations.

4) Integration into Local Development Plans: The IoT installation project was formally incorporated into the Nongsano Subdistrict development plan, ensuring long-term institutional support and expanding the use of technology across the entire subdistrict and neighboring areas.

5) Transformation of Degraded Land into a Learning Center: The 999 Herbal Learning Center was established on four rai (1.6 acres) of previously barren land that had no trees in 2021. A 4-meter-deep reservoir covering approximately 1.2 rai (30% of the total area) was excavated, with a storage capacity of 7,000 cubic meters—sufficient to collect rainwater during heavy rainfall and supply irrigation throughout the dry season. Around the reservoir, 999 species of herbs (approximately 1,000 plants) were cultivated using precision drip irrigation. The surrounding bamboo belt helped reduce ambient temperature by 3°C, increased relative humidity by 10%, and served as a natural windbreak against summer storms.

**Results and Findings:** The integration of IoT with the Khok Nong Na model successfully improved microclimatic conditions, soil moisture stability, and ecosystem resilience. During the summer storm season of 2025, the learning center suffered no structural damage—demonstrating the protective efficiency of its bamboo buffer and drip irrigation system. The project became a district-level model learning center in 2023 under the “One District, One Royal Initiative Learning Center” program and was later recognized as a provincial model in 2024.

Thirty households adopted the model, each converting one rai of land from monoculture to integrated farming, creating a total of 30 rai of sustainable green space. Members applied New Theory Agriculture principles by dividing land for reservoirs, mixed-crop cultivation, and herbal planting. The project improved year-round water availability, diversified household income, and enhanced food and medicinal self-sufficiency.

To sustain the IoT system, the community established a maintenance fund by allocating 10% of income from all product sales to support equipment repair, upgrades, and technological expansion. Over 3,000 people from Lao Khwan District and other provinces have since participated in hands-on learning visits, gaining knowledge applicable to their local contexts. The center now serves as a national model for integrating smart agriculture and local wisdom to build community resilience.

**Impacts and Sustainability:** The impacts of this initiative can be summarized in three interrelated dimensions:

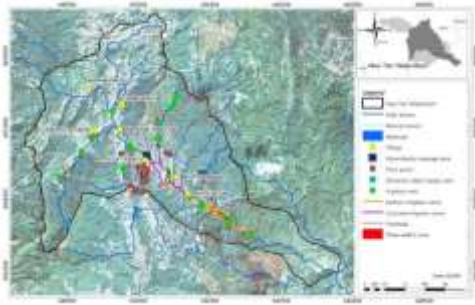
1) *Social Impacts:* The project enhanced local participation and collective responsibility. Farmers developed positive attitudes toward sustainable land use, water conservation, and forest restoration following the “five-layer forest” principle. Women and youth gained new vocational skills in herbal processing, packaging, and online marketing, contributing to daily, weekly, and monthly income streams. The learning center was formally registered as a farmer organization under the Kanchanaburi Provincial Farmers Council, signifying institutional recognition of community leadership.

2) *Economic Impacts:* Through integrated herbal and mixed farming, household incomes increased measurably. The diversification of crops and the introduction of value-added herbal products helped reduce production risks and create steady income sources. The model has been identified by the Kanchanaburi Provincial Farmers Council (2025) as a Success Case for agricultural disaster prevention and innovation-driven rural enterprise development.

3) *Environmental Impacts:* The project restored degraded land, improved biodiversity, and reduced the local temperature and dust levels. The efficient use of water and energy through IoT-controlled systems exemplifies climate-smart agriculture. By balancing technology with ecological principles, the center became a sustainable food and herbal production site resilient to climate variability.

**Conclusions:** The 999 Herbal Learning Center, High-Tech Khok Nong Na Bamboo Garden for Developing Livelihoods demonstrates how the integration of modern IoT technology with traditional agricultural wisdom can transform disaster-prone drylands into productive, self-reliant learning ecosystems. The initiative not only revitalized the landscape and strengthened livelihoods but also established a replicable model of sustainable community-based disaster prevention and smart farming for Thailand’s arid regions

**Keywords:** Kanchanaburi Province, Internet of Things, Natural Disaster, Drought, Wind Disaster, Khok Nong Na



## Applying Geographic Information Systems and Community Participation for Water Management in the Mae Tien Watershed, Chiang Mai, Thailand

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### Abstract

**Background:** The Mae Tien watershed, located in Mae Wang District, Chiang Mai Province, is a highland area that relies primarily on water from the Mae Tien stream and rainfall. The region faces multiple challenges: (1) variability in rainfall volume and distribution, where mid-season dry spells damage crops at early growth stages while intense storms often cause flash floods; (2) recurrent drought cycles, occurring approximately every three years, resulting in severe shortages of water for domestic consumption and agricultural production; (3) widespread cultivation on steep slopes (approximately 16–35%), leading to soil erosion and placing additional pressure on fragile headwater ecosystems; and (4) fragmented water management structures, which tend to focus on short-term, ad hoc solutions without evidence-based databases or long-term integrative mechanisms. In recent years, communities and local governments have implemented small-scale interventions such as repairing and constructing check dams, establishing community reservoirs, and reforesting degraded lands. However, these measures remain insufficient in relation to the growing water demand and the increasing risks posed by climate variability and change.

**Objectives and Methodology:** This study aimed to (1) examine the water situation and develop community water maps in the Mae Tien watershed, Chiang Mai Province, (2) analyze community participation processes in water management, and (3) propose integrated water management approaches that are appropriate for highland contexts.

The study employed a Participatory Action Research (PAR) framework as the principal mechanism for driving change in the Mae Tien watershed. PAR was deemed appropriate as it emphasizes collaborative learning and knowledge co-creation between researchers and communities, which is particularly relevant in complex highland contexts that require acceptance from multiple stakeholders. Within this framework, the community was placed at the center of decision-making and water management, while farmers, community leaders, local government officials, and Royal Project staff actively engaged throughout the process. The methodological design can be summarized in five components:

- 1) Approach – Implementation of a PAR framework integrated with Geographic Information Systems (GIS) to combine scientific analysis with participatory engagement.
- 2) Participants – Involvement of approximately 100–135 stakeholders, including community leaders, farmers (men, women, and youth), and representatives of local administrative organizations.
- 3) Data Collection – Use of multiple methods such as field surveys, community mapping, and in-depth interviews, with all information consolidated into a GIS-based database for evidence-based planning.
- 4) Analysis and Validation – Joint analysis of rainfall, water balance, and land-use patterns, followed by validation through community workshops to enhance accuracy, transparency, and shared understanding.
- 5) Action and Institutionalization – Development of watershed action plans and establishment of local management networks to institutionalize collaborative governance and ensure long-term sustainability.

### **Key Findings and Outcomes:**

1) **Water Situation and Balance:** The Mae Tien watershed faces dry-season water shortages and difficulties in managing excess water during the rainy season, particularly in upland and downstream areas. Water balance analysis revealed that rainy-season supply exceeded demand by fourfold, yet streamflow dropped to 0.89 million m<sup>3</sup> against a demand of 1.41 million m<sup>3</sup> in February–April. Limited storage capacity due to shallow tributaries, steep gradients, and unused seepage sources further constrained water availability.

2) **Process Outcomes and Community Institutions:** Communities established collective water-use agreements to ease upstream–downstream conflicts and formed watershed committees with clear roles in resource maintenance. The creation of GIS-based maps and databases provided both communities and local authorities with practical tools for evidence-based planning.

3) **Spatial Measures and Natural Resource Management:** These institutional gains were reinforced through targeted conservation measures, including check dams, reforestation, buffer zones, and conservation agriculture on slopes. Such interventions reduced soil erosion and improved water retention, enhancing ecological resilience.

4) **Socio-Economic and Service Improvements:** Improved water security enabled farmers to align cropping with available water, lowering risks and stabilizing incomes. Pilot projects also strengthened local services through integrated water supply systems, solar-powered pumps, communal tanks, and household metering.

5) **Policy Recommendations and Planning Integration:** The study emphasized integrating community water maps and GIS databases into local and provincial development plans. Linking agencies across water, forestry, agriculture, and land management ensures coordinated investments and long-term sustainability, consolidating outcomes at multiple levels.

**Discussion and Implications:** The study provides important insights into how participatory and evidence-based approaches can address water management challenges in highland contexts. By integrating Participatory Action Research (PAR) with Geographic Information Systems (GIS), the research not only generated technical solutions but also strengthened community institutions and created pathways for sustainable policy integration. The key implications are as follows:

1) **Integration of PAR and GIS –** Combining scientific data with local knowledge enhanced transparency, community ownership, and evidence-based planning, in line with IWRM principles.

2) **Institutional Strengthening –** Establishment of water-use agreements and watershed committees reduced upstream–downstream conflicts.

3) **Environmental Sustainability –** Targeted conservation measures (check dams, reforestation, buffer zones, conservation agriculture) improved water retention and reduced soil erosion.

4) **Socio-Economic Benefits –** Improved water security enabled adaptive cropping, stabilized household incomes, and enhanced services through solar-powered pumps and communal water systems.

5) **Policy Integration –** Embedding community water maps and GIS databases into local and provincial development plans ensures coordinated investment and scalability to other highland watersheds.

**Conclusions:** This study demonstrates that integrating PAR with GIS provides an effective framework for addressing complex water management challenges in highland communities. By combining scientific evidence with local knowledge, the research produced practical tools such as community water maps and GIS databases, while also strengthening community institutions through collective water-use agreements and watershed committees. These efforts were reinforced by targeted conservation measures that improved ecological resilience and enhanced water security. At the same time, socio-economic outcomes were evident in the stabilization of household incomes and improved community services. Importantly, embedding community-based knowledge into local and provincial planning processes ensures that both structural and non-structural investments are coordinated for long-term sustainability. Overall, the Mae Tien watershed case offers a transferable model for other highland regions facing similar socio-ecological challenges.

**Keywords:** Chiang Mai Province, Water management, Geographic Information System, Community water map, Highland watershed



## Design and Development of Packaging and Branding Applying the Thung Kula Ronghai Cultural Capital: Herbal Product Group Satri Maeban, Ban Yang Leng, Suwannaphum District, Roi Et Province, Thailand

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### Abstract

**Background:** The Ban Yang Leng Housewives Herbal Product Community Enterprise, located in Dokmai Subdistrict, Suwannaphum District, Roi Et Province, northeastern Thailand, consists of 20 local women producing herbal products such as balm sticks and camphor oil under the “Leng Hom” brand. Products are distributed through the community enterprise office and at local festivals across Suwannaphum District. However, the enterprise faced several product and marketing limitations that hindered competitiveness and sustainability. The balm stick packaging was inadequately sealed, leading to melting and leakage under high regional temperatures (often exceeding 35°C). The camphor oil was packaged in fragile roll-on glass bottles prone to breakage during transport. Additionally, the packaging design was conventional and failed to reflect the unique cultural identity, traditional wisdom, and craftsmanship of the Thung Kula Ronghai region.

**Objectives and Methodology:** This research aimed to enhance the market value and identity of Leng Hom herbal products through innovative packaging and branding that draw upon the cultural capital of Thung Kula Ronghai. A participatory action research (PAR) approach was employed to ensure community engagement throughout. Data were collected through interviews with six community leaders and enterprise members, four local cultural experts, three packaging design specialists, and 80 tourists representing potential consumers.

The research comprised six phases:

- 1) Documenting the tangible and intangible cultural capital of Thung Kula Ronghai, including the Ku Ka Sing Ancient Monument, Si Phum silk patterns, Bun Bang Fai motifs, Leng Khi Tun tourist attraction, and the legend of the Samang flower field;
- 2) Identifying key cultural identities suitable for integration into branding;
- 3) Designing packaging and branding concepts derived from these identities, including logo creation and container redesign;
- 4) Registering the “Leng Hom” trademark (No. 251117285);
- 5) Producing and testing prototypes for usability, durability, and quality protection; and
- 6) Conducting market testing at the OTOP (One Tambon One Product) Center in Mueang District, Roi Et Province.

**Results and Findings:** The new packaging effectively preserved product quality while conveying local identity through colors, patterns, and motifs inspired by Thung Kula Ronghai’s landscape and traditions. The Leng Hom logo integrated local symbolism, creating emotional resonance with producers and consumers alike. The redesigned containers were more durable, practical, and visually appealing, enhancing product recognition and shelf presence.

Following trademark registration and redesign, profits rose substantially—camphor oil by 350% per month and balm sticks by 37.25%.

Participatory workshops deepened members' understanding of community identity and its value as cultural capital. Members actively contributed to packaging design, color selection, slogans, and brand development, fostering a strong sense of ownership and unity. Monthly meetings were institutionalized for decision-making, progress tracking, and conflict resolution, strengthening group cohesion and accountability.

The Leng Hom products are now continuously sold through OTOP centers and social media, expanding their market reach. Customers report improved satisfaction and higher brand recognition, resulting in increased repeat purchases. The enterprise has become a model for rural women's empowerment through the creative use of local wisdom and design innovation.

The project's outcomes can be categorized into social, economic, and cultural dimensions.

*1) Social Impacts:* The initiative enhanced members' confidence, self-worth, and leadership. Women who once viewed themselves as economically inactive are now central to production, marketing, and management. The strengthened sense of ownership and shared responsibility fostered greater participation in community activities and social welfare. Monthly meetings, transparent communication, and rotating committee roles helped maintain engagement and resolve conflicts, building long-term resilience. The enterprise is now positioned to transfer knowledge to younger generations and neighboring communities, ensuring continuity of local wisdom and sustainable development.

*2) Economic Impacts:* Integrating design knowledge into product development allowed the enterprise to translate Thung Kula Ronghai's cultural motifs into marketable packaging. The distinctive branding increased product visibility, expanded market access, and diversified income streams through OTOP and online sales channels. The group achieved stable profit growth and now serves as a benchmark for rural microenterprises using cultural capital for value creation. Future directions include developing new herbal products, optimizing costs, and protecting brand authenticity. Strategic digital marketing and cost management will further sustain profitability and strengthen the community's economic foundation.

*3) Cultural Impacts:* The creative adaptation of Thung Kula Ronghai's cultural heritage—through motifs, storytelling, and indigenous herbs—preserves and revitalizes local identity while generating economic and social value. By linking local narratives to branding and educational activities, the project demonstrated that culture can serve as both an economic and intellectual asset. However, cultural commercialization requires sensitivity to prevent misrepresentation or loss of authenticity. Sustainable development should emphasize community consent, fair benefit-sharing, and ethical branding to maintain cultural integrity.

**Conclusions:** The Ban Yang Leng Housewives Herbal Product Community Enterprise exemplifies how local cultural capital, when creatively applied through participatory design and branding, can generate social empowerment, economic vitality, and cultural sustainability. The Leng Hom brand stands as a testament to the potential of rural Thai communities to integrate tradition and innovation—transforming pride in place into prosperity and resilience for future generations.

**Keywords:** Roi Et Province, Packaging, Branding, Cultural capital, Cultural identities



## Development of Identity Patterns of Bang Sadet Community, Ang Thong Province, Thailand

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### Abstract

**Background:** The Bang Sadet community, located in Pa Mok District, Ang Thong Province, central Thailand, is a historic settlement renowned for its cultural richness and long-standing traditions. Its distinctive cultural assets include the riverside landscape, the royal visit of Her Majesty Queen Sirikit, The Queen Mother, the historic Wat Tha Sutthawat temple, traditional raft houses, local folk singers, the majestic Yang Na (*Dipterocarpus alatus*) trees, ancient temple murals and Wang Palace doll center. Despite this abundance of tangible and intangible heritage, the community has struggled to effectively present these features as part of its tourism identity, resulting in low visitor numbers and limited local economic growth.

**Objectives and Methodology:** This research aimed to develop and promote a distinctive tourism image for the Bang Sadet community through a participatory and systematic approach. The project consisted of five main stages:

- 1) Community awareness and collaboration: Building knowledge, understanding, and participation among local residents to enhance appreciation of cultural value and foster cooperation among community members, entrepreneurs, and relevant agencies;
- 2) Strategic analysis: Conducting a business environment analysis using SWOT and TOWS matrices to formulate context-appropriate development strategies;
- 3) Entrepreneurial capacity assessment: Evaluating the potential and readiness of local producers and service providers;
- 4) Identity creation: Designing and branding a unique community identity supported by storytelling; and
- 5) Promotion and dissemination: Publicizing the new image through media, products, and tourism events.

**Results and Findings:** The participatory process generated tangible and measurable outcomes. A distinctive community identity pattern, inspired by local culture and history, was developed and applied to shirts, pants, and other fabric products. These identity-patterned items served as both tourism symbols and practical everyday attire. Community members and entrepreneurs began wearing them during welcoming ceremonies, tourism events, and official functions, while government agencies adopted the designs to help promote Bang Sadet at provincial and national levels.

These initiatives transformed cultural identity into an economic asset. The sale of community-branded shirts generated additional household income, while new tourism-related occupations emerged, strengthening the local

economy. Consistent branding enhanced visibility and recognition, positioning Bang Sadet as an attractive destination for domestic and international tourists.

Beyond visual branding, the project fostered collaboration among nine local business groups, including artisans, textile producers, souvenir sellers, cultural performers, and small hospitality providers. Through cooperation, these groups shared experiences, coordinated marketing strategies, and organized community-based events offering immersive cultural experiences. The resulting network enabled more efficient resource use and long-term sustainability.

The transmission of community identity extended beyond products. Entrepreneurs and partner organizations produced promotional media reflecting Bang Sadet's culture and traditions, such as short documentaries, cultural exhibitions, and participation in regional fairs. These activities reinforced community pride and positioned local entrepreneurs as cultural ambassadors. Notable examples include online marketing through the community's Facebook page and the collective wearing of identity-patterned shirts during community activities—strengthening both cohesion and visibility.

The project's impacts can be categorized into three major dimensions: policy, business, and academic.

*1) Policy Impacts:* The Bang Sadet model demonstrates an effective framework for developing community entrepreneurship and local branding through participatory processes. The collaboration between local residents, researchers, and government agencies can be replicated in other Thai communities to advance sustainable community-based tourism (CBT). Provincial and subdistrict administrative organizations, along with the Tourism Authority of Thailand (TAT), can adapt this model to design more inclusive and context-sensitive tourism programs. Moreover, the project supports Bang Sadet's eligibility for official CBT certification, ensuring long-term recognition and sustainability at the policy level.

*2) Business Impacts:* The initiative strengthened local entrepreneurship and business innovation. Training sessions equipped participants with practical skills in interpretive communication, storytelling, tourism management, digital marketing, and product development. These competencies enhanced competitiveness and added value to local goods and services. By integrating storytelling with cultural design, Bang Sadet's products gained distinctiveness and consumer appeal. The branding strategy fostered trust and recognition, reinforcing the community's tourism image and stimulating spending on local products and services. The resulting economic activity improved income, employment, and living standards throughout the community.

*3) Academic Impacts:* From an academic standpoint, the research generated new insights into community-based tourism focused on cultural identity and entrepreneurship development. It demonstrated how collaborative partnerships between academics, researchers, and communities can produce co-created knowledge with tangible social benefits. The methodological framework—integrating participatory design, branding, and strategic business planning—provides a model adaptable to other cultural and tourism contexts. It can also be incorporated into university curricula on tourism management, community development, and heritage preservation, enriching both teaching and practice.

**Conclusions:** The Bang Sadet project illustrates how a systematic and participatory approach to identity development can revitalize local tourism and stimulate economic, social, and cultural sustainability. By transforming traditional motifs and narratives into modern identity-based products, the community has created new avenues for self-representation, pride, and prosperity. The project underscores the power of community-led initiatives in ensuring that development is not externally imposed but grows organically from within. By bridging cultural heritage and modern innovation, Bang Sadet provides a replicable model for other communities seeking to achieve sustainable tourism and long-term resilience.

**Keywords** Ang Thong Province, Secondary city tourism, Entrepreneurs, Image promotion, Networking