From Cultural Heritage to Emerging Economic Crop: State Agricultural Policy and Local Hemp Development in Khiri Rat Subdistrict, Phop Phra District, Tak Province, Thailand

Submitted date: 8 September 2025 *Revised date:* 3 March 2026 *Accepted date:* 17 April 2026

Wasan Pounpunwong [1*]

Abstract

Background and objective (s): Hemp (Cannabis sativa L.) has been an integral part of the cultural heritage, domestic economy, and textile practices of Hmong communities in northern Thailand. Recently, hemp has been repositioned within Thailand's Bio-Circular-Green (BCG) policy framework as a strategic economic crop. This study aimed to achieve two objectives: (1) to analyze the agricultural policies of the Thai government regarding the promotion of hemp as a developing economic crop in Khiri Rat Sub-district, Phop Phra District, Tak Province; and (2) to investigate the impact of these policies on sustainable capacity building, collective strengthening, and market development among hemp-growing farmer groups in the area of study.

Methodology: This study used a qualitative case study approach, combining the analysis of existing documents with fieldwork. The sources for this documentary analysis came from a variety of places. These included policy documents, legal and regulatory texts, district and provincial development plans, official reports, research reports,

[1] Faculty of Social Sciences and Local Development, Pibulsongkram Rajabhat University, Thailand
* Corresponding author wasan.po@psru.ac.th

Journal of Thai Studies
DOI: 10.58837/CHULA.JTS.22.1.2

academic books, journal articles, and publications from relevant public and private organizations. Fieldwork was carried out from April to July 2025 following the ethics approval granted by the Human Research Ethics Committee of Pibulsongkram Rajabhat University (COA No. 023/2025). The final sample included thirteen participants, chosen purposefully from three groups: those involved in policy and institutions, those in network and community enterprises, and those who grew hemp or were involved in community enterprises. Data collection involved semi-structured, in-depth interviews, field notes, photographs, and site observations. Thematic content analysis and methodological triangulation were used to analyze the data.

Main result: The findings show that Thailand's hemp policy, particularly under the Action Plan for the Development of the Hemp Industry toward Commercialization, 2023–2027, reflects a developmental and policy-coordination approach through targeted regulation, institutional support, and value-chain planning. In Khiri Rat, hemp development is supported by favorable geography, agro-ecological suitability, and longstanding Hmong expertise. However, implementation remains incomplete. Major constraints include complex licensing procedures, uneven access to technical and regulatory knowledge, limited processing infrastructure, fragmented inter-agency coordination, and unstable market channels.

Relevance to Thai Studies: This study contributes to Thai Studies by demonstrating how hemp has shifted from a culturally embedded Hmong plant to a state-promoted economic crop within contemporary Thailand's BCG regime. This research links cultural capital, public policy, and borderland development, and shows how state strategy, ethnic livelihoods, and market rationalities are negotiated in a peripheral yet strategically significant region.

DOI: 10.58837/CHULA.JTS.22.1.2

Conclusion: The study concludes that Thailand has made progress in establishing a strategic framework for hemp development, but its effectiveness remains constrained by uneven state capacity, fragmented institutional mechanisms, limited infrastructure, and uncertain market formation. Sustainable hemp development in border ethnic communities requires not only legal liberalization, but also accessible licensing, stronger community enterprises, integrated value-chain governance, and the strategic integration of traditional Hmong knowledge with modern standards, branding, and market innovation.

Keywords: developmental state; agricultural policy; Hemp; Hmong; emerging economic crop

Introduction

The scientific name for hemp is Cannabis sativa L. This plant has attracted significant attention from Thai society for its potential as an economic crop, recognizing that hemp is related to cannabis or marijuana, scientifically referred to as Cannabis indica Lam. Cannabis and hemp belong to the Cannabaceae family and have been cultivated for their fibers for millennia in Asia and the Middle East. Their distribution spans several regions, including southern Siberia, Persia, northern Kashmir, India, and the Himalayan foothills in China. Cannabis plants were first classified in the year 1753 by Carl Linnaeus, a Swedish botanist who developed the modern system for classifying living organisms (Saepae, 2022). The classification consists of three categories: (1) species grown for fiber, (2) species grown for seeds, and (3) species grown for medical or recreational purposes (Weed Review, 2023). Thailand has officially reclassified hemp, removing it from its status as a Category 5 narcotic. It has established clear control conditions, indicating that cultivation, production, sale, import, and export must occur under the authorization and oversight of the appropriate agencies. The concentration of 9-tetrahydrocannabinol (THC) in hemp must not surpass 0.2% of dry weight, whereas cannabidiol (CBD) (Suksanapat & Sirikanchanarak, 2021), recognized for its medical benefits, may be present in greater quantities than THC. Hemp continues to present significant opportunities for advancement as a fundamental resource in the fields of medicine, health food, and cosmetics. Currently, cannabis has been reclassified solely for medical use under stringent regulations, necessitating a prescription from a licensed physician or healthcare provider, while recreational use continues to be illegal (Sukcharoen & Sampanpanish, 2019)

DOI: 10.58837/CHULA.JTS.22.1.2

Since 2016, the Thai government has enacted measures to facilitate the cultivation and ale of hemp for income generation, designating various agencies, including the Office of the Narcotics Control Board, to oversee these initiatives. Additionally, the Ministry of Agriculture and Cooperatives and the Food and Drug Administration. Establish guidelines for economic cultivation, which should include the identification of pilot areas. Khiri Rat Subdistrict, located in Phop Phra District of Tak Province, is a significant area where the predominant population consists of the Hmong ethnic group (Tak Agricultural Occupation Promotion and Development Center [Highland Agriculture], 2017). This community has a rich history of cultivating hemp for various household purposes, including weaving, creating household items, and participating in traditional ceremonies.

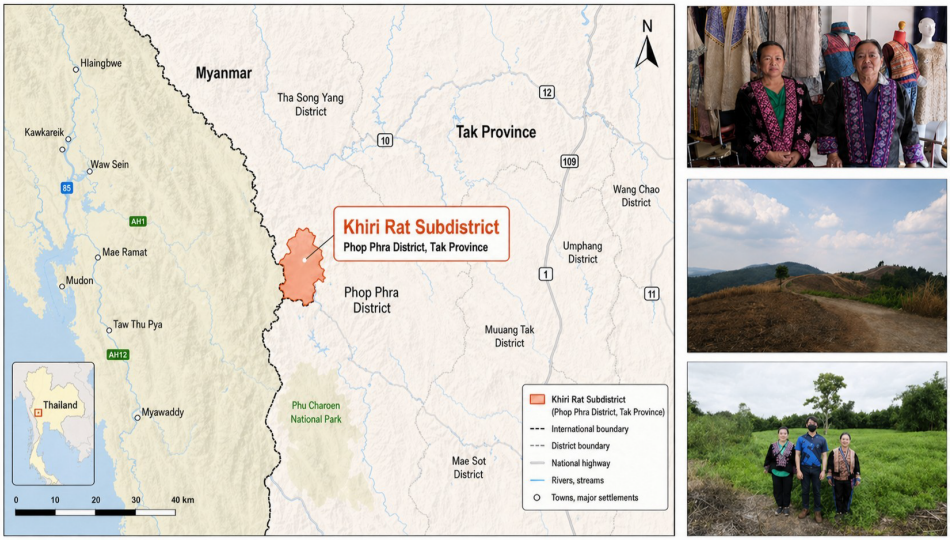


Figure 1: Location of Khiri Rat Sub-district, Phop Phra District, Tak Province

Khiri Rat Subdistrict is situated in the elevated western border region. The region features a complex mountainous terrain and possesses a climate conducive to the cultivation of cold-weather crops, such as hemp, which necessitates particular temperature and sunlight conditions. Utilizing cultural capital through the Hmong ethnicity's traditional expertise in hemp cultivation and weaving, alongside ecological advantages from the region's suitability for low-THC hemp varieties and supportive government policies, Khiri Rat has emerged as a key hemp production area in the country, recognized as the “Phop Phra Model.” This initiative connects the economic framework of the community, the formation of farmer groups, and the development of products utilizing local raw materials (Chatjenkit & Sarnnoi, 2021).

This study holds importance as it seeks to comprehend the dynamics involved in the transition of hemp from a “cultural plant” to a “new economic plant” within the framework of agricultural policy and spatial development in Khiri Rat Sub-district, Phop Phra District, Tak Province, an area distinguished by its unique geographical, cultural, and community economic traits. This research illustrates the mechanisms and strategies of government policies aimed at promoting commercial hemp. Additionally, it produces knowledge that serves as a guideline to improve farmers' capabilities, bolster the local economy, and enhance competitiveness in both regional and national hemp markets. This will result in the identification of development pathways that are sustainable and in harmony with the social, economic, and cultural context of the region.

DOI: 10.58837/CHULA.JTS.22.1.2

Research objective

1. To analyze the government's agricultural policies pertaining to the advancement of hemp as a novel economic crop in Khiri Rat Sub-district, Phop Phra District, Tak Province.

2. To study the influence of public agricultural policies on strengthening the sustainability and potential of farmers, with a focus on enhancing the capacity to boost sales productivity for hemp-growing farmer groups in Khiri Rat Sub-district, Phop Phra District, Tak Province.

Methodology

This study employed a qualitative case study design to examine how state agricultural policy has shaped hemp development in Khiri Rat Sub-district, Phop Phra District, Tak Province. The analysis focused on two interrelated dimensions: (1) the promotion of hemp as an emerging economic crop and (2) sustainable capacity building, collective strengthening, and market development among hemp-growing farmer groups. A qualitative approach was appropriate because the study aimed to explain policy implementation, institutional coordination, local adaptation, and market constraints within a specific socio-cultural and territorial context rather than to produce statistically generalizable results.

Data collection combined documentary research and fieldwork. Documentary sources included policy documents, legal and regulatory texts, district and provincial development plans, official reports, research reports, academic books, journal articles, and publications issued by relevant public and private organizations. These materials were used to reconstruct the policy trajectory of hemp promotion in Thailand and to contextualize field-based findings.

Fieldwork was conducted between April and July 2025, following ethics approval from the Human Research Ethics Committee of Pibulsongkram Rajabhat University on 21 November 2024 (COA No. 023/2025). All participants provided informed consent prior

DOI: 10.58837/CHULA.JTS.22.1.2

to participation, and no personally identifying information is disclosed in this article. Interview-based evidence is therefore cited using anonymized role-based identifiers.

Key informants were selected through purposive sampling on the basis of direct relevance to the study objectives. Informants were included if they held a formal role in hemp-related policy implementation, agricultural extension, institutional support, market coordination, or inter-agency networking in Tak Province or Phop Phra District, or had direct experience in hemp cultivation, processing, weaving, or community enterprise management in Khiri Rat. The final sample comprised 13 informants across three analytically defined groups: policy and institutional actors (KI-01 to KI-03), network and community enterprise actors (KI-04 to KI-05), and hemp growers and community enterprise members (KI-06 to KI-13). This grouping enabled the study to capture the translation of policy from state strategy and institutional support to local production, collective organization, and market practice.

Semi-structured in-depth interviews were organized around five themes: policy and regulation, farmer capacity building, group formation, processing and market access, and policy recommendations. Interviews lasted approximately 20-30 minutes and were audio-recorded with consent, supplemented by field notes, photographs, and site observations.

Data were analyzed using thematic content analysis. Open coding was first used to identify recurring issues such as licensing complexity, knowledge transfer, collective organization, infrastructure constraints, standards compliance, and market uncertainty. These codes were then grouped through axial coding into broader themes related to state policy support, sustainable capacity building, grassroots institutional strength, and value-chain development. Credibility was strengthened through methodological triangulation across interview data, documentary sources, field observations, and visual documentation.

Theoretical Framework and Literature Review

This study outlines the conceptual framework for hemp development in Khiri Rat Subdistrict, Phop Phra District, Tak Province, utilizing an integrated approach that incorporates Developmental State Theory, Public Policy Theory, Sustainable Development Theory, and Grassroots Economic Development. An integrated approach is essential, as hemp with in the Thai context cannot be merely classified as an agricultural commodity or a newly legalized cash crop. It occupies a complex position at the intersection of state strategy, regulatory transformation, territorial development, ethnic livelihoods, local knowledge, and the marketization of cultural resources. From this perspective, we can best understand the promotion of hemp as a development process deeply rooted in its spatial context. It involves the state's efforts to reorganize productive activities, create new economic opportunities, and integrate local resources into wider national strategies aimed at industrial advancement and sustainable growth.

The theory of the developmental state serves as the initial analytical foundation for this interpretation. The developmental state, in both its classical and contemporary forms, denotes a state that embodies not only coercive or administrative power but also the institutional capability to devise long-term strategies, coordinate productive sectors, influence market incentives, and guide structural transformation through intentional public action (Clark & Jung, 2002; Chen & Lees, 2016; Fleckenstein & Lee, 2017; Ovadia & Wolf, 2018; Singh & Ovadia, 2018; Singh et al., 2020). Subsequent research has demonstrated that the practices associated with developmental states extend beyond the industrialization experiences of East Asia. They continue to hold significant relevance for current efforts to establish new sectors, manage emerging markets, and synchronize industrial policy with broader legal, environmental, and territorial goals (Bowman, 2020; Butollo & Ten Brink, 2018; Cheang, 2024; De Marchi & Alford, 2022; Dent, 2018, 2020; Kim, 2007; Massi & Singh, 2020; Meckling, 2018; Trubek, 2008). The literature regarding hemp indicates that the Thai state's interest in its promotion transcends mere agricultural diversification; it is a fundamental

component of a holistic developmental strategy aimed at establishing a bio-based economic sector linked to regional competitiveness, industrial processing, and value-added production. The case simultaneously highlights the disparities in developmental capacity in practice, especially when ambitious national strategies face challenges such as legal ambiguity, fragmented implementation, infrastructural deficits, and insufficient inter-agency coordination in borderland contexts.

Public policy theory enhances this analysis by redirecting focus from state intention to the political processes involved in defining policy problems, constructing agendas, selecting instruments, and negotiating implementation outcomes. Policy scholarship has consistently highlighted that public policy is not merely a neutral technical response to obvious issues, but rather a politically mediated process influenced by institutional interests, varying interpretations, and conflicts regarding what should be recognized as a legitimate public objective (Bakir & Gunduz, 2017; Biesbroek & Candel, 2020; Eller & Krutz, 2009; Fischer, 2003; Fischer & Miller, 2017; Greenberg et al., 1977; Hoppe, 2010; Paudel, 2009; Rietig, 2021; Smith & Larimer, 2018). The Thai hemp case highlights the significance of this perspective, as hemp policy has evolved through a changing regulatory landscape, transitioning from stringent narcotics-focused governance to conditional legalization and economic encouragement. The primary analytical inquiry, then, is not solely whether the state currently endorses hemp, but rather how that endorsement is manifested through licensing frameworks, extension services, regulatory transparency, market accessibility, and institutional collaboration in practice. From this perspective, hemp development illustrates the disparity between policy aspirations and actual implementation. National policy frameworks may designate hemp as a strategic crop; however, farmers and local stakeholders still face challenges such as complex licensing processes, ambiguity regarding regulatory status, inadequate processing infrastructure, and inconsistent commercial channels. Public policy theory highlights the disparity between the formal adoption of policies and the actual developmental results achieved.

DOI: 10.58837/CHULA.JTS.22.1.2

Sustainable Development Theory introduces an essential dimension by broadening the assessment of hemp development to include factors beyond mere commercial returns and production growth. The foundational literature on sustainability has consistently emphasized the necessity of evaluating development in relation to its economic, social, and environmental impacts. It asserts that long-term viability is contingent upon preserving the conditions that enable both human communities and ecological systems to sustain themselves over time (Cowie et al., 2018; Deng & Bai, 2014; Giddings et al., 2002; Hariram et al., 2023; Hayward, 2009; Javanmardi et al., 2023; Mensah, 2019; Pelling & Manuel-Navarrete, 2011; Raworth, 2017; Van Kerkhoff & Lebel, 2006). In the context of Khiri Rat, this viewpoint is particularly significant as hemp is advocated within the framework of the bio-circular-green economy, which clearly connects productivity, value creation, and environmental efficiency. However, the sustainability issue in this instance goes beyond mere resource management or environmentally conscious farming practices. It also includes the resilience of smallholders, the strength of local institutions, the reliability of market access, and the safeguarding of community-based cultural resources. The cultivation of hemp cannot be deemed sustainable if it produces immediate financial gains while subjecting farmers to regulatory unpredictability, market volatility, and the degradation of local knowledge systems. Sustainable development in this context necessitates a comprehensive understanding of value, encompassing economic security, social continuity, and ecological responsibility concurrently.

The fourth pillar, Grassroots Economic Development, emphasizes the importance of local communities in the development process. Unlike top-down models that primarily view rural populations as policy recipients, grassroots approaches emphasize the significance of participation, inherent capacities, community organization, local knowledge, and the development of productive systems from the ground up (Eversole, 2003; Kothari, 2014; Pettit, 2000; Singh et al., 2020; Uduma & Arciszewski, 2010). This viewpoint is particularly relevant in Khiri Rat, as the Hmong community has a rich history of expertise in hemp cultivation, fiber processing, weaving, and domestic applications. This knowledge is integral

DOI: 10.58837/CHULA.JTS.22.1.2

to development; it serves as a significant economic and cultural resource on its own. The existing literature indicates that local development is strengthened when communities maintain significant control over productive assets, engage in market activities, and participate in value creation processes (Vaughan, 1995; Deininger, 2003). Simultaneously, critical scholarship highlights the susceptibility of grassroots economies to external capture when they are integrated into broader markets without the presence of institutional safeguards, equitable bargaining power, or cultural protection (Li et al., 2022; Valenzuela, 2016; Wheeler & Laing, 2008). The grassroots perspective regarding hemp emphasizes the importance of evaluating whether policy fosters the development of locally rooted enterprises and community autonomy or if it potentially subjugates local stakeholders to external companies, uniform production systems, and limited commercial interests (Hennessey Lavery et al., 2005).

The empirical literature regarding hemp in Thailand underscores the necessity for a comprehensive framework of this nature. Current research suggests that hemp has a longstanding presence in both social and historical contexts. It has been deeply integrated into the cultural and productive practices of northern highland communities, especially among ethnic groups that have cultivated and utilized it for fiber, textiles, rope, and various household applications (Cameron, 2000, 2011; Rispoli et al., 2013; Sengloung et al., 2009; Tipparat, et al., 2014). This historical literature is significant, as it demonstrates that the current state-led promotion of hemp does not introduce a completely novel resource into rural Thailand; rather, it reclassifies and reorganizes a historically embedded plant within a new legal, regulatory, and commercial framework. The transition is consequently not solely financial. The matter is also institutional and epistemic, encompassing a shift in the authority to delineate the definition of hemp, the methods of its cultivation, and the types of value deemed legitimate.

Recent literature on hemp as an emerging economic crop underscores its commercial potential while also identifying significant analytical deficiencies. Research has investigated the potential of hemp in various domains, including textiles, community enterprise development, OTOP products, and higher-value processing. It has also acknowledged the continuing significance of hemp in Hmong cultural practices and traditional applications (Aroonsrimorakot et al., 2019; Mahattanachai et al., 2018, 2021; Parasee, 2006; Upan, 2018; Whungthun & Assapaporn, 2018). However, a significant portion of this scholarship often focuses on a single aspect, whether it be market opportunity, product development, legal regulation, or cultural identity. A more systematic account of how state policy reorganizes the relationship between these dimensions remains underdeveloped. The present study addresses this gap. In a borderland context like Khiri Rat, the understanding of hemp extends beyond mere commercial potential or regulatory reform. It is essential to examine this location as a point where the developmental goals of the state converge with community livelihoods, the continuity of ethnic cultures, local ecological circumstances, and the contentious process of converting cultural capital into market value.

The combined theoretical and empirical literature indicates that the development of hemp in Khiri Rat should be viewed as a multifaceted political-economic and socio-cultural process, rather than merely an agricultural initiative. Developmental State Theory elucidates the strategic ambitions and institutional constraints of the Thai state; Public Policy Theory highlights the contested and uneven translation of policy into practice; Sustainable Development Theory expands the evaluative perspective beyond immediate growth; and Grassroots Economic Development emphasizes the agency, knowledge, and economic aspirations of the local community. The literature on Thai hemp confirms its historical significance in ethnic livelihoods and highlights the increasing efforts by the state to develop it as a new economic frontier. The primary analytical implication is that hemp policy extends beyond mere crop promotion. The reordering of relations among law, market, state institutions, and local cultural life is crucial in shaping the long-term trajectory of territorial development in Thailand's border ethnic communities, as it influences how these communities engage with hemp cultivation and the economic opportunities it presents.

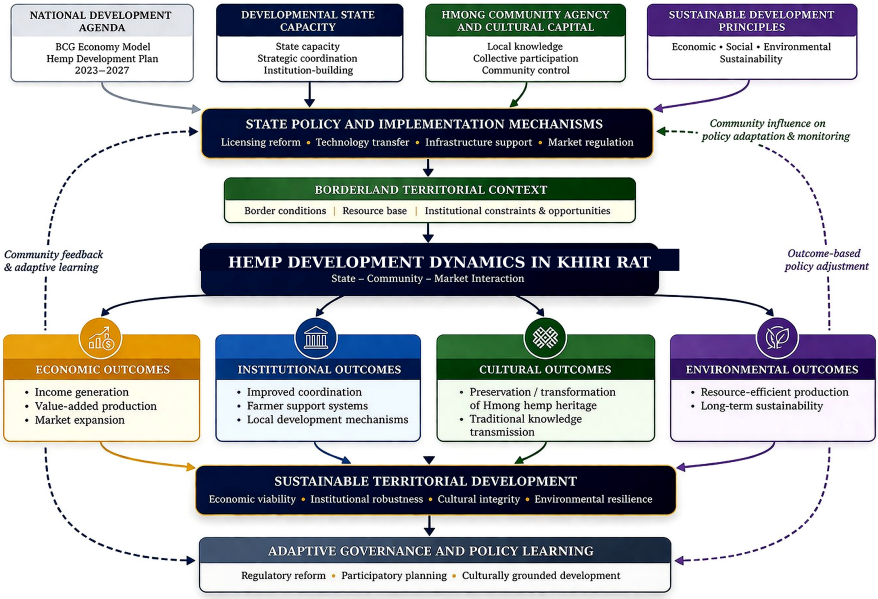


Figure 2: Conceptual Framework

As shown in Figure 2, the framework conceptualizes hemp development as a dynamic interaction between state developmental capacity, public policy implementation, sustainable development principles, and Hmong community agency. It highlights the state as a direct driver of economic, institutional, cultural, and environmental outcomes, while also recognizing that Hmong cultural capital and local knowledge actively shape policy implementation, adaptation, and the long-term trajectory of sustainable territorial development.

DOI: 10.58837/CHULA.JTS.22.1.2

Result

1. Agricultural Policy and the Promotion of Hemp as an Emerging Economic Crop in Khiri Rat Sub-district, Phop Phra District, Tak Province. The findings indicate that the Thai government's agricultural policy regarding hemp development in Khiri Rat Sub-district, Phop Phra District, Tak Province, reflects a coordinated multi-level policy framework linking national, provincial, and local institutions. The BCG Economy model and the Action Plan for the Development of the Hemp Industry toward Commercialization, 2023–2027 have functioned as the principal policy frameworks through which the Thai state has attempted to reposition hemp from a local cultural plant into a strategic economic crop (Office of Industrial Economics, Ministry of Industry, 2023). This policy direction emerged following major legal changes, including the ministerial regulations of 2020 and the Ministry of Public Health notification of 2022, which expanded the legal space for the cultivation, production, and commercial utilization of hemp under the condition that THC content remain below 0.2% by weight. Within this policy architecture, hemp has been redefined as a biological resource capable of supporting high-value industries while linking agriculture to contemporary systems of production, processing, and marketing (Office of Industrial Economics, Ministry of Industry, 2023). This strategic repositioning is particularly evident in relation to competitiveness enhancement, high-value agriculture, circular economy promotion, food security, and sustainable resource use, all of which are explicitly embedded in the state's broader BCG development agenda (Office of Industrial Economics, Ministry of Industry, 2023).

At the local level, the study found that Khiri Rat Sub-district possesses considerable structural potential for the development of hemp as an emerging economic crop. This potential derives from a combination of geographical suitability, climatic conditions, land and water resources, and the agricultural character of the local economy. According to the Phop Phra District Agricultural Development Plan, mountains and forests account for 59.3% of the total area, while environmental and soil conditions are conducive to drought-tolerant

crop cultivation; approximately 90% of the population is engaged in agriculture (Phop Phra District Agricultural Office, Tak Province, 2023). Under these conditions, hemp is viewed as a promising alternative to some existing cash crops because it can be diversified across multiple sectors, including fiber, food, cosmetics, biomaterials, and health-related products. The area also benefits from the social and cultural assets of the Hmong community, whose long-standing knowledge of hemp cultivation has been reinforced by institutional support since 2014 (Phop Phra District Agricultural Office, Tak Province, 2023; policy and institutional actor KI-03, personal communication, July 14, 2025).

The findings further show that the policy mechanism for promoting hemp in Khiri Rat has been structured as a multi-stage development chain encompassing preparation, production, processing, and monitoring. A number of agencies have been involved in this process, including the Phop Phra District Agricultural Office, provincial and district public health offices, the Highland Research and Development Institute, the Khiri Rat Subdistrict Administrative Organization, the Provincial Industry Office, the Community Development Office, the Provincial Commerce Office, as well as community enterprises and local cooperatives (Tak Agricultural Occupation Promotion and Development Center (Highland Agriculture), 2017). This institutional arrangement reflects a state effort to create a support system covering public communication, farmer selection, knowledge transfer, demonstration plots, licensing procedures, promotion of GAP and organic standards, model processing facilities, and domestic and international market linkage.

However, when documentary evidence is read alongside interview data, the findings consistently suggest that hemp development in Khiri Rat remains policy-driven but only partially realized in practice. Although national policy has provided strategic clarity and greater legal legitimacy, its translation into community-level implementation continues to face at least four major constraints: (1) complex and inaccessible licensing procedures for ethnic farmers, (2) uneven understanding of production standards and THC requirements,

(3) inadequate processing infrastructure and unstable purchasing arrangements, and (4) fragmented coordination among agencies rather than systematic integration (hemp grower KI-07, personal communication, April 3, 2025; policy and institutional actor KI-02, personal communication, July 14, 2025). These limitations prevent hemp from fully functioning as a viable "new economic crop" within the local community context.

A further significant finding is that local farmers clearly distinguish between "policy opportunity" and "economic confidence." While some interviewees acknowledged that legal reform has enabled communities to cultivate hemp more openly than before, they also expressed concern over market uncertainty, price instability, and the absence of reliable purchasing systems. For this reason, farmers called for stronger government support in organizing producer groups, establishing village-level learning centers, and creating local purchasing or processing units so that hemp cultivation would not become an additional source of household risk (hemp grower KI-06, personal communication, April 3, 2025; hemp growers KI-09, KI-10, KI-11, KI-12, and KI-13, personal communication, April 3, 2025). Similarly, policy and institutional actors emphasized that if hemp is to be promoted effectively as an economic crop, the state must move beyond legal permission and establish a fully integrated policy framework across the value chain, including standards compliance, THC control, GAP-based production, and support for community enterprises (policy and institutional actor KI-01, personal communication, July 14, 2025; policy and institutional actor KI-02, personal communication, July 14, 2025).

Taken together, the findings indicate that the government's agricultural policy on hemp development in Khiri Rat is broadly aligned with Thailand's strategic agenda for promoting new economic crops and is supported by a relatively clear national policy framework. Nevertheless, the effectiveness of this policy at the local level depends less on the existence of formal policy documents than on the state's capacity to build tangible mechanisms for implementation and integration. The strengths of the area lie in resource

DOI: 10.58837/CHULA.JTS.22.1.2

suitability, Hmong cultural knowledge, and the presence of multiple supporting agencies. Its main weaknesses, by contrast, lie in regulatory complexity, market uncertainty, and the absence of sufficient infrastructure and long-term coordination mechanisms. Hemp development in Khiri Rat should therefore be understood as an early-stage process of policy transition rather than as a fully achieved economic and social transformation (Office of Industrial Economics, Ministry of Industry, 2023; Phop Phra District Agricultural Office, Tak Province, 2023).



Figure 3: : Community-Based Value-Added Activities under Hemp Cultivation Promotion in Khiri Rat Sub-district (2018)

DOI: 10.58837/CHULA.JTS.22.1.2

2. Agricultural Policy, Sustainable Capacity Building, and Market Development among Hemp-Growing Farmer Groups in Khiri Rat Sub-district, Phop Phra District, Tak Province. The findings show that state agricultural policy has created a significant policy space through which Khiri Rat Sub-district has begun to shift from cultivating hemp as a traditional Hmong cultural plant toward promoting it as an emerging economic crop. This transition is closely linked to the BCG Economy framework and the Action Plan for the Development of the Hemp Industry toward Commercialization, 2023–2027, under which the state has attempted to integrate hemp into the bioeconomy, high-value production, and grassroots economic revitalization (Office of Industrial Economics, Ministry of Industry, 2023). Yet the findings also indicate that the effectiveness of this policy shift at the local level does not depend solely on legal liberalization or the existence of a strategic national plan. Rather, it depends on whether the state can convert policy ambition into accessible support mechanisms at the community level, particularly in the areas of knowledge transfer, group formation, processing capacity, and market continuity.

With respect to farmer capacity building, the findings suggest that the development of hemp-growing farmers in Khiri Rat rests on the interaction between traditional ethnic knowledge and modern technical support. The Hmong community possesses substantial inherited expertise in hemp cultivation, fiber use, and weaving. Government and supporting agencies, including the District Agricultural Office, public health authorities, and the Highland Research and Development Institute, have sought to build upon this foundation through activities such as varietal selection, learning plots, production standards, cultivation permits, and GAP/organic-oriented support intended to align production with contemporary market requirements (Phop Phra District Agricultural Office, Tak Province, 2023; Tak Agricultural Occupation Promotion and Development Center (Highland Agriculture), 2017). Nevertheless, field data indicate that such support remains intermittent and project-based rather than continuous and institutionally embedded within the community. As a result, some local producers continue to face difficulties in accessing clear and comprehensive information

regarding production standards, THC regulation, and legal procedures (policy and institutional actor KI-02, personal communication, July 14, 2025; hemp growers KI-09, KI-10, KI-11, KI-12, and KI-13, personal communication, April 3, 2025).

The findings further indicate that the long-term resilience of hemp-growing farmer groups derives not primarily from individual capability, but from collective organization through community enterprises and farmer networks with defined structures of management. An important example is the Ban Mai Yod Kiri group, which operates as a registered community enterprise with a membership system, production planning, and the ability to coordinate with state agencies in order to obtain support for training, product design, packaging development, and natural dyeing. As reflected in the accounts of a network and community enterprise actor and a policy and institutional actor, this organizational model not only reduces production costs and strengthens bargaining power, but also supports collective knowledge management and provides a basis for long-term self-reliance (network and community enterprise actor KI-05, personal communication, July 15, 2025; policy and institutional actor KI-02, personal communication, July 14, 2025). At the same time, the sustainability of this collective strength remains dependent on policy continuity, long-term support, and the creation of conditions under which younger generations can acquire knowledge and develop innovation grounded in the community's cultural heritage (hemp growers KI-09, KI-10, KI-11, KI-12, and KI-13, personal communication, April 3, 2025).

Market development emerged as the most fragile dimension of hemp promotion in the study area. Although national policy envisions the creation of supply chains, value-added products, and market linkages at both domestic and international levels, local farmers continue to distinguish sharply between policy opportunity and actual economic security. Some interviewees remained uncertain as to whether hemp cultivation would be backed by guaranteed markets, stable pricing, or fair distribution of risk in cases where products could not be sold. For that reason, participants proposed that the government should support more systematic group organization, establish local learning or purchasing centers,

and develop an integrated market mechanism extending from upstream production to downstream commercialization (hemp grower KI-06, personal communication, April 3, 2025; hemp grower KI-07, personal communication, April 3, 2025; policy and institutional actor KI-01, personal communication, July 14, 2025). At the same time, the study identified notable market potential rooted in Hmong cultural capital, particularly in the development of hemp-fabric products that combine local knowledge with contemporary design. Such products could potentially access fashion markets, creative industries, and cultural tourism if supported by branding strategies, quality standards, and more stable market networks.

Overall, the findings confirm that state agricultural policy has created important enabling conditions for hemp development in Khiri Rat, particularly in relation to farmer capacity building, collective strengthening, and the expansion of possible market opportunities. However, this process remains progressive in policy terms but incomplete at the systemic level, because it still lacks consistent strategic integration across human development, community institution building, processing capacity, and market access. If hemp is to function as a genuinely sustainable economic crop capable of strengthening farmer livelihoods, the state must move beyond fragmented, project-based intervention and instead construct a complete value chain that connects education, production, collective organization, value addition, branding, and a stable and equitable market for community-level producers (Office of Industrial Economics, Ministry of Industry, 2023; Phop Phra District Agricultural Office, Tak Province, 2023).

DOI: 10.58837/CHULA.JTS.22.1.2

Discussion

1. From Policy Vision to Local Practice: Agricultural Policy and the Promotion of Hemp as an Emerging Economic Crop in Khiri Rat Sub-district, Tak Province. The findings demonstrate that the Thai state's agricultural policy regarding hemp development in Khiri Rat Sub-district closely reflects the logic of the developmental state. Rather than functioning merely as a regulatory authority, the state has assumed a strategic role in defining hemp as an emerging economic crop and embedding it within a sector-specific industrial agenda under the BCG Economy model and the Hemp Industry Development Action Plan 2023–2027. This trajectory is consistent with Johnson (1999) classic formulation of the developmental state as one that actively guides production and industrial upgrading, and with subsequent arguments that East Asian developmental states rely on selective industrial targeting to build structural competitiveness (Chen & Lees, 2016). In the Thai case, this strategic orientation is evident in attempts to organize hemp development across the entire value chain, from upstream research, certified seed development, and demonstration plots to midstream community enterprise formation and preliminary processing, and finally to downstream branding, OTOP/GI certification, and domestic and international market linkage. In this respect, the findings support Dent (2020) argument that successful developmental states do not merely liberalize markets but intervene creatively and invest strategically in priority sectors.

The Khiri Rat case further shows that state-led agricultural transformation in borderland settings depends not only on industrial policy, but also on the ability to incorporate local social and cultural assets into development strategy. The agro-ecological suitability of the area, together with the Hmong community's long-standing knowledge of hemp cultivation, fiber processing, natural dyeing, and weaving, indicates that the state is not creating an entirely new sector from the ground up; rather, it is reorganizing an existing cultural resource into a new economic domain (policy and institutional actor KI-03, personal communication,

July 14, 2025; network and community enterprise actor KI-05, personal communication, July 15, 2025). This finding resonates with Alexander (2013) proposition that developmental success requires the integration of social and cultural capital into economic planning, and with Singh and Ovadia (2018) broader argument that culturally embedded resources can support sustainable development in the Global South. Moreover, the emergence of farmer groups and community enterprises, together with the use of Thai hemp varieties such as RPF1–RPF4, reflects an institutionalization process consistent with the notion of embedded autonomy, whereby the state retains strategic direction while remaining socially embedded in local networks of trust and cooperation (Dejene & Cochrane, 2019; Trubek, 2008).

Nonetheless, the findings also indicate that Thailand's hemp policy, in this case, falls short of the conditions associated with a fully effective developmental state. The principal limitation lies in the gap between strategic ambition and administrative capacity. Cultivation permits remain procedurally complex, knowledge of GAP standards and THC regulation is uneven, support mechanisms tend to be project-based and short-term, and systematic monitoring remains weak (hemp grower KI-07, personal communication, April 3, 2025; policy and institutional actor KI-02, personal communication, July 14, 2025). These constraints are consistent with critiques emphasizing the importance of bureaucratic capacity, policy continuity, and institutional coherence for developmental success (Bowman, 2020; Clark & Jung, 2002; Ovadia & Wolf, 2018). Equally significant, the area still lacks key industrial infrastructure, including pilot processing plants, local processing centers, and specialized machinery. This weakens the capacity to move from cultivation to value-added production and confirms Johnson (1999) and Cheang (2024) insistence that infrastructural investment is central to productivity upgrading and long-term competitiveness.

From a public policy perspective, these findings further suggest that hemp development should be understood not as a fixed policy outcome, but as an incomplete and contested policy process. At the formulation stage, the BCG framework and the hemp action plan illustrate a policy agenda shaped by both economic rationality and political negotiation,

as suggested by Fischer and Miller (2017) and Smith and Larimer (2018). Yet implementation reveals a more complex reality. The evidence from Khiri Rat strongly supports implementation-oriented scholarship showing that policy success depends on inter-agency coordination, resource allocation, institutional adaptability, and the capacity of policy actors to translate formal goals into workable local arrangements (Bakir & Gunduz, 2017; Biesbroek & Candel, 2020; Hoppe, 2010; Paudel, 2009). In this case, the central challenge lies not in the absence of policy, but in the weak conversion of policy intent into territorially grounded governance, a point repeatedly echoed by both producers and institutional actors in the study area (hemp grower KI-06, personal communication, April 3, 2025; policy and institutional actor KI-01, personal communication, July 14, 2025).

The findings are also consistent with prior literature emphasizing both the commercial potential and the cultural embeddedness of hemp in northern Thailand. They align with studies highlighting the suitability of highland environments for hemp cultivation and the importance of ethnic knowledge systems in sustaining hemp-based production (Cameron, 2000, 2011; Rispoli et al., 2013; Sengloung et al., 2009; Tipparat et al., 2014). Likewise, they reinforce earlier work suggesting that state agencies, universities, and local institutions can play an important role in product upgrading and value creation (Aroonsrimorakot et al., 2019; Mahattanachai et al., 2018; Whungthun & Assapaporn, 2018). At the same time, they strengthen criticisms that regulatory rigidity, weak market clarity, and inconsistent long-term support continue to constrain small producers (Upan, 2018). The broader theoretical implication, therefore, is that legal liberalization alone does not create a viable hemp economy. What is required is a state capable of integrating industrial policy, local institutions, infrastructure, and market architecture into a coherent developmental framework. Without this, hemp remains an emerging policy aspiration rather than a consolidated pathway of sustainable territorial transformation.

DOI: 10.58837/CHULA.JTS.22.1.2

2. From Cultural Capital to Market Constraints: Rethinking State Agricultural Policy, Sustainable Capacity Building, and Hemp-Based Rural Development in Khiri Rat Sub-district, Tak Province. The findings indicate that agricultural policy in Khiri Rat Sub-district has created a significant policy opening through which a culturally embedded crop has been repositioned as an emerging economic asset, particularly under Thailand's post-2021 hemp liberalization and the BCG policy framework. From the perspective of Sustainable Development Theory, this transition is important because it shows that hemp development cannot be assessed solely in terms of commercialization or output growth; rather, it must be understood through the interdependence of economic viability, social continuity, cultural reproduction, and local resource sustainability (Giddings et al., 2002; Mensah, 2019). In this sense, the findings support the argument that cultural capital can serve as a productive foundation for long-term local development and grassroots economic resilience (Eversole, 2003; Vaughan, 1995). At the same time, the case confirms the critique advanced by Raworth (2017) and Javanmardi et al. (2023): cultural capital alone is insufficient to secure competitive and durable development unless it is institutionally linked to technical upgrading, market infrastructure, and modern quality-control systems.

A central contribution of the study lies in showing that farmer capacity-building in Khiri Rat is most effective when traditional Hmong knowledge and modern technical knowledge are not treated as oppositional, but as mutually constitutive. The community's expertise in hemp cultivation, fiber processing, natural dyeing, and weaving gives the crop a dual status as both an economic and a cultural resource, consistent with Aroonsrimorakot et al., 2019 argument that hemp constitutes an important form of ethnic cultural capital. Yet the findings also support concerns raised by Mahattanachai et al., 2018, Langhout and Thomas (2010), and Valenzuela (2016), who warn that if modern knowledge systems are introduced without cultural mediation, local communities may lose meaningful control over both knowledge and identity. This is particularly evident in the uneven transmission of hemp-related knowledge to younger generations, a concern highlighted by both community

enterprise actors and producers in the field (network and community enterprise actor KI-05, personal communication, July 15, 2025; hemp grower KI-07, personal communication, April 3, 2025). This suggests that the sustainability of hemp development depends not only on whether production can be expanded, but also on whether the community's knowledge system can be reproduced across generations in a form that remains socially meaningful (Hariram et al., 2023; Kothari, 2014; Van Kerkhoff & Lebel, 2006).

The findings further demonstrate that the long-term strength of hemp-growing collectives depends less on individual initiative than on collective organization. The emergence of community enterprises such as the Ban Mai Yod Kiri hemp weaving group confirms that group formation can enhance bargaining power, facilitate knowledge sharing, and strengthen local self-management, in line with Pettit (2000), Cummings (2001), Hennessey Lavery et al. (2005), and Singh et al. (2020). In this respect, farmer groups should be understood not merely as economic units, but as grassroots institutions through which production, identity, and resource governance are organized. However, the evidence also supports critiques by Wheeler and Laing (2008) and Li et al. (2022), namely that collective organization cannot be sustainable if it remains dependent on ad hoc markets and weak external networks. This limitation was evident in the interview data, where participants emphasized the continuing fragility of market channels and the dependence of community enterprise activity on intermittent support and irregular commercial opportunities (network and community enterprise actor KI-05, personal communication, July 15, 2025; policy and institutional actor KI-01, personal communication, July 14, 2025). The findings are therefore consistent with Mahattanachai et al. (2021), who argue that group sustainability requires strong local leadership, sustained state support, and effective intergenerational continuity. Without these conditions, collective organization may appear institutionally visible while remaining economically fragile.

DOI: 10.58837/CHULA.JTS.22.1.2

The most critical bottleneck identified by the study lies in market development. Although the BCG framework has opened new opportunities for border communities, local producers remain constrained by the absence of processing facilities, specialized machinery, stable purchasing systems, and coherent market channels (hemp grower KI-09, KI-10, KI-11, KI-12, KI-13, personal communication, April 3, 2025; policy and institutional actor KI-01, personal communication, July 14, 2025). This finding aligns with Deng and Bai (2014), Cowie et al. (2018), Aroonsrimorakot et al. (2019), and Mahattanachai et al. (2021), all of whom emphasize that competitive agricultural transformation requires infrastructural and standards-based support across the value chain. It also reinforces the argument of Pelling and Manuel-Navarrete (2011) and Upan (2018) that communities without branding strategies and culturally grounded narratives are likely to remain trapped in low-value market segments. The broader knowledge implication of this study, therefore, is that hemp development in border ethnic communities cannot be sustained through legal liberalization or production support alone. It requires a full value-chain approach that integrates technical standards, processing infrastructure, public-private partnership, market security, and community control over the terms of development itself. Under such conditions, Khiri Rat's hemp economy may move beyond being a policy opportunity and become a genuinely sustainable model of culturally grounded territorial development.

DOI: 10.58837/CHULA.JTS.22.1.2

Conclusion

This article analyzes the evolution of the Thai state's role in spatial development, concentrating on the case of hemp promotion in Khiri Rat Subdistrict, Phop Phra District, Tak Province. Rooted in developmental state theory and public policy theory, this analysis posits that hemp policy in Thailand should be viewed not merely as an agricultural or economic measure, but as a politically mediated process through which state power, territorial development, ethnic cultural life, and market rationalities are selectively articulated. National frameworks like the BCG Economy model and the Hemp Development Plan 2023–2027 outline a visionary approach to elevating hemp from a household practice to a key regional economic crop. However, legal uncertainties, institutional fragmentation, resource limitations, and inadequate cross-sectoral coordination significantly influence the execution of these plans. The limitations are especially evident in ethnically diverse borderland settings like Hmong communities, where hemp has historically served not only as an economic resource but also as a culturally significant "plant of life," closely linked to household production, weaving traditions, intergenerational knowledge, and ritual practices. The article asserts that effective policy extends beyond mere formal legislation, technical planning, or the promotion of commodities. An area-based developmental state mechanism is essential, one that effectively integrates bureaucratic capacity with local knowledge, situates policy within culturally specific social relations, and promotes collaborative governance among state institutions, market participants, and civil society. The case provides a comprehensive theoretical perspective: public policy functions not merely as a neutral administrative tool but as a political landscape where developmental priorities, cultural interpretations, and market demands are consistently negotiated and redefined.

DOI: 10.58837/CHULA.JTS.22.1.2

From the researcher's perspective, the primary contribution of this study is in illustrating that the most significant change under current hemp policy is not just the recognition of hemp as an economic crop but the redefinition of its social significance within the Hmong cultural context. Historically, hemp was of great importance as a household plant integral to daily life, domestic applications, textile manufacturing, and ceremonial traditions. The current landscape of development increasingly redefines hemp through the frameworks of legality, certification, productivity, and market value. This transition represents more than just a practical alteration in cultivation; it indicates a significant shift in the power to define the essence of hemp, its purposes, and whose expertise is valued in shaping its future. What was previously managed mainly through community-based knowledge, customary practices, and cultural continuity is now progressively influenced by regulatory classification, standardization, and market-oriented evaluation, which often prioritize economic interests over traditional practices and local knowledge. The study reveals that hemp policy functions as both a developmental initiative and a process of epistemic and cultural reordering. This allows state and market institutions to gain increased authority in framing, regulating, and valuing a resource that was once deeply rooted in ethnic lifeworlds.

At this analytical juncture, the findings reveal the intricate and frequently conflicting relationship between ethnic cultural reproduction and the principles of modern development. Hemp promotion presents significant opportunities for income generation, product enhancement, territorial branding, and the increased recognition of Hmong cultural capital within both state and market frameworks. Conversely, it presents a considerable risk: the potential for hemp's cultural significance to be increasingly diminished to its market value or redefined as a branding element for commercial use. The growing focus on value addition, branding, processing, and market linkage has the potential to improve community livelihoods. However, it may also transform culture into a strategic asset to be utilized, rather than allowing it to remain a vibrant and intrinsically meaningful system of practice, which could lead to the commodification of cultural expressions and a loss of

authenticity. The integration of Hmong cultural capital into development policy is not necessarily liberating; it may also represent a form of selective acknowledgment where cultural differences are maintained only to the extent that they can be made understandable, productive, and profitable within existing development paradigms.

Additionally, the study highlights a significant normative issue concerning the gradual decline of intangible cultural heritage within a developmental framework that prioritizes efficiency, productivity, and commercial standardization. The current research does not assert direct evidence of the loss of traditional knowledge; however, it does delineate a distinct trend toward that outcome. The spread of contemporary agricultural technologies, the inclination towards certified varieties, the creation of demonstration plots, the advocacy for GAP and organic standards, and suggestions for local technology-transfer centers all reflect the increasing dominance of technical expertise in shaping production practices. In these circumstances, the Hmong understanding of seed selection, cultivation practices, fiber utilization, and the domestic transmission of practical skills is at risk of being marginalized, reduced to a residual state, or symbolically preserved, while becoming disconnected from daily social reproduction. This scenario is exactly where the developmental potential of hemp becomes analytically complex: the same policy instruments aimed at fostering economic inclusion may also detach the crop from the cultural relationships that have historically given it significance. To achieve true sustainability in hemp development, state institutions must expand their focus beyond mere economic enhancement. It is essential to integrate the protection, revitalization, and intergenerational transmission of community-based knowledge into the very framework of policy-making. Conversely, the conversion of hemp into a strategic economic crop may produce immediate developmental benefits, yet it could also jeopardize the cultural foundations essential for its long-term social sustainability, such as traditional practices and community values that have been passed down through generations.

Recommendations

1.Policy Recommendations

1.1 Optimize hemp cultivation permit regulations by implementing a border-sensitive One Stop Service mechanism that is clear, adaptable, and simple to navigate. The objective is to shorten approval timelines to 30 days, alleviate compliance burdens on farmers, and decrease the prevalence of informal or illegal cultivation.

1.2 Establish a Subdistrict Hemp Technology Development and Transfer Center that includes demonstration plots, processing facilities, market support services, and quality-testing units to strengthen technology transfer, reduce production costs, improve product standards, and enhance long-term market stability for hemp producers.

1.3 Establish multi-tiered public–private–people partnership (PPP) frameworks at provincial and subdistrict levels to unify state agencies, private enterprises, and community stakeholders through contract farming agreements, technology-sharing initiatives, and reliable domestic and export market pathways, thus enhancing farmer income stability and mitigating market fluctuations.

1.4 Enhance the “Khiri Rat Hemp” brand by thoughtfully incorporating Hmong cultural identity and heritage alongside globally acknowledged standards and certifications, such as GAP, Organic, and Geographical Indication (GI), to create premium market value and broaden access to upscale domestic and international markets.

1.5 Integrate cultural heritage conservation into hemp development policy by utilizing community-led mechanisms that document, protect, revitalize, and share Hmong traditional knowledge concerning hemp cultivation, weaving, ritual significance, and household practices. This approach should connect these cultural assets to sustainable value creation through heritage-based products, cultural tourism, and community creative enterprises.

2. Research Recommendations

2.1 Conduct comparative regional studies between Khiri Rat and other hemp-growing areas (e.g., Chiang Mai, Mae Hong Son, border provinces) to identify success factors and inform area-based policies.

2.2 Adopt Participatory Action Research (PAR) to involve farmers, enterprises, private sector, academia, and government at every stage, ensuring recommendations reflect genuine needs and strengthen collaborative networks.

2.3 Develop and evaluate business models and value chains covering cultivation, processing, branding, digital marketing, and certification to determine feasible and sustainable strategies for global competitiveness.

2.4 Undertake cross-country policy and legal comparisons (China, Canada, Japan, Europe) to identify strengths, weaknesses, and adaptable practices, thereby enhancing Thailand's legal clarity, quality standards, and investment confidence.

DOI: 10.58837/CHULA.JTS.22.1.2

References

Alexander, D. E. (2013). Resilience and disaster risk reduction: An etymological journey. *Natural Hazards and Earth System Sciences, 13*(11), 2707–2716. https://doi.org/10.5194/nhess-13-2707-2013

Aroonsrimorakot, S., Laiphrakpam, M., & Metadilogkul, O. (2019). Social, religious, recreational and medicinal usage of cannabis in India and Thailand. *Interdisciplinary Research Review, 14*(4), 43–50. https://ph02.tci-thaijo.org/index.php/jtir/article/view/221554

Bakir, C., & Gunduz, K. A. (2017). When, why and how institutional change takes place: A systematic review and a future research agenda on the importance of policy entrepreneurship in macroeconomic bureaucracies. *Policy and Society, 36*(4), 479–503. https://doi.org/10.1080/14494035.2017.1369676

Biesbroek, R., & Candel, J. J. (2020). Mechanisms for policy (dis)integration: Explaining food policy and climate change adaptation policy in the Netherlands. *Policy Sciences, 53*(1), 61–84. https://doi.org/10.1007/s11077-019-09354-2

Bowman, A. (2020). Parastatals and economic transformation in South Africa: The political economy of the Eskom crisis. *African Affairs, 119*(476), 395–431. https://doi.org/10.1093/afraf/adaa013

Butollo, F., & ten Brink, T. (2018). A great leap? Domestic market growth and local state support in the upgrading of China's LED lighting industry. *Global Networks, 18*(2), 285–306. https://doi.org/10.1111/glob.12160

Cameron, J. (2000). Asbestos cloth and elites in Southeast Asia. *Bulletin of the Indo-Pacific Prehistory Association, 19*(3), 47–51. https://journals.lib.washington.edu/index.php/BIPPA/article/view/11719/10348

Cameron, J. (2011). Iron and cloth across the Bay of Bengal: New data from Tha Kae, central Thailand. *Antiquity, 85*(328), 559–567.

Chatjenkit, O., & Sarnnoi, E. (2021). Hemp legal status issues in the Narcotics Act, B.E. 2522. *Journal of Humanities and Social Sciences Loei Rajabhat University, 3*(2), 35–46. https://so01.tci-thaijo.org/index.php/husolru/article/view/249154

Cheang, B. (2024). What can industrial policy do? Evidence from Singapore. *The Review of Austrian Economics, 37*(1), 1–34. https://doi.org/10.1007/s11138-022-00589-6

Chen, G. C., & Lees, C. (2016). Growing China's renewables sector: A developmental state approach. *New Political Economy, 21*(6), 574–586. https://doi.org/10.1080/13563467.2016.1183113

Clark, C., & Jung, C. (2002). Implications of the Asian flu for developmental state theory: The cases of South Korea and Taiwan. *Asian Affairs: An American Review, 29*(1), 16–42. https://doi.org/10.1080/00927670209598874

Cowie, A. L., Orr, B. J., Castillo Sanchez, V. M., Chasek, P., Crossman, N. D., Erlewein, A., Louwagie, G., Maron, M., Metternicht, G. I., Minelli, S., Tengberg, A. E., Walter, S., & Welton, S. (2018). Land in balance: The scientific conceptual framework for Land Degradation Neutrality. *Environmental Science & Policy, 79*, 25–35. https://doi.org/10.1016/j.envsci.2017.10.011

Cummings, S. L. (2001). Community economic development as progressive politics: Toward a grassroots movement for economic justice. *Stanford Law Review, 54*(3), 399–493. https://doi.org/10.2307/1229464

De Marchi, V., & Alford, M. (2022). State policies and upgrading in global value chains: A systematic literature review. *Journal of International Business Policy, 5*(1), 88–111. https://doi.org/10.1057/s42214-021-00107-8

Deininger, K. W. (2003). *Land policies for growth and poverty reduction* (World Bank Policy Research Report). World Bank.

Dejene, M., & Cochrane, L. (2019). Ethiopia's developmental state: A building stability framework assessment. *Development Policy Review, 37*, O161–O178. https://doi.org/10.1111/dpr.12414

Deng, X., & Bai, X. (2014). Sustainable urbanization in western China. *Environment: Science and Policy for Sustainable Development, 56*(3), 12–24. https://doi.org/10.1080/00139157.2014.901836

Dent, C. M. (2018). East Asia's new developmentalism: State capacity, climate change and low-carbon development. *Third World Quarterly, 39*(6), 1191–1210. https://doi.org/10.1080/01436597.2017.1388740

Dent, C. M. (2020). East Asia's new developmentalism: State capacity, climate change and low-carbon development. In J. T. Nem Singh & J. S. Ovadia (Eds.), *Developmental states beyond East Asia* (pp. 159–178). Routledge. https://doi.org/10.4324/9780429055645-9

Eller, W., & Krutz, G. (2009). Policy process, scholarship, and the road ahead: An introduction to the 2008 policy shootout! *Policy Studies Journal, 37*(1), 1–4. https://doi.org/10.1111/j.1541-0072.2008.00290.x

Eversole, R. (2003). Value-adding community? Community economic development in theory and practice. *Rural Society, 13*(1), 72–86. https://doi.org/10.5172/rsj.351.13.1.72

Fischer, F. (2003). *Reframing public policy: Discursive politics and deliberative practices.* Oxford University Press.

Fischer, F., & Miller, G. J. (Eds.). (2017). *Handbook of public policy analysis: Theory, politics, and methods*. Routledge.

Fleckenstein, T., & Lee, S. C. (2017). Democratization, post-industrialization, and East Asian welfare capitalism: The politics of welfare state reform in Japan, South Korea, and Taiwan. *Journal of International and Comparative Social Policy, 33*(1), 36–54. https://doi.org/10.1080/21699763.2017.1288158

Giddings, B., Hopwood, B., & O'Brien, G. (2002). Environment, economy and society: Fitting them together into sustainable development. *Sustainable Development, 10*(4), 187–196. https://doi.org/10.1002/sd.199

Greenberg, G. D., Miller, J. A., Mohr, L. B., & Vladeck, B. C. (1977). Developing public policy theory: Perspectives from empirical research. *American Political Science Review, 71*(4), 1532–1543. https://doi.org/10.2307/1961494

Hariram, N. P., Mekha, K. B., Suganthan, V., & Sudhakar, K. (2023). Sustainalism: An integrated socio-economic-environmental model to address sustainable development and sustainability. *Sustainability, 15*(13), 10682. https://doi.org/10.3390/su151310682

Hayward, T. (2009). International political theory and the global environment: Some critical questions for liberal cosmopolitans. *Journal of Social Philosophy, 40*(2), 276–295. https://doi.org/10.1111/j.1467-9833.2009.01451.x

Hennessey Lavery, S., Smith, M. L., Esparza, A. A., Hrushow, A., Moore, M., & Reed, D. F. (2005). The community action model: A community-driven model designed to address disparities in health. *American Journal of Public Health, 95*(4), 611–616. https://doi.org/10.2105/AJPH.2004.047704

Hoppe, R. (2010). Cultures of public policy problems. In *The governance of problems* (pp. 91–120). Policy Press. https://doi.org/10.51952/9781847426307.ch004

Javanmardi, E., Liu, S., & Xie, N. (2023). Exploring the challenges to sustainable development from the perspective of grey systems theory. *Systems, 11*(2), 70. https://doi.org/10.3390/systems11020070

Johnson, C. (1999). The developmental state: Odyssey of a concept. In M. Woo-Cumings (Ed.), *The developmental state* (pp. 32–60). Cornell University Press. https://doi.org/10.7591/9781501720383-004

Kim, S.-Y. (2007). Consolidating the authoritarian developmental state in the 1970s Korea: Chosen strategies. *International Review of Public Administration, 12*(1), 119–132. https://doi.org/10.1080/12294659.2007.10805096

Kothari, A. (2014). Radical ecological democracy: A path forward for India and beyond. *Development, 57*(1), 36–45. https://doi.org/10.1057/dev.2014.43

Langhout, R. D., & Thomas, E. (2010). Imagining participatory action research in collaboration with children: An introduction. *American Journal of Community Psychology, 46*, 60–66. https://doi.org/10.1007/s10464-010-9321-1

Li, J., Zhan, G., Dai, X., Qi, M., & Liu, B. (2022). Innovation and optimization logic of grassroots digital governance in China under digital empowerment and digital sustainability. *Sustainability, 14*(24), 16470. https://doi.org/10.3390/su142416470

Mahattanachai, B., Mahattanachai, C., Tharapitakwong, J., Takran, T., & Chaibut, D. (2021). Applying digital technology to transfer the local wisdom of hemp woven fabric production. *Buriram Rajabhat University Science and Technology Journal (Online), 5*(2), 71–85. https://ph02.tci-thaijo.org/index.php/scibru/article/view/245287

Mahattanachai, C., Chum-un, M., Mahattanachai, B., Tharapitakwong, J., Takran, T., Santiteerakul, W., & Wongchomphu, P. (2018). *The development of a digital commerce system to promote the marketing of One Tambon One Product (OTOP) products in Mae Rim District, Chiang Mai Province*. National Research Council of Thailand. http://www.cmruir.cmru.ac.th/handle/123456789/1155?mode=full

Massi, E., & Nem Singh, J. T. (2020). Industrial policy and state-making: Brazil's attempt at oil-based industrial development. In J. T. Nem Singh & J. S. Ovadia (Eds.), *Developmental states beyond East Asia* (pp. 101–118). Routledge. https://doi.org/10.4324/9780429055645-6

Meckling, J. (2018). The developmental state in global regulation: Economic change and climate policy. *European Journal of International Relations, 24*(1), 58–81. https://doi.org/10.1177/1354066117700966

Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action—Literature review. *Cogent Social Sciences, 5*(1), 1653531. https://doi.org/10.1080/23311886.2019.1653531

Office of Industrial Economics, Ministry of Industry. (2023). *Action plan for the development of the industrial hemp sector toward commercialization (2023–2027)*. https://surl.li/yhvulk

Ovadia, J. S., & Wolf, C. (2018). Studying the developmental state: Theory and method in research on industrial policy and state-led development in Africa. *Third World Quarterly, 39*(6), 1056–1076. https://doi.org/10.1080/01436597.2017.1368382

Parasee, A. (2006). *Integrated development of good management for community enterprise groups producing textile products in Mae Rim District, Chiang Mai Province*. Chiang Mai Rajabhat University Institutional Repository. http://www.cmruir.cmru.ac.th/handle/123456789/782?locale=th

Paudel, N. R. (2009). A critical account of policy implementation theories: Status and reconsideration. *Nepalese Journal of Public Policy and Governance, 25*(2), 36–54.

Pelling, M., & Manuel-Navarrete, D. (2011). From resilience to transformation: The adaptive cycle in two Mexican urban centers. *Ecology and Society, 16*(2). https://doi.org/10.5751/ES-04038-160211

Pettit, J. (2000). Strengthening local organisation: "Where the rubber hits the road." *IDS Bulletin, 31*(3), 57–67. https://doi.org/10.1111/j.1759-5436.2000.mp31003006.x

Phop Phra District Agricultural Office, Tak Province. (2023). *District-level agricultural development plan for Phop Phra District, 2023–2027*. https://www.loengnokta.com/attachments/view/?attach_id=403395

Raworth, K. (2017). A doughnut for the Anthropocene: Humanity's compass in the 21st century. *The Lancet Planetary Health, 1*(2), e48–e49. https://doi.org/10.1016/S2542-5196(17)30028-1

Rietig, K. (2021). Multilevel reinforcing dynamics: Global climate governance and European renewable energy policy. *Public Administration, 99*(1), 55–71. https://doi.org/10.1111/padm.12674

Rispoli, F., Ciarla, R., & Pigott, V. C. (2013). Establishing the prehistoric cultural sequence for the Lopburi region, central Thailand. *Journal of World Prehistory, 26*(2), 101–171. https://doi.org/10.1007/s10963-013-9064-7

Rueangpankan, S., Chantachon, S., & Sirisamphan, R. (2022). A study of indigenous knowledge in producing hemp fiber for the community textile industry. *Dhammasuksa Research Journal, 5*(2), 17–27. https://so07.tci-thaijo.org/index.php/dsr/article/view/2172

Saepae, P. (2022, April 21). Understanding cannabis: Thai cannabis varieties and medical uses. *SIMPLE SCIENCE, Faculty of Science, Mahidol University*. https://science.mahidol.ac.th/simple-science/2022/04/21/know-about-thai-cannabis/

Sengloung, T., Kaveeta, L., & Nanakorn, W. (2009). Effect of sowing date on growth and development of Thai hemp (*Cannabis sativa* L.). *Agriculture and Natural Resources, 43*(3), 423–431. https://li01.tci-thaijo.org/index.php/anres/article/view/244687

Singh, J. N., & Ovadia, J. S. (2018). The theory and practice of building developmental states in the Global South. *Third World Quarterly, 39*(6), 1033–1055. https://doi.org/10.1080/01436597.2018.1455143

Singh, S. H., Maiyar, L. M., & Bhowmick, B. (2020). Assessing the appropriate grassroots technological innovation for sustainable development. *Technology Analysis & Strategic Management, 32*(2), 175–194. https://doi.org/10.1080/09537325.2019.1646420

Smith, K. B., & Larimer, C. W. (2018). *The public policy theory primer*. Routledge.

Sukcharoen, M., & Sampanpanish, P. (2019). An introduction to hemp that is not cannabis [in Thai]. *Thai Environment, 23*(3), 1–12. https://digital.car.chula.ac.th/cuej/vol23/iss3/2/

Suksanapat, R., & Sirikanchanarak, D. (2021, January 15). Brewing hemp from a narcotic into a new economic crop. *Bank of Thailand*. https://www.bot.or.th/th/research-and-publications/articles-and-publications/articles/regional-articles/reg-article-2021-01.html

Suthat Na Ayutthaya, B., Mekphat, S., & Tajumpa, N. (2023). Development of hemp fiber products for value addition through storytelling, creative design, and digital marketing promotion among community enterprises in Chiang Mai Province. *Journal of Cannabis, Hemp and Herbs, 2*, 88–102. https://he01.tci-thaijo.org/index.php/JCHH/article/view/262808

Tak Agricultural Occupation Promotion and Development Center (Highland Agriculture). (2017). *Basic information on the Royal Project–based highland development project in Khiri Rat Subdistrict, Phop Phra District, Tak Province*. Highland Research and Development Institute (Public Organization). https://www.hrdi.or.th/public/files/Areas-Profile/33-Areas/PobPra.pdf

Thangruang, T., & Panturee, W. (2024). Hemp products development: Cultural landscape of the Hmong ethnic group, Phop Phra District, Tak Province. *Pathumthani University Academic Journal, 16*(1), 54–68. https://so05.tci-thaijo.org/index.php/ptujournal/article/view/271192

Tipparat, P., Kunkaew, W., Julsrigival, S., Pinmanee, S., & Natakankitkul, S. (2014). Classification of cannabis plants grown in northern Thailand using physico-chemical properties. *Journal of Natural Sciences Research, 4*(4), 46–54. https://www.iiste.org/Journals/index.php/JNSR/article/view/11178

Trubek, D. M. (2008). *Developmental states and the legal order: Towards a new political economy of development and law* (University of Wisconsin Law School Legal Studies Research Paper No. 1075). Social Science Research Network. https://doi.org/10.2139/ssrn.1349163

Uduma, K., & Arciszewski, T. (2010). Sustainable energy development: The key to a stable Nigeria. *Sustainability, 2*(6), 1558–1570. https://doi.org/10.3390/su2061558

Upan, C. (2018). *The legal status and measures to control for the use of cannabis plants in Thailand* [Doctoral dissertation, National Institute of Development Administration]. NIDA Wisdom Repository. https://doi.org/10.14457/NIDA.the.2018.100

Uppanya, C. (2018). Legal status and regulatory measures for the utilization of cannabis and hemp in Thailand. *Assumption University Law Journal, 9*(2), 126–150. https://auojs.au.edu/index.php/LawJournal/article/view/3669

Valenzuela, H. (2016). Agroecology: A global paradigm to challenge mainstream industrial agriculture. *Horticulturae, 2*(1), 2. https://doi.org/10.3390/horticulturae2010002

Van Kerkhoff, L., & Lebel, L. (2006). Linking knowledge and action for sustainable development. *Annual Review of Environment and Resources, 31*(1), 445–477. https://doi.org/10.1146/annurev.energy.31.102405.170850

Vaughan, O. (1995). Assessing grassroots politics and community development in Nigeria. *African Affairs, 94*(377), 501–518. http://www.jstor.org/stable/723605

Weed Review. (2023, July 31). *Cannabis seeds: Basics, types, legality, how to choose.* https://weed.review/cannabis-seeds/

Wheeler, F., & Laing, J. (2008). Tourism as a vehicle for liveable communities: Case studies from regional Victoria, Australia. *Annals of Leisure Research, 11*(1–2), 242–263. https://doi.org/10.1080/11745398.2008.9686795

Whungthun, C., & Assapaporn, N. (2018). Professional development guidelines for women farmer groups producing hemp embroidery in line with the Sufficiency Economy Philosophy. *Nakhon Lampang Buddhist College Journal, 7*(1), 115–124. https://so04.tci-thaijo.org/index.php/NBJ/article/view/252985

Wongrerkdee, C. (2025). The design and development of hemp products by community enterprises in Ban Seree Rat, Chong Kheap Subdistrict, Phop Phra District, Tak Province. *Pathumthani University Academic Journal, 17*(1), 23–36. https://so05.tci-thaijo.org/index.php/ptujournal/article/view/276649

Wongrerkdee, C., Naknarin, T., Pongwiritthon, K., & Wongwilairat, S. (2021). The promotion and development of electronic marketing of hemp fabric for community enterprise in Khirirat Sub-district, Phop Phra District, Tak Province. *Journal of Legal Entity Management and Local Innovation, 7*(5), 1–15. https://so04.tci-thaijo.org/index.php/jsa-journal/article/view/246662

Wongwilairat, S., & Punture, W. (2024). Development of hemp products: A case study of the hemp community enterprise group in Phop Phra District, Tak Province. *Journal of Local Management and Development Pibulsongkram Rajabhat University, 4*(1), 70–84. https://so06.tci-thaijo.org/index.php/jclmd_psru/article/view/273638

Declaration of Generative AI and AI-assisted technologies in the writing process

In the preparation of this article, the author used ChatGPT version 5.4 and Scopus AI to assist in checking language accuracy and researching relevant studies. After using these tools, the author personally reviewed, filtered, and revised all content to align with the objectives and academic standards of the article. Therefore, the author is solely responsible for the content, text, and conclusions presented in this article upon publication.

Acknowledgment

This article is a component of the research initiative titled *"Policies and Guidelines for the Development of Hemp as a New Economic Crop in Khiri Rat Subdistrict, Phop Phra District, Tak Province."* The research received financial support from the Fundamental Fund (Fiscal Year 2025) as part of Thailand's Science, Research, and Innovation budget. The author sincerely appreciates the invaluable contributions of key informants and stakeholders from various sectors, including government agencies, local administrative organizations, community enterprise networks, private sector partners, civil society groups, and farmer households. Their time, insights, and collaboration were essential to the success of this research.