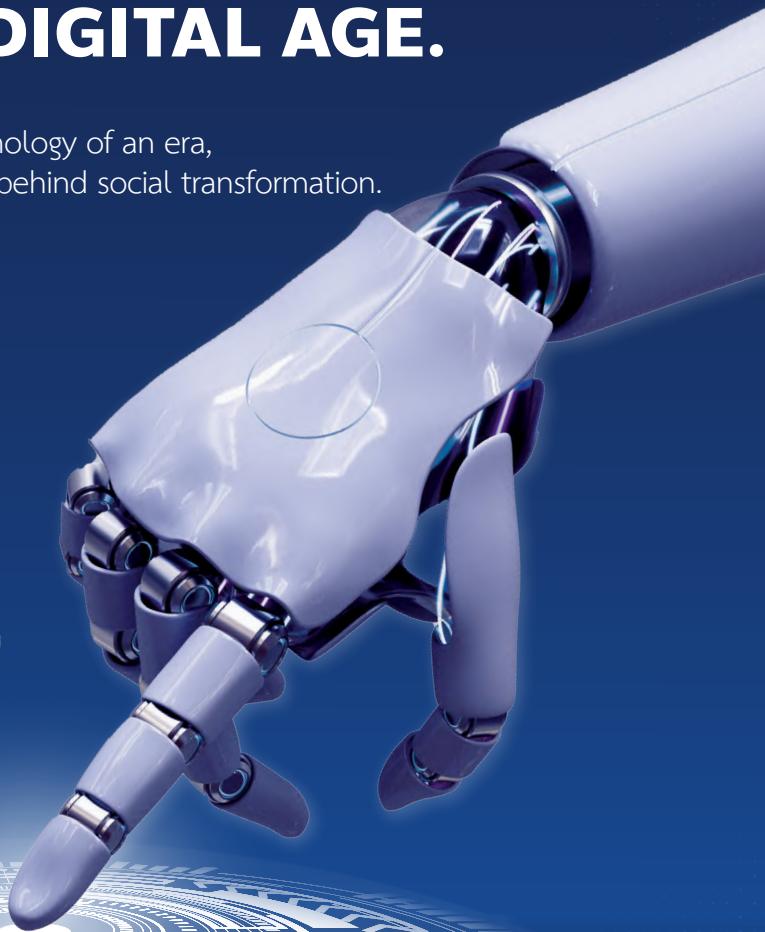


THAI - WORLD INNOVATION : TOWARD SUSTAINABILITY IN THE DIGITAL AGE.

“Innovation”

Not merely the technology of an era,
but the driving force behind social transformation.



Dr. Apiwat Taweesap, Ph.D.

Leadership in Society Business and Politics.
College of Social Innovation, Rangsit University

Thai-World Innovation Towards Sustainability in the Digital Age

Thai-World Innovation: Toward Sustainability in the Digital Age

Author Dr.Apiwat Thaweesap, Ph.D.

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“Towards a Sustainable Scenario: Social, Economic,
and Political Transformations
in the Era of Thai–Global Innovation towards
Sustainability in the Digital Age”

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PREFACE: FIVE KEY RATIONALES

The origins of the book “**Thai and Global Innovations toward Sustainability in the Digital Era**” are rooted in a research project entitled “**The Social Mission of Protestant Churches and the Role of Royal Projects in the Sustainable Development of Communities in Khun Yuam District, Chiang Mai Province.**” This initiative emerged following the recommendation of the advisor, Asst. Prof. Dr. Vithawas Khongkhakul, former President of the Faculty Senate, Chulalongkorn University. After reviewing the dissertation, the advisor observed that this area of study had not yet been systematically explored. Consequently, in order to generate benefits for the nation as well as to provide continued knowledge resources for undergraduate, master’s, and doctoral students, it was suggested that the findings be developed into a comprehensive academic book.

His Majesty King Bhumibol Adulyadej the Great (Rama IX) personally visited communities in Khun Yuam District, Chiang Mai Province, on four occasions, demonstrating His profound concern for the opium problem. His Majesty initiated the establishment of the Royal Project Development Center at Wat Chan, and appointed Mom Chao Phisitdej Ratchanee as the Director of the Royal Project, with the objective of promoting sustainable livelihoods for local highland communities. This included the promotion of economic crops, animal husbandry, provision of citizenship rights, and the development of public utilities. Furthermore, the Thai government later established Khun Yuam as an official district in order to promote sustainable community development.

Therefore, the author intends to build upon this research in order to keep pace with the rapidly changing global digital era. The world is undergoing swift and unpredictable transformations, and Thai society is no exception. Examples include the imposition of trade tariffs by the United States, the Russia–Ukraine war, the conflict involving Israel, the United States, and Iran. Consequently, Thailand cannot avoid confronting the reality of determining its stance when future wars arise, and the crucial question is how the government will prioritize its

preparedness across various dimensions as follows:

1. Inspiration from empirical social change: The book is motivated by the author's in-depth study of social transformations occurring within the Nong Chet Nuai Protestant Church community in Khun Yuam District, Chiang Mai Province. The study identified the church as a central driver of community development, leading to the dissertation titled **“Social Mission of Protestant Churches and the Roles of Royal Initiated Project on Sustainable Development in Kulayaniwattana District, Chiang Mai Province.”**

2. Social Innovation and Disruption: This book arises from the necessity of presenting the dynamics of social innovation and disruption to both Thai society and the global community. It aims to serve as an academic reference that clarifies multifaceted dimensions of right and wrong within socio-economic and political struggles in the digital era, as well as the implications of Artificial Intelligence (AI) in the financial sector and the broader transformation toward Thailand 4.0.

3. Global security challenges: The world is increasingly confronted with the proliferation of weapons of mass destruction, including intercontinental ballistic missiles from global powers such as the United States, Russia, and China, along with continuing geopolitical conflicts that heighten global instability.

4. Pathways toward sustainable peace and governance: This book also addresses the role of innovation in fostering global peace and strengthening sustainable political development in Thailand. It underscores the challenges posed by systemic weaknesses in areas such as basic education, governance, and the judiciary, alongside the persistence of corruption in both domestic and international contexts. It raises the question of how Thai society can collectively address these issues over the next two decades (2026–2046).

5. Religious and philosophical perspectives: The discussion further explores how religious thought, Thai social philosophy, and global philosophical traditions—particularly from Western societies—offer insights into shaping sustainable development pathways.

In summary, this book consolidates and presents essential knowledge concerning innovations at both the global and national levels. It aspires to serve as an academic resource for general readers, students, and scholars, providing a foundation for further study as well as for driving sustainable social development.

FOREWORD

The world in the 21st century is undergoing rapid and increasingly complex transformations. We are living in an era in which conventional concepts and traditional approaches can no longer provide adequate solutions to emerging challenges. These challenges include environmental crises, climate change, economic inequality, aging societies, and even escalating international conflicts. Such conditions signify that the concept of “**sustainability**” is no longer merely an academic ideal but rather an urgent necessity requiring the participation of all nations, communities, and individuals.

Within this context, the notion of “**innovation**” has become an increasingly significant global discourse. At the same time, however, the meaning of innovation must be interpreted in a broader and deeper sense. Innovation does not solely refer to advanced technologies; it also encompasses novel approaches in thinking, working, management, and generating positive social change, particularly at the local and community levels, including those on the periphery of society.

The research entitled “**Thai-World Innovation Towards Sustainability in the Digital Age**” represents a scholarly contribution of considerable value to society in multiple dimensions. It provides both theoretical knowledge that integrates Thai perspectives with global megatrends and practical pathways for application in various local contexts across Thailand. The study demonstrates that Thai innovation does not necessarily need to follow international paradigms or constantly seek to replicate foreign models. Rather, it can cultivate its own distinctive identity, which, when strategically developed, can contribute to global transformation in meaningful ways.

The author has formulated the Thai-World Innovation Framework, which connects local Thai innovation concepts with the global context of the Sustainable Development Goals (SDGs), while preserving cultural heritage, indigenous wisdom, and regional ways of life. A key strength of this work lies in its presentation of case studies and analytical insights

into developmental practices across diverse domains—including agriculture, creative communities, grassroots economies, natural resource management, and the empowerment of civil society. This illustrates that innovation need not arise solely from central authorities or large industries; rather, it can emerge organically from local contexts, provided there is mutual understanding, community collaboration, and opportunities for experimentation, shared learning, and collective progress.

For instance, certain communities have integrated indigenous knowledge with modern technologies to achieve sustainable water management, while groups of farmers have adapted by developing organic products through a combination of academic knowledge and family-based learning. These cases exemplify “**Thai-style innovation**,” which addresses not only economic dimensions but also community livelihoods, cultural values, and shared social principles. Such characteristics embody the essence of sustainable development within the Thai context.

Moreover, this book offers policy recommendations across various domains that are both insightful and applicable for systemic development. These include promoting policies that empower communities to drive sustainability through innovation, fostering genuine collaboration between the public sector, private sector, and civil society, adapting educational curricula to emphasize systems thinking and analytical skills, and prioritizing the development of local “**learning spaces**” that enable experimentation, contextual adaptation, and co-creation.

As the Dean of the College of Social Innovation, Rangsit University, I take pride in witnessing the transformation of this research into a powerful scholarly work. This book not only contributes to academic knowledge but also embodies a collective vision for the future—anchored in the values of Thai society and prepared to engage meaningfully on the global stage with self-understanding and mutual recognition of the world.

I extend my sincere commendation and encouragement to the author and hope that this book will serve as a catalyst for new dialogues

across academic communities, development sectors, and local societies throughout Thailand, thereby advancing Thai innovation toward sustainable global development guided by a “**Thai heart**.”

Respectfully,

Asst. Prof. Dr. Suriyasai Katasila

Dean, College of Social Innovation

Rangsit University

May 11, 2025

FOREWORD BY THE ACADEMIC ADVISOR

Based on the doctoral dissertation entitled “**Social Mission of Protestant Churches and the Roles of Royal Initiated Project on Sustainable Development in Kulayaniwattana District, Chiang Mai Province**”, after reviewing and providing academic guidance on this research, I recommended that the author further develop the study into a scholarly book. Such a work would enhance knowledge on social development, religion, and the roles of the Royal Projects initiated by His Majesty King Bhumibol Adulyadej the Great (Rama IX), who personally visited the highland communities in Khun Yuam District on four occasions to address the opium problem, to promote self-sufficiency among local people, to provide citizenship rights for ethnic minorities, and to support the development of remote communities into the fully established Khun Yuam District of Chiang Mai Province.

In relation to the context and historical trajectory of sustainable development in Khun Yuam District, this book appropriately integrates perspectives on social innovation and the profound transformations inspired by the Philosophy of Sufficiency Economy promoted through the Royal Projects. Furthermore, it extends these insights toward the concept of Thai-World Innovation for Sustainability in the Digital Era, thereby reflecting on how globalization and the emerging paradigm of Innovation and Disruption, including the rise of Artificial Intelligence (AI), will fundamentally reshape the future of humanity over the next two decades.

I sincerely hope that this book will provide valuable perspectives across the dimensions of society, politics, governance, philosophy, and religion, and that it will serve as a significant scholarly contribution capable of guiding future directions in social development.

Respectfully,
Asst. Prof. Dr. Vithawas Khongkhakul
Former President, Faculty Senate
Chulalongkorn University
July 24, 2025

FOREWORD FROM THE PRESIDENT OF THE COLLEGE OF AGRICULTURAL INNOVATION AND FOOD TECHNOLOGY, RANGSIT UNIVERSITY

The book authored and compiled by Dr. Apiwat Thaweesap, entitled **“Thai-World Innovation Towards Sustainability in the Digital Age,”** constitutes a valuable academic work that offers contemporary knowledge on development within the context of global changes. It addresses multidimensional aspects—social, economic, and environmental and reflects that Thai society is likewise experiencing the dynamics of the **“Digital Era,”** wherein heightened awareness of inevitable transformations compels individuals and communities to adapt to new circumstances in order to ensure survival, stability, and long-term sustainability.

Such adaptation requires continuous intellectual engagement through research, study, and the development of innovations and new knowledge that enable individuals and societies to thrive. In particular, the evolution of modern technologies, often referred to as the Electronic Age or Digital Era, has progressed toward the advent of Robotics and Artificial Intelligence (AI). These developments represent the emerging future shaped by human ingenuity to enhance convenience, accelerate processes, and strengthen sustainable ways of living.

Accordingly, sustainable development in the age of digital transformation constitutes a new dimension of progress that must be pursued with resilience in the face of rapid, volatile, uncertain, and complex global changes, consistent with the concept of the VUCA World. Consideration of the conditions and critical factors that support sustainability is therefore of paramount importance. The perspectives and analyses presented in this book are expected to serve as a valuable source of knowledge and guidance for engaging with these challenges and advancing sustainable development in alignment with the author’s vision and commitment.

I wish to extend my sincere congratulations and encouragement to the author, and I hope that this scholarly work will achieve its intended objectives and contribute meaningfully to future development

Prof. Pongsak Angkasith, Ed.D.
the President of College of Agricultural
Innovation and Food Technology
August, 5, 2025

Past Present Future



AI Innovation

“To address the development goals for
the next 20 years,
for Thailand to enter the digital world,
and to be free from corruption.”

THE INSPIRATION FOR WRITING THIS BOOK stems from a profound discovery about real social transformations observed in communities where churches serve as centers of development. This insight emerged from the author's doctoral dissertation titled "**Social Mission of Protestant Churches and the Roles of Royal Initiated Project on Sustainable Development in Kulayaniwattana District, Chiang Mai Province**". The study revealed that "**social innovation**" is not merely derived from the application of new technologies or ideas, but also from values rooted in morality, love, and authentic humanity within communities.

This book, therefore, aims to offer a fresh perspective on how to address complex social issues. It draws upon field experiences and collaborations with local churches to craft innovations that are not only effective but also deeply compassionate, born from the spiritual vitality of the community.

Amidst the towering mountains of "**Muejehkee**" in Kulayaniwattana District, Chiang Mai—source of the Mae Chaem River, revered by the Karen people—lies a lush natural pine forest, akin to a green carpet. This area has become a stage for one of Thailand's most powerful "**social innovations**." The story began in 1933, when Mr. Bue-Ka Wangjai, a Karen leader, became the first Christian in Kulayaniwattana District, and Pastor Bornae Khankaew was recognized as the pioneer in the Muejaekhi area, together with a group of Baptist missionaries who trekked through dense jungles to reach a small village on the mountain ridge to '**proclaim the Gospel**.' Yet, alongside the Bible held close to their hearts, they also carried with them the '**seeds**' of development—literacy, malaria medicine, and new ideas in agriculture.

HISTORY OF THE KAREN ETHNIC GROUP FROM MYANMAR TO MUEJEHKEE, CHIANG MAI

Origins and Migration: The Karen people have a rich history and way of life. Their migration spans two major eras. The first dates back to 750 A.D. when they fled Chinese aggression, descending from the Mongol-inhabited upper Yangtze River to the Mekong and Salween river

basins—long before the Thai established themselves in Suvarnabhumi.

The second wave was during the Burmese-Mon conflicts, prompting the Karen to migrate into Thailand to escape war and poverty. During Burmese invasions of Chiang Mai, the Karen, including elephant handlers and supply troops, fled and settled in northern lowland areas, particularly in Muejehkee, Kulayaniwattana District.

BELIEF SYSTEM TRANSFORMATION

Originally animist, the Karen revered guardian spirits and expressed culture through poetry. But the arrival of Burmese missionaries introduced Christianity. Figures like Pastor Borne and village leader Buaka played key roles in promoting the Bible, leading to a gradual shift from animism to Christianity and the establishment of local churches.

CHURCH FORMATION AND EXPANSION

Converted Karen communities formed Christian congregations. The founding of the Nong Jed Nuay Church marked a pivotal moment, eventually expanding into a network of Karen churches affiliated with the Church of Christ in Thailand. These spiritual institutions also partnered with Royal Projects and state agencies to improve Karen livelihoods in line with the UN Sustainable Development Goals and the philosophy of sufficiency economy.

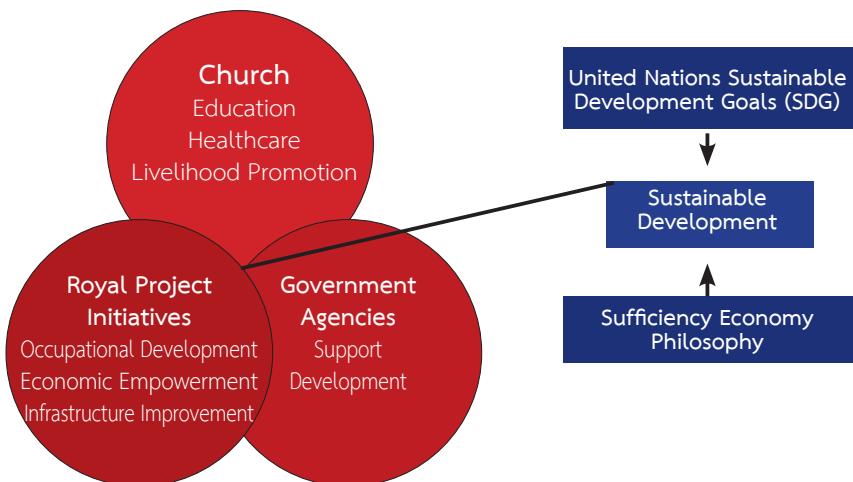


Figure 1: Tripartite Partnership in Kulayaniwattana’s Community Development
Source: Apiwat Taweesap (2023), Social Mission of Protestant Churches
and the Roles of Royal Initiated Project on Sustainable Development
in Kulayaniwattana District, Chiang Mai Province, (Disseration, Society,
Business, and Polotics, Rangsit University).

Over the past decade, local development has shifted from structural approaches toward an emphasis on social innovation, which refers to the creation of new processes to address social problems through alternative ways of thinking. This approach aims to generate shared value and foster social motivation, aligning with Mulgan’s (2007) idea that social innovation is not merely a technical change but a transformation in cultural values, institutions, and power relations.

In the highland context of Kulayaniwattana District, Chiang Mai Province, field research reveals the role of the Protestant church not only as a religious institution but also as a key driver of social capital and human capital. It engages in processes consistent with the Sustainable Livelihood Framework (SLF), which emphasizes strengthening five types of assets—human, social, physical, natural, and financial capital—to promote sustainable household livelihoods

This aligns with the role of the “**Wat Chan Royal Project**”, which was initiated under the royal initiative of His Majesty King Bhumibol Adulyadej (Rama IX). The project demonstrates a dynamic development model that integrates local knowledge, community voices, and the appropriate application of agricultural science.

This case study clearly illustrates that social innovation does not solely refer to advanced technology, but rather to processes designed to address public problems in a holistic manner—especially when those processes are grounded in trust, continuity, and local participation. It echoes the concept of adaptive governance, which remains responsive to change while upholding sustainability and internalized principles of good governance.

“Wat Chan The Royal Project” is thus more than just a promotion of commercial agriculture—it represents a transformation of the area’s socio-economic structure. It connects high-level policy with the everyday lives of highland communities, promotes citizenship rights, develops basic infrastructure, and builds sustainable markets for local produce. The following section will delve into the dynamics of the Royal Project as a form of public sector innovation, encompassing economic, social, and environmental dimensions. At its core lies the royal initiative, which seamlessly integrates the ‘King’s science’ with the ‘people’s wisdom.’

Moreover, the formal establishment of Kulayaniwattana District in 2009, as Chiang Mai’s 25th administrative district by Royal Decree on December 26, 2009, marked not just a shift in administrative status but also opened up space for the state to act more as a facilitator than a regulator. This approach aligns with the concept of Governance for Development, which emphasizes enhancing the community’s capacity to determine its own future, with the state providing essential infrastructure, legal frameworks, rights, and resources.

Local government agencies in Kulayaniwattana have played a vital role in bridging faith (the Church) and agricultural technology (the Royal Project) to design place-based policies that truly respond to the needs of the local community—whether in transportation, education, public health, or citizenship. The following section will examine the roles of local administrative organizations and various state agencies as mechanisms for enhancing sustainability—acting more as ‘connectors’ than ‘interveners’—by fostering the conditions for genuine long-term self-reliance.

EACH SECTOR PLAYS A DISTINCT ROLE IN THE AREA'S DEVELOPMENT, AS FOLLOWS:

1. "Protestant Church"

The Root of Transformation

1.1 Mission in Education

- Origins and Motivations: Initially, almost no Karen people had access to formal education. Most could neither read nor write due to the remote geography, poverty, and lack of government support. Traveling on foot from Baan Chan or Baan Nong Jed Nuay to Chiang Mai city could take up to a week. Under these conditions, "**education**" became a rare and precious opportunity.

- Establishment of Sahamit Wittaya School:

1. Local leaders such as Village Headman Buaka and Pastor Borne Khan Kaew worked tirelessly for 8 years to obtain an official license from the government to establish a school.

2. American missionaries and Protestant church organizations helped recruit teachers. In the beginning, missionary teachers—dedicated foreign clergy—taught in the rugged mountain villages.

3. The school welcomed both Christian and non-Christian children, fostering inclusive education for "**everyone**" in the community.

4. Once the school was officially recognized as a private institution under Section 15(3), it expanded its curriculum to junior and eventually senior high school levels. Dormitories were also built for students from distant villages.

- Outcomes:

- Over 20 Generations of Karen youth became

literate. Many received scholarships to pursue higher education and returned as doctors, nurses, teachers, or even senior civil servants in the area.

- Sahamit Wittaya School became the district's primary educational institution, predating the establishment of formal state schools.

- Today, there are 12 churches in Kulayaniwattana district and over 5,000 Christian members in the region.

1.2 Mission in Health

- Health Before Public Services:

Traditionally, illnesses were believed to be caused by “**spirits**” or supernatural forces. Treatments involved rituals, spiritual practices, and herbal medicine from the forest. Consequently, mortality rates from diseases—especially malaria—were very high.

- Arrival of Medical Missionaries:
- Missionaries brought with them quinine and anti-malarial drugs, offering free diagnosis and treatment in the mountains. Their tangible success in healing built trust in both Western medicine and in God.
- As villagers saw real recovery without the need to abandon farmland or resort to spiritual divination, they increasingly embraced Christianity.
- Forming the first generation of converts who left animist beliefs in favor of faith in a compassionate, healing God.
- After the District’s Establishment:
 - The government later established Wat Chan Chalerm Phrakiat 80th Anniversary Hospital and 3 sub-district health-promoting hospitals, taking over the main role in public health.
 - Churches continued supporting these efforts by forming health care committees to assist sick members, covering travel and food costs, and coordinating with local village health volunteers (Aor Sor Mor).

1.3 Mission in Livelihood and Agriculture

- Traditional Karen Livelihoods:

The Karen community primarily practiced subsistence farming—growing rice, rotating crops, and cultivating various vegetables for personal consumption. Surpluses were occasionally sold, but transporting goods to Chiang Mai was difficult and costly.
- Church Support in Agriculture:
 - The Protestant church introduced economically valuable plants and animals from abroad, such as lychee, coffee, and Brahman cattle—long before the Royal Project was implemented. These efforts were supported by funding from Christian foundations.
 - They taught techniques in cultivation, animal vaccination, and small-scale commercial pig and poultry farming. However, adoption was limited at the time due to the absence of roads for transporting goods to urban markets.
 - When the Royal Project was eventually implemented in earnest

(as detailed in the next section), the church collaborated in facilitating training and knowledge transfer for locals.

Summary of the Protestant Church's Major Role in Kulayaniwattana, Chiang Mai – The Taproot of Social Innovation

1. Education: Sahamit Wittaya School was established in 1963 after years of advocacy by Headman Buaka and the missionaries. Mountain children gained literacy and received scholarships to study up to university level.

2. Health: The first quinine pill introduced by missionaries dispelled the belief in “**forest spirits**” causing illness. Villagers began to trust modern medicine and converted to Christianity.

3. Livelihoods: Missionaries introduced coffee and lychee saplings and Brahman cattle, along with training in perennial crop cultivation. This laid the foundation for a new economy and replaced slash-and-burn agriculture.

2. Wat Chan Royal Project- The Power of Royal Initiatives in Area Development

2.1 Early Royal Endeavors

- Concern over Opium Cultivation:

In the past, large areas in Kulayaniwattana District were dedicated to growing opium, as there were no alternative sources of income. Attempts at suppression through enforcement failed due to the district's remote location, lack of transportation infrastructure, poor access to education, and insufficient healthcare. Additionally, there was chronic food insecurity. Despite these challenges, the area was rich in natural resources, with forests still largely intact.

- Establishment of the Royal Project:

In 1979, His Majesty King Rama IX visited Wat Chan Subdistrict. Moved by the suffering and statelessness of local hill tribe populations, he initiated the Wat Chan Royal Project Development Center, encouraging the cultivation of temperate-climate crops—such as Japanese pumpkin, heart-shaped cabbage, and avocado—as substitutes for opium, along with livestock rearing.

- Over time, His Majesty visited the area four times, personally engaging