Developing a system of community-based agritourism for sustainable local food systems: a multi-case study of rural livelihood diversification and sustainable urban consumption in city-regional Bangkok

Miss Sofia Anna Enrica Cavalleri

A Dissertation Submitted in Partial Fulfillment of the Requirements
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การพัฒนาระบบการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐานเพื่อความยั่งยืนของระบบอาหารในท้องถิ่น: พหุกรณีศึกษาความหลากหลายของการทำมาหากินในท้องถิ่นและความยั่งยืนของการบริโภคของเมืองในกรุงเทพมหานครและจังหวัดโดยรอบ

น.ส.โซเฟีย แอนนา เอนริกา คาวาลเลอรี่

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บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
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By	Miss Sofia Anna Enrica Cavalleri
Field of Study	Environment, Development and Sustainability
Thesis Advisor	PUNTITA TANWATTANA, Ph.D.
Thesis Co Advisor	Clemens Grünbühel, Ph.D.

Accepted by the GRADUATE SCHOOL, Chulalongkorn University in Partial Fulfillment of the Requirement for the Doctor of Philosophy

..... Dean of the GRADUATE SCHOOL

(Associate Professor YOOTTHANA CHUPPUNNARAT, Ph.D.)

DISSERTATION COMMITTEE

..... Chairman

(Bart Lambregts, Ph.D.)

..... Thesis Advisor

(PUNTITA TANWATTANA, Ph.D.)

..... Thesis Co-Advisor

(Clemens Grünbühel, Ph.D.)

..... Examiner

(Assistant Professor Suthirat Kittipongvises, Ph.D.)

..... Examiner

(Associate Professor Narumon Arunotai, Ph.D.)

..... External Examiner

(Leonie Pearson, Ph.D.)

โซเฟีย แอนนา เอนริกา คาวาลเลอรี่ : การพัฒนาระบบการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐานเพื่อความยั่งยืนของระบบอาหารในท้องถิ่น: พหุกรณีศึกษาความหลากหลายของการทำมาหากินในท้องถิ่นและความยั่งยืนของการบริโภคของเมืองในกรุงเทพมหานครและจังหวัดโดยรอบ. (Developing a system of community-based agritourism for sustainable local food systems: a multi-case study of rural livelihood diversification and sustainable urban consumption in city-regional Bangkok) อ.ที่ปรึกษาหลัก : ปัณฑิตา ตันวัฒนะ, อ.ที่ปรึกษาร่วม : คลีเมนส์ กรีนบิวเฮิล

ระบบอาหารในปัจจุบันประสบความล้มเหลวในการเชื่อมโยงผู้ผลิตในชนบทกับผู้บริโภคในเมืองเข้าด้วยกันโดยตรง งานวิจัยฉบับนี้จึงศึกษาและจำแนกการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐานซึ่งเป็นแนวปฏิบัติที่เพิ่งเกิดขึ้นในฐานะกลยุทธ์ที่จะเชื่อมผู้ผลิตในชนบท กับผู้บริโภคในเมืองเข้าด้วยกัน คำถามหลักของงานวิจัยชิ้นนี้คือ การท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐานจะเชื่อมผู้ผลิตในชนบทเข้ากับผู้บริโภคในเมือง และเป็นกลยุทธ์สร้างความหลากหลายของการทำมาหากินในท้องถิ่นได้อย่างไร

โดยผู้วิจัยได้เลือกใช้วิธีวิจัย แบบผสมผสานในการเก็บข้อมูลเพื่อตอบคำถามวิจัยนี้ และวิเคราะห์ข้อมูลด้วยกระบวนการทั้งอุปนัยและนิรนัย วิธีการเก็บข้อมูลที่ใช้ได้แก่การทบทวนวรรณกรรมทั้งที่ได้รับการตีพิมพ์และไม่ได้รับการตีพิมพ์ การเฝ้าสังเกตอย่างใกล้ชิดในพื้นที่ชนบทของสามจังหวัดการคำนวณดัชนีความเที่ยงตรงเชิงเนื้อหาโดยคณะผู้เชี่ยวชาญ (n=17) การสัมภาษณ์กึ่งมีโครงสร้างกับผู้มีส่วนได้ส่วนเสีย (n=40) การสัมภาษณ์เชิงลึกกับผู้น าชุมชนในพื้นที่ชนบท (n=10) และการใช้แบบสอบถามกับกลุ่มตัวอย่างของผู้บริโภคในเมืองที่อาศัยในกรุงเทพมหานคร (n=400) ผลผลิตที่ได้จากการวิจัยนี้ได้แก่ (1) กรอบแนวคิดแบบบูรณาการที่ใช้ตัวชี้วัดเพื่อจำแนกแนวปฏิบัติในการสร้างความหลากหลายของการทำมาหากินในท้องถิ่น ซึ่งประกอบด้วยมิติด้านสิ่งแวดล้อม สังคม-วัฒนธรรม เศรษฐกิจ และสุขภาพ (2) แนวปฏิบัติในการสร้างความหลากหลายของการท ามาหากินในท้องถิ่นซึ่งเกิดขึ้นในบริเวณภูมิภาคโดยรอบที่มีความสัมพันธ์กับกรุงเทพมหานคร ซึ่งรวมถึงการท่องเที่ยวเชิงอาหารที่โดดเด่นกว่าแนวปฏิบัติอื่นๆ (3) การตรวจสอบความถูกต้องเชิงสถิติของความเกี่ยวเนื่องกันระหว่างเมือง-ชนบทและการบริโภคที่ยั่งยืน ผลการศึกษานี้ได้ยืนยันว่าการเชื่อมต่ออย่างแน่นแฟ้นระหว่างผู้บริโภคและผู้ผลิตทำให้เกิดการบริโภคอย่างยั่งยืนและระบบอาหารท้องถิ่นที่ยั่งยืน และ (4) ข้อเสนอแนะเกี่ยวกับประสบการณ์การท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐานสำหรับตอบสนองผู้บริโภคเฉพาะกลุ่ม ซึ่งจะทำให้ผลิตภัณฑ์และบริการสามารถพัฒนาสิ่งที่มีอยู่ได้โดยตั้งอยู่บนบริบทเฉพาะของต้นทุนทางสิ่งแวดล้อม สังคม-วัฒนธรรม เศรษฐกิจและสุขภาพของชุมชนท้องถิ่นนั้น ๆ

สาขาวิชา	สิ่งแวดล้อม การพัฒนา และความยั่งยืน	ลายมือชื่อนิสิต .....
ปีการศึกษา	2564	ลายมือชื่อ อ.ที่ปรึกษาหลัก .....
		ลายมือชื่อ อ.ที่ปรึกษาร่วม .....

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KEYWORD: Community-Based Agritourism, Rural Livelihood Diversification, Sustainable Food Systems, Rural, Urban

Sofia Anna Enrica Cavalleri : Developing a system of community-based agritourism for sustainable local food systems: a multi-case study of rural livelihood diversification and sustainable urban consumption in city-regional Bangkok. Advisor: PUNTITA TANWATTANA, Ph.D. Co-advisor: Clemens Grünbühel, Ph.D.

Current food systems fail to directly link rural producers and urban consumers. This research explores and categorizes emerging community-based agritourism practices as strategies to reconnect rural food producers with urban consumers. The main research question of this study is: how can community-based agritourism link rural food producers and urban consumers as a rural livelihood diversification strategy? Mixed methods for data collection were selected to answer this question and analyzed with a deductive and inductive approach. These include the review of secondary grey and academic literature, shadow observation in three rural provinces, content validity index calculation performed by experts (n = 17), semi-structured multistakeholder interviews (n = 40), in-depth interviews with rural community leaders (n = 10) and a survey questionnaire distributed to a sample of urban consumers living in Bangkok (n = 400). Research outputs include: (1) an integrated framework of indicators to categorize rural livelihood diversification practices, built on the four environmental, sociocultural, economic, and health dimensions; (2) a list of rural diversification practices emerging in Bangkok cityregion, with culinary tourism being a prominent one; (3) the statistical validation of the association between urban-rural relation and sustainable consumption, confirming that strong consumer-producer links lead to sustainable consumption and sustainable local food systems and (4) recommendations targeting community-based agritourism experiences to specific consumer niches. In this way, products and services can effectively leverage on context-specific environmental, sociocultural, economic and health assets of local rural communities.

Field of Study:	Environment, Development and Sustainability	Student's Signature .....
Academic Year:	2021	Advisor's Signature .....
		Co-advisor's Signature .....

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1. Introduction

1.1 Rationale and background

Cities have always depended on their hinterlands to ensure food and nutrition security. Nowadays, urban-rural links are being disrupted due to complex food value chains. This translates into urban consumers struggling to access direct, reliable information on the source of their food and rural food producers having limited access to markets. A city-regional circular systemic approach is needed to plan sustainable local food systems, to ensure intersectional food and nutrition security and reconnect urban consumers with rural producers (FAO, 2015; Nunes, 2017; Ross et al., 2010). Since March 2020, the Covid-19 pandemic crisis has provided a visible example of the disruption of complex food chains, re-questioning the sustainability, resilience, and inclusivity of current food systems and which kind of agriculture and food producers are being supported by existing food policies and market standards. Vulnerable and marginalized rural communities still relying on traditional ecological knowledge (TEK) or local ecological knowledge (LEK) practices, face systemic barriers and institutional complications. These prevent them to effectively access alternative markets and consumer niches (Leach et al., 2020; Nunes, 2017; Rigg et al., 2018; Zazo-Moratalla et al., 2019).

Due to the flow of resources linking urban and rural centers, an overarching sustainable consumption (SC) framework can help discerning the drivers and barriers to achieve sustainable regional development. Urban consumers and rural food producers can be linked more directly through sustainable local food systems, advancing situated sustainable consumption (SC) practice models and fair value chains. Local food systems (LFS) “have emerged against industrial and transnational food chains as different socioeconomic and geographic structures, relocalizing production, while building closer links to urban consumers” (Zazo-Moratalla et al., 2019, p.2). Developing fair local food chains refers to a “closer link between

producers and customers. Responsibility among them is expected to be enhanced, while food miles are expected to be reduced", as highlighted in a recent analysis of Bangkok's food system (Boossabong, 2019, p. 56). Urban consumers are often forced to purchase from "hegemonic food corporations in the modern trade market that can be accessed easily" and that can "provide the most effective food distribution that bridge rural, peri-urban and urban areas through their effective food supply chains" (Boossabong, 2019, p. 54). Nonetheless, effective food supply chains do not always consider elements of social justice, environmental externalities, health issues and decentralized economic development. This leads to a food sovereignty problem concerning access and control over local food systems, with rural producers and urban consumers being disconnected from each other due to complex food value chains (Boossabong, 2019).

This research emerges as an interdisciplinary cross-sectional multi case study of local food systems in Bangkok city-region. As a growing megacity, Bangkok is heavily dependent on surrounding agriculture to effectively feed its urban dwellers (Boossabong, 2019). This calls for the need to plan food systems at the city-regional level to mainstream sustainability in the food value chain ensuring that resilience and rural economic opportunities are being situated at the community level. A re-localization of food can reconnect the macro, meso and micro levels of governance and effectively transition towards sustainable food systems. As stated by Nunes (2017, p.447), "alternative, local responses to conventional food systems" are increasingly needed. Community resilience, urban-rural relation (URR) and sustainable urban consumer behavior (SUCB) are being examined in this research as they are crucial to plan more sustainable local food systems.

1.1.1 Practical and theoretical contributions

Among different mechanisms to diversify small-scale farmers' livelihoods and encourage sustainable consumption, community-based agritourism can be a strategy to reconnect urban consumers with rural food producers (Chase et al., 2018). Community-based agritourism (CBAT) relates to different Sustainable Development Goals (SDGs). It has specific implications for SDG target 11.a to support "positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning" as well as SDG target 12.b to "develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products" (United Nations, 2019). This research emerges as a scalable contribution to localize and integrate SDGs with mixed qualitative and quantitative data collected in Bangkok and surrounding provinces. The theoretical contribution of this study adds to the body of knowledge using the KAP model to measure sustainable consumer behavior, by advancing "consumer loyalty" as an additional dimension of the model to be measured and taken into consideration. Findings provide insights on CBAT as a possible policy strategy to achieve regional integrated urban-rural development, situated circular economic models in rural areas, community resilience and intersectional food and nutrition security.

A recent framework of indicators was advanced from research conducted in Mexico, conceptualizing CBT and CBAT as practice models to diversify sustainable rural livelihoods and localize current agri-food systems (Sosa et al., 2021). This doctoral research aims to provide a similar contribution in the context of Bangkok's sustainable local food systems.

On an international level, both sustainable consumption and sustainable urban-rural links are listed as goals of the 2030 UN Agenda for Sustainable Development. More research is needed to understand the correlation between these

two dimensions. This research provides a contribution towards that end, accelerating the delivery of Sustainable Development Goal (SDG) 11.a.

On a local level, community-based agritourism (CBAT) has been conceptualized as a policy strategy for community development, often associated with the broader umbrella of community-based cultural tourism (CBCT). CBAT is often conceptualized by different scholars as a strategy to preserve traditional ecological knowledge (TEK) and local ecological knowledge (LEK) of rural communities. TEK and LEK "can be passed between generations and between different communities in order to develop sustainability and ensure the spread of benefits from creative tourism" (Sznajder et al., 2009). The most recent literature has highlighted how "a broader quality of life approach to monitoring and evaluation could help to identify the specific ways in which creative tourism could help local communities" (Duxbury & Richards, 2019). This research emerges as an academic contribution towards that end, focusing on Thailand as recent "studies of communities in Thailand underline the potential for developing creative skills that can enhance the income-generation potential of local people, such as valorizing gastronomic skills and knowledge" (Duxbury & Richards, 2019).

1.2 Significant problem and research gap

The main significant problem explored by this research is related to the fact that our current food systems are disrupted. Rural food producers and urban consumers are not directly linked in a sustainable way, due to complex food value chains which are eroding rural ecosystem services to meet increasing urban food demand.

In occasion of the United Nations General Assembly (UNGA) high-level week held in September 2020, an online panel entitled SDG Action Zone was organized as an inclusive virtual conference. The aim was to highlight the fields where political and social action on Sustainable Development Goals (SDGs) are most urgently needed. The Stockholm Environment Institute (SEI) hosted a session as a moderator

of the United Nations (UN) SDG Action Zone, entitled “Protection For Resilience: Synergizing SDGs to Achieve Resilient Food Systems[1]”. The panel included key informant stakeholders representing different perspectives, working to redesign sustainable food systems in Asia and Southeast Asia in particular. Representatives from youth, civil society organizations (CSOs), Indigenous Peoples and Local Communities (IPLC) and the private sector provided a multi-stakeholder background on this issue. The video recording and research-related outputs produced as an outcome of the panel discussion were later synthesized and published online by the Consultative Group for International Agricultural Research (CGIAR) Research Program on Forests, Trees and Agroforestry and SEI (CGIAR & SEI, 2020). The main discussion highlighted that little progress has been achieved towards ending hunger in the Asia-Pacific region, with a regression of SDGs 2, 12 and 13, therefore requiring more action in relation to these. This research builds on the political momentum of the United Nations General Assembly (UNGA), and on the need to synergize SDGs which was restated during the session “Protection For Resilience: Synergizing SDGs to Achieve Resilient Food Systems”. In this occasion, a multistakeholder dialogue called for the need of more sustainable, resilient, inclusive food systems to be planned at the regional level with a collaborative and inclusive approach.

A “re-regionalization of food” is nowadays needed (Nunes, 2017). This is crucial to reintroduce a “scalar dimension to the practice of doing food justice, which extends beyond local initiatives to consider broader fundamental land-use planning challenges around circular economies and ecosystem services” (Nunes, 2017). “Alternative, local responses to conventional food systems” (Nunes, 2017), operating under various legal designations, under adaptive governance planning mechanisms or corporate social responsibility (CSR) business models can offer alternative, scalable solutions to plan sustainable food systems. Due to governance fragmentation, urban,

[1] https://sdgactionzone.org/class/protection-for-resilience-synergizing-sdgs-to-achieve-resilient-food-systems/

peri-urban and rural areas are often managed with a silo approach which emphasizes the urban-rural divide (Buxton et al., 2016; Hedblom et al., 2017; Martin et al., 2016; Simon & Adam-Bradford, 2016; Wang et al., 2018).

Among the different mechanisms to support sustainable links between rural food producers and urban consumers, community-based agritourism (CBAT) emerged as a strategy to support livelihood diversification and consider urban development and rural development with a circular economy approach (Chase et al., 2018). Nonetheless, "extensive information on indicators that can be applicable to measure various aspects of social, economic, and environmental sustainability at a community level are limited" (Duxbury & Richards, 2019) with the existing body of knowledge mainly focusing on social impact assessment, community well-being and social capitals and requiring an innovative interdisciplinary approach to study this significant problem. This research aims to contribute towards that end.

1.3 Research area

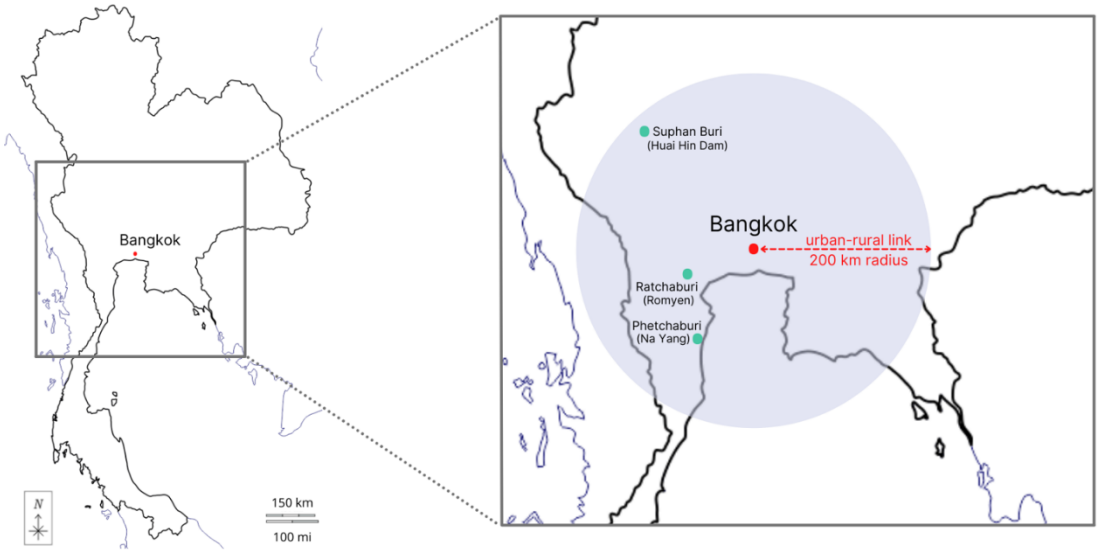


Figure 1 : map of the three rural case studies (source: authors)

Three rural communities were selected for this research based on a set of inclusion and exclusion criteria, as well as geographical criteria. The case studies were chosen in a radius of 200 km from Bangkok city center. Notice that the radius in Figure 1 shows the aerial distance in kilometers (200) from Bangkok city center. The actual distance by car is sometimes greater. A 200 km distance was suggested by preliminary key informant interviews as a scope to explore sustainable consumer-producer relationships, as it enables Bangkok consumers to reach rural communities with a weekend trip or even with a one-day trip. Another criterion for selection required communities to have prototyped livelihood diversification strategies out of farming, investing in non-agricultural products and services. Communities adopting "community-based agritourism" (CBAT) as an additional stream of income in addition to food production/agriculture were selected for this study. Their location had to be in rural provinces surrounding Bangkok, therefore Suphan Buri, Phetchaburi and Ratchaburi were considered as adjacent provinces. Since the scope of this study is mainly related to the production stage of local food systems, the research design was further narrowed down to a target population of respondents, namely rural food producers, as well as other relevant stakeholders (private sector, government, NGOs/CSOs, academia) based in Bangkok. The strategies adopted in the three communities showcase different practice models of rural livelihoods diversification. After the initial selection process, these were categorized depending on supporting sectoral stakeholders:

1) **NGO-supported community**: the Thai-Karen community of Huai Hin Dam in Suphan Buri province, around 200 km by car from Bangkok. The community is collaborating mainly with local NGOs/CSOs to develop its CBAT strategy.
2) **Government-supported community**: the community of Na Yang in Phetchaburi province is located around 180 km by car from Bangkok. The community is supported by provincial universities and the local Government to develop its CBAT strategy.

3) **Business-supported community**: Romyen farmers' group in Ratchaburi province, around 120 km by car from Bangkok. The community works closely with the private sector to develop its CBAT strategy through CSR schemes.

1.4 Research design

This research aims to explore and categorize emerging community-based agritourism practice models as strategies of rural livelihood diversification and sustainable urban consumption to reconnect rural food producers with urban consumers through sustainable food systems.

RQ: how can community-based agritourism link rural food producers and urban consumers as a rural livelihood diversification strategy?

The main research question is a "how" question (related to CBAT as a rural livelihood diversification strategy). This is operationalized with two sub-questions: 1) a "what" and 2) a "why" question. These are formulated hereby:

1. What rural livelihood diversification practices are emerging in Bangkok city-region?
2. Why is diversification of rural livelihood a policy strategy for a sustainable food system?

Sub-question 1 focuses on exploring rural livelihood diversification practices which are emerging in Bangkok city-region, to ground-truth the secondary data from the literature (conceptualizing CBAT as an established rural livelihood diversification practice). Sub-question 2 focuses on exploring CBAT as a policy strategy for sustainable food systems and is linked to policy recommendations as well.

In relation to these sub-questions, four objectives were developed:

1. To advance an integrated framework of indicators systemizing rural livelihood diversification practices
2. To categorize emerging regional practices linking urban consumers to rural communities in Bangkok city-region

3. To test the association between urban-rural relation and sustainable consumption
4. To advance scalable recommendations to stakeholders on how to mainstream livelihood diversification strategies to support a sustainable food system and community resilience

The final four **research outputs** advanced by this study are connected to the previous objectives:

1. Integrated framework of indicators systemizing rural livelihood diversification practices
2. List of rural diversification practices emerging in Bangkok city-region
3. Validated the association between urban-rural relation and sustainable consumption
4. Recommendations advanced as propositions

Table 1 : research design (source: authors)

Research question	Sub-questions	Research objectives	Methods for data collection & analysis	Research outputs
How can community-based agritourism link rural food producers and urban consumers as a rural livelihood diversification strategy?	What rural livelihood diversification practices are emerging in Bangkok city-region?	To advance an integrated framework of indicators systemizing rural livelihood diversification practices	- Literature review - Shadow observation fieldwork (in 3 sites) - Content Validity Index (CVI) with experts	Integrated framework of indicators systemizing rural livelihood diversification practices
		To categorize emerging regional practices linking urban consumers to rural communities in Bangkok city-region	- Semi-structured multistakeholder interviews - In-depth interviews with rural community leaders	List of rural diversification practices emerging in Bangkok city-region

Research question	Sub-questions	Research objectives	Methods for data collection & analysis	Research outputs
	Why is diversification of rural livelihood a policy strategy for a sustainable food system?	To test the association between urban-rural relation and sustainable consumption	- Literature review - Online survey questionnaire with urban consumers - Mixed method approach for data analysis: statistical analysis for quantitative data and thematic analysis for qualitative data	Validated the association between urban-rural relation and sustainable consumption
		To advance scalable recommendations to stakeholders on how to mainstream livelihood diversification strategies to support a sustainable food system and community resilience		Recommendations advanced as propositions

1.5 Research assumptions

Two research assumptions were deducted from the literature review and tested by this research with a mixed methods approach. These are reported below and are related to the production and consumption stages of local food systems.

1. From the production stage, rural livelihood diversification is associated with community resilience.
2. From the consumption stage, a strong urban-rural relation is associated with sustainable consumption.

1.6 Ethics approval

This research was submitted to the Office of the Research Ethics Review Committee for Research Involving Human Subjects (Chulalongkorn University) for an Institutional Review Board (IRB). It received an official research approval on the 10th of August 2021 (COA No. 194/2564).

Due to time constraints and limited resources, secondary background data was collected through preliminary pre-survey fieldwork in the selected rural case-studies, making sure to avoid any intrusive interaction with sensitive human subjects. Pilot fieldwork shadow observation visits were scheduled in August 2020 in Huai Hin Dam community, in December 2020 in Na Yang community, and in April 2021 in Romyen community (Annex 2, 3, 4). Informal talks were conducted both on-site and online. Additionally, stakeholders provided access to online secondary data (e.g. NGOs such as RECOFTC and academic institutions operating on the ground). Only after passing the CU IRB ethical review, in-depth mixed primary data were collected in person and online, as these included more sensitive information. Because of the joint affiliation of the researcher, ethical standards integrated and followed the guidelines provided by Chulalongkorn University (CU) and the Stockholm Environment Institute (SEI). Both ethical guidelines were upheld at all stages of this research.

The main ethical risks considered in this study are hereby listed:

- Indigenous Peoples and Local Communities (IPLC): IPLC were considered as sensitive respondents, living in vulnerable and marginalized rural areas with limited access to resources. Any type of sensitive information related to IPLC which could harm their authentic ways of life was not publicly disclosed by this research.
- Cultural appropriation: the specific traditions, cultural beliefs, and local practices of IPLC were considered during the research design. This aspect was especially related to the sensitive agricultural, gastro-culinary, medicinal heritage connected to elements of TEK and LEK. Sensitive data were collected, stored and analyzed only after an official informed consent was collected from community members, either in a written or recorded form.
- Privacy considerations: ensuring that research respondents were not harmed. Collected data was stored and shared accordingly to what specified in the informed consent forms.

- Non-discrimination: all research respondents were treated equally without any sort of discrimination (in relation to age, gender, ethnicity, religion, or any other aspect).
- Positionality of the main researcher: to transparently present the reflexivity in relation to the research outcomes, positionality details were considered and presented at the beginning of the discussion of findings. The main researcher conducted this study by following a cultural sensitivity approach, mainstreaming it at all stages of the research design.

1.7 Operational definitions

- Community-based agritourism (CBAT): this study defines community-based agritourism as the rural livelihood diversification services provided by a community relying on agriculture as its main source of income.
- Community capacity building: the "process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in the fast-changing world" (Philbin, 1996).
- Community resilience: the capacity of a certain community to actively respond to any socio-economic, environmental, political, or pandemic stressor by actively integrating external disturbing elements into the core of their own complex and adaptable multifunctional system.
- Ecosystem services: “the benefits human populations derive, directly or indirectly, from ecosystem functions [as well as] the processes and conditions through which natural ecosystems and the species that comprise them, sustain and fulfill human life [...]. The UN’s Millennium Ecosystem Assessment (2005) followed this broad definition and differentiated between supporting, provisioning, regulating, and cultural services, which are provided by unmanaged natural or human-domesticated agricultural land and that provide services of direct benefit to people.” (Lee et al., 2015)

- Epistemology: “the branch of philosophy that studies how one knows what is true and how one validates truth” (Repko & Szostak, 2017).
- Food security: ‘A situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life’ (Food and Agriculture Organization [FAO] 1996).
- Food planner: “anyone who is working in, or engaged with, the food system with the aim of rendering it more sustainable with respect to its social, economic and ecological effects” (Morgan, 2009).
- Food (system) planning: “a set of future-oriented, place-based, and dynamic activities that strengthen a community’s food system through the creation and implementation of community plans and policies, which are often but not always recognized or led by local and regional governments” (Whittaker et al., 2017).
- Food system: “a food system encompasses all the stages of keeping us fed: growing, harvesting, packing, processing, transforming, marketing, consuming and disposing of food. The most common food system is the agro-industrial food system that is global [and] dominated by a few multinational corporations through vertical integration” (FAO, 2016).
- Interdisciplinarity: [approach] “a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline, and draws on the disciplines with the goal of integrating their insights to construct a more comprehensive understanding.” (Repko & Szostak, 2017)
- Intersectionality: [approach] acknowledging that “multidimensional elements of social life such as class, caste, religion, ethnicity, age, sexual orientation and physical (dis)ability” (Mahadevia et al., 2017) are interconnected and thus need to be considered when addressing an issue from a holistic perspective.
- KAPL model (Knowledge, Attitude, Practice, Loyalty): integrated model to measure sustainable consumption by considering the four dimensions of (1)

knowledge, (2) attitude, (3) practice, and (4) loyalty in relation to sustainable urban consumer behavior.

- Local food system (LFS): “LFS have emerged against industrial and transnational food chains as different socioeconomic and geographic structures, relocalizing production, while building closer links to urban consumers. LFS involve people, institutions, resources, and logistics platforms, alongside intertwined relationships, to produce, distribute, and consume food (…) “local” is defined by a triple proximity between producers and consumers: physical, social, and identitarian” (Zazo-Moratalla et al., 2019).
- Ontology: “a branch of philosophy concerned with the assumptions we make in order to believe that something makes sense or is real, or the very nature or essence of the social phenomenon we are investigating.” (Kivunja & Kuyini, 2017)
- (Practice) model: “a representation that serves to visualize and communicate a theory” (Repko & Szostak, 2017).
- Sustainable development: “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987).
- Sustainable food system (SFS): “a sustainable food system (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised. This means that:
    - It is profitable throughout (economic sustainability);
    - It has broad-based benefits for society (social sustainability); and
    - It has a positive or neutral impact on the natural environment (environmental sustainability).” (FAO, 2018)
- Sustainable local food system: a situated food system that considers city-regional areas and local communities, actively involving them in a process of value-added income generation connected to local flows of food resources.

- Sustainable livelihood (SL): [framework] “covers research concerning poverty reduction, sustainability and livelihood strategies. The SL framework is applicable to both rural and urban survival strategies. The five assets in sustainable livelihood are human capital, physical capital, social capital, financial capital and natural capital.
- Sustainable tourism: “tourism which leads to management of all resources in such a way that economic, social and aesthetic needs can be filled while maintaining cultural integrity, essentials ecological processes, biological diversity and life support systems” (UNEP and WTO, 2005).

2. Literature review

This chapter opens by acknowledging how urban and rural dimensions are interlinked, conceptually moving beyond the mainstream academic narrative of the urban-rural divide. Concepts of sustainable production and consumption are linked with a systemic circular economy approach. After presenting the overarching integrated theoretical framework (2.1), the main literature dimensions are systematically structured into rural production (2.2) and urban consumption (2.3) in relation to sustainable local food systems (explored in 2.1.1). From the production stage, these include sustainable livelihoods (2.2.1), livelihood diversification (2.2.2), community resilience (2.2.3), community-based agritourism (2.2.4). From the consumption side, these include urban-rural relation (2.3.1) and sustainable urban consumer behavior (2.3.2).

2.1 Integrated theoretical framework

Academic and grey literature related to sustainable local food systems was reviewed. Research fields related to food sovereignty, food security and nutrition (FSN), sustainable development (SD), agroecology, sustainable livelihood (SL), agritourism (or agro-tourism), community-based tourism (CBT), cultural tourism and community-based agritourism (CBAT), Thai sufficiency economy philosophy (SEP), socio-ecological systems (SES), traditional ecological knowledge (TEK) and local ecological knowledge (LEK), community resilience were reviewed among other related fields.

Due to the interdisciplinary nature of sustainable community-based agritourism (CBAT) and to a lack of coherent definitions from the existing literature, various interrelated research fields were considered to build the integrated theoretical framework of this study. These are presented in the figure below, by intersecting the sectors of agriculture and tourism with the paradigms of sustainability (sustainable development) and resilience (community resilience).

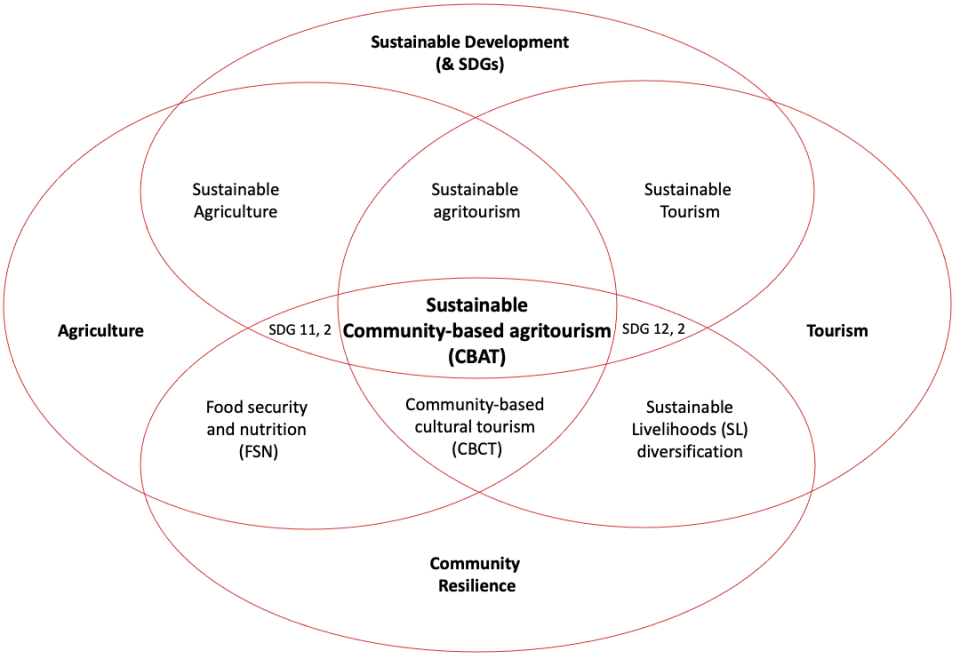


Figure 2 : integrated theoretical framework of community-based agritourism (source: authors)

Logical links between the selected literature streams are visually represented in the Figure above. The top-down concept of sustainable development is intersected with the bottom-up concept of community resilience. At the same time, the two sectors of tourism and agriculture have been considered in parallel. The figure shows how the intersection between research fields can lead to specific interdisciplinary sub-fields that span from food security and nutrition to community-based cultural tourism, to sustainable agriculture and sustainable tourism, to sustainable agritourism, and finally to sustainable livelihoods diversification. The figure accurately represents the interdisciplinary nature of this study and the conceptual complexity of sustainable community-based agritourism.

First, the difference between sustainability and resilience needs to be addressed to motivate the need to select both elements of sustainable development and community resilience in the framework. Sustainability can be defined as “the measure of system performance, whereas resilience can be seen as a means to achieve it during times of disturbance” (Tendall et al., 2015). The latter

relates to the “dynamic capacity to continue to achieve goals despite disturbances and shocks”, as resilience thinking itself “represents a paradigm rather than a testable body of theory” (Tendall et al., 2015). As a paradigm, resilience has been selected alongside the paradigm of sustainable development explored by Sachs (Sachs, 2015), and integrated at the foundations of the theoretical framework of this study. Due to our scope, the concept of resilience has been narrowed to *community resilience* and sustainable development to specific *sustainable development goals,* namely SDGs 2, 11, and 12 (represented in the figure above).

The extensive body of literature was systematically structured into four dimensions: environmental, sociocultural, economic, and health. These four dimensions emerged as common points from the theoretical frameworks intersecting both sustainable food systems and sustainable tourism. As represented in the first column of Table 2, [1] the four pillars of food security and nutrition were integrated with [2] the three pillars of sustainable development and [3] the five pillars of sustainable livelihood. Table 2 was compiled by selecting the most recent state of the art, published between 2000 and 2021, considered relevant for the research objectives of this study.

Scholars exploring different literature dimensions were grouped in relation to the main theoretical frameworks of:

[1] Food Security and Nutrition or FSN (Abu Hatab et al., 2019; Anselmi & Vignola, 2021; Béné, 2020; Boossabong, 2019; Conti et al., 2021; FAO, 2018; Nunes, 2017; Zazo-Moratalla et al., 2019) focusing on four pillars related to food availability, access, stability and utilization. Food security and nutrition (FSN) has been considered as an overarching umbrella concept and as the ideal outcome resulting from localizing sustainable food systems at the city-regional level to ensure community resilience and sustainable consumption. The four pillars of FSN have been integrated in the framework, considering (1) food availability, (2) food access, (3) food utilization and (4) food stability as conceptualized by FAO (FAO, 2016).

[2] Sustainable Development or SD (Barzola et al., 2019; FAO, 2018; Leach et al., 2020; Rigg et al., 2018; Sachs, 2015; Srinivasan et al., 2011; Thorbeck & Troughton, 2016; Valdés & Foster, 2010; Wang et al., 2018; Wiskerke, 2009; World Tourism Organization, 2009; Zhao, 2012) focusing on the three pillars of sustainable development, or 3 "Es" (equity, environment and economy) and integrated with the health pillar.

[3] Sustainable Livelihoods or SL (Gebru et al., 2018; Haidar, 2009; Mphande, 2016; Serrat, 2017; Thorbeck & Troughton, 2016; Valdés & Foster, 2010) focusing on five pillars related to natural, social, physical, financial, human capital. The sustainable livelihoods (SL) framework was considered at the intersection between community resilience and tourism, as livelihood diversification services can provide non-agricultural streams of income to improve the livelihood of rural and peri-urban communities, ensuring their resilience to external shocks (Mphande, 2016). As a matter of fact, "agritourism can be seen as an innovative and diversification strategy for farms, by including recreation and leisure activities for tourists, with many economic and non-economic benefits for farmers, visitors and communities" (Broccardo et al., 2017).

Table 2 : common literature dimensions emerging from 3 integrated theoretical frameworks (source: authors)

3 theoretical frameworks	4 literature dimensions			
	ENVIRONMENTAL	SOCIOCULTURAL	ECONOMIC	HEALTH
Food Security and Nutrition [1] FSN	Food Availability	Food Access	Food Stability	Food Utilization
Sustainable Development [2] SD	Environment	Equity	Economy	Health (*integrated One Health approach)

3 theoretical frameworks	4 literature dimensions				
	ENVIRONMENTAL	SOCIOCULTURAL		ECONOMIC	HEALTH
Sustainable Livelihoods [3] SL	Natural Capital	Social Capital	Physical Capital	Financial Capital	Human Capital
Indicators emerging from the literature reviewed	Indicators related to climate adaptation and mitigation strategies in terms of biodiversity preservation and habitat provision. Sustainable resource management to preserve all 4 groups of ecosystem services: provisioning, regulating, cultural, and supporting.	Indicators related to intersectional access and control over natural resources. Measuring community participation and equity, community integrity, biocultural education, social inclusion.		Indicators related to poverty alleviation: use-value (related to monetary income) and non-use value (related to community resilience, capacity building, skills development and assets which cannot be monetized).	Indicators related to proper biological, medicinal, nutritional value of native, indigenous, and seasonal foods and diets.

Logical links between different theoretical frameworks have been represented in the table above. Food availability (FSN) links to the pillar of environment (SD) in relation to the quantity of food as a provisioning ecosystem service and thus links to the component of natural capital (SL). Food access (FSN) is linked to the pillar of equity (SD) focusing on the access to and control over food as a resource as well as to the components of social and physical capital (SL). Similarly, food stability (FSN) is related to the economic pillar (SD) in terms of the value of food resources and to financial capital or profit (SL). Finally, the pillar of food utilization (FSN) required an additional component of health to be added to the three pillars of sustainable development (SD) to focus on nutrition security and local

diets, concerning the quality of food resources in terms of micronutrients for human capital (SL). This was possible by following a One Health (SD) approach (Garcia et al., 2020).

2.1.1 Sustainable local food systems

More recently, the literature has moved towards a paradigm shift in terms of agri-food systems thinking rather than merely focusing on agricultural land-use per se. FAO has defined sustainable food systems as delivering "food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised. This means that: it is profitable throughout (economic sustainability); it has broad-based benefits for society (social sustainability); and it has a positive or neutral impact on the natural environment (environmental sustainability)" (FAO, 2018). This has provided the opportunity to move away from the urban-rural divide narrative and towards a more regionally interconnected adaptive realm (Nunes, 2017; Wiskerke, 2009). As a matter of fact, food systems involve "matters of production, reproduction, distribution, consumption – and the interlinkages between these, across global, national and local scales", linking urban, peri-urban and rural areas as interconnected socio-ecological systems (Leach et al., 2020). Such a regional approach is crucial to plan sustainable local food system (LFS). LFSs rely on the four pillars of food security and nutrition (FSN): according to FAO, these are food access, food availability, food stability and food utilization (FAO, 2016). By selecting a political science perspective, this research takes into consideration the specific sub-fields of food policy (related to legal, institutionalized instruments) and food planning (with a multi-stakeholder approach) and how a strategy such as a CBAT can contribute to plan sustainable food systems at the regional level.

Due to unchecked industrialization and unplanned urbanization, mainly industrial, residential and commercial land-use plans have been prioritized in urban and peri-urban areas in and around Bangkok, instead of preserving their traditional agricultural use (Boossabong, 2019; Le & Dung, 2018; Zasada, 2011). As a result of

that, the resilience of Bangkok city-region and similar megacities depends on the resilience of their sub-systems at the community level to effectively FSN locally. When considering resilience to shocks (such as pandemics and other external elements) the scope must shift to the local scale, to ensure positive ripple effects for urban, peri-urban or rural communities with a city-regional approach (Béné, 2020).

A brief overview of the four pillars of FSN is hereby presented as it represents the foundations of sustainable local food systems.

Food access is related to the allocation and affordability of food, the two main types of access to food being (I) direct access based on human and material resources and (II) economic access (with food production taking place in a different geographical location). The concept of food access is connected to food sovereignty and food justice, as well as to food policies and participatory planning mechanisms, ensuring that every individual has equal access to and control over local food systems. Inclusive and participatory food planning is related to the theoretical concepts of visibility and power, to the Post-structuralist concept of "governmentality" (developed by the French sociologist Michel Foucault) underpinning a strong connection and correlation between the control of resources such as food and the concept of power (Legg & Heath, 2018). Post-structural theories and alternative narratives (in particular related to feminist political ecology, anti-racist and decolonial critiques) have been highlighting how an intersectional approach is needed to analyze how vulnerable and marginalized individuals such as women or IPLC are lacking opportunities "to access land, water, inputs, technical knowledge and markets and adapt to changing environmental and economic conditions" (Leach et al., 2020).

Food availability refers to the preservation of the natural capital and natural ecosystem services. Resource management literature focuses on the preservation of all types of ecosystem services: provisioning (specifically including food resources), regulating, cultural and supporting services (UNEP, 2009). Sustainable food systems and sustainable agriculture nowadays constitute a climate mitigation strategy through

which forests, trees and agroforestry can support food security, nutrition security, natural environment and human health by ensuring that different ecosystem services are being preserved (Zazo-Moratalla et al., 2019). Industrial agriculture, on the other hand, has been associated to negative environmental impacts at the micro and macro scale (Bryant & Johnston, 1992; Valdés & Foster, 2010). One of the main problems of industrial agriculture is that it prevents carbon sequestration from the atmosphere and its fixation by the soil, consequently having a bigger impact on the water cycle on a macro-scale (Tickell, 2020). Changes in microclimate and macroclimate are interconnected. Agroecological principles embedded in local traditional agriculture can support larger scale sustainable agroforestry and agrobiodiversity practices. Agroecological principles range from growing cover crops, to choosing crop diversity over monocrop, to reducing tillage, restoring water cycle and overall working “with nature, not against it” (Mars, 2016).

Food stability has been connected to the ability to access and control food systems over time, in face of external socio-economic, environmental, or pandemic shocks. It is related to the resilience of broader food systems and local communities but also to poverty alleviation and sustainable consumption and production patterns.

Finally, food utilization considers diet as the proper biological use of food, highlighting the importance of micronutrients which are a consequence of using sustainable agriculture practices as they provide various benefits not only to the planet but also to human health. A stronger post-Covid research trend is emphasizing the importance of mainstreaming indigenous diets, local food systems (LFSs) and seasonal foods into food planning. This opposes the dominant globalized diets focusing on the caloric intake and not on the micronutrient value of food. Land use change, including deforestation practices, is often done in the name of food security, to convert more forest into agricultural lands and feed the growing global population. Nonetheless, by focusing on the production of energy foods for the growing population, biodiversity and local food systems are usually endangered,

leading not only to a loss of nutrients for the soil but also for human diets (Campbell, 2009; Leach et al., 2020; Nunes, 2017).

Food politics approach	Disciplinary and theoretical perspectives
Food interests and incentives	Pluralist models in political science; neoclassical and behavioral economics; instrumental policy analysis
Food institutions	Institutional economics; institutional political economy analysis; governance institutions; value chains
Food regimes	World systems theory; historical materialism; structural Marxism
Food contentions & movements	Social movement theory; contentious politics theory; identity politics; networks
Food innovation systems	Socio-technical systems; socio-ecological systems; multi-level perspective in innovation studies
Food discourses	Post structural theory, power/knowledge and discourse theory; deliberative governance; anthropology and sociology of knowledge, feminist, anti-racist and decolonial critiques
Food socio-natures	Cultural geography; political ecology; ontological turn in anthropology; deep-ecological, posthuman, indigenous thought

Figure 3 : food politics approaches with disciplinary and theoretical perspectives (adapted from Leach er al. 2020)

The figure above structures the existing literature into seven streams of food politics approaches, namely “food interests and incentives”, “food institutions”, “food regimes”, “food contentions and movements”, “food innovation systems”, “food discourses” and “food socio-natures” (Leach et al., 2020). By studying the social factors influencing sustainable food systems, this study selects a food discourses and food institutions approach to unveil power dynamics at the local and regional level, combining environmental governance, political sociology, post

structural social theory, with a value chain analysis and relevant interdisciplinary theoretical perspectives. By acknowledging that “multidimensional elements of social life such as class, caste, religion, ethnicity, age, sexual orientation and physical (dis)ability” (Mahadevia et al., 2017) are interconnected, an intersectional approach enables to study the main research problem of this study with a holistic perspective.

2.2 Rural production

2.2.1 Sustainable livelihoods

The sustainable livelihoods (SL) framework emerges as “a complex structure comprising of mostly agriculture, with part of the population diversifying into non-farm activities in order to attain a sustainable livelihood to get better income for their households” and finally be more resilient to external environmental and socio-economic shocks (Mphande, 2016). CBAT and livelihood other diversification strategies have often been studied with this framework, as it “covers research concerning poverty reduction, sustainability and livelihood strategies [and] is applicable to both rural and urban survival strategies. The five assets in sustainable livelihood are human capital, physical capital, social capital, financial capital and natural capital. These assets play an important role in survival strategies both in rural and urban livelihoods” (Mphande, 2016).

According to different scholars, agriculture-led growth is an important strategy to contribute to poverty reduction, hunger alleviation and sustainable development in particular concerning disadvantaged rural or peri-urban communities in developing countries (Leach et al., 2020; Valdés & Foster, 2010). In this context, “diversification can be defined as activities undertaken by household members in order to improve their social status and standard of living” (Mphande, 2016). The main activities that fall under the concept of rural livelihood are not necessarily limited to agriculture (divided into farming and cultivation) but instead range from animal herding, to hunting, gathering, wage labor, trading, hawking, artisanal work (e.g. carving, weaving, tie-dying), providing additional services (e.g. transport services), fetching, carrying, bakery, basket weaving among many others (Mphande, 2016). Thus, the concept of

livelihood diversification is nowadays being studied and applied to both rural and peri-urban communities, to analyze their community resilience (STEPS Centre, n.d.).

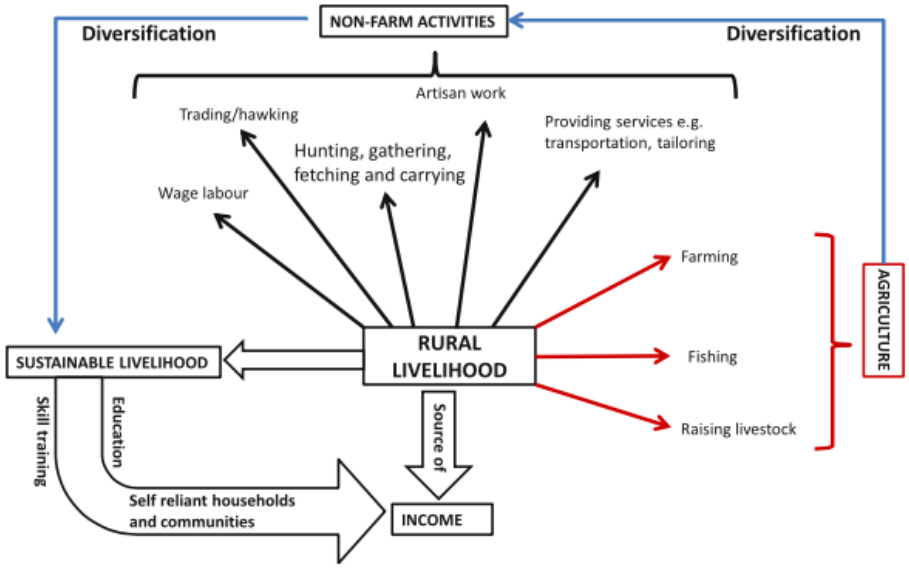


Figure 4 : “Rural livelihoods as a source of income” (source: Mphande 2016)

2.2.2 Livelihood diversification

Food production is a major aspect of local sustainability in rural agricultural communities. However, it has become increasingly difficult to base livelihoods on food production alone (Gebru et al., 2018). Recently, there has been an emerging movement towards a diversification of income sources by local smallholders. During the 1980s-1990s additional income was only possible in urban centers and we have seen massive movements of population from rural to urban areas in search for jobs. With closer connectivity through digitalization, mobile networks, and the internet, at the start of the millennium, economic diversification became possible in situ. Smallholders were able to either direct market their products or host urban customers in their communities, to experience rural lifestyles and learn about food production and land use. Diversification improved the sustainability of local food systems and the resilience of local communities to withstand external shocks such as market fluctuations, natural disasters, or pandemic crises. Simultaneously, the “re-regionalization of food” brought “scalar dimension to

the practice of doing food justice, which extends beyond local initiatives to consider broader fundamental land-use planning challenges around circular economies and ecosystem services" (Nunes, 2017). Food production is now not merely a separate sector with the intent of providing sufficient food to urban centers. It is integrated in rural livelihoods with deeper connections to resource and land use systems, as well as the overarching regional consumption patterns.

Many countries are nowadays diversifying employment opportunities for rural communities beyond the mere agricultural sector, implementing adaptive governance mechanisms with multifunctional rural development plans (Le & Dung, 2018; Sznajder et al., 2009; Yoshida et al., 2019; Zasada, 2011). Diversifying employment opportunities of rural communities beyond the mere agricultural sector, can happen through the "activation of rural areas", by "giving rural people a chance to gain extra income in the country" under "multifunctional rural development" plans and adaptive governance strategies (Sznajder et al., 2009). The redistribution of income from the city to the hinterlands emerges as an important mechanism for sustainable regional development, as "redistribution of financial resources from cities to the country and increasing the possibility of rural people generating income are important goals of social policy" overall (Sznajder et al., 2009).

2.2.3 Community resilience

The different nuances and conceptualizations of resilience have been defined and categorized by various scholars and synthesized in a cross-disciplinary report by the Community and Regional Resilience Institute (CARRI, 2013). This considers different research domains, ranging from the physical to ecological systems, and ranging from the community (and social resilience) to the economic and individual fields. The most widely used definitions of the term *resilience* present five common aspects: 1) resilience emerges as "an attribute of the community" (CARRI, 2013), 2) which is "inherent and dynamic", 3) with an adaptation component, 4) an adaptive trajectory, leading "to a positive outcome for the community relative to its state after the crisis" (CARRI, 2013), 5) and comparability as different communities can "be compared in terms of their ability to positively adapt to adversity" (CARRI,

2013). Due to the complexity of the overarching concept of resilience, the sub-concept of community resilience is hereby being considered. Narrowing the scope to community resilience is also motivated by the fact that this research focuses on community-based agritourism (CBAT), with local communities being the main unit of analysis. The comprehensive definition of community resilience proposed by this study builds on previous conceptualizations advanced by different scholars and draws on the fields of ecological systems resilience, social resilience and economic resilience. Thus, community resilience is hereby defined as the capacity of a certain community to actively respond to any socio-economic, environmental, political, or pandemic stressor by actively integrating external disturbing elements into the core of their own complex and adaptable multifunctional system.

2.2.4 Community-based agritourism

The existing vast literature on ecotourism, sustainable tourism and community-based tourism (CBT) has proven how "sustainable tourism can play an important role in community development, especially in areas abundant in natural capital, yet lacking financial resources or ability to pursue other avenues of growth" (Seba, 2012). Nonetheless, tourism as a development strategy can lead to both "positive and negative ecological, economic and socio-cultural consequences" (Seba, 2012).

Many definitions of community-based agritourism emerge from the existing academic literature and there is not agreement among scholars on a coherent one. The etymology of the word "agritourism" derives from the Latin *ager* (meaning "field") and the Greek *agros* (meaning "soil"), while "tourism" is considered "a form of active recreation away from one's place of residence that is inspired by cognitive, recreational and sports needs" (Sznajder et al., 2009). Agritourism can be a "possible sale channel for products and services, especially products manufactured in small quantities, which are not important from the point of view of supermarkets" (Sznajder et al., 2009). It can also constitute a "diversification strategy for farms, by including recreation and leisure activities for tourists, with many economic and non-economic benefits for farmers, visitors and

communities" (Broccardo et al., 2017). By focusing on its community aspect, the concept of agritourism has been further scoped down for the purpose of this research with a focus on community-based agritourism (CBAT). CBAT is hereby defined as the services provided by a local rural or peri-urban community which is dependent on agriculture as one of its main sources of income, integrating additional services that expand beyond the mere production of food and engage outsiders in a holistic on-site experience, diversifying the community's livelihood. CBAT usually falls under the concept of ecotourism which is defined by the IUCN as the mechanism involving "mutually supporting partnerships among three key elements: the natural environment, the local communities, and the tourism system" (IUCN 1997).

2.3 Urban consumption

2.3.1 Urban-rural relation

By Urban-Rural Relation (URR) we refer to the complex flow of resources connecting urban and rural centers. Among the main resources being exchanged, urban centers absorb huge quantities of food being produced by rural agricultural communities (Sznajder et al., 2009). Due to unchecked industrialization and unplanned urbanization, cities that once relied on their surrounding agricultural peri-urban areas for food production have to nowadays turn to their rural hinterlands to secure the source of their food (Buxton et al., 2016; FAO, 2015; Hedblom et al., 2017; Tsuchiya et al., 2015; Wang et al., 2018). Scholars have highlighted how, due to governance fragmentation, urban, peri-urban and rural areas are often planned in a way that reinforces the existing urban-rural divide (Buxton et al., 2016; Hedblom et al., 2017; Martin et al., 2016; Simon & Adam-Bradford, 2016; Wang et al., 2018). One of the main consequences of increasing urbanization trends is that more urban residents lack direct access and connection to their food producers (Sznajder et al., 2009), being disconnected from the source of their food (Leach et al., 2020).

The migration of rural population to cities due to better working and education opportunities has led to suburbanization (Butt, 2013; Piorr & PLUREL (Project), 2011) and to the phenomenon of urban sprawl (Dockemdorff, 2000). The

uncontrolled expansion of the city caused a loss of ecosystem services in surrounding rural and peri-urban areas, creating a fragmented urban model that expands across the peri-urban lands which originally were crucial for food security due to their agricultural land-use (Bryant & Johnston, 1992; Steel, 2013). This exacerbated the urban-rural divide.

In the context of urban planning, regional development, and rural sociology, agritourism emerges as a potential strategy to bridge urban and rural development with an integrated approach. Nonetheless, is presents several limitations and “agritourism research still needs a framework for systematically studying and creating knowledge. Indeed, it is necessary to observe the management, planning, and policy implications, since agritourism studies and related researches are still in the early stage of development and there is great scope for theoretical advances” (Broccardo et al., 2017). This research situates the phenomenon of community-based agritourism within a regional context, by considering common urbanization trends which have been steadily emerging at an increasing rate not only in Thailand (Figure 5) but more generally in Southeast Asia (Figure 6).

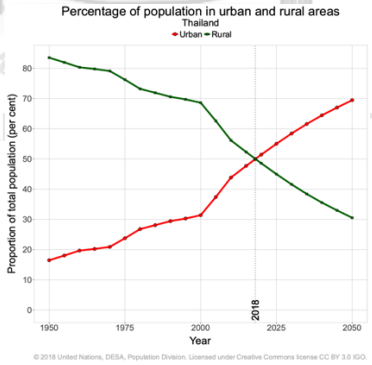


Figure 5 : factor of increased urbanization trend in Thailand (source: DESA 2018)

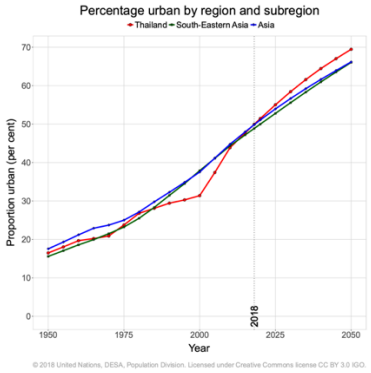


Figure 6 : factor of increased urbanization trend in Southeast Asia (source: DESA 2018)

"Urbanization is a continuous and permanent increase of the urban population at the expense of rural areas [so that] urban people become more and more numerous relative to the number of rural people" (Sznajder et al., 2009). One of the main implications of this phenomenon will be that "an increasing number of people worldwide will not have any contacts with the country and will not produce food" (Sznajder et al., 2009). Among the flux of resources moving between urban, peri-urban and rural areas, "cities absorb huge amounts of food produced by the population working in agriculture" (Sznajder et al., 2009). At the same time, "cities supply means of production and services for agriculture, [becoming] a workplace for a considerable proportion of the rural population [as well as they] supply the rural population with cultural and artistic goods and services" (Sznajder et al., 2009). Peri-urban areas and rural hinterlands emerge as crucial when planning for regional food security and nutrition (FAO, 2015; Hedblom et al., 2017). Nonetheless, rural development cannot be considered in silo. By leveraging the purchasing power of urban consumers through agritourism or other rural products or services, circular economic models and sustainable food systems can be implemented at the city-regional level. More research is needed to explore sustainable food value chains to "develop alternative food systems from the bottom-up and as the social movement and civic activism of communities, which support the role of local governments and not-for profit organizations as smart city food providers" (Boossabong, 2019).

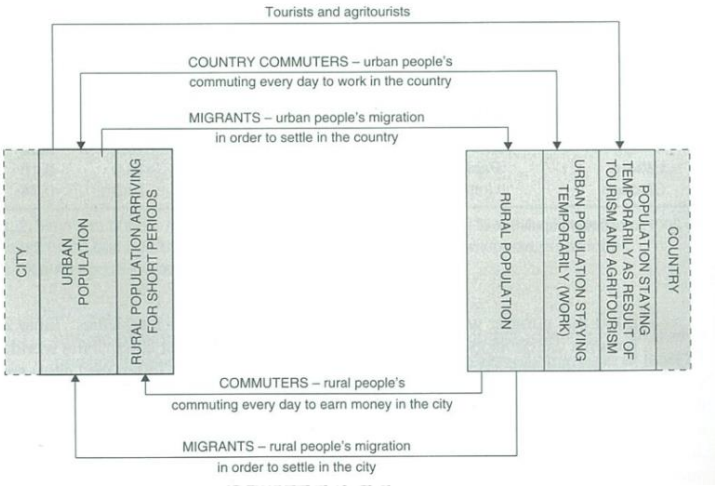


Figure 7 : “the flow of people between the country and the city" (source: Sznajder et al., 2009)

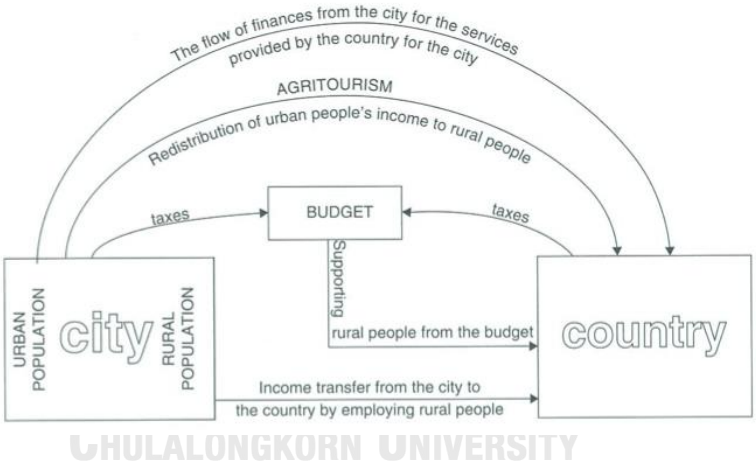


Figure 8 : agritourism as “redistribution of urban people’s income to rural people” (source: Sznajder et al., 2009)

2.3.2 Sustainable urban consumer behavior

In this research we adopt an integrated KAPL model to measure Sustainable Urban Consumer Behavior (SUCB). Firstly, different relevant definitions were retrieved from the literature and integrated into a Knowledge, Attitude, Practice, Loyalty (KAPL) model. The model aims to reflect and consider four different dimensions of sustainable urban consumer behavior: namely knowledge, attitude, practice, and loyalty. To measure the first three, the existing Knowledge, Attitude,

and Practice (KAP) model was selected, as a well-established approach emerging from the literature to measure human behavior in the field of environmental and SC studies (Ahmad et al., 2015; Al-Shabib et al., 2017; Babaei et al., 2015; Kuźniar et al., 2021; Mariani Ariffin & Yacoob, 2017; Mohd. Firdaus Siau et al., 2015; Zanin et al., 2017). KAP has been defined as a method to understand human behavior on a specific topic (Ahamad & Ariffin, 2018). Ahamad and Ariffin have simplified the definition of Knowledge, Attitude, Practice respectively as what consumers know, feel and do (Ahamad & Ariffin, 2018). The KAP model was later integrated with the ladder of consumer loyalty (Roberts & Alpert, 2010) for the purpose of this study. Loyalty (L) emerged as a relevant dimension to be integrated, as additional literature sources focus on the power of "word-of-mouth behaviour", "advocacy" and "recommendation to others" (Hall & Mitchell, 2005; Roberts & Alpert, 2010) which can lead to SC trends.

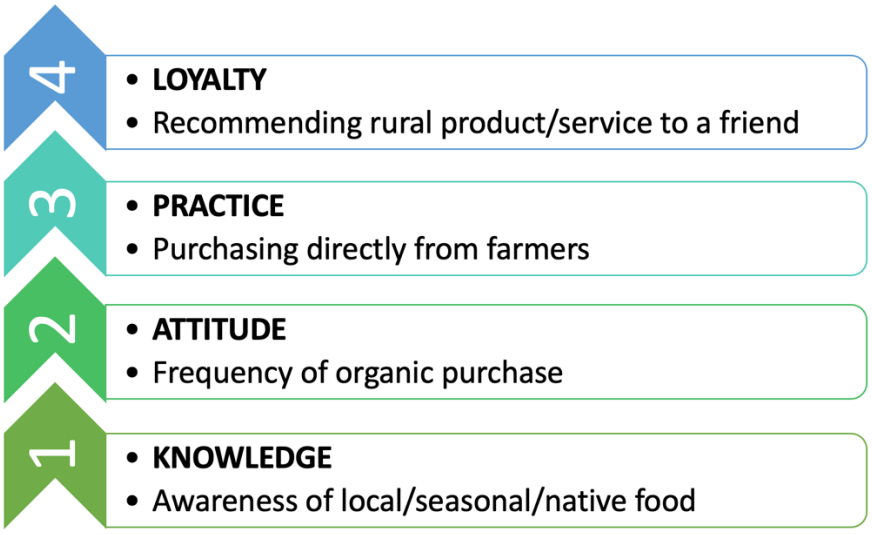


Figure 9 : integrated KAPL model to measure the level of sustainable urban consumer behavior (source: authors)

3. Research methodology

This research emerges as a mixed method cross-sectional multi case study of Bangkok and surrounding provinces. The research scope focuses on two stages of Bangkok's local food systems: rural food production and urban food consumption. The overarching research design follows a mixed method approach, integrating qualitative and quantitative data. In social sciences, a cross-sectional study emerges as an observational approach to analyze data from a specific target population, providing a snapshot of a phenomenon in a defined setting and highlighting common emerging drivers, factors, barriers and trends (Bryman, 2004). This research methodology is multimethod (or interdisciplinary) in nature as it makes use of triangulation to ensure the trustworthiness and representativeness of research findings (Repko & Szostak, 2017).

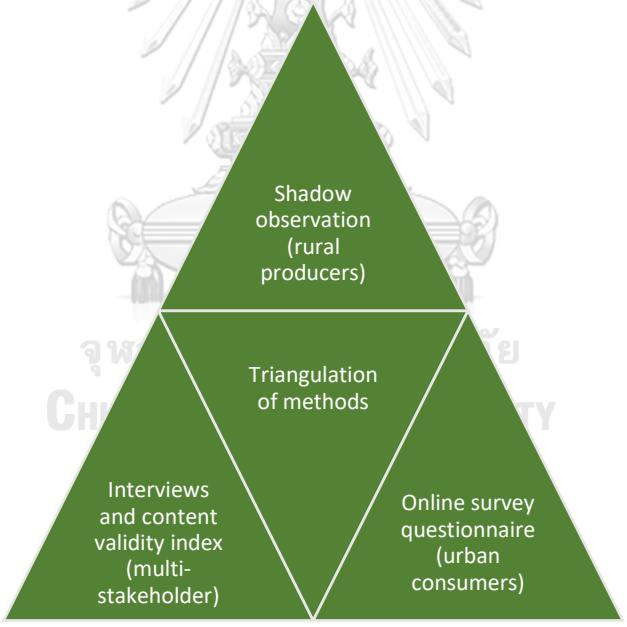


Figure 10 : triangulation of research methods for primary data collection (source: authors)

A so-called convergent research design was selected for this study; concurrent qualitative and quantitative data were collected with an embedded integration of findings (Kane & Kahwati, 2020). Such an "embedded integration of findings" in the

case of a convergent research design refers to “having a primary method (and/or research questions), then nesting a secondary method within the primary method” which “may address sub-questions or secondary aspects of the primary aim” (Kane & Kahwati, 2020). The selection of a mixed method approach was motivated by the fact that “integrating qualitative and quantitative data collection and analysis into a single study can yield a more comprehensive understanding of the phenomenon and more justifiable results” (Kane & Kahwati, 2020).

3.1 Scope of the study

Non-invasive pilot fieldworks and shadow observation were carried in all the 3 rural communities selected. These were scheduled in August 2020 in Huai Hin Dam community, in December 2020 in Na Yang community and in April 2021 in Romyen community. Additional fieldwork was organized from October 2020 onwards to the Sampran village, the Sookjai Market in Nakhon Pathom, and to independent weekend farmers markets being held in Bangkok. Fieldwork scheduled for July 2021 was canceled and interviews were instead conducted online due to the Covid-19 outbreak in Bangkok and stricter traveling restrictions measures.

The study area includes two target populations: (1) urban consumers living in Bangkok and (2) three rural communities located in surrounding provinces (Phetchaburi, Ratchaburi and Suphanburi). These consider two stages of (1) consumption and (2) production related to Bangkok’s local food systems (LFSs). Namely, the surrounding provinces of Phetchaburi, Ratchaburi and Suphanburi were considered as part of city-regional Bangkok. The geographic scope of the radius linking rural food producers and urban consumers hereby extends to consider a maximum of 200 km in the case of Suphan Buri (Huai Hin Dam community) and a minimum of 120 km from Bangkok city center in the case of Romyen. This geographic scope is motivated by the agritourists’ preference to join flexible CBAT trips lasting

from a minimum of a one-day trip (mainly for workshops and short farm visits) or extending into weekend trips with overnight stays (in the case of Huai Hin Dam community).

3.1.1 Rural production study areas

Three rural case studies were selected for this cross-sectional case study in relation to the production stage, based on a set of parameters. Selection criteria of rural case studies include:

- Being part of the pre-set geographical normative scope defined as “Bangkok’s local food system”. The selected case-studies were identified as local food systems (LFSs) being part of city-regional Bangkok. The concept of LFS can be applied to city-regional food systems which “have emerged against industrial and transnational food chains as different socioeconomic and geographic structures, relocalizing production, while building closer links to urban consumers. LFS involve people, institutions, resources, and logistics platforms, alongside intertwined relationships, to produce, distribute, and consume food (…) “local” is defined by a triple proximity between producers and consumers: physical, social, and identitarian” (Zazo-Moratalla et al., 2019).
- Representing a diversity of community profiles and diversification practices. CBAT emerged as an established diversification practice in all case studies, with different levels or stages of CBAT development in each community. The selected case studies represent a diverse range of rural development stages, with an intersectional approach. This led to integrating Indigenous Karen People as one of the target populations from the production stage, interviewing community sub-groups such as the informal Women’s Group in Huai Hin Dam community.

- Different stages of tourism development were considered, to achieve more representative findings, reflecting a broader spectrum of practices. This research advances 3 CBAT development stages:

    - Starting stage (initial exploration and prototyping): Huai Hin Dam community (has prototyped but not developed a fixed CBAT package yet).
    - Ongoing stage (relying on stakeholder support): Romyen farmers group (has developed a CBAT package under the Organic Tourism initiative).
    - Consolidated stage (self-sufficient in its development): Na Yang community (has been developing packages for year and is involved in multi-stakeholder collaborations).

- Willingness to join this research as a case study. The availability of the community to disclose information, providing both primary and (whether available) secondary data for the purpose of this study. All community leaders or gatekeepers were previously contacted either directly or through a bridging organization. Key informant interviews were held before fieldwork on the ground was conducted.

More specific background related to the historical and socio-demographic profile of the three communities is provided in the following paragraphs.

3.1.1.1 Huai Hin Dam community in Suphanburi province

The Huai Hin Dam community in located in Suphanburi province, around 200 km from Bangkok city center. The historical background of the community goes back to 200 years ago, when the Karen Indigenous People emigrated from Burma since the Rattanakosin era and settled in Suphanburi as a Thai-Karen tribe (map represented in Annex 8). From the preliminary informal talks with community members, it emerged that their livelihood heavily relies on forest and nature, making the community more vulnerable to any external shock (e.g.

environmental ones related to climate change and deforestation). At Huai Hin Dam, the community holds old traditions and custom as their core norms, heavily relying on their traditional ecological knowledge (TEK) which is passed on from generation to generation. In terms of agroecology and TEK, the Huai Hin Dam community has been practicing shifting cultivation for centuries. This is a technique of rotational farming in which the land is cleared for cultivation and then left to regenerate after a few years. In 1974 the government allowed the concession of land to the private sector and that led to deforestation and drought in the area in which the Huai Hin Dam community originally settled, heavily altering the ecosystem services on which the community members heavily depended for their livelihoods. The concession happened in a second time in 1994. In this occasion, the community lost almost 10,000 rai (1 rai = 1,600 square meters) of land to the concession contractor, resulting in the phenomenon of land grabbing and in the forced displacement of the Huai Hin Dam community.

After being supported by the NGO RECOFTC, alongside other regional stakeholders, Huai Hin Dam explored the potential to diversify the livelihood of community members by prototyping an alternative CBAT model based on integrating TEK in the agritourism package and heavily capitalizing on the natural and cultural ecosystem services which are at the heart of this Thai-Karen community. Preliminary pilot groups of agritourists (usually between 10 to 15 visitors per trip) visited Huai Hin Dam community supported by boundary partners such as local universities, provincial government bodies, NGOs (such as RECOFTC) and social enterprises (such as Happy Grocers). After Covid many agritourism trips were canceled due to safety concerns of community members and to travel restrictions affecting provincial rural destinations. Huai Hin Dam community thus represents a case study of an initial exploratory stage of CBAT.

Interesting sub-groups and informal groups in Huai Hin Dam include the Karen Women's Group, which oversees financial issues and of the rice bank in the community. The Karen women have a crucial role in developing and leading the

CBAT activities and workshops, from leading the natural tie-dye workshops to explaining (with the support of translators) how the rice bank works and how the natural resources are extracted from the surrounding forest in accordance with the limits of nature and with the local cultural beliefs of the community.

3.1.1.2 Romyen community in Ratchaburi province

The Romyen farmers group in Ratchaburi province co-developed an Organic Tourism package which was supposed to be implemented at the beginning of 2021. Its implementation was delayed due to Covid-19 complications and restrictions. The community is in Ratchaburi province, around 120 km away from the city center of Bangkok. This makes it an attractive destination for urban dwellers who want to experience agritourism nearby the city. Khun Peerada is the contact person and gatekeeper in the community, and the main marketing expert, leading various non-agricultural alternative services and activities in the farm. In the past, the community prototyped agritourism tours in the province with the aim of testing it and getting feedback from consumers.

This represents an ongoing stage of CBAT, which has been prototyped in the past but is still in the process of developing with the support of boundary partners. Romyen emerges as an interesting case study because of its structure (it is a farmers group composed of 26 members in total) and closely collaborating with Sampran under the Organic Tourism initiative. Nonetheless, due to Covid limitations, only 5 members of the farmers group managed to develop CBAT practices during the past years.

The Organic Tourism initiative launched on the 5th December 2020 and officially started in January 2021, implementing 20 agritourism packages (among which there will also be CBAT packages) later in 2021. After considering all 20 packages, Romyen was selected as a case-study for this research, due to its ongoing development stage of CBAT. The packages have a minimum of 5 tourists joining each trip and are co-developed by communities which have already started prototyping CBAT models in the past. The current package in Romyen includes two organic farms:

Ban Rai Ruang Naw Phatuwan and Baan Suan San Sook Organic Farm (Annex 7). Both intend to showcase a circular economic model of self-reliant living, highlighting elements of balanced life, smart farming, organic agriculture and permaculture design on the ground.

CBAT workshops in Romyen were designed to include the following activities:

- Crop rotation, soil management, planting seedlings
- Organic fertilizer with a focus on its benefits for the local ecosystem
- Eco-learning about the forest garden, permaculture design, agroforestry and the benefits of avoiding monocropping
- USDA-compliant organic chicken eggs: workshops to learn food mix for raising chickens
- Cooking workshops to learn how to bake and cook with organic eggs: egg soup, egg noodles, wonton wrappers and more

3.1.1.3 Na Yang community in Phetchaburi province

The community of Na Yang in Phetchaburi province is located around 180 km from Bangkok. The community is composed of 380 members and 115 households. The average income per household is around 52,000 THB yearly. Na Yang is also known as the "8th village" and its demographic composition includes most people being around 40 years old and female. Their main occupation is agriculture; most of the community members cultivate fruits and vegetables, while a minority cultivates paddy fields. This emerged as a good practice for community-based tourism and experimented targeted agritourism packages with the Thonghathai Learning Center, where some proactive farmers in the community started experimenting on how to diversify their livelihood with CBAT (Annex 6). The community has a democratic and participatory grassroots approach to community-based agritourism; community members can actively participate in co-planning

agritourism activities through a bottom-up open organization called “Tourism Club”. Dr. Thadthong Bhrammanee is an active member of the Club, managing the Thonghathai Learning Center and acting as one of the main gatekeepers of the community.

CBAT workshops in Na Yang include, among the others:

- Permaculture workshops
- Volunteer tourism trips
- Educational agritourism trips to benefit both the community and young students
- Culinary workshops (planned) in a common kitchen and shop set up at the Thonghathai Learning Center, where local farmers can showcase their know-how and products
- Smart-farming sessions: visiting the Thonghathai Learning Center and learning about clean energy (e.g. solar panels) and agroecological principles
- Sustainable fishery workshops
- Compost workshops

3.1.2 Urban consumption sampling process

From the consumption stage, a group of 400 respondents filled in an online survey questionnaire. Respondents were selected through purposive sampling, based on specific characteristics of the target population and the main objectives of this study. Sampling criteria for selecting respondents are reported in-depth in the table below (Table 3). Respondents were selected from urban consumers living in the Bangkok Metropolitan Area, or BMA[2], to be representative of the target population of this study. Due to the complexity of food systems and food value chains, this study focused on the consumer side to select the main target population of survey respondents, while considering the urban-rural linkage in the design of the

[2] The Bangkok Metropolitan Area or BMA comprises the inner city and excludes the BMR which extends the scope to suburbs and provinces surrounding Bangkok.

questionnaire and in the discussion of the findings. In terms of general eligibility criteria of the target populations, the respondents have been considered from an adult population of minimum 18 years of age. This is motivated by the fact that production and consumption patterns are considered by this research as activities performed by a working population which is generating an income and relying on its own finances when purchasing CBAT packages or developing rural services. Further scoping has been applied in the three rural communities selected to limit the sample size of the population interviewed to members in the community who are actively implementing CBAT practices in their farms or supporting related activities.

Table 3 : sampling criteria for selecting respondents (source: authors, adapted from Pontis et al.)

Population	**Eligibility criteria for selecting respondents**	**Sample size (number of respondents)**	**Sampling criteria**	**Research instruments for data collection**	**Exclusion criteria**
Community leaders case study 1 (Huai Hin Dam community)	-18 years of age or older -all genders -community leaders with direct experience in leading CBAT in the past -leaders of community sub-groups: Karen Women's Group and Agriculture Group	n = 3	purposeful sampling	In-depth interviews Informal talks	Community members not involved in tourism activities/not part of the Karen sub-community of Baan Huai Hin Dam
Community leaders case study 2 (Romyen farmers group)	-18 years of age or older -all genders -community leaders with direct experience in leading CBAT in the	n = 4	purposeful sampling	In-depth interviews Informal talk	Community members relying on agriculture as their only source of income (not engaging in livelihood

Population	Eligibility criteria for selecting respondents	Sample size (number of respondents)	Sampling criteria	Research instruments for data collection	Exclusion criteria
	past				diversification)
Community leaders case study 3 (Na Yang community)	-18 years of age or older -all genders -community leaders with direct experience in leading CBAT in the past	n = 3	purposeful sampling	In-depth interviews Informal talk	Community members not involved in the Tourism Club
Urban consumers in Bangkok	-18 years of age or older -all genders -consumers currently living in Bangkok (Thai or foreigners)	n = 400	simple random sampling	Online survey questionnaire	Consumers not based in Bangkok
Key informant multi-stakeholder respondents	-18 years of age or older -all genders - from NGOs and CSOs, private sector, government	n = 40	purposeful sampling, snowball sampling	Semi-structured interviews Informal talk CVI with a panel of 17 experts	Stakeholders outside the local food system scope

3.2 Methods for data collection and analysis

The mixed methods (both qualitative and quantitative) used for secondary and primary data collection are listed in the following paragraphs and include literature review, in-depth interviews with community leaders, semi-structured interviews relevant stakeholders from different sectors and a questionnaire survey for the urban consumers in Bangkok.

Table 4 : methods for data collection and analysis (source: authors)

Data	Methods for data collection	Methods for data analysis	Respondents
Qualitative	Academic and grey literature review	Thematic deductive analysis	-
	Non-invasive shadow observation in the 3 selected rural case studies		-
	In-depth interviews	Thematic inductive analysis	Rural community leaders in the 3 selected case studies: Huai Hin Dam (n = 3), Romyen (n = 4), Na Yang (n = 3)
	Semi-structured interviews		Multi-sectoral stakeholders from academia, NGOs and CSOs, private sector, government (n = 62)
	Content validity index (CVI)		
Quantitative	Online survey questionnaire	Statistical analysis	Urban consumers living in Bangkok (n = 400)

3.2.1 Rural production

In relation to the rural production stage and due to the applied approach of this research, qualitative methods were prioritized to select methods for data collection and analysis. This is also motivated by the research objectives of the study, to unveil and highlight practice models and common trends with a community-based ground-truthing approach.

3.2.1.1 Shadow observation

Data has been collected on the field through non-invasive shadow observation. The main researcher took part in community activities and recorded observation notes through a systematic checklist (Annex 10). The checklist form was used in the local communities of Huai Hin Dam (in Suphan Buri province), Romyen (in Ratchaburi province) and Na Yang (in Phetchaburi province), where shadow observation fieldwork was organized. During fieldtrips on the ground, the main

researcher either: 1) joined an already existing community-based tourism trip (as a trip participant) organized by the community, without asking any sensitive information and/or 2) followed community members with their informed consent in their daily activities in the farm without asking any sensitive information and collecting background information.

3.2.1.2 Content validity index

Building on the secondary data from the literature review and primary data from the shadow observation fieldwork, an integrated framework of indicators was developed as the main methodological tool of this research. This informed the design of data collection forms related to in-depth interview, semi-structured interviews, and survey questionnaire for urban consumers, as these reflected relevant indicators from the framework.

Table 5 : content validity index calculation with non-relevant indicators removed (source: authors)

Dimensions	Indicators		Not Relevant (≤ 2)	Relevant (≥ 3)	I-CVI	Interpretation	S-CVI/AVG per section
Environmental (natural resources: provisioning, regulating, supporting ecosystem services)	A. Fresh water		2	15	0.88	Appropriate	0.90
	B. Food/fodder, forest products, fiber		3	14	0.82	Appropriate	
	C. Drought and soil erosion management (upstream plan)		3	14	0.82	Appropriate	
	D. Soil quality and nutrient recycling (downstream plan)		0	17	1.0	Appropriate	
	E. Biodiversity preservation and habitat provision		0	17	1.0	Appropriate	
Sociocultural (access and control over natural resources, equity and social relations, cultural ecosystem services)	A. Social networks and collective organization of farmers		3	14	0.82	Appropriate	0.87
	B. Intersectional participation and social inclusion of vulnerable and marginalized groups		2	15	0.88	Appropriate	
	C. Educational activities for consumers and producers		2	15	0.88	Appropriate	
	D. Community identity and integrity, sense of place		1	16	0.94	Appropriate	
	E. Spiritual values and sacred grounds		3	14	0.82	Appropriate	
	F. Scenery and mosaic landscapes		2	15	0.88	Appropriate	
	G. Access and control over land and natural resources		Added				
Economic (food stability and financial capital)	A. Use-value (products and services)	1. Agri-accommodation services (staying in the local community)	3	14	0.82	Appropriate	0.89
		2. Agri-food services (eating in the local community)	2	15	0.88	Appropriate	
		3. Cultural tourism supporting local products	1	16	0.94	Appropriate	
		4 Primary agritourism workshops	2	15	0.88	Appropriate	
		5. Direct sales	2	15	0.88	Appropriate	
		6. New alternative jobs for community members	2	15	0.88	Appropriate	
		7. Income distribution and local economy development	Added				
	B. Non-use value (not monetized)	8. Local ecosystem services increase in value (as a tourism asset)	2	15	0.88	Appropriate	
		9. Capacity building and skills development for community members	0	17	1.0	Appropriate	
		10. Volunteering activities in the community	Added				
Health (food utilization, local/indigenous diets, nutrition)	A. Seasonal local foods/diets		2	15	0.88	Appropriate	0.88
	B. Native indigenous foods/diets		2	15	0.88	Appropriate	
	C. Medicinal purposes of wild foods		2	15	0.88	Appropriate	

To obtain the above integrated framework of indicators, a content validity index (CVI) calculation was performed at the item level (I-CVI) as well as at the scale level (S-CVI) in relation to the four environmental, sociocultural, economic and health dimensions. These are related to the main research objectives and literature

streams. The pertinence evaluation supported a content validity assessment of the integrated framework of indicators following these selection criteria:

- **Relevance**: indicators were considered "relevant" if ratings by experts were ≥ 3, not relevant if ratings by experts were ≤ 2.
- **Interpretation**: with more than five experts, the I-CVI should not be under the value of 0.78 (Polit & Beck, 2006). The following interpretation of CVI has screened relevant indicators as those having an I-CVI ≥ 0.78.
- **Criteria for selection of indicators to be prioritized**: no duplicates were selected (leading to a simplification of categories) and indicators were added if suggested by more than one expert.

Table 6 : characteristics of the panel of content validity index (source: authors)

Characteristics of the panel of experts *n = 17*	
Gender	14 women, 3 men
Academic Disciplines	Social sciences, gender environment and development, landscape architecture, urban planning, ecological economy, sustainable consumption and production, sustainable food systems, environmental management, sustainable agriculture (among others).
Vocational trainings	Capacity development of IPLC (Indigenous Peoples and Local Communities) towards sustainable management of forested landscapes and ecosystems, control over natural resources, livelihoods, cultural identity, gender equality. User experience (UX) design.
Position	14 employed by university/development or research institutes (scientists, researchers and lecturers), 1 design researcher (private company), 1 consultant working at the United Nations, 1 from a regional NGO in Asia.

Description of selection criteria for experts

The CVI was used as a method to confirm the representativeness of indicators by having them weighted and additionally filtered by an interdisciplinary panel of experts. Experts in various fields were contacted, ranging from environmental sciences and disaster risk management, development studies, agriculture, social sciences as well as practitioners working in NGOs and think-tanks

related to sustainable food systems, indigenous diets and sustainable development. Priority was given to experts from the region (Southeast Asia and Thailand in particular) but this was not a limiting requirement, although all experts were selected based on their experience in development work in the Global South. From a longer list of experts which were identified and contacted, 17 have provided their feedback to support this study.

Structure of the integrated framework of indicators

As the integrated framework of indicators was composed of 4 sub-sections, with related indicators and sub-indicators, a content validity index was calculated for each specific sub-indicator and then aggregated at the indicator and sub-section level. Each sub-indicator was assessed by rating a) its relevance to the aim/research question b) comprehensiveness of the indicators under each section was ensured by providing the opportunity to add any additional relevant indicators in the matrix. Each sub-indicator was scored on a scale going from 0 (not relevant at all) to 5 (very relevant), in relation to the Ph.D. proposal and main research question and aim. The experts had the opportunity to provide open comments on every item of the framework.

Measurement of the content validity index (CVI)

A content validity index (CVI) was calculated both at the item level (I-CVI) and grouped by subsections. In a second time, a scale content validity index (S-CVI) was calculated at a broader level. The I-CVI was calculated by dividing the number of experts providing a score of 3 or higher (considered as “relevant”) by the total number of experts (N = 17). With more than five experts, the I-CVI should not be under the value of 0.78 (Polit & Beck, 2006), therefore the following interpretation of CVI has screened relevant indicators as those having an I-CVI ≥ 0.78. These have been prioritized in re-drafting the framework of indicators by structuring it into sections related to the research objectives, as suggested by experts.

A second informal validation of the consolidated framework of indicators was planned and conducted with community leaders. This is motivated by

the applied ground-truthing approach of this study, aiming to elevate and give visibility to situated local knowledge and integrate it, to further support expert practitioners' CVI. Community leaders in Na Yang, Huai Hin Dam and Romyen provided feedback to the integrated framework of indicators presented in figure 11. For this round, the integrated framework of indicators was 1) translated in Thai and 2) sent to the Chulalongkorn University IRB ethical review process 3) sent to community leaders via post letter due to Covid-19 limitations or via Line. Community leaders were contacted and reviewed the framework with follow-up interviews, validating it.

3.2.1.3 In-depth interviews

In-depth interviews were carried with formal and informal community leaders in the three selected local communities. These interviews collected rich qualitative data on environmental, social, economic and health implications of CBAT and other services for community resilience. Sampling was done with a snowball technique. Cluster sampling was also used to select respondents due to the complex social and cultural profiles of local communities. This selection is motivated by the specific socio-economic barriers encountered in local communities, from language barriers to different levels of literacy, which make in-depth interviews the most relevant method to gather significant data with the support of Thai translators. In-depth interviews were held with community leaders and preceded by informal talks (e.g. with gatekeepers, community leaders, natural leaders of community sub-groups). Data was collected at the individual level, focusing on unveiling in-depth rich qualitative and quantitative details and background on social information in terms of experiences, opinions, lesson learned related to CBAT practices and other rural livelihood diversification strategies. Different leaders were interviewed in each community to ensure an intersectional approach to data collection. Intersectional considerations led to reflect different gender, age, ethnicity and socio-cultural differences in the spectrum of respondents' selection. A target population was selected in the 3 rural case studies. The bigger communities consist of a total population of N = 357 in Huai Hin Dam, N = 380 in Na Yang and N = 26 in Romyen.

As already mentioned, sampling strategies to select respondents included purposeful sampling and snowball sampling, which are explained below.

- **Purposeful sampling** "involves selecting participants who fully satisfy all eligibility criteria and, thus are most likely to address the goal of the study efficiently" (Pontis, 2019).
- **Snowball sampling** "involves finding participants by asking the first recruited participants if they know anyone who satisfies eligibility criteria and would be interested in the study" (Pontis, 2019). In terms of recruiting methods to reach out to potential respondents, the rural production stage was reached with direct contact, approaching "potential participants in the workplace (with the necessary authorization if needed) or in public spaces. Or use the Internet and social media to reach out to potential participants" (Pontis, 2019).

Table 7 : list of respondents for in-depth interviews (source: authors)

Community	Position	Respondent
Na Yang	Community leader and vice head of the village (Moo 8) in Na Yang subdistrict (Cha-Am district)	Mrs. Naowarat Saricha - เนาวรัตน์ สริชะ (Khun Roh)
	Leader of Chaam-NaYang-KhokSetthi community-based tourism club in Phetchaburi province	Mrs. Bhrammanee Thadthong
	Village head	Mr. Manop Makmoon (มานพ มากมูล)
Romyen	Leader of Romyen Farmers' Group	Mrs. Peerada Srisarai or Khun Pla (Romyen farmers group) ภีรดา ศรีสาหร่าย
	Ban Rai Ruang Naw Phatuwan, agripreneur and owner	Mr. Pinya Srisarai - นายภิญญา ศรีสาหร่าย (husband of Khun Peerada)
	Romyen "focal points" from Ban Rai Ruang Naw Phatuwan and Baan Suan San Sook Organic Farm	Mr. Ake (Akkrachai Yasaphandu) อัครชัย ยัสพันธุ์, owner of Y Farmily (manager) - admin of FB page Romyen
		Mr. Jeep, manager of farm Baan Rai San Suk,

Community	Position	Respondent
		auditor of the Romyen group (to check if the farms in Romyen are complying to PGS standards)
Huai Hin Dam	Natural leader, CF committee and Organic Agriculture Group leader	Mr. Kwai NgamYing (ไกว งามยิ่ง)
	CF committee and Organic Agriculture Group leader	Mr. Noey AimJan - เนย อิ่มจันทร์
	Karen Women's group natural leader	Mrs. Suda NgamYing
Total respondents		10

3.2.1.4 Semi-structured interviews

The complex multi-stakeholder nature of sustainable local food systems in Bangkok city-region emerged from preliminary key informant interviews. Thus, a round of semi-structured interviews aimed to integrate the data collected in the three rural case studies with a multi-sectoral approach. This included respondents from the government and private sector, academia and research, NGOs and CSOs, and other bridging organizations. Stakeholders were selected with a snowball sampling and purposeful sampling technique (Pontis, 2019). Respondents are reported in the table below and in case they did not want to disclose their name, a "-" is inserted in the table. Informed consent was obtained from all research respondents to protect their privacy while ensuring the representativeness and transparency of findings.

Table 8 : list of respondents for semi-structured interviews and content validity index (source: authors)

Sector	Target organization	Respondents	Position/Affiliation
NGO/CSO	CUSO/local CSA HHD	Khun Jane	Officer Agricultural Ecosystem Development and Plant Conservation Project (CUSO/local CSA scheme)
		Mr. Payong Srithong	Farmer and independent consultant at HHD
	RECOFTC	Mr. Rawee Thaworn (Khun Max)	Capacity Development and Research Coordinator of Thailand Program of RECOFTC
	CBT-N (network)	-	-
	Partner Asia	Pawsansoe Karen Bree	Grant manager
	Pattanarak Foundation	Komate Soongsumalaya	-
	KESAN - Karen Environmental and Social Action Network	-	-
	Thailand Environment Institute	Ms. Attjala Roongwong (Khun Gai)	Independent researcher, working with Thailand Environmental Institute (working on REDD+) and Royal Forest Department
	Pacific Asia Travel Association	-	-
	TOCA - Thai Organic Consumer Association	-	-
	WWF Thailand	Mr. Ply Pirom	Consultant for Central THAM, WWF
	Nutrition Association of Thailand (NAT)	Dr. Nalinee Chongviriyaphan	President
	NTFP-EP Asia	Eufemia Felisa Pinto	Executive Director
Private sector	Sampran	Mr. Arrut Navaraj	President of the Thai Organic Consumers Association, Managing Director of Suan Sampran

Sector	Target organization	Respondents	Position/Affiliation
	Sixth Senses	Celia Lam	Director of Eat Six Senses (a food initiative for sustainable food and beverage in hospitality)
	Left Hand Roasters	Dustin Joseph	Founder
	Monsoon Tea	Kenneth Rimdahl	Founder
	Chef For Change	Sarita Kovatana	Founder, Chef
	Haoma	Deepanker Khosla	CEO, Chef
	Baan Tepa	Chudaree Debhakam (Khun Tam)	Founder, Chef
	Sookjai market	Khun Natthida (**ณัฐธิดา ฟักขาว**)	Management leader, Sookjai Society Foundation
	Happy Grocers	Moh Suthasiny Sudprasert	Co-founder
	Embrace Energy Yoga	Nutthavee Poonbunditkul (Khun Noy)	Manager of operations
		Lalit Masant	Founder
	Root the Future	Joanna Broomfield	Co-founder
		Max Hellier	Co-founder
	Only Good Stuff	-	-
	Coconut Lane	-	-
	Thai Retailers Association	Chatrchai Tuongratanaphan	Consultant
	YodTarn	Khun Noon	Co-founder
		Khun Hop	Co-founder
	Central	-	In charge of central THAM CSR project
	Three Trees Doi Saket	Eyal Aspler (Mr. Hanuman)	Co-founder of culinary school and farm
	PALO IT	Aunggoon Klongpithak	Landscape Architect and Design Researcher
Government	NIA – National Innovation Agency	-	-
	Department of Thai Traditional	-	-

Sector	Target organization	Respondents	Position/Affiliation
	and Alternative Medicine Ministry of Public Health, Thailand		
	Ministry of Health	-	-
	Designated Areas for Sustainable Tourism Administration (DASTA)	Ms. Wanvipa Phanumat	Office of Community-Based Tourism Development
	Community Development Department, Ministry of Interior, Thailand	Mr. Nattapot Boonkong	Community Development Specialist
		Ms. Chittranut Kiatadisorn (P'Pook)	Community Development Specialist
	Thailand's Ministry of Agriculture and Cooperatives	Ms. Vanida Khumnirdpetch	Director
	Department of National Parks	Ms. Peeranuch Dulkul Cappella (Khun Pat)	National Park Bureau, working in the field of tourism and recreational program design for the national parks in Thailand
	Royal Forestry Department	Dr. Preecha Ongprasert	Forest officer (focusing on environmental management of community forests)
	TAT	-	-
		-	-
Academia, research institutes	Chulalongkorn University	Dr. Kallaya Suntornvongsagul	EDS
		Dr. Krittinee Nuttavuthisit	Sasin
		Dr. Narumon Arunotai	CUSRI
		Dr. Suthirat Kittipongvises	EDS
	Kasetsart University	Dr. Bart Lambregts	Kasetsart University

Sector	Target organization	Respondents	Position/Affiliation
	ECOSUR Advanced Studies Institute, Mexico	Dr. Peter Rosset	ECOSUR
	Phetchaburi Rajabhat University	Dr. Thadthong Bhrammanee	Lecturer at Phetchaburi Rajabhat University
	Silpakorn University	Dr. Chalermporn Siriwichai	Silpakorn University
	Stockholm Resilience Center	Dr. Laura Pereira	Stockholm Resilience Center
	Stockholm Environment Institute (SEI)	Dr. Diane Archer	Urban cluster
		Ha Nguyen	Gender cluster
		Dr. Leonie Pearson	Water cluster
		Dr. Sara Vigil	Gender cluster
	Swedish International Agricultural Network Initiative (SIANI)	Madeleine Fogde	Director of the Swedish International Agriculture Network Initiative (SIANI) and Senior Expert (SEI)
	Ubonratchathani University	Dr.Natapol Thongplew	Assistant professor, Faculty of Science
	Mahasarakham University	Dr. Yanyong Inmuong	Director, GMS Research Center for Environment and Sustainability, Faculty of Environment and Resource Studies
Intergovernmental organizations	UNESCAP	Ms. Van Nguyen	Sustainable Development Officer, Office of the Executive Secretary, UN Economic and Social Commission for Asia and the Pacific

3.2.2 Urban consumption

In relation to the consumption stage, mixed qualitative and quantitative methods for data collection and analysis were selected. This is motivated by the large sample of 400 urban consumers selected as survey questionnaire respondents. The survey questionnaire (the template can be found as

Annex 9) was distributed to people living in Bangkok in the months of September and October 2021. The capital was chosen because it is the most largely populated city in Thailand, with population living in the Bangkok Metropolitan Area estimated to be 5,666,264 people as registered in the year 2019 (Administrative Strategy Division, 2019). A mixed method research design was developed to collect and analyze primary mixed qualitative and quantitative data from the questionnaire. Research methods are explained in the following paragraphs.

The online survey questionnaire was designed with a total of three sections structured as following:

1) Section 1 to assess urban consumers' purchasing behavior in Bangkok.

2) Section 2 to assess urban consumers' relation with local rural communities in Thailand.

3) Section 3 to collect urban consumers' demographic data.

3.2.2.1 The KAPL model

The questionnaire was designed to integrate the conceptual elements from the KAPL model with the four environmental, sociocultural, economic and health sub-dimensions of sustainable local food systems. Relevant secondary data retrieved from the literature was translated into measurable indicators and into specific survey questions. Questions were related to knowledge (K), attitude (A), practice (P), loyalty (L) of consumers in section 1. Consumers were asked about their awareness/knowledge of local diets and seasonal consumption (K), their frequency of organic food purchase (A), whether they purchase directly from farmers (P) and finally whether they recommend products/services of rural communities to friends/family (L). Section 2 of the survey measured the level of urban-rural relation (URR) by breaking it down into seven main rural services for urban consumers. These were deductively retrieved from the existing literature and are listed in Figure 9. A total of 4 items were identified to measure sustainable urban consumer behavior (SUCB) while a total of 7 items was identified to assess the urban-rural relationship

(URR). The list of items was integrated after conducting validity and reliability tests of the survey with two pilot test groups of respondents.

3.2.2.2 Survey pretests, pilot tests and ethics review

Before the process of data collection, the survey questionnaire questions were submitted to the Research Ethics Review Committee for Research Involving Human Subjects of Chulalongkorn University. After an initial approval, the survey was both pretested and pilot tested on a smaller sample of respondents (n = 40) to ensure its validity, consistency, and reliability. The pretest involved a small panel of experts to provide feedback on the consistency and coherence of the questionnaire and its internal logical flow. The pilot test was conducted with a sub-group of 40 respondents (n = 40) to assess the survey from a user perspective, improving technical aspects related to user interface, to improve the survey response rate. Both the pretest and pilot test helped to remove survey bias, maximizing meaningful data results (reshaping and simplifying the framing of open-ended questions) and ensuring accessibility of the survey from different technical devices. This allowed to re-design the structure of the survey, submit it for a second round of ethics review after feedback from pilot groups was effectively integrated, and get the official approval by the committee in August 2021. Data was collected online for a timeframe of two months, from the beginning of September to the end of October 2021. Two versions of the survey were shared, for accessibility purposes: one in English and another version translated into Thai. After this period, the online survey was closed, and data was analyzed using an online spreadsheet application.

3.2.2.3 Sampling method and sampling size

The survey questionnaire was distributed online in the months of September and October 2021, due to COVID lockdown limitations affecting Bangkok during the period of data collection. The sampling method to select survey respondents online was the “river sampling” method, also known as “intercept sampling” or “real-time sampling” (Lehdonvirta et al., 2021). With river sampling, respondents are recruited “by inviting them to follow a link to a survey placed on a

web page, email, or somewhere else where it is likely to be noticed by members of the target population" (Lehdonvirta et al., 2021). Different social media platforms were used to share the survey online: LinkedIn, Facebook, Instagram, and Twitter. Two versions of the survey were shared, both in English and in Thai, for accessibility purposes. Although this method presents limitations due to coverage bias, as not every subpopulation can be reached and represented, it is useful to collect and analyze data on more specific consumer niches (Räsänen, 2006).

A total number of 400 respondents filled in the online survey questionnaire. The target population was defined based on specific characteristics related to the research objectives and limitations of this study. Inclusion criteria for the selection of respondents required them to be of 18 years of age, to represent all genders, to have a social media account (LinkedIn, Facebook, Instagram, or Twitter) and to be currently living in the Bangkok Metropolitan Area (or BMA[3]). The capital was chosen because it is the most largely populated city in Thailand, with the population living in the Bangkok Metropolitan Area estimated to be 5,666,264 people as registered in the year 2019 (Administrative Strategy Division, 2019), having important implications in relation to its urbanization trends.

The formula advanced by Yamane was used to calculate a representative sample size for urban consumers living in Bangkok (Yamane, 1973). A 95% confidence level with p = 0.5 was assumed in the equation. In the formula, n refers to the sample size, N to the population size, and e to the level of precision. The calculation formula developed by Taro Yamane is presented hereby.

$$n = \frac{N}{1 + N(e)^2}$$

The BMA population was estimated to be 5,666,264 people as registered in the year 2019 (Administrative Strategy Division, 2019). After the

[3] The Bangkok Metropolitan Area or BMA comprises the inner city and excludes the BMR which extends the scope to suburbs and provinces surrounding Bangkok.

calculation, a target population of 400 urban residents in Bangkok was rounded from the initial number resulted from the formula of 399.971765 and selected as an appropriate sample size for the purpose of this study. Following the results from the formula below, a total number of 400 survey responses (n = 400) was collected.

$$400 = \frac{5{,}666{,}264}{1 + 5{,}666{,}264\ (0.05)^2}$$

3.2.2.4 Data analysis

Primary data collected from the survey was analyzed with a mixed method approach. The Google Form online questionnaire was closed on the 1st of November 2021.

Quantitative data was systematically structured and analyzed using descriptive and inferential statistics. The correlation between urban-rural relation and sustainable urban consumer behavior was calculated with the Pearson's Chi-square test for independence. To perform this, data was analyzed at the categorical level (in three levels organized into poor, moderate, high). P-values were considered significant at < 0.05.

Qualitative data obtained from the open-ended questions of the surveys was coded and organized into a thematic analysis. Open-ended responses in the survey questionnaire were structured into relevant comments and coded to identify recurring themes. The thematic analysis identified drivers and barriers to link urban consumers to rural food producers. Survey respondents also provided qualitative information of their additional experience of additional rural services; this was integrated to the list of rural livelihood diversification practices from the literature

4. Research results

Research results are systematically structured according to the first three objectives of this study. Section 4.1 presents the integrated framework of indicators to categorize rural livelihood diversification practices (research objective 1). All its indicators are examined in-depth, building on primary data collected in the three rural case studies. Section 4.2 presents the list of rural diversification practices emerging in Bangkok city-region (research objective 2), with culinary tourism being a prominent one. In section 4.3, the association between urban-rural relation (URR) and sustainable urban consumer behavior (SUCB) is tested and discussed (research objective 3). Section 4.4 summarizes key research findings on which further recommendations are later presented as propositions in Chapter 5 (objective 4).

The main **research aim** was tackled by exploring and categorizing emerging community-based agritourism practice models as strategies of rural livelihood diversification and sustainable urban consumption, reconnecting rural food producers with urban consumers through sustainable food systems. Such CBAT strategies were systematically categorized at different stages of development (starting, developing and ongoing) and supported by different external actors (NGOs/CSOs, private actors and public actors).

4.1 Integrated framework of indicators to categorize rural livelihood diversification practices

The comprehensive integrated framework of indicators for rural livelihood diversification is represented in the figure below. Specific indicators were retrieved from secondary data related to the four environmental, social, economic and health literature dimensions presented in Chapter 2. Indicators are described in the following paragraphs.

Legend:	interpretation scored with 1 point for CVI > 0.90, 1 point for observation from all fields, 1 point if supported by both in depth and semi-structured interviews							
Indicators	**Description**	**CVI score**	**Observation**			**Interviews**		**Interpretation (score)**
			Huai Hin Dam	Romyen	Na Yang	Confirmed by in-depth (I), semi-structured (S), or both (I,S)	Main findings and keywords across the 4 subsections	
1.A	Fresh water	0.88	x	x	x	I		1
1.B	Food/fodder, forest products, fiber	0.82	x	x		I	Agroecological design, "water smart agriculture", forest as "a savings account for the community", "forest-friendly production" as an alternative to monoculture/industrial agriculture, "farm driven cuisine" to support local biodiversity	
1.C	Drought and soil erosion management (upstream plan)	0.82		x		I		
1.D	Soil quality and nutrient recycling (downstream plan)	1	x	x		I		1
1.E	Biodiversity preservation and habitat provision	1	x	x	x	I,S		3
2.A	Social networks and collective organization of farmers	0.82	x	x	x	I,S	Farmers' groups, ancestral networks, PGS groups seed exchange networks create common pool of resources. Intersectional community participation, diversification of livelihoods as "a social laboratory for farmer-to-farmer knowledge sharing". The risk of cultural appropriation of tangible and intangible heritage must be considered to preserve the community's sense of place and belonging.	2
2.B	Intersectional participation and social inclusion of vulnerable and marginalized groups	0.88	x			I,S		1
2.C	Educational activities for consumers and producers	0.88	x	x	x	I,S		2
2.D	Community identity and integrity, sense of place	0.94	x	x	x	I,S		3
2.E	Spiritual values and sacred grounds	0.82	x			I		
2.F	Scenery and mosaic landscapes	0.88	x	x	x	I,S		2
2.G	Access and control over land and natural resources	added	x	x	x	I		1
3.A.1	Agri-accommodation services (staying in the local community)	0.82	x	x		I,S	Flexible agri-camping services, "culinary tourism" and "farm to fork" experiences are emerging as a trend. OTOP is the main marketing channel for regional traditional produces. Common workshops offered by rural communties: crop rotation, soil management, seedling planting, harvesting food in the farm and surrounding forests, organic fertilizer, compost, natural tie-dye and workshops with farm animals. Common alternative jobs for community members to diversify their livelihood: cook, tour guide, workshop demonstrator or educator. Services of livelihood diversification usally managed not at the household level but at the community level (sharing common pool of resources). Long-term volunteering in the farm for farmer-to-farmer knowledge-sharing or for educational purposes.	1
3.A.2	Agri-food services (eating in the local community)	0.88	x			I		
3.A.3	Cultural tourism supporting local products	0.94	x	x	x	I,S		3
3.A.4	Primary agritourism workshops	0.88	x	x	x	I,S		2
3.A.5	Direct sales	0.88	x	x	x	I,S		2
3.A.6	New alternative jobs for community members	0.88	x	x	x	I,S		2
3.A.7	Income distribution and local economy development	added	x	x	x	I,S		2
3.B.8	Local ecosystem services increase in value (as a tourism asset)	0.88	x	x	x	I,S		2
3.B.9	Capacity building and skills development for community members	1	x	x	x	I,S		3
3.B.10	Volunteering activities in the community	added		x	x	I,S		1
4.A	Seasonal local foods/diets	0.88	x	x	x	I,S	Medicinal benefits of seasonal local, native indigenous, wild foods: higher phytonutrients, vitamins, minerals, micronutrients, fiber, and proteins.	2
4.B	Native indigenous foods/diets	0.88	x		x	I,S		1
4.C	Medicinal purposes of wild foods	0.88	x		x	I		

Figure 11 : integrated framework of indicators systemizing rural livelihood diversification (source: authors)

Fresh water

Different permaculture methods were observed on the field. Permaculture and agroecological design in the farms aim to use resources effectively with a circular approach. The concept of "smart farming" has been applied to the so-called “water smart agriculture” (CL) to ensure access to fresh water at the local level, relying on less labor-intensive practices. Access and control over fresh water is crucial for the community not only from an environmental perspective, but also from a socio-economic one to ensure self-sufficiency and resilience at the local level. In Huai Hin Dam, for instance, the community has been trying to enhance the links between their organic farms and the surrounding forest to implement community-led sustainable resource management (SRM) solutions. To do so, practices of water resource management have been integrated with forest management: in Huai Hin Dam community the water supply comes directly from the National Park, with a pipe linking the forest directly to the community’s agricultural land (N, CL).

Food/fodder, forest products, fiber

Interviewees have stressed the crucial ecological functions of community forests, including the preservation of local ecosystems and biodiversity, acting as a climate mitigation strategy, and as a food security mechanism for community members (CL). The forest has a key function in local farms, both in terms of sun upper-level blockage and protection (limiting the sun exposure for the fruit), and of lower-level compost function (the leaves are often mixed with food waste and water to maintain moisture and nourish the soil). Among the main forest products, economic timber takes approximately 20 years to grow, and it is considered as "a savings account for the community", in terms of a long-term investment, as mentioned by a community leader in Romyen (CL). Forests are managed by employing concepts of industrial symbiosis and collaborative management of natural resources at the community-provincial level. In Romyen community, the pruning and trimming of timber branches in the forest is being supported by neighbors. Neighbors can join this activity. In return, they take the forest products and make biofuel with them or sell them. This has been described as **"a win-win, zero-waste solution"** by a community leader in Romyen (CL). In Huai Hin Dam community, foraging (harvesting bamboo shoots, herbs, resources from the forest trees) happens in a specific time of the year (for a period of around 45 days). The resources which are being foraged in the forest can be sold and provide additional revenue, in a period during which other resources are recovering and being restored, leading to potential for income diversification (CL). The forest provides food security for the local community, as well as other ecosystem services. Vegetables provide a source of daily income, fruit provides monthly income, while forest timber is a more long-term investment for community members (CL). The use of surrounding forest timber is also in line with agroecological principles to plan the farm in a more efficient way, by adding shade for the crops, protecting them from the sun, and improving the ecosystem through intercropping (CL).

An interviewee from the private sector involved with reforestation projects for sustainable tea in different provinces in Thailand highlighted how different industries preserve the forest with the aim to protect local biodiversity. This is crucial to grow the wild organic tea trees without any pesticides, by relying on permaculture and community-managed forest gardens. The aim of the so-called **"forest-friendly production" trend** which is emerging in Thailand is to move beyond the concept of organic and towards a regenerative, holistic reforestation approach where the focus is both on climate adaptation and mitigation strategies (P).

Drought and soil erosion management

Upstream plans related to the specific design of rural landscapes have been considered as crucial by several interviewees in terms of drought and soil erosion management and prevention (CL, N, G). Several local farms in Ratchaburi province have been experiencing problems with drought in recent years (CL). Crop rotation, intercropping and other so-called "permaculture strategies" have been tested by the PGS group in Romyen, in parallel with drought assessments and prevention plans. Community leaders confirmed that, for a more efficient use of resources, the wind and the sun must be considered when designing and deciding the exact position and rotation of crops.

During shadow observation fieldwork in Romyen, a community leader showcased how he planned his farm by considering that "the east side in the farm does not require light, the north has colder weather, the south has a strong wind (during monsoon season), so big trees were being planted to control and limit the wind" (CL). This whole ecosystem acts as a drought mitigation mechanism. Drought control was considered along with other regulating ecosystem services in Na Yang community (such as carbon storage, air quality and water purification, erosion control), at the initial stages of co-design of farms and crop rotation strategies with local farmers (CL).

Soil quality and nutrient recycling

Important staple crops such as maize are cultivated using **monoculture practices**, where large quantities of land are reserved for their production. This agricultural production system is associated with deforestation, soil degradation and agrochemical pollution, and accounts for a significant source of greenhouse gas (GHGs) emissions. Approximately 5,000,000 rai (800,000 hectares) of forest, mostly clustered in the watershed areas of northern Thailand, has been encroached upon for such crop plantations (N). The main source of income for all the communities considered by this study is agriculture, rural households and farms do monocropping to ensure a stable income flow and financial security (such as with the case of maize monocropping in Huai Hin Dam). Industrial farming practices are supported by a strong market demand; nonetheless, they have a negative impact on the quality of the soil, usually degrading it.

In certain communities, alternative movements and community organizations have emerged to provide a more sustainable alternative to industrial agricultural practices. The Agriculture Group in Huai Hin Dam prioritizes organic farming using permaculture, agroecological principles and traditional ecological knowledge (as observed in August 2020 and confirmed in interviews with community leaders).

In terms of downstream plan and resource recovery, composting emerged in all case studies as one of the most scalable practices to regenerate the soil, improve nutrient recycling, minimize resource waste and create added value by leading workshops with visitors.

Biodiversity preservation and habitat provision

Different interviewees from academia and research institutes have highlighted how vegetable farms and fruit trees are no longer dominant in Bangkok (A). Urban and peri-urban agricultural land in Bangkok and surrounding areas has been replaced by commercial, industrial, and residential land use. Urbanization trends are making mega-cities increasingly dependent on their hinterlands to ensure food and nutrition security: grains, fruit, vegetable, meat, and raw food increasingly

come from surrounding rural provinces (A). Although Bangkok is currently experimenting alternative urban farming techniques, these are still in their prototyping stage and cannot meet the urban food demand fast enough.

As it emerged from the literature, land use change in rural areas (including deforestation practices) often happens in the name of food security, to convert more forest into agricultural lands and feed the increasingly growing global population. Nonetheless, by focusing mainly on the production of energy foods for the growing population, biodiversity, local landscapes, and local food systems are usually endangered or even lost (Campbell, 2009; Leach et al., 2020; Nunes, 2017). This leads to **unsustainable food value chains** prone to external disruption and to the loss of those added benefits that highly diverse local diets can provide. Sustainable local diets have emerged as more beneficial for the environment: by requiring less inputs in terms of water, pesticides and fertilizers and by reducing transportation miles, they contribute to both local biodiversity preservation and habitat provision. Thus, a new trend of **"farm-driven cuisine" or "menus supporting local biodiversity"**, developed by environmentally conscious chefs, currently represents a renewed effort to enrich instead of depleting the natural environment (P). Such trend aims to highlight the links between food consumption and environmental biodiversity impact (P).

Social networks and collective organizations of farmers

Based on the existing categories retrieved from the literature review (Rosset & Altieri, 2017) and the observation on the field. These include **farmers groups, PGS groups, seed exchange networks and ancestral networks**. Different organizational structures emerged at the community and regional level. In Huai Hin Dam community, an informal *Organic Farmers Group* includes over ten families. The group grows organic fruits such as papayas and bananas, and seasonal vegetables which are sold to a company distributing them to supermarkets in Bangkok and to foreign markets as well. Huai Hin Dam also hosts the *Women's Group* which plays a crucial role, "acting as a community glue" as mentioned by a local leader (CL). Similar local networks are present in Na Yang community, with the *Cha'Am Tourism*

Club and in Romyen, with the *Romyen PGS Farmers' Group*. The aim of such collective organizations is to develop a shared set of skills, resources, and capital by creating **common pools of resources** to be shared among farmers and local communities. Resources can be both economic or non-monetary in nature, ranging from information sharing to networking and infrastructure, among others. At the regional level in Suphan Buri, the *Western Karen Network* or *Network of Karen traditional and natural resource management* emerges as an important social structure within the western part of Thailand. The network aims to provide resources and access to information to Karen Indigenous People living in the area which included the provinces of Kanchanaburi, Uthai Thani, and Suphan Buri, Ratchaburi and Phetchaburi. "Members of the network share issues that they are facing and help each other in finding solutions or supporting traditions by taking part in each other's ceremonies and sharing information" (CL).

Intersectional participation and social inclusion of vulnerable and marginalized groups

This indicator refers to vulnerable and marginalized sub-groups in the community, including but not limited to women, youth, elders, and ethnic minorities. What emerged from the interviews is that after the COVID-19 pandemic, the social structure of rural Thai communities changed. Younger rural generations would previously migrate, encouraged by their families, to urban areas in search of better employment and educational opportunities. After COVID-19, younger generations were forced to go back to their rural hometowns due to a lack of resources and a higher cost of life in urban areas. By going back, they brought back to rural communities a unique human capital in terms of technological, social media and marketing know-how. Younger generations have demonstrated that they have a comparative advantage when it comes to smart farming, as this often implies an approach to agriculture requiring technological skills to generate and analyze quantitative data on yields (P). Such data leads to predictable outputs and increases confidence in calculating profits and assessing market prices. This also translates into more opportunities to access loans from local agricultural banks as well as a better

chance to connect to any emerging consumer niche or alternative market. Ensuring intersectional participation is at the foundations of community resilience and sustainable rural livelihoods (Faysse et al., 2019; Mphande, 2016). **Younger generations** have been mentioned in several interviews in terms of their "**help as mediators**, acting between the community and outsiders" (CL). This happens for example with the National Park in Huai Hin Dam. When the community wants to hold ceremonies, they must inform the National Park or write letters to invite Government officials to the community forest. Different community leaders have expressed their hopes for younger generations to play a more official leading role in that regard, acting as delegates when the community gets invited to any workshop or seminar organized by external stakeholders. "We hope that they [younger generations] can learn new information from outsiders and then come back and share the message with the elders in the community. Younger people should play the role of ambassadors for older generations in the community" (CL in Huai Hin Dam). Developing human capital is also key and at the foundation of community resilience. This includes empowering community members through an accountability mechanism at the local level, also described by a DASTA representative as a "matching fund system" (G). This relies on the concept of building a sense of participatory ownership and accountability; it requires the local community to co-invest (usually in kind) at the initial stages of rural development projects co-led by the Government or other stakeholders (G).

Educational activities for consumers and producers

This indicator refers to a broad array of concepts retrieved from the literature, including biocultural education and understanding, knowledge exchange, food citizenship, environmental education, among others. An example comes from the Thongathai learning center in Na Yang community. Following the Sufficiency Economy Philosophy (Mongsawad, 2012), the Thonghathai learning center is the location of the Agricultural Product Enhancement Learning Center under the Cha-Am district in Phetchaburi province, in accordance with the New Theory Agriculture and Organic Agriculture. The learning center is perceived as "a classroom, **a social**

laboratory for farmer-to-farmer knowledge sharing" (CL). Local community members can learn and teach at the center according to their availability, with a flexible commitment. The main knowledge exchange happening in the center concerns the management of soil-water-forest resources to preserve local cultural landscapes. The center also raises awareness on the importance of organic agriculture, encouraging agricultural production linked to permaculture principles, biofertilizers and renewable energy sources (like solar panels, which are installed in the learning center and showcased during farm trips). The learning center aims to emerge not as a standalone practice but as a scalable solution, engaging in integrated farming and biodiversity activities. To do so, it advances different products and services, including: 1) crops and rice 2) herbs 3) livestock 4) fishery 5) processing and 6) community-based agritourism for diversification of local livelihoods. The center is also involved in long-term capacity building to empower local community members in building skills, in particular marketing know-how and co-leading a "Farm Shop" in the center to boost the local economy and sell native products. The aim of the "Farm Shop" is to rebrand and select outstanding local products, educating visitors on what are seasonal traditional foods in Na Yang. This could elevate the community's visibility and attractiveness as a destination for sustainable community-based agritourism (CL).

Community identity and integrity, sense of place

This indicator considers any externalities in terms of changes in the routine of the community due to livelihood diversification practices. Maintaining an authentic sense of place and sense of belonging is crucial not only for community resilience, but also for sustainable community-based tourism development (Broccardo et al., 2017; Lo & Janta, 2020). Several interviewees have mentioned how having organized groups of tourists coming to the farm for CBAT and other activities results in limiting disruptions to the routine of local community members (P, CL). At the Government level, seminars have been organized to support community members and empower them with the skills to diversify their livelihoods as well as with the opportunity to exchange knowledge with farmer-to-farmer horizontal

networks (G). As mentioned by a DASTA representative, the aim of the Government has not been to change the local ways of life, but instead, to integrate additional income-generating channels for local communities (G). Different projects facilitated by local NGO and CSO networks such as KESAN, the Karen Environmental and Social Action Network, have also emerged with the aim to support communities in finding balanced diversification strategies of rural livelihoods. For example, the CBLI or Community-Based Livelihood Initiative focuses on ensuring the preservation of local traditions (via indigenous schools, local activities, workshops), raise awareness on indigenous heritage at the policy level, publish books on local biodiversity to support and give visibility to local communities' efforts in preserving it (N). Different interviewees have mentioned how local communities need to avoid the **risk of cultural appropriation** by integrating it into the planning stages of CBAT or other strategies of livelihood diversification (G, P). In order to do so, communities must proceed systematically: by building solid foundations in terms of community awareness, and then focusing on planning, marketing, and impact assessment (financial, socio-economic, cultural, environmental) to assess any externalities of livelihood diversification on the whole community and its sense of belonging (G).

Spiritual values and sacred grounds

This indicator captures the importance of cultural meanings, indigenous knowledge, traditional systems and practices, spiritual values and sacred grounds in relation to livelihood diversification in local communities. In the case of Huai Hin Dam, since this is a Thai-Karen community with a rich indigenous tangible and intangible heritage, a **Karen Museum** was established in the community with the support of an NGO, RECOFTC. The aim of the museum is to serve as a cultural bridge between the community's values and beliefs and any outsiders such as visitors and tourists (N). In Huai Hin Dam, rituals are linked to agricultural production and to the community's sense of place. Community members perform annual rituals to pay respect to nature with traditional ceremonies. Making merit in the forest is important for community leaders, as it serves to give thanks to "the source of all the life and resources" which they are using and extracting daily. This so-called "source" is also

referred to as “life-giving entity”, “Mother” or “Mother Nature” (CM, CL). As mentioned by a CDD representative during his interview, sustainable development should not be invasive nor exploitative. The cultural beliefs and spiritual values of local communities should be not only respected, but also elevated with visibility and recognition at the national level (G).

Scenery and cultural landscapes

Rural tourism and other practices of rural community development have been conceptualized as strategies for sustainable landscape planning by UNESCO. Cultural landscapes emerge as traditional, contemporary, and living landscapes (they can also evolve and adapt to the changing external context), showcasing social values as well as the sense of identity and belonging of the community they host. They also emerge as inclusive, since values and practices connected to cultural landscapes act as a social glue between different generations. Cultural landscapes are conceptualized by UNESCO as “representative” and “community-based”, reflecting a broad range of tangible and intangible ecosystem services provided by cultural landscapes. In terms of intertwined **tangible and intangible heritage**, the Women’s Group in Huai Hin Dam plays a central role in leading rituals and ceremonies in the forest, while men are traditionally more involved in agricultural activities. The **women are passing on skills and traditional practices such as weaving, tie dye and how to forage and get organic pigment from the forest, while preserving the ecosystem services in the forest** (CL). At the same time, the **men are passing on traditional farming and agroecological principles which are protecting local biodiversity**. As mentioned by the government, cultural landscapes finally create added value in terms of assets and capital which are already existing at the local level and can be monetized by the community (G).

Access and control over land and natural resources

By ensuring that local communities have access and control over land and natural resources, an important check-and-balance mechanism is being established at the local level. This leverages the accountability of local communities to effectively implement and monitor sustainable resource management schemes in the long-term. In the three communities observed for this research, members have expressed how different issues have limited both the control of and access to local ecosystem services. These include:

1) **land grabbing and land concession to private companies leading to deforestation**
2) **floods and water management adaptation connected to disaster risk reduction**
3) **concrete companies extracting natural resources, having an irreversible impact on the local landscape, scenery and habitat on which communities rely for their livelihoods**

Agri-accommodation services

Based on the fieldwork conducted, a longer list of agri-accommodation services was further simplified into the following categories, which emerged from shadow observation. These include A) intensive agritourism farm stay or home stay (usually for the purpose of a weekend trip), B) intensive on-site volunteering farm stay (which can also be extended into a longer stay of several weeks and months as captured by indicator 3.B.10) and C) agri-camping (flexible tourism arrangements, suiting the specific needs of seasonal visitors). Na Yang developed homestay services during the Covid-19 lockdown, hoping to invest in CBAT after the lift of all travel restrictions by the Government. A community leader in Na Yang shared how while she does **not currently have the financial capacity** to invest in developing home stay services and infrastructure, she **can provide a more flexible agri-camping service for visitors** (CL). In all three communities, members have been discussing the option of arranging a collaborative CBAT model by sharing their different resources with an integrated services approach. Sharing resources, benefits and risks linked to CBAT implies the development of a collaborative community-based strategy; homestay

and agri-accommodation services can be provided by some members, while others can support with agri-food services and any additional farm activities and workshops (CL, CM).

Agri-food services

The category of "agri-food services" emerged from the literature and was observed in the field, where it was usually described and marketed as **"culinary tourism", "gastrotourism", "sharing home cooked meals with the community" and "farm to fork experiences"**. Such services include traditional home meals being cooked and served by community members. Usually, a specific community sub-group oversees the provision of such services, for instance the *Women's Group* in Huai Hin Dam. Leveraging local foods and tasting experiences of native ingredients can create an added value and income stream for rural communities. At the same time, it **can build a deeper trust between producers and urban consumers who are not used to cook with wild, indigenous foods** (CL, P). By introducing urban consumers to alternative recipes and diets, agri-food services are crucial to strengthen the trust bond between community members and consumers, by sharing experiences in terms of food expectations and finding a common ground between supply and demand (P).

Cultural tourism supporting local products

This indicator is connected to the current Government strategy to build capacity and added value at the community level. The Thai Government is currently trying to transition rural development plans a step forward from the product-focused marketing strategy of **OTOP** (One Tambon One Product) to an integrated value-added strategy (integrating both products and services). OTOP (One Tambon One Product) started around twenty years ago as a Thai implementation of the Japanese OVOP (One Village One Product). The aim is **to provide visibility and marketing access to regional, local, traditional products**. In a second time, the strategy evolved into a product-service integrated one, trying to link OTOP to sustainable rural livelihoods and community development as well (via CBT or other

livelihoods diversification strategies). The Government has been trying to create value at the local level by supporting the design of highly localized tourism experiences to effectively decentralize income generation and redistribute it to rural areas. CBT packages are nowadays being designed based on specific areas, to link directly those consumers interested in a specific product to the local communities producing it. This win-win solution involves a double strategy: 1) knowledge sharing processes at the national level focusing on how to segment target markets for local communities and 2) sustainable tourism as a tool to redistribute tourism demand at the provincial level and not only limited to a few mass tourism destinations in Thailand (G). This alternative tourism trend builds on the foundations prepared by OTOP and is in line with the new Thai national agenda related to BCG (envisioning a transition towards sustainable bioeconomy, circular economy, and green economy). Communities can diversify their livelihood by selling byproducts or developing services connected to their own unique cultural landscape and sense of place (G). In recent years, the district community development office supported ten families in Huai Hin Dam (five Thai and five Karen) to start community-based tourism as part of the OTOP strategy. Two main products were sold: 1) Karen traditional foods made from organically grown vegetables and 2) fabric handicrafts (initially supported by AGRECO/PGRC) to revive and preserve the traditional knowledge and culture.

Primary agritourism workshops

Primary agritourism workshops include farm tours, learning and knowledge sharing activities, demonstration workshops, among other services. Consumers can take part in farm tours to learn basic agroecology principles; these are led by experienced members of the community, community sub-groups, community leaders, local guides or academic experts who have lived in the community for a long time. Knowledge sharing activities observed in local communities include:

- **crop rotation workshops**
- **soil management workshops**
- **seedling planting workshops**

- **harvesting food in the farm and surrounding forests (e.g. wild chrysanthemum in Romyen, rose apples and coconut in Na Yang, foraging in the forest in Huai Hin Dam)**
- **organic fertilizer workshops**
- **compost workshops**
- **natural tie-dye workshops (e.g. guided by the Women's Group in Huai Hin Dam)**
- **workshops with farm animals (e.g. collecting eggs in Na Yang community)**

Both in Huai Hin Dam and Na Yang, community members are considering to diversify livelihoods with what Sznajder has defined as "**agri-sports**" (Sznajder et al., 2009). The aim is to organize additional non-agricultural services such as trekking trips and longer wild walks in the forests surrounding the local community. Visitors would be accompanied and guided by so-called "custodians of knowledge", as they have been defined by a community leader in Huai Hin Dam, referring to elder or knowledgeable community members (CL).

Direct sales

Sales of local products can be divided into two categories: 1) sales taking place directly at the farm and in surrounding rural areas and 2) sales taking place at re-selling points located in urban or peri-urban settings, mainly in the Bangkok Metropolitan Area (BMA). Communities utilize all **byproducts** to increase their revenue and reduce any waste. For instance, an interesting sustainable practice comes from the use of the byproduct of coffee beans, cascara (also called "coffee fruit"). Normally, cascara is used as a fertilizer by local communities, but as mentioned by a community-driven coffee enterprise "it has so much more potential to be sold as a byproduct, as tea, to diversify the community's sources of income. In this way, the community benefits from sustainably integrating both coffee and tea production" (P).

New alternative jobs for community members

New job opportunities have emerged in the observed communities because of rural livelihoods diversification. These included community members working part-time as **a cook, a tour guide, workshop demonstrator or educator**. Community members can generate income from sharing their knowledge with visitors, supported by resources and infrastructure which are initially provided by regional partners such as the provincial Government or local universities. **Younger generations have been playing a crucial role in terms of managing social media and co-developing marketing strategies, due to their higher educational background and technological skills** (CL). It emerged that the most successful approach to develop sustainable rural livelihoods is to focus on ensuring resilience and long-term self-reliance of rural communities first. This means to give access to financial grants only after a strategy has been co-developed with the local community. This is to ensure that the community develops capacity building at the local level also in terms of creating additional new jobs at the local level, leading to long-term benefits for the local economy. Moreover, usually not a lot of investment is needed at the initial stages of CBAT development. For instance, no additional infrastructure was required in Romyen community, as "the CBAT package was designed to provide an authentic agriculture experience, not a staged experience or rural livelihoods" (CL).

Income distribution and local economy development

Income distribution was conceptualized, observed, and monitored at the broader community level as suggested by key informant interviews. This was motivated by the fact that **community-based services of livelihood diversification are usually offered not at the household level but at the community level**. **Different households can support each other by integrating products and services and providing a collaborative integrated experience for visitors. Since different households share community resources, they also share the revenue from such livelihood diversification services and products.** The active role of women, youth, and other marginalized groups in the development of CBAT or other

strategies is key to reducing poverty and hunger with an intersectional approach. The food produced and supplied directly from smallholder farmers and community-based enterprises can also help create independence from large retailers, reduce margins paid by smallholder farmers to large agribusiness, reduce the power of middlemen, and strengthen local food systems (N). At the community level, the income distribution mechanism can change from a more structured to a more informal one. For example, in Huai Hin Dam the informal system for collecting income from workshops and demonstrations is that, when visitors come to the community, they usually donate money into the village fund. More structured systems often involve external partners to develop packages with fixed prices and specific marketing strategies.

At the overarching national level, the aim of the Government through the Community Development Department (CDD) is to improve rural communities' income in the 76 provinces which are not Bangkok, as these are usually classified as "rural" (G). Bangkok depends on its rural provinces to thrive and currently relies on unsustainable city-regional links (P). The CDD Government project aims to achieve a macro-scale decentralization of resources, by classifying Thai communities into four categories and focusing on their rural development (G). These include A - best, most attractive communities B – communities with potential for the future in terms of products/services strategy C – communities with strong local products strategy (OTOP) but no capacity to host tourists D - communities with no capacity in terms of products/services strategy (G).

Local ecosystem services increase in value (as a tourism asset)

This indicator could be monitored in terms of biodiversity preservation, for instance by observing how the wild chrysanthemum species cultivated with an intercropping method in Romyen not only serve as a permaculture practice to reduce pests, but also produce an added value, as they can be sold to visitors for infusions or can attract visitors interested in taking photoshoots in a natural environment. **The value-added aspect motivates community members to preserve those ecosystem services attract visitors as a cultural landscape or**

culinary tourism asset. The importance to preserve rural landscapes and having people experience them through CBAT is key to educate urban consumers by changing their perspective and mindset on food production (G, P). Although there is not always a follow-up monitoring evaluation after those trips or activities in the farm, several community leaders have shared how farm visitors are surprised by the information they learn (CL). A growing niche market is represented by parents coming with small kids as they are particularly concerned for the healthy diet of their kids and want to educate them on the source of high-quality organic food (CL).

Capacity building and skills development for community members

Capacity building can be developed with a top-down approach (e.g., facilitated by the Government or another stakeholder, delivering seminars and training at the local level) or with a more horizontal peer-to-peer, farmer-to-farmer knowledge exchange approach (e.g., through the PGS or more informal networks). To ensure community resilience and long-term self-reliance, it has been noticed by several interviewees how the Government should not start with an economic grant at the first stages of project design. The economic benefit should come at a later stage of project implementation, giving access to monetary grants only after a strategy has been co-developed with the local community. "The community has to be strong enough to redistribute the income locally in a fair way", relying on a pre-existing sense of place and belonging (G). The planning stage of any rural development project is key to identify who to include and how to sell products and services from the community to avoid generating any internal conflict at the community level (G).

Volunteering activities in the community

Long-term volunteering in the farm used to happen before COVID-19 1) with a farmer-to-farmer knowledge-sharing approach, to learn different agricultural practices 2) for educational purposes, involving researchers and students from provincial universities, conducting their fieldwork on the ground. In Romyen, volunteers come from the southern part of Thailand or

from surrounding provinces to learn permaculture and organic strategies to grow food. In Huai Hin Dam, before the COVID-19 pandemic, researchers could spend a longer period as community residents, taking part in daily activities to understand the Karen ways of life and cultural beliefs connected to the forest and to the different seasons. This led the community boundaries to become more flexible and inclusive to those outsiders who are interested in understanding, communicating, and sharing knowledge related to rural livelihoods. Several community members mentioned how it is important to pass their traditional ecological knowledge and ensure that such intangible heritage is being recorded and pass on to future generations (CM).

Seasonal local foods/diets

Due to the ethical danger of cultural appropriation, specific details of ingredients and local traditional recipes have not been disclosed in this study, as agreed with local communities. **Seasonal local diets represent a climate adaptation strategy for local communities, to ensure their food security. Seasonal diets adapt to the constantly unpredictable temperature conditions resulting from climate change, and to any external ecosystem shock such as pest diseases, droughts, pandemic crises.** As mentioned by several interviewees, promoting local foods by co-planning culinary tourism packages with farmers can have a deep impact on the production side of the food value chain (N, P, G). “Local foods and indigenous crops are used as the main asset in the presentation and preparation of traditional recipes. They become a selling point for eating organic food in local communities depending on what is in season” (N). “This is an opportunity to change the habits of consumers by inspiring them with simple sustainable diets so that when they go home, they rethink about their daily food consumption” (P). The main difference in expectations and food/diets behavior between consumers and producers, comes from the fact that “locals living in rural areas go to the market and make decisions on what to eat based on what they find there, but Bangkokians decide before leaving home” (P). Seasonal menus and diets are key to reconnect consumers and producers in a sustainable way, as explained by a local Chef in Bangkok. “We look at the seasons and draw the menu from there. Sometimes there

are risk factors to be considered, like a storm or a massive pest infection. In that case, restaurants and consumers must be more flexible and talk to the farmers with an open mindset, to lower their unrealistic expectations" (P).

Native indigenous foods/diets

Important health benefits of native, indigenous foods and diets have emerged from the most recent report published by FAO, related to Indigenous Peoples' food systems (FAO, 2021). This is supported by interviews with representatives from the Department of Thai Traditional and Alternative Medicine Ministry of Public Health (G). Due to an increased **focus on immunological benefits of local diets after the Covid-19 pandemic, native foods emerge as more nutrient-dense** if compared to highly globalized and processed foods and diets. Native foods can include local grains, seeds, vegetables, fruits which are locally produced in a specific area. Other health **benefits include the fact that they are higher in phytonutrients, vitamins, minerals, micronutrients, fiber, and proteins (FAO, 2021).** As mentioned by a Chef in Bangkok, "the food industry is becoming increasingly interested in the so-called **"flavor profile" of wild, indigenous, native ingredients** as this is different and more nutritious compared to what consumers are used to" (P). Communities are also becoming more aware of this trend, and more confident in re-branding their native food. In Huai Hin Dam, the community has developed two strategies to preserve indigenous local diets: 1) preservation of natural habitat (community forests) with the support from RECOFTC as an external partner 2) cultivation of wild foods to actively preserve local varieties. Currently the community is using two types of seeds. These are (I) traditional crop varieties grown in rotation cultivation (their traditional agricultural system), grown to be consumed by the community members and (II) the modern seed varieties, including crops like corn and cassava (supplied by companies and middlemen), grown for selling to the market (N, CL). The indigenous rice variety in Huai Hin Dam is also different and used to cook traditional desserts for guests in several ceremonies. A traditional chili variety called "Karen chili" is used in Huai Hin Dam as a key ingredient of local dishes

cooked by the *Women's Group* for visitors. Tourists can later purchase such chili as a product, after tasting it during culinary experiences on the ground (N, CL, CM).

Medicinal purposes of wild foods

The medicinal purpose of wild foods relates to the retention of nutritional values and was added to the framework after observing such practices on the field. Community members in Huai Hin Dam have developed an informal system of sharing traditional medicinal knowledge with interested visitors, as they recognize the potential of this niche market. The most knowledgeable community members offer the opportunity for any interested visitor to try medicinal plants and locally grown herbs, either in soups or as traditional infusions (CM, CL). Tourists can purchase such herbs directly from community members during CBAT trips. This represents an additional source of revenue for elders who are growing herbs in their backyard. Various herbal teas such as lotus tea ("benefitting the heart" - CL), lemongrass tea ("with calming, relaxing effects" - CL) pandan tea ("to reduce blood sugar" - CL), Mon rose tea ("to help relieve stomach symptoms" - CL) are also sold by Romyen community with a marketing strategy leveraging health benefits for consumers (P). Interviews with health experts (N, G) and researchers (A) confirm how native foods are linked with higher levels of micronutrients especially zinc and iron, rich in antioxidants protecting from oxidative stress, and probiotics helping to improve the immune system. After Covid-19, there has been an increased interest and more demand for healthier options in terms of foods and diets as ingredients are being more carefully selected by consumers (P, G). As mentioned by a representative of the Ministry of Health, "by connecting the field of public health and sustainable food systems, we can integrate and promote public health policies that support the use of local Thai food as traditional medicine" (G).

4.2 List of rural diversification practices emerging in Bangkok city-region

A comprehensive list of rural diversification practices was built as a research tool to perform the shadow observation checklist for fieldwork in rural communities. By triangulating this with data from the interviews and the survey

questionnaire, it was possible to identify emerging rural livelihood diversification practices in Bangkok city-region. Results are displayed in the table below, in which the most relevant findings with a higher frequency level (> 30%) are highlighted. From the results, two practices emerged as already established (item 1 and 2) and two emerged with a high potential for future developed or investment (item 4 and 7).

Table 9 : rural livelihood diversification practices supported by urban consumers, n = 400 (source: authors)

#	Item	Frequency				
		Never n (%)	Once in the past n (%)	Every few months n (%)	Monthly n (%)	Weekly n (%)
1	Home stay or camping	132 (33%)	**153 (38.25%)**	76 (19%)	16 (4%)	23 (5.75%)
2	Eating local traditional food in rural communities	20 (5%)	38 (9.5%)	83 (20.75%)	108 (27%)	**151 (37.75%)**
3	Learning about rural intangible heritage (local culture/traditions)	58 (14.5%)	87 (21.75%)	119 (29.75%)	83 (20.75%)	53 13.25%)
4	Eco-learning about rural tangible heritage (organic agriculture)	**151 (37.75%)**	97 (24.25%)	82 (20.5%)	51 (12.75%)	19 (4.75%)
5	Purchasing products directly at the farm	113 (28.25%)	98 (24.5%)	92 (23%)	62 (15.5%)	35 (8.75%)
6	Supporting local community-driven businesses	92 (23%)	81 (20.25%)	104 (26%)	83 (20.75%)	40 (10%)
7	Volunteering in the rural community	**239 (59.75%)**	77 (19.25%)	59 (14.75%)	17 (4.25%)	8 (2%)

For item 1, it is interesting to examine how 38.25% of respondents (n = 153) has experienced “Home stay or camping” at least once in the past. “Experience tourism”, “niche tourism”, “creative tourism” and “community-based tourism” (CBT) have been emerging in the literature as a sustainable alternative to mass tourism practices and are usually associated with home stay, agri-accommodation or camping services (Duxbury & Richards, 2019; Hall & Mitchell, 2005; Lo & Janta, 2020; Milano et al., 2019; Novelli, 2010; Sosa et al., 2021; World Tourism Organization, 2009). Such practices focus on situated, community-driven tourism

which capitalize on the local tangible and intangible heritage to diversify rural livelihoods by adding additional streams of income (Gebru et al., 2018; Mphande, 2016; Yoshida et al., 2019).

It is evident that item 2, “Eating local traditional food in rural communities” is the most popular and frequent activity preferred by urban consumers, with a high percentage of 37.75% of respondents (n = 151) doing it as a weekly activity. This is in line with the rural gastronomy trends examined in Asia (Park et al., 2019) and in Thailand in particular (Muangasame & Park, 2019). Grey literature reviewed from governmental agencies has also confirmed that community-based tourism (CBT) in Thailand often relies on rural culinary tourism (National Tourism Policy Committee, 2019). The country internationally positions itself as a well-known touristic destination for such services, which are often linked with its rural development agenda (Muangasame & Park, 2019). Local culture, practices, traditions and an authentic sense of place are usually leveraged with a value-added approach to gastro-tourism (Hall & Mitchell, 2005; Novelli, 2010). Results are consistent with the findings of Hall and Mitchell, stating that “for food tourism to be a success, it is vital that a positive relationship is established with customers not only through the delivery of good food products but that attention also be given to the wider service scape in which it occurs” (Hall & Mitchell, 2005, p.86). This study confirms that urban consumers displaying a SUCB not only support local communities by “purchasing products directly at the farm” and “supporting local community-driven businesses” (items 5 and 6 in Table 3), but also by supporting and experiencing a variety of other rural services (items 1, 2, 3, 4, 7 in Table 3).

Finally, results show a low engagement level of respondents in item 4 and 7. From the table, it can be noticed that 37.75% of respondents (n = 151) have never taken part in “Eco-learning about tangible heritage (organic agriculture)” and 59.75% respondents (n = 239) have never taken part in “Volunteering in the rural community” in the past. Although such rural services seem to be not established yet, key informant interviews have revealed their potential as a post-Covid recovery strategy. Analyzing policy measures and CSR subsidies can be crucial to understand

the opportunity that such services can offer to future rural development plans.

The survey questionnaire for urban consumers provided data to integrate emerging regional practices to reconnect urban consumers to rural producers. The last open question of section 2 of the questionnaire provided respondents with the option to add comments and integrate the list of rural services with any additional activities they had experienced in the past. From a total of 83 comments received, the qualitative data was screened to select information providing additional emerging services (n = 78). Comments directly validate the existing categories retrieved from the literature and are represented in the table above.

Additionally, the followings represent emerging services mentioned by survey respondents and were less frequently found in the literature:

a. **Corporate social responsibility (CSR) projects and companies' outing activities**
b. **Watching movies while staying in local communities or so-called "rural staycation"**
c. **Setting wildlife cameras for biodiversity preservation/monitoring**
d. **Bike touring and agri-sports**

4.3 Association between urban-rural relation and sustainable urban consumer behavior

The main research assumption related to the urban consumption scope was validated by performing a statistical analysis of data collected from the online survey questionnaire. The Pearson Product Moment Correlation Coefficient was calculated, as it is used with data at the interval or ratio level of measurement. The correlation between variable I (URR or urban-rural relation) and II (SUCB or sustainable urban consumer behavior) was tested and resulted significantly positive, confirming the assumption that a stronger relation between urban consumers and rural producers is associated with a more sustainable urban consumer behavior.

4.3.1 Socio-demographic characteristics of survey respondents

To explain the first half of the demographic background table (Table 1, items 1,2,3), from a total of 400 survey respondents 61.3% (n = 245) were female

while 38.7% (n = 155) were male. Such disproportion can be motivated by looking at the existing academic literature focusing on gendered differences in sustainable consumption behavior, showing that women tend to have more interest and engagement in SC (Bloodhart & Swim, 2020; Kumar & Yadav, 2021; Muresan et al., 2021). This can explain a higher response rate to the survey by the female population. The composition of respondents also reflects diverse socio-cultural profiles with a nearly even representation of Thai 43.3% (n = 173) and foreigners 56.8% (n = 227) living in Bangkok, which also captures the important concentration of foreigners living in the capital. A high percentage of respondents fall into the age-group of 25 to 54 years old (82%, n = 328). This age-group is very active on social media platforms, where the survey was shared with respondents.

Table 10 : general socio-demographic characteristics of respondents, n = 400 (source: authors)

#	Socio-demographic items	Characteristics	Frequency	Percentage
1	Gender	**Female**	**245**	**61.3%**
		Male	155	38.7%
2	Age	18-24	44	11%
		25-54	**328**	**82%**
		55-64	19	4.7%
		>65	9	2.2%
3	Nationality	Thai	173	43.3%
		Non-Thai	227	56.8%
4	Monthly income	<15,000 Thai baht	30	7.5%
		15,001-30,000 Thai baht	78	19.5%
		30,001-45,000 Thai baht	60	15%
		45,001-60,000 Thai baht	45	11.2%
		>60,000 Thai baht	**187**	**46.8%**
5	Employment status	**Employed full-time**	**257**	**64.3%**
		Employed part-time	12	3%
		Freelance or contractor	41	10.3%
		Student	50	12.5%
		Unemployed	12	3%
		Retired	6	1.5%

#	Socio-demographic items	Characteristics	Frequency	Percentage
		Other	22	5.5%
6	Educational background	High school diploma or other	14	3.4%
		University degree (bachelor level)	**109**	**27.3%**
		University degree (master level)	**213**	**53.3%**
		University degree (Ph.D. level)	**64**	**16%**

The second half of Table 1 (items 4, 5, 6) clearly shows that survey respondents represent a consumer niche with a high purchasing power. 64.3% (n = 257) of respondents are employed full-time and 46.8% or almost half of respondents (n =187) have a monthly income above 60,000 THB. Finally, a very high percentage of respondents 96.6% (n = 386) hold a university degree (bachelor, master, or Ph.D. level of education). This is in line with previous studies on SC, highlighting education as one of the social factors that can determine and promote sustainable consumption behaviors (Figueroa-García et al., 2018).

4.3.2 Variable I: urban-rural relation

The level of urban-rural relation was measured by assessing how often urban consumers living in Bangkok have been involved in various activities in rural communities. Seven main rural community-led services were identified from the literature (Broccardo et al., 2017; Iaquinta & Drescher, n.d.; Sznajder et al., 2009). These were confirmed relevant after key informant interviews were conducted with experts.

Consumers were asked to record (1) which activities they had been involved in and (2) how frequently they took part in such activities. Frequency was measured with a Likert scale ranging from “never (and I am not interested)”, “never (and I would be interested in the future)”, “once in the past”, “every few months”, “monthly”, “weekly”. Values were assigned to the Likert scale, ranging from 0 to 4. In the case the responses were “not interested” or “not yet, but I would be interested in the future”, a value of 0 was assigned. Other statements were coded with the value of 1 (“yes, once in a year/in the past”), 2 (“yes, every few months”), 3

("yes, every month") and 4 ("yes, weekly"). A final score was calculated for each individual survey respondent by adding the frequency of experience related to all different services. Scores ranged from a minimum of 0 to a maximum of 28. The lowest score recorded from collected data is 0 (n = 12, 3%) and the highest is 28 (n = 1, 0.2%), while the total mean score was 11.2 with a standard deviation of 5.87.

Collected data was later organized at the categorical level and grouped into weak, moderate, and strong (in the table below). Total respondents' individual scores were divided by percentage:

a) **Scores less than 60% (corresponding to values from 0 to 16): weak relation**
b) **Scores from 60% to 80% (corresponding to values from 17 to 22): moderate relation**
c) **Scores from 80% to 100% (corresponding to values from 23 to 28): strong relation**

Table 11 : level of urban-rural relation, n = 400 (source: authors)

	Level	**Frequency**	**Percentage**
Urban-rural relation	Weak	321	80.25%
	Moderate	66	16.5%
	Strong	13	3.25%

4.3.3 Variable II: sustainable urban consumer behavior

The sustainable urban consumer behavior (SUCB) was measured by advancing an integrated model with four main indicators (KAPL model). Collected data was organized in this integrated model to calculate a final SUCB score. This is adapted and simplified from the literature, merging the Knowledge, Attitude, and Practice (KAP) model with the ladder of consumer loyalty (Roberts & Alpert, 2010), as explained in Chapter 3.

The integrated model is structured into four targets comprising Knowledge (K), Attitude (A), Practice (P), and Loyalty (L). To measure the scores of every target, relevant indicators were retrieved from the literature and selected. Targets 1 and 2 in the model were assigned a score depending on the frequency of

their indicators while for targets 3 and 4 the absence/presence of indicators was measured. Total scores ranged from a minimum of 0 to a maximum of 12. The lowest score recorded from collected data is 0 (n = 1, 0.2%) and the highest is 12 (n = 27, 6.7%), while the total mean score is 8.14 with a standard deviation of 2.28.

Knowledge (K) of urban consumers related to sustainable local food systems was measured with a Likert scale-type (0—4). This ranges from a minimum of 0 (I am not sure/ I do not know the source of my food), to 1 (I consume mostly food that is imported from abroad), to 2 (I consume a mix of local food and imported produce), to 3 (I consume mostly food grown in Thailand), to a maximum of 4 (I consume mostly local seasonal food grown in Thailand). The total mean score of K is 2.5175 with a standard deviation of 0.99.

Attitude (A) of urban consumers was operationalized as the frequency of organic food purchase and measured with a Likert scale-type (0—6). The scale goes from a minimum value of 0 (never) to 1 (once in a year or less) to 2 (once every six months), 3 (once every two months) 4 (once a month) 5 (twice a month) 6 (every week). The total mean score of A is 4.67 with a standard deviation of 1.51.

Practice (P, target 3) and Loyalty (L, target 4) are calculated on a scale from 0 to 1, where the presence (coded as 1) or absence (coded as 0) of such behaviors were recorded for each respondent. To measure SUCB Practice, respondents were asked “Do you purchase products directly purchase from farmer/s?”. Results show that 36.5% (n = 146) of consumers purchase directly from farmers, while a majority of 63.5% (n = 254) does not.

While consumers tend to not purchase directly from farmers, often relying on middlemen, they tend to have a strong loyalty to rural communities. This has been labeled by Hall and Mitchell as “word-of-mouth behavior” or “recommendation to others” (Hall & Mitchell, 2005) and is crucial to support small rural businesses. A majority of 59.5% (n = 238) consumers recommends a friend to purchase from a rural community they have visited.

The level of sustainable urban consumer behavior was measured by organizing collected data at the categorical level to group observations into weak, moderate, and strong (in the table below). Total respondents' individual scores were classified by percentage:

a) **Scores less than 60% (corresponding to values 0-7): weak behavior**
b) **Scores from 60% to 80% (corresponding to values 8-9): moderate behavior**
c) **Scores from 80% to 100% (corresponding to values 10-12): strong behavior**

Table 12 : level of sustainable urban consumer behavior, n = 400 (source: authors)

	Level	**Frequency**	**Percentage**
Sustainable urban consumer behavior	Weak	140	35%
	Moderate	140	35%
	Strong	120	30%

4.3.4 Statistical correlation between urban-rural relation and sustainable urban consumer behavior

The correlation between urban-rural relation and sustainable urban consumer behavior was calculated with the Pearson's Chi-square test for independence. Statistical analysis indicates that urban consumers who showcase a poor relation with local rural communities tend to have a poor or moderate sustainable consumer behavior. On the other hand, urban consumers who have a moderate or high level of engagement with rural communities tend to have higher levels of sustainable consumer behavior. The p-value calculated from the test confirms that there is a statistically significant relationship between the level of urban-rural relation and the level of sustainable urban consumer behavior ($p < 0.05$).

Table 13 : Pearson's chi-square test for independence (source: authors)

		Sustainable urban consumer behavior				
		Weak	Moderate	Strong	Total	p-value
Urban-rural relation	**Weak**	**130**	**120**	**71**	**321**	0.000
	Moderate	8	18	40	66	
	Strong	2	2	9	13	
	Total	140	140	120	400	

The results of the Pearson's Chi-square test for independence indicate that out of the 321 respondents having a weak relation with rural communities, most of them also display a poor sustainable consumption behavior (n = 130, 40.5%). 37.4% (n = 120) show a more moderate level of SC behavior and only 22.1% (n = 71) of them have a strong SC behavior. This demonstrates that weak-moderate levels of sustainable urban consumer behavior are more frequent in consumers having a weak relation with rural local communities. Conversely, urban consumers with a moderate or strong relation with local rural communities have yielded interesting survey results, associated with a higher level of sustainable urban consumer behavior. Urban consumers moderately engaging with rural communities (n = 66) were found to mostly have a high (n = 40, 60.6%) or moderate (n = 18, 27.3%) sustainable consumer behavior, with a minority of 12.1% of them showing a poor level of SC (n = 8). A moderate level of engagement with the local rural communities seems to be already effective to influence consumer behavior towards supporting sustainable local food systems options. Finally, out of the 13 respondents showing a strong level of engagement with rural communities, only a minority of them displayed a weak (n = 2, 15.4%) and moderate (n = 2, 15.4%) sustainable consumer behavior, while the majority (n = 9, 69.2%) showed a strong consumer behavior.

Findings are consistent with recent research on the importance of having a direct contact with rural food producers and hear their personal experiences (Stockebrand et al., 2011). Stockebrand et al. (2011) explored how the communication of emotional food through farm tourism can help simplify and

convey complex environmental narratives, for instance related to sustainable food systems, climate change. To shape a more conscious consumer demand, sensitizing urban residents can be facilitated by involving farmers and rural communities in a collaborative process of stakeholder engagement, as they are directly taking part in such issues (Stockebrand et al., 2011).

4.3.5 Thematic analysis

The qualitative data collected from open-ended questions in the survey was structured into a thematic analysis with a mixed deductive and inductive approach. Comments were systematically organized into drivers (n = 241) which are described in section 4.2.5.1 and barriers (n = 119) which are described in section 4.2.5.2. Drivers and barriers provide more insights on how to connect producers and consumers. This sets the foundations for practical scalable recommendations to fulfil the last objective of this study (objective 4).

A mixed deductive and inductive approach was selected to explore research objective 4. In terms of drivers, four common dimensions related to sustainable local food systems (environmental, socio-cultural, economic, health) were deductively retrieved from the existing literature. Data collected from the survey was coded into keywords and these were used to validate the existing four categories retrieved from the secondary data.

An inductive approach was selected to identify barriers for urban consumers to reconnect with rural communities. This enabled to explore and categorize emerging trends from the qualitative data collected from the survey, understanding common behavioral factors preventing urban consumers from effectively reconnecting with local rural communities. 7 recurring themes were identified, the four most relevant in terms of frequency being 1) lack of information or knowledge, 2) lack of previous experience in visiting rural communities, 3) lack of access to rural communities and 4) negative social perception related to rural communities.

4.3.5.1 Drivers

Qualitative responses related to drivers (n = 241) are systematically analyzed in the table below with a deductive approach.

Table 14 : drivers for urban consumers to reconnect with rural communities, n = 241 (source: authors)

Theme	Frequency	Percentage	Recurring keywords around responses
Environmental	47	19.50%	Reduce emissions in transportation, “green” organic practices observed directly, traceability, biodiversity and ecosystem services preservation, integrated nature-based solutions, low carbon footprint, no chemicals and no pesticides, no plastic, environmental awareness, sustainable agriculture practices, support local food systems, locally grown and eco-friendly produce, short supply chain, clean production
Sociocultural	46	19.09%	Sense of community, authentic and unique rural experience, local traditional dishes, relying on friends’ recommendation to integrate and enhance ecolabels, conscious consumption, consumer trust, consumer loyalty, alignment of consumers’ and producers’ values
Economic	86	35.68%	Cheaper price for consumers, support rural community, contribute to local economy development, improve market access for local communities, short supply chain, resilience strategy for post-Covid-19 recovery, middlemen directly bridging producers and consumers, sustainable purchasing behavior while traveling, sustainable tourism, community business model aligned with sustainability, buy directly online from farmers to shorten the supply chain
Health	62	25.73%	Good, fresh, high-quality, safe, healthy, delicious, seasonal food
Total of responses around themes	241	100.00%	

The main comments related to the environmental theme (n = 47, 19.50%) revolve around reducing emissions in transportation and the adoption of “green” organic practices. Traceability was also considered a key aspect, as importance was given to knowing the “source of food”, to have an “origin guarantee”, support a life cycle approach related to “where” and “how” the food

comes from. Consumers showed a concern for rural biodiversity preservation (expressed as “plant survival” or “supporting natural environments”) and nature-based solutions (e.g., aquaponic solutions in the farms). Other concerns include low carbon footprint, a strong preference for products that do not use chemicals and pesticides, and the need for less (or no) plastic for packaging. Consumers have a high environmental awareness, supporting sustainable agriculture practices, locally grown and eco-friendly produce happening at the upstream of the supply chain with their purchasing choices.

The sociocultural dimension was identified in respondents’ comments (n = 46, 19.09%), since consumers stated how they value a rural authentic sense of space and sense of belonging. Keywords such as “sense of community”, “authentic and unique rural experience”, “local traditional dishes” emerged as positive aspects, leading consumers to be more confident in purchasing products and services from rural communities. Relying on friends’ recommendation to integrate and enhance ecolabels also emerged as a consumer strategy to simplify sustainable choices and can be linked to consumer loyalty towards rural brands. Consumers’ recommendations can substitute or enhance ecolabels in terms of consolidating the trust bond with producers. Consumers feel “more empowered” and involved in a process of value-added creation with farmers. By sharing stories of the community and giving visibility to their local traditions, consumers “start to lead by example, to convince friends and family”. Consumers also appreciate the added value of rural livelihood diversification, where additional non-agricultural experiences are integrated to support artisanal, traditional products, cultural landscapes, and intangible heritage. In conclusion, if consumers’ personal values are well aligned with producers’ mission and vision, this ensures a better consumer loyalty and sociocultural support.

Most comments fall into the economic theme (n = 86, 35.68%). A cheaper price for consumers is needed to ensure not only food security, but also nutrition security for both consumers and producers. On the other hand, consumers seem to understand that producing organic, safe, and healthy food can result in higher production costs and are willing to act as conscious consumers and

adequately adapting their purchasing behavior. A direct relationship of consumers with local communities is translated in many comments as an increased purchasing power for consumers due to cutting the middlemen and shortening the food value chain. It also provides direct market access for local communities. Overall, if the business model developed by the community "resonates with sustainability" or "integrates sustainability into their branding", consumers seem more willing to pay for such products and services.

Finally, it is not surprising that around a quarter of the comments mentioned health-related themes (n = 62, 25.73%). Good, fresh, high-quality, safe, healthy, delicious, and seasonal food purchased directly from rural communities was perceived as "better compared to supermarkets".

4.3.5.2 Barriers

An open-theme inductive identification approach was used to identify barriers preventing urban consumers to link directly with rural communities. Common trends were observed and classified in a total of 119 comments. The main barriers are reported in the table below.

Table 15 : barriers for urban consumers to reconnect with rural communities, n = 119 (source: authors)

#	Themes	Frequency	Percentage
1	Lack of information or knowledge	37	31.09%
2	Lack of previous experience in local communities	28	23.53%
3	Lack of access to rural communities	25	21.01%
4	Social perception of rural communities	17	14.29%
5	Expensive cost of produce	5	4.20%
6	Seasonal produce not available all-year round	4	3.36%
7	Language barrier (for non-Thai speakers)	3	2.52%
Total of comments around themes		119	100.00%

Lack of information/knowledge and lack of previous experience were often intertwined and appeared together in the survey responses, emerging as the main barrier experienced by respondents (n = 37, 31.09%). A lack of previous

experience in local communities acts as a barrier for urban consumers to connect with such communities (n = 28, 23.53%), a more practical indicator than the previous one which is knowledge-based. This is in line with studies arguing for the need to shift SC behavior from an affective one (related to feelings and emotions) to a cognitive one (influencing consumers' knowledge) to effectively create capacity for informed decisions (Muresan et al., 2021).

Lack of access to rural communities (n = 25, 21.01%) was also reported as an important logistics barrier for urban consumers in Bangkok to access remote rural communities. "While it is easier to buy at big supermarkets in Bangkok, it is harder to access food from a rural sustainable source", as "there is no transparent or certified guarantee in terms of traceability". In terms of infrastructure, is difficult for consumers to travel to rural communities. The main limitations include distance, poor infrastructure, and complex logistics arrangements to contact rural communities directly.

Another important socio-cultural barrier was social perception (n = 17, 14.29%). From the disaggregated data, Thai respondents showed a tendency to be less interested in directly supporting rural, seasonal produce (perceived as "poor"), and having less interest in organic produce. As mentioned by one respondent, "most of my friends are Thai who are sadly less interested in supporting rural communities/organic products in general". This was supported by similar comments from other Thai respondents: "most of my friends are not working in the NGO field. They don't really pay attention much to the organic product/sustainable consumption concept", "most of my friends don't care about that". This shows a lack of conscious sustainable urban community, shaping its consumer behavior accordingly. Food was framed as a very personal individual choice, influenced by a variety of external factors, including social perception. A lack of like-minded sustainability-oriented networks in Bangkok was identified as the main barrier to sustain a long-term sustainable consumer behavior and lifestyle. Some respondents also felt "not comfortable with recommending purchasing decisions" as this is perceived as invading personal freedom of choice. As mentioned by another survey

respondent, “I usually recommend only if a friend shows interest”. As already mentioned, socio-economic, cultural, and political external factors influence how consumers behave. A very strong ideological component was identified in the comments, linking consumer behavior to individual identity and social perception, suggesting that food choices are more than mere consumer choices, and can send strong political or ideological messages. An example of such identify-framing labels comes from a respondent identifying himself as a “locavore” who wants to “support small and local businesses” and identifies as someone who is “against big corporations”.

Other barriers with a lower frequency of n < 10 are hereby grouped and explored. One of such barriers was related to the expensive cost coming from directly supporting rural communities of food producers if these are practicing organic agriculture (n = 5, 4.20%). Respondents have mentioned how this “organic lifestyle in urban areas is only accessible for a restricted elite” with the purchasing power to support transparent sustainable local food systems. Another barrier advanced by respondents is the fact that seasonal produce is not available all-year round and there is a risk for the consumer demand to remain unmet. Accessibility and ease of local seasonal products is seen as “problematic” and “not practical on a weekly basis” in 3.36% of comments (n = 4). As reported by a survey respondent, her family “would prefer direct purchase but finding a reliable farm source all year round with variety of products has been a hurdle”. Finally, the language barrier for non-Thai speakers creates a critical communication barrier between consumers and producers (n = 3, 2.52%). Here, mediators were identified by survey respondents as trusted translators, along with tech solutions such as Google Translate. Potential solutions to barriers were also advanced in the open-ended responses of the survey. These include mainly two strategies to overcome barriers.

1. **The first one is to invest in building a stronger reliance on a small circle of trusted intermediaries (mediators, small businesses, farmers’ markets’ operators) to link consumers with local communities.**

2. **The second strategy is to rely on social media platforms to reconnect to food producers, buying directly from them via Facebook, Line or Instagram.**

4.4 Key research findings

Key findings are related to the main research aim and focus on: (1) rural livelihood diversification and (2) sustainable urban consumption. This allows to better explore and categorize community-based agritourism as a rural livelihood diversification strategy to plan sustainable local food systems at the city-regional level.

4.4.1 Community-based agritourism for rural livelihood diversification

The figure below presents the framework of findings to systemize rural livelihood diversification according to the four environmental, sociocultural, economic and health dimensions deducted from the secondary data. In line with the interdisciplinary literature considered (Béné, 2020; Boossabong, 2019; Conti et al., 2021; Nunes, 2017; Sidali et al., 2011; WWF Thailand, n.d.; Zazo-Moratalla et al., 2019), this research explored rural livelihood diversification to localize sustainable food systems with community-based agritourism as a practice model.

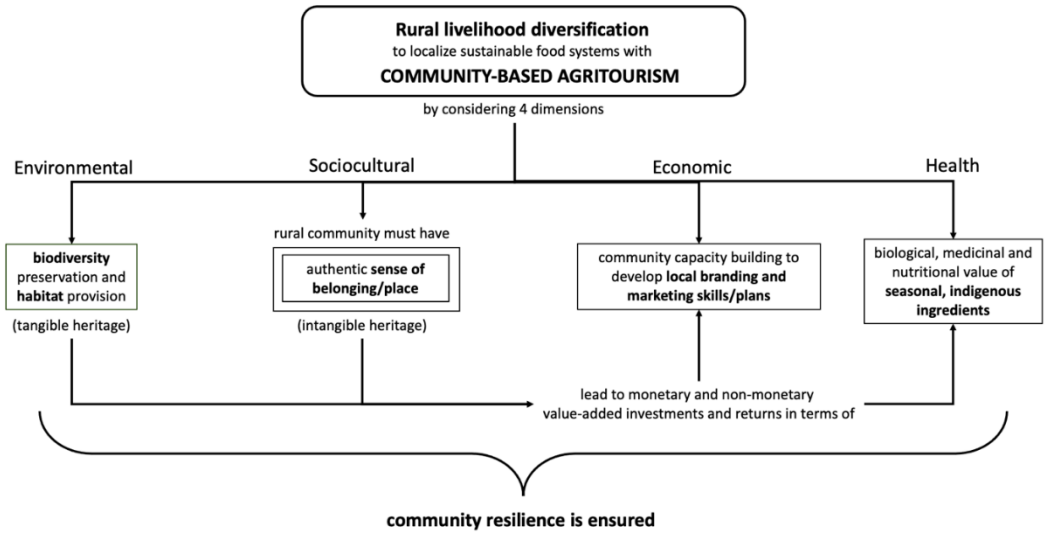


Figure 12 : CBAT practice model to diversify rural livelihood and ensure community resilience (source: authors)

Research findings have important implications in terms of community resilience. As highlighted in the literature, “diversification could reduce the level of disruption in supply chains faced by producers and other actors along the food supply chain” (Béné, 2020, p.812). Rural livelihood diversification can mitigate external shocks and ensure community resilience by planning sustainable local food systems to effectively bridge the urban-rural divide. This study considers diversification not solely as a sustainable rural livelihood strategy, but with a rather overarching holistic approach to achieve community resilience. Complex food supply chains require an integrated approach to plan sustainable local food systems with a participatory approach. Instead of highlighting and implementing isolated “best practices” which could result in context-dependent findings and recommendations, this research advances an integrated rural livelihood diversification framework to localize sustainable food systems.

As represented in the framework, biodiversity preservation and habitat provision are the environmental preconditions for livelihood diversification to effectively support sustainable local food systems. Community leaders have expressed how complex issues at the landscape level can limit their control and access over various local ecosystem services. Indicators 2.F “scenery and cultural landscapes” and 2.G “access and control over land and natural resources” are meant to capture such macro-issues. Land degradation and habitat loss have emerged in the selected communities because of land grabbing and concession to private companies (leading to deforestation). Concrete companies extracting natural resources have lead to irreversible impacts on mountainous landscapes on which communities rely for their livelihood. A lack of disaster risk reduction (DRR) planning at the provincial level (for floods and drought in particular) also emerged from several key informant interviews.

The complex interrelation of tangible (environmental dimension) and intangible (sociocultural dimension) heritage on which communities rely daily can be used as an alternative local asset. This can lead to monetary and non-monetary returns in terms of developing a community-driven brand and more localized

marketing strategies (connected to the economic dimension). Non-monetary, value-added benefits include biological, medicinal, nutritional value of indigenous foods (related to the health dimension). The value-added aspects are measured by indicators 3.B.8, 3.B.9, 3.B.10. These are connected to livelihood diversification and can incentivize community members to preserve ecosystem services. When local ecosystem services are perceived by community members as an asset with the potential to attract visitors and generate alternative streams of income, the community becomes more actively involved in sustainable resource management (G, CL, N).

From a socio-economic perspective, the main source of income for all communities considered by this study is agriculture. Although most community members are aware of the negative environmental externalities of monocropping and other industrial agricultural practices, they still rely on them as a strategy to ensure a stable income flow for their household. Industrial farming practices are usually supported by stronger market demands (A, P); while having a negative impact on the quality of the soil and usually degrading it, they provide a consistent market demand and reliable source of income for rural households. This is why diversifying crops and integrating both staple and cash crops has emerged as a strategy to enhance community resilience in face of external unpredictable systemic shocks (Lin, 2011). This research confirms that by diversifying its streams of income, the community can effectively reach a diverse array of markets and access consumer niches with a higher purchasing power. Integrating both diversification of rural products (such as diversification of crops) and diversification of rural services (such as CBAT or other practices in the farm) can strengthen the role of rural communities in sustainable local food systems, making them more resilient and visible.

The most relevant indicators with a high interpretation score of 3 have been selected from the framework, grouped and presented in the table below. A silo approach to the framework was highly discouraged by experts performing the CVI assessment, instead suggesting for a more trans-disciplinary applied use. The framework can be a conceptual tool to disentangle complex environmental, socio-

economic and health-related issues linked to rural livelihood diversification and sustainable local food systems trends at the city-regional level.

Table 16 : key research findings from the integrated framework of indicators (source: authors)

Legend:	interpretation scored with 1 point for CVI > 0.90, 1 point for observation from all fields, 1 point for both in depth and semi-structured interviews						
Indicators	**Description**	**CVI score**	**Observation**			**Interviews**	**Interpretation (score)**
			Huai Hin Dam	Romyen	Na Yang	Confirmed by in-depth (I), semi-structured (S), or both (I,S)	
1.E	Biodiversity preservation and habitat provision	1	x	x	x	I,S	3
2.D	Community identity and integrity, sense of place	0.94	x	x	x	I,S	3
3.A.3	Cultural tourism supporting local products	0.94	x	x	x	I,S	3
3.B.9	Capacity building and skills development for community members	1	x	x	x	I,S	3

The environmental (indicator 1.E), sociocultural (indicator 2.D) and economic dimensions (indicators 3.A.3 and 3.B.9) were selected due to their high interpretation score (3). These can explain how emerging rural livelihood diversification practices can support sustainable local food systems in city-regional Bangkok.

Overall, sustainable local food systems (LFSs) were considered as beneficial for the environment by all research respondents, as they provide benefits in terms of “biodiversity preservation and habitat provision” (indicator 1.E). By requiring less inputs in terms of water, pesticides, and fertilizers and by reducing transportation miles, a LFS contributes to both local biodiversity preservation and habitat provision. Sustainable LFSs also align with new urban trends, such as “farm-driven cuisine” and “menus supporting local biodiversity”, developed by environmentally conscious chefs and SMEs, aiming to enrich local ecosystems instead of depleting them (P). Such trends support sustainable links between urban food consumption and environmental biodiversity preservation in rural communities, by shortening food value chains (Sosa et al., 2021).

Rural livelihood diversification plans involve two preliminary stages described in the integrated framework as (1) capacity building and local awareness of “community identity and integrity, sense of place” (indicator 2.D) and as (2)

marketing strategies co-developed with a participatory approach. Experts have specified how these stages must be further supported by impact assessments (financial, socio-economic, cultural, environmental). These could help monitoring and evaluating any negative externalities of livelihood diversification strategies on the local communities' ways of life (G, N, A).

Once community-driven practices are developed with a bottom-up approach, they can be supported by external stakeholders in a second stage. "Cultural tourism supporting local products" (indicator 3.A.3) can capture such collaborative multistakeholder practices. In Thailand, rural development has been transitioning from a mere commodity-focused strategy towards an integrated product-service value-added one (Natsuda et al., 2012). The latter involves a joint strategy based on: (1) diversifying target markets in relation to specific regional local communities and (2) using sustainable tourism to evenly redistribute mass tourism flows at the provincial level (G). An example of external stakeholder-supported community diversification can be found in Huai Hin Dam. Here, two main products are being sold: (1) Karen traditional foods made from organically grown vegetables and (2) fabric handicrafts to revive and preserve traditional ecological knowledge. Local, seasonal, native products are linked to situated services for livelihood diversification with a value-added strategy. By capitalizing on their intangible and tangible heritage, local communities such as the one in Huai Hin Dam can create new opportunities for urban consumers to reconnect with authentic biocultural values. These can directly support both sustainable local food systems and community resilience with their purchasing power.

Finally, "capacity building and skills development for local community members" (indicator 3.B.9) relates to the long-term value added created at the local level for community members. It can be achieved with a top-down approach (e.g., facilitated by the Government by delivering seminars and trainings to community members) or with a more horizontal peer-to-peer, farmer-to-farmer knowledge exchange approach (e.g., through PGS or more informal grassroots networks, enabling knowledge sharing and a flow of information).

4.4.2 Community-based agritourism for sustainable urban consumption

The integrated framework below combines both the qualitative and quantitative data collected. Mixed data analysis aims to advance a comprehensive holistic picture related to food-related systemic issues. It merges the previous framework of findings related to the production stage, with the consumption stage, highlighting the urban-rural links. Findings related to the consumption stage highlight the potential to plan sustainable local food systems with a city-regional circular systemic approach, reconnecting urban consumers with rural food producers. This research fits into a broader academic attempt to analyze local food systems from a sustainability and circular economy perspective, integrating elements related to "environmental burden [...], health, food quality, consumers' behavior, producer-consumer relationships, and local economy" (Kiss et al., 2019).

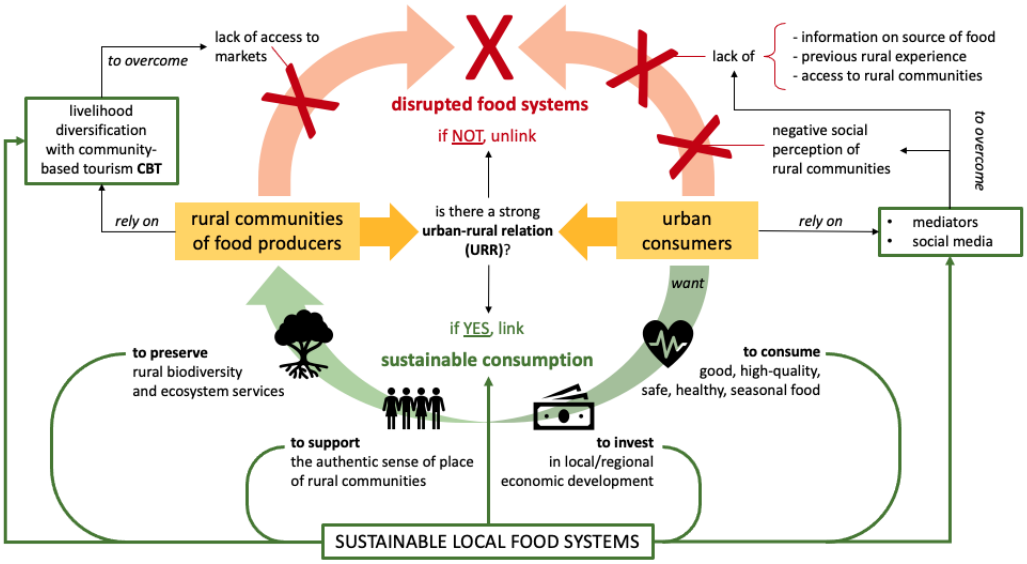


Figure 13 : integrated framework of key research findings (source: authors)

As shown at the center of the figure, a strong urban-rural relation (URR) can determine and influence the nature of such food systems. A stronger URR is associated with sustainable consumption (drivers for URR are represented in the lower half of the graph) and with sustainable local food systems. This is due to the positive association between urban-rural relation and sustainable urban consumer

behavior, which was statistically tested and validated by this research. A weaker level of URR is associated with a consumer-producer unlink, resulting in disrupted food systems (barriers for URR are represented by the red crosses in the top half of the graph). The main barriers for urban consumers to reconnect with rural smallholders were systemized with an inductive thematic analysis and are represented at the top of the figure above. Emerging barriers include: 1) lack of information or knowledge on the source of food, 2) lack of previous experience in visiting rural communities, 3) lack of access to rural communities and 4) negative social perception related to rural communities. Research findings confirm that 80.25% of respondents (n = 321) showcase a weak level of urban-rural relation (URR), which is in line with the literature review. Among respondents, 40.5% (n = 130) show a weak level of sustainable consumer behavior and 37.4% (n = 120) show a moderate one. Only 22.1% (n = 71) show a high level of SC. This data confirms the assumption that a weaker producer-consumer relation translates into weaker sustainable consumption.

Due to the need to simplify the visualization of findings, different ranges of “weak”, “medium” and “strong” levels of both variables have not been integrated in the graphical framework. It must be noticed that these present an additional layer of complexity which can help to better understand the urban-rural connections.

To overcome barriers identified in the top half of the framework, different strategies have been grouped from the qualitative data collected. On the production side, successful practices include rural livelihood diversification related to community-based agritourism (CBAT) practices. Emerging CBAT trends in the Bangkok city-region involve (1) home stay and camping (as 38.25% of respondents did it at least once in the past) and (2) culinary or gastro-tourism (as 37.75% of respondents are doing it on a weekly basis). Non-established practices include eco-learning and volunteering in the farm: 37.75% of respondents never experienced eco-learning in rural communities before, while an even higher percentage of 59.75% never volunteered in a rural community. This could open the opportunity for rural communities to explore alternative markets and different consumer niches.

5. Discussion of research findings

Urban consumers and rural food producers are disconnected due to unsustainable local food systems. The aim of this research is to explore and categorize emerging community-based agritourism practice models as strategies of rural livelihood diversification and sustainable urban consumption to reconnect rural producers with urban consumers through a sustainable local food system. The main research question of this study is: how can community-based agritourism link rural food producers and urban consumers as a rural livelihood diversification strategy? This question was further operationalized into the following sub-questions: (1) What rural livelihood diversification practices are emerging in Bangkok city-region? (2) Why is diversification of rural livelihood a policy strategy for a sustainable food system? The four main research objectives are (1) to advance an integrated framework of indicators systemizing rural livelihood diversification practices (2) to categorize emerging regional practices linking urban consumers to rural communities in Bangkok city-region (3) to test the association between urban-rural relation and sustainable consumption and (4) to advance scalable recommendations to stakeholders on how to mainstream livelihood diversification strategies to support a sustainable food system and community resilience.

Research findings develop a system to consider community-based agritourism as a rural livelihood diversification strategy linking rural producers and urban consumers through a sustainable local food system. The data confirm that among different rural livelihood diversification strategies, community-based agritourism emerges as a practice model in Bangkok city-region, particularly with culinary tourism, gastro-tourism and food tourism products and services. Primary data collected confirm that community-based agritourism leads to various environmental, sociocultural, economic and health benefits. These include (1) biodiversity preservation and habitat provision, (2) the preservation of the authentic sense of place of rural communities, (3) the creation of community capacity building to develop local branding and marketing skills/plans and (4) the recognition of the

biological, medicinal, nutritional value of seasonal, indigenous ingredients. There is a statistically significant association between urban-rural relation and sustainable urban consumer behavior, confirming the importance of linking urban consumers with rural food producers more directly. Research findings are in line with the initial assumptions of this study, confirming that (1) rural livelihood diversification leads to community resilience and that (2) a strong urban-rural relation is associated with higher levels of sustainable urban consumption. This supports the theory that community-based agritourism as a practice model of rural livelihood diversification can be a policy strategy to plan sustainable local food systems.

Research findings are further interpreted and discussed in the following paragraphs structured as represented below. Community-based agritourism is systemized as a rural livelihood diversification practice model to link producers and consumers, ensure sustainable consumption, community resilience, and support sustainable local food systems.

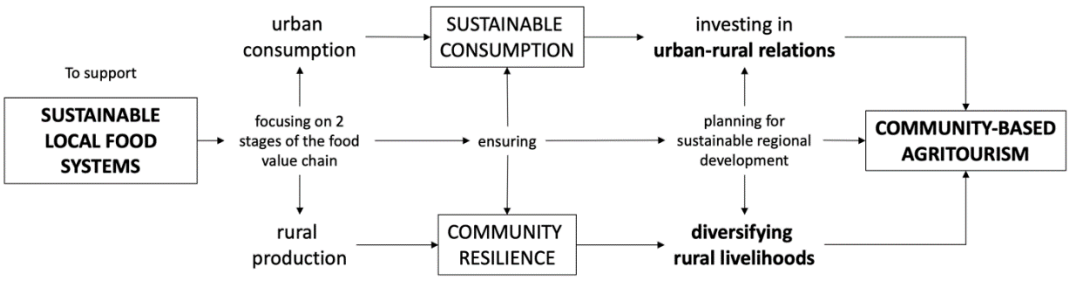


Figure 14 : conceptual interpretation of research findings (source: authors)

5.1 Community-based agritourism to diversify rural livelihoods

Community-based agritourism can diversify rural livelihoods by developing non-agricultural services and reducing the vulnerability of communities to external risks. This is in line with the literature showing that it is increasingly difficult to base rural livelihoods on food production alone. Rural communities are developing a diversified livelihoods approach (Gebru et al., 2018). In all the rural case

studies considered by this research, community-based agritourism practice models emerge as the dominant diversification strategy.

Emerging practices in Bangkok city-region include home stay or camping, eating local traditional food in rural communities, learning about rural intangible heritage (local culture/traditions), eco-learning about rural tangible heritage (organic agriculture), purchasing products directly at the farm, supporting local community-driven businesses, volunteering in the rural community. All these can be categorized under the broad conceptual umbrella of community-based agritourism.

5.2 Community-based agritourism to invest in urban-rural relations

As stated in the literature, the redistribution of income to rural areas is an important mechanism for sustainable regional development, as "redistribution of financial resources from cities to the country and increasing the possibility of rural people generating income are important goals of social policy" (Sznajder et al., 2009). Research results are in line with this body of evidence. This study measures the level of urban-rural relation by assessing how often urban consumers living in Bangkok have been involved in various activities in rural communities. Seven main rural community-led services were identified from the literature review (Broccardo et al., 2017; Iaquinta & Drescher, n.d.; Sznajder et al., 2009) and confirmed as relevant after key informant interviews. Consumers recorded which activities they had been involved in the past as well as how frequently they took part in them. Sustainable urban consumer behavior was also operationalized into a scale and calculated. The correlation between the urban-rural relation and sustainable urban consumer behavior was calculated with the Pearson's Chi-square test for independence.

Statistical analysis indicates that urban consumers who showcase a poor relation with local rural communities tend to have a poor or moderate sustainable consumer behavior. On the other hand, urban consumers who have a moderate or high level of engagement with rural communities tend to have higher levels of sustainable consumer behavior (see Table 6). The p-value calculated from the test confirms that there is a statistically significant relationship between the level

of urban-rural relation and the level of sustainable urban consumer behavior ($p < 0.05$). This proves that community-based agritourism is one of the main rural services with the potential to link urban consumers with rural producers and increase the level of sustainable urban consumer behavior.

5.3 Implications for community resilience and sustainable consumption

Data collected from the production side can explain how emerging rural livelihood diversification practices support community resilience in city-regional Bangkok. Through CBAT, local biodiversity preservation and habitat provision can be ensured at the local level. Both capacity building and local awareness of community identity and integrity can be reinforced as a marketing strategy. Once community-driven practices are initiated with a bottom-up approach, they can be implemented with multistakeholder collaborative practices. This can lead to community resilience, which is defined by this study as the capacity of a certain community to actively respond to any socio-economic, environmental, political, or pandemic stressor by actively integrating external disturbing elements into the core of their own complex and adaptable multifunctional system.

Data collected from the consumption side can explain how there is an association between urban-rural relation and sustainable urban consumer behavior. From the survey for urban consumers, a statistically significant positive correlation was calculated between the sustainable purchasing behavior of urban consumers in Bangkok and their relationship with rural communities ($p < 0.05$). Findings confirm the relevance of the four (1) environmental, (2) socio-cultural, (3) economic and (4) health dimensions to link urban consumers with rural producers. Urban consumers want (1) to preserve rural biodiversity and ecosystem services, (2) to support the authentic sense of place of rural communities, (3) to invest in local and regional economic development and (4) to consume good, high-quality, safe, healthy, seasonal food. The main barriers for urban consumers to reconnect with rural smallholders were inductively structured into themes and include lack of information or knowledge on the source of food, lack of previous rural experience, lack of access

to rural communities and negative social perception related to rural communities. As confirmed by the statistical analysis, weaker producer-consumer relations translate into weaker sustainable consumption behaviors. SC occurs by shortening the food value chain and developing a personalized connection with local rural communities, linking production and consumption more directly.

5.4 Systemizing community-based agritourism to plan sustainable local food systems

This study systemizes community-based agritourism as a practice model to plan and implement sustainable local food systems. More specifically and following the logical flow of the diagram in figure 14, community-based agritourism is systemized as a livelihood diversification practice model to link producers and consumers, ensure sustainable consumption, community resilience, and finally support sustainable local food systems. The four environmental, sociocultural, economic and health dimensions emerged as drivers for consumers to reconnect to producers and for producers to invest in rural livelihood diversification.

Sustainable consumption occurs by shortening the food value chain and developing personalized connections with rural communities, directly linking producers and consumers. When urban-rural links become stronger, it enables urban consumers to create alternative niche markets for producers, in turn improving consumers' access to information on the source of their food. Two strategies were advanced by survey respondents to reconnect urban consumers with rural producers and finally achieve sustainable local food systems. These include using both mediators and social media platforms to enhance the urban-rural links. These can both support the provision of reliable and trustworthy information to consumers, improving their trust and loyalty to community-driven brands.

5.5 Limitations

The scope of this study is limited to two stages of (1) consumption and (2) production of Bangkok's local food systems. The relevant study area includes two target populations: (1) urban consumers living in Bangkok and (2) three rural

communities located in Phetchaburi, Ratchaburi, Suphanburi provinces, surrounding Bangkok. The scope in the selection of case-studies was partially motivated by the limitations imposed by the Covid-19 pandemic in terms of travel restrictions and social distancing measures. Because of the intrinsic complexity of food systems, rural food producers and urban consumers were selected as the main target population, as the stages of food production and consumption are the most relevant for CBAT practices. Nonetheless, after informal talks and pilot fieldworks, it emerged that a vast and complex network of stakeholders are supporting rural strategies for livelihood diversification, making it necessary to interview supporting stakeholders and explore their role in the food system. These range from private sector, public sector, NGOs and CSOs and academia and research institutes. The three local communities selected as case-studies present different socio-cultural and demographic profiles and are all heavily dependent on agriculture for their livelihoods. The socio-cultural and demographic differences ensure that research findings can be scalable in a variety of contexts. Although the stages of food processing, distribution, access, waste management can also be considered with a life-cycle approach (LCA) related to local food systems, these are excluded from the scope of the study. The research scope was narrowed due to the limited time and resources available. Due to the abovementioned limitations and after additional consultation with key informant interviewees to ensure their safety at all research stages, the original research timeline was updated accordingly. Pilot fieldwork in the selected communities was scheduled in August 2020, October 2020, December 2020, April 2021 and later in July 2021 to follow the guidelines provided by the government and in compliance with the availability expressed by community members. Bangkok and surrounding provinces were selected as the main geographical scope of this study.

Methodological limitations also come from language translation and cultural sensitivity issues. As found from the informal talks conducted with experts and gate keepers in rural communities, communication in the English language was generally not possible with farmers. At the same time, the level of Thai language of

the main researcher was limited and did not enable her to collect in-depth qualitative data. To overcome language or cultural barriers preventing from collecting representative data in the field, boundary partners were involved at the very initial stages of this research to ensure a long-term process of trust building with community members. Boundary partners ranged from local NGOs and CSOs to mediators working for social enterprises in Bangkok city-region, willing to connect the researcher to community leaders in the three selected case studies. Two Thai research assistants were selected as translators and provided additional support for the main researcher on the field. Both research assistants had previous professional and academic experience in the fields of sustainable consumption and production and traditional/local ecological knowledge.

Finally, although data was collected from a statistically representative sample size, the sample represents a consumer niche of highly educated, full-time employed respondents. These respondents show a higher purchasing power and do not reflect the more intersectional consumer behavior spectrum in Bangkok city-region. This research limitation opens opportunities for future studies to fill the knowledge gap. Another limitation comes from the need to carry a deeper stakeholder analysis to understand the flow of resources and networks which are connecting urban consumer with rural producers. Such study could lead to institutional analyses to advance relevant regional policy recommendations.

5.6 Recommendations

Based on the key research findings and discussion, this study advances recommendations in the form of four propositions. These focus on emerging practice models of community-based agritourism as strategies to plan sustainable local food systems, adapted from the four key indicators prioritized in Table 16. They also provide a more practical contribution towards achieving the research aim, to explore and categorize emerging community-based agritourism practice models as a strategy for rural livelihood diversification and sustainable urban consumption to reconnect rural food producers with urban consumers through sustainable food systems.

5.6.1 Environmental proposition: using rural natural heritage as a CBAT asset

By requiring less inputs in terms of water, pesticides, and fertilizers and by reducing transportation miles, a sustainable local food system contributes to “biodiversity preservation and habitat provision” (indicator 1.E). Research findings prove how these sustainable local food systems outcomes are aligned with CBAT trends related to gastro-tourism or culinary tourism services. “Farm-driven cuisine” and “menus supporting local biodiversity” are emerging in Bangkok city-region as a strategy to be co-developed with the support of the private sector. Various environmentally conscious chefs and SMEs can enrich instead of depleting local ecosystems, by giving more visibility to regenerative agricultural practices in rural communities and by linking such communities with new consumer niches. Such a trend can support sustainable links between urban food consumption and environmental biodiversity preservation practices in rural communities, effectively shortening food value chains as well (Sosa et al., 2021).

5.6.2 Sociocultural proposition: traditional assets as a CBAT selling point

The complex interrelation of tangible (environmental) and intangible (sociocultural) heritage possessed by a local community can be an alternative CBAT asset. Planning rural livelihood diversification strategies includes two consecutive stages represented in the analytical framework. These are (1) ensuring the preservation of the authentic local sense of belonging rooted in “community identity and integrity, sense of place” as this is crucial for community resilience; and (2) co-developing diversification strategies with a participatory approach involving the local community. In Thailand, rural development has been transitioning from a commodity-focused strategy towards a more value-added strategy focused on the unique sense of place/belonging of local communities (Natsuda et al., 2012). This Thai approach to rural development involves a double strategy: (1) knowledge sharing at the national level to segment target markets for local communities and develop sustainable local food systems and (2) sustainable community-based agritourism as a tool to evenly redistribute the mass tourism at the provincial level and ensure community resilience. An example of how the aspect of authentic sense

of belonging can be translated into community-based agritourism products comes from Huai Hin Dam. Here, two main local products are being sold: (1) Karen traditional meals cooked with organically grown vegetables and (2) fabric handicrafts reviving and preserving the community's indigenous traditional ecological knowledge.

5.6.3 Economic proposition: community-driven rural branding and localized CBAT marketing

The main localized, situated marketing strategies developed by the three rural communities observed include circular, closed-loop, zero-waste branding to sell byproducts, effectively increasing economic revenue while reducing food waste. Moreover, community-driven rural brands focus their marketing strategy on an integrated local product-services approach. Services and products are combined with a situated strategy, positioning the community at the center. This provides resilience in face of external shocks by developing a strong community-driven brand which can target alternative consumer niches and markets.

A community-driven brand can be developed by investing in community members in terms of capacity building and skills development. As a top-down approach, it can be facilitated by the Government or other stakeholders, by delivering seminars and training programs at the local level. As a bottom-up approach, it can take place with a more horizontal peer-to-peer, farmer-to-farmer knowledge exchange, for instance in the form of the Participatory Guarantee System (PGS) or other informal grassroots networks to enable knowledge sharing.

5.6.4 Health proposition: selling point of indigenous foods through CBAT

A value-added benefit and asset for CBAT comes from the unique biological, medicinal, nutritional value of indigenous foods found in rural communities. The value-added aspects of livelihood diversification can effectively leverage community members' sense of accountability to preserve ecosystem services. This means that when the value of seasonal, indigenous, native produce is recognized by community members as an asset, its potential to attract visitors and generate alternative streams of income can motivate the community to implement

sustainable resource management. The value-added is not limited to the unique *flavor profile* of indigenous native ingredients but can also lead to a higher income stream associated with the biological, medicinal, nutritional properties of indigenous local products, if connected to strategic health branding and marketing. Preserving native, indigenous ingredients at the local level can also provide associated environmental benefits and effectively secure community resilience, as native plants have been proven to be more adaptive to climate change.

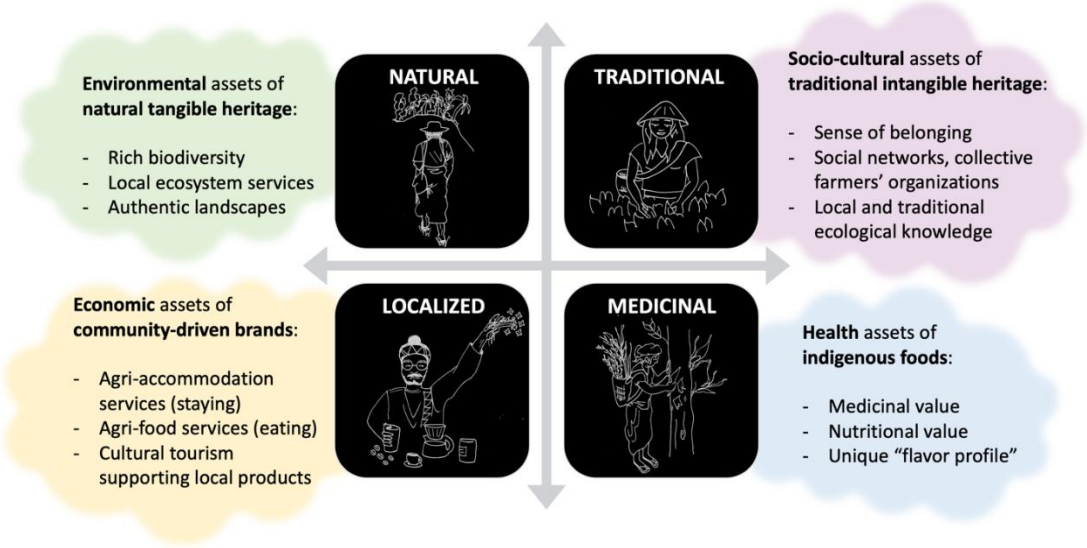


Figure 15 : propositions based on key research findings (source: authors)

In conclusion, community-based agritourism is systemized as a livelihood diversification practice model to link producers and consumers, ensure sustainable consumption, community resilience, and finally support sustainable local food systems. These outcomes can be achieved by strategically planning CBAT packages following the four guidelines presented hereby as propositions to design rural marketing and branding packages (Figure 15). These are based on the four environmental, sociocultural, economic and health dimensions which emerged as drivers for consumers to reconnect to producers and for producers to invest in rural livelihood diversification. The four propositions act as a guiding framework to design sustainable community-based agritourism experiences.

Rural communities can take advantage of specific consumer niches by offering more targeted services and products in terms of CBAT experiences. These can leverage on different assets possessed by the rural communities. First, the environmental proposition advances rural biodiversity and rural habitat as a community-based agritourism asset. Findings show that agritourists care about reducing emissions in transportation, the importance of "green" organic practices observed directly, traceability, biodiversity and ecosystem services preservation, integrated nature-based solutions, low carbon footprint, no chemicals and no pesticides, no plastic, environmental awareness, sustainable agriculture practices, local food systems, locally grown and eco-friendly produces, short supply chains, and overall eco-friendly clean production which does not endanger rural habitats. Secondly, the sociocultural proposition focuses on the authentic sense of belonging/sense of place of rural communities as a community-based agritourism asset. A genuine sense of community, an authentic and unique rural experience, local traditional dishes, can attract more visitors to rural areas by developing experience tourism packages. These have been emerging in the grey and academic literature as a trend to contrast exploitative dominant mass tourism in Thailand. The economic proposition refers to how consumers are willing to support rural communities if they feel like contributing to local economic development and short supply chains. From the survey, conscious sustainable consumption appears to be associated with a strong community-driven marketing strategy. When communities are supported in developing their local brands, niche consumers are willing to use their purchasing power to financially support those brands. Finally, the health proposition refers to the value-added of indigenous, native foods as a CBAT asset. Consumers want good, fresh, high-quality, safe, healthy, delicious, seasonal food and, on top of that, indigenous food can provide an array of biological, nutritional and medicinal health benefits. Communities can leverage on this to develop health-centered CBAT experiences.

6. Conclusions

Our current food value chains are often disconnected and unsustainable. Unlinks in local food systems are particularly visible and manifest as a lack of market access for rural producers and a lack of transparent information on food traceability for urban consumers.

The aim of this research was to explore and categorize emerging community-based agritourism practice models as strategies of rural livelihood diversification. Among established strategies of rural livelihood diversification, community-based agritourism emerges from the literature as an established practice to localize sustainable food systems. Thus, the main research question of this study was: how can community-based agritourism link rural food producers and urban consumers as a rural livelihood diversification strategy? Research findings answered this question by explaining how from the production side, CBAT can lead to community resilience, while from the consumption side, CBAT can lead to sustainable urban consumption patterns. This study confirms that community-based agritourism is an established rural livelihood diversification strategy to link rural food producers and urban consumers through sustainable local food systems in the Bangkok city-region.

Due to the complexity of the main research question, this was operationalized into two sub-questions: (1) what rural livelihood diversification practices are emerging in Bangkok city-region? (2) why is diversification of rural livelihood a policy strategy for a sustainable food system? Sub-question (1) explored what rural livelihood diversification practices are emerging in Bangkok city-region, to ground-truth the secondary data from the literature (which define CBAT as an established rural livelihood diversification practice). Sub-question (2) explored CBAT as a policy strategy for sustainable food systems and, based on key research findings, policy recommendations were advanced. Four research objectives were connected to the two sub-questions: (1) to advance an integrated framework of indicators systemizing rural livelihood diversification practices (2) to categorize emerging

regional practices linking urban consumers to rural communities in Bangkok city-region (3) to test the association between urban-rural relation and sustainable consumption and (4) to advance scalable recommendations to stakeholders on how to mainstream livelihood diversification strategies to support a sustainable food system and community resilience.

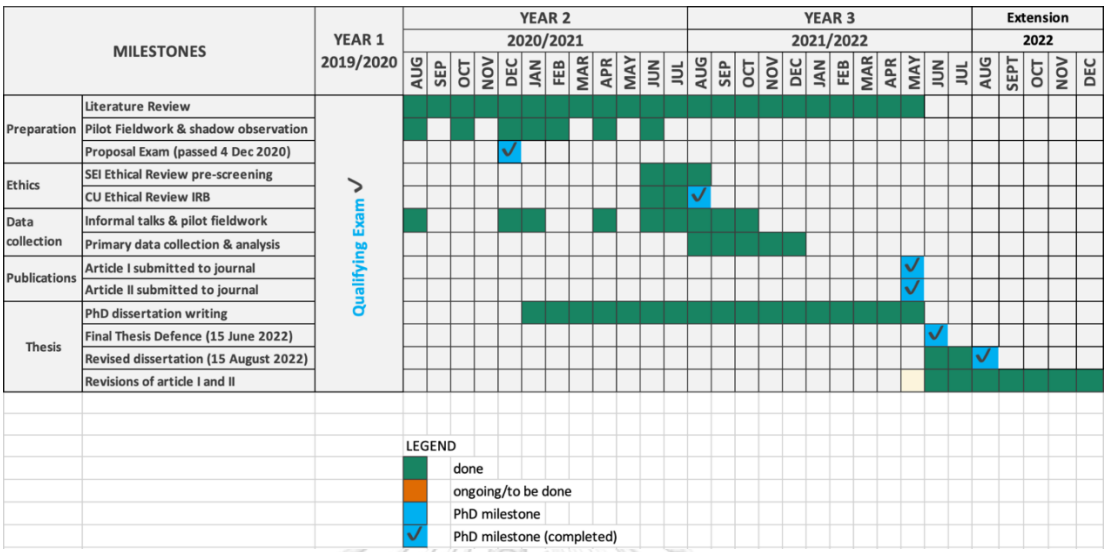
Mixed methods for data collection were selected to answer research questions. These include a review of secondary grey and academic literature, shadow observation in three rural communities, content validity index calculation performed by experts (n = 17), semi-structured multistakeholder interviews (n = 45), in-depth interviews with rural community leaders (n = 10) and a survey questionnaire distributed to a sample of urban consumers living in Bangkok (n = 400). A mixed deductive and inductive approach was selected to analyze secondary data and primary qualitative and quantitative data. CBAT was firstly conceptualized as a rural livelihood diversification strategy, as it emerged from the secondary data. In a second time, CBAT practices were found to be the most established rural livelihood diversification strategy on the ground, in all the three different rural communities considered as case studies by this research. Primary data confirm that among different rural livelihood diversification strategies, community-based agritourism emerges as an established practice model in Bangkok city-region. Culinary tourism, gastro-tourism and food tourism products and services are particularly prominent in terms of how frequently urban consumers have done such activities in the past. Community-based agritourism can also lead to various interconnected benefits, which span from environmental, sociocultural, economic and health ones. These include (1) biodiversity preservation and habitat provision, (2) the preservation of the authentic sense of place of rural communities, (3) the creation of community capacity building to develop local branding and marketing skills/plans and (4) the recognition of the biological, medicinal, nutritional value of seasonal, indigenous ingredients. Data analysis validated that there is a statistically significant association between urban-rural relation and sustainable urban consumer behavior, confirming the need to link urban consumers with rural food producers more directly.

Community-based agritourism is systemized as a livelihood diversification practice model to link producers and consumers, urban and rural areas, ensure sustainable consumption, community resilience, and finally support sustainable local food systems. These outcomes can be achieved by strategically planning CBAT packages following four environmental, sociocultural, economic and health propositions. These emerged as drivers for consumers to reconnect to producers, as findings prove that urban consumers want (1) to preserve rural biodiversity and ecosystem services, (2) to support the authentic sense of place of rural communities, (3) to invest in local and regional economic development and (4) to consume good, high-quality, safe, healthy, seasonal food. The four propositions act as practical research contributions, targeting a multistakeholder audience and supporting the design of sustainable community-based agritourism experiences. By following such recommendations, rural communities can take advantage of specific consumer niches to offer more targeted services and products in terms of CBAT experiences, leveraging on the different local assets they possess. Future research can expand these findings by collecting more data to cover different consumer niches, contributing to delivering a more representative overview of the urban consumption behavior. Furthermore, behavioral policies could be researched, recommended, and later implemented to directly influence sustainable consumption and production patters at the city-regional level.

In conclusion, this research highlights how regional development plans must encourage circular, sustainable local food systems implementing rural livelihood diversification strategies (such as community-based agritourism) in megacities like Bangkok. Such a policy strategy can improve (1) access to markets for rural smallholders and (2) access to information on food traceability for urban consumers, addressing this study's significant problem of disconnected food value chains.

Appendix

Annex 1: Ph.D. research timeline



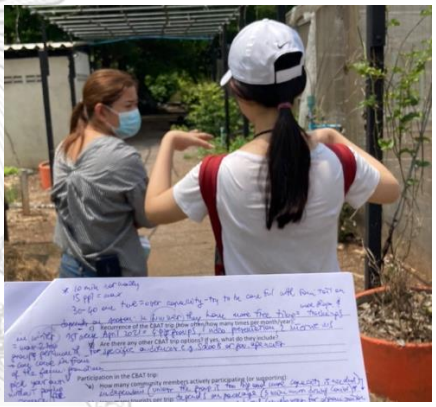
Annex 2: fieldwork shadow observation in Huai Hin Dam community (source: Samuel Castan)




Annex 3: fieldwork shadow observation in Na Yang community (source: author, THT.farm)

Annex 4: fieldwork shadow observation in Romyen community (source: author)



Annex 5: snapshot of the first page of the Organic Tourism package offered by the Romyen farmers group in collaboration with Suan Sampran (source: Organic Tourism)

ORGANIC TOURISM

ท่องเที่ยววิถีอินทรีย์ ตามเส้นทางสามพรานโมเดล

สัมผัสเสน่ห์ฟาร์มจริงที่ยกระดับสู่สมาร์ทฟาร์ม และฟาร์มไก่ไข่อินทรีย์ กลุ่มเกษตรอินทรีย์ร่มเย็นราชบุรี

Organic Agriculture Group of Romyen Ratchaburi

สวนสามพราน และมูลนิธิสังคมสุขใจ นำท่านเปิดประสบการณ์ ด้วยการท่องเที่ยว เรียนรู้ด้านเกษตรอินทรีย์ ในฟาร์มออร์แกนิก เครือข่ายสามพรานโมเดล ที่ใช้หลัก**เศรษฐกิจหมุนเวียน พึ่งพาตนเองได้อย่างยั่งยืน**

ณ ฟาร์มฝันแม่ (บ้านไร่รวงข้าวภูตะวัน)

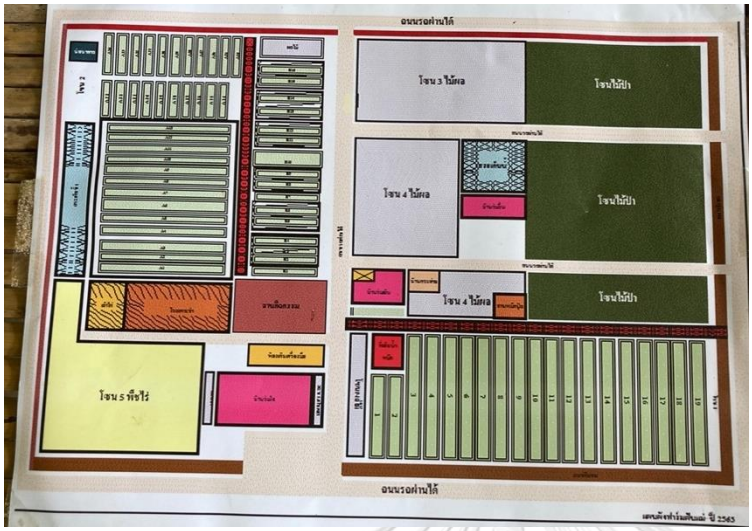
เรียนรู้วิถีการพึ่งพาตนเอง ด้วยหลักเศรษฐกิจหมุนเวียน สัมผัสวิถีชีวิตคนทำอินทรีย์ ชีวิตที่สมดุล และการยกระดับไปสู่การเป็นสมาร์ทฟาร์มเมอร์ ตลอดจนการออกแบบแปลงที่สร้างผลผลิตตอบโจทย์ความต้องการหลากหลายของผู้บริโภค

กิจกรรมแนะนำ

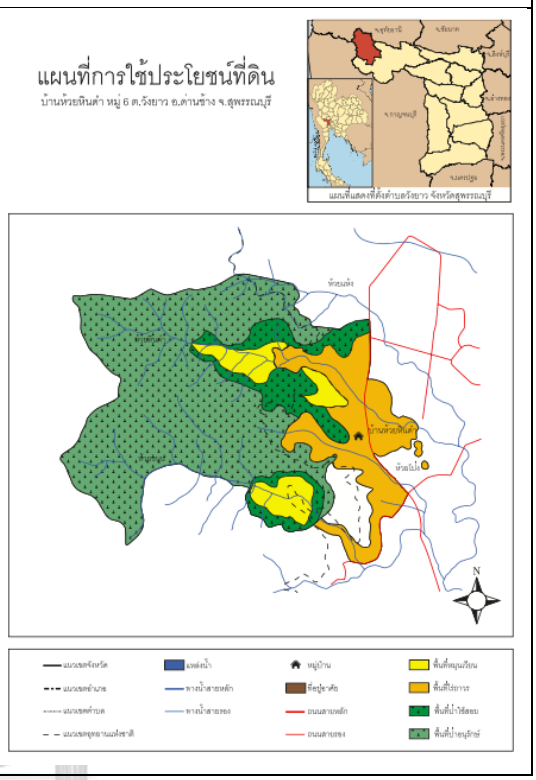
- Workshop เทคนิคการเพาะผักสลัด ทำอย่างไรให้ได้ผลตลอดปี ตลอดจนการปรุงดิน การหยอดเมล็ด และการย้ายต้นกล้าสลัดลงแปลง หรือย้ายลงถุง
- สาธิตการทำปุ๋ย อาหารของผัก
- การปลูกไม้ผสมผสาน และประโยชน์ของสวนป่า

Annex 6: agritourism map of Na Yang community (source: Thonghathai Learning Center)

Annex 7: smart farm design of Romyen Ban Rai Ruang Naw Phatuwan (source: Romyen farmers group)



Annex 8: Huai Hin Dam represented (a) by the community in a local map (source: photographed by author in August 2020) and (b) by RECOFTC NGO (source: RECOFT)

(a)	(b)
	

Annex 9: template of the online survey questionnaire for urban consumers living in Bangkok (English version)

Please complete the survey and provide your email at the end for a chance to be selected and receive a local product from one of the rural communities studied in this research. Your answers will NOT influence whether you will win the prize, as the winner will be randomly selected.

-

Your kind participation is genuinely appreciated.

Your responses will support the joint Ph.D. research entitled "A Practice Model of Community-Based Agritourism to promote Sustainable Food System: A Cross-Sectional Multi Case Study of City-Regional Bangkok, Thailand" carried by Sofia Cavalleri, joint Ph.D. candidate at Chulalongkorn University (Interdisciplinary Department of EDS: Environment, Development and Sustainability) and at the Stockholm Environment Institute (SEI, Asia office). The CU supervisor is Dr. Puntita Tanwattana, senior researcher at the Environmental Research Institute, Chulalongkorn University and the SEI co-advisor is Dr. Clemens Grünbühel, Researcher affiliated with SEI Asia.

The survey is anonymous, therefore nobody, including the researchers conducting the study, will be aware of your identity. By answering it, you are giving the consent for the researcher to use your responses for the purpose of this study. Your answers will remain completely anonymous and unidentifiable. Once you submit the survey, it will be impossible to retract your answer. Please do not include any personally identifiable information in your responses.

This research has been approved by the Research Ethics Review Committee for Research Involving Human Subjects: The Second Allied Academic Group in Social Sciences, Humanities and Fine and Applied Arts, Chulalongkorn University (passing the Ethics Review of Research Involving Human Subjects).

Reference number: #146/64

In case additional information and clarifications are needed, the researcher can be contacted at any time via email at sofia.cavalleri@sei.org or via telephone number +66(0)952517782 (Line ID: @sofilleri).

Additional contacts:

- Dr. Puntita Tanwattana: Puntita.t@chula.ac.th
- Dr. Clemens Grünbühel: clemens.grunbuhel@sei.org
- CU Research Ethics Review Committee for Research Involving Human Subjects: curec2.ch1@chula.ac.th

This survey is divided into 3 sections: section 1 is related to assessing consumers' purchasing behavior in Bangkok, section 2 is related to assessing consumers' relation with rural communities in Thailand and section 3 will finally collect demographic data of respondents.

Thank you for your kind support!

SECTION 1: assessing consumers' purchasing behavior in Bangkok. This section intends to explore your current purchasing behavior as an urban consumer based in Bangkok.

1. What type of food do you normally consume?

- ❑ Mostly local seasonal food grown in Thailand
- ❑ Mostly food grown in Thailand
- ❑ A mix of local food and imported produce
- ❑ I consume mostly food that is imported (from abroad)
- ❑ I am not sure/ I do not know the source of my food

2. Which characteristics do you consider when purchasing food?
(Please rank on a scale from 1 to 5 from 1 being the most important to 5 being the least important)

1 👍 👍 - 2 👍 - 3 - 4 👎 - 5 👎 👎

___ No pesticides

___ Zero-waste packaging (example: less plastic packaging)

___ Cheap price

___ Knowing the farmers directly (example: purchasing at a farmers' market)

___ Eco-labels and organic certifications on the produce

3. How often do you buy organic produce ("organic produce" is hereby broadly defined as anything produced naturally and without any use of pesticides, chemical fertilizers or artificial agents)

☐ Every week
☐ Twice a month
☐ Once a month
☐ Once every two months
☐ Once every six months
☐ Once in a year or less

☐ Never, and I am not interested in this

☐ Not sure

4. How do you know if a product is organic or not? (you can select more than one option)

☐ Eco-labels and organic certification on the produce (example: Organic Thailand)

☐ Corporate social responsibility (CSR) done by an intermediary re-selling enterprise (the values of the enterprise include fair trade and eco-friendly practices)

☐ Talking to the farmer/knowing the organic practices implemented in his/her own farm

☐ Not sure/I don't know

☐ Other: _____

5. Where do you normally buy organic produce? (you can select more than one option)

- ❑ Big supermarkets (Big C, Villa, Tesco, …)
- ❑ Wet markets
- ❑ Farmers markets
- ❑ Online
- ❑ Other: _____

6. Do you purchase products directly from a farmer/farmers?

- ❑ Yes
- ❑ No

7. If you answered yes to the previous question, does this farmer have an official organic certification?

- ❑ Yes
- ❑ No
- ❑ I am not sure/I do not know

8. Have you ever recommended a friend to purchase produce from a rural community you have visited?

- ❑ Yes
- ❑ No

8.1 Explain why/why not: _____

SECTION 2: assessing consumers' relation with rural communities in Thailand. This section intends to explore your current relation with rural communities in provinces around the hinterlands in Bangkok and Thailand in general.

For each of the following activities, specify how often you have done them in the past:

Activities in rural communities	Please specify how often you did this in the past:
Home stay or camping	☐ No, and I am not interested in it ☐ Not yet, but I would be interested in the future ☐ Yes, once in a year ☐ Yes, every few months ☐ Yes, every month ☐ Yes, weekly
Eating local traditional food	☐ No, and I am not interested in it ☐ Not yet, but I would be interested in the future ☐ Yes, once in a year ☐ Yes, every few months ☐ Yes, every month ☐ Yes, weekly
Learning about local culture/practices/traditions	☐ No, and I am not interested in it ☐ Not yet, but I would be interested in the future ☐ Yes, once in a year ☐ Yes, every few months ☐ Yes, every month ☐ Yes, weekly
Learning from the farmers about organic agriculture	☐ No, and I am not interested in it ☐ Not yet, but I would be interested in the future ☐ Yes, once in a year ☐ Yes, every few months ☐ Yes, every month ☐ Yes, weekly
Purchasing products directly from the community at the farm	☐ No, and I am not interested in it ☐ Not yet, but I would be interested in the future ☐ Yes, once in a year ☐ Yes, every few months ☐ Yes, every month ☐ Yes, weekly
Supporting alternative local businesses of community members (not agricultural ones: natural tie-dye, other products/services)	☐ No, and I am not interested in it ☐ Not yet, but I would be interested in the future ☐ Yes, once in a year ☐ Yes, every few months

	☐ Yes, every month ☐ Yes, weekly
Volunteering in the rural community	☐ No, and I am not interested in it ☐ Not yet, but I would be interested in the future ☐ Yes, once in a year ☐ Yes, every few months ☐ Yes, every month ☐ Yes, weekly
Other (please specify):	

SECTION 3: Demographic data. This final section intends to collect general demographic data.

1. Age: in which age group are you?
   - ❑ 18-24 years
   - ❑ 25-54 years
   - ❑ 55-64 years
   - ❑ 65 years and over
2. Nationality:
   - ❑ Thai
   - ❑ Other
3. Gender:
   - ❑ Female
   - ❑ Male
   - ❑ Transgender
   - ❑ Other
4. Employment status:
   - ❑ Employed full-time
   - ❑ Employed part-time
   - ❑ Freelance/contractor
   - ❑ Student
   - ❑ Unemployed
   - ❑ Retired
   - ❑ Other
5. Your educational background:
   - ❑ Primary school
   - ❑ High school diploma
   - ❑ University degree (Bachelor)
   - ❑ University degree (Masters)
   - ❑ University degree (PhD)
   - ❑ Other
6. Please specify where you grew up when you were younger/before moving to Bangkok:
   - ❑ Rural hinterlands
   - ❑ Bangkok/another city
   - ❑ Other
7. Monthly income:
   - ❑ Below 15,000 Baht
   - ❑ 15,001 – 30,000 Baht

- ❑ 30,001 – 45,000 Baht
- ❑ 45,001 – 60,000 Baht
- ❑ Above 60,000 Baht

Annex 10: template of the checklist for fieldwork shadow observation

Data collection form template. Output: shadow observation checklist to be filled in by the main researcher.
(no interaction with any respondent is needed)

This shadow observation checklist is part of the joint Ph.D. research program between Chulalongkorn University (Interdisciplinary Department of EDS: Environment, Development and Sustainability) and the Stockholm Environment Institute (SEI, Asia office) entitled "A Practice Model of Community-Based Agritourism to promote Sustainable Food System: A Cross-Sectional Multi Case Study of City-Regional Bangkok, Thailand" and carried by the PhD candidate Sofia Cavalleri. The CU supervisor is Dr. Puntita Tanwattana, senior researcher at the Environmental Research Institute, Chulalongkorn University and the SEI co-advisor is Dr. Clemens Grünbühel, Researcher affiliated with SEI Asia.

In case additional information and clarifications are needed, the researcher can be contacted at any time via email sofia.cavalleri@sei.org or via telephone number +66(0)952517782 (Line ID: @sofilleri).
Additional contacts:

- Dr. Puntita Tanwattana: Puntita.t@chula.ac.th
- Dr. Clemens Grünbühel: clemens.grunbuhel@sei.org

Research background: This Ph.D. research aims to understand how community-based agritourism and other community-based practices of livelihood diversification can support sustainable links between rural food producers and urban consumers in Bangkok and surrounding provinces. The expected outcomes to be obtained from this research will provide contributions to 1) academia 2) local communities and 3) practical contributions as policy recommendations. This will add to the existing body of knowledge and contribute to achieving the UN Sustainable Development Goals 11.a and 12.b.

Instructions: Background data will be collected on the field through non-invasive data collection methods involving *shadow observation*. The researcher will take part in community activities and record any observation through the checklist below. This form is aimed to be used in the local communities of Huai Hin Dam (in Suphan Buri province), Romyen farmers group (in Ratchaburi province) and Na Yang (in Phetchaburi province). Please notice that no interaction with any respondent will be needed at this stage, therefore no ethical implications arise.

SHADOW OBSERVATION notes	
Date & Time:	
Location:	
Number of participants and stakeholders involved in activities recorded (if applicable):	

Items related to the strategies of rural livelihood diversification which can currently be observed in the local community are ticked (☑) from the checklist below by the researcher during shadow observation on the field. These are classified into "provided/available" or "not provided/not available" as per observation on the field. In case the researcher is not able to observe, the "cannot observe" column will be checked, and more details will be collected at a later stage through in-depth

interviews with stakeholders. Additional remarks, notes and/or evidence is collected in the last column based on shadow observation and collection of material (publicly available videos, photos, hard documents) without any direct sensitive interaction with respondents.

SHADOW OBSERVATION checklist

Items	**Provided/ Available**	**Not provided/ not available**	**Cannot observe**	**Additional remark/notes/evidence**
1.1 Fresh water availability				
1.1.1 Wastewater management system				
1.1.2 Low-tech water management system (with local ingenuity)				
1.1.3 High-tech water management system (with renewable energy)				
1.1.4 Other: ……..				
1.2 Tree forest used by the community for additional services				
1.2.1 Food/fodder use				
1.2.2. Forest products extracted and sold				
1.2.3 Fiber extracted and used for clothing or selling other goods				
1.2.4 Tree forest used for zero waste packaging (ex. banana leaves)				
1.2.5 Other: ……..				
1.3 Community strategy for natural disaster risk management				
1.3.1 Drought (caused by insufficient rainfall)				
1.3.1.1 Soil erosion (connected to drought, leading to loss of plant life)				
Other: ……				
1.4 Soil quality and soil management				
1.4.1 Soil managed with permaculture methods				Note which methods are being used:
1.4.2 Organic compost				Note how the compost is made:
1.4.3 Other: ……..				
1.5 Growing different types of crops/trees in the farm				Note the 5 main crop varieties and trees species as observed in the farm:
2.1 Social networks and collective organization of				Note any publicly available information on the name of the social networks/collective

farmers				organization which the community is part of:
2.1.1 the community is part of a farmers group				
2.2.2 the community is part of a PGS group				
2.2.3 the community is part of a seed exchange network				
2.2.4 the community is part of an informal ancestral network				
2.2.5 Other: ……				
2.2 Intersectional participation of different community members in rural services				For each of these groups, if checked, note which services they are involved in:
2.2.1 women				……
2.2.2 youth				……
2.2.3 elders				……
2.2.4 ethnic minorities				……
2.2.5 disabled				……
2.2.6 Other: ……				……
2.3 Knowledge exchange activities with outsiders				
2.3.1 informational educational activities				
2.3.2 practical workshops				
2.3.3 Other: ……				
2.4 Element of community identity and integrity				Note how this community markets itself/what is its unique value:
2.5 Spiritual values and sacred grounds				
2.5.1 cultural meanings				
2.5.2 values and philosophies				
2.5.3 traditional systems and practices				
2.5.4 Other: ……				
2.6 Scenery and aesthetic landscapes of the community				Note how the community uses its scenery and aesthetic landscapes for marketing purposes:
3.1 Agri-accommodation services				
3.1.1 Intensive agritourism farm stay/home stay				
3.1.2 Extensive on-site volunteer stay				
3.1.3 Agri-camping				
3.1.4 Other: …… ……				
3.2 Agri-food services (for outsiders to eat in the local				

community)				
3.2.1 Traditional home meals served by the local community				
3.2.2 Culinary workshop using local foods				
3.2.3 Tasting of local ingredients/produce				
3.2.4 Other: ……..				
3.3 Cultural tourism and traditional products				Note which local traditions are integrated in the marketing of the services/products:
3.4 On-farm educational services for consumers				
3.4.1 Farm tour				
3.4.2 Permaculture principles/agroecology education				
3.4.3 Smart-farming education (both low tech/high tech)				
3.4.4 Other: ……..				
3.5 Practical Workshops				
3.5.1 Crop rotation workshop				
3.5.2 Soil management workshop				
3.5.3 Seedling workshops/planting seedlings				
3.5.4 Harvesting food in the farm				
3.5.5 Organic fertilizer workshop				
3.5.6 Compost workshop				
3.5.7 Natural tie-dye workshop (with local ingredients collected on-site)				
3.5.8 Workshop with animals at the farm				
3.5.9 Other: ……..				
3.5 Direct sales (of products from the local community to consumers)				
3.5.1 Direct sales of farm products (at the farm)				
3.5.2 Wild food walks in the farm (“pick your own food”)				
3.5.3 Local shop/restaurant/canteen in the local community				
3.5.4 Re-selling point in urban/peri-urban Bangkok				Note where:
3.5.5 Other: ……..				
4.1 Seasonality: the community grows different crops in different seasons				If publicly available, attach picture of seasonal calendar of the community here:
4.2 Native foods: Indigenous				Note foods preserved and used during the

and local foods are preserved by the community				trip/workshops/activity:
4.3 Medicinal foods: the community uses wild/local foods for medicinal purposes				Note how local foods are used for medicinal/health purposes:

Other additional notes to be integrated by the researcher here based on observation:

_____
_____

Annex 11: information sheet for research respondents (English version)

AF 04-07

Information Sheet for Research Respondents

Title of the Ph.D. research: **"A Practice Model of Community-Based Agritourism to promote Sustainable Food System: A Cross-Sectional Multi Case Study of City-Regional Bangkok, Thailand"**

Name of the principal researcher: Sofia Anna Enrica Cavalleri
Position: PhD Candidate
Office address: SEI, 10th Floor, Kasem Uttayanin Building, 254, Chulalongkorn University, Henri Dunant Rd, Pathum Wan District, Bangkok 10330
Home address: CU iHouse (room 2610) 268 ซอย จุฬาฯ 9 Wang Mai, Pathum Wan District, Bangkok 10330 Telephone: Extension +66 Mobile phone 0952517782 E-mail sofia.cavalleri@sei.org

1. You are invited to take part in this Ph.D. as a research respondent. Before confirming to join, it is necessary for you to understand why this research is being conducted and what it involves. Please take the time to read all information provided carefully. If some statements are unclear, please feel free to request further information.

2. This Ph.D. research aims to understand how community-based agritourism can support sustainable links between rural food producers and urban consumers in Bangkok. The benefits and expected outcomes to be obtained from this research will provide both academic contributions, contributions to local communities and practical policy contributions. More data will be collected on the value of community-based agritourism as a rural livelihoods diversification strategy to plan a more sustainable food system (contributing to advance progress in the area of UN Sustainable Development Goals 11.a and 12.b).

3. You are invited to take part in this research because of your role and action in Bangkok's city-regional food system.

4. After you have decided to take part in this research, the researcher would like to interview you with in-depth interview questions about the environmental, social, economic and health implications of community-based agritourism (CBAT) as a rural livelihood diversification strategy in Bangkok and surrounding provinces. The interviews will last from a minimum of 30 to a maximum of 60 minutes.

5. The researcher will ask for your permission to collect information (by taking notes, recording your voice, taking photos and videos) during the interview. The researcher will keep the information about you, together with other information, after the research is completed, as a valuable academic material to be shared. Ethical considerations:

1. The researcher will not publicly disclose any traditional recipes without the informed consent of local community members due to the moral ethical consideration of cultural appropriation.
2. The researcher will not publicly disclose any data related to the ingredients in case sharing these data might be harmful for the local communities (e.g. publicly disclosing recipes using cannabis substances or endangered plants/wild foods).
3. The researcher will not publicly disclose any traditional/cultural aspect without the informed consent of local community members due to the moral ethical consideration of cultural appropriation.

6. Please be aware that the information you will be providing during the interview will be accessible to the general public and your name and position can be cited as the source of information. This is to enhance the transparency, trustworthiness and validity of the data provided. Nonetheless, in case you would like to provide any sensitive information for it to be kept confidential and not to be linked to your name, you can do so by informing the researcher at any point to protect your privacy. In that case, people who will have the right to access your identity will only be the main researcher, supervisor, co-advisor and the Research Ethics Review Committee for Research Involving Human Subjects. Please inform the researcher in case you would like to keep any sensitive information confidential and not associated with you nor your affiliation in the consent form.

7. In the case in which you may feel uneasy or somewhat uncomfortable with any question for any reason, you have the right not to answer those questions. This includes your right to withdraw from the research at any moment without advance notification. Your withdrawal from this research will not affect you in any way.

8. This research will not cost you anything and you will not be financially remunerated for it.

9. If you have any questions, please feel free to contact the researcher at any time, before or after the

Office of the Research Ethics Review Committee for Research Involving Human Subjects: the Second Allied Academic Group in Social Sciences, Humanities, and Fine and Applied Arts

Study Title No. 1466
Date of Approval 10 AUG 21
Approval Expire Date 9 AUG 22

interview.

10. If you are not treated in accordance with the above mentioned information, you can file a complaint to the Research Ethics Review Committee for Research Involving Human Subjects: The Second Allied Academic Group in Social Sciences, Humanities and Fine and Applied Arts, Chulalongkorn University, Chamchuri Building, Room 114, Phayathai Road, Wang Mai Sub-district, Pathum Wan District, Bangkok 10330, Telephone number 0 02218 3210-11, e-mail: curec2.ch1@chula.ac.th.

Study Title No.	146/64
Date of Approval	10 AUG 21
Approval Expire Date	9 AUG 22

Annex 12: information sheet for research respondents (English version)

AF 04-07

แบบฟอร์มข้อมูลสำหรับผู้ตอบแบบสอบถาม

วิทยานิพนธ์ระดับปริญญาเอก "ต้นแบบการปฏิบัติของการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐาน เพื่อส่งเสริมระบบอาหารที่ยั่งยืน: การศึกษาตามขวางจากพหุกรณีในกรุงเทพมหานครและจังหวัดโดยรอบ"

นักวิจัยหลัก: โซเฟีย แอนนา เอนริกา คาวาลเลอรี (Sofia Anna Enrica Cavalleri)
ต าแหน่ง: นักศึกษาปริญญาเอก
ที่อยู่ส านักงาน: สถาบันสิ่งแวดล้อมสต็อกโฮล์ม ชั้น 10 อาคารเกษมอุทยานิน 254 จุฬาลงกรณ์มหาวิทยาลัย ถนนอังรีดูนังต์ เขตปทุมวัน กทม. 10330
ที่อยู่: ห้อง 2610 หอพักเรือนวิรัชมิตร 268 ซอยจุฬาฯ 9 แขวง วังใหม่ เขตปทุมวัน กทม. 10330 โทรศัพท์: +66952517782
อีเมล: sofia.cavalleri@sei.org

1. ท่านได้รับเชิญให้เข้าร่วมเป็นส่วนหนึ่งของการศึกษาวิจัยระดับปริญญาเอกนี้ในฐานะผู้ให้ข้อมูล ก่อนที่ท่านจะตัดสินใจ เข้าร่วมในการวิจัย ขอให้ท่านท าความเข้าใจว่าเพราะเหตุใดจึงมีการศึกษานี้ และการศึกษานี้เกี่ยวกับอะไร กรุณาใช้เวลา อ่านข้อมูลดังต่อไปนี้อย่างละเอียด หากมีข้อความที่ไม่ชัดเจน ท่านสามารถขอข้อมูลเพิ่มเติมได้

2. การศึกษาวิจัยระดับปริญญาเอกนี้มุ่งท าความเข้าใจการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐานว่าจะสามารถสนับสนุนให้ เกิดการเชื่อมโยงที่ยั่งยืนระหว่างผู้ผลิตอาหารในเขตชนบทและผู้บริโภคเมืองในกรุงเทพฯ ได้อย่างไร คุณูปการและผลที่คาดว่าจะได้รับจากการวิจัยนี้มีทั้งต่อวงวิชาการและชุมชนท้องถิ่น รวมทั้งนโยบายที่ปฏิบัติได้จริง โดยจะมีการเก็บข้อมูลเพิ่มเติม เกี่ยวกับประโยชน์ของการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐานเพื่อเป็นกลยุทธ์ในการสร้างความหลากหลายของการ ด ารงชีพในชนทบทเพื่อการวางแผนระบบอาหารที่ยั่งยืน (ซึ่งจะสนับสนุนพัฒนาการในเป้าหมายการพัฒนาที่ยั่งยืนที่ 11.a และ 12.a) ระยะเวลาในการด าเนินการศึกษาวิจัยนี้ (ทั้งการเก็บและการวิเคราะห์ข้อมูล) คือ 1 ปี ตั้งแต่เมษายน 2564 ถึง เมษายน 2565 หลังจากนั้นจะเป็นการเขียนวิทยานิพนธ์เพื่อสรุปผลการศึกษา ตั้งแต่เมษายน 2565 ถึงกรกฎาคม 2565

เลขที่โครงการ	146/64
วันที่รับรอง	10 ส.ค. 64
วันหมดอายุ	9 ส.ค. 65

3. ท่านได้รับเชิญให้เข้าร่วมการศึกษาวิจัยนี้เนื่องจากท่านมีบทบาทและส่วนร่วมในระบบอาหารของกรุงเทพฯและจังหวัด โดยรอบ

4. หลังจากที่ท่านได้ตัดสินใจเข้าร่วมการวิจัยนี้แล้ว นักวิจัยจะขอสัมภาษณ์ท่านในรูปแบบการสัมภาษณ์เชิงลึกเกี่ยวกับ ผลกระทบทางสิ่งแวดล้อม สังคม เศรษฐกิจและสุขภาพของการท่องเที่ยวเชิงเกษตรโดยมีชุมชนเป็นฐานเพื่อเป็นกลยุทธ์ใน การสร้างความหลากหลายของการด ารงชีพของชุมชนในกรุงเทพฯ และจังหวัดโดยรอบ การสัมภาษณ์จะใช้เวลาอย่างน้อย 30 นาทีและสูงสุด 60 นาที

5. นักวิจัยจะขออนุญาตท่านเก็บข้อมูล (โดยการจดบันทึก บันทึกเสียง ถ่ายภาพหรือวิดีโอ) ระหว่างการสัมภาษณ์ นักวิจัย จะเก็บบันทึกข้อมูลอันมีค่าในทางวิชาการจากท่านหลังการวิจัยสิ้นสุด เพื่อน าไปเผยแพร่ต่อไป

ข้อค านึงทางจริยธรรม:

1. นักวิจัยจะไม่เปิดเผยสูตรอาหารท้องถิ่นต่อสาธารณะหากไม่ได้รับความยินยอมจากสมาชิกชุมชน ทั้งนี้เพื่อเป็นไปตามจริยธรรมในการหลีกเลี่ยงการฉกฉวยทางวัฒนธรรม
2. นักวิจัยจะไม่เปิดเผยข้อมูลเกี่ยวกับส่วนผสมในอาหารท้องถิ่นต่อสาธารณะ หากการเปิดเผยข้อมูลดังกล่าวเป็นอันตรายต่อชุมชน *(เช่น เปิดเผยต่อสาธารณะว่ามีการใช้ส่วนผสมจากกัญชา หรืออาหารป่าที่มีสถานภาพใกล้สูญพันธุ์)*
3. นักวิจัยจะไม่เปิดเผยแง่มุมทางวัฒนธรรมหรือประเพณีท้องถิ่นหากไม่ได้รับความยินยอมจากสมาชิกชุมชน ทั้งนี้เพื่อเป็นไปตามจริยธรรมในการหลีกเลี่ยงการฉกฉวยทางวัฒนธรรม

6. โปรดทราบว่าข้อมูลที่คุณให้ในระหว่างการสัมภาษณ์จะถูกเปิดเผยต่อสาธารณะ ชื่อและที่ตั้งของคุณจะถูกอ้างอิงเป็นแหล่งข้อมูล เพื่อส่งเสริมความโปร่งใส ความน่าเชื่อถือและความถูกต้องของข้อมูล อย่างไรก็ตาม หากคุณต้องการให้ข้อมูลที่เป็นความลับซึ่งจะไม่ระบุตัวตนของคุณ คุณสามารถแจ้งนักวิจัยได้ตลอดเวลาเพื่อปกป้องความเป็นส่วนตัวของคุณ เฉพาะหัวหน้านักวิจัย ที่ปรึกษา ที่ปรึกษาร่วมเท่านั้นที่จะรู้ว่าคุณเป็นใคร และคณะกรรมการจริยธรรมของมนุษย์ โปรดแจ้งนักวิจัยหากคุณต้องการให้ข้อมูลที่เกี่ยวข้องในแบบฟอร์มยินยอม

7. หากท่านรู้สึกกังวลหรือไม่สบายใจเนื่องจากค าถามด้วยเหตุใดก็ตาม ท่านมีสิทธิ์ไม่ตอบค าถามเหล่านั้น ท่านยังมีสิทธิ์ ถอนตัวจากการศึกษาวิจัยได้ทุกเมื่อโดยไม่จ าเป็นต้องแจ้งล่วงหน้า การถอนตัวจะไม่ส่งผลต่อท่านแต่อย่างใด

8. การศึกษาวิจัยนี้ไม่มีค่าใช้จ่ายและไม่มีค่าตอบแทนในการเข้าร่วม

9. หากท่านมีค าถามอื่นๆ ท่านสามารถติดต่อนักวิจัยได้ทุกเมื่อทั้งก่อนและหลังการ

เลขที่โครงการ	146/64
วันที่รับรอง	10 ส.ค. 64
วันหมดอายุ	9 ส.ค. 65

สัมภาษณ์

10. หากท่านไม่ได้รับการปฏิบัติดังที่ระบุไว้ข้างต้นนี้ ท่านมีสิทธิ์ที่จะยื่นเรื่องร้องเรียนต่อคณะกรรมการพิจารณาจริยธรรม การในคน กลุ่มสหสถาบันชุดที่ 2 สังคมศาสตร์ มนุษยศาสตร์และศิลปกรรมศาสตร์ ห้อง 114 ชั้น 1 อาคารจามจุรี 1 จุฬ าลง กรณ์ ม ห าวิท ยาลัย แ ข ว ง วัง ใ หม่ เข ต ปทุ ม วัน กท ม . 10330 โ ท รศัพ ท์ 022183210-11 ห รืออีเมล cure2.ch1@chula.ac.th

เลขที่โครงการ	146/64
วันที่รับรอง	10 ส.ค. 64
วันหมดอายุ	9 ส.ค. 65

Annex 13: consent form (English version)

AF 05-07

Consent Form to join as a respondent for the Ph.D. Research "A Practice Model of Community-Based Agritourism to promote Sustainable Food System: A Cross-Sectional Multi Case Study of City-Regional Bangkok, Thailand"

In expressing your consent to take part in this research, you agree with the following terms, in relation to this Ph.D. research:

Title of the Ph.D. research: **"A Practice Model of Community-Based Agritourism to promote Sustainable Food System: A Cross-Sectional Multi Case Study of City-Regional Bangkok, Thailand".** Name of the principal researcher: Sofia Anna Enrica Cavalleri
Contact address: sofia.cavalleri@sei.org
Telephone number: +660952517782

- I **have been notified** of the details concerning the research aim, outcomes and research stages, as well as the risks/dangers/privacy implications and the academic and practical benefits to be obtained from this research. I have thoroughly read the details in the information sheet for the research participants and have received explanations from the researcher so that I clearly understand the information.
- **I agree** to take part in this Ph.D. research, as specified in the information sheet for research participants. Concerning this, I consent to answer questions related to environmental, social, economic and health implications of community-based agritourism (CBAT) and other community practices in Bangkok and surrounding provinces. The interviews will last from a minimum of 30 to a maximum of 60 minutes.
- I **have the right** to withdraw from the research at any time without having to state the reason. This withdrawal will in no way negatively affect me in relation to work, study or other concerns.
- **I consent** for the researcher to keep the data collected in the interview, together with other information, after the research is completed, as valuable academic material. I am aware that the information provided during the interview will be accessible to the general public and my name and position can be cited as a source of information. This is to enhance the transparency, trustworthiness and validity of the data provided. I have been assured that the researcher will treat me in accordance with what is specified in the information sheet for the research participants. Nonetheless, in case I would like to provide any sensitive information for it to be kept confidential and not to be linked to my name, I am aware I can inform the researcher at any point to protect my privacy. In that case, people who will have the right to access my identity will only be the main researcher, supervisor, co-advisor and the Research Ethics Review Committee for Research Involving Human Subjects.
- **If I am not treated according to what is specified in the information sheet for the research participants**, I have the right to file a complaint to the Research Ethics Review Committee for Research Involving Human Subjects: The Second Allied Academic Group in Social Sciences, Humanities and Fine and Applied Arts, Chulalongkorn University, Chamchuri 1 Building, First Floor, Room 114, Wang Mai Sub-district, Pathum Wan District, Bangkok 10330, Telephone number 0 2218 3210-11, e-mail: cure2.ch1@chula.ac.th.
- I have also received a copy of the information sheet for the research participants and a copy of the letter of consent.

I consent for the researcher to collect my name, surname and affiliation, audio recording and to take pictures/videos for research purposes:

☐ I consent
☐ I do not consent
☐ I consent, except (please specify what you would like NOT to be collected): _____

Name, Surname: _____
Signature for informed consent: _____

Office of the Research Ethics Review Committee for Research Involving Human Subjects in Social Sciences, Humanities, and Fine and Applied Arts the Second Allied Academic Group

Study Title No.	146/64
Date of Approval	10 AUG 21
Approval Expire Date	9 AUG 22

Annex 14: consent form (Thai version)

AF 05-07

แบบฟอร์มยินยอมเข้าร่วมเป็นผู้ตอบแบบสอบถาม การวิจัยปริญญาเอก

"ต้นแบบการปฏิบัติของการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐาน เพื่อส่งเสริมระบบอาหารที่ยั่งยืน: การศึกษาตามขวางจากพหุกรณีในกรุงเทพมหานครและจังหวัดโดยรอบ"

เมื่อแสดงความยินยอมเข้าร่วมในการวิจัยนี้แล้ว ย่อมหมายความว่าท่านเห็นด้วยกับข้อความดังต่อไปนี้

การศึกษาในหัวข้อ **"ต้นแบบการปฏิบัติของการท่องเที่ยวเชิงเกษตรโดยชุมชนเป็นฐาน เพื่อส่งเสริมระบบอาหารที่ยั่งยืน: การศึกษาตามขวางจากพหุกรณีในกรุงเทพมหานครและจังหวัดโดยรอบ"**

ผู้วิจัยหลัก: โซเฟีย แอนนา เอนริกา คาวาลเลอรี (Sofia Anna Enrica Cavalleri)
อีเมล: sofia.cavalleri@sei.org
โทรศัพท์: +660952517782

- **ข้าพเจ้าได้รับทราบ**รายละเอียดเกี่ยวกับหลักการและวัตถุประสงค์ของการศึกษาวิจัย ล าดับขั้นตอนต่างๆ ใน การศึกษาวิจัยที่ข้าพเจ้าต้องเข้าร่วม ความเสี่ยงอันตรายหรือผลกระทบเกี่ยวกับความเป็นส่วนตัวของข้าพเจ้า รวมทั้ง คุณูปการในเชิงวิชาการและเชิงปฏิบัติที่จะเกิดขึ้นจากการศึกษาครั้งนี้ ข้าพเจ้าได้ศึกษารายละเอียดในเอกสารประกอบ ส าหรับผู้เข้าร่วมโดยถี่ถ้วนและได้รับค าอธิบายจากนักวิจัยจนข้าพเจ้าเข้าใจข้อมูลอย่างชัดแจ้งแล้ว
- **ข้าพเจ้ายินยอม**เข้าร่วมการศึกษาวิจัยปริญญาเอกนี้ซึ่งมีรายละเอียดดังระบุในเอกสารประกอบส าหรับผู้เข้าร่วม ใน การนี้ ข้าพเจ้ายินดีตอบค าถามเกี่ยวกับผลกระทบทางสิ่งแวดล้อม สังคม เศรษฐกิจและสุขภาพของการท่องเที่ยวเชิง เกษตรโดยมีชุมชนเป็นฐานรวมทั้งแนวปฏิบัติอื่นๆ ของชุมชนในกรุงเทพฯ และจังหวัดโดยรอบ ในกรณีที่มีการ สัมภาษณ์แบบกึ่งโครงสร้างหรือการสัมภาษณ์เชิงลึก การสัมภาษณ์จะใช้เวลาอย่างน้อย 30 นาทีและสูงสุด 60 นาที
- **ข้าพเจ้ามีสิทธิ์**ที่จะถอนตัวจากการศึกษาวิจัยนี้ได้ทุกเมื่อโดยไม่จ าเป็นต้องแจ้งสาเหตุ ซึ่งจะไม่มีผลใดๆ ในทางลบต่อ ข้าพเจ้าในด้านการงาน การศึกษาหรืออื่นๆ
- **ข้าพเจ้ายินยอม**ให้นักวิจัยเก็บบันทึกข้อมูลที่ได้จากการสัมภาษณ์และข้อมูลอื่นๆ อันมีค่าในทางวิชาการหลังการวิจัย สิ้นสุด ข้าพเจ้าตระหนักว่าข้อมูลจากการสัมภาษณ์จะได้รับการเผยแพร่ให้สาธารณะเข้าถึงได้ ชื่อและต าแหน่งของข้าพเจ้าจะได้รับการอ้างอิงเป็นแหล่งข้อมูล ทั้งนี้เพื่อส่งเสริมความโปร่งใส ความ

วันที่รับรอง 10 ส.ค. 64
วันหมดอายุ 9 ส.ค. 65

เชื่อถือได้และความถูกต้องของข้อมูล นักวิจัยได้รับรองแล้วว่าจะปฏิบัติต่อข้าพเจ้าดังที่ก าหนดไว้ในเอกสารประกอบ อย่างไรก็ตาม หากข้าพเจ้าประสงค์ให้ข้อมูลที่มีความอ่อนไหวได้รับการเก็บเป็นความลับซึ่งจะท าให้ไม่สามาระระบุตัวตนของข้าพเจ้าได้ ข้าพเจ้ารับทราบว่า ข้าพเจ้าสามารถแจ้งให้นักวิจัยทราบได้ทุกเมื่อเพื่อปกป้องความเป็นส่วนตัว ซึ่งผู้ที่จะสามารถทราบตัวตนของข้าพเจ้า ได้มีเพียงนักวิจัยหลัก ที่ปรึกษา ที่ปรึกษาร่วม และคณะกรรมการพิจารณาจริยธรรมการวิจัยในคน

- **หากข้าพเจ้าไม่ได้รับการปฏิบติดงัที่ระบุไว้ในเอกสารประกอบสา หรบัผู้เข้าร่วมการศึกษาวิจัย** ข้าพเจ้ามีสิทธิ์ที่ จะยื่นเรื่องร้องเรียนต่อคณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบันชุดที่ 2 สังคมศาสตร์ มนุษยศาสตร์และศิลปกรรมศาสตร์ ห้อง 114 ชั้น 1 อาคารจามจุรี 1 จุฬาลงกรณ์มหาวิทยาลัย แขวงวังใหม่ เขตปทุม วัน กทม. 10330 โทรศัพท์ 022183210-11 หรืออีเมล cure2.ch1@chula.ac.th
- ข้าพเจ้าได้รับส าเนาเอกสารประกอบส าหรับผู้เข้าร่วมการวิจัยและส าเนาหนังสือแสดงความยินยอมนี้แล้ว

ฉันยินยอมให้ผู้วิจัยรวบรวมชื่อ นามสกุล และสังกัด บันทึกเสียง และถ่ายภาพ/วิดีโอเพื่อวัตถุประสงค์ในการวิจัยของฉัน:

- ☐ **ฉันยินยอม**
- ☐ **ฉันไม่ยินยอม**
- ☐ **ฉันยินยอม ยกเว้น (โปรดระบุสิ่งที่คุณไม่ต้องการให้รวบรวม):** _____

ชื่อและนามสกุล: _____
ลงนามเพื่อแสดงความยินยอมเข้าร่วมการวิจัย: _____

เลขที่โครงการ	146/64
วันที่รับรอง	10 ส.ค. 64
วันหมดอายุ	9 ส.ค. 65

Annex 15: certificate of ethics approval from Chulalongkorn University

Office of the Research Ethics Review Committee for Research Involving Human Subjects:
The Second Allied Academic Group in Social Sciences, Humanities and Fine and Applied Arts
Chamchuri 1 Building, Room 114, Phayathai Road, Wang Mai Sub-district,
Pathum Wan District, Bangkok 10330
Telephone number 0 2218 3210-11 E-mail curec2.ch1@chula.ac.th

COA No. 194/2564

Certificate of Research Approval

Research Project Number 146/64 A PRACTICE MODEL OF COMMUNITY-BASED AGRITOURISM TO PROMOTE SUSTAINABLE FOOD SYSTEM: A CROSS-SECTIONAL MULTI CASE STUDY OF CITY-REGIONAL BANGKOK, THAILAND

Principal Researcher Miss Sofia Anna Enrica Cavalleri

Affiliation Environment Development and Sustainability, Graduate School, Chulalongkorn University

The Research Ethics Review Committee for Research Involving Human Subjects: The Second Allied Academic Group in Social Sciences, Humanities and Fine and Applied Arts at Chulalongkorn University, based on Declaration of Helsinki, the Belmont report, CIOMS guidelines and the Principle of the international conference on harmonization – Good clinical practice (ICH-GCP) has approved the execution of the aforementioned research project.

Signature Theraphan Luangthongkum (Theraphan Luangthongkum, PhD.) Chair

Signature (Nunghatai Rangponsumrit, PhD.) Secretary

Research Project Review Category: Expedited Review

Date of approval: 10 August 2021 **Expiry date:** 9 August 2022

Office of the Research Ethics Review Committee for Research Involving Human Subjects: The Second Allied Academic Group in Social Sciences, Humanities and Fine and Applied Arts

Protocol No. 146/64
Date of Approval 10 AUG 2021
Approval Expiry Date - 9 AUG 2022

Documents approved by the Committee

1. The research proposal
2. The researcher CV
3. The information sheets for research participants
4. The informed consent forms
5. The observation form, guide questions for interviews and survey questionnaire

Conditions

1. *The researcher has acknowledged that it is unethical if he/she collects information for the research before the application for an ethics review has been approved by the Research Ethics Review Committee.*
2. *If the certificate of the research project expires, the research execution must come to a halt. If the researcher wishes to reapply for approval, he/she has to submit an application for a new certificate at least one month in advance, together with a research progress report.*
3. *The researcher must conduct the research strictly in accordance with what is specified in the research project.*
4. *The researcher must **only** use documents that provide information for the research sampling population/participants, their letters of consent and the letters inviting them to take part in the research (if any) **that have been endorsed with the seal of the Committee.***
5. *If any seriously untoward incident happens to the place where the research information, which has requested the approval of the Committee, is kept, the researcher must report this to the Committee within five working days.*
6. *If there is any change in the research procedure, the researcher must submit the change for review by the Committee before he/she can continue with his/her research.*
7. *For a research project of less than one year the researcher must submit a report of research termination (AF 03-13) and an abstract of the research outcome within thirty days of the research being completed. For a research project which is a thesis, the researcher must submit an abstract of the research outcome within thirty days of the research being completed. This is to be used as evidence of the termination of the project.*
8. *A research project which has passed the Exemption Review, must observe only the conditions in 1, 6 and 7.*

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doi:10.3828/idpr.2012.20

VITA

NAME	Sofia Anna Enrica Cavalleri
DATE OF BIRTH	16 November 1995
PLACE OF BIRTH	Negrar, Verona, Italy
INSTITUTIONS ATTENDED	Trento University, ILERI, Central European University, University of the Aegean, Lund University, Chulalongkorn University
HOME ADDRESS	via Murari Brà 2, Verona 37136 (Italy)