



# Urban community study on design thinking: A case study of product development in Wat Pracharabuedham community 1–4, Dusit District, Bangkok, Thailand

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## Abstract

The research explored the problems within Wat Pracharabuedham Community 1–4, the urban communities located in the center of Bangkok, towards the application of design thinking. The primary data were collected by the use of questionnaires, interviews, and focus group discussions. The data were used for identifying problems, brainstorming, and developing a prototype for practical product development. For more than 100 years, the communities experienced many communal changes as a result of city development. Due to the diversities in the city, various problems emerged. Those who had been neglected in the communities were low-income older people and volunteers living there. More recently, with the collaboration among community members, ‘Phayayor Green Oil’ became a new hope of the community. Phayayor Green Oil is product used for healing the communities’ elderly, but it could be used for generating extra community income as well. The product had been mutually studied and tested by the Bhatphat Career Group, the community leaders, students of Wat Pracharabuedham School, Suan Sunandha Rajabhat University students, and officers from the department of community development and welfare of the Dusit District Office. The product not only added value to the communities but also promoted their sustainability.

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## Introduction

Today, the problems embedded in the urban communities of Bangkok are a direct result of Thai traditional multifaceted environment, which comprises

multiple social institutions such as households, schools, and temples located in the same areas. Wat Pracharabuedham Community 1–4 (or “Pracharabuedham Temple Community 1–4”) are urban communities located in Dusit District, Bangkok, Thailand. They are also close to the royal palace, parliament house, tertiary institutions, and markets. Their location provides a convenient access to employment opportunities and financial stability much more than other communities. However, in reality,

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Wat Pracharabuedham communities are highly populated areas, making them prone to communal problems such as excessive waste, illegal drugs, social conflicts, poverty, and population aging. Since 2011, the local community members had been demanding urgent solutions to the poverty problems in particular. They had requested extra income generation for unemployed people and older adults in the communities (Institute for Research and Development, 2014; Phukamchanoad & Khudthipong, 2011). This conforms to the interviews with the community leaders in 2020 conducted by Srimongkol et al. (2020); they found that the expenditures of the elderly in these communities were around 600–1,000 baht per month, which they could barely afford.

Due to the rise of aging population problems in urban areas, the majority of the older adults living in Wat Pracharabuedham Community 1–4 were unemployed and lived in a low-income family. Village health volunteers were highly required to support this group of people, but they also faced the problem of poverty as they earned very little from volunteering. Moreover, like many other communities, younger generations in these areas tended to work outside the communities and only used their homes as a shelter, which was opposite to the older generations. As a result, many older people felt neglected and showed a lack of engagement in the decision-making and evaluation processes of the communities. Theoretically, this could affect them to rarely enjoy collective benefits in the communities (Cohen & Uphoff, 1980). This social division problem is also believed to result in many kinds of inequalities such as unequal access to sources of income, basic rights, and other opportunities (Achawanantakul, 2011). Therefore, it is necessary to support this population group to gain a stable source of income and increase their engagement in the communities. More importantly, to understand and develop a community with the elderly population, one must encourage the community with a willpower to make their lives better (The Chaipattana Foundation, 2014). The community members must be able to visualize a higher quality of life and be willing to generate sufficient incomes to look after themselves and support their family. This would diminish income gaps between different generations and add value to the elderly population from their children's point of view.

Thus, in order to increase incomes of older adults and village health volunteers in Wat Pracharabuedham Community 1–4, this research examines the communities by using the problem tree analysis and developing a community product towards the use of design thinking. The problem tree analysis can explain geo-social

mapping, family structures, community organizational structures, health and welfare systems, community events calendar, community history, and individual biographies. These factors allow researchers to thoroughly explore the communities in a fast and efficient manner. They can be also applied to the health care services, bringing about positive attitudes towards community services in the long term (Juengsathienap et al., 2002). Furthermore, studying the communities from social, cultural, economic, and political perspectives can increase public understanding about the nature of the community and its human, artificial, and natural phenomena (Chavalit, 1981; Nijamet, 1985; Poltree, 1987; Techarin, 1981; Thani, 1997). Respectively, towards the use of design thinking (Brown, 2009), a new product was introduced to the older adults in the Wat Pracharabuedham Community 1–4. Initially, the product was expected to benefit the older adults in terms of health benefits and income generation. Another goal was later added to promote uniqueness and special qualities of the community and enhance its image and identity. The product was considered as a tool for community development. It was also aligned with the government policy on local problem-solving purposes.

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## Literature Review

### *Community Study*

A community study is a study which collects phenomena occurring in an urban community. Wat Pracharabuedham Community 1–4 were local communities located in the heart of Bangkok city. In this context, the researcher conducted a ground study for collecting data based on the six senses, comprising sight, hearing, smell, touch, taste, and mind. The collected data represented an honest data of the people living in the community. The data were characterized into human phenomena, artificial phenomena, and natural phenomena (Hongphan, 1983). Systematic data collection tools for social sciences were used for collecting data in consideration of local lifestyle and respectful relationships between the researchers and local community members (Blackshaw, 2010). A community is a source of cultural and social propagation (Arensberg, 1954). To study a community, it is crucial to investigate the community organizational structures, community events calendar, community history, and biographies of community members (Juengsathienap et al., 2002). Retrospectively, interviews, questionnaires, surveys, focus group

discussions, observations, photography, and after-action review (AAR) could be applied for developing community planning, problem-solving skills, and local product design in order to achieve better living conditions in a community (Kaewthep, 2020).

### *Public Participation*

The analysis system for public participation processes in this research consisted of two models, which were 1) proactive participation and 2) reactive participation. The process began with needs identification and role assignment which corresponded to the target group. Additionally, group coordination and camaraderie helped foresee task completion (Phukamchanoad, 2016; Phukamchanoad, 2019). In this scenario, public participation refers to the development of community participation and communal activities. In other words, community members became the stakeholders who made decisions, implemented activities and policies, received collective benefits, and conducted evaluations together with others in the community. Resourcing local intuitions and recruiting individuals' intakes helped stipulate new ideas for the community members. New pathways led to financial gains, social and political success, leveraging the community with higher negotiation power (Cohen & Uphoff, 1977; Erwin, 1976; Kaewthep, 1995; Patanaponasa, 1990; Phukamchanoad, 2009; Reeder, 1974; 1980; Rerkrai, 1981; Saphachokchai, 1995; Wuttimethee, 1993).

### *Community Products*

Morihiro Hiramatsu, governor of Oita Province, Japan, initiated the concept of One Village One Product (OVOP) (or "One Tambon One Product (OTOP)" in Thai). The OVOP concept stresses three ideas as follows. First, 'local yet global' sometimes refers to 'think globally, act locally'. The idea encouraged a production of local products which reflect and preserve local identities and community images. Second, a product shall stipulate self-reliance and creativity within the community. Third, human resources should be developed to influence the community members to produce new things (Community Development Department [CDD], Ministry of Interior of Thailand, 2015; Jaiborisudhi, 2013). Therefore, a community product must reflect community thinking, local services, environmental preservation, local knowledge, local tourism, local culture and traditions, and knowledge exchange in and between communities. Storytelling is also an important

aspect of these kinds of products, and having a good story means a higher value added to a community product (Phukamchanoad & Palapin, 2020; Phukamchanoad & Yodchim, 2020; Thailand Creative & Design Center [TCDC], 2013).

### *Urban Community*

According to the 2012 regulations on communities and community committees implemented by the Bangkok Metropolitan Administration (BMA), there are 6 types of communities, including highly populated communities, urban communities, suburb communities, community housings, high-rise communities, and residential communities (Royal Thai Government Gazette, 2013). There are also other types of communities such as slums, condominium communities, apartment communities, military communities, temple communities, market communities, business communities, homeless communities, night communities, and so on (Phukamchanoad, 2018). Regarding urban communities, the growth of the capital city, the people's way of life, and their consumption activities all signify a fashionable, urban lifestyle. There is a high diversity in people residing in an urban community such as the rich, the poor, and the homeless people. A very distinct feature of urban communities is selfishness and hectic lifestyle. Urban people eat quickly and focus on making a living. Money is their essence of life and living (Phukamchanoad, 2012). There are many types of food providers ranging from fancy restaurants, coffee shops to portable food stalls in an urban community (Nirathorn et al., 2007). Therefore, 'urban living' refers to a populated area of living, with an easy access to water, electricity, and transportation. Additionally, urbanization tremendously affects people living in the areas, especially the elderly. Commuter labor force has increased due to the job opportunities in urban towns. This group of workers has better knowledge and access to technologies than the older adults, so they eventually replace the old-age workers. The unemployment rate among the elderly inevitably rises (Office of Knowledge Management and Development (Public Organization) [OKMD], 2015). In summary, an urban community in a big city demonstrates high diversities in terms of social, cultural, traditional, and artistic ways of living and thinking, with the access to water and electricity. It is perceivable that an urban community is much more complex and divergent compared to a rural community. Perhaps, the clearest difference between them is that an urban community manifests more materialistic values, while a rural

community places high values on the spiritual and sentimental lifestyle. Life in an urban community is also particularly difficult for the elderly population. In this study, Wat Pracharabuedham Community 1–4, which were urban communities located in Dusit District, Bangkok, were explored. The communities had been facing problems related to poverty and elderly population, making it suitable for being used as the research settings.

### *Elderly Population*

According to the Organisation for Economic Co-operation and Development (OECD, 2022), the elderly population refers to individuals aged 65 and over. The ratio between the elderly population and the working age population is called the elderly dependency rate. The conditions of elderly population are varied both within and across countries and, sometimes, by rural and urban communities. Older people are usually clustered in a few areas within each country, particularly urban areas. This affects some regions to confront numerous socio-economic challenges due to aging population problems. In Thailand, the Elderly Act B.E. 2546, Article 3, defines the elderly as people aged 60 years old or over (Government Gazette, 2003). In 2019, there were 11.6 million older adults in Thailand, which accounted for 17.5 percent of the total population. There were also 7 million older people aged between 60–69 years old (young-old age group) at that time, making up 60.4 percent of the total elderly population (Foundation of Thai Gerontology Research and Development Institute, 2020). A study conducted by Soonthornchawakan (2018) showed that the income inequality within the elderly population in Thailand was higher than that of the younger and prime aged worker groups. Hence, it is necessary to diminish the income inequality among the older people by establishing an employment system which allows the elderly to continue working or elevates their productivity. Basic occupations such as contractors, freelance workers, and small business owners can help relieve the elderly and their families from poverty. Moreover, an establishment of a local community board and the management team representing its people is crucial for supporting the elderly population in a community (Phukamchanoad, 2009). In this research, the research participants included all older adults aged 60 and over in Wat Pracharabuedham Community 1–4.

### *Design Thinking*

The term ‘design thinking’ was first introduced in the 1990s. Brown and Martin (2015) explained in the Harvard Business Review that design thinking is a human-centered approach which incorporates collaboration from individuals with different levels of creativity, areas of expertise, and occupations. Moreover, Murray Cox (2016) added that design thinking is a human-centered, collaborative, action-orientated approach applied to understand, reframe and solve problems. It is a process of thinking which addresses how a product or service fulfills the customers’ demands. In Thailand, ‘design thinking’ is a creative problem-solving method focusing on individuals and their hands-on experiences and experiments (Isarasena Na Ayudhya & Triratanaphan, 2017). It is a rational process which incorporates genuine problem identification and problem-solving skills. Design thinking requires interpretations and multidisciplinary knowledge. It produces innovative thinking and perfection (Phukamchanoad & Palapin, 2021). In this research, the design thinking is a 5-step process developed by Stanford D. School. The process starts from ‘empathy’ or to ‘empathize’ or make an honest understanding about a target group. Second, it is vital to ‘define’ the problems. Third, ‘ideas’ should be generated or brainstormed. Fourth, a ‘prototype’ should be developed. Lastly, the developed prototype must be ‘tested’ (Cox, 2015; Dam & Siang, 2021; Isarasena Na Ayudhya & Triratanaphan, 2017; Stanford D. School, 2021; Vianna et al., 2012).

The application of design thinking in this research is based on Bandura (1986)’s Social Learning Theory. The theory explains that human beings learn from constant interactions between one another and the environment. Each person learns towards modeling or, in other words, imitation. This process occurs after a person observes the model’s behavior, environment, outcomes, storytelling, and reliability. The learning process consists of 4 stages, including: (1) attention; (2) retention; (3) motor reproduction; and (4) motivation. When applying the theory into practice, it can be said that a community may go through the social learning process which, in turn, creates new careers for the community members. The positive outcomes demonstrated by Wat Pracharabuedham Community 1–4 can further contribute to not only the communities themselves in other aspects but also other communities. Besides, the learning process occurring in a community is collaborative learning or community learning.

Community members would learn together towards a common goal, being connected and developing themselves rapidly and effectively.

## Methodology

This research employed a mixed-methods approach which incorporated both qualitative and quantitative research methodologies. The research placed a high emphasis on the use of Participatory Action Research (PAR) method as well as the Community-Based Research (CBR) method. Participatory observation was also applied. Four urban communities were selected as research settings, which included Wat Pracharabuedham Community 1; Wat Pracharabuedham Community 2; Wat Pracharabuedham Community 3; and Wat Pracharabuedham Community 4. Before conducting the field study, the researcher had organized a community forum where stakeholders were gathered at the beginning of the process. The stakeholders consisted of community leaders, the community development team, Pracharabuedham School teachers, the Bhatphat Career Group, older people, volunteers, and the Bhatphat Youth Group for social development management of Suan Sunandha University. To solve the community issues, the data collection process was designed in correspondence with the five steps of the design thinking process as follows.

### Step 1: 'Empathize'

To empathize with the community members, four methods were incorporated in this field work as described below.

1. 'Community surveys' were conducted to study the contexts of the four communities. The contexts included the paths leading to the communities, the community histories, residential establishments, finance and trade, local culture, governance, and community development.

2. 'Interviews' were conducted with youth groups, unemployed workers, housewives and stay-at-home husbands, older adults, health care volunteers, monks, teachers, and Wat Pracharabuedham community leaders. The data collection tools were unstructured interview questions which employed collaborative problem-solving technique. The interviews were analyzed by the content analysis. The interpreted data were later used for developing a community product of the Wat Pracharabuedham communities.

3. 'Participatory observation' was applied by which the researcher collected data three times a day both on weekdays and weekends to observe the people's ways of life in the communities.

4. 'Questionnaires' were designed to collect data from the target group which consisted of 30 older people and village health volunteers. From the highest to the lowest, the scales of rating scores were 5.20–6.00; 4.36–5.19; 3.52–4.35; 2.68–3.51; 1.84–2.67; and 1.00–1.83 (Silcharu, 2017). Afterwards, descriptive statistics, arithmetic mean, and standard deviation were used for statistical data analysis.

### Step 2: 'Define'

The researcher analyzed the cause of the community problems in order to define and identify the problems using the problem tree analysis.

### Step 3: 'Ideate'

Ideas were generated during focus group discussions. The focus group participants included: (1) officers of the Department of Community Development and Social Welfare, Dusit District Office, Bangkok; (2) Wat Pracharabuedham School teachers; (3) leaders of Wat Pracharabuedham Community 1–4; (4) village health volunteers (VHVs); (5) Dusit community network members; (6) members of Bhatphat Youth Group of Suan Sunandha Rajabhat University; and (7) members of Bhatphat Career Group of Wat Pracharabuedham.

### Step 4: 'Prototype'

This stage was the development of a 'prototype', an ideal community product which resolved health problems of the elderly population in the communities and generated extra incomes for the communities.

### Step 5: 'Testing'

The last stage was 'product testing'. The activity followed the production of a herbal product and its prototype manufacturing. The communities and their stakeholders all engaged in the testing process. The test participants included community leaders, members of Bhatphat Career Group of Wat Pracharabuedham Community 1–4, VHVs, and youth group members from Wat Pracharabuedham School, Dusit District, Bangkok.



Furthermore, all activities were conducted under the precaution of COVID-19 measurements and prevention. The measurements included:

1. Everyone wore double masks, with at least a layer of a surgical mask.
2. Surgical masks had to be worn at all time during the activities.
3. Everyone followed a 2-meter social distancing protocol.
4. Eating and drinking were only permitted in an open space with at least 2-3 meters away from other individuals.
5. Conversation could not take place anytime a mask was not worn.
6. Everyone regularly washed their hands.
7. The use of personal pens was required.
8. The number of participants was limited.
9. Coughing and sneezing were allowed only when surgical masks were worn.

### *Scope of the Study*

This research focused on the problem-solving of urban communities towards the application of design thinking. Therefore, Wat Pracharabuedham Community 1–4, which are urban communities in Bangkok, were selected as research settings. In this study, only two major problems of urban communities, which were poverty and aging population, were the focus. The study also emphasized the use of design thinking as the problem-solving method for the urban communities' problems. The design thinking technique was applied to the product development process, with the purpose of community product creation. The developed community product, Phayayor Green Oil, was the solution to Wat Pracharabuedham Community 1–4's problems by which it not only healed the elderly but also generated extra community incomes.

## **Results and Discussion**

The findings in this study were categorized into 5 sub-topics, which included: (1) urban community study; (2) Wat Pracharabuedham Community 1–4's problem tree analysis; (3) design thinking; (4) herbal products and community product prototype; and (5) hands-on product testing. The details are narrated as follows.

### *1. Urban Community Study*

Wat Pracharabuedham Community 1, 2, 3 and 4 are urban communities located in Dusit District, Bangkok. Their history could be traced back more than 100 years. The following timeline illustrates their history in detail.

B.E.

- |             |   |
|-------------|---|
| Before 1897 | At that time, there was only a lowland area with one canal called the Bangkrabue Canal. There was only a village where people mainly made a living through rice farming and fruit farming, especially durian and coconut farming. The village also practiced buffalo farming; hence, it was named as "Bangkrabue Village" or the Buffalo village. |
| 1897        | "Wat Bangkrabue" of the Bangkrabue Temple was established and later changed its name to Pracharabuedham Temple.   |
| 1932        | Prachabarn School of Nakonchaisri Road was established.   |
| 1953        | Prachabarn School was renamed as Pracharabuedham School.  |
| 1973        | A concrete bridge was built in place of the old Premprahcakorn wooden bridge. The bridge acted as the entrance road to Wat Pracharabuedham.   |
| 1987        | The community population sharply grew as a result of relocation; the community leaders, therefore, established the Pracharabuedham Community to solve community problems and maintain social order.   |
| 1995        | The community was divided into three smaller ones which were Wat Pracharabuedham Community 1, 2, and 3.   |
| 1997        | Wat Pracharabuedham Community 4 was established. This latest community, Wat Pracharabuedham Community 4, was a flat community.  |

Additionally, observations, which took place three times a day from Monday to Friday and on Saturday to Sunday, revealed that the older adults living in the communities often made merit at 5 a.m. at Pracharabuedham Temple. Then, at 6 a.m., younger adults started leaving home via public transports, private cars, and motorcycles, in order to go to work outside the communities. Around 8 a.m., older adults

and grandparents walked their grandchildren to Wat Pracharabuedham School. Afterwards, businesses and activities within the communities started to take place between 9 a.m. to 4.30 p.m. The Wat Pracharabuedham flea market was opened from 2 p.m. to 8 p.m. every Wednesday and Sunday. From 5 p.m. to 7 p.m., young adults often returned home from work, and from 8 p.m. to 5 a.m. they relaxed with their families at home. Other geo-social phenomena found in Wat Pracharabuedham Community 1–4 are listed below (Figure 1).

Overall, the level of public participation in various activities within Wat Pracharabuedham Community 1–4 was rated at a medium level ( $\bar{x} = 3.87$ ). Considering each aspect, the community members engaged in all activities at a medium level. Their engagement in the following aspects was ordered from the highest to the lowest: awareness and understanding ( $\bar{x} = 4.23$ ), evaluation ( $\bar{x} = 4.00$ ), problem identification ( $\bar{x} = 3.87$ ),

collaboration and participative implementation ( $\bar{x} = 3.85$ ), mutual responsibility ( $\bar{x} = 3.76$ ), mutual benefits ( $\bar{x} = 3.75$ ), and mutual analysis ( $\bar{x} = 3.67$ ). Table 1 illustrates the level of public participation in community development activities in Wat Pracharabuedham Community 1–4.

## 2. Problem Tree Analysis of Wat Pracharabuedham Communities

The study of Wat Pracharabuedham Community 1–4 started with problem identification. Regarding this aspect, there were three types of inequalities found in the communities, which were income inequality, herbal knowledge inequality, and access to state provision inequality. However, the most evident pain point was the needs to stipulate income growth. The problem tree analysis of the communities is displayed below (Figure 2).

Residential Establishment	Finance and Trade	Culture	Governance	Community Development
High diversity of residential types	Multiple trading stores	- Respect towards the elderly	Community leaders	- Establishment of Bhatphat Career Group in Wat Pracharabuedham Community 1–4
- Commercial buildings	- Cooked to order restaurants	- Morning merit making	- Chairman	- Children's Day activities
- Two-storey wooden houses	- Small grocery stores	- Holy day merit making	- Vice-chairman	- Free health examination provisions
- Half concrete and half wooden houses built within very close proximity with one another	- Food stalls	- New year merit making	- Secretary	- Canal cleaning
	- Laundry shops	- Thai new year merit making	- Bookkeeper	
	- Barbers		- Registrar	
	- Upholstery shops		- Public relations officers and other necessary positions	
	- Tailors			
	- Fruit and Vegetable stalls			
	- Printing presses			
	- Pharmacies			
	- Ices stores			

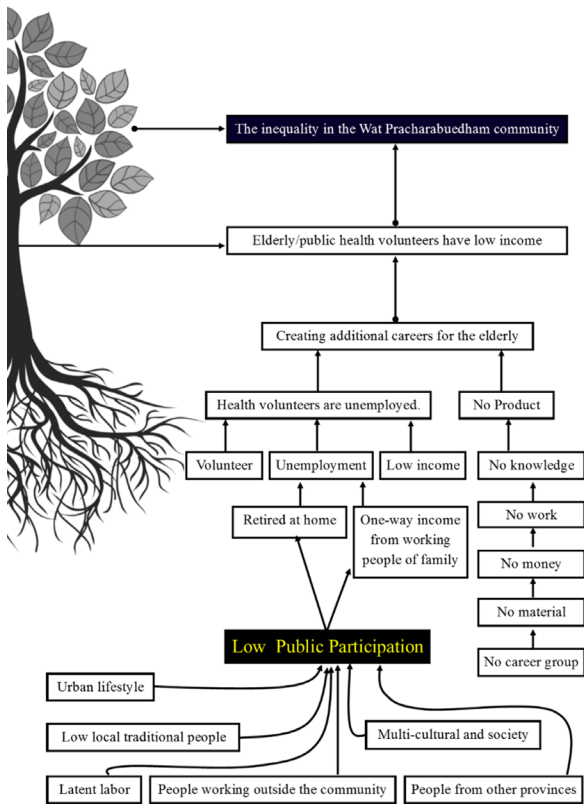
**Figure 1** Phenomena occurring in the context of urban community

Source: obtained from primary data

**Table 1** Level of public participation in Wat Pracharabuedham Community 1–4's community development activities

Public Participation Activities	Mean	SD	Level
Awareness and Understanding	4.23	1.19	Medium
Problem Identification	3.87	1.33	Medium
Mutual Analysis	3.67	1.33	Medium
Collaboration and Participatory Implementation	3.85	1.51	Medium
Mutual b = Benefits	3.75	1.49	Medium
Mutual Responsibility	3.76	1.38	Medium
Evaluation	4.00	1.45	Medium
Total	3.87	1.31	Medium

Source: obtained from primary data



**Figure 2** Problem Tree Analysis of Wat Pracharabuedham Community 1–4

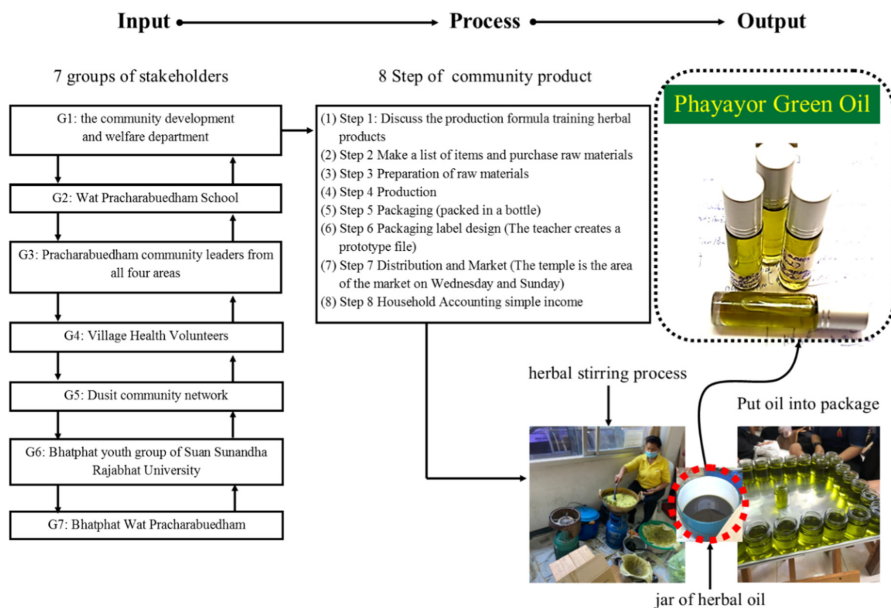
Source: Developed from the primary data

### 3. Design Thinking

The focus group discussions allowed design thinking to take place among the stakeholders. The stakeholders consisted of: (1) the community development and welfare department officers; (2) Wat Pracharabuedham School students and teachers; (3) leaders of Wat Pracharabuedham Community 1–4; (4) village health volunteers; (5) Dusit community network members; (6) members of Bhatphat Youth Group of Suan Sunandha Rajabhat University; and (7) members of Bhatphat Career Group of Wat Pracharabuedham Community. The results obtained from the discussions revealed that, first, the work with urban communities needed consistent collaboration between potential group members. This led to higher work efficiency and greater quality of knowledge. Second, the production of the community product generated extra incomes for the people living in the communities. Third, the most valuable asset in the community development process was the elderly population. At the age of retirement, some older adults had gained huge experiences in various types of jobs such as community board members, businessmen and businesswomen, and group leaders.

### 4. Community Product Prototype

The analysis reciprocated by the seven groups of stakeholders proposed the development of Phayayor Green Oil, the first prototype of community products. The development process is illustrated below (Figure 3).



**Figure 3** System of the community product prototype process

Source: Developed from the primary data



### 5. Prototype Testing

The prototype was tested with a small group of people to examine the effectiveness of the Phayayor Green Oil. The product was tested by foot masseurs living in the Wat Pracharabuedham communities, VHVs, Bhatphat Youth Group and Career Group members, students and teachers of Wat Pracharabuedham School, and social development students of Suan Sunandha Rajabhat University.

The research results showed that public participation was a key to occupational development in the communities. The local way of life was the foundation of the communities' economic system, which did not prioritize profit-making or the maximization of profits (Community Development Department [CDD], Ministry of Interior of Thailand, 2019). The development of the community product, which could increase the urban elderly's incomes, was a result of the elderly's genuine ambition and demand for their own occupational development. Most importantly, opportunities were provided to the elderly to play a significant role in the community development. For instance, they were involved in the planning process and received vocational trainings. This is similar to the case of One Tambon One Product (OTOP) fairs, where older people were regularly invited or recruited to sell their products or do part-time jobs in the local communities by the government agencies (Phangnaren, 2021). The roles of community leaders and representatives of major career groups were highly crucial since they were responsible for raising awareness of the importance of collaboration and occupational development (Saybunjaung & Banjongthititan, 2021).

In comparison with the previous studies, the results of this research are in line with a study conducted by Phukamchanoad and Khudthipong (2011). The prior research aimed to reduce social inequalities in Wat Pracharabuedham Community 1–4, Dusit District, Bangkok, by using the Appreciation-Influence-Control (AIC) technique. The AIC technique is similar to design thinking by which it emphasizes the participation among stake holders in planning projects. As a result of the study, two government projects were implemented, which were an occupational training program and a Thai traditional medicine health promotion program. The majority of the local people voted for the integration of the two programs, leading to the new career in the local communities. The applied Thai traditional massage, based on the Suan Sunandha-style Thai traditional massage, had become a new source of community

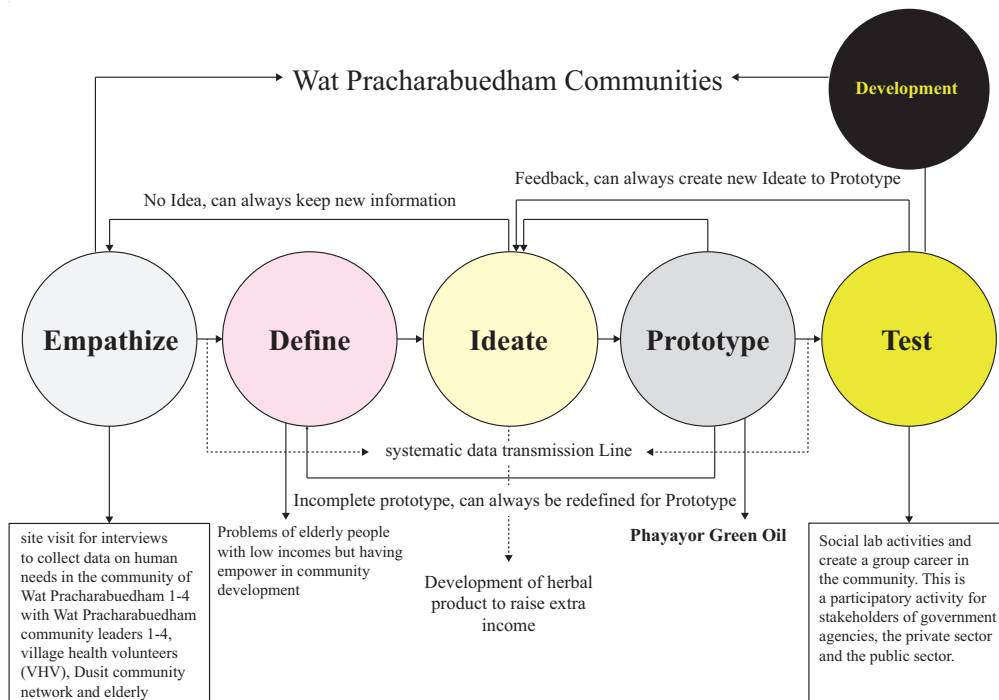
incomes since 2011. This shows a success of public participation and collaboration in problem-solving in the same research settings.

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### Conclusion and Recommendation

This study employed design thinking to develop and produce a community product which sustainably increased community incomes in Wat Pracharabuedham Community 1–4, Dusit District, Bangkok, Thailand. In other words, it is research applying the design thinking technique in a new context of product development since this technique has been mostly used in the field of business rather than community development. The applied design thinking process consisted of five vital steps, which included empathizing, problem identification, ideating, prototype development, and prototype testing. The low-income older adults and volunteers were empathized in order to identify their problems. As a result, a health-related product, which could generate extra incomes for them, was developed. The relevant knowledge and ideas were obtained from the social and community stakeholders to create a community product called 'Phayayor Green Oil'. The prototype of the product was developed to help the elders feel relaxed and refreshed. The prototype was tested by the Bhatphat Career Group members, older adults, VHVs, Wat Pracharabuedham School students and teachers, Suan Sunandha Rajabhat students, and the community and welfare development officers of Dusit District Office, Bangkok, Thailand. The product generated extra incomes for the elderly population and the low-income village health volunteers (VHVs) in the communities. The product was found to be unique as it innovatively added value to the communities and their members. It also increased the community incomes sustainably. The researcher concluded the design thinking process of Wat Pracharabuedham Community 1–4 as shown in Figure 4.

Similar to a previous study conducted by Phukamchanoad and Khudthipong (2011), this research contributed to the development of urban communities by which problems such as poverty and aging population were reduced. It shows that design thinking could be applied to solve the problems in the same way with the Appreciation-Influence-Control (AIC) technique. For future studies, it is crucial to apply the design thinking process in other communities. In order to prove its effectiveness in different contexts, more



**Figure 4** Design Thinking Process of Wat Pracharabuedham Community 1–4

Source: Adapted from Dam and Siang (2021)

successful examples should be investigated. Ultimately, other communities could benefit from the idea and develop their own community products, which could help them earn higher community incomes.

### Conflict of Interest

The author declares that there is no conflict of interest.

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