Community Supported Agriculture (CSA) - The Selective Way of Life for Unemployed Persons Affected by the Pandemic of COVID-19

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Received: 24 August 2023; Revised: 20 November 2023; Accepted: 27 November 2023; Available Online: 15 December 2023

Abstract

This research studied: 1) the influences of environmental factors on agricultural careers in Nong Mamong district, central Thailand, 2) acceptance by community households and leaders on unemployed persons starting agricultural careers, 3) agricultural knowledge, experience, and attitude of unemployed persons starting agricultural careers, and 4) limiting factors on unemployed persons starting agricultural careers. The sample size of household, community leaders, and unemployed persons sample was 374, 36 (28 male, 8 female, average age 50.9 years old) and 60 (14 male, 46 female, average age 46.4 years old) cases, respectively. A simple random sampling technique was used for data collection in households and community leaders, while the census technique was used for data collection in unemployed persons. This study was conducted using questionnaires with both open-ended and close-ended questions for data collection from household, community, and unemployed persons samples. The close-ended questions with a 2-point scale (0 and 1 points) were used for agricultural knowledge measurement, and the five-point Likert scale (1-5 points) questions were used for attitude on agricultural careers measurement among unemployed person samples. Results of the study showed that the farmers grew traditional mono-crops, especially rice, because sufficient water supply was only available during the seasonal rainfall. They were willing to create integrated agriculture to generate daily incomes, but they faced many obstacles in both environmental factors and factors limiting agricultural success. Most household members and community leaders accepted the unemployed persons starting agricultural careers. Most of the unemployed persons had moderate levels of both agricultural knowledge and attitude and were willing to start farming in their homeland. In this study area, major problems of agricultural careers were agricultural water deficiency, increasing production costs, and lack of marketing opportunities. The government and community sectors should play an essential role in solving these problems. The readiness of these community components and environmental factors played an important role in the success of Community-Supported Agriculture (CSA). Even though they faced limiting environmental factors such as lack of agricultural water supply, climate change, etc., community strength and government support helped them overcome these obstacles for their agricultural activities.

Keywords: Agricultural Careers, Community Supported, Selective Way of Life, Unemployed Person, The Pandemic of COVID-19

Introduction

The COVID-19 pandemic has affected not only human health but also human lives from a social perspective. After the pandemic declined, people in many regions of the world still have to face the economic fallout and hardship. During the pandemic, many global business activities were lost, including the import-export sector and tourism sector. A lot of people faced unemployment, and many countries faced food insufficiency. According to

the World Bank, the world unemployment rate increased from 5.36% in 2019 to 6.58% in 2020 but decreased to 6.18 in 2021 (MacroTrends, n.d.). Most of the harmful effects of the COVID-19 pandemic were felt in developing country countries, including Thailand. All sections of the Thai economy were significantly affected, and the situation led to an increase in the unemployment rate.

Agriculture is an ancient occupation of humans that provides food for the world's population. In many countries, it also supports the national income. The agricultural communities act as a source of food or raw materials for agro-industries in the domestic market and export markets. The value of Thai exports in the agricultural sector with FTA and Asian members from 2021-2022 rose 22.0% (International Agricultural Economics Division, Office of Agricultural Economics, 2023). In Thailand, most agricultural areas are located in the rural regions. Thai farmers transfer agricultural skills to the young generation in their families. As the young generation from rural areas achieve higher education, they migrate to urban areas such as Bangkok to seek opportunities for better careers with more income. Traditional agricultural careers require hard labor with low wages. Many farming families in Thailand face poverty due to high costs and low unstable incomes from agricultural products. These factors have driven the new generation in the agriculture community to migrate to cities for employment. The migration of workers not only affects the population density and carrying capacity of facilities in urban areas but also changes the rural social structure, including isolated seniors and the loss of traditions, cultures, and agricultural knowledge.

Since the collapse of the world economy during the COVID-19 pandemic, unemployed workers in Thailand have felt hopeless. When people face difficult unemployment conditions, it induces them to return to their homeland in rural communities. Most rural households depend on agriculture, which provides a large volume of products for food security. Careers in agriculture are an option to support unemployed persons in starting new opportunities. Success in an agricultural career also depends on personal and community readiness, environmental factors, and government support.

Although agriculture is a career of hardship and low incomes, this career is an essential sector for food production. External factors influencing agriculture include climate, farm inputs, availability and demand of the market, government support, capital subsidy, and socioeconomic factors (Cong, 2021; Hamuda & Patkó, 2010; Das & Mondal, 2021). Knowledge, experience, and attitude are important factors that influence a person's decision to work in an agricultural career (Liao et al., 2022; Abayomi et al., 2015; Alyaarbi et al., 2019). The study of Borisutdhi and Kaewkhata (2015) found that the internal factors that influence people to remain in their agricultural career were individual performances such as age, family, owning or inheriting the farmland, earning income from farming that is sufficient to live, having a budget and being able to access to source of financing, socio-economic, marketing factors. For our study, the research was conducted in the area of Nong Mamong district, Chainat province, a traditional "Lao Krung" agricultural community. People in this community inherit the identity culture from their ancestors who migrated from Vientiane, Lao PDR, in 1884 (Chainat City Hall, n.d.). A picturesque cultural root and purity of natural resources without the intervention of urbanization from the outside world make it a charming place to live. When some community members who moved out to work in other places face unemployment, they can return to their homeland and keep on agriculture, a heritage career from their own family.

The aims of this study include the analysis of environmental factors influencing agricultural careers, acceptance by community households and leaders of unemployed persons starting agricultural careers, agricultural knowledge, experience, and attitude of unemployed persons starting agricultural careers, and limiting factors on unemployed persons starting agricultural careers. The case study of the community in Nong Mamong district, central Thailand.

This study focused on analyzing opportunities and the supporting factors for unemployed persons to select agriculture as a new career. To find the selective sustainable way of life for unemployed persons affected by domestic and global economic fallout.

Methods and Materials

This one-year project was conducted in Nong Mamong district, Chainat province, central Thailand, in 2022. The research methodology used was a survey. Nong Mamong is an agricultural community with a total population of 19,574 and 7,582 households. In the study area, most of main family career of household samples was non-formal labor and farmer. Most of the unemployed persons were female, 30.9 years old on average, and primary school educated. For the sample of community leaders, most of them were male, 50.9 years old on average, secondary school graduates, and working as a farmer career.

The samples were chosen from the focus area of 13 villages of the Wang Ta Kien subdistrict. The condition for focus area selection was the highest number of unemployed persons compared to other subdistricts. An appropriate sample size was calculated using the Taro Yamane Formula with an acceptable sampling error of 0.05 (Yamane, 1973).

For households, the sample size was 374. The household samples were collected by simple random sampling technique. A structured questionnaire with both open-ended and close-ended questions was used for data collection. Data analysis was done with the Statistical Package for Social Sciences (SPSS) ver.26 (SPSS Inc., Chicago). Descriptive statistics parameters were Frequency, Percentage, Mean, and Standard Deviation (S.D.).

For community leaders, the sample size was 36. The community leaders' samples were collected using a simple random sampling technique. A structured questionnaire with both open-ended and close-ended questions was used for data collection. Data analysis was done with the Statistical Package for Social Sciences (SPSS) ver.26 (SPSS Inc., Chicago). Descriptive statistics parameters were Frequency, Percentage, Mean, and Standard Deviation (S.D.).

For unemployed samples, the sample size was 60. A census technique was used to collect data. A structured questionnaire with both open-ended and close-ended questions was used for data collection. The measurement of agricultural knowledge close-ended questions used a 2-point scale (0 and 1 points). Measuring attitudes toward agricultural careers using a five-point Likert scale (1-5 points). Data analysis was done with the Statistical Package for Social Sciences (SPSS) ver.26 (SPSS Inc., Chicago). Descriptive statistics parameters were Frequency, Percentage, Mean, and Standard Deviation (S.D.). A comparative statistic was also analyzed with one-way ANOVAs, mean values were compared with Tukey's Post Hoc multiple comparisons when P-value $\leq$ 0.05.

SWOT analysis was summarized from the aspects of environmental factors, socio-economy, and government support concerning the condition of unemployed persons starting agricultural careers in their homeland.

The main limitation of the study was the COVID-19 pandemic, and the research team faced discomfort in contacting the participant samples.

Results

The Influences of Environmental Factors on Agricultural Careers in Nong Mamong District, Central Thailand

In this study area, environmental factors such as suitable soil type for crops influenced productivity. Because these environmental factors limited farming options, most household farms raised livestock and grew traditional

rice in the suitable fields shown in the land uses map (Figures 1 & 2). Until now, this area had a low rate of change in land use. The lifestyle still keeps the characteristics of a rural agricultural community. The study area is located on the central plateau of Thailand, with flat land and nearly zero risk of land erosion. They must grow traditional monocrops, especially rice, because their only water supply is annual rainfall. They are willing to change to an integrated agriculture, but the lack of water supply is the main limiting factor. Integrated agriculture needs enough water for planting every day, but the ratio of agricultural area to surface water area of Nong Mamong district is 31 : 1 Rai (Table 1). Integrated agriculture has a high potential to generate more income by providing daily income from various products, while mono-crops such as rice provide income only one or two times per year. Monocrops not only restrict incomes but also has high costs and creates a monopoly market in which the buyers control product price. In addition, mono-crop cultivation has a risk of being destroyed by persistent pests or diseases every year. The limits of natural pest control in mono-crops have pushed farmers to increase chemical pesticide use for product protection. This places a burden of higher toxicity on the environment and increases the production cost. Unemployed persons starting new careers in agriculture in Nong Mamong are faced with high production costs and adverse environmental factors.

Table 1 Ratio of Agricultural Area to Surface Water Area

Sub Districts	Agricultural Area (Rai)	Waterbody Area (Rai)	Ratio
Nong Mamong	31,112	801	39 : 1
Wangtakien	46,027	1,805	25 : 1
Sapanhin	47,388	1,640	29 : 1
Kudjork	27,561	585	47 : 1
Total	**38,022**	**1,208**	**31 : 1**

Source: Adapted from the Royal Irrigation Department (2019).

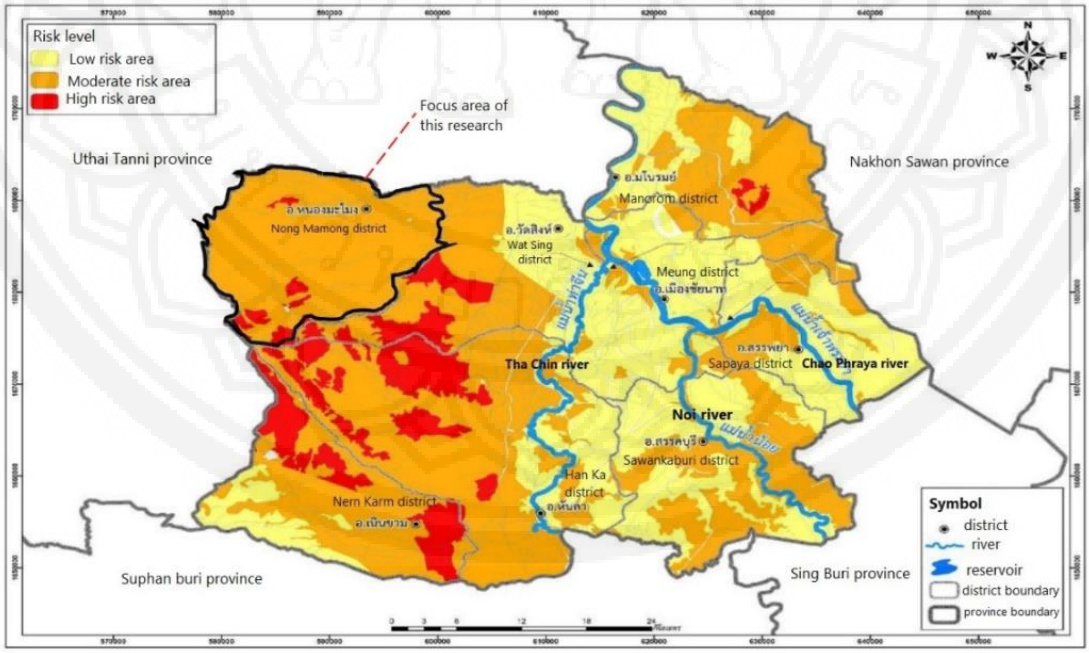

Figure 1 Drought Level of Chainat Province Classify by District.

Source: Adapted from the Royal Irrigation Department (2019).

Acceptance by Community Households and Leaders of Unemployed Persons Starting Agricultural Careers

Results of the survey of 374 community households showed that most residents were accepting of unemployed persons starting agricultural careers in their homeland (Table 2). The reasons for this acceptance include the advantage of young generations moving home to support older parents, the lower cost of living in rural areas, and the potential for the younger educated generation to use new technology to develop agricultural markets, such as advanced knowledge in modern marketing tools. The reasons for not agreeing to start new agricultural careers were low income, high costs, and hard labor. There was no difference in acceptance between households who had main careers in agricultural and non-agricultural households. There was also no difference in acceptance between households with different income levels (Table 3).

Table 2 Acceptance by Households of Unemployed Persons Starting Agricultural Careers in their Homeland

Acceptation	Frequency	%
Agree	272	72.7
Not Agree	35	9.4
No Answer	67	17.9
Total	**374**	**100.0**

Table 3 Factors Influencing Acceptance by Households for Unemployed Persons to Start Agricultural Careers in their Homeland

Factors	N	Mean	S.D.	df	F-value	Sig.
Main Career of Family						
Agricultural Sector	234	0.91	0.484	373	0.000	0.996
Non-agricultural Sector	140	0.91	0.569			
Total	**374**					
Income of Family (Thai Bath)						
< 10,000	177	0.94	0.490	373	0.363	0.726
10,000 - 20,000	81	0.84	0.535			
20,001 - 30,000	48	0.94	0.433			
30,001 - 40,000	20	0.90	0.641			
40,001 - 50,000	10	0.80	0.789			
50,001 - 60,000	26	1.00	0.599			
> 60,000	12	0.92	0.515			
Total	**374**					

*$p \leq 0.05$

The attitude of 36 community leaders toward unemployed persons starting agricultural careers was mostly moderate or high. Most of them agreed that the new generation has advanced knowledge about technology that can be advantageous for agricultural development (Table 4). Some community leaders expressed a low attitude due to high agricultural costs, such as expensive fertilizers, pesticides, and fuel (Table 5). Promote Factors supporting agricultural success include a location with fertile soil, having enough agricultural area, and a wealth of local agricultural knowledge inherited from the older generations. Inhibiting factors of agricultural success include increasing costs, no control of crop prices, and a lack of interest in organic farming techniques, causing a push towards chemical usage. Supported for agriculture careers by both government and non-government sectors include investments, loans, and consultation. The community leaders' expectations from the government include the generation of an agricultural water supply, higher and stable prices of the products, lowering agricultural costs, and providing more training courses.

Table 4 Acceptance of Community Leaders for Unemployed Persons to Start Agricultural Careers in their Homeland

Acceptance	Frequency	%
Agree	29	80.6
Not Agree	1	2.8
No Answer	6	16.6
Total	**36**	**100.0**

Table 5 Attitude of Community Leaders on an Appropriate Level of Present Agricultural Section in Community

Appropriate Level	Frequency	%
High	10	27.8
Moderate	18	50.0
Low	8	22.2
Total	**36**	**100.0**

Agricultural Knowledge, Experience, and Attitude of Unemployed Persons Starting Agricultural Careers

The 60 unemployed participants were chosen from the sub-district with the highest unemployment rate for in-depth interviews. These interviews focused on the agricultural knowledge, experience, and attitude toward agricultural careers of the unemployed participants. The results showed that most of the unemployed participants had a moderate level of both knowledge and attitude (Table 6). Most unemployed participants wanted to start new careers in the agricultural section in their homeland (Table 7). Although most of them lost jobs in the industrial sector and had little agricultural experience, they were members of a farming family (Table 8). Most of them were willing to be farmers to make a sustainable livelihood with independence, provide agricultural products essential for human life, and continue the traditional Thai agricultural heritage.

Table 6 Agricultural Knowledge and Attitude on Agricultural Careers of Unemployed Persons

Level	Frequency	%	Average	S.D.	Mode	Range
Knowledge*						
High	3	5.0				
Moderate	42	70.0	22.3	4.386	21.0	9.0-23.0
Low	15	25.0				
Total	**60**	**100.0**				
Attitude**						
High	14	23.3				
Moderate	40	66.7	116.7	10.680	114.0	93.0-133.0
Low	6	10.0				
Total	**60**	**100.0**				

*Full Score is 27; **Full Score is 150

Table 7 Willingness of Unemployed Persons towards Agricultural Careers

Willing	Frequency	%
Want to be a farmer	45	75.0
Don't want to be a farmer	15	25.0
Total	**60**	**100.0**

Table 8 Family Background of Unemployed Persons

Family Background	Frequency	%
Agricultural Family	38	63.3
Non-agricultural Family	22	36.7
Total	**60**	**100.0**

Limiting Factors on Unemployed Persons Starting Agricultural Careers

The opinions of households and community leaders showed that the major problems faced in this agricultural area were a deficiency of agricultural water, increasing costs of production, and lack of marketing opportunities. For the deficiency of agricultural water supply, they suggested the government support investment in technology to store surplus water in the rainy season for use in the summer. To lower costs, they suggested the government support investment in local and Thai agricultural chemical industries instead of importing from overseas. To increase product sales, there is hope that the new generation of farmers can apply their knowledge of new technology to find more marketing opportunities. They hope to find opportunities to set the price for their agricultural products instead of selling them to middlemen.

Community-Supported Agriculture (CSA) in the Study Area

In the area of this study, the farmers faced a limited supply of agricultural water, higher production costs, and a narrow channel of marketing. Because of these hard conditions for farmers, the Community-Supported Agriculture (CSA) principles were applied to strengthen community occupations. This generated 59 community enterprises in 41 villages to enhance economic opportunities (Table 9). The farmers in eight villages enhanced the stakeholder participation through a community project named "Kaset Plang Yai (rice)" under support from the Chainat Provincial Agriculture and Cooperatives office, the project of coworking, sharing production resources and sharing marketing channels among the members (Table 10 and Figure 3-4). This project enhanced their power to access capital investments from village funds, government sectors, and government banks. They can increase their bargaining in product markets and share opportunities among community members. Community leaders played a major role in this participation because rural social community leaders are respected as persons who can support community members in many aspects. In Nong Mamong, the community leaders co-work with local wisdom scholars using CSA to overcome limiting factors in agriculture. They hope the new generation will continue this system for their communities in the future. The unemployed persons starting agricultural careers would be part of the new generation group who will continue to be a source of food security and strengthen the rural social structure. The input of higher education and familiarity with the latest technology of the new generation would be advantageous for local agriculture development. This model has been applied in an area that faces many limiting conditions. They succeed by working hard, communicating, and working together. This model can be used as a template to develop selective careers for unemployed persons in other rural places.

Table 9 Community Enterprises in Nong Mamong District, Chainat Province, Central Thailand

Community Enterprises	Frequency	%
Women Farm Groups	5	8.5
Rice Farm Groups	6	10.2
Organic Farm Groups	4	6.8
Livestock Farm Groups	30	50.8
Product Processing Groups	7	11.8

Table 9 (Cont.)

Community Enterprises	Frequency	%
Field Crop Groups	3	5.1
Others	4	6.8
Total	**59**	**100.0**

Source: Adapted from Chainat Provincial Agriculture and Cooperatives Office (2020).

Table 10 The Project "Kaset Plang Yai" at Nong Mamong District, Chainat Province, Central of Thailand

Type of Product	Frequency	%	Area (Rai)	No. of Farmers	Supporter
Casava	1	12.5	1,374.3	66	Government Unit
Sugar Cane	1	12.5	1,320.0	64	Government Unit
Rice	4	50.0	5,213.8	212	Government Unit
Livestock	1	12.5	1,205.0	50	Government Unit
Integrated Agricultural	1	12.5	2,067.0	77	Government Unit
Total	**8**	**100.0**	**11,180.1**	**469**	**Government Unit**

Source: Adapted from Chainat Provincial Agriculture and Cooperatives Office (2020).

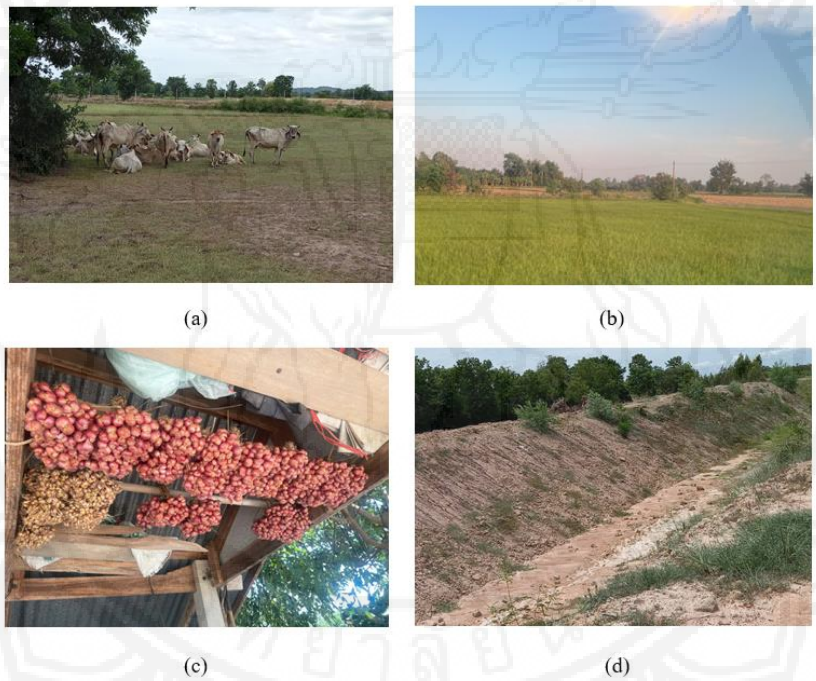

Figure 2 Some Agricultural Activities: (a) Livestock, (b) Rice Fields, (c) Crops Rotation, and (d) Empty Surface Water Reservoir.

Source: Designed by Authors.

Figure 3 Some Activities of the "Kaset Pang Yai" Project.

Source: Designed by Authors.

Figure 4 Successful "Kaset Plang Yai" Project on Limiting Environmental Factors.

Source: Designed by Authors.

SWOT Analysis

SWOT technique was used to analyze the capacity of environmental factors, households, community leaders, and readiness of unemployed samples for promoting agricultural careers as the new opportunity for solving the unemployed problems.

The results of the SWOT analysis revealed 4 sectors as follows: 1) S: Strengths include positive willingness and family background of unemployed samples to start agricultural career, positive attitude of households and community leaders on unemployed samples starting their agricultural career in the homeland, and strong participation of community member for local agricultural development, 2) W: Weakness includes some environmental limiting factors such as agricultural water supply, knowledge and experience of unemployed samples, and low opportunity on marketing, 3) O: Opportunities was performed by a homogenous combination of modern characteristics of new generation and the readiness of community-government supporting resource such as cooperation, local wisdom scholars and funding, and 4) T: Threats includes uncontrol global warming, negative phenomena of world economics, and remarkably increasing of production costs. The analysis found that even though severe uncontrol obstacles occurred, Community-Supported Agriculture (CSA) played an important role as an inner immune system of agricultural communities to keep their members survive (Figure 5).

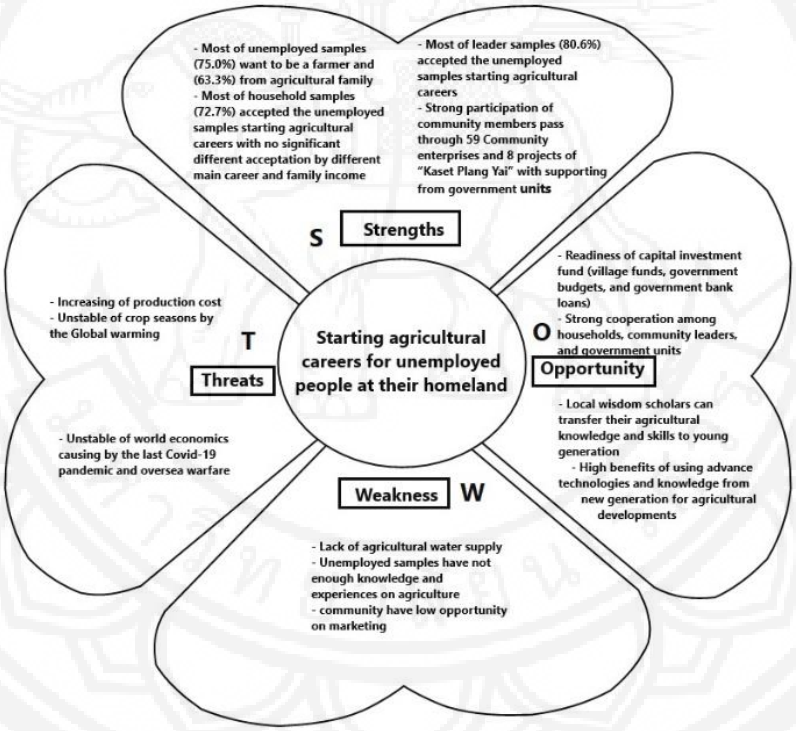

Figure 5 SWOT Analysis of Starting Agricultural Careers for Unemployed Persons in their Homeland.

Source: Designed by Authors.

Discussion

Environmental factors play an important role in agriculture to support the food chain by providing ecosystem components such as temperature, light, gas exchange cycle, water cycle, soil nutrients, and biodiversity. Climate change and drought are very important environmental impacts on agricultural productivity. The episodes of El Nino and La Nina act as a major kind of climate change that affects agriculture in several ways, such as decreasing

growth rate, photosynthesis rate, transpiration rate, and productivity. Climate change increases global temperatures, causing extreme drought or flooding. Drought reduces the water supply for planting, while huge amounts of water from flooding destroys water from flooding destroy the water supply for planting, while huge amounts of water from flooding destroy large agricultural areas. Drought reduces natural nutrient accumulation in soil by decreasing mineralization and humification. Natural soil fertility formation depends on temperature, moisture, and water-holding capacity. Increasing temperatures and decreasing humidity significantly decrease these processes, while floods cause runoff and erosion on the land, resulting in fertility losses. This study identified that the major limiting factor for agricultural development in Nong Mamong is the lack of water supply. Climate change becomes the biggest environmental challenge for new start-up farmers. (Mahato, 2014; Larionova et al., 2017)

Acceptance of households and community leaders is important in encouraging unemployed persons to start agricultural careers in their homeland. This study showed that most household members in the community and community leaders accepted the transition of unemployed persons starting agricultural careers. Community-Supported Agriculture (CSA) is a fundamental principle to increase solidarity, proximity, variety, and producer/consumer tandem (Struś et al., 2020).

Most unemployed participants wanted to start new careers in the agricultural sector in their homeland. Most of them had little experience in agriculture, moderate agricultural knowledge and attitude, and were willing to be a farmer.

Knowledge is an important background for doing something. If there is a lack of knowledge, it is difficult to find success. However, knowledge is a form of an abstract concept that can be developed by learning (Bruner, 1996). Fortunately, most of the unemployed samples in this study came from an agricultural-based unemployed sample, which came from agricultural-based families and communities. They have the opportunity to learn farming knowledge from wisdom scholars in their family or community. A local wisdom scholar is a key person who preserves and transfers the knowledge heritage value to new generations (Sanannaree et al., 2020). This transfer can be the developing basement for the synthesis of advanced knowledge and technology in the next generation.

The main limiting factors for unemployed persons starting agricultural careers include deficiency of agricultural water, increasing costs of production, and lack of marketing opportunities. The power of a strong community can support them to overcome these problems. The farmers in the study area have strong participation in their community. They set up 59 groups of collaboration to generate more income during the time after the annual rice planting season. They set up the "Kaset Plang Yai (rice)" project among the community farms to enhance the power to overcome obstacles such as drought, lack of water supply, increasing costs, lack of funds, and lack of marketing opportunities. The Community Supported Agriculture (CSA) is an agricultural system that originated in the 1960s in Switzerland and Japan. CSA is a direct collaboration between farmers and customers and a linkage between farmers and urban markets that decreases the role of middlemen. Selling products is based on sharing and the principles of sustainable agriculture. CSA enhances the power of farmer groups to develop their community agriculture business and reduce production costs (DeMuth, 1993; Nakpracha & Chantaranamchoo, 2019; Ostrom, 1997).

Because of the world economic downturn after the COVID-19 pandemic in the last few years, numerous new generations have lost their jobs in the cities. Returning to their rural homeland allows many to recover mentally and financially. Some hoped to gain a source of income when they came back to stay with their family. The readiness and support of community members are important for them to enter new careers and opportunities. A strong community, visionary leaders, and effective support from the government play important roles in encouraging agricultural careers as a new opportunity for unemployed persons in their community. Even though they lack

knowledge and experience in agriculture, the senior farmers in the community can act as trainers to help them set up their own agricultural projects. In this way, they not only help give hope but also contribute to the continuity of careers in agriculture to provide food security and quality livelihoods in the future.

Conclusion and Suggestions

In the study area, the farmers grow traditional mono-crops, especially rice, because their water supply is limited by seasonal rainfall. They are willing to create integrated agriculture to generate daily incomes, which decreases the cost of production, but the lack of water supply is the main limiting factor. To start new careers in the agricultural sector, unemployed persons must face high production costs and environmental limitations.

Most household members in the community and community leaders accepted unemployed persons starting agricultural careers. According to the Community-Supported Agriculture (CSA) principles, community stakeholder participation generates a way for success by transferring their agricultural knowledge to the next generation, which includes giving livelihood opportunities to unemployed persons.

Most of the unemployed participants in this study have a moderate level of farming knowledge and attitude. Most of them are willing to be a farmer in their homeland. Household members in the community and community leaders should support them, including providing access to financial resources, agricultural training, participation in community groups to increase bargaining power, and working together to develop marketing channels.

Major problems of agricultural careers in this study area were agricultural water deficiency, increasing production costs, and lack of marketing opportunities. The government sections should support them to solve these problems. Community households and leaders hope the new generation of farmers will apply their knowledge of new technology to develop the agriculture sector.

The suggestions of the study are: 1) expand the agricultural water supply by developing reservoirs to store water during the rainy season for use in the summer, 2) government should permit domestic companies to initiate agricultural fertilizer and chemical industries to reduce the cost of farming, and 3) combining skills in advanced technology from the new generation with the local knowledge from the experienced farmers to develop a Community-Supported Agriculture (CSA) system. CSA can play an important role as a caretaker of unemployed persons who start an agriculture career. Unemployed persons never stand alone when they work in their homeland community with CSA. Not only do unemployed persons find a selective career to support their lives, but the community also transfers agricultural knowledge to the next generation to conserve food security.

Acknowledgments

We would like to thank the National Research Council of Thailand (NRCT) for financial support (grant no. 2563NRCT336557).

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