

Coping Strategies to Deal with COVID-19 Pandemic of Khon Kaen Agricultural Enterprise, Thailand

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ABSTRACT— The impact of COVID-19 on agricultural enterprises is well reported. There are few studies on how their coping strategies dealt with its impacts. This study used purposive sampling to determine Khok Sawang Agricultural Enterprise (KSAE), which consists of 75 members. They were interviewed individually to explore coping strategies to deal with the pandemic throughout its four waves. ATLAS.ti and Grounded Theory were used to supplement the analysis. The results show that COVID-19's difficulties in the first wave were enormous, however, KSAE's coping strategies were scarce as they were in shock. Most coping strategies were seen in the second wave, motivated by the acknowledgment of COVID-19's impacts. The implementation of hygiene practices and cutting down production were serially introduced to reduce health and economic strains. The third wave was noted as more workers were temporarily recruited to establish new online channels to compensate for the damage of closed traditional markets. In the fourth wave, all coping strategies were preserved without the introduction of any new ones. The conclusion from this study leads to agricultural enterprises should be operated as groups to gain support and leadership in the manner of collective action.

KEYWORDS: Coping strategy, COVID-19, agricultural enterprises, Khon Kaen.

1. INTRODUCTION

It is widely known that humans were first exposed to Covid-19 at the end of 2019 [1]. This pandemic, which was caused by the Coronavirus, was labeled as a global contagious epidemic by the World Health Organization (WHO) on March 11, 2021. Its impacts have resulted in the degeneration of the economic, social, industrial, and agricultural sectors [33]. These deteriorations not only exist in the context of people's health, but the pandemic has also affected governmental policy to control the disease. Social distancing, halting business activities, and traveling across domestic and international borders have occurred [16]. This is due to Covid-19 using humans as contagions. Even healthy people are easily infected if they breathe in air contaminated by droplets and airborne particles containing the virus. Consequently, the pandemic has caused extreme devastation to human life [14]. It is reported that about 690 million people across the globe have fallen into unprecedented challenges of poverty, unemployment, and public health caused by Covid-19 [31].

Like other countries, Thailand has not been immune to those challenges. Since noticing its effects in early 2020, the pandemic has caused the country to decline in dimensions [1]. Regarding the economy, in the first quarter of that year, Thailand's gross domestic product (GDP) suffered its lowest growth rate in five years [16]. This was due to no overseas tourist arrivals combined with a decrease in domestic consumption and weaker global exports [20]. This has led to a spike in 20% employment that caused almost 800,000 people to fall into sudden poverty. Commercially, it was unfortunate and the most negative impact since the Asia

Financial Crisis of 1997 causing Thailand's GDP to drop by 60 percent, depending on industries. The situation in public health has struggled too. As of April 2022, the country has reported a cumulative total of 4,194,684 confirmed cases [33]. Meanwhile, the number of deaths was 28,022, making the country ranked fourth in the number of deceased in Southeast Asia, behind Vietnam, Indonesia, and Malaysia [19].

One of the greatest populations to be affected by the pandemic is millions of workers in agriculture [3]. According to people's perception, farmers have always been praised as the country's backbone because of their prominent role in providing the country's food security. They are also the most important economic actor as their number accounts for 30% of the domestic labor force with 6.4 million households [11]. In reality, they often encounter high levels of disturbances which include irregular incomes, malnutrition, and a scarcity of safety nets [33]. This vulnerability is influenced by rationales such as the fact that most of them are older with an average age of around 53 years [21]. Importantly, they are a restricted farming portfolio. Two-thirds of them still cultivate one crop a year with a monoculture of in-season rice [22]. These mentioned factors are not only sensitive to the pandemic but also all kinds of challenges [37].

From those rationales, it makes farmers more vulnerable to Covid-19 than ordinary households. This statement is affirmed by a report by FAO (2022), which states farmers were affected by a loss of income of 39 percent in comparison to their respective levels of income before the pandemic, while general households faced an income loss of 16 percent [11]. To participate in other sectors to survive like in the past is difficult. In the spring of 2021, Thailand's job market had 710,000 fewer positions compared with the previous year [10]. Maintaining a living in agriculture may be very arduous. Farmers experienced a double blow from COVID-19 because, during this time, Thailand was exposed to an acute drought that severely affected their cash crops [20]. It is therefore expected that many farmers employed unhealthy coping strategies such as the distress sale of assets to save their livelihoods [32].

Nevertheless, one glimmer of hope has been witnessed in farmers in provinces. Reportedly, they have created coping strategies to deal with COVID-19. The most common practice, for instance, is the reduction of food and non-food consumption for the sake of savings [19]. This is followed by reliance on the government's assistance compensation, including undertaking new income-generating activities as short-term solutions to alleviate the crisis [26].

Moreover, coping strategies were seen among farmers who administer jobs in agricultural enterprises. One of the COVID-19 regulations included an official lockdown declaration and a travel ban in and out of certain areas [14]. Consequently, many markets had to shut down, causing a lack of opportunities to obtain basic needs for consumption [20]. To deal with those difficulties, two agricultural enterprises in Chiang Mai Province came up with the idea of exchanging food. This did not emphasize the financial value of the exchange but aimed at growing the two parties' relationship [21]. Another remarkable case is an agricultural enterprise in the Non-Koon village, Khon Kaen Province. They survived domestic lockdowns by relying on dietary provisions from the village's food bank [6]. The food bank has been operated like financial institutions' credit systems, for example, members can borrow rice once a year. After a year has passed, the member needs to give back rice at the interest rate of one kg. per 10 kg of borrowed rice. If they have no rice to return, cash can be paid back instead, and the payment is cheaper than the market price of rice at that time [18]. The cheaper payment not only brings financial benefits but also adds social cohesion to strengthen the sense of solidarity [12].

Recently, many studies have examined the impact of COVID-19 and its coping strategies on populations and farmers as individuals, however, studies regarding agricultural enterprises are rare, despite being the key actor

in generating household income in developing countries' rural areas [24]. In Thailand, agricultural enterprises are one of the most important sectors as they contribute around 7% of the country's overall GDP [10]. In this paper, we investigate how agricultural enterprises adapted themselves to cope with COVID-19. Conceptually, coping strategies refer to the thoughts and actions that people must introduce during threatening situations [25]. This topic is interesting. The findings are productive in guiding a regional scale and it has implications for stakeholders to follow if a crisis caused by pandemics like Covid-19 arises again in the future [31].

2. Material and Methods

2.1 Study Site and Sampling Procedure

In this study, Khon Kaen province was chosen as the study site as its economic value is the second highest in Northeastern Thailand [24]. The province is also in the top five highest number of agricultural enterprises registered with the Ministry of Agriculture and Cooperatives of Thailand [18].

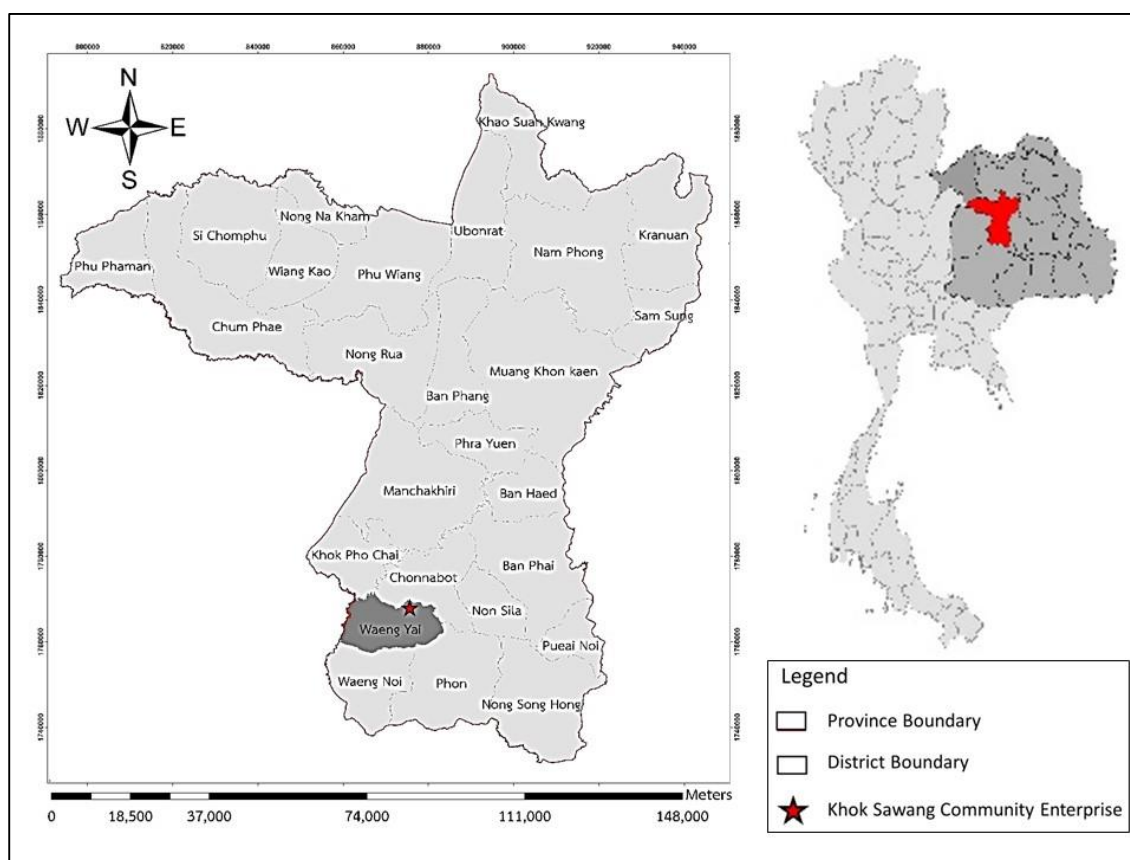


Figure 1. Map and landscape of the study site

Regarding the sampling procedure, Critical Case Sampling, a type of purposive sampling, was used to yield Khok Sawang Agricultural Enterprise (KSAE) that consisted of 75 members as informants [2]. The selection was based on the authors' appropriate judgmental characteristics. First, KSAE, whose main product is rice crackers, is one of the most successful agricultural enterprises in Northeastern Thailand as its outstanding performance in management and marketing [18]. This is attested to by Toyota which has chosen them to be their business learning center [27]. Moreover, their product has been certified as a five-star One Tambon One Product (OTOP) since 2013. This is the highest quality of local products owned by agricultural enterprises in Thailand can achieve [8].

2.2 Data Collection and Analysis

The study conducted from July to August of 2022 was divided into 2 parts as follows.

Part 1: Study of contexts of KSAE – A study of the socio-ecological contexts of KSAE by formulating sub-topics for interviews. The sub-topics that served as the main tools for data collection were built by reviewing the literature [4], [6], [16], [25]. The data was interpreted by Content Analysis to summarize the outcomes as a questionnaire that was distributed to every member of KSAE (n=75) [2]. The data of the questionnaire were computed using Microsoft Excel 2013 to formulate descriptive statistics such as frequencies and percentages [9].

Part 2: Study of the impacts of COVID-19 and associated coping strategies – Semi-structured interviews were applied to investigate 75 informants' negative experiences throughout the four waves of Covid-19. They were asked individually what coping strategies were implemented to deal with those experiences. The interview data were transcribed by ATLAS.ti to generate codes that could be developed into theoretical propositions about coping strategies [32]. Grounded Theory (GT) was used together with ATLAS.ti to assist constructing in the theoretical propositions into more textual explanations. GT also classified coping strategies during which wave of the COVID-19 outbreak, including organizing them into theoretical concepts to identify the themes of coping strategies [9].

3. Results and Discussion

3.1 Socio-economic Characteristics of KSAE

Table 1 shows socio-economic contents, KSAE had a total of 75 members. Seventy-two members were female (96.00%) and three members were male (4.00%). The ages of the members were mostly under 40 years (28.00%) followed by an age range of more than 60 years (25.33%). Regarding membership, around 53% had been members for more than 15 years because they have persistently earned a satisfactory income rewarded by KSAE's business profits. This is in accordance with Boonlert and Srisuwan (2017) who stated that being a member of a group will be brief or prolonged significantly depending on the enterprise's business profits [4]. This is proven by most of them having an annual income of about 2,801 USD, whose value is higher than most domestic farmers at 1,545.54 USD [3].

Table 1. Socio-economic characteristics of Khok Sawang Agricultural Enterprise (n=75)

Characteristic	Frequency	%
Sex		
Male	3	4.00
Female	72	96.00
Age (year)		
40 and below	21	28.00
41-50	18	24.00
51-60	17	22.67
More than 60	19	25.33
Educational level		
Primary school	50	66.67
Early secondary school	18	24.00
Secondary school or vocational certification	1	1.33
Bachelor's degree	6	8.00
Experience in rice production (years)		
5 and below	30	40.00
6-10	25	33.33
11-15	10	13.33
More than 15	10	13.33

Period of membership (years)		
5 and below	10	13.33
6-10	7	9.33
11-15	18	24.00
More than 15	40	53.33
Annual income contributed by agriculture (USD)		
2,800 and below	39	52.00
2,801-5,600	12	16.00
5,601-8,400	5	6.67
More than 8,400	19	25.33

Source. Field survey (2022)

3.2 Coping Strategies for COVID-19

According to the findings shown in table 2, four subject matters about coping strategies were formulated. To make the presentation orderly, the findings are categorized into 4 stages corresponding to the four waves of the pandemic [33].

3.2.1 Coping strategies in the first wave

During the first wave from January to March 2020 [33], the pandemic's difficulties were enormous. It was triggered by boxing events and nightclubs in Bangkok that spread to 68 provinces across the country [26]. To control the spread, travel restrictions, good hygiene practices, and social distancing were implemented, particularly aimed at the working-age population [27]. The night-time curfew was also legitimized to decelerate people's movement. These actions were the government's efforts to alleviate COVID-19's impacts [20].

Although a considerable burden in this wave, KSAE's coping strategies were scarce. COVID-19 was a newly emerging infectious disease with unaccustomed symptoms and consequences, it resulted in KSAE being in shock and it was caught unprepared [23]. Although coping strategies were difficult, they were still necessary to establish a response and receive the benefits of keeping out COVID-19 and nourishing their emotional well-being. Wearing a face mask when indoors and washing hands with hand sanitizers or alcohol gels was practiced regularly [18]. Their changes in habit were like other Thai populations who were forced to modify their daily behavior to be compatible with a new normal after the COVID-19 outbreak [17]. These behavioral changes have also been performed with the COVID-19 vaccination campaign which was facilitated by the Ministry of Health's campaign [16]. Although KSAE were sufficiently aware that the vaccine does not guarantee immunity from being infected, they were enthusiastic to be vaccinated to reduce the chance of infection. The infection can lead to poor health meaning workers are unable to work and lose income during their absence [28].

The enterprise is different from many other agribusinesses within the country, they have not encountered negative consequences of lockdown policies [5]. A total of 100 percent of their activities, whether production, trade, and logistics, were all administrated during the daytime, approximately from 08.00 a.m. to 05.00 p.m. Therefore, the introduction of related coping strategies to deal with the impact of lockdown measures was unnecessary [8].

3.2.2 Coping strategies in the second wave

In Thailand, COVID-19's second wave was effective from October 2020 to May 2021 [33]. It was ignited by illegal migrants who were not captured by the quarantine system and ongoing Thai Myanmar cross-border travel that brought the virus. In a nutshell, this outbreak wave was dissimilar from the first wave in aspects.

Although the number of infected populations was much higher, the lockdown measures were much less strict than before to help recover the country's economy [31]. The government employed a targeted strategy to mitigate COVID-19's impacts, for example, only locking down selected areas and employing active case finding [26].

In comparison to other waves of the outbreak, coping strategies in the second wave were the greatest as COVID-19's impacts were acknowledged. Indeed, KSAE maintained the behavior of good hygiene practices to enrich the condition of free COVID-19 infection. Nevertheless, other types of coping strategies to cope with ongoing problems were seen as well to deal with the pressures of production, marketing, and social influences [23].

At the beginning of the wave, the head of KSAE was formally told by the accountant that their revenue had heavily decreased by about 25.28%, in comparison to the first wave. A few reasons could explain this large loss. KSAE's products are usually bought for the benefit of souvenirs and refreshments available at meeting events of the government and private institutes [18]. During this wave, however, face-to-face meetings and public gatherings could not be held. This was in addition to logistics systems being affected by lockdowns [26]. This made the cost of raw materials used to cook the products higher e.g., the cost of palm oils considerably rose from 7.94 USD to 27.94 USD per bucket [8].

To deal with those constraints, a set of coping strategies was established sequentially. First, KSAE had to cut down on production costs by reducing the amount of the products from 2,600,000 packs to 1,900,000 packs. This coping strategy was expected. Saving production costs and/or making by orders are both coping strategies perpetually implemented by enterprises, especially local ones that are limited in resources [23]. Next, the members were asked to lower their daily remuneration, from 11.76 USD to 8.82 USD. Besides, the working hours were reduced by two hours a day, adjusting from 08.00 a.m. to 05.00 p.m. to 08.00 a.m. to 03.00 p.m. These modifications were decided by a democratic system amongst the members, voting on which actions were most workable to carry on operations in this crisis. Initially, increasing the price of the products was raised to avoid the cutting down of working hours and daily payments. This recommendation was vetoed. It was considered a destructive step because, based on the leader's experience, it could lead the enterprise to bankruptcy [7]. *"Do not compete on price-cutting if you do not want to go down quickly. The price is not all the marketing mix,"* said the leader. In general, if consumers notice higher prices of non-staples at the checkout aisle during the outbreak, they are likely to ignore those products. They will pay more attention to everyday household goods such as meat, eggs, and poultry to benefit their adverse income caused by the pandemic [3], [19].

Regarding the two coping strategies, it was coping strategies to sustain the business and continue the harmonious working atmosphere. This is vital. Appropriately designing working hours and adjusting payment to suit impromptu situations are incentives to firm employees' loyalty, preventing them from looking for another job [6]. In this case, the appropriation should be paid to KSAE's members, especially the leader and the accountant. Their coping strategies to respond to economic disruptions were determined by data, experiences, and information, such as existing turnover. This ensures communication is based on empirical evidence to help members understand existing risks. As a result, priorities for effective coping strategies were planned [7].

Table 2. A comprehensive set of key coping strategies to cope with COVID-19 of KSAE

Subject matter	1 st wave	2 nd wave (October 2020 – May 2021)	3 rd wave	4 th wave (April 2021 – July 2022)
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(January – March 2020)		(January – July 2021)
1. General management		Temporarily recruiting new members, especially teenagers, to establish online marketing channels through Facebook and platforms to extend commercial opportunities
2. Production	(1) Reducing wages and working hours per day. It was together done by increasing products price and decreasing the number of product pieces per pack. These coping strategies were seen to avoid increasing the cost of the products (2) Carefully mixing raw materials during the manufacturing process to lessen production costs	
3. Marketing	Decreasing the production capacity to mitigate the difficulty of wholesale, leading to the reduction of income	
4. Public health	Regularly wearing face masks, washing hands with soaps or alcohol gels, and maintaining social distancing. Receiving COVID-19 vaccination was conducted. These were coping strategies to prevent the risk of catching the pandemic, whose consequences are sick and absent from work	

3.2.3 Coping strategies in the third wave

The pandemic's third wave was effective from January to July 2021 [33]. It gained scope by the case spreading among luxury bars in Bangkok, Thailand, reporting 604 cases infected by this cluster. Although agriculture is the largest employer (11.8 million) with a very high informality (92%), the pandemic caused fewer negative effects than other sectors due to 3 reasons: (1) Agriculture is always the last resort for employment and economic opportunities in Thailand; (2) The supply chain and labor productivity in agriculture were only slightly interrupted influenced by the emancipation of lockdowns; and (3) Workers in agriculture saw incomes rise by 53%. This was subsidized by government programs combined with consumer demand that increased gradually [3], [20], [24].

Because wholesale was considerably reduced due to the scarcity of meeting events, coping strategies in this period were designed to survive economic pressures by exploiting retail markets covering both traditional offline and online places. To achieve that, the recruitment of more staff as temporary workers was announced. The target group was local people, who had recently been discharged from other industries in Bangkok and nearby provinces. They were enlisted to serve two exclusive objectives. Applicants, who were teenage and satisfactorily literate, had been assigned to establish the system of digital localism, with the facilitation of Facebook and e-commerce platforms. The establishment of online marketing in various formats, with the help of local young people, is one of the most popular practices of agricultural enterprises in Thailand to ease the difficulty in traditional shopping during COVID-19 [7]. It is not only served to extend more outlets but also to keep products at the same original prices [14], [29].

In the meantime, the government's relief schemes, e.g., cash support of 147.05 USD for 3 months were eventually granted, focusing on workers who had been unable to work due to COVID-19's mandated orders [6]. Most members of KSAE were paid from those schemes as well. Unfortunately, its hidden negative potential caused new stresses on the enterprise in dimensions. Most of the young members, who had been subsidized, were often absent from the workplace. The financial schemes could secure them the necessities they needed at that time. Consequently, they were unwilling to work diligently as before. The burden of the

workload must be transferred to senior members, especially those aged 60 or over, who were digitally unskilled to enroll in such relief schemes. To mitigate the impact on unavailable workers, a group of fewer literate applicants was recruited to participate in duties such as packaging, shipping, and performing as sales promotion officers during online events like the virtual Red Cross Fair, whose event totaled 1,198,677 visitors [28]. However, they were hired for a while as adolescent workers, who were working in the section of e-commerce platforms.

3.2.4 Coping strategies in the fourth wave

The fourth wave was visible from April 2021 to JULY 2022 [33], with the Delta coronavirus variant dominating. Although the nature of the Delta is transmitting quickly, the average number of cases reported per day decreased by 38%, thanks to the thorough distribution of COVID-19 vaccinations [28]. However, the economic recovery has slowed down. Thailand's employment has remained at a stable level of 68% since the onset of the outbreak, especially in urban areas [5]. This contrasts with agricultural households. They benefited from the 'No One Left Behind' and 'Let's Go Halves' co-payment programs: these schemes provided them with monthly cash transfers and discounted 50 percent of goods from registered retailers, respectively [25]. Around 80 percent of Thai farmers were subsidized, making them not experience much of a decline in income [17].

Unsurprisingly, the fewest new coping strategies originated in this wave. KSAE was aware of how to generate effective practices for combating the contagion's impacts. In other words, they had become familiar with COVID-19 and tried to carry on without its troubling effects. Wearing a face mask and washing hands were always implemented to keep free from COVID-19 [21]. These coping strategies were visible, including some that had existed in the previous waves e.g., cutting daily remuneration and reducing working hours. This was expected. According to studies, mechanisms to develop new coping techniques are likely to halt if none of the significantly stressful situations are identified [6], [30]. The only coping strategy found in this wave was recruiting a handful of temporary workers. They, especially teenagers who have been adept at using digital gadgets and online platforms, were enlisted to service the considerable demand for onsite fairs and online marketing.

4. Conclusion and Recommendations

We detailed how KSAE responded to COVID-19's impacts throughout its four waves. They have faced catastrophic threats because Thailand was among the first countries outside the People's Republic of China to encounter the pandemic [31]. This led to a lot of difficulties such as the repeated shutdowns of marketplaces and triggered a massive migration of agricultural labor to reduce the chances of infection [6]. These required KSAE to conduct coping strategies covering production, management, and public health to cope with impromptu challenges.

In the first wave, coping strategies were scarce. KSAE was in a panic and had no references to follow because COVID-19 was a newly emerging infectious disease [1]. Once they accepted the situation, they calmly marched on. This led to the number of coping strategies increasing in the next following waves, especially the second. This is because they were aware of the pandemic's impacts and attempted to cope with it to sustain the business.

Regarding this study, there are three recommendations. First, related organizations should encourage farmers to do their job in a manner of enterprises and cooperatives. These are more approved to operate and accomplish coping strategies. Collective action enhanced by being enterprises proposes farmers get access to exclusive benefits, for example, common-pool resources (inputs, knowledge, manpower) including spiritual support and

leadership. The latter is vital, especially for small enterprises in times of crisis [13]. Leadership offers an influential power relationship that can guide and provide knowledge to other individuals or the entire organization to reach goals. Secondly, although agriculture in Thailand is currently occupied by elders who are less adept at learning new skills [29], they must be trained on how to use Information and Communication Technology (ICT). Notably, its potential can provide platforms of e-commerce to substitute on-site markets during lockdowns, including assets to uphold coping strategies during crises. Third, future studies are recommended to examine coping strategies in different sectors. The outcomes help to identify feasible practices to deal with COVID-19 and other respiratory diseases that have already been predicted by public health experts to expose in the future [31], [33].

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