

Chapter 2

Examining Poverty and Vulnerability among Farmer Households in Northeastern Thailand: Analyzing the Interplay of Drought and the COVID-19 Pandemic

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Summary: The Northeastern region of Thailand, an area with a high number of peasant households relying on rain-fed water for rice production, suffers from extensive problems caused by the limited availability of sources of water for irrigation. This has resulted to a low yield of rice compared to other regions, aggravated by long drought and socioeconomic effect of COVID-19. This article examines interlinkages between the influence of drought and the effect of COVID-19 on household income and poverty in Northeastern Thailand. Using descriptive statistics and the methods of probability, in particular, the three-step Feasible Generalized Least Squares (FGLS) for analyzing the vulnerability to poverty of the households who had an income under the limit of poverty line. Findings highlight significant income declines during the COVID-19 outbreak, affecting farmers across different farm sizes. Large farms exhibit greater resilience to both the pandemic and drought, emphasizing the complexity of vulnerabilities. The study reveals a rise in poverty rates from 43.64% in 2019 to 49.59% in 2020, disproportionately affecting households relying on agricultural employment and those headed by the elderly. Vulnerability analysis exposes increased susceptibility among previously non-poor farmers, emphasizing the substantial impact of the COVID-19 outbreak.

Drought-affected farmers face higher vulnerability, emphasizing the compounding challenges. This study offers a fuller understanding of poverty dynamics among farmers, indicating the necessity of some evidence-based policies to overcome difficulties resulting from the drought and the COVID-19 pandemic.

1. Introduction

The Northeastern region of Thailand, commonly referred to as “Isan,” is characterized by a substantial concentration of peasant households whose primary livelihood revolves around rice cultivation. Given the limited availability of sources of water for irrigation in most areas, rice farming heavily relies on rainwater. Consequently, the average rice yield in this region tends to be lower than other regions within the country. As a result, some members of these households seek non-agricultural employment opportunities to augment their income (Rambo 2017).

The challenges faced by peasant households in the Northeastern region are compounded by the persistently worsening drought situation that has persisted for nearly a decade. This prolonged period of water scarcity has increased the difficulties already experienced due to limited access to irrigation, further impeding agricultural productivity (Felkner et al. 2009). Additionally, the region has not been immune to the far-reaching effects of the global COVID-19 pandemic, which emerged towards the end of 2019. The outbreak of the virus has had profound socio-economic ramifications, intensifying the economic and income crises facing peasant households in the area.

The confluence of drought and the spread of the COVID-19 pandemic has had significant repercussions for the regional economy, particularly for agricultural households in the Northeastern region of

Thailand. These households are highly vulnerable to enduring poverty, a susceptibility that has been amplified by recurring droughts and the ongoing COVID-19 pandemic. Consequently, these events render households vulnerable to falling into poverty or increase the likelihood of future impoverishment (Srisompun 2022). The impact on households when unforeseen circumstances occur can vary. Swift recovery and restoration to their pre-crisis state allow households to withstand temporary disruptions. However, severe economic consequences, such as income decline leading to reduced risk-bearing capacity, elevate the risk of descending into poverty (Siamwala et al. 2006).

The paper¹ that this chapter is based on aims to provide an analysis of poverty and vulnerability to poverty among Isan peasant households in the face of drought situations and the spread of the COVID-19 pandemic. The analysis serves as essential groundwork for formulating policy recommendations to mitigate and address the challenges posed by drought and the COVID-19 outbreak.

2. Research Methodology

(1) Data Sources

The data used from primary data collection involved a range of methods, including questionnaire surveys, in-depth interviews, and small group discussions. The questionnaire employed a closed-ended format and was administered to sample farmers in the target provinces

¹ The paper forms a part of the research project titled “Study on Economics and the Social Effect of Drought and the COVID-19 Pandemic on Farmers in Northeast Thailand.” Invaluable financial support has been provided by the National Research Council of Thailand (NRCT) through the Coordination Office for Agricultural Policy Research Networking Enhancement, the Knowledge Network Institution of Thailand (KNIT).

of the northeastern region between January and December 2020. It encompassed topics such as changes in income, agricultural production, debt levels, and the impacts of drought and the COVID-19 pandemic.

(2) Data Analysis

The examination of the impacts of drought and the COVID-19 pandemic on household income and poverty entailed the application of descriptive statistics. Specifically, this methodology was instrumental in assessing the vulnerability of households to poverty, particularly when their income descended below the minimum living expenses or the designated poverty line. To ascertain the probability of households being susceptible to poverty both in the present and future, wherein their income may fall below the poverty line, advanced probability estimation techniques were employed. To conduct this analysis, the three-step feasible generalized least squares (FGLS) method was chosen to estimate the fragility coefficient. This methodological selection was grounded in the precedent set by prior studies (Siamwala et al. 2006; Shahida and Patta 2016). The utilization of the three-step FGLS method is underpinned by its established efficacy in delivering robust estimates and facilitating comprehensive analyses of vulnerability to poverty.

3. Results and Discussions

(1) Effect of Drought and COVID-19 on Household Income and Its Changes

The COVID-19 pandemic has emerged as an unprecedented global crisis, posing profound challenges to societies worldwide. Governments across the globe have implemented a range of policies,

including social distancing, lockdowns, and quarantine measures, to contain the spread of the virus. However, these measures have had far-reaching implications, disrupted production and consumption activities and generated uncertainties and potential long-term disruptions across various economic sectors. Consequently, the resulting market downturn has had severe consequences, with a significant portion of the workforce confined and numerous businesses compelled to suspend operations (UNDP 2020). These circumstances have had a substantial impact on labor markets and household incomes, exacerbating the issue of poverty, particularly among agricultural households reliant on remittance income.

The study's findings revealed a pronounced impact on farmers residing in regions characterized by drought, as they faced heightened vulnerability to the combined challenges posed by both drought conditions and the onset of the COVID-19 pandemic. This impact was particularly pronounced among households reliant on income generated through the hiring of agricultural workers. In this demographic, the entirety of farmers surveyed faced repercussions from drought conditions, with an additional 47% grappling with the adverse effects of the COVID-19 outbreak. An analysis of the data concerning farm size disclosed noteworthy trends. Specifically, "large farms" emerged as comparatively less susceptible to the dual challenges of the COVID-19 pandemic and drought, registering lower impact rates at 35% and 67%, respectively, in contrast to their counterparts with smaller-sized farms. This observation underscores a potential resilience among larger-scale agricultural operations in mitigating the multifaceted risks associated with both climatic and pandemic-related factors.

The examination of the impact of both drought and the spread of COVID-19 on household income and income fluctuations revealed notable patterns. In the year of the COVID-19 outbreak (2020), a substantial majority of farmers experienced a decline in income, even in the absence

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of drought-related issues. Specifically, income reduced from 187,986 to 158,048 baht per year for farmers affected by the COVID-19 outbreak, compared to their counterparts unaffected by COVID-19. Noteworthy differentials in income reduction were observed among affected farmers in both drought-prone areas and non-drought regions, with income decreasing by 21.10% and -29.61%, respectively (see Figure 2.1).

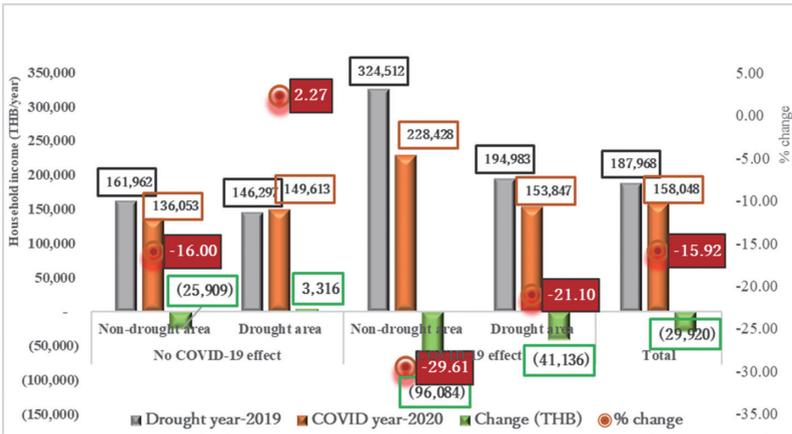


Figure 2.1. Household Income and Its Changes, Categorized by the Effects of Drought and COVID-19

Source: Srisompun (2022)

Conversely, farmers who remained unaffected by the COVID-19 outbreak experienced the least proportionate decrease in income, amounting to -2.62%. During the same period, i.e., the year of the COVID-19 outbreak (2020), farmers residing in areas not prone to drought exhibited a more substantial income reduction compared to their counterparts in other regions. Specifically, income for this group decreased from 239,486 to 180,109 baht, representing a significant decline of 24.79% (see Figure 2.2). This underscores the sweeping ramifications of the COVID-19 pandemic, going beyond the confines of

drought-affected areas and significantly impacting the income stability of farmers even in regions where drought was not a prevailing concern.

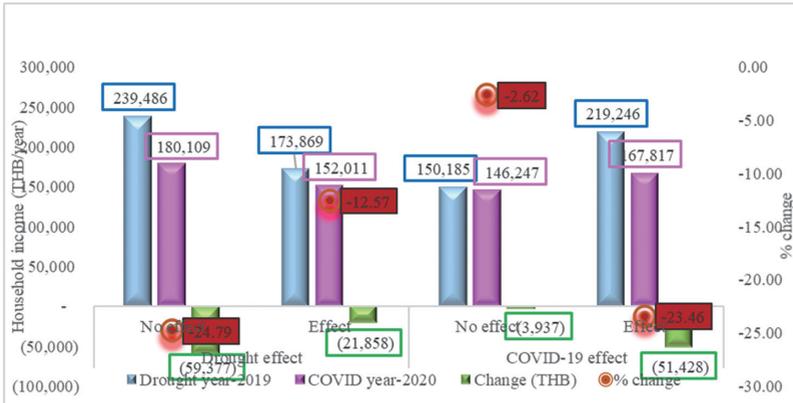


Figure 2.2. Household Income and Its Changes, Categorized by the Effects of Drought or COVID-19
 Source: Srisompun (2022)

(2) The Poverty Situation during the Periods of Drought and the COVID-19 Pandemic

The study’s findings reveal that a predominant segment of farmers sustained an average income falling within the range of approximately 1,000 to 4,000 baht per person per year. Comparing this income profile with the poverty line established in 2019 at 2,262 baht per person per year underscores a disconcerting reality: more than half of the farming population exhibits per capita income levels below the poverty line.

Moreover, a discernible trend emerges when scrutinizing the prevalence of poverty, with the proportion of individuals categorized as impoverished escalating from 43.64% in 2019 to 49.59% in 2020. Categorizing farmers based on the impact of the COVID-19 outbreak reveals a notable rise in the proportion of impoverished individuals

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among those affected, both in regions experiencing drought and those in non-drought areas, surging from 47.7% in 2019 to 51.3% in 2020. In areas unaffected by drought, poverty rates decreased from 52.3% in 2019 to 47.7% in 2020 (see Figure 2.3).

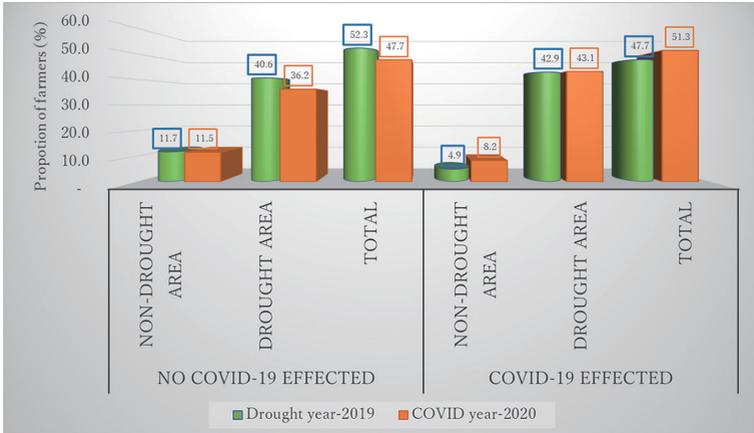


Figure 2.3. Proportion of Poverty among Sample Farmers Classified by the Effects of COVID-19 and drought

Source: Srisompun (2022)

Further categorization of farmers based on key variables in 2020 reveals a universal increase in poverty ratios across all identified groups compared to 2019. Particularly noteworthy is the substantial rise in the proportion of impoverished individuals within households reliant on income derived from the agricultural sector and those headed by the elderly, recording increases of 11.76% and 10.38% among each respective group of farmers. Even though, in 2019, groups predominantly reliant on income from hiring agricultural workers exhibited the lowest proportion of impoverished individuals, the shifting dynamics in 2020 led to a considerable upswing in poverty rates within this demographic (see Figure 2.4).

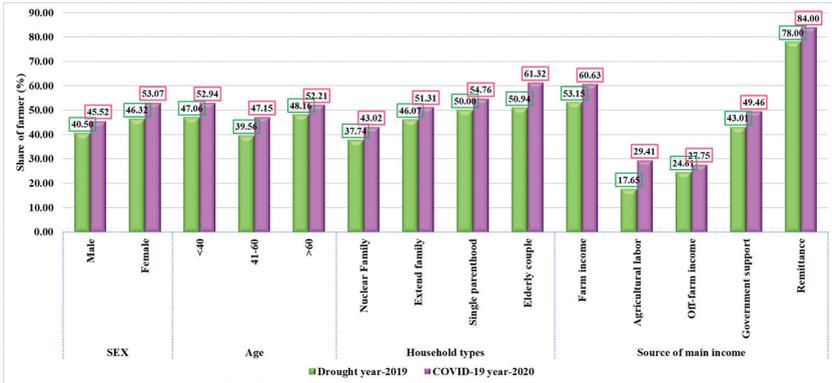


Figure 2.4. The Proportion of Poverty among Farmers Categorized by Various Socio-economic Characteristics

Source: Srisompun (2022)

Despite the expectation that the COVID-19 outbreak would have a relatively diminished impact on the agricultural sector compared to other production sectors, the study unravels nuanced complexities. While the outbreak may exert a more direct influence on non-agricultural sectors, the stringent disease surveillance measures have reverberated significantly within the agricultural domain. The resultant decrease in produce prices, coupled with disruptions in the market, disproportionately affected households within low-income and precarious strata, intensifying the adverse impact on these groups more than their counterparts in more economically stable circumstances.

(3) Vulnerability to Poverty during the Periods of Drought and the COVID-19 Pandemic

Research conducted on vulnerability to poverty compared to the poverty line in 2018 (2,262 baht/person/year) reveals significant

findings. The ratio of farmers vulnerable to poverty increased from 40.83% in 2019 to 59.17% in 2020 among sample farmers who were not poor in 2019. Conversely, farmers who were poor in 2019 exhibited a smaller increase in vulnerability to poverty in 2020 (19.50% and 11.90% respectively). This suggests that the impact of the COVID-19 outbreak had a greater effect on farmers vulnerable to poverty, while the probability of falling deeper into poverty increased for farmers who were already poor. Furthermore, farmers whose primary source of income is remittances exhibited the highest proportion of vulnerability to poverty. The compounding effects of drought and the COVID-19 epidemic complicated the struggles faced by Isan farmers. A coefficient of Log Per Capita Income was calculated using FGLS (Feasible Generalized Least Squares) analysis, and statistical significance was observed at different confidence levels (90%, 95%, and 99%).

For farmers residing in areas affected by drought in 2019 and contending with the COVID-19 situation in 2020, probability analysis revealed a higher vulnerability to poverty. The proportion of farmers affected by drought and living in poverty was higher than that of those not impacted by drought (46.32% and 50.53% respectively in 2019, and 33.85% and 46.15% respectively in 2020). The analysis further revealed that drought-affected farmers had a higher proportion (61.89%) of households vulnerable to poverty compared to the 12.66% among farmers who did not experience drought. These findings emphasize that drought not only has economic consequences for affected households but also impairs their ability to cope with risks and unforeseen events, rendering them even more susceptible to poverty when faced with the COVID-19 pandemic in 2020.

4. Conclusion and Policy Implications

The findings of this study shed light on the critical issue of poverty and vulnerability among Isan peasant households in Northeastern Thailand, particularly in the context of drought and the COVID-19 pandemic. The analysis reveals that the COVID-19 outbreak has had a substantial negative impact on household incomes, with a notable decline observed among farmers in the study area. This decline can be attributed to the stringent measures implemented to control the spread of the virus, which resulted in reduced remittances and decreased income from non-farm sectors. Furthermore, the study highlights the vulnerability to poverty among agricultural households, with a significant proportion falling below the poverty line. Their vulnerability has been exacerbated by the compounding effects of drought and the COVID-19 pandemic. Farmers heavily reliant on remittances and those residing in drought-affected areas are particularly susceptible to poverty and face heightened challenges in coping with risks and unexpected events. The findings emphasize the need for targeted policy interventions to address the multifaceted challenges faced by Isan peasant households. Based on the research results, the following policy implications are recommended:

1. Scaling-up social protection – Strengthening social protection including safety nets to provide assistance to vulnerable agricultural households, particularly those affected by drought and the COVID-19 pandemic. This might involve cash transfers, subsidies, and targeted help to cover basic needs and to prevent further impoverishment.
2. Diversifying household income sources – Promoting income diversification among farm households to decrease reliance on a sole sector and increase resilience. This can be facilitated by encouraging non-farm activities, greater market connectivity of farm produce, skill development, and entrepreneurship.

3. Increasing access to financial services, including credit and insurance, for agricultural households. This can help them to manage income fluctuations, reduce risks, and invest in sustainable farming techniques.
4. Systems for managing water should be strengthened, resources for irrigation infrastructure should be mobilized, and sustainable water conservation practices should be promoted to reduce the effects on agricultural production and livelihoods of drought.
5. Encouraging the adoption of modern agricultural technologies and practices that improve productivity, help adapt to climate-related risks, and strengthen the resilience of agricultural systems.

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Chapter 2. Examining Poverty and Vulnerability among Farmer Households in Northeastern Thailand: Analyzing the Interplay of Drought and the COVID-19 Pandemic

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