

## CHAPTER I. INTRODUCTION

### A. Background

Indonesia is recognized as an agrarian nation, signifying a country where the agricultural sector plays a pivotal role in sustaining livelihoods and aiding in its development (Secretariat of the Cabinet of the Republic of Indonesia, 2022). The agricultural sector wields considerable influence over individuals' earnings in Indonesia due to the prevalence of farming as the primary occupation among the nation's populace, encompassing 38.7 million individuals, constituting 28.6 percent of the overall labor force, which amounts to 135.3 million people (BPS, 2022).

Agricultural advancement holds significant importance within the context of Indonesia's broader national development. Several key factors contribute significantly to the progress of agriculture in the country, including its abundant and diverse natural resources, substantial contributions to national income, a significant portion of national exports, a large population in Indonesia relying on this sector for employment opportunities, income generation, food supply, as well as the supply of essential raw materials, among others (Satria, 2017).

The agricultural domain includes a variety of subsectors, including the horticultural subsector, fisheries subsector, food crops subsector, forestry subsector, and livestock subsector. Among these five existing agricultural subsectors, the horticulture subsector stands out as a promising contributor to agricultural development in Indonesia, particularly during and after the pandemic. This assertion is supported by data from the Ministry of Agriculture's Database. In 2021, horticultural exports reached USD 647.24 million, marking a 0.27 percent increase compared to 2020. The growth in exports was primarily driven by fruit commodities during the Covid-19 pandemic in 2021. The realized export value of fruits in 2021 amounted to USD 488.18 million, reflecting a significant 25.21 percent increase compared to 2020 (Ministry of Agriculture, 2020).

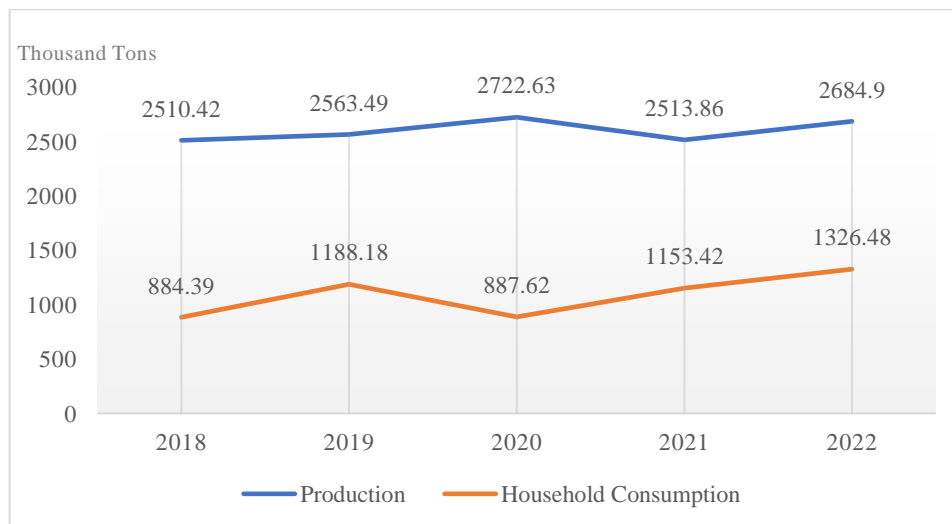
Horticultural crop commodities in Indonesia are divided into four major groups: fruit crops, vegetable crops, biopharma plants, and ornamental plants. Within this group of commodities, oranges hold a substantial position in contributing to the nation's foreign exchange revenue. This is evident from their

contribution to foreign exchange earnings through exports. In 2021, the export value of oranges reached US\$1.52 million, which was three times higher than the US\$0.51 million recorded in 2020. Although there was a slight decrease in 2022, with exports totaling US\$1.51 million, oranges maintained their significance in this regard. They ranked fourth in terms of their contribution to the annual fruit export value in 2022 when compared to other fruits (BPS, 2023). Furthermore, orange cultivation also plays a vital role in creating employment opportunities for thousands of people. In 2020, the Central Statistics Agency (BPS) recorded that approximately 3.88 million people were employed in the horticultural agriculture sector, which includes fruit cultivation, including oranges (BPS, 2020).

Orange is the fourth largest fruit production commodity in Indonesia after bananas, pineapples, and mangoes with Indonesia's production of conjoined orange fruit in 2022 amounting to 2,684,980 tons, while banana production is 9,245,427 tons, pineapple fruit production is 3,203,775 tons, and mango fruit production is 3,308,895 tons (BPS, 2023). One of the rapidly developing varieties of oranges is siam orange. Currently, the total cultivation area of siam oranges in Indonesia covers approximately 62,829 hectares, yielding a production of about 2.4 million tons. Siam orange population reaches around 400 trees, with an average production of approximately 38.000 kg per hectare per year or about 95 kilograms per tree per year. Centers of siam orange production are distributed in various regions, including Karo, Simalungun, Agam, Lima Puluh Kota, Kerinci, Banyuwangi, Malang, Jember, Kota Batu, Ponorogo, Bangli, Gianyar, Sambas, Barito Kuala, Tapin (BPS, 2023).

Based on Figure 1, the demand for oranges in Indonesia has increased, as evidenced by the rising household consumption of oranges in Indonesia over the past two years. In 2021, this consumption amounted to 1,153.43 thousand tons, and in 2022, it further increased to 1,326.48 thousand tons. This trend signifies a promising opportunity to enhance orange production in Indonesia, which would significantly benefit the country's agricultural economy. However, meeting the domestic demand for oranges in Indonesia has not been adequately supported by national orange production over the last five years, which has experienced fluctuations. In 2018, orange production in Indonesia reached 2,510.42 thousand

tons, followed by a slight increase in 2019 to 2,563.49 thousand tons. Subsequently, in 2020, there was a marginal rise to 2,722.63 thousand tons, but it decreased in 2021 to 2,513.86 thousand tons. Nevertheless, in 2022, orange production in Indonesia rebounded, experiencing a 6.81% increase to reach 2,684.98 thousand tons (BPS, 2023).



**Figure 1.** Orange's Production and Household Consumption in Indonesia from 2018 to 2022

Source : BPS, 2023

The production of siam oranges in West Sumatra Province is the fifth largest among other provinces in 2022 in Indonesia (Appendix 1) and its production is in every district. However, the province which is the center of chayote production is spread across five districts, namely in Lima Puluh Kota Regency, Agam Regency, Pesisir Selatan Regency, West Pasaman Regency, and Solok Regency. These five districts contribute 89 percent to the production of siam oranges in West Sumatra Province (Appendix 2).

The area that contributed the highest average siam orange production in West Sumatra Province from 2018 to 2022 is Lima Puluh Kota Regency. In 2018, Lima Puluh Kota Regency contributed to siam orange production of 45,076 tons or 43% of the total siam orange production in Lima Puluh Kota Regency. In 2019, Lima Puluh Kota Regency accounted for 39,593 tons of siam orange production, representing 36% of the entire siam orange yield in West Sumatra. In 2020, Lima Puluh Kota Regency contributed to siam orange production of 58,193 tons or 39%

of the total siam orange production in West Sumatra Province. In 2021, Lima Puluh Kota Regency accounted for 38,368 or 32% of the total siam orange production in West Sumatra Province. In 2022, Lima Puluh Kota Regency contributed to siam orange production of 59,441 tons or 34% of the total siam orange production in West Sumatra Province. Overall, Lima Puluh Kota Regency from 2018 to 2022 is the district that contributes the highest average siam orange production with an average contribution of siam orange production of 39% in West Sumatra Province. However, in 2021 and 2022, it has slightly decreased becoming the second orange production after Agam Regency with the production as many as 38,368 tons and 59,441 tons (Appendix 3).

There are nine districts in Lima Puluh Kota Regency that have received financial assistance from the Lima Puluh Kota Government in the context of developing siam orange areas for 10 years from 2011 – 2020 (BPP, 2020). Of the ten sub-districts, there are three districts that received the most assistance for the development of orange areas from the Lima Puluh Kota Regency government, namely Gunung Omeh District, Bukit Barisan District, and Suliki District. Gunung Omeh District received assistance in developing the siam orange area covering an area of 295.5 ha of land followed by Bukik Barisan District covering an area of 173 ha of land and Suliki District covering an area of 77.5 ha of orange land. So this was previously by the words of Mr. Governor Mahyeldi who will focus on paying more attention to the three districts because they are the main sources that contribute greatly to siam orange production in Lima Puluh Regency (The Department of Food Crops, Horticulture, and Plantation in Lima Puluh Kota Regency, 2022)

## **B. Problem Statement**

As the largest producer of siam oranges in West Sumatra Province, Lima Puluh Kota Regency has the potential to become a siam orange development area. However, based on Table 1, it is not followed by the growth of the production, harvest area, and productivity of siam oranges year by year. The siam orange production in Lima Puluh Kota Regency exhibits annual fluctuations, with an overall declining trend happening from 2015 to 2022. In 2015, siam orange production peaked at 269,179 tons. Unfortunately, in 2016, it witnessed a sharp decline, plummeting nearly 21 times to 12,446 tons. The trend reversed in 2017,



with siam orange production doubling to 26,413 tons. In 2018, there was a significant increase, almost doubling the previous year, reaching 25,076 tons. Meanwhile, in 2019 siam orange production decreased by 5,483 tons or by 12%, down from the previous total production to 39,593 tons. Worse, in 2020-2021, siam orange production dropped dramatically by 35 percent, more than 58,193 tons, down to 38,368 tons, while productivity in the same period also fell 55.81 percent from 60.29 tons per hectare to 33.65 tons per hectare. In 2022, the data for siam orange production once again indicated a reduction, amounting to 31,233 tons.

**Table 1.** Production, harvest area, and productivity of siam oranges in Lima Puluh Kota regency from 2015 to 2022

Year	Production (ton)	Harvest Area(ha)	Productivity (ton/ha)
2015	269,179	890	302.45
2016	12,466	354	35.13
2017	26,413	966	27.32
2018	45,076	1,135	39.71
2019	39,593	1,214	32.61
2020	58,193	965	60.29
2021	38,368	1,140	33.65
2022	31,323	1,217	25.72

Source: Dinas Tanaman Pangan Hortikultura dan Perkebunan Kabupaten Lima Puluh Kota, 2023

The reduction in orange farming production and productivity in Lima Puluh Kota Regency over the past two years is attributed to farmers' inefficient utilization of production resources. Among these production factors are limited fertilizers and pesticides and increased attacks by plant-disturbing organisms. This is also becoming a discussion in the province of West Sumatra, where in mid-2022 the Governor of West Sumatra, Mr. Mahyeldi, and the Regent of Lima Puluh Kota Regency, Safaruddin Dt. Bandaro, immediately responded to the drastic decline in siam orange production by going directly to the orange orchard in Lima Puluh Kota Regency to see the situation in the field. The arrival of these two West Sumatran officials show that the existence of siam oranges is very important which is the main commodity in Lima Puluh Kota Regency.

The downward trend in siam orange at the Lima Puluh Kota Regency level indicates a decrease in production in the village areas of Lima Puluh Kota siam orange-producing districts, including Suliki District. Suliki District is one of the main sources of siam orange producers is Andiang Village (Appendix 3).

**Table 2.** Village producing siam oranges in Suliki District 2020

No	Village	Harvested (ha)	Number of Trees
1	Tanjung Bungo	33,375	13,350
<b>2</b>	<b>Andiang</b>	<b>32,148</b>	<b>12,859</b>
3	Suliki	23,500	9,400
4	Sungai Rimbang	21,900	8,760
5	Kurai	17,250	6,900
6	Limbanang	4,138	1,655
Total		132,310	52,924

Source: BPP of Suliki District, 2020

Andiang Village is the point of attention of researchers in conducting research because Andiang Village has great potential in siam orange production. Based on Table 2, Andiang village occupies the 2nd position which contributes the largest siam orange production in Suliki District in 2020. Compared to other villages, Andiang village is the newest village to adopt siam orange cultivation, with the majority of the community beginning this practice in 2016. Other villages started cultivating siam oranges more than 20 years ago. Although Andiang village is relatively new in cultivating siam oranges, it has been able to outperform other villages by reaching achievements at the National level from the Minister of Tourism and Creative Economy as "Symbolic Village of National Economic Revival" in 2021. Because of the perseverance of the Andiang people in cultivating siam oranges which in just 6 years have been able to build "Andiang Orange Picking Tourism." However, this is very unfortunate because in 2022 there was a significant decrease in Andiang's siam orange production which can be seen in Table 3.

According to the data presented in Table 3, the problem indicates that the increase of planted area is not accompanied by the increase in production and productivity of siam oranges. The planted area has constantly increased since 2018 to 2020 but the production and productivity were sharply decreasing the last two years or from 2021 to 2022. The data shows that the siam orange production in Andiang Village reached a total of 953.67 tons in the year 2018, then in 2019 the

production of siam oranges increased to 1237.74 tons. In 2020 there was a significant increase in siam orange production to 1622.5 tons. However, in 2021 the production of siam oranges in Andiang decreased to 1585.78 tons, then in 2022 there was a substantial drop in the production of siam oranges to 965.4 tons or 60% of the total siam orange production the previous year. Overall, Andiang's siam orange production has shown good numbers from 2018 to 2020. However, there was a slowly significant decline in siam orange production at the end of 2021 to 2022.

**Table 3.** Planted area, harvest area, production, and productivity of siam oranges in Andiang Village

Year	Planted Area (ha)	Harvest Area (ha)	Production (ton)	Productivity (ton/ha)
2018	29	22	953.67	43.35
2019	35	27	1,237.74	45.84
2020	38	32	1,622.50	50.70
2021	40	30	1,585.78	52.86
2022	40	26	965.4	37.13

Source: BPP of Suliki District, 2022

The decrease in harvest area and the production indicates a problem in the use of inputs of production factors. As previously explained, during a discussion between the Governor of West Sumatra Mr. Mahyeldi, and the Regent of Lima Puluh Kota Regency Safaruddin Dt. Bandaro with siam orange farmers Lima Puluh Kota Regency said that farmers suspected this was caused by limited inputs such as fertilizers, pesticides, and increased attacks by plant disturbing organisms that made farmers not process oranges with the right pattern which led to a decrease in siam orange production. Therefore, it is necessary to identify what production factors are the most influential in increasing the siam orange production business in Andiang Village. In addition, the type of orange seeds used by farmers also affects the quantity and quality of oranges produced. Based on data from BPP Suliki District, only 15% of farmers use superior seeds of orange plants (Department of Food Crops, Horticulture, and Plantations of Limapuluh Kota Regency, 2022)

The increase in farmers' interest in planting siam oranges has resulted in a sustained expansion of the planted area of siam oranges in Andiang Village over the past 5 years but has not been accompanied by an increase in the harvest area over the last two years. According to Table 3, the planted area of siam oranges in Andiang Village was 29 ha in 2018, which subsequently increased to 40 hectares in 2022. However, this was not accompanied by a decrease in the area of harvest. In 2018 the siam orange harvest area was 22 ha, then in 2019 the siam orange harvest area increased by 27 ha and in 2020 also increased by 32 ha. Meanwhile, in 2021, the area of siam oranges decreased by 30 ha. In 2020, the area harvested by siam oranges decreased significantly to 26 ha. The productivity of siam oranges in Andiang Village also experienced in the last year of 2022 of 37.13 tons/ha.

Based on the problem description provided above, it is possible to formulate research inquiries as follows:

1. How is the description of orange farming in Andiang Village, Suliki District, Lima Puluh Kota Regency?
2. What factors affecting siam orange production in Andiang Village, Suliki District, Lima Puluh Kota Regency?

Based on the questions above, researchers need to conduct a study entitled **"Analysis of Factors Affecting Siam Orange Production in Andiang Village, Suliki District, Lima Puluh Kota Regency"**

### **C. Research Objectives**

Based on the formulation of the problem that has been explained earlier, the objectives of this study are:

1. To describe the process of orange farming in Andiang Village, Suliki District, Lima Puluh Kota Regency
2. To analyze the factors affecting siam orange production in Andiang Village, Suliki District, Lima Puluh Kota Regency



#### **D. Research Benefits**

This research is expected to provide benefits for interested parties, namely:

1. For orange farmers, this study can provide recommendations or information in an effort to manage siam oranges more efficiently.
2. For the government, this research can be a policy consideration for the development and progress of siam farming in Andiang Village, Suliki District.
3. For the author, this research can be a tool to apply the knowledge gained from lectures.

