

## **Natural Silk Business Conditions in Soppeng Regency, South Sulawesi Province, Indonesia**

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### **Abstract**

*Natural silk is an agro-industrial activity that includes two related aspects of cultivation and industrial aspects. The business activities of planting mulberry as feed for caterpillars, breeding silkworms and raising caterpillars to form cocoons ready for harvest are activities in the aspect of cultivation. Meanwhile, the industrial aspect involves processing cocoons into yarn and weaving them into silk sarongs. This study aimed to determine the condition of the natural silk business in Soppeng Regency, South Sulawesi Province, Indonesia. The research was conducted by processing secondary data from 2021 to 2022. Data analysis was descriptive quantitative. The results showed decreased cocoon and thread production and the number of silk farmer groups in 2021 and 2022.*

**Keywords:** *Natural silk, cultivation, industrial aspects.*

## **INTRODUCTION**

Natural silk is an agro-industrial activity that includes two related aspects of cultivation and industrial aspects. The business activities of planting mulberry as caterpillar feed, silkworm nursery and caterpillar rearing activities to form cocoons ready for harvest are activities in the aspect of cultivation. In the industrial aspect, it consists of processing cocoons into yarn and weaving them into silk sarongs. natural silk production activities have decreased yearly, including in Indonesia. Although several regions in Indonesia were once commodity centres, they continue to produce. Data on Indonesia's natural silk are not explicitly recorded but are included in several countries whose contribution is only 0.4% of world silk production (Dun and Bradstreet, 2010).

The natural silk agro-industry has the potential to be developed as a mainstay industry because it has advantages including: raw materials based on domestic natural resources, silk products have the potential to become a leading export commodity and the domestic market opportunity is very large, the spread of Indonesia's natural silk business is quite wide, the government support the development of the natural silk industry through policies and programs (Tarigan et al,2008)

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The natural silk cultivation activity is one of the assets of local wisdom that the people of South Sulawesi Province have carried out since the 1950s. Hence, the South Sulawesi Province is one of Indonesia's natural silk development areas, contributing 70% to 80% of the national silk thread production (Maturity 2011; Nuraeni 2017; Muin and Isnan 2019). Silk activities in South Sulawesi Province have been carried out in an integrated manner, starting from mulberry cultivation, silkworm rearing, yarn spinning, weaving and the apparel industry. The people of South Sulawesi have a very thick culture with natural silk, and has become a reliable source of income (Nuraeni, 2019).

South Sulawesi Province has several development centres for cultivating mulberry and silkworm, the essential ingredients for making silk cloth. Silk cloth is a processed product from silk thread produced from cocoons produced by silkworm cultivation and woven into silk cloth. Although the silk business is significant, the number of farmers in the upstream section who are involved in raising silkworms and mulberry plants in South Sulawesi Province is decreasing every year (Muin and Isnan, 2019). The stages of activity in the silk chain of South Sulawesi Province consist of the upstream-manufacturing-downstream sector. Currently, Soppeng Regency is an area which is the upstream sector of the silk business in South Sulawesi Province.

## RESEARCH METHODS

This research was conducted in Soppeng Regency, South Sulawesi Province. The data used are secondary data for 2021 and 2022. The data analysis used was a literature review quantitative descriptive.

## RESULTS AND DISCUSSION

### Benefits of Silk Development

Silk commodity development has a long value chain involving multiple sectors and has comprehensive benefits. Not only beneficial for the economic development of society but also for environmental sustainability. From several kinds of literature, at least seven main benefits of silk commodity development have been identified. The first benefit is that silk contributes to increasing people's economic income because of its labour-intensive nature and the relatively short period of raising silkworms to sell cocoons (Sadapotto, 2010 dan Isnan et al., 2019). The second benefit of developing silk is protecting the environment because mulberry trees can improve critical land to be known as conservation plants (Sadapotto, 2010; Isnan & Muin, 2015). Thus, mulberry trees can be planted on all types of land, even on degraded land, helping farmers in areas with less rainfall (Sadapotto, 2010). The third benefit is that mulberry trees are an alternative to forest plants to avoid forest destruction and become one of the social forestry strategies (Sadapotto, 2010; Harbi et al., 2015). The fourth benefit is that mulberry leaves are not only used for feeding silkworms but can also be developed for other animal feeds, such as cattle, buffalo, sheep, chickens and mangrove crabs (Isnan & Muin, 2015; Setiawan & Wiryawan, 2015; Dady et al., 2016; Kamaruddin et al., 2018). The sixth benefit, mulberry leaves are often used as a health drink or herbal medicine known as mulberry leaf tea (Isnan & Muin, 2015; Wirastuty, 2019; Miladiyah, 2003). Finally, the silk commodity has excellent potential for developing agro-tourism and creative industries (Cangara et al., 2019).

The variety and breadth of the benefits and value of silk commodity development in the entire scope of the production process from upstream to downstream positions this commodity to be very strategic. In addition, the development of silk commodities has also involved vulnerable groups, such as women, people with disabilities, and people with low incomes (Lathifah et al., 2015; Ibrahim et al., 2013). Therefore, the development of the silk commodity has enormous potential to provide a broader impact on improving the economy and environment of South Sulawesi.

#### Natural Silk Business in Soppeng District, South Sulawesi Province

Soppeng Regency is the first epicentre of natural silk development in South Sulawesi. The latest developments were in April 2017 in Soppeng Regency the remaining mulberry garden area was 38.65 ha, 72 families of active farmers with raw silk production of 237.75 kg, which was very much different from the 1971 raw silk production of 90 tons, and a mulberry land area of 5,500 ha and the number of farmers is 9,006 households (Razak, 2017)

Natural silk development activities in Soppeng Regency can be found in several sub-districts, including Marioriawa, Donri-Donri, Liliriaja, and Marioriwawo Districts. Specifically for developing natural silk and producing silk thread, it is concentrated in the Donri-Donri Subdistrict. However, Pising and Pesse villages produce cocoons and yarn, although other villages still need to produce them in decreasing quantities. Data on silkworm production for 2021 can be seen in Table 1.

Table 1. Silkworm Production Results in 2021

No	Date	Number of eggs (box)	Kokon (kg)	Yarn (kg)	Information
1	January	0,00	0,00	0,00	No maintenance
2	February	0,00	0,00	0,00	No maintenance
3	March	15,25	470,37	54,99	
4	April	54,00	1584,94	192,60	
5	May	23,50	706,44	84,86	
6	June	95,00	1716,11	204,39	
7	July	54,00	914,97	112,04	
8	August	18,50	294,45	36,17	
9	September	0,00	0,0	0,00	No maintenance
10	October	0,00	0,0	0,00	No maintenance
11	November	29,00	964,72	120,75	
12	December	41,00	1326,11	157,16	
	Amount	330,25	7978,11	962,94	

Source: Department of Food Crops, Horticulture and Food Security, Soppeng Regency

Table 1 shows that silkworm production fluctuates every month; even in certain months, there is no maintenance of silkworms, with certain months there is no maintenance, and there is a gap between these months. It even shows that the number of cocoons is quite a lot, but the yarn produced is low, for example, in August 2021. Meanwhile, data on silkworm production 2022 can be seen in Table 2.

Table 2. Silkworm Production Data in 2022

No	Date	Area(ha)	Eggs (boxes)	cocoon (kg)	Yarn(kg)	Income (IDR/month)
1	January	0,00	0,00	0,00	0,00	0,00
2	February	27,35	46,00	1303,290	144,570	18.236.000
3	March	10,50	9,00	257,250	45,590	18.236.000
4	April	17,30	22,00	553,540	62,210	24.884.000
5	May	15,70	19,25	558,500	62,340	24.936.000
6	June	24,60	101,00	1240,150	149,150	59.660.000
7	July	9,15	100,50	365,710	41,480	16.592.000
8	August	28,40	22,50	707,640	85,070	34.028.000
9	September	28,40	31,25	757,020	103,690	41.476.000
10	October	17,55	17,25	504,820	62,460	24.984.000
11	November	24,75	33,25	995,100	114,500	45.800.000
12	December	9,40	11,00	146,950	21,010	8.404.000
	Amount	213,10	413,00	7389,970	892,070	356.828.000

Source: Department of Food Crops, Horticulture and Food Security, Soppeng Regency

Table 2 shows that in 2022 silkworm production will also fluctuate in both the number of cocoons and threads produced; even in certain months, the eggs are in high numbers of 100.50 (boxes), but the production of cocoons and threads produced is low compared to June

From the data obtained, various programs/activities were developed to support the development of natural silk in Soppeng Regency, including a Master Plan for the Development of the Natural Silk Industry and Tourism in the Sabbeta Pising Village Area, Soppeng Regency, facilitation activities for mulberry cutting assistance, assistance for silkworm seeds, machinery equipment, marketing facilitation, farmer empowerment and capital. These activities can encourage the activities of natural silk farmer groups in Soppeng Regency.

The natural silk business is a business that involves upstream and downstream activities which are a series of mulberry planting activities, silkworm maintenance, processing, to marketing. The exploitation of natural silk can be organized by three main groups, namely the public sector group consisting of the government, in this case, the ministries related to natural silk, the non-profit private sector such as NGOs, foundations and associations, and the private sector with a profit orientation namely production companies, commercial farmers. And farmer groups. Institutions at the most upstream level are farmer groups. This institution consists of farmers involved in the natural silk business. The group's institutional structure facilitates farmers' work so that common goals can be quickly achieved. The institutional structure adapts to the needs felt by farmer groups. The institutional structure is related to the effectiveness of implementing activities carried out by farmer groups. Therefore, farmer groups play a strategic role in the productivity of natural silk and the business of natural silk, there are several farmer groups in Soppeng Regency.

The data on natural silk business farmer groups in Soppeng district in 2022 can be seen in Table 3:

Table 3. Name of the Natural Silk Business Farmer Group in Soppeng Regency in 2022

No	Group name	Number of active members(people)	Number of inactive members (people)
1	Saturday	4	-
2	Mega Sutera	4	8
3	Batu Tungke	4	-
4	Eka Sutera	3	3
5	Lord Jumpi	5	5
6	Mother's song Sabbeta	2	-
7	Build Silk	Not active	-
8	Coppo Tellang	4	1
9	Tanah Bellange	0	Not active
10	Seppang Riwawo	7	-
11	Hope Bud	Not active	-
12	Aggalange	2	-
13	Mattunru-tunrue	Not active	-

Source: Department of Food Crops, Horticulture and Food Security, Soppeng Regency

Table 3 shows that of the 13 groups of silkworm farmers in the Soppeng district, most of them are in the Donri-Donri District. However, the activity of the farmers in the group is decreasing, and there are even groups that still need silkworm maintenance. This result is different from the opinion of Andarwati, et al (2012) that the formation of farmer groups is currently more directed at the ease of carrying out government tasks in channelling production facilities to farmers so that they are more coordinated. The reduced silk farmer groups in the Soppeng district is also due to diminishing group dynamics. A social group such as a farmer group has an external structure or socio-group, namely group dynamics, activities to respond to tasks that arise due to environmental challenges and challenge needs.

## CONCLUSIONS

The conditions for the natural silk business in Soppeng Regency, namely the production of cocoons and threads, have decreased from 2021 to 2022. Natural silk farmer groups from 2021 to 2022 have also experienced a decline in activity, even in 2022 there will be groups not raising silkworms.

### Recommendations

It is necessary to carry out activities to increase the production of cocoons and yarn and increase the capacity of groups supported by the local government of Soppeng Regency.

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