

Sheep farm: an alternative community livelihood in Kampung Laut, Cilacap

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Abstract. It is estimated that from year to year the area of Segara Anakan Lagoon will continue to decline and affect fisheries production. This condition requires the community to look for other activities besides being fishermen, one of which is the development of sheep farming which has been started since 2014 in Kampung Laut. Hence, the research aims to determine the potential of sheep farming as an alternative livelihood for the people of Kampung Laut, using secondary data on brackish water fisheries production and sheep populations in Kampung Laut Subdistrict originating from the Central Bureau of Statistics of Cilacap Regency. The result shows that the average growth of brackish water fisheries production from 2011 to 2016 has decreased by 6.30% while the average growth of the sheep population from 2011 to 2016 has increased by 6.75%. Based on these results, sheep farming has the potential to become an alternative livelihood for the people of Kampung Laut.

1. Introduction

Segara Anakan Lagoon has a very important role in the lives of the surrounding communities because of the abundance of fisheries. However, this role has declined over time as the effect of high sedimentation rate till lagoon area decreased by 2703.7 ha from 1978 to 2016. In other words, the land area in the lagoon continues to increase by 71.15 ha per year [1], [2]. The decline in the lagoon area causing total fish and shrimp production decreased significantly. In response to these conditions there was a change in economic activity from the fisheries sector to the agricultural sector through the use of land resources [3], [4].

The phenomenon of economic activity change shows that people around the Segara Anakan Lagoon need an alternative livelihood to fulfil their daily needs. The activities of fisherman not only turned into agricultural farmers but also livestock farmers [5], [6]. The subdistrict that experienced a change in economic activity due to the decline in the area of the Segara Anakan Lagoon is The Kampung Laut Subdistrict. The development of alternative livelihood for the people of Kampung Laut Subdistrict has been carried out since 2014 by the Bina Sejahtera Social Foundation by developing sheep farm. Therefore, this study aims to determine the potential of sheep farming as an alternative livelihood for the people of Kampung Laut Subdistrict based on secondary data brackish water fisheries production and sheep population.

2. Material and Methods

2.1. *Material*. The material for this study is secondary data from The Central Bureau of Statistics of Cilacap District, Indonesia from 2011 to 2016 concerning brackish water fisheries production and sheep population in Kampung Laut Subdistrict.

2.2. *Methods*. Data were analyzed for annual growth rates to determine the average growth rates of brackish water fisheries and sheep populations. Interpretation of the results of secondary data processing using the literature review method to help draw a conclusion on the study. The literature review method is used to present the results of similar studies, link studies with other literature, and create a framework to compare the results of studies with other studies [7].

3. Results and Discussion

Kampung Laut is the youngest subdistrict in the Cilacap District of Central Java which is located at coordinates 07° 40'S and 108°52'E. This subdistrict is located in the Segara Anakan Lagoon area which is a meeting place between several river estuaries with Indian Ocean seawater. Hence, the water quality in Segara Anakan Lagoon is influenced by the mass of fresh water and the mass of seawater/salt water, resulting in a brackish water lagoon area [8], [9]. Brackish lagoon waters make it an area of migration and breeding of shrimp, crabs, and fish so that it produces high economic value and can be used as a livelihood for the surrounding communities [10]. The potential for fisheries production made the Segara Anakan Lagoon area a potential fishing and inland fishery until the 1990s [11].

3.1. Brackish Water Fisheries in Kampung Laut Subdistrict

The narrowing of the lagoon area will affect the production of brackish water fisheries, especially in Kampung Laut Subdistrict. Data from the Central Bureau of Statistics of Cilacap District shows that from 2011 to 2016 the growth of brackish water fisheries production in Kampung Laut Subdistrict has decreased (Table 1).

Table 1. The Growth of Brackish Water Fisheries in Kampung Laut

Year	Production (kg)	Growth (%)
2011	290760	
2012	284712	-2.08
2013	339705	19.31
2014	370233	8.98
2015	399090	7.79
2016	137602	-65.52
Average		-6.30

Processed secondary data, 2019

Source: The Central Bureau of Statistics of Cilacap District, Indonesia

The average growth of brackish water fishery production in Kampung Laut Subdistrict has decreased by 6.30% per year. Production growth only increased in 2013, after which the growth rate continued to decline until 2016. In 2016 brackish water fishery production decreased significantly by 65.52% with the lowest production in 6 years.

The decline in brackish water production is a negative impact of the decline in the Segara Anakan Lagoon. Shrinkage the water body and decreasing the water quality of the lagoon have limited the opportunity for fish to breed, so that fish resources will decline. Communities whose livelihoods depend on the potential of these fisheries must develop another livelihood according to natural changes by utilizing the arising land due to sedimentation [2], [11].

3.2. Sheep Farm in Kampung Laut Subdistrict

The sheep farm development carried out by Bina Sejahtera Social Foundation aims to help the people of Kampung Laut Subdistrict to find an alternative livelihood, so that they do not only rely on brackish water fishery production as their main livelihood. The community of Kampung Laut Subdistrict is willing to start developing sheep farm because in their area there are water spinach plants that can be used as forage resources. The water spinach availability can help to reduce feed costs, wherein sheep farm the feed cost can reach 61.6% [12]. Based on data, there was a fluctuation in the growth of the sheep population from 2011 to 2016 (Table 2).

Table 2. The Growth of Sheep Population in Kampung Laut

Year	Population (heads)	Growth (%)
2011	1106	
2012	1446	30.74
2013	1438	-0.55
2014	1454	1.11
2015	1460	0.41
2016	1490	2.05
Average		6.75

Processed secondary data, 2019

Source: The Central Bureau of Statistics of Cilacap District

Form Table 2, the average growth of the sheep population increases every year by 6.75%. The decline in the growth of the sheep population only occurred in 2013 at 0.55%. Based on these data, it can be said that with the development of sheep farms since 2014 by Bina Sejahtera Social Foundation, it has been able to support the increase in sheep population in Kampung Laut Subdistrict.

The development of the livestock sector in Kampung Laut Subdistrict has been going on for a long time. Where farms that are sufficiently developed in Kampung Laut District are goats and sheeps farms. The development of goat and sheep farm is directed at village economic efforts and diversification farming activity [13]. Livestock activities are one of the actions other than migration and farming, that can be done by fishermen to respond to the decline in fisheries production [6]. Based on the result of the study, it can be said that sheep farming has the potential as an alternative livelihood for the community of Kampung Laut Subdistrict.

4. Conclusion

The area of Segara Anakan Lagoon continues to shrink due to sedimentation. The condition resulted the average growth of brackish water fisheries production in Kampung Laut Subdistrict from 2011 to 2016 decreased by 6.30%. In order to adapt, the community must find other livelihoods besides becoming fishermen to maintain their lives. On the other hand, the development of sheep farms carried out by Bina Sejahtera Social Foundation is able to support the increase in sheep population in Kampung Laut Subdistrict and the average growth of the sheep population increases every year by 6.75%. The result shows that sheep farm has the potential to be an alternative livelihood so that the community does not only depend on their livelihood as fishermen.

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