



Beach tourism, whether benefit or disaster for coastal fishermen of Tanah Laut Regency, South Kalimantan Province

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Abstract. This study was aimed at analyzing the development of beach tourism areas in fishermen's villages in the coastal area of Tanah Laut regency, the Province of South Kalimantan. Fishermen's exchange rate and fishermen's exchange rate index were utilized to describe the fisheries business contribution to the fishermen's household income. The fishermen's perception to the beach tourism area was descriptively analyzed using Linkert scale and the contribution of Asmara beach tourism to business opportunity of the local villagers was descriptively described. Results showed that fishing activities in the study site are still highly capable of giving prosperity to the owner fisher with the exchange rate of 1.13, but it could only give the major need of the crew fishers with the exchange rate of 1.028. The fishermen's perception to the existence of tourism area of Asmara beach would be able to give positive impact to the community's economy and their area, in which 65.7% respondents highly agreed, 26% were doubtful, and only 8.3% did not agree and highly disagree. The tourism of Asmara beach gave a business opportunity of 69 business units involving 166 people (> 10% of productive age) in the areal entrance retribution, security, and parking management. Homestay yielded the largest contribution, between IDR. 1,524,750 and IDR. 12,486,100 mo⁻¹, then food and drink shops, cloth, and public services (washroom). The government's role is very important in managing the utilization of coastal potentials and empowering the coastal villagers to support their business diversification development.

Key words: fishermen's income, fishing activity, coastal area, beach tourism, business opportunity.

Introduction. Tanah Laut regency possesses an extensive coastal area, 2,430 km² or 63.15% of total regency area with a coastal line of about 175.93 km. This wide area has been utilized for various activities in fisheries and marine sector. In 2018, there were 2,213 fishermen's households of coastal and marine fisheries and 137 fish farmer's households (BPS-Statistics of Tanah Laut Regency 2018).

Decline in fisher's and fish farmer's households have occurred in sufficiently significant numbers compared with that in 2008, 3,749 fishing households and 467 fish farmers. Fishing activities in this area is dominated by mini bottom gillnets, and long line, and drift gill net (Ministry of Marine Affairs and Fisheries of Tanah Laut Regency 2013).

The coastal area of this regency also has potentials of mining resources and various minerals. Coal resource is one of the economic mining materials distributed in about 314.4 million m² area. Since early 2000, the coal mine has been exploited by several certified mining companies and developed to 53 companies in 2012 besides Coal Mining Company Work Agreement holder (Regional Development Planning Board of Tanah Laut Regency 2014).

Various resources potential in the coastal area of Tanah Laut regency results in conflict among sectors in space utilization, such as water transportation activities of the coal mining companies and fishing and fish pond activities. Hidayat (2017) stated that the external challenge in pond culture activities was very strong environmental disturbances of various coal mining activities and oil palm plantation along the east coast of Tanah Laut regency. It is possible because all parties consider that coastal water is a common property resource and its utilization is opened to anyone.

The activity of an economic sector can be seen from its contribution to the Gross Regional Domestic Revenue. The mining sector contribution to the agricultural sector,

particularly the fisheries sub-sector in this area, is very remarkable. The contribution development of mining sector, the agricultural sector, in general, and the fisheries sub-sector, in particular, on the Gross Regional Domestic Revenue of Tanah Laut regency in the last two decades is presented in Figure 1.

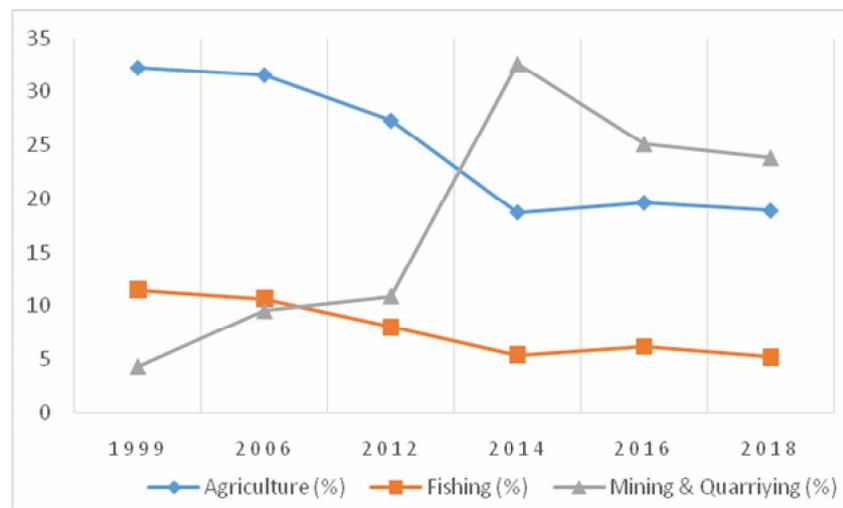


Figure 1. Contribution development to economic sector on the Gross Regional Domestic Revenue.

Figure 1 shows that mining sector activities have been increasing since early 2000 to 2014, then declines up to 2018. The agricultural sector in general, including the fisheries and marine sub-sector that initially greatly contributes (> 32%) has declined to less than 19% in 2018. The contribution of mining sector and mines, in spite of declining, are still above that of the agricultural sector in general, including the fisheries subsector in the last 4 years (BPS-Statistics of Tanah Laut Regency 1999-2019).

The conflict of coastal land use, of course, will give environmental pressures that eventually cause ecological loss if it is not well managed by all economic executors, and then can affect the livelihood of fishermen and surrounding communities since the fishermen's access to the fisheries resources will become more and more limited (Nasution & Sunarno 2009; Salmi 2015; Suryawan & Gata 2015; Benansio et al 2016). However, the fishermen communities are highly dependent upon the fisheries resources and very limited to their current social economic diversification level (Morzaria-Luna et al 2014; Lange 2015; Knudsen 2016).

The coastal area of Tanah Laut regency that is being inhabited by most of the fishermen and fish farmers has now several coastal tourism objects offering the coastal beauty and the mangrove forest diversity under their own initiatives. Does this phenomenon indicate that fisheries activities have not been able to yield people's prosperity business so that the fishermen have to change to the coastal tourism management services?

The presence of coastal tourism will positively impact the local communities if they are capable of involving in benefiting it as new business opportunity. Nevertheless, this situation will negatively impact their livelihood and only degrade the coastal ecology if all economic executors cannot maintain the environmental sustainability (Lopes et al 2015; Wu & Tsai 2016; Suardana & Sudiarta 2016; Khrisnamurti et al 2016; Maliao et al 2017).

Asmara coast located in Muara Asam-Asam village, Jorong district, Tanah Laut regency, is one of the coastal tourism localities that have high local tourists in the last several years. This village is one of the villages where 68% residents work as fishermen and fishing crews, but it has become tourism destination as well.

Based on above condition, several questions were given in this study in relation with whether or not the fisheries activities could be taken as source of fishermen's household income, what the fishermen's perception on the existence of coastal tourism area appeared, and how the coastal tourism areas contributed to the community's household income in the study locality. This study was aimed to know the role of fisheries business on the fishermen's household's economy, analyze the fishermen's perception to

the existence of coastal tourism areas and facilities, and analyze the contribution of coastal tourism area occurrence to community's household income in the study site.

Material and Method. This study was carried out from February to June 2019 in Muara Asam-Asam village, one of the coastal villages in Jorong district, Tanah Laut regency, Central Kalimantan. Site selection was purposely done under consideration that this village has highly represented the coastal village with fishermen concentration, but it has also been developed as coastal tourism area.

There were two types of data collected in this study, primary and secondary data. The former is data directly collected in the study site through questioners and interviews to the respondents and key person and the latter was taken from other sources, such as village profile, district in numbers, journal, and relevant previous studies. Data requirements and collection methods in this study are presented in Table 1. The respondents were fishermen and other communities in Muara Asam-Asam village who used the tourism area of Asmara coast as localities to run various businesses in order to support various necessities of the tourists. Fishermen on study were the fishermen owner and the fishing crews of rengge (set gillnet) and rempa (bottom gillnet).

Table 1

Data, data source, and sampling method

No	Data requirements	Data collection method	Type of data	Source	Notes
1	Cost and income gain of fishing activities	Interview, observation	Primary	Fisherman owner and fishing crew	Sampling 10%
2	Family's expenditures	Interview, observation	Primary	Fisherman owner and fishing crew	Sampling 10%
3	Fishermen's perception on the coastal tourism presence	interview, observation	Primary	Fisherman owner and fishing crew	Sampling 10%
4	Cost, gain, and profit of various service and shops around coastal tourism	Interview, observation	Primary	Seller	Census

Source: Processed data of 2019.

Number of samples in this study was 35 fishermen, 10% of the total population (339 people) in the village selected purposively and 60 people (census) who have run the business in Asrama coast tourism area. This sample size ($N > 30$) can be used to represent the total population (Sekaran 2000).

Fishermen's exchange rate and exchange rate index analysis. The analysis of fishermen's exchange rate and exchange rate index was employed to answer whether or not the fisheries activities are still capable of being main source of the fishermen's income and to describe their prosperity condition.

Fishermen's exchange rate (ER) was calculated following Basuki et al (2001) as follows:

$$ER = \frac{Y_t}{E_t}$$

Where: ER is total fishermen's income from non-fisheries business in t period, Y_t is total fishermen's household income in t period, and E_t is total family's expenditures in t period.

$$Y_t = Y_{Ft} + Y_{NFt}$$

Where: Y_{Ft} is total fishermen's income from fisheries in t period and Y_{NFt} is total fishermen's income from non-fisheries in t period.

$$E_t = E_{Ft} + E_{Kt}$$

Where: E_{Ft} is total fishermen's expenditures in t period, E_{Kt} is total fishermen's expenditures for family's consumption in t period, and t is time period.

Moreover, the fishermen's exchange rate index is defined as the ratio of total income index and total fishermen's household expenditure index in certain period of time. The index was calculated using Basuki et al (2001):

$$ERI = \frac{IYt}{IEt} \times 100$$

Where: ERI is fishermen's exchange rate index in *t* period, IYt is total fishermen's income index from fisheries in *t* period, and IEt is total family's expenditures index in *t* period.

$$IYt = \frac{Yt}{Ytb} \times 100$$

Where Yt is total fishermen's household income in *t* period (present value) and Ytb is total fishermen's household income in basic period.

$$IEt = \frac{Et}{Etb} \times 100$$

Where Et is total family's expenditures in *t* period (present value), Etb is total family's expenditures in basic period, and fishermen's exchange rate index of basic period = 100.

Fishermen's perception analysis. Fishermen's perception on the existence of coastal tourism was descriptively analyzed using likert scale. For the analysis, the respondent's answer was scored from 1 to 5 as follows in Table 2.

Table 2

Score value at each response scale

No	Response scale	Score
1	Highly agree	5
2	Agree	4
3	Doubt	3
4	Disagree	2
5	Strongly disagree	1

Contribution analysis of coastal tourism area economy. Descriptive analysis on the contribution of Asmara coast tourism to local community's household economy was measured with the number of new business opportunities, number of people involved in running the business in the tourism area, and the income value of the business operations.

Results and Discussion

Fishermen's exchange rate and exchange rate index. Fishermen of Muara Asam-Asam village implemented share system, in which net revenue of fish sale was subtracted with the operational costs and divided by two, 50% for the boat owner and 50% for boat crews. The labor's income was also divided into 40% for the captain and 60% divided for all involved fishing crews. In share system of *rempa* fishermen, the fish sale was subtracted with the operational costs, then 50% became the right of the boat owner and 50% was evenly divided to the boat crews.

Fishermen's exchange rate is one of the indicators that are able to be used to assess the fishermen's prosperity level in order to figure out the fishermen's capability of meeting the living. The fishermen in the study site use fishing gear "*rengge*" with lunar system (17-20 days of dark period) and 6-10 fishing crews including the captain. Thus, the estimation of exchange rate and exchange rate index was separated for the boat owner and the fishing crews through the local share system among the boat owner, the captain, and the fishing crews.

Table 3 demonstrates that total fishermen's exchange rate is > 1 reflecting that the boat owners of rengge fishing in the study site have good living, since they could meet their living needs and spend the income to buy the secondary or even tertiary needs and have savings. The exchange rate index in April and May is also not much different meaning that there is no significant change in fish catch, sale price, operational costs, and the fishermen's household consumption needs in both months. The fluctuation in the exchange rate index will usually occur if there is significant change in one of the four components (Ramadhan et al 2014; Wijaya 2015).

Table 3

Fishermen's exchange rate and fishermen's exchange rate index of fisherman owner in April and May, 2019

No	Description	Month	
		April	May
<i>A</i>	<i>Fishermen's household income (IDR)</i>		
1	Fishing fisheries	51,750,000	54,140,000
2	Non-fishing fisheries	0	0
3	Total	51,750,000	54,140,000
<i>B</i>	<i>Expenditure of fishermen's household (IDR)</i>		
1	Fishing business	38.685.714	40.245.000
2	Family's consumption	7.342.857	7.750.000
3	Total	46.028.571	47.995.000
<i>C</i>	<i>Fishermen's exchange rate</i>		
1	Total fishermen's income	1.12	1.13
2	Fisheries income	1.34	1.35
<i>D</i>	<i>Fishermen's exchange rate index</i>		
1	Total fishermen's income	100.00	100.33
2	Fisheries income	100.00	100.56

Source: processed primary data of 2019.

The fishermen's exchange rate of the fishing crews is around 1 (Table 4) meaning that the fishermen could only meet their substantial need. This situation mostly occurs in the fishing crews and small-scaled fishermen or traditional fishermen whose prosperity level is far below that of the fishermen owner as previously reported in Yonvitner (2014) and Sari et al (2017). However, this condition is contrary to other findings for the fishing crews of purse seiners, trolling, and Rambo lift net who are in good prosperity (ER > 1) (Khumairoh et al 2013; Pratama et al 2012; Hermawan et al 2017).

Table 4

Fishermen's exchange rate and fishermen's exchange rate index of fishing crews in April and May, 2019

No	Description	Month	
		April	May
<i>A</i>	<i>Fishermen's household income (IDR)</i>		
1	Fishing fisheries	3,629,286	3,706,348
2	Non-fishing fisheries		
3	Total	3,629,286	3,706,348
<i>B</i>	<i>Expenditure of fishermen's household (IDR)</i>		
1	Fishing business	0	0
2	Family's consumption	3,519,857	3,605,193
3	Total	3,519,857	3,605,193
<i>C</i>	<i>Fishermen's exchange rate</i>		
1	Total fishermen's income	1.031	1.028
<i>D</i>	<i>Fishermen's exchange rate index</i>		
1	Total fishermen's income	100.00	99.71

Source: Processed primary data of 2019.

The adaption of small-scaled fishermen and fishing crews to increase their family's income is to run other livelihoods in the family, such as small shops, labor, other services in the landing base, such as catch handling and processing (Firdaus & Witomo 2014; Cahaya 2015; Hidayat et al 2014). Nevertheless, the amount of the fishing crew's income from fishing is higher than that of the minimum wage of south Kalimantan province in 2019, IDR. 2,651,781 per month based on the decree of South Kalimantan governor numbered 188.44/0570/KUM/2018.

The fishermen's income beyond fisheries is not included in the assessment in order to see the strength of fishing fisheries to support their household income. All fishing costs have been provided by the fishermen owner so that fishing costs are not included in the calculation.

Fishermen's perception on the existence of coastal tourism area. The fishermen community's response to the questioners indicated that most of them (65.7%) agreed and highly agreed with the existence of Asmara coast tourism that would give positive impact on their life, 26% were doubtful, and 8.3% did not agree and highly disagreed (Figure 2). Most respondents agreed and highly agreed that the occurrence of Pantai Asmara tourism will give job opportunity (82.9%) and the village will be more recognized by people from other areas (88.6%).

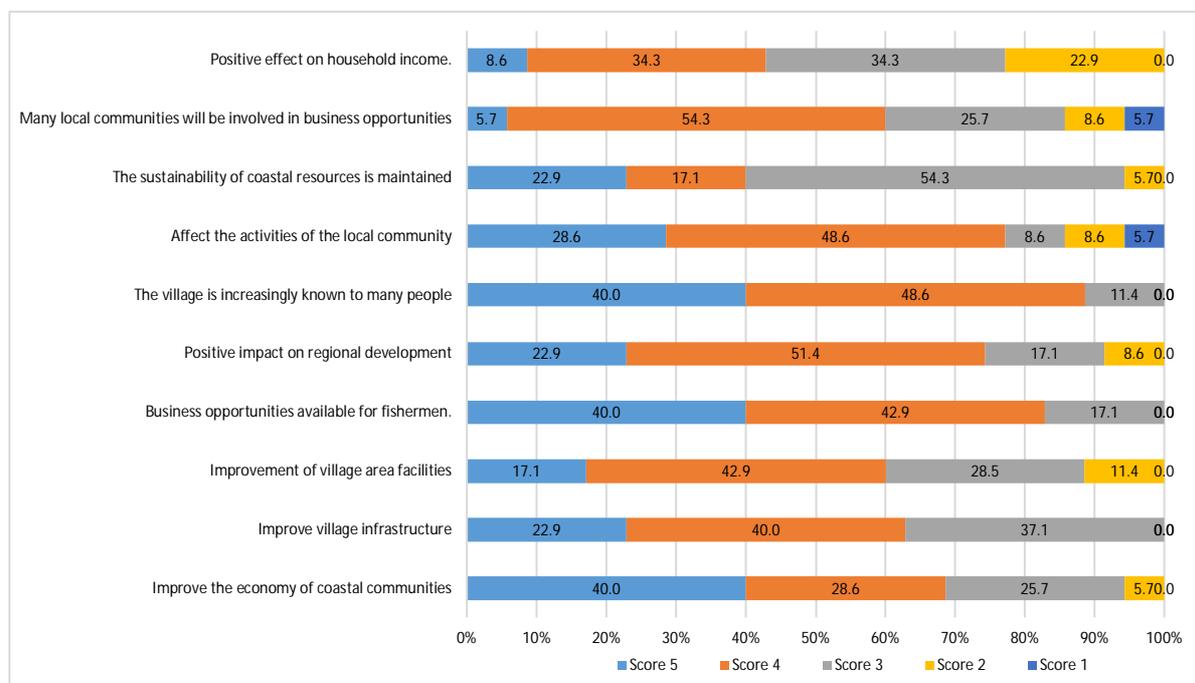


Figure 2. Fishermen's perception on the existence of Asmara coast tourism. Source: processed primary data of 2019.

The fishermen's perception scoring on the 10 questions provided concerning the occurrence of Asmara coast tourism ranged between 66 and 86%. The highest score of > 80% reflects their belief that the occurrence of this coastal tourism could increase the community's economy through business opportunity availability and make the village be better recognized. The score range of 70-80% (moderate) showed that the areal infrastructure and village facilities development will positively impact the areal development, the local people's activities, and the sustainability of the resources. The score < 70% indicates that the community will be more involved in the management of the coast tourism area and it will positively influence their income (Figure 3).

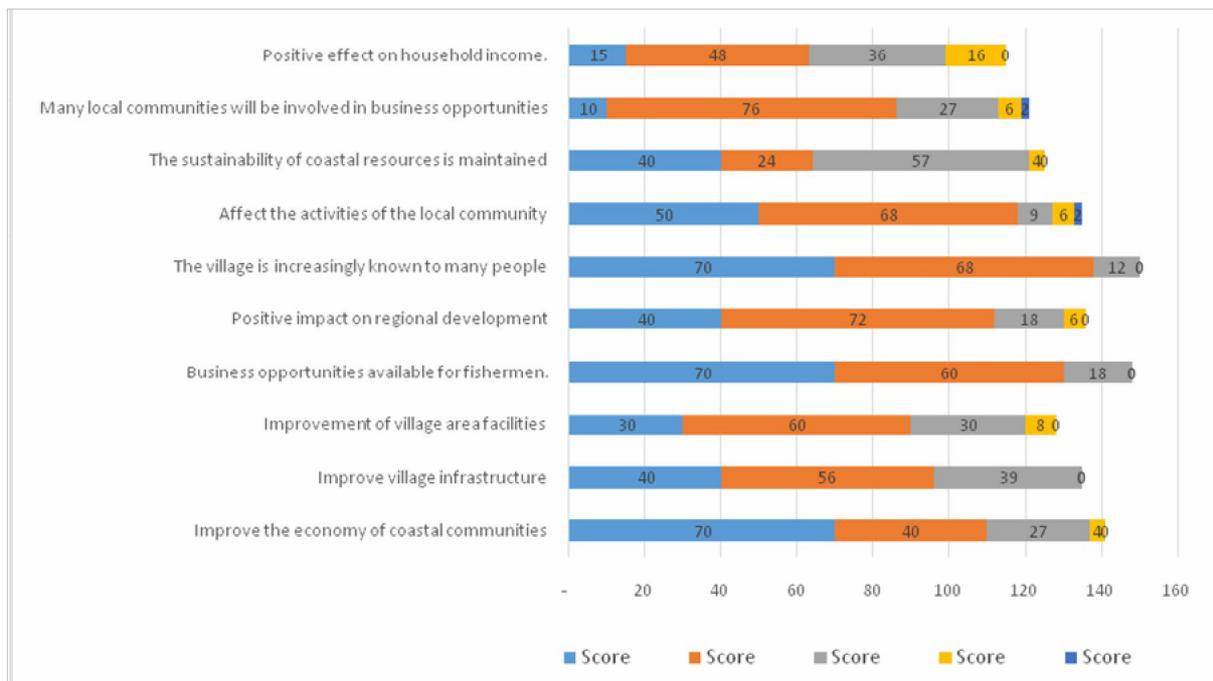


Figure 3. Fishermen's perception score. Source: processed primary data of 2019.

Contribution of Pantai Asmara tourism area to the household income. The tourism area of Asmara coast, Muara Kintap village, developed by the local community itself has significantly given positive contribution to the local community's economy. Those who were involved in parking and security management were 28 people and in services and shops were 69 businesses, such as homestay, food shop, small shop, and swimsuit shop, and washroom.

Number of communities involved in this coastal tourism area reached 166 people or about 10% of total productive-aged local people. This condition certainly gives high contribution to business opportunity for surrounding society despite only in the weekend (Saturday and Sunday) with great number of visitors reaching 300-500 people. Each visitor had to pay IDR. 10,000 for entrance fee, IDR. 5,000 for motorbike parking, and IDR. 10,000 for car parking, respectively.

The gain from entrance ticket and parking is used to pay the parking management workers, security, and village cash. The availability of village cash makes the village have financial capability to run self-supported traditional ceremony "*mappanretasi*" traditional ceremony that requested donations from various sources in the past. Besides that, this gain was also utilized to develop several public facilities over the entire village.

Each business run by the local community in this coastal tourism area yielded different income. Homestay gave the highest gain, IDR. 1,524,750 to IDR. 12,486,100 depending upon room condition and facility offered and number of rooms available (Table 5). It means that the existence of Asmara coast tourism in Muara Asam-Asam brings positive contribution to the local fishermen's families (Andriyani et al 2012; Cahyo 2014; Dewi 2014; Laksono & Mussadun 2014). Even the small-scaled fishermen's households and the fishing crews usually do multiple livelihoods in order to add their living needs (Wawansyah et al 2012; Hidayat et al 2014).

Table 5

Net income per month of the business in the tourism area of Pantai Asmara beach

No	Type of business	No. business	No. rooms	Net income per month	
				Lowest (IDR)	Highest (IDR)
1	Accommodation	15	1-5 rooms	1,524,750	12,486,100
2	Food shop	9	Soto, rice+other dishes, and mixed rice	879,600	8,400,000
3	Small shops	28	Snack, drink, cigarette	696,400	4,740,000
4	Cloth merchant	10	Variety of beach clothes	226,150	801,600
5	Public facility	5	Public washroom	356,500	750,800
6	Play ground	2	Rubber boat, Motor trail	203,600	654,300

Source: processed primary data of 2019.

Based on above condition, there are enough number of business opportunities available in Asmara coast tourism area. Nevertheless, from 166 people who were involved in various tourist's need-supporting businesses, only 60% were indigenous people of the village and the rests were expat communities from surrounding villages. The capability of the local communities needs to be upgraded in line with business diversification opportunity beyond fisheries business, such as human resources capability development or capital strength to start new business. The government is expected to be able to support the communities in building their readiness to maintain the environmental quality, to develop their readiness to be involved in playing the role in various alternative business/services beyond fishing fisheries and to build a commitment of bringing secure and comfort feeling to the tourists Bennett & Dearden 2014; Ijeomah 2015; Hussin et al 2015; Pinto 2015; Su et al 2016; Wibowo et al 2016; Triyanti & Susilowati 2019).

Conclusions. Based on the fishermen's exchange rate (ER), the present study found that fishing business in the study site was still highly capable of yielding prosperity to the fishermen owner (ER = 1.13), but the fishing crews could only fulfill their living needs (ER = 1.028). The condition in April and May did not nearly cause fluctuations in fish catch, sale, operational costs, and fishermen's household consumption costs (exchange rate index = about 100). The fishermen's perception on the existence of Asrama coast tourism area will be able to give positive impact on the economy of their community and territory indicated with 65.7% respondents agreed to highly agreed, 26.0% were doubtful, and 8.3% did not agree to highly disagree.

The existence of Asmara coast tourism provided also 69 units of business opportunity with 166 people (> 10% of productive ages) involved in entrance retribution, security, parking management. Homestay business yielded the largest income, between IDR. 1,524,750 to IDR. 12,486,100 per month, then food and drink shops, cloth merchants, and public facility services (washroom and bathing room). However, only about 60% of local villagers were involved in the coastal tourism area, and the rest came from adjacent villages.

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