


# Agglomeration of Economic Activities of Fisherman Communities In Jenilu Village Belu District

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ARTICLE INFO	ABSTRACT
<p><b>Article History:</b> Received: 03-02-2023 Accepted: 28-03-2023 Published: 30-03-2023</p> <p><b>Keywords:</b> Agglomeration; Fisherman Economic Activity; Jenilu Village</p> <p><b>Corresponding author:</b> Muhammad Husain Hasan Email: <a href="mailto:muhammadhusain@staf.undana.ac.id">muhammadhusain@staf.undana.ac.id</a> DOI: 10.34312/jgej.v4i1.18799</p> <p>Copyright © 2023 The Authors</p>  <p>This open access article is distributed under a Creative Commons Attribution-Non Commercial (CC-BY-NC) 4.0 International License</p>	<p>Research on the phenomenon of agglomeration of community economic activities needs to be carried out to see its impact on regional development, especially in border areas. Grouped economic activities can be a consideration for the government in taking economic policies in order to improve people's welfare. This study aimed to find out: 1) where and how the economic activities of the fishing community in Jenilu Village experience concentration or agglomeration; 2) what are the characteristics of the economic activities of the fishing community in Jenilu Village; and 3) what government policies should be taken to accelerate development in Jenilu Village. This type of research is a qualitative field exploration with data collection techniques of observation, interviews, and documentation studies. The research results show: 1) the economic activities of the fishing community in Jenilu Village experience agglomeration or grouping in the Atapupu area due to the historical value of this area which has long been the center of community activities and also the existence of infrastructure support including good access to cross-country roads, markets, and ports; 2) 80% of the people of Jenilu Village work as fishermen with a low-income level of an average of Rp. 1000,000,- per month, still relying on simple fishing equipment such as fishing rods, nets, and motorized boats, and the main types of a catch include tuna, tuna, yellow stripe, and mackerel; 3) the regional government is expected to be able to improve the quality of human resources and build infrastructure in this region to support the development of the main border gate area which has not been maximized.</p>

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## 1. Introduction

Economic activity has always been a concern of policymakers. This activity can be in the form of community activities such as micro, small, medium enterprises, and other forms. In this case, the government carries out its role in the form of a facilitator, regulator, and catalyst in helping the community improve small and medium enterprises so that the community can develop its business (Nirwana et al., 2017). One example is the presence of cooperatives that help the community in procuring venture capital. Cooperatives develop and adapt to laws and regulations and community needs (Sitepu & Hasyim, 2018). The development of economic sectors will be an indication of the progress of a region.

The economic conditions of the people in the border areas are included in the low category. This can be caused by several factors including accessibility difficulties (land, sea, and air) to growth centers. Another thing is that government policies are not accommodating to the interests of villages in border areas (Haryaingsih, 2022). This condition is exacerbated by people's economic activities that are concentrated or clustered at one point only. The results of research (Mukhlis et al., 2018) found that Regional economic development happens through economic agglomeration activities. Economic agglomeration has a positive correlation to the acceleration of economic resource utilisation and economic output. Based on the results of this study, the economic agglomeration has a positive and significant impact on income inequality in various districts of East Java Province during 2011-2015. The manifestation of economic agglomeration that occurs in various regencies/cities is the centralisation of sectoral economic activity (agriculture, industry, and services). Comprehensive information is needed on the grouped community's economic activities and their impact on the outermost areas.

Border area development policies are an integral part that cannot be separated from national development policies and provincial development policies (Sudiar, 2012). Fishing is an important source of income that contributes to the economy of the fishing community in Jenilu Village where the pattern of fishermen's income is not sufficient for their annual expenditure so that it affects lifestyle. This is in accordance with the results of research (Sethy & Nayak, 2018) that fishermen work hard and invest money in fishing gear, they do not have

facilities for fish storage (cooling), processing and packaging, and transportation to reach other markets, so hard workers who actually can not enjoy the fruits of their labor. and intermediaries (all sellers and retailers) being the actual beneficiaries. Data at the village level is incomplete in detail, so data from the Central Bureau of Statistics or Bappeda are generally used, which only accommodate up to the sub-district level.

Jenilu Village, Belu Regency is the center of community activity on the north coast which is supported by the existence of the Atapupu Port which can facilitate the distribution of goods both for export and import. One of the closest export destinations is to Timor Leste. This indicates that the economic activities of the fishing community in Jenilu Village also experience agglomeration in this area. Location points for marketing the catch of fishermen scattered around the Atapupu area will move or carry out spatial mobility to the Atapupu area. However, the results of the researchers' observations found that this condition is inversely proportional to the low level of community income because fishermen still use simple equipment to catch fish.

The policy of the regional government of Belu Regency which makes the border area a center of development should be realized in this area. Therefore the development of human resources and support for facilities and infrastructure is important to improve people's living standards and growth in this region. The challenge comes from the fishing communities themselves where some find it difficult to adopt new innovations. The low level of education and the lack of participation in training are some of the reasons.

Some research results show how agglomeration plays a role in economic growth. Sholehati, (2017) found that agglomeration has a significant influence on economic growth where every one agglomeration increases, economic growth will increase by 78.49%. The impact of industrial agglomeration on the distribution of settlements is to form different settlement patterns (Udin, 2015). There are differences regarding the impact of agglomeration on the community's economy, especially in border areas, so it is necessary to carry out further research in the form of direct field exploration.

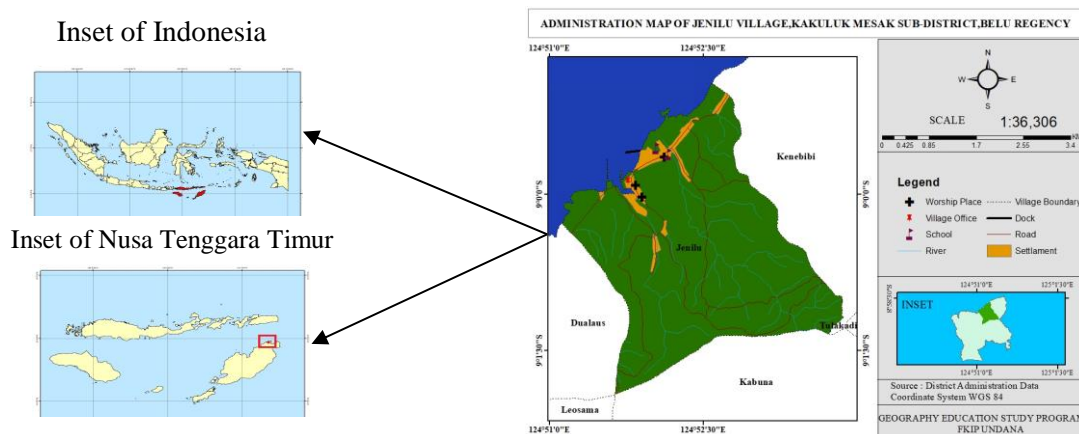
The economic activity makes space complex both in management and in community activities. Space will be formed and developed according to settlement centers, transportation accessibility, and infrastructure supporting the socio-economic activities of the population (Hasan, 2021;Yunus, 2010; & Surachman, 2012). The grouping of economic activities raises problems including management or relocation if problems occur at that location. However, there are also benefits to the agglomeration of economic activities, including spatial mobility which will affect the ease of provision of infrastructure by the government. The results of other studies found that the ratio of the number of fish-freezing industries tends to be in larger clusters than random industries (Kakerissa & Hahury, 2022).

This study aims to analyze the economic activities of the community in its groupings. The results of this study are expected to provide an overview of the advantages and disadvantages of agglomeration of fishing community economic activities in the border area of Jenilu Village, Kakuluk Mesak District, Belu Regency.

## 2. Method

### 2.1 Location and research schedule

This research was conducted in Jenilu Village, Kakuluk Mesak District, Belu Regency, East Nusa Tenggara Province in October 2022.



**Figure 1.** Map of research locations

This location was chosen with the consideration of being one of the five northern coastal villages of Kakuluk Mesak District, Belu Regency which is close to the border. In addition, a coastal village has residents

with livelihoods as fishermen. The existence of the Atapupu Port in Jenilu Village has contributed to the activities of the community.

### 2.3 Types of research, data collection techniques, and data analysis techniques

This type of research is qualitative exploratory research (Darmalaksana, 2020). The data obtained will be narrated/described based on the results of observations and interviews at the location. The stages of observation according to (Hasanah, 2017) include selection, recording, coding, and tests of behavior settings. The indicators observed in this study are the location of fishermen's activities (how they are distributed and also how they have grouped), types of activity, and special behaviors that occur at the location. These indicators are arranged in an observation guideline format.

Interviews were conducted with several informants who were considered to know about the focus of the problem under study. Informants in this study were fishing communities, village heads, and hamlet heads. The list of interview questions contains the reasons for carrying out economic activities in that location, what are the advantages and disadvantages of the location, recommendations, and expectations for the government or policymakers. The location determination is based on observing the locations of fishing activities in Jenilu Village and which locations are the centers of economic activity for the fishing community.

The collected data will be coded based on categories and indicators. Furthermore, the data will be analyzed using the stages of qualitative data analysis according to Miles and Huberman in (Sugiyono, 2017), namely data reduction, data presentation and drawing conclusions.

The collected data will be coded based on categories and indicators. Furthermore, the data will be analyzed by combining some data from the results of interviews and observations as well as documentation studies), members check or correct the results of interviews from informants to find important things, organize data according to research objectives, and draw conclusions. Interview data were analyzed using qualitative data analysis stages according to Miles and Huberman in (Sugiyono, 2017), namely data reduction, data presentation and drawing conclusions.

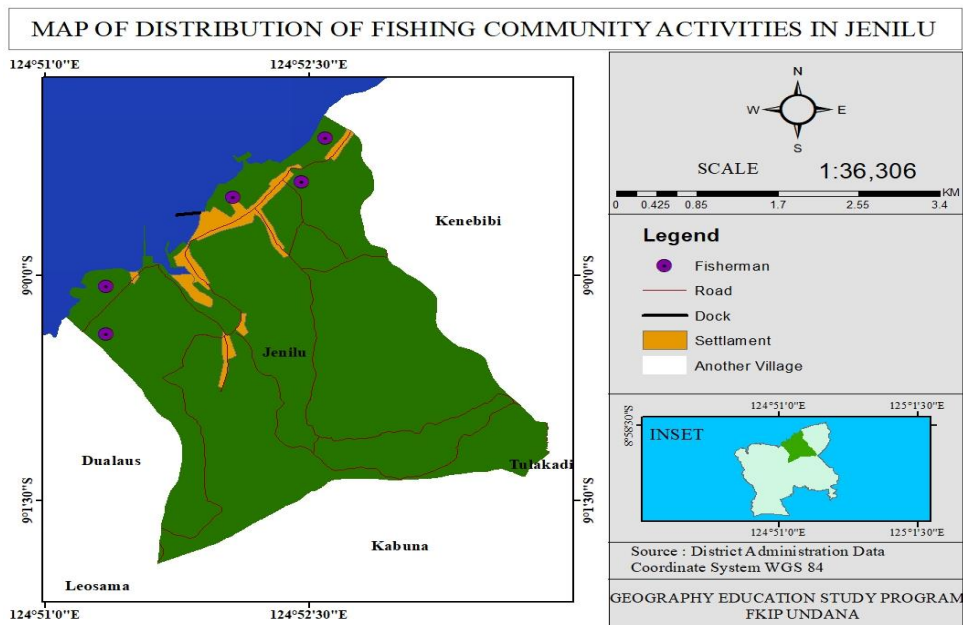
## 3. Results and discussion

### 3.1 General description of the location and distribution of fishing community activities

Jenilu Village is one of the villages in Kakuluk Mesak District with an area of 20.73 Km<sup>2</sup> with a population of 2,759. In Jenilu Village, fishing communities carry out their activities at several points along the coast and the main road. These activities tend to be small-scale. The results of observations and recording of coordinates found that the distribution of these activities was in the form of marketing the fishermen's catch sold on the roadside. Generally consumers who come are residents. For this reason, further observations were carried out to see the characteristics of the distribution of these activities. The results of the initial observations are presented in a map of the distribution of fishing community activities in Jenilu Village.

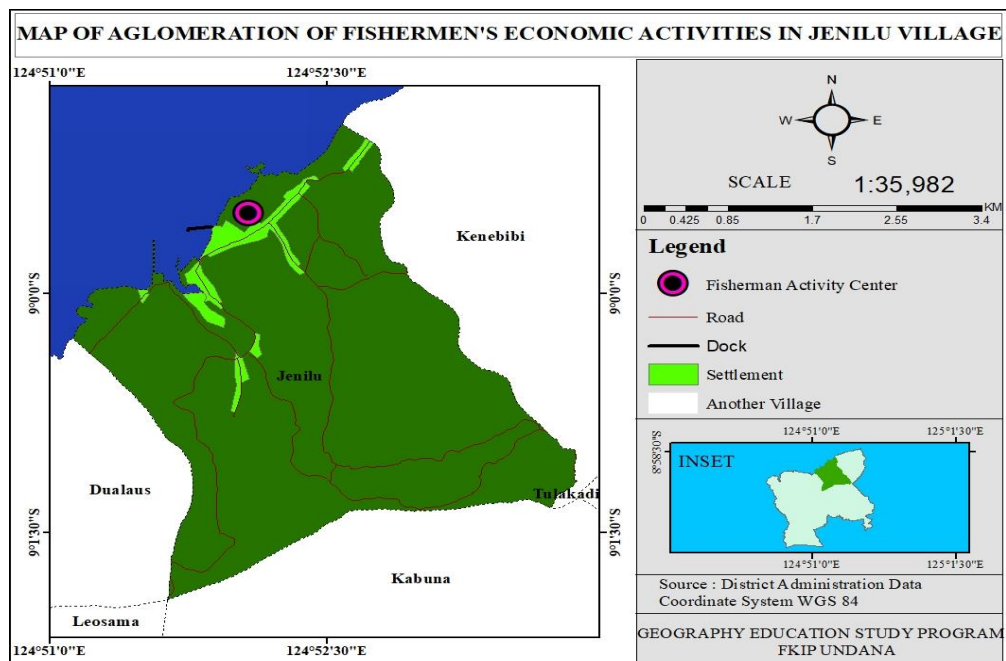
The economic activity of the fishing community is generally in the form of buying and selling fish caught on a small scale. These activities are generally located close to access roads or where the catch first arrives from the sea. This is to make it easier for consumers to access it. Based on the results of observations in Jenilu Village, five points were found as locations for fishing community activities, especially in marketing their catch. However, due to the inadequate condition of supporting facilities, the community's activities in marketing their fish catches have not been able to develop any better. For example, freshly caught fish that arrives in the morning can only be sold until the afternoon or evening because the next day the fish is rotten. The solution to this problem is the provision of a cooler box to store fish so that it stays fresh and durable for a long time. However, because not all fishing communities have these coolers, the most likely alternative is to sell them immediately and if they don't sell, they will consume them themselves.

The results of research (Pane et al., 2013) & (Hasan, et al., 2022) found that service centers are an agglomeration of various activities and agglomeration of various infrastructures and facilities that can support regional growth and development. By grouping these activities, it will make it easier in terms of choosing a location as a center for buying and selling activities of the community as well as the availability of other facilities and infrastructure. Therefore, agglomeration is not only about the phenomenon of economic activity but also about service centers for that activity. Centralizing community activities, including the economic activities of fishing communities, will make it easier for the local government to provide supporting facilities such as markets, cooperatives, telephone and internet power lines, fish processing machines, and information centers, including facilities provided by related agencies.



**Figure 2.** Map of the distribution of fishing community activities in jenilu village

Agglomeration of economic activity and service centers in one location will be very beneficial for various parties. These activities will support each other and that is only possible if they are at one point. Fish sellers and buyers will find it easy to meet at one location. In addition, there will be developments in the economic structure due to social contacts between business actors. The results of the study show that between ship owners and fishing workers, there is a mutual agreement in the profit-sharing system, among others, related to rights and obligations to meet needs (Fargomeli, 2014). Capital owners will be motivated to invest by looking at existing business opportunities, as well as people who don't have jobs or who are in a vacuum due to uncertainty about capital will have proper guarantees. The development of other economic structures can also be seen from the development of other business sectors outside of fisheries such as restaurants, the ice cube industry, and so on.



**Figure 3.** Map of the agglomeration of fishing community economic activities in atapupu area

The results of the observations presented on the map above show that the centers of community economic activity in Jenilu Village are clustered in the old town area called Atapupu. This area has long been the center

of community activities including the support of seaport facilities which make it easy as a sea access route to other areas. This area also develops fishing community settlements and people's market facilities.



**Figure 4.** Agglomeration activities with support of facilities in the Atapupu area

The pictures above shows the existence of the Atapupu seaport facility with very good land access conditions on a cross-country road. To the east of the harbor, there is a fishing community settlement that extends following the main road along the north coast which is also interspersed with mangrove vegetation. The main market is also located not far from the location of the port and fishing community settlements. Atapupu seaport has a very strategic role. This port is being developed to become a transit port for goods to be brought to Timor Leste and vice versa for goods to be sent to Indonesia. Here there is also a fishing port information center whose function, among other things, is to accommodate information about fishery products caught by fishermen. Information relating to facilities, investment, labor, marketing distribution, and price monitoring can be accessed by the public so that it can make it easier for fishing communities in particular.

The results of an interview with the Head of Jenilu Village, Mr. Daniel R.V. Novak explained that the Atapupu area is the center of community activity on the north coast, even several villages that used to be just one village with its center in Atapupu. Atapupu Port, for example, can facilitate the distribution of both exported and import goods. One of the closest export destinations is Timor Leste with a relatively short travel time. This indicates that the Atapupu area has indeed been the center of community activities for a long time, so it is not surprising that the economic activities of the fishermen community in Jenilu Village are also concentrated or experiencing agglomeration in this area.

Location points for marketing the catch of fishermen scattered around the Atapupu area will move or carry out spatial mobility to the Atapupu area. The goal is to facilitate marketing on a larger scale and supported by better facilities. The concentration of community activities in the Atapupu region will create opportunities for the development of other sectors. Initially, most of the commodities market at the district level can be encouraged to develop to the international level. This is quite possible considering that culturally the people of Belu Regency and Timor Leste still have ties so communication is easier.

### 3.2 Characteristics of fishermen's activities and income levels

The activities of the fishing community in Jenilu Village are generally in the marine fisheries sector where they live on the coast and form fishing settlements. Observation results found: 1) Some of the residents who live are not indigenous people, including those from Buton and also from Alor who are Muslim. 2) The technology used in fishing is still relatively ordinary, such as motorized boats, fishing rods, and nets. 3) The

condition of the fishermen's house is in the form of a wooden house with half of the poles under the water, woven walls (a type of plaited nipa palm branch), and a corrugated iron roof. 4) Around the fishermen's settlements, motor boats are also moored which are used to catch fish. 5) The catch varies depending on weather conditions and the amount of production/capital costs.

Furthermore, interviews were conducted to complement the results of observations of several informants and from elements of the village government.



Head of Fatuluka Hamlet (Mr. Leksi Parera)



Mrs. Habibah (fishermen's society)



Mr. Hafiz (Fishermen)

**Figure 5.** Observation and interviews in fishing village

The following are the results of interviews with the fishing community and also one of the hamlet heads of Fatuluka: Hafiz and Habibah (fishermen): Types of fish that are usually produced in Jenilu Village are tuna, mackerel, striped yellow, and tuna. Antonius Suarez (fisherman): The fishing tools used are nets and fishing rods. Yanorius Nahak (fisherman): The average monthly income is Rp. 1000.000,- Leksi Parera (Head of Fatuluka Hamlet): 80% of the community work as fishermen.

From the results of the interviews with some of the informants above, it is known that the profession of a fisherman remains the main profession of the Jenilu Village community but their productivity is not optimal due to limited resources. Most of the income is more for meeting household needs than as a commodity that can be distributed to other regions. The types of fish produced by fishermen in this capture fisheries business have good quality and selling value. Tuna, skipjack, and tuna, for example, are export commodities destined for developed countries. The results of the study show that tuna fish, skipjack tuna, and mackerel fish has a good share of the export market which is growing dynamically in the United States market (Rudi Hartanto et al., 2021). However, the productivity of fishermen in this area is still constrained by production/business capital costs, catch management, and marketing management.

Fisherman communities in several studies found that they are still included in the lower middle-class category. The results of the study found that the net income of fishing households in Lero Village, Donggala Regency for a month was Rp. 839,413 which means less than the World Bank standard so fishermen in the village are categorized as poor or not yet prosperous (Mulviana; Laapo, 2021). For Jenilu Village itself, the average monthly income of fishing communities is Rp. 1000.000,- included in the low category. As a comparison with the per capita income level, which is < Rp. 1,680,000 (low), Rp. 1,680,000 - Rp. 2,240,000 (moderate), and >Rp. 2,240,000 (high) (Kobi & Hendra, 2020).

The fishing community in Jenilu Village needs to improve so that their standard of living can be improved. There are various variables to consider. The results of the study (Dima, 2020;Zulfi et al., 2014) found that fishermen need to increase their capital, working hours, and work experience. The role of the capture fisheries sub-sector in the regional economy is included in base activities ( $LQ > 1$ ) where the Multiplier Effect of the capture fisheries sub-sector based on the Gross Regional Domestic Income indicator was the highest at 57.09 in 2009. Increasing the standard of living of fishing communities will encourage economic growth region.

### 3.3 Recommendations of local government

The economic sectors of society are very much determined by their human resources. In Jenilu Village, the education level of the community is still quite low. This is partly due to the lack of educational facilities. For example, based on the results of a survey conducted, there is no senior high school in Jenilu Village, so

students who wish to continue their education to that level must drop out. Another economic sector besides fisheries is agriculture which is seasonal or only as a side livelihood. Following are the results of interviews with the local government (Head of Jenilu Village): 1) Daniel R.V. Novak (Head of Jenilu Village): Human resources in Jenilu Village are inadequate. The fishing profession is often interspersed with the profession of being a port hunter because the income is more certain and clear. Another factor is that fishing communities are still racing with traditional fishing gear and are not literate about fishing technology. This habit makes the results obtained by fishermen not much and can only meet household needs so sometimes the operational costs of the ship are higher than the results obtained by fishermen. Hopefully, in the future, this village will become a fostered village where it is hoped that each group of fishermen can be fostered and trained to introduce renewable fishing gear in such a way that the results obtained by fishermen will no longer only be able to meet household needs but can be sold to markets within the city to outside Atambua City. 2) Head of Fatu Ala Hamlet, Jenilu Village: The total area of agricultural land in Fatu Ala Hamlet is approximately 7-8 Ha. For the entire Jenilu Village area, 50-80% of the people who work in the agricultural sector are still active on a seasonal or side basis. The types of plants that are often planted in this area are corn as the most dominant agricultural commodity, as beans, tubers, and vegetables.

Based on the results of the interview above, in Jenilu village the main economic activity is fishing. Other activities such as agriculture are only seasonal activities that are highly dependent on climatic conditions (rainfall) where Belu Regency is generally classified as an area with a type D climate (semi-arid climate) or a tropical climate with two seasons namely dry and rainy seasons, where the data shows that in the 2019 rainy season which started in January and was the highest amount of rainfall of 356 mm for 20 rainy days and July and September did not experience a rainy season (Badan Perencanaan Pembangunan Penelitian dan Pengembangan Daerah Kabupaten Belu, 2020). People who are active as farmers are limited to supplementing household income if they are not carrying out their main activities as fishermen. However, the professional as a fisherman is experiencing problems with limited human resources and supporting infrastructure. For the human resources themselves, when viewed from the level of education it is still very minimal where the highest average education is only limited to junior high school while to increase productivity and innovation at a minimum, graduates from marine and fisheries schools are needed. As for supporting facilities, according to information from the village head, most fishermen still rely on traditional fishing gear and are not technologically literate.

The policy of the regional government of Belu Regency which makes the border area a center of development should be realized in this area. The results showed that the functions of the sub-regions in the 5 border villages including Jenilu Village were the development of the main border gate, the Atapupu sea area, the natural tourism area, the industrial child development area, the main international crossing route for the eastern part of the Democratic Republic of Timor Leste and the trade development area. border (Efendi, et al., 2014). Therefore the development of human resources and support for facilities and infrastructure is important to improve people's living standards and growth in this region. The challenge comes from the fishing communities themselves where some find it difficult to adopt innovations. The low level of education and the lack of participation in training are some of the reasons. The results of the study (Hamzah, 2009) found that modernization by increasing and using fishing gear technology has implications for changes in a fishing community. This definition can only be done with the participation of education, both formal and non-formal education.

#### 4. Conclusion

The economic activities of the fishing community in Jenilu Village experience spatial concentration or agglomeration in the Atapupu area due to its strategic location and the support of supporting facilities. The policy of the regional government of Belu Regency which makes the border area a center of development should be realized in this area. However, because the education level of the people in Jenilu Village is low, it cannot improve people's welfare. The characteristics of the fishing community in Jenilu Village are generally still classified as low-income people because they still use simple equipment and catch only types of fish such as cob, cob, striped yellow and cob. Government policies to improve the quality of human resources and infrastructure development in this area are important to increase the productivity of the fisheries sector and develop the main border gate area. In addition, the government must also pay attention to the quality of human resources by paying attention to public education because in order to increase the productivity and innovation of fishermen, graduates from marine and fisheries schools are required at a minimum.

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