

## **Economic Changes in Fishing Communities In Getem Village, Jember District, East Java Province**

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### **Abstract:**

*Based on the results of field observations, data was found that the Getem fishing community had experienced better changes in the household economy compared to the situation fifteen years ago. This research was carried out to answer the question of why these economic changes occurred and what the manifestations of these changes were. The method used in this research is a qualitative method with a case study approach. The results of this research show that since the PEMP Program intervention in Getem Village in 2003 and 2006, the economic income of the fishing community has gradually continued to increase. Income stability and household survival can be well maintained. This can be achieved due to the diversification of fishing gear, the quality and capacity of boats, and support from additional sources of income from the off-fishing sector. Despite this, fishing communities still face extreme weather challenges when going to sea. In conclusion, the PEMP Program in 2003 and 2006 has played an important role in encouraging economic change in the fishing community in Getem Village. These economic changes have helped fishermen improve the quality of fishing equipment, build houses, and meet their daily living needs.*

**Key Word:** economic change, fishermen, PEMP Program, fishing gear diversification.

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## **I. Introduction**

### **Background**

This anthropological research was carried out in Getem Village, Mojomulyo Village, Puger District, Jember Regency, East Java, Indonesia. Because Mojomulyo Village borders directly on the Indian Ocean, some of the residents who live near the coast work as fishermen. They catch fish in the South Coastal Waters of Jember and Lumajang Regencies. Getem fishermen are classified as traditional fishermen. The capacity of fishing equipment and business capital is limited, so the fishing activities of Getem fishermen are only in coastal waters [1][2].

In the early 1970s, the government implemented fisheries modernization [3]. The aim is to encourage catch productivity, overcome poverty, and improve the welfare of fishing communities. This policy has not achieved the goals expected. In fact, in several areas the level of catch productivity has decreased, poverty continues, and damage to marine ecosystems has occurred [4]. Such socio-economic conditions are faced by fishing communities in various regions.

During the 2000-2009 period, the Department of Maritime Affairs and Fisheries implemented the Economic Empowerment Program for Coastal Communities [5]. Nationally, the success rate of the PEMP Program reaches 60% [6]. The fishing village in Getem, Mojomulyo Village, received this program in 2003 and 2006 [7]. The fishing community takes advantage of the program to repair boats, replace fishing nets, and buy new machines. The benefits of this program can increase fishermen's income from previous conditions.

In the following years, fishing communities must strive to maintain the stability of income from fishing activities. The challenges that the fishing community in Getem Village must and continue to face are the readiness and quality of fishing facilities (boats, nets, machines), business capital, climate constraints, and marketing as determinants of the success of fishing efforts [1]. Moreover, they generally solve these problems independently. Even though there are fishing cooperatives, the size of loans is still limited, which can hinder the fulfillment of fishing business needs.

Apart from the challenges above, the Getem fishing community is facing the impact of climate change which is greatly hampering fishing activities. Unstable climatic conditions are characterized by winds and high

sea waves that often come suddenly. On the South Coast of Java, climate instability makes fishing activities difficult to meet the economic needs of fishermen's households [8] [9] [10]. However, Getem fishermen have effective adaptation capabilities to overcome economic difficulties so that they can maintain the survival of their households [11] [12].

### **Research question**

Based on the background above, the problems that will be raised in this research are as follows.

1. What are the characteristics of capture fisheries activities carried out by the fishing community in Getem Village?
  2. What are the factors underlying economic changes in the fishing community in Getem Village?
  3. What are the results of the economic changes that have occurred in the fishing community in Getem Village?
- The three research questions above will be answered in the discussion of this article.

### **Theoretical Framework**

Fisheries modernization was implemented as part of the New Order's development strategy which was oriented towards economic growth. This capitalistic development orientation is the antithesis of the Old Order development strategy which emphasized more on the principle of independence, namely being sovereign in the political field, independent in the economic field, and having personality in the socio-cultural field. With high economic growth, it is hoped that development will be equalized so that people's income and welfare will increase. This strategy is to repeat the successful development of Western European countries and Japan which were destroyed by World War through the Marshall Plan program in the 1950s [13].

The modernization of capture fisheries or what is known as the blue revolution was implemented in Indonesia in line with the green revolution in the agricultural sector, which was implemented in the early 1970s. Fisheries modernization is carried out by motorizing boats, improving the quality of fishing equipment, and supporting cooperative institutions. Fisheries modernization aims to increase the productivity of catches to support national economic growth. Through productivity growth, it is hoped that fishermen's income and welfare will increase. This economic change is expected to reduce poverty [14].

The modernization of capture fisheries has indeed succeeded in increasing the productivity of fishermen in various regions. With motorization, fishing boats increasingly have an operating range far to the middle. Increasingly modern nets are capable of reaping large amounts of catch. Increasing productivity has an impact on increasing fishermen's income and welfare. Because the level of quality of fishing technology owned by fishermen varies, the quantity of catch is also different. This condition is the main cause of income inequality.

The modernization of fisheries has provided wide and open space for the exploitation of captured fisheries resources. This opportunity opens up the opportunity for anyone to enter a business in the capture fisheries sector. Along with the failure of coastal rural development, the capture fisheries business has become the basis for overcoming unemployment and poverty in coastal areas. As a result, increasing population pressure on fisheries resources capture fisheries resources is increasing. Overfishing conditions also occur in various fishing areas. The next impact is that fisheries resources are increasingly scarce so obtaining a decent income from fishing activities is increasingly difficult [15].

The modernization of capture fisheries has a serious impact on economic changes in fishing communities in various regions [16]. Anthropologically, economic change is a change that is associated with the socio-economic conditions of individuals or social groups in the structure of society. Such changes are driven by development interventions, dynamics and productivity of the local economy, improving the quality of community education, opening access to inter-regional relations, social mobility, increasing employment opportunities, and population pressure. These economic changes can take place in an evolutionary or revolutionary way. If a society does not experience economic change, it is called involution. Economic change is an inevitability as a consequence of development programs and societal dynamics [17].

In general, economic changes in fishing communities are changes that occur due to the intervention of fisheries development programs and developments in the local economic sector. The introduction of fishing technology plays an important role in driving economic change [18]. The nature of change in fishing communities is evolutionary or involutive. Evolutionary changes take place gradually. Involutionary changes are changes that are "running in place" or sometimes actually recede into the background. This means that the condition of the community has not experienced significant development.

This type of involutive change occurs in coastal villages that previously had economic potential, but then experienced ups and downs in productivity because fishermen used fishing equipment that damaged the environment. Destructive fishing activities result in a reduction in the potential number of capture fisheries or fisheries scarcity. Fishing activities have become quiet, affecting the socio-economic conditions of society in

general. Damage to the coastal and marine environment also contributes directly to the emergence of fishermen's poverty [13].

If the condition of environmental resources is not damaged, organizing other potential resources is needed to encourage local economic productivity. A stable and gradually developing local economy will contribute to changes in the fishing economy. This means that the capture fisheries sector is not sufficient to drive local economic activities if the level of productivity is low. Therefore, integration between the capture fisheries sector and other economic sectors is needed and it is driven in an integrated manner [7] [19].

Activities in the capture fisheries sector face major challenges from the impacts of climate change. Climate change has disrupted the orderliness of fishing communities and the stability of income from fishing activities. Climate change and its consequences have a serious impact on the living conditions of traditional fishing communities. Therefore, they try their best to overcome it [8]. In this way, fishing communities can maintain their survival.

As humans who have creative social capital, fishing communities can develop various adaptation strategies to save their lives. Fishermen obtain a diversity of adaptation strategies by identifying potential resources available in their environment, managing them appropriately, and utilizing them according to their needs. Adaptation capacity is the main key that can drive economic activities and improve the welfare of fishing communities [20].

For the fishing community, the various adaptation strategy efforts undertaken ultimately lead to saving the fishing sector business. The challenges faced are very complex because they are multidimensional, while on the other hand, the resources available to overcome them are not necessarily available optimally. Serious concern for maintaining the continuity of the fishing business is continuously carried out because this business is the backbone of household life [21].

## **II. Research Methods**

This qualitative research was carried out to understand the economic changes that occurred in the traditional fishing community in Getem Village, Jember Regency. According to [22], qualitative research has five approaches, namely narrative, phenomenological, *grounded theory*, ethnography, and case study. This qualitative research uses a case study approach [23].

The rationale for choosing a case study approach is as follows. First, the fishing community in Getem Village received the PEMP Program in 2003 and 2006. The funds for this program are managed by the LEPP-M3 Nusa Barong Cooperative which was formed in 2003 when the program entered Getem Village. Second, to identify the positive and negative impacts of government policy on society.

This research activity was carried out in five stages, namely research planning, field data collection, data analysis, presentation of analysis results, and conclusion. Research planning activities produce research proposal documents to be implemented. Field data collection activities were carried out using the method of involved observation and in-depth interviews. Data collection activities aim to obtain primary data from research informants and secondary data obtained from statistical documents.

During data collection activities, data analysis activities were also carried out. The data analysis method is interpretive. The scope of research data analysis includes activities of selecting and selecting data that is relevant to the research topic, simplifying complex data, making abstractions, refining data, and organizing data towards the research focus. The mapping of relationships between data is analyzed and the results are presented descriptively. Conclusions are drawn to formulate final research results.

## **III. Results And Discussion**

### **Capture Fisheries Activities**

The catchment area (fishing ground) for Getem fishermen is in the waters around Nusa Barong Island; to the West of the waters of Lumajang Regency and the East to the waters of Watu Ulo. In contrast to Getem fishermen, traditional fishermen in Watu Ulo only rely on fry production, while Payang boat fishermen catch pelagic types of fish. Since May 2023, Watu Ulo fishermen have begun to develop the diversity of fish they catch, such as lemurs fish. They realize that fishing activities that rely on certain types of fish can no longer be maintained because the profit impact is limited.

The waters around Nusa Barong Island are not only a fishing location for fishermen from the South Coast of Jember Regency. Ornamental fish fishermen from Puger or Bangsring at certain times also catch ornamental fish in the waters around Nusa Barong Island. They brought a boat that was quite large, to accommodate 7 crew members. Usually, fishing activities last for one week. If the catch is deemed sufficient, they go home.

Getem fishermen are classified as small fishermen or traditional fishermen who generally operate in coastal waters. Getem fishermen are characterized by limited business capital and boat capacity. The number of boat crews ranges from 2-4 people, who usually come from relatives and close neighbors. Apart from Getem, traditional fishermen are also found in Mojosari, Mayangan, Jeni, and Paseban. In this area, there are no payang fishing groups. Payang fishermen are often found in Watu Ulo and Puger on the east coast.

Compared with traditional fishermen, Payang fishermen have higher business capital and technology capabilities. The number of boat crew reaches more than 15 people with the size of the boat being quite large. The type of net used is quite long and wide. In one go-to-sea, a payang boat requires operational costs of around IDR 1,000,000 because the operating area is in the middle of the sea. We can compare it with the operational costs of traditional fishermen which range between IDR 150,000-IDR 200,000. This difference in business scale and operational scope has implications for the level of productivity of the catch obtained in one fishing trip.

Getem fishermen know two patterns of going to sea. First, go to sea at 15.00 and return at 21.00 if the weather conditions are good. If the weather is not good, fishermen will stay 1 night at Camba Beach, north coast of Nusa Barong Island, and return home tomorrow morning. Second, fishermen who go to sea at dawn. They went home to sea around 10.00. The supplies needed for one trip to sea are around 10-15 liters of diesel fuel for the boat engine. The current price of 1 liter of diesel is IDR 9,000. The total need for diesel is IDR 90,000-IDR 145,000. Fishermen also bring food supplies and lights to support fishing activities.

The quality of fishing facilities (boats, nets, machines, and lights) owned by Getem fishermen is now better than the condition 20 years ago. For example, the price of Mr Misto's complete boat is IDR 75,000,000 - IDR 100,000,000. From these costs, Mr. Misto borrowed IDR 10,000,000 from an intermediary trader. The boat engine brand is Tiangli 18 PK. The boat crew consists of 4 people. The boat's carrying capacity reaches 2 tons of fish. Pak Misto's boat is made of fiber and purchased from Cilacap.

Among the fishermen of the South Coast of Jember Regency, fishing activities are carried out during the dark period of the month, namely the period when there is no moonlight. The arrest period in one month lasts 20 days. The other 10 days are the moonlight period and fishermen take time off from the sea because the fish do not come to the surface of the sea. Getem fishermen also have regular fishing holidays on Friday nights because they attend Yasin-Tahlil recitations in their home environment. For fishermen who still go to sea during the moonlight, they leave work at around 05.00 and return home at 10.00. According to fishermen during the moonlight, fish will still be there as long as there are no strong winds and big waves.

The volume and value of capture fisheries production on the south coast of Jember based on sub-district area units can be seen in the table below.

Table Production and Production Value of Marine Fisheries  
According to sub-districts in Jember Regency in 2022

No.	Subdistrict	Volume (Tons)	Value (000 Rp)
1.	Kencong	232.35	2,822,633
2.	Gumukmas	509.63	6,191,086
3.	Puger	10,689.49	129.858.119
4.	Ambulu	1,860.43	22,600,874
5.	Tempurejo	102.60	1,246,387

Source: Jember Regency in Figures 2023

Fishing holidays are a mechanism to maintain the recovery and sustainability of fisheries resources so that the potential of fisheries resources can be maintained. In this way, fishing communities can maintain consistent income from fishing activities.

The types of fish caught by fishermen on the South Coast of Jember Regency and which have high production value are tengiri, grouper, mackerel, skipjack, manyung, layang, tuna, and lemuru. The types of fish caught by Getem fishermen with high production levels are lemuru, tuna, and skipjack. In certain seasons, fishermen's catches in the form of layur fish, octopus, and squid are quite high.

If during a fishing activity, fishermen catch a lot of fish and the boat is unable to contain them, the fish will be given to other fishermen. This is a form of social solidarity. Fishing and sea activities are not only a social space to seek economic income but also to strengthen social awareness among fellow fishermen.

### **Causes of Economic Change**

Like fishing communities in other areas, Getem fishermen have responsive economic adaptability to overcome household economic problems. The economic problems routinely faced by fishermen are when there

is a fishing shortage during the western season when extreme weather occurs, and when they go to sea but don't catch anything. This last thing is usually closely related to the good fortune or fortune of every fisherman.

Fishing activities are speculative activities. This happens to traditional fishermen in various regions. Because of these conditions, every fisherman who goes to sea does not guarantee that they will earn an income. In general, if fishermen are asked, "Do you get a catch every time you go to sea?" They will answer, "Not sure!". The next question is, "How much income do fishermen earn in one go at sea, a week, or a month?" Fishermen will answer "Not necessarily!". The fishermen's answers illustrate that every time you go to sea you don't automatically get a catch.

Limited income is an event that often occurs in fishing communities. They have also prepared economic adaptation strategies to cover daily living needs when facing economic difficulties. The adaptation strategy relies on the priority of meeting daily food needs. The most important thing for them is the availability of rice for daily consumption. The need for side dishes can be met by asking other fishermen who are going to sea that day for fish. If you need vegetables, you can find them in the yard around your house.

Apart from the methods above, periods of limited income encourage for fishing households to look for oysters at the Getem River estuary during low tide. At the mouth of Kali Getem, there are lots of oysters and blanak fish. The price for oysters that have had their shells removed per glass is IDR 5,000. There are also those selling for IDR 10,000 for 3 glasses. Traders sell the oysters to the Mojomulyo Village market. The village market is located in the northern part of Kalimalang Hamlet or on the edge of the Mojomulyo-Gumukmas Highway.

For fishing households that do not have a side business, the economic burden on the household during times of difficulty in income is indeed heavy. The non-fishing sector job opportunities available in Getem Village are very limited. There is also no catch processing industry with sufficient business scale. The involvement of women in Getem Village in the local economy is usually done by opening food stalls in the middle of the village or on the side of the village road. Even though it is small, the income earned can be used to meet some of the needs of daily life.

Most Getem fishermen before 2003 operated jukung equipped with oars and sails. The jukung also does not have an engine. Only a few fishermen have engines to propel the jukung. The jukung that is operated is made of wood. Fishermen only operate one type of fishing net, namely a set net for catching lemuru fish and small fish, such as redfish (*kreseh*). Before the 2003 PEMP Program, the price of one boat of wood was IDR 1,200,000, plus 2 katir, machines, and nets to IDR 10,000,000. At that time, the price of a better jukung could reach IDR 20,000,000.

According to fishermen, the presence of the 2003 Coastal Community Economic Empowerment Program ( PEMP ) has contributed greatly to supporting economic change for Getem fishermen. The value of funds disbursed to coastal communities reached IDR 900,000,000. Program funds are managed by a cooperative that was formed as the managing body, namely the Mina Bahari Nusa Barong Cooperative. The priority community groups for accessing PEMP Program funds are fishermen, fish farmers, fish traders, and small and medium business owners. They are spread across the South Coast area of Jember Regency, from Paseban to Watu Ulo. In 2006, Jember Regency received back the second phase of the PEMP Program amounting to IDR 1,200,000,000.

In responding to the presence of the PEMP Program, fishermen have the desire to use program funds to improve fishing facilities that do not support fishing efforts. This step illustrates that fishermen respond in the form of fishing adaptations that suit their economic needs. For other community groups such as farmers, fish traders, and small and medium entrepreneurs, program funds are used to increase their business capacity.

Since 2023, the quality of fishing facilities in Getem Village has improved. The quality and capacity of boats have increased with fiber materials, not wooden materials like jukung. On average, each boat operates 2-3 engines. The types of nets also vary according to the fishing seasons. By improving the quality of these fishing facilities, the fishing community in Getem Village can operate fishing as far away as the Lumajang and Malang waters, as well as to the east as far as the Watu Ulo waters. The diversity of nets has helped fishermen to obtain catches and income from fishing throughout the year. In this way, opportunities to improve the welfare of fishing households are increasingly open. Increasing the quality and capacity of fishing facilities has reflected an increase in the economic capacity of fishermen's households.

### **Results of Economic Change**

Adaptations to fishing carried out by Getem fishermen have a positive impact on the smooth running of income from fishing and the sustainability of capture fisheries businesses. In 2006 or three years after the 2003 PEMP Program funds were disbursed, lemuru fish production increased so that fishermen were able to go to sea three times a day. Apart from progress in fishing activities, catch productivity has opened up employment opportunities for Getem women. They work to collect lemuru fish that are unloaded from fishing boats.

In fishing households, both the husband (fisherman) and his wife, namely coastal women, have the same responsibility to support the survival of their household. In general, women, apart from having domestic responsibilities, also help their husbands earn a living in the public sector. The economic sectors that fishermen's wives have the opportunity to enter are the fisheries processing industry, fish trading, opening stalls for consumption of necessities, and household services.

In Getem and Kalimalang villages, fishermen's wives work as fish traders, open stalls, and work as laborers to collect lemuru fish caught in nets. This last job is carried out by the fishermen's wives when the fishermen land their boats on the beach to load and unload their catch. The potential for this work is quite large because lemuru fish is a dominant catch and is labor intensive, involving many people. The greater the number of fishermen's catches obtained by fishermen, the greater the number of workers needed. The results of work obtained by women also help increase household income.

The fishermen hand over the work to women because they do not have enough energy and time to complete the work while in the middle of the sea and on their way back to the beach. When in the middle of the sea, fishermen contact the fish weigher on the beach via cell phone to order the number of workers to collect lemuru fish from net traps. The additional income is also used to buy livestock and build a permanent house.

In general, Getem fishermen raise cattle and goats. Animal feed is taken from rice fields that have not been planted with rice for a long time and are covered with grass. In Getem Village there is extensive agricultural land which is less fertile due to sea water intrusion. The rice fields were transformed into grasslands to meet the community's animal feed needs. The grassland measuring 10 square meters and some distance from the road is rented annually for IDR 1,000,000. If the pasture is near a road making transportation easier, the rental price is around IDR 2,000,000-IDR 2,500,000. Many Getem fishermen set aside their time to raise livestock. This additional work is part of their adaptation strategy to ensure household survival.

Since the last three years, fishermen's income has increased. Once at sea, fishermen can earn around IDR 7,000,000-IDR 10,000,000. One sign of fishermen's economic success can be seen in property ownership, namely good permanent houses. Such houses were built in 2019 until now. The construction of fishermen's houses uses a cooperation system where the norms are mutually agreed upon. Apart from building a good permanent home, fishermen also have the latest brand motorbikes, cars, bank savings, and rice fields. Most Getem fishermen already have motorbikes. Only 1-2 people have bicycles. Getem fishermen have 6 cars, while Kalimalang fishermen have 3 cars. Only 1 fisherman owns a rice field, while 3 people own a field. Only a few fishermen already have bank savings.

Even though fishermen sometimes earn a large income, this does not encourage them to live lavishly. Instead, they maintain a simple lifestyle [24]. The reason is that threats to income stability can occur at any time, so they have to be careful. To overcome this, cash savings are needed. Apart from that, the cost of going to sea and the cost of repairing fishing facilities, such as damaged boats, engines, and nets. Cash must always be available to respond to sudden needs. If not, fishing activities will be hampered. Getem Village is a remote area. The town of Puger District, which is the center of the crowd, is quite far from Getem Village, so it does not provide space for living lavishly.

The fishing community in Getem Village has strong social ties in networks of kinship, neighborliness, and friendship. This social network plays an important role in organizing local resources to help each other and overcome socio-economic difficulties among community members [25]. These social networks have become the main basis for social life so that they do not experience social disorganization.

#### **IV. Conclusion**

The socio-economic developments and changes that took place in the fishing community in Getem Village were caused by the dominant factor of the 2003 PEMP Program to empower coastal communities in terms of providing business capital. This is a program with a large scale and large enough funding for the first time in the Jember Regency. The target scope is economic business groups in coastal communities, including fishing communities. This program was continued with the second phase of the PEMP Program in 2006 to strengthen the business capital capacity of coastal communities. Until 2009, the Ministry of Maritime Affairs and Fisheries was still providing assistance with business capital, fishing gear, and coastal environmental conservation costs to fishing communities in Jember Regency.

The fishing community groups targeted by the program utilize the program to adapt fishing, by improving the quality and capacity of fishing facilities. The current condition of fishing facilities is better than the condition of fishing facilities before the 2003 PEMP Program. The positive impact of this empowerment policy and its chain nature is as follows: the reach of fishermen to go to sea is getting farther, the opportunity to fish all year round is wide open, the creation of stability maintains business sustainability due to having a variety of fishing nets, increasing income, as well as owning household property and family transportation facilities.

Apart from increasingly smooth fishing activities, fishermen are also developing other socio-economic adaptation strategies, such as becoming independent breeders and working together to build good permanent homes. Things like this would be impossible to achieve if there was no increase in fishermen's income since the PEMP Program existed in 2003 and 2006. The construction of the Southern Cross Route (Jalur Lintas Selatan or JLS) infrastructure also affects the economic dynamics of the coastal area from Puger to Lumajang. The flow of goods, services, and interaction between people is greatly helped by the existence of JLS so that it becomes a driver of economic progress in coastal areas.

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