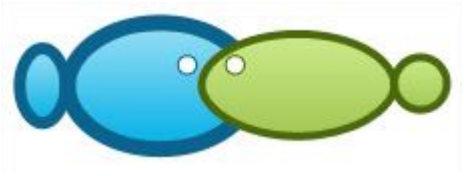

Local government policy analysis in implementing strategic roles of marine and fisheries development in East Kalimantan, Indonesia

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Abstract. This article discusses the efforts of the pronvincial government of East Kalimantan in implementing the strategic roles of marine and fisheries development. These development strategies may be assessed by understanding the efforts, steps, and policies formulated and implemented by the local governments. A deliberative policy analysis approach was used to analyze this policy. This approach analyzed the narratives and arguments of the authorities to examine decision-making processes and policy implementation. A qualitative approach using descriptive analysis method was utilized for this article, while literature study of books, journal articles, newspapers, online news, and websites of government institutions was used as the data collection technique. The study discovered five issues, namely inadequate institutions in the field of Marine Affairs and Fisheries of East Kalimantan, inadequate fishery production and capture fisheries production, inadequate development of added value and marketing of marine and fishery products, inadequate development marine and fisheries areas that are environmentally friendly and based on low emissions, as well as threats to the sustainability of fish resources and the environment. These five factors complicates the government's efforts to achieve economic, ecological, and social-cultivation goals of the marine and fisheries development.
Key Words: deliberative policy analysis, marine and fisheries development, policy.

Introduction. East Kalimantan is one of the main gateways to the eastern regions of Indonesia. It covers an area known as wood warehouses and mining products with hundreds of rivers spread across nearly all of its cities. East Kalimantan's rivers, including the Mahakam River, are the primary means of transportation besides land transportation (Wijaya et al 2020). In East Kalimantan Province, there are currently 1200 micro, small and medium enterprises (MSMEs) engaged in fishing processing activities. According to the 2017-2018 target, both the catching and cultivation sector contributed a total volume of 414 tons (Ministry of Marine Affairs and Fisheries 2018). The catch and cultivation of aquatic resources generate income for fishers, indicating that the marine and fisheries sector plays a role in improving residents' welfare and economic growth. However, the marine and fishery resources have not been optimally utilized, demonstrated by the relatively high poverty rate among fishermen and fish cultivators (Witarsa 2015).

To accelerate economic growth, it is necessary for the local government of East Kalimantan to improve the welfare of its improverished citizens and manage unemployment issues. Programs and activities have been initiated, especially those related to spending allocations that support economic activities capable of spurring growth, expanding employment opportunities, and reducing poverty. Regional development, both at the provincial and district/city levels, is the supporting pillar of national development goals, as well as the basis for national development planning (Rafiy et al 2019). Therefore, there is a pressing need for synchronization, integration, and harmony between national and regional development plans. These may be realized through regional development planning system that is integrated, comprehensive, relevant, and consistent at each level. Such initiative potentially provide employment,

while boosting export and tax revenues on national level. In this system, all sub-sectors, including marine and fisheries, cannot be separated from various dynamics of the national and global environment and must follow the dynamics of environmental change (Merino et al 2012).

It is necessary for regional governments to improve the efficiency and effectiveness of marine and fisheries programs in the face of global economic changes (Wijayanto 2016). The government of East Kalimantan Province has initiated various programs and activities to achieve the goal of increasing the contribution of fisheries sector to the local economy. Although there are numerous challenges in realizing the goal, the East Kalimantan government continues to improve and adapt to various changes and increasingly complex development issues (Paulus et al 2019). This study aims to examine the performance of the East Kalimantan government in achieving the aforementiod goal.

Material and Method. A deliberative policy analysis approach was used to evaluate the policies of the East Kalimantan government and a qualitative approach using descriptive analysis method was used in this study. This approach analyzes the narratives and arguments of the authorities to understand the decision-making processes and policy implementations. The qualitative approach was selected since it provides a deep, authentic, and basic understanding of the observed phenomenon. The descriptive analysis method was used because the data and collected information focused on the actual phenomenon or problem through data collection, preparation, processing, and conclusion. This method attempts to describe an objective empirical state of the phenomenon or problem being studied. Meanwhile, literature study using books, journal articles, newspapers, online news, and websites of authoritative institutions was selected as data collection technique. Finally, the data analysis technique in writing this article adopted Creswell & Poth's (2017) explanation, which concentrates the technique on organizing data, reading and memoing (making notes), as well as describing, clarifying, and interpreting data into codes and themes.

Results and Discussion

The marine and fisheries potential in East Kalimantan. East Kalimantan covers an area of 127,267.52 km^2 and a sea management area of 25,267.52 km^2. It is located between 113°44' to 119°00' East Long, and between 2°33' North Latitude and 2°25' South Latitude (Ministry of Marine Affairs and Fisheries 2018). East Kalimantan consists of 10 districts and cities, 7 of which are located in coastal areas, namely Berau Regency, East Kutai Regency, Kutai Kartanegara Regency, Bontang City, Balikpapan City, Penajam Paser Utara Regency, and Paser Regency. The enormous potential of the fisheries sector is an alternative to support the economy of East Kalimantan. With predominantly raw commodities, East Kalimantan fisheries have become the main export contributor (Juliani & Suyatna 2014).

The fishing potential in the East Kalimantan Exclusive Economic Zone (EEZ) is located in the Sulawesi Sea, northeast of Nunukan Regency, with an area of 2,750,813 hectares at 118° East Longitude and 4^o1' North Latitude. The development of marine and fishery production in East Kalimantan is managed based on the type of business, which consists of fishing business in the sea and public waters, fish farming in the sea, as well as in fresh and brackish water. The potential of marine and fisheries in East Kalimantan is presented in Table 1.

The marine and fisheries sector in East Kalimantan has enormous potential but remains constrained by inadequate facilities, such as fishing vessels and landing bases (Lukman et al 2021). The eight fish landing bases in East Kalimantan presently manage an average of 70 tons per day (Department of Marine Affairs and Fisheries East Kalimantan Province 2021). Therefore, the fishery industry in East Kalimantan needs to be further developed to enable larger catch and be supported by adequate facilities. The provision of adequate facilities is not only the responsibility of the local government, but also the role of private sectors in supporting government programs. The potential capture

fisheries areas, especially in the waters of the Makassar Strait, East Kalimantan, are currently categorized as dense and saturated. Therefore, the capture activities are directed to the Gulf of Bone, the Flores Sea, and Bali Sea, including Fishery Management Area WPP-RI 713, which are not optimally managed.

Table 1

Potential of marine and fisheries of East Kalimantan Province

Description	*Potential*
Number of inhabited islands	22 islands
Number of uninhabited islands	190 islands
Length of coastline	3,925 km
Fishing:	
- number of marine ships	22 018 units
- number of public water ships	23 660 units
Public water:	
- river, lake, and swamp area	2,235,770 ha
- brackish area	200,000 ha
Aquaculture cultivation:	
- shrimp ponds	82,735.0 ha
- fishponds	3,986.1 ha
- fish cages	12,581.1 ha
- paddy fields	13.0 ha
- marine / coastal	3,210.5 ha

The sea waters of East Kalimantan and their vast natural resources have various essential functions as life support. The residents of East Kalimantan utilize them as a source of income. Biological natural resources (fish, seaweed, pearls, coral reefs, mangroves, seagrass beds, and other marine biota), non-biological resources (petroleum, minerals, sea sand, and other marine energy) as well as environmental and marine services can be utilized for industry-based marines, such as fisheries, shipping, marine tourism, marine cultivation, mineral industry, and biotechnology (Department of Marine Affairs and Fisheries, East Kalimantan Province 2021).

Ocean and fisheries are key in Indonesian economy; both central and regional governments must pay attention to and develop marine and fisheries into a strategic sector to increase employment and the wealth of their residents. Any issues, therefore, should be resolved thoroughly by involving all parties. The development of Indonesian marine and fisheries are potential for international and domestic markets. Hence, it is necessary to analyze the strategic issues faced by the East Kalimantan government in the developing the marine and fisheries sector. The issues will be discussed in details as follows.

Inadequate institutional capacity in the marine and fisheries sector of East Kalimantan. One key indicator of a successful development planning is the achievement of development goals, and targets are determined primarily by institutional capacity. The limited competence of the human resources at the Department of Marine Affairs and Fisheries of East Kalimantan in carrying out development, budgeting, implementation, and reporting of the marine and fisheries sector correctly and accountably is one of the unresolved issues. In terms of quantity, there are sufficient staff members to carry out those tasks procedurally. However, the challenges lie in developing quality plans to carry out analysis and in-depth studies related to the management of marine and fisheries in East Kalimantan.

Despite various efforts to improve the unsatisfactory condition, the problems persist (Huda et al 2012). Institutional arrangements are required to increase synergistic cooperation among stakeholders, namely government, business sector and general public. The role of the government is very strategic, especially in providing infrastructure and regulatory tools to enable the appropriate and efficient implementation the marine

and fisheries sector development. This is essential, especially in the face of the multidimensional crisis that is currently happening, namely the presence of institutions that are not capable of developing economic activities, strengthening the commodity structure and ensuring efficiency of their processes. Fishers, cultivators and fishery processing institutions still lack competencies, both from social and economic aspects (Sulistiyanti & Wahyudi 2015).

The inadequate institutional capacity of the East Kalimantan government is triggered by several root causes, such as weak institutions that guarantee partiality to fishery business players; weak institutions in commodity development and fisheries marketing; the lack of science and technology development required by business sector; underdeveloped data and information in the marine and fisheries sector; as well as lack of optimal support for human resources and lack of infrastructure.

Inadequate cultivation of fishery production and capture fishery production. One of the objectives of marine and fisheries development is to increase the production of aquaculture and capture fisheries and improve the quality of fishery products (Yusni & Santoso 2017). It is hoped that this increase will increase revenue, enlarge inter-island trade and exports, and expand employment opportunities. The development of the marine and fisheries sector is experiencing an increasingly rapid development. It is expected to experience an increase in production fulfillment and export needs, which subsequently impact the income of marine and fisheries business players, boost the local economy, and encourage the emergence of a multiplier effect both sectorally and spatially, in national, regional, and local context.

In aquaculture production development, East Kalimantan still faces challenges in spatial planning policies and zoning plans implementation for coastal areas and small islands, limited irrigation canal infrastructure, limited availability and distribution of superior broodstock and seeds, readiness to tackle pests and diseases, as well as provision of adequate facilities. Ponds, good water, feed raw materials and price stability and the high price of feed remain to be issues too. The low productivity of aquaculture is also caused by the structure of the aquaculture business players who are predominantly small scale/traditional fishers with limited access to capital, technology networks, and markets. The attack of pests and diseases of fish/shrimp and pollution equally affect the quality of East Kalimantan's aquaculture environment (Karjoko et al 2020).

The low productivity of capture fisheries is caused by the structure of the fishing fleets, which are dominated by small vessels. It is necessary, therefore, to accelerate the development of the fishing industry in the regions. Government and support from private sectors are needed to accelerate the productivity of capture fisheries development. Deregulation is equally deemed necessary and government needs to enforce penalties and optimize capture fisheries sources (Turisno et al 2020).

The availability of subsidized fuel for fishers is also not optimal. The difficulty in determining the exact amount of fuel needed for fishing vessels is due to the difficulty obtaining valid vessel data and operational data. The allocation provided to SPDF (Solar Packed Dealer Fishermen) often runs out in the middle of the month due to the ongoing fishing season. Fuel is generally purchased by skippers who subsequently supply fuel and basic food packages to fishers. The dynamics of fuel availability is also one of the problems faced in increasing fisheries productivity.

The inadeaquate aquaculture production and capture fisheries production is triggered by several root causes, namely limited availability of superior seeds, lack of optimal management against pests and diseases of fish and pond irrigation networks, the increasing the price of manufactured feed for cultivation business, the domination of small boats in the fishing fleet, constantly changing fishing regulations, and the lack of availability of fuel for fishermen.

Inadequate development of added value and marketing of marine and fishery products. The utilization of fishery resources encourages the increased trade in marine and fishery products and East Kalimantan has the prospect of developing marine and fisheries agribusiness. Unfortunately, the existing agribusiness is not yet competitive. A

lot of work is required to develop the marine and fisheries sector into a regional economic wheel to replace the mining sector.

In the era of regional autonomy, marine and fishery industry require the commitment of local governments to be able to compete in international markets. Business players bridge macro and regional policies or between sector/sub-sector policies and between producing regions to be operationalized. The management of the East Kalimantan marine and fisheries agribusiness system and business is far from being fully optimized (Department of Marine Affairs and Fisheries East Kalimantan Province 2021). One of the main obstacles is the inadequate infrastructure in East Kalimantan which causes downstream industry to be unable to attract invesment in East Kalimantan. In addition, the lack of fisheries extension personnel is also an obstacle in the management of the agribusiness system. Fishery extension agents are the spearhead in the field because they facilitate, mediate, and empower the communities (Nuryadi et al 2017).

There is still a lack of a good partnership between fishers and owners of fishery businesses. This relationship is essential to facilitate the marketing of marine and fishery commodities. It needs to be built because the market for marine and fishery commodities will expand if fishers have more partners or buyers and the products of marine and fisheries commodities are guaranteed to be marketed. Up to date, problems are faced by fishers and cultivators because they cannot market their products. This marketing difficulty is due to infrastructure support that is not yet available. Fishers and cultivators do not fully comprehend the required efforts in marketing their products to ensure that their products can be absorbed in the market at an acceptable price (Setyowati et al 2016).

The inadequate development of added value and marketing of marine and fishery products is triggered by several factors, namely inadequate development of superior commodities in the marine and fisheries sector, outdated promotion system, lack of Processing Feasibility Certificate among many Small and Medium Enterprises, lack of cooperation in fisheries business, lack of innovations to improve fishery products, low-quality fishery products, and lack of empowerment among fisheries assistants.

Inadequate development of environmentally-friendly and low-emission marine and fisheries sector. Global warming is an increase in the earth's atmospheric parameters due to an increase of the greenhouse gas on Earth's atmosphere. Global warming impacts global climate change in the form of shifting global climate maps, climate anomalies, floods, droughts, storms, and sea-level rise, which cause many losses and threaten the sustainability of life on earth (Xu & Cui 2021). This presents numeorous obstacles to marine and fisheries development, especially in East Kalimantan. Global warming issues must be addressed and there needs to be coordination between local, central, and stakeholders. Proper management of marine and fisheries conservation areas is necessary, especially mangrove areas which has an ecological function.

The activities of exploiting marine and fisheries resources, whether on land, coastal areas, or oceans, cannot be separated from the potential for natural disasters and the impacts of climate change in East Kalimantan. Natural disasters and climate change may severely impact marine and fishery activities, such as the rise of sea-level, which can cause the sinking of small islands and cultivation areas/lands in coastal areas, as well as intrusion of seawater on mainland. The increase and change in extreme weather intensity (such as storms, cyclones, floods) also affects fishing and fish farming activities, and damages facilities (Rizal & Anna 2019). Therefore, preparing the community capacity to carry out various disaster mitigation efforts and adaptation to the impacts of climate change is highly necessary. Apart from the potential for natural disasters and climate change, coastal areas' challenges include damage to ecosystems, sedimentation, abrasion, pollution, and problems with land limitations. Therefore, various efforts to rehabilitate ecosystems, control pollution and revitalization efforts are needed, including controlled reclamation (Douvere 2008; Budiman et al 2010).

The inadequate development of marine and fisheries areas that are environmentally friendly and low emission-based is triggered by several factors, namely the increasing size of critical land due to the opening of fisheries businesses, the

abundance of cultivated lands, especially ponds that are abandoned after the clearing of mangrove forests, the absence of clarity on the concept of spatial planning to ensure that the development of marine and fisheries businesses is by the designation based on regional characteristics without sacrificing environmental interests, as well as the lack of system for calculating and managing disaster mitigation in coastal areas and small islands.

The threats to the sustainability of fish resources and the environment. The marine sector has complex issues due to its relationship with numerous sectors and is also sensitive to interactions, especially in environmental aspect. There are various marine fishery management issues in East Kalimantan that potentially threaten the sustainability of community livelihoods in the fisheries sector, food security, and economic growth from the utilization of fishery resources. In addition, illegal unreported and unregulated (IUU) fishing practices that occur in the Fishery Management Area (WPP) 713, both by Indonesian fishing vessels and foreign fishing vessels, cause social, ecological/environmental, and economic losses (Rahmadi 2018).

The threat of IUU fishing is triggered by conditions in the global fisheries sector, where several fishing areas have reduced fish stocks due to restrictions on fishing gear through Ministerial Decree No. KP. 02 of 2015 concerning the prohibition of using trawls and seine nets. On the other hand, the monitoring capacity of marine and fishery resources in East Kalimantan Province remains weak.

The capacity and capability of monitoring marine and fisheries resources need to be improved as mandated by Law no. 45 of 2009 concerning amendments to Law no. 31 of 2004 concerning Fisheries. The monitoring can be carried out through the development of an integrated surveillance system, the provision of monitoring facilities and infrastructure, the compliance of regulations in the field of supervision and institutions at the regional level, the development of regulations in the field of supervision and institutions at the regional level, the development of intensive cooperation with other agencies, as well as building commitments and support in countering IUU fishing activities (Gusmawati et al 2020).

The threats to the preservation of fish resources and the environment are triggered by several factors, namely the governance of marine and fisheries development; the lack of optimal supervision of IUU fishing, the social conflicts between fishermen and non-fishery business actors as well as the increasing number of IUU fishing activities.

Conclusions. The maritime and fisheries sector plays a strategic role in the economy of East Kalimantan in addition to the mining sector. The development of marine and fisheries sector in East Kalimantan contributes to the regional economy and local communities. Nevertheless, the marine and fisheries sector still faces several challenges, including the inadequate institutions in the field of marine affairs and fisheries in East Kalimantan, the inadequate fishery production and capture fisheries production, the inadequate development of added value and marketing of marine and fishery products, the inadequate development of marine and fisheries areas that are environmentally friendly and based on low emissions, the threats to the sustainability of fish resources and the environment. The main problem of the East Kalimantan government is that the strategic roles of marine and fisheries development in economic, ecological and socio-cultivated fields have not been optimally realized.

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