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RESEARCH ARTICLE

ACCELERATION DEVELOPMENT REGION CAPTURE FISHERIES ECONOMY ORIENTED
(A CASE AT COAST SOUTHERN DISTRICT GARUT WEST JAVA PROVINCE)

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ABSTRACT

This research is aimed to analyze acceleration development region capture fisheries economy oriented (A case at Coast South district Garut West Java Province). The research was background of condition of the coastal areas south of the island of Java development is relatively slower compared to the coastal areas north of the island of Java. Southern coastal area of the island of Java, particularly in Garut West Java has regional of capture fisheries development opportunities that have not been optimized, so it is necessary to do research on the extent to which production prospects and the economic value of capture fisheries in coast south district Garut West Java Province as well as how government policy in there giondo development of capture fisheries-oriented economy. The method used was survey method and sampling was done by purposive sampling. The analysis model used is the model hierarchy forecasting and analytical process. The results showed that fisheries production has decreased the economic value that needs to be done fast acceleration for the development of capture fisheries areas are oriented economy oriented.

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INTRODUCTION

Autonomy of region presents a great opportunity for the development of specific locally areas, this gives greater authority to local governments in the implementation spatial management. West Java Province has the coastal areas south and north of the economic value of the results of marine tourism and fisheries. Region of the southern coast of Java and Java's north coast have different characteristics, such differences are influenced by the be sides of bio-physical environmental conditions also affected the position of the city as a center of activity. The condition is seen in the quality of the population of Human Development Index (HDI). HDI is calculated based on three indicators: Education Index, Health Index, and the Purchasing Power Index HDI Garut district where in 2011 reached 71.70 less than the Tasikmalaya district HDI in 2011 is 72.51. This has encouraged local governments to accelerate development in the south coast region of Garut. (Statistical, west java 2012). According with the Government's vision district Garut in 2009-2014 was: "Creating Garut Its Forward, Welfare, Justice and Environmental "(Master plan Garut, 2005-2025). Potential the coastal areas are still very open to be utilized and developed, which in turn can increase the welfare of the community.

But the condition and potential of fisheries and marine resources of this great business has not been followed by the development of fisheries and marine and insufficient. Coastal areas of South Garut has the fishing fleets is still relatively limited and generally still use boat with outboard motor, due to limitations of the fishing fleets fishing areas is still limited to a distance of 200 nautical miles from the coast so it is still not utilized optimally. Socioeconomic conditions in South Garut region is still relatively underdeveloped when compared to other communities in the region,. This is caused by several factors, including the geographical conditions areas that are generally a mountainous region with a land surface that has a relatively steeper slope, so that this region is generally an unstable area, the lack of infrastructure and transportation and infrastructure, especially roads. The lack of infrastructure has resulted in the road network into isolated regions, South Garut region is a region that is prone to natural disasters both ground movement / landslide and tsunami hazard potential. Imbalance development between regions in the north and south of Garut, so it needs to be an effort to to reduce these gaps by accelerating development. Development is a complex process and aims to increase the welfare of the population as a whole, both economically, socially, culturally. The condition South district Garut to is dominated by the agricultural sector, including fisheries and marine become a the prime mover to accelerate economic growth in the region, on the basis of fishery potential. Based on the background of problems can be

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identified as : how far acceleration of economic-oriented fisheries in the South Coastal district Garut West Java and how to do the policies of local governments in the region of fisheries development-oriented economic. Purpose of this study was to analyze the development of fisheries the region in the South Coast district Garut, West Java Province. The purpose of this study was to: analyze the acceleration of economic-oriented fisheries in South Coastal Garut West Java Province and analyze the policies of local governments in the region to develop fisheries-oriented economy. Is expected that results of this research his useful for: information's for the parties the interest to know the prospects off is heries production in the South Coastal district Garut, considerations for researchers who will conduct research related to the management of fisheries resources, and basic scientific considerations for planners and policy makers, especially the local government, in order to managing the region's fisheries resources in the South Coastal district. Garut, West Java Province. The coastal area includes the area of land related to the territorial waters and marine areas affect the land and land use. Coastal is the transition between terrestrial and marine eco systems are influenced by changeling and sea. The coastal area is an area of land that is bordering the sea. Boundary on land includes areas that are flooded or not flooded are still influenced by ocean processes, such as tides, and sea water intrusion.

While the sea boundary are areas influenced by natural processes on land, such as sedimentation and flow of fresh water in to the sea, and are affected by human activities on land (Supriharyono, 2000). Coastal zone is a kind of transitional zone between the terrestrial and marine ecosystems, influenced by both natural forces, such as the ocean, land and atmosphere, and other non-natural forces coming from human society, making matter and energy exchange actively (Zhang Yongzhan and Wang Ying, 2000). Ernani Rustiadi and S. Hadi (2004), which states that the interaction between rural areas to the urban areas to the front to bein the context of the development of inter-regional balance, where a process of division of the added value of a balanced and proportionate between the two. Coastal Area covering an areal and which is related to the territorial waters and marine areas influence the land and land use. Marine resource management planning by Hiroyuki Matsuda, et al (2009). The management plan defines measures to conserve the marine ecosystem, strategies to maintain major fisheries resources, monitoring methods for those resources, and policies for marine recreation. Nurhayati (2014) expressed that the nature of coastal and marine areas that are common-pool resources encouraging utilization pattern that is open access, giving rise to externalities in the form of a variety of biophysical destruction. Utilization of coastal and marine resources oriented to short-term production without regard to the process and cycle of changes in coastal and marine resources led to the recovery cycle. Management of fisheries resources will not be separated from the economic behavior of fisher men as the primary holder in the utilization of fishery resources. Behavioral economics is a logical consequence of fisher men who have instinctively wishes to looking for welfare. So that they can be realized in the form of tangible activity (Nurhayati, 2012). The method used in this study is a survey method to taking samples at purposive 30 fishermen in the coastal areas south of district Garut of West Java Province.

The data analyzed were primary and secondary data. Primary data were obtained from the literature data is ststistik fisheries production and secondary data was obtained from interviews with fishermen.

MATERIALS AND METHODS

Analyze exploratory fisheries-oriented economy in South Coastal Garut West Java uses quantitative description and Forecasting. Forecasting Techniques using multiple linear one parameter exponential Brown. The formula used is as follows:

$$S'_1 = S''_1 = Y_1 \dots \dots \dots (1)$$

$$S'_t = \alpha Y_t + (1 - \alpha) S'_{t-1} \dots \dots \dots (2)$$

$$S''_t = \alpha S'_t + (1 - \alpha) S''_{t-1} \dots \dots \dots (3)$$

$$a_t = S'_t + (S'_t - S''_t) = 2S'_t - S''_t \dots \dots \dots (4)$$

$$b_t = \left[\frac{\alpha}{(1 - \alpha)} \right] [S'_t - S''_t] \dots \dots \dots (5)$$

$$F_{t-1} = a_t + b_t(m); \alpha = 0.7 \dots \dots \dots (6)$$

m=1 fort=1 until=12

Analyzing the policies of local governments in the region developing the economy-oriented fisheries using Analysis of Hierarchy Process (AHP).The foundation of the Analytic Hierarchy Process (AHP) is a set of axioms that carefully delimits the problem environment (Saaty, 1986). Data analysis was conducted with the Analysis of Hierarchy Process (AHP), because the AHP is one of tools that can be used for the analysis of uncertainty and imperfect information and the diversity of the decision-making criteria (Saaty, 1993). Hierarchy Analytical Process (AHP) is an organized thought process to complex issues, elaborate, and unstructured allowing for interaction between factors, but still enable to consider these factors is simply. The Analytic Hierarchy Process (AHP) is a powerful and flexible decision making process to help people set priorities and make the best decision when both qualitative and quantitative aspects of a decision need to be considered. Both qualitative and quantitative information can be compared using informed judgments to derive weights and priorities (Sataay,1994). Asamulti-criteria analysis, AHP by Triantaphyllou and Alfonso (1997) should be equipped with sensitivity analysis. Sensitivity analysis is used to be able to see the range (limits) the key person's opinion changes in decision-making with the AHP. With a sensitivity analysis can be found components/elements of the structure of the hierarchy where the most sensitive to changes in weight resulting in a change to the alternative.

RESULTS AND DISCUSSION

Garut is geographically located at position 107°25'8"-108°7'30" East Longitude and 6°56'49"- 7°45'00" South latitude. Garut is located in the province of West Java, with the following boundaries: west bordering Cianjur and Bandung district,

Table 1. Scale compared in pairs

Levels of importance	Definitions	Explanations
1	Both elements are equally important	Two elements has equal influence to goals
3	Elements that one a bit more important than any other elements	Experiences and assessments very strongly pushing one element over ran other elements.
5	Elements which one is more important than any other elements	Experience and assessment of very strongly pushing one element over another elements.
7	One clearly elements is more important than any other elements	One elements is supported by a strong, dominant visible into practice
9	One absolutely elements	

Table 2. Indicators of Development Acceleration Oriented Economic Regions of Capture Fisheries.

NO	ACCELERATION INDICATORS	Scoring (%)					Scor	Specification
		5	4	3	2	1		
I	Infrastructure Conditions of Capture Fisheries	5	4	3	2	1	5	There is, accordance with the needs
	Vessel types	20	40	30	10	0	4	There, is not according to need
	Types of fishing gear	35	15	30	20	0	3	There, is less in accordance with the needs
	Fish Landing Bases	45	35	20	0	0	2	None, but there is a response to improvement
	Fish Auction Place	40	35	25	0	0	1	None
II	The condition of Capture Fisheries							Achieving the potential offisheries 166.667 tonnes/year
	Potential of Capture Fisheries	0	0	20	30	50	4	70% reached the target potential for sustainable/ trip/value of production
	Catcha fish	0	0	0	60	40	3	50% reached the target potential for sustainable/ trip/value of production
	Fishing efforts	0	0	0	50	50	2	30% achieving sustainable potential/ trip/production value
	Values of Capture Fisheries Production	0	0	0	45	55	1	is less than 30% achieving potential sustainable/ trip/value of production
III	Conditions of Capital							
	availability of Banking	15	50	35	5	0	5	There is, accordance with the needs
	availability of Cooperatives	40	35	25	0	0	4	There, is not according to need
	availability of Pawnshops	20	45	35	0	0	3	There, is less in accordance with the needs
	The existence of the Local Finance Non-Formal	60	20	10	0	0	2	None, but there is a response to improvement
							1	None
IV	Institutions							
	Fisher men organization	25	35	40	0	0	5	There is, accordance with the needs
	Women's Organization of Fishermen	0	0	0	0	0	4	There, is not according to need
	Local Community Organizations	0	10	60	0	0	3	There, is less in accordance with the needs
	Social Organization	20	30	10	0	0	2	None, but there is a response to improvement
							1	None

Table 3. Total Fleet with Engineering Development of Dual Linear One Parameter Exponential Brown

Years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Motor boats	15	16	22	22	22	22	16	14	15	20	20	20	21	21	21	21	20
Outboard motor	336	353	506	522	528	529	492	452	403	2042	2057	2072	2087	2102	2117	2132	2147
Barge	8	8	196	196	196	196	196	196	474	821	1825	2299	2030	2433	2836	3239	3642

east Sumedang Tasikmalaya district north and south Indian Ocean. Coastal areas southern of Garut district includes the sub-district Cisewu, Bungbulang, Pakenjeng, Cikelet, Paameungpeuk, Cibalong. Generally, in the revision of spatial planning district Garut Years 2010-2030, Garut regency split in to two major areas, that is protected areas and areas cultivation. Protected areas, is generally dominated by protected forests, conservation forests an driver border/coast. Cultivation area covering aquaculture, agriculture, settlements, wetland agriculture, dry land farming and animal husbandry. Facilities and infrastructures is quite important in supporting fishing available in Garutisa fish landing base consisting, that is Cijeruk in the sub district Cibalong, Cilauteureun, Pameungpeuk Cikelet and Cimarimuara. The facilities have

been available in each fish landing is the building the fish auction place, which serves as: place the fish sold by way of auction; the meeting of fisher men with a bargainer of fish; the training of the fishermen; place the fish price information; and income source revenue for local government. The southern coast has the potential to be Garut Zone Economic Eklsusir of 200 nautical miles with a total area of 560km² arrest of ±28 and estimated to have the potential for sustainable (MSY) amounted to 166.667 tonnes/year. As for the territorial zone (12 nautical miles) with a total capacity of 10,000 tons/year. Until now, fisher men have utilized Garut district territorial zone with catches reaching 4,994,16 tonnes (or approximately 49.94% of the potential that exists). This is because the fishing fleet is now owned by a new form of boat

Table 4 Analytical Hierarchy Process (AHP) Dimension Costal Management

Dimension	Level 1	Level 2		Level 3		Alternatif Level 4									
	value	Sub Dimension	Value	Indicator	Value	Alternatif	Level 1	Level 2	Level 3.1	Level 3.2	Level 3.3	Level 3.4	Level 3.5		
Costal Management	1,00	Potential of fisheries	0,321	Determination of Effort Level(Level 3.1)	0,348	Management Planning	0,357	0,426	0,398	0,210	0,321	0,346	0,312		
				Size of fishing is allowed caught(Level 3.2)	0,211	Integration between water area	0,230	0,354	0,270	0,180	0,234	0,215	0,301		
				Determination of mesh size (Level 3.3)	0,181	Balance of development with Conservation	0,254	0,128	0,210	0,250	0,320	0,146	0,125		
				Constrain the amount of fishing gear(Level 3.4)	0,260	Local Institutional	0,159	0,92	0,122	0,36	0,125	0,293	0,262		
				Coastal ecosystem	0,212	Fishing improvement of habitat(Level 3.1)	0,360	Management Planning	0,357	0,304	0,260	0,360	0,360	0,349	0,422
						Making artificial FADs(Level 3.2)	0,218	Integration between water area	0,230	0,254	0,399	0,218	0,218	0,248	0,120
						Improvements of coral reefs(Level 3.3)	0,210	Balance of development with Conservation	0,254	0,249	0,159	0,210	0,210	0,129	0,135
						Planting and utilization of mangrove(Level 3.4)	0,212	Local Institutional	0,159	0,193	0,182	0,212	0,212	0,274	0,323
		Role of local institutions	0,251	The group joint venture (Level 3.1)	0,421	Management Planning	0,357	0,406	0,278	0,304	0,260	0,312	0,323		
				Increasing the participation of cooperatives(Level 3.2)	0,210	Integration between water area	0,230	0,247	0,312	0,254	0,399	0,190	0,230		
				Optimization fishing auction place(Level 3.3)	0,185	Balance of development with Conservation	0,254	0,146	0,211	0,249	0,159	0,120	0,145		
				Capital support(Level 3.4)	0,184	Local Institutional	0,159	0,201	0,199	0,193	0,182	0,140	0,302		
				local regulations	0,216	Regulations(Level 3.1)	0,210	Management Planning	0,357	0,350	0,314	0,406	0,304	0,280	0,321
						The Closing area/fishing season(Level 3.2)	0,180	Integration between water area	0,230	0,287	0,257	0,247	0,254	0,320	0,277
						Improvements of degraded ecosystems(Level 3.3)	0,250	Balance of development with Conservation	0,254	0,267	0,187	0,146	0,249	0,185	0,260
						Protecting of fish stocks(Level 3.4)	0,36	Local Institutional	0,159	0,096	0,242	0,201	0,193	0,215	0,142

ships small size (5-10GT). (Department of animal husbandry and fishery Garut District 2012). Analysis of acceleration of fisheries using an indicator fishery potential, availability of capital and facilities production, the use of fishing gear technology, labor, and productivity related to potential fishery commodities, economic institutions, as well as the income of fisher men on the South Coast Garut. Potential fisheries are generally caught in the waters south of Garut include Tuna, *Katsuwonus pelamis*, *Trichiurus lepturus*, *Lutjanus argentimaculatus*, *Epinehelus fuscoguttatus*, there is also a considerable potential sea weed. In addition to the potential for sustainable marine and coast, in Garut there are also potential ponds along the coast line which is about 1,000 hectares.

The potential of marine ecosystems consist of Estuary (24 ha), coral reefs (525 ha), Sea grass (75 ha), mangrove (50.9 ha) Acceleration of coastal manage men indicators infrastructure conditions that include (1) the type of vessel indicates the range of values of 40% are not according to needs for the accelerated development of coastal areas; (2) the type of fishing gear 35% there according to need; (3) fish hauling 45% there according to the needs of accelerated development and (4) 40% fish markets there as needed. Conditions of fisheries which include: (1) The fishery potential of 50% has not reached the potential for sustainable/ trip/value of production; (2) 60% of the catch has not reached the potential for sustainable; (3) fishing effort and production value reached 30% of the sustainable potential.

The capital conditions include: (1) the availability of banking 50% there, but not in accordance with the need to accelerate the development of coastal areas; (2) the existence of a cooperative of 40% is expected to be able to accelerate the growth of coastal areas; (3) 60% still in the dominance of non-formal financial institutions as deemed appropriate according to the needs of the community. Local institutions include organizations of fisher men by 40% there, but not in accordance with the need to accelerate the development of coastal areas. Based on fleet composition/type of motor boats fishing boats in 2004 as many as 15 units based on the exponential analysis in 2020 will increase to 20 units motor boats an increase of 75%. Type the size of the out board motor 15 HP engine and a 40 HP contributes the most in fishing that is 529 units in 2009, but in 2012 decreased by 23.82% to 403 units. Instead sail boat or boat without a motor or boat junkung that tend to increase in 2009 as many as 196 units to 474 units in 2012. By using the calculations condition forecasting techniques can be found accelerated development of coastal areas with indicators of infrastructure especially in the fleet in 2020 will increase the quantity. Based on calculations of alternative policies can be found should be done by the local government in coastal management dimensions: (1) Management Planning with partial weight value of 0.357 meaning alternative government policy through the management planning will have an impact of 35.7 percent of the acceleration development region capture fisheries oriented; (2) Integration between water area has partial weight value of 0.230 meaning the alternative government policy through Integration between water area has the influence of 23.0 percent of the acceleration of the development region capture fisheries oriented; (3) Balance of Conservation development with partial weight values of 0.254 meaning the alternative government policy with attention to Balance of Conservation has the influence of development with 25.4 percent of the acceleration of the development region capture fisheries oriented and (4) Local Institutional partial weight value of 0.159 meaning any government policy through the Local Institutional has influence 15.9 percent of the acceleration of the development region capture fisheries oriented.

Conclusion

The results showed that fisheries production has decreased the economic value that needs to be done fast acceleration for the development of capture fisheries areas are oriented economy oriented. Based on calculations of alternative policies can be found should be done by the local government in coastal management dimensions is management planning, integration between water area, balance of conservation development, local Institutional.

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