



# Indonesian Coastal Macroeconomic Performances and Problems Before and During Covid-19

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**Abstract.** The Indonesian government has introduced a maritime road map and policy to improve the coastal economy. Studies of the relationship between unemployment and the coastal macroeconomy are limited. This study aims to analyze unemployment as a main macroeconomic performance and problem, factors that influence unemployment, and the role of maritime policy. This study employs the student t-test and panel data generalized linear modeling. The student t-test is to compare macroeconomic performances before and during Covid-19 and coastal and non-coastal macroeconomic performances. The panel data is being used in generalized linear modeling to infer several factors, including maritime policy, that influence the coastal unemployment rate. The variables are economic growth, inflation rate, unemployment rate, real GRDP, provincial road length, number of laborers in medium and large industries, and a dummy variable of coastal and non-coastal regions as an approach to maritime policy. The data analyzed is from 2010 to 2019 in the Central Java province of Indonesia. The results show that economic growth, inflation rate, and unemployment rate are the main macroeconomic performances, the unemployment rate is the main macroeconomic performance and problem, real GRDP and inflation rate have a negative significant influence on the unemployment rate, and the length of the provincial road and the number of medium and large industries' labor have a positive significant influence on the unemployment rate. Another result is the positive but not significant dummy variable of coastal and non-coastal regions, which indicates the maritime policy role. This result is supported by additional data on interrelated policies at the Central Java Provincial Marine and Fisheries Department.

**Keywords:** Economic Performances and Unemployment · Maritime Policies · Coastal Region

## 1 Introduction

Indonesia is an agricultural and maritime country. Indonesia is an agricultural country because of the high contribution of the agricultural sector to Indonesia's aggregate production. The agricultural sector is one of the top contributors to Indonesia's aggregate

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production. On average, from 2010 to 2021, the contribution of the agricultural sector to Indonesia's aggregate production was around 10%. Indonesia is a maritime country because it has a sea area of 5.8 million km<sup>2</sup>, which is 75.7% of Indonesia's area. In addition, Indonesia has around 16056 islands (Susdarwono, 2018, p. 63).

Indonesia has prepared a maritime sector roadmap policy to develop the maritime sector. The policy contains the mission, principles, and pillars of maritime affairs, guidelines for marine activities, and the legal basis for maritime law in Indonesia. This policy is expected to be a reference in maritime management for national and regional governments and non-government organizations to achieve welfare and place Indonesia as the world's maritime center.

Moreover, this roadmap policy is expected to open an opportunity for coastal rural people to participate in sustainable development (Setiawan, Rijanta, and Baiquni, 2017) and highlight that beaches and coastal areas are among the most important natural capital assets (Yu et al., 2021) that in most locations in Indonesia, they provide services that are critical to the survival of coastal communities and possess core values. However, irresponsible people's activities have caused much destruction and pollution, as happened on Santa Marta beaches (Garcés-Ordóñez et al., 2020).

Various studies have examined how maritime policy affects economic performance, such as economic growth, inflation, and economic inequality (Christianto Leasiwal, 2013; Tajerin et al., 2017; Millia et al., 2018; Zen et al., 2022). However, no research discusses the relationship between maritime policy and unemployment. Whereas unemployment is one of the main economic performances (Setiaji, 2015; Setiaji, Maulana, and Rahaditama, 2018), unemployment in Indonesia always increases, and compared to other islands in Indonesia, the highest unemployment rate is in Java Island (Sembiring et al., 2017), and the COVID-19 pandemic era shows that unemployment is the biggest economic problem (Houston, 2020). Therefore, it is interesting to study the relationship between maritime policy and unemployment.

This study employs two assumptions. First, the assumption is that unemployment is the main crucial problem. That is because when the unemployment problem happens, economic growth and inflation problems also happen. Furthermore, economic growth and inflation have an impact on unemployment. Second, the assumption is that the maritime policy can reduce unemployment in coastal areas. Based on these assumptions, this study aims to prove that unemployment is the main problem of the economy, that various factors can reduce unemployment, and that as a result of the maritime policy, there is no difference in unemployment between coastal and non-coastal areas.

This research has achieved its objectives. When comparing macroeconomic performances before and during Covid-19 and coastal and non-coastal regions, unemployment is the main performance problem. Furthermore, various factors reduce unemployment, and the insignificant difference in the unemployment rate between coastal and non-coastal areas indicates that maritime policy can reduce unemployment in the coastal area.

The organization of this paper consists of the theoretical review, research methods, results and discussion, and conclusions. A theoretical review discusses the concept of macroeconomic performance, including unemployment as the main performance indicator, and its application in the coastal and non-coastal economies. The research method

explains the t-test which is useful to prove the unemployment rate as the main performance, and the GLM panel data regression equation, which is useful to prove various factors, including maritime policy, that affect the unemployment rate. Results and Discussion present the research results and their interpretation.

## 2 Theoretical Review

The green economy and the blue economy are economies based on natural resources. The green economy relies on land resources and the environment, while the blue economy relies on maritime resources. The combination of green and blue economies accelerates sustainable development goal achievement.

Indonesia implements a green economy through the National Development Planning Agency (Bappenas). The challenges are not only land conversion and environmental damage, but also increasing environmentally friendly investments, especially in the industrial sector, high economic growth, and sustainable economic development.

Indonesia also prepares policies, roadmaps, and developments in the maritime sector, including a blue economy. The target is to strengthen and sustain the eastern Indonesia economy, coastal areas, and small islands. Moreover, the target is to prepare Indonesia as a world maritime axis (Setiawan, Rijanta and Baiquni, 2017).

Talib et al. (2022) analyzed the maritime policy in Indonesia that has existed for the last 300 years. The previous policy was influenced by maritime policy colonialism ideology, which only stands for elite interests and immediate development while ignoring the needs of local communities. As a consequence, past maritime policy hinders the maritime sector's sustainable governance and development.

Hasbullah (2022) analyzed two promising Indonesian policies. The first is the Indonesian blue economy policy. The second is the job creation law. These two policies' compatibility benefits coastal community development, fisheries, marine resources, and environmental sustainability.

According to Setiawan, Rianto, and Sudirman (2022), coastal management policy is critical. The policy is best implemented based on a sustainable development approach. Banyuwangi municipality in East Java Province, Indonesia, implements a policy based on ecological, economic, socio-cultural, and political sustainability.

Some studies have observed maritime policy and its application in an international setting. Caviedes, Arenas-Granados, and Barragán-Muñoz (2020) analyzed countries in Central America with supranationally integrated sustainable maritime policies. The benefit of this integrated approach is to promote and harmonize coastal, regional, and state policies. Nicolodi et al., (2021) investigated Brazilian marine policy, which was started 30 years ago. The policy is not fully implemented. Several gaps arise, such as sectoral support, the output produced, the government budget, integration into the green policy, conflict solving, and public participation. Garza-Gil, Varela-Lafuente, and Pérez-Pérez (2021) analyze the worry about the fate of small fishermen because of the blue economy. They observed the small fishermen from Spain's perspective. They conclude that the blue economy is useful for small-scale fishery growth but has a negative impact on environmental damage. Harvey & Clarke (2019) studied Australian coastal policy. The Australian 21st-century policy represents a non-uniform sustainable policy to initiate more integrated coastal management and climate change adaptation.

Rizal, Nurruhwati, and Apriliani (2020) proved that macroeconomic factors affect fishery investment. Among them are regional output and inflation. Regional output has a significant positive impact, and inflation has a negative impact on fishery investment.

Rizal et al. (2018) and Banu (2020) discussed that maritime development is very important to face the economic crisis and improve the economy. Rizal et al. (2018) argued that the ecosystem diversity of the maritime sector increases maritime sector production technology and changes labor-intensive production into knowledge-intensive production. It causes the economy to develop and grow. Banu (2020) argued the Minapolitan concept supports the modern fisheries and maritime sectors and encourages economic growth and development.

Susdarwono (2018) discussed the relationship between the maritime sector and macroeconomic performance. The maritime sector is the blue economy, and macroeconomic performance is economic growth, inflation, and unemployment. The blue economy's role in supporting macroeconomic performances strengthens Indonesia's strategic position and national defense and security.

Leasiwal (2013), Tajerin et al. (2017), and Millia et al. (2018) approached the maritime economy through the archipelagic economy. Analyzing the six major islands in Indonesia using the neoclassical economic growth equation, they found increasing economic growth. The main factors influencing economic growth are the level of investment, human resources and education, natural resources, infrastructure, the role of government, foreign trade, potential sectors, and political-economic stability. However, economic growth is not convergent (Tajerin et al., 2017; Millia et al., 2018).

Zen et al. (2022) highlighted the Indonesian maritime transportation policy known as the maritime highway. The policy of developing ports, ships, human resources, and other resources in the maritime transportation sector is useful for Eastern Indonesia's economy. At least there are two benefits. First, lesser inequality in Western Indonesia's economy. Second, a low inflation rate.

Peón et al. (2019) analyzed the importance of road infrastructure that connects developed coastal areas to underdeveloped hinterlands. The road infrastructure improves the hinterland transportation and manufacturing sectors. However, the improvement depends on coastal overpopulation and good business performance.

Liu et al. (2014) analyzed the manufacturing companies' heterogeneity. It plays a role in the differences in regional economic growth. The cause and effect of foreign direct investment (FDI) in China's coastal areas is different from that of FDI in the non-coastal areas in central and western China. The positive effect of FDI on the total factor productivity of firms in coastal China decreased, while that in non-coastal China was stable.

Different economic growth in China is caused by different export and labor participation in the national and global economies, according to Liu, Jin, and Dai (2020).

Various studies above draw attention to economic growth, inflation, and its relationship to maritime development. However, no research shows that unemployment in coastal areas is a macroeconomic performance problem. Several studies emphasize the unemployment problem and Covid-19 as their caution, whereas others prefer to examine macroeconomic performance at the aggregate level.

Setiaji, Maulana, and Rahaditama (2018) defined unemployment as the main macroeconomic performance. Sembiring et al. (2017) concluded that unemployment is Indonesia's main problem. Unemployment increases from time to time. Java Island has a better economy than other islands. However, provinces that face a high unemployment rate are on Java Island. Setiaji (2015) studied that Muhammadiyah pays great attention to unemployment. Ridwan, Andriyanto, and Suharso (2019) explored Badan Amil Zakat Nasional (BAZNAS) strategies to empower coastal unemployment. Four strategies are implemented. The consumptive model, the creative consumptive model, the traditional productive model, and the creative production model. The second to fourth strategies have great potential to reduce contemporary unemployment, although they are limited by financial support.

Some studies focused on the Covid-19 impact. Covid-19 worsens the unemployment rate, income, and business scale. According to Houston (2020), the COVID-19 pandemic period revealed that unemployment is the primary economic problem. Bennett et al. (2020) discovered that COVID-19 reduces the income of small-scale fisheries and coastal communities. Hoque et al. (2021) investigated how COVID-19 affects the small-scale fishery in Bangladesh. Their fishing habits and income change depending on Covid-19 knowledge and practice.

National economies were observed in some macroeconomic studies. They observe the relationship between economic growth, inflation, and unemployment. Anas, Widodo, and Sugiyanto (2018) found, using the Indonesian Social Accounting Matrix, that education and health infrastructure influence economic growth, and it is very important to analyze the impact of other infrastructures. Triyono, Ariyani, and Sasongko (2021) investigated the role of economic growth in moderating the effects of fiscal decentralization and foreign direct investment on inequality. Tenzin (2019) observed that inflation is different from economic growth in affecting short-run unemployment in Bhutan. Ahmed and Dawai (2022) found that economic growth and inflation significantly affect Sudan's unemployment in the short and long runs. According to Caligagan, Ching, and Suin (2022), economic growth, inflation, investment, and international trade all have a significant impact on Philippine unemployment.

Based on the previous studies above, this study tries to prove that unemployment is more appropriate than economic growth and inflation. Unemployment is influenced by economic growth, inflation rates, the number of medium and large industrial workers, road infrastructure, and maritime sector policy, which decreases unemployment so that unemployment in coastal areas is not higher than non-coastal unemployment.

### 3 Method

The methods in this study are the t-test and the panel data generalized linear model (GLM) regression equation. The t-test examines differences between before and during Covid-19 and coastal and non-coastal areas on economic growth, inflation rates, and unemployment. The panel data GLM regression equation investigates various factors influencing the unemployment rate and determines whether maritime sector policies and developments have reduced unemployment in the coastal area.

The t-test steps are formulating the hypothesis, determining the criteria for the null hypothesis rejection, and deciding whether the null hypothesis is rejected or accepted. The null hypothesis states that there is no difference in macroeconomic performance between before and during COVID-19, or between coastal and non-coastal areas. The critical point at  $\alpha = 5\%$  is used to reject the null hypothesis. The decision to reject or accept the null hypothesis is made by comparing the p-value and the critical value. If the p-value is less than the critical value, then the null hypothesis is rejected.

There are nine t-tests. All of them test macroeconomic performance. Six of them examine economic growth, inflation, and unemployment before and during Covid 19 in coastal and non-coastal areas. The rest will be tested between coastal and non-coastal areas before Covid-19.

The generalized linear model (GLM) panel data regression equation is the appropriate regression equation. The initial panel data equation and its transformation to the GLM panel data equation are as follows. The initial equation is

$$Y_{i,t} = \beta_0 + \beta_1 X_{1i,t} + \dots + \beta_5 X_{ni,t} + v_{i,t} \tag{1}$$

Transforming (1) into GLM equation

$$G(\mu_{i,t}) = g[E(Y_{i,t})] = \beta_0 + \beta_1 X_{1i,t} + \dots + \beta_5 X_{ni,t} + v_{i,t} \tag{2}$$

or

$$Y_{i,t} = \beta_0 + \beta_1 X_{1i,t} + \dots + \beta_5 X_{ni,t} + v_{i,t} \tag{3}$$

Y is the dependent variable of the non-normal data distribution equation, g is the link function,  $g^{-1}$  is the invertible link function,  $X_1$  until  $X_n$  are independent variables (See Table 1),  $\beta_0$  is constant,  $\beta_1$  to  $\beta_n$  are independent variable coefficients, v is an error term, i is cross-section data, and t is time-series data.

The coastal/non-coastal area dummy variable in the macroeconomic performance modeling is the best approach for maritime policy, although it provides little information. The reason is that no appropriate variable, apart from the dummy variable, can explain maritime policy. In addition, coastal areas are different from non-coastal areas in that coastal areas have a definitive maritime policy, while non-coastal areas have non-maritime policies.

Additional data on marine and fisheries government policy and performance can supplement the dummy variable’s minimum information. This additional data can serve to explain the maritime policy’s actual role in decreasing unemployment. It includes what the policies are, how they work, and what their performance and impact are. If well presented, then this additional data is very useful in explaining the dummy variable.

Proving the data distribution is non-normal, selecting the appropriate GLM equation, conducting an overdispersion test, and conducting a significance test for independent variables are the steps in employing the GLM panel data equation. The Jarque-Bera test is used to test non-normal data distributions, the Akaike information criteria (AIC) are used to select models, the disperse test is used to test overdispersion, and the t-test is used to test independent variables.

The data consist of data for the t-test and panel GLM equation modeling. Data for the t-test is 2018 and 2021 data on economic growth, inflation, and unemployment rate data

**Table 1.** Variables and their descriptions.

Variables	Variable Name	Description
C	Constant	Equation Intercept
LnX1	Real GRDP	Natural logarithm of Real GRDP, Rp
X2	Inflation	Inflation rate, %
LnX3	Infrastructure	Approached by the natural logarithm of provincial road length, km
LnX4	Industrial performance	Approached by natural logarithm number of large and medium industrial labor, number
D1	Dummy variable of maritime policy	1 = Coastal municipality/city; 0 = non-coastal municipality/city as an approach to maritime policy
Y	Unemployment	The unemployment rate, dependent variable, %

for municipalities and cities in Central Java Province, Indonesia. Data for the panel GLM modeling is 2010–2019 data on unemployment, real GRDP, inflation, provincial road length, medium and large manufacturing labor numbers, and coastal and non-coastal municipalities and cities in Central Java Provinces. The data source is Central Java Statistics.

## 4 Result and Analysis

Unemployment is the main macroeconomic problem. The t-test shows this result. Tests in coastal and non-coastal areas show that economic growth, inflation, and unemployment during Covid-19 are worse than before Covid-19. However, the Covid-19 test shows that economic growth and inflation in coastal areas are not worse than in non-coastal areas, but unemployment is (see Table 2). It means that economic growth, inflation, and unemployment are the main macroeconomic performances, but unemployment is the main problem.

This result confirms previous studies. It confirms Setiaji, Maulana, and Rahaditama's (2018) analysis that economic growth, inflation, and unemployment are the main macroeconomic performances. Moreover, it confirms the importance of concern about the unemployment problem, as shown in Setiaji (2015) which analyzed Muhammadiyah's concern about the unemployment problem, Sembiring et al. (2017) that analyzed unemployment as Indonesia's main macroeconomic problem, and Houston (2020), which studied Covid-19 causes increasing unemployment.

The GLM data panel regression equation from the Gamma data distribution group can be used with the inversion link function using the Jarque-Bera test, Akaike information criteria, and overdispersion test. The Jarque-Bera test proves that the data distribution is not normal. The skewness of the data distribution is 0.806 and the kurtosis is 4.023

**Table 2.** Economic Growth, Inflation, and Unemployment Comparison.

<b>Macroeconomic Performances</b>	<b>Coastal/Non-coastal</b>	<b>t-statistic</b>	<b>Conclusion</b>
Economic Growth	Coastal	4.6477	<b>Before and during Covid-19:</b> Coastal economic growth before Covid-19 is higher than during Covid-19
	Non-coastal	13.5684	<b>Before and during Covid-19:</b> Non-coastal economic growth before Covid-19 is higher than during Covid-19
	Coastal and Non-coastal before Covid-19	-0.6794	<b>Coastal and Non-coastal:</b> Before Covid-19, coastal economic growth is not different from the non-coastal economic growth
Inflation	Coastal	4.4646	<b>Before and during Covid-19:</b> Coastal inflation before Covid-19 is lower than during Covid-19
	Non-coastal	9.1499	<b>Before and during Covid-19:</b> Non-coastal inflation before Covid-19 is lower than during Covid-19
	Coastal and Non-coastal before Covid-19	1.6428	<b>Before and during Covid-19:</b> Before Covid-19, coastal inflation is not different from non-coastal inflation
Unemployment	Coastal	-1.3710	<b>Before and during Covid-19:</b> Coastal unemployment before Covid-19 is lower than during Covid-19

*(continued)*



**Table 2.** (continued)

Macroeconomic Performances	Coastal/Non-coastal	t-statistic	Conclusion
	Non-coastal	-4.1175	<b>Before and during Covid-19:</b> Non-coastal unemployment is lower than during Covid-19
	Coastal and Non-coastal before Covid-19	3.7838	<b>Coastal and non-Coastal:</b> Before Covid-19, coastal unemployment is different from non-coastal unemployment

from 350 observations, producing a high Jarque-Bera and a low probability value. The Jarque-Bera value is 53.125, and the probability is 0.000. This means that the probability of rejecting the null hypothesis that the data is normally distributed is very large. The meaning is that the data is not normally distributed and the GLM panel data equation is appropriate. The smallest Akaike Information Criteria are when the GLM panel regression equation is from the Gamma data distribution group and the link function is an inversion function (see Table 3). The overdispersion test provides a very low parameter of dispersion. When the dispersion coefficient is 40.965 and the degree of freedom is 348, the coefficient test is 0,118. This parameter is lower than one and confirms that there is no overdispersion between the data groups. Therefore, the GLM panel data equation is appropriate to analyze the relationship between the unemployment rate and real GRDP, the inflation rate, provincial road length, medium and large manufacturing worker numbers, and coastal or non-coastal location as an approach to maritime policy.

The gamma-inversion link function panel GLM data modeling provides interesting results. The real GRDP and inflation rates negatively affect the unemployment rate, the length of provincial roads and the number of medium and large industrial workers positively affect the unemployment rate, and coastal unemployment is not significantly different from non-coastal unemployment (see Table 4). The interpretation of all results indicates that the unemployment problem is solvable.

**Table 3.** Akaike Information Criteria (AIC) Value of GLM Panel Data Equations.

Data Distribution	Link Function	AIC Value
Normal	Identity	4.152
	Inversion	414
Gamma	Identity	4.036
	Inversion	4.030

**Table 4.** Results of GLM Panel Data Equation Processing.

Variable	Coefficient, Std. Error, and Probability Value	
C (Constant)	Coefficient	0.119*
	Std. Error	0.035
	Probability Value	0.0007
LnX1 (Real GRDP)	Coefficient	-0.022*
	Std. Error	0.007
	Probability Value	0.004
X2 (Rate of Inflation)	Coefficient	-0.004*
	Std. Error	0.0014
	Probability Value	0.008
LnX3 (Length of Provincial Road)	Coefficient	0.007*
	Std. Error	0.0020
	Probability Value	0.003
LnX4 (Number of Large and Medium Industrial labor)	Coefficient	0.012*
	Std. Error	0.003
	Probability Value	0.0000
D1 (Dummy variable, 1 = Coastal municipality/city; 0 = Non-coastal municipality/city)	Coefficient	0.007
	Std. Error	0.008
	Probability Value	0.334

Real GRDP negatively affects unemployment by following the labor absorption theory. It is a simple relationship that is easy to understand. Increasing real GRDP means an economic improvement that absorbs all resources and creates employment. As a consequence, unemployment decreases. Therefore, the higher the real GRDP, the lower the unemployment.

According to the Phillip curve phenomenon, inflation has a negative impact on unemployment. The trade-off between inflation and unemployment occurs. Some studies also found this phenomenon, such as Bhattarai (2016), Carnevali and Deleidi (2020), and Conrad, Enders, and Glas (2022).

The trade-off between inflation and unemployment means a positive relationship between inflation and employment. The positive relationship means that as inflation increases, employment also increases. The reason behind this relationship is the yearly minimum wage increase. The minimum wage rises as a result of inflation. Furthermore, this increase absorbs labor and reduces unemployment. This situation also happens in an online job vacancy. This GLM equation reads this phenomenon as a significant negative relationship between inflation and unemployment.

A provincial road is a road that connects the provincial capital with the regional capital in the province, a road that connects the capital of a region to others within a province,

and a provincial strategic road. Provincial roads in Central Java province are shorter from year to year because of the conversion policy into national or municipality/city roads (Rokhmat et al., 2020, pp. 72–73).

In that perspective, when the unemployment rate also decreases, a positive association occurs. The length of provincial roads decreases, and at the same time, the unemployment rate decreases. The positive association between provincial roads and the unemployment rate in this study does not contradict Peón, Rodríguez-Álvarez and López-Iglesias (2019), who analyzed that the new road developed a non-coastal economy, and Rokhmat et al. (2020, pp. 72–73), who analyzed that the provincial road increased real GRDP. All agree on the positive role of roads in the economy. However, the shorter provincial road causes this study to prove the role implicitly.

The significant positive relationship between the number of medium and large industrial workers and unemployment indicates that the labor absorption increase is smaller than the labor force increase. Central Java Statistics data from 2010 to 2019 shows that the average increase in labor absorption is 1.18% a year, while the average increase in the labor force is 1.2%. They cause unemployment to increase by around 3.18% a year. Thus, when the number of medium and large industrial workers increases, the number of unemployed also increases.

The unemployment rate in the coastal areas is not significantly higher than in the non-coastal areas. This can be seen from the probability value, which is 0.316. It implies that there is a small chance of rejecting the null hypothesis that the unemployment rate on the coast is not different from the non-coastal unemployment rate. Thus, coastal unemployment is quite similar to non-coastal unemployment.

This result indicates that the maritime policy in Central Java province is successful in reducing coastal unemployment. In the past, coastal unemployment was higher than non-coastal unemployment. However, during the observation period, the marine policy can reduce coastal unemployment so that coastal unemployment is similar to non-coastal unemployment.

The Central Java Department of Fisheries and Maritime's interrelated policies and its improved performance from 2014 to 2018 support the unemployment reduction. The department's policies are its assets, community participation, mangrove planting, coral reef protection and rehabilitation, fish and salt production, fish consumption, fish export, and the incomes of fisherman, coastal women, and coastal young people. Figure 1 shows the interrelated policies. There are three interrelated policy groups. Group one consists of the department's assets, community participation, mangrove planting, and coral reef protection and rehabilitation policies. Group two consists of fish and salt production, fish consumption, and fish export policies. Group three consists of fishermen, coastal women, and coastal young people's income policies. This interrelated policy is an important key for performance improvement.

All policies' performances increase (see Table 5). Some policies have unexpectedly increased. The monetary department's assets increased by around 75%, Central Java fishery production increased by around 65.7%, and fishermen's, coastal women's, and coastal young people's incomes increased by above 50%. As a consequence of the policies, their interrelationships, and performance, coastal unemployment decreases.

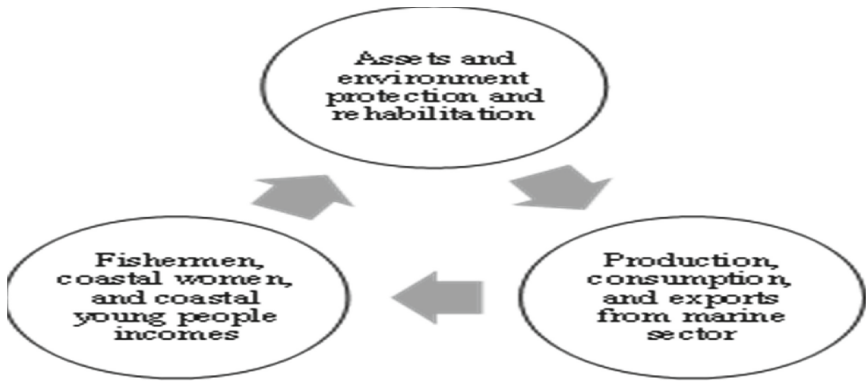


Fig. 1. Central Java Province Interrelated Maritime Policies.

Table 5. Central Java Maritime Sector Performance Achievement.

Central Java Maritime Sector Policy	2014	2018	Increasing (%)
Asset (Current asset, Long-term Investment, Fixed asset, Reserved fund, and other assets, Rp 000)	150348919.29	264273396.89	75.77
Community participation (Number of the groups)	20	65	225.00
Mangrove planting (Ha)	7.61	10.20	34.03
Coral reef protection and rehabilitation (Ha)	5.40	6.48	20.00
Fishery production (Ton/year)	270185.30	446277.16	65.17
Salt production (Ton/year)	633840.13	762381.61	20.28
Fishery export (Ton/year)	35500.97	41815.23	17.79
Fishery consumption (Kg/cap/year)	20.92	30.65	46.51
Coastal woman income (Rp/cap/year)	5528000.00	8595784.80	55.50
Coastal young people income (Rp/cap/year)	4800000.00	10632242.95	121.51
Fisherman income (Rp/cap/year)	14200605.94	61150319.76	330.62

## 5 Conclusion

Indonesia has prepared policies in the maritime sector. It involves a blue economy policy regarding the marine diversity resource’s sustainable use. The hope is to strengthen the economies of eastern Indonesia, coastal areas, and small islands in a sustainable manner and make Indonesia the world’s maritime axis.

The important question is to what extent the maritime sector can reduce the unemployment rate. This is because unemployment is the main macroeconomic performance problem. In addition, studies that analyze the relationship between unemployment and the maritime sector are limited.

This research has proven that unemployment is a major macroeconomic problem. Before and during Covid-19 and the coastal and non-coastal tests proved that the main macroeconomic performance problem is unemployment. This research has also proven various things that play a role in reducing coastal unemployment, such as real GRDP, the inflation rate, the length of the road, the number of medium and large industrial workers, and maritime policies.

The maritime policy is successful because it considers the interrelationships between other policies and their performance. The initial policies are policies that strengthen the marine department's assets and the marine environment protection and rehabilitation. These policies are continued by policies to increase marine sector production, consumption, and export. The end result of the policy is that fishermen's, coastal women's, and coastal young people's incomes increase. These policies and their interrelationships successfully decreased unemployment in coastal areas, although they have not been able to cause coastal unemployment to be lower than non-coastal unemployment.

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