Sodality: Jurnal Sosiologi Pedesaan Vol. 13 (02) 2025 | 27-41
https://doi.org/10.22500/13202567248
E-ISSN: 2302-7525 | P-ISSN: 2302-7517

Resilience of Fisherman Community Facing the Impacts of Patimban Port Development (A Case of Trungtum Fisherman, Subang Regency)

Leli Pajriah*, Nuraini Wahyuning Prasodjo, Nurmala Katrina Pandjaitan

Department of Communication and Community Development Sciences, IPB University, Jl. Kamper Darmaga, Bogor, West Java, 16680, Indonesia
*)*Correspondence e-mail: lelipajriah@gmail.com*

Received: August 14, 2026 | Revised: January 14, 2026 | Accepted: January 25, 2026 | Online Publication: February 7, 2026

ABSTRACT

Reclamation in the construction of Patimban port has had various impacts on the sustainability of the lives of the Trungtum fishing community. This study aims to analyze the resilience of the fishing community in facing the impact of port development. The method used was a survey of 75 fishermen respondents and interviews with village officials and KSOP Patimban. The results showed that the port reclamation had a significant impact on the lives of fishermen, including a decrease in catches, an increase in operational costs, a weakening of local institutional functions, and changes in social and cultural structures. The community's adaptive capacity is moderate, characterized by strong social capital but weak economic and human resources. Community resilience has not been fully formed, and the adaptation process is still partial and tends to be elitist, occurring only in groups with better access to resources. Information inequality and weak collective organizing are the main obstacles in building inclusive and sustainable resilience. Thus, it is necessary to strengthen collective capacity, equal access to resources, and a more equitable communication system to realize a fully resilient community.

Keywords: adaptive capacity, fisherman community, reclamation, resilience

INTRODUCTION

Infrastructure development is one of the factors that contribute positively to human activities and economic growth (Novitasari et al., 2020). Nevertheless, in the process of infrastructure development, major obstacles are often encountered in relation to the local communities where the infrastructure is built. Differences in geographical, demographic, and socio-cultural conditions are among the factors that frequently hinder the implementation of development (Sanggoro et al., 2022). Based on Presidential Regulation No. 3 of 2016 concerning the acceleration of National Strategic Projects (PSN), one of the National Strategic Projects in the field of transport infrastructure is the construction of Patimban Port in Subang Regency. This project commenced in 2017 and is planned to be completed in 2027. In its implementation, an area of approximately 356.23 hectares is planned as a backup area, 15.7 hectares for access roads, and around 301 hectares for the port area (sea reclamation). The land acquisition for the construction of Patimban Port comes from dry fields, rice fields, fishponds, and the coastal area of Patimban (JICA Survey Team, 2017). When Patimban Port was designated as a PSN, the project obtained accelerated licensing, simplified environmental impact assessment (AMDAL), and development priority. This has led the state to grant full legitimacy to investors/contractors, while the needs and livelihood sustainability of the fishers have not become the central concern. Within the PSN framework, the state prioritizes project interests so that fishers' management rights are not recognized, and ecological as well as economic losses are instead borne by them. As a result, fishers in Trungtum face layered vulnerabilities: declining income, the loss of coastal cultural spaces, and a weakening bargaining position over marine spaces that have long been their source of livelihood.

Based on data from the Subang Regency Government, about 171 farmers, 39 fishpond farmers, and 1,692 fishers have become affected people (WTD) (Yuana et al., 2019). Among the groups in the community, fishing households are one of the most vulnerable to disturbances in livelihood sources. This is because the livelihoods of communities living in coastal areas are highly dependent on natural resources that are susceptible to environmental degradation and climate change (Jayanti et al., 2018). In addition to climate change, fishers also face challenges arising from massive reclamation activities. One of the negative impacts of reclamation programs is the increasingly limited access of fishing communities to fishing grounds (Yustiana et al., 2021). Research by Ramadhan et al. (2016) notes around 41 reclamation projects throughout Indonesia covering 79,348 hectares of coastal areas and affecting the lives of more than 700,000 fishers (Ramadhan et al., 2019). These reclamation projects include the Jakarta Bay reclamation, the Pantai Indah Kapuk (PIK) commercial area, and the Centre Point of Indonesia (CPI) area in Makassar. The phenomenon of ocean grabbing resulting from these reclamation projects directly affects fishing communities through the loss of access to traditional fishing grounds, damage to coastal ecosystems, and declining catch. Fishers are forced to go further offshore with higher costs, while their living spaces and coastal cultural practices are increasingly pushed aside. Overall, ocean grabbing exacerbates the economic, social, and ecological vulnerabilities of small-scale fishers (Kamim, 2020; Cezalipi et al., 2017; Yustiana et al., 2021; Anugraha et al., 2022).

Even before the construction of Patimban Port, the community of Trungtum was known as a fishing community whose livelihood depended on fishing and fish processing activities. However, the presence of the Patimban Port development project has disrupted their sources of livelihood. Reclamation activities have generated various impacts, ranging from ecological impacts such as changes in coastal landscapes, to economic impacts from livelihood transitions, and social impacts in the form of the erosion of culture and shifting patterns of relations within the fishing community (Iryana, 2018). Coastal communities generally possess strong solidarity and social bonds among their members. This is influenced by geographical conditions and the characteristics of natural resources as common property, which demands cooperation among residents. However, since the introduction of the port project, these social values have begun to shift. Restrictions on access to the sea due to reclamation, unequal opportunities in occupational change, and increasing economic competition have caused a shift from collective cooperation towards individualism.

In facing these changes, the ability of the community to endure and adapt becomes highly important. Community resilience is a concept that explains the capacity of a group of people to face, adapt to, recover from, and transform in response to stresses or disturbances (Adger, 2000). Community resilience can also be understood as the ability to persist that includes learning processes and social transformation towards better conditions (Folke, 2006). The concept of community resilience explains that for a

community to be able to confront and adapt to change, strong resources and high adaptive capacity are required (Norris et al., 2008; Adger, 2000).

A sociological approach to community resilience places greater emphasis on aspects of social relations, social capital, and community cohesion. According to Norris et al. (2008), community resilience is built upon four main sources: information and communication, social capital, economic capacity, and community systems that are able to function effectively in crisis situations. This theory emphasizes that social solidarity, trust, and active citizen participation in decision-making processes are crucial foundations in building collective resilience. Thus, community resilience is not merely structural, but also a social process shaped through interactions among community members in responding to pressures and change.

Research on community resilience has been widely conducted, particularly in communities experiencing disasters and climate change arising from natural events that are felt equally by all members of a community in a given area (Nasdian et al., 2020; Panjaitan et al., 2016; Nissa et al., 2019). However, communities are now also confronted with threats in the form of infrastructure development activities that further increase the vulnerability of fishing communities. This vulnerability is formed through the interplay of socio-ecological factors influenced by policies and governance of coastal areas. Existing policies remain poorly aligned with the socio-ecological context of coastal zones (Ferrol-Schulte et al., 2015). This hinders community adaptation processes due to external pressures. Consequently, residents remain trapped in a cycle of vulnerability, in which the impacts of development trigger new vulnerabilities that gradually weaken their resilience over time. Based on this, this study aims to analyze the resilience of the fishing community in Trungtum in facing the impacts of the Patimban Port development by identifying the perceived development impacts, the strength of community resources, and the adaptive capacities that shape community resilience. The hypothesis of this study is that the fishing community of Trungtum is presumed to be resilient to the impacts of the Patimban Port development.

METHOD

The research location was purposively selected in Trungtum, RT 07-09 RW 04, Patimban Village, Pusakanagara Sub-District, Subang Regency. This is because the National Strategic Project (PSN), namely the Patimban Port development, is located closest to Trungtum. In addition, Trungtum is the area with the highest number of fishers compared to others in Patimban Village. The research was conducted from October to December 2024. The paradigm used in this study is the positivist paradigm with a quantitative approach supported by qualitative data through in-depth interviews with several stakeholders. The unit of analysis is individuals as respondents.

The population sample consists of the fishing community in Trungtum. A total of 75 respondents were selected using cluster sampling method, with 25 individuals from each RT, comprising boat owners, crew members (ABK), and fishing laborers. Data collection was carried out using a survey method with questionnaires. Qualitative data were obtained through in-depth interviews with the head, representatives from Patimban Village, several fishers, and representatives from the Patimban Class II Port Operational Unit Office (KSOP). Quantitative data were analyzed using cross-tabulation, tables, and diagrams, followed by descriptive analysis. Meanwhile, qualitative data were used to confirm, complement, and strengthen the results of the quantitative data analysis..

RESULTS AND DISCUSSIONS

Socio-Ecological Profile of the Coastal Community

Trungtum is part of Patimban Village located directly in front of the Patimban Port development project, specifically the backup area and port (reclamation) zone. This consists of 5 RTs with a population of 2,116 people, comprising 1,072 females and 1,044 males, divided into 639 household heads (KK). The majority of the community works as fishers, including boat owners, crew members (ABK), fishing laborers, and owners of small food stalls. Based on a survey conducted by the JICA Survey Team in 2017, there are 517 fishers, consisting of 109 boat owners and 408 crew members (laborers). In addition, many housewives process the fishers' catch into salted anchovies. In general, the people of Trungtum engage in diversified livelihoods: when not fishing at sea, they pursue other jobs such as trading, gardening, laboring, or even migrating to cities outside the area. Besides fishing activities, women in

Trungtum process catches into salted fish products. Before the port's construction, there was the Patimban Kelapa Beach tourist attraction, which also served as a source of village and local community revenue.

Fishers in Trungtum, Patimban Village, are predominantly small-scale fishers owning vessels of 2-5 GT equipped with anchovy nets, crab nets, and handlines (JICA Survey Team, 2017). Their fishing activities are highly influenced by local ecological conditions—from water quality, fish habitat availability, to seasonal wind and current dynamics. As small-scale fishers with limited fleets, they operate close to the shore and are highly sensitive to environmental changes, so ecosystem degradation due to port construction and sedimentation directly reduces catch productivity. Their dependence on limited marine spaces and declining resources makes their ecological position increasingly vulnerable, as their ability to relocate or switch target species is also constrained.

Impacts of Patimban Port Development

The construction of Patimban International Port (PIP), which began in 2017, is a government effort to reduce the burden on Tanjung Priok Port and enhance maritime connectivity on Java Island, with a target completion in 2027 through cooperation with JICA. The project includes the development of a backup area of approximately 356.23 ha, access roads of about 15.7 ha, and sea reclamation and port area of around 301 ha along the Patimban coast. However, this reclamation and conversion of marine spaces significantly impacts the fishing community, particularly the residents of Trungtum who are closest to the construction site, as it restricts their access to marine resources essential for their livelihoods. Fishers' vulnerability is exacerbated by the common property nature of marine resources and the lack of clear legal basis for assessing and providing compensation to affected fishers.

Several impacts felt by the community are related to marine ecological conditions and residential environments. The ecological disturbances perceived by fishers include declining catch volumes, reduced fish diversity, changes in sea wave directions, and alterations in wave patterns. Based on survey results from 75 respondents, the impacts experienced by the community are as follows.

Table 1. Perception Matrix of the Impact of Patimban Port Development as felt by the Trungtum Fishing Community, 2024

Impacts Categories	Not much changed	Changed quite a lot	Changed a lot
Ecological			
Decrease in fish diversity			✓
Change in wave direction		✓	
Increased tidal flooding	✓		
Change in groundwater quality	✓		
Economy			
Declining catches			✓
Opportunities for job transfer	✓		
Increased fishing costs			✓
New business opportunities	✓		
Function of village unit cooperatives (KUD)		✓	
Social and cultural			
Social gap		✓	
Potential conflict (horizontal dan vertikal)		✓	
Nyadran ceremony			✓
Community members harmony		✓	

Within the framework of sustainable development, reclamation is ideally aimed at enhancing spatial benefits and local community welfare (Yustiana et al., 2015). However, in practice, coastal reclamation often exhibits a common pattern of marine ecosystem degradation, leading to socio-economic pressures on communities dependent on coastal resources. This is reflected in the Patimban Port reclamation, which, based on data from Table 1, generates significant ecological and socio-economic impacts on the fishing community. Ecologically, 94.7% of respondents reported a decline in fish catch diversity and

species by more than 50%, indicating disruption of aquatic habitats due to reclamation activities. Similar patterns are found in various coastal reclamation cases in Indonesia, such as in Gamalama Sub-District, Ternate, where reclamation caused the loss of mangrove species, fish, crabs, and shellfish, as well as damage to sea grass beds covering 192 m² (Anugrah et al., 2022), or the Jakarta Bay reclamation, which impacted fishery productivity and narrowed fishers' fishing grounds. This comparison demonstrates that coastal reclamation tends to reproduce similar ecological impacts, ultimately amplifying the socio-economic vulnerability of local fishing communities.

The ecological impacts felt by the community include that, before the Patimban Port development, they could catch various high-value economic fish species such as snapper, squid, crabs, mackerel, talang-talang, etong, shrimp, and anchovies. However, post-reclamation, their catches have drastically shrunk, limited to small fish species like anchovies, lapan, and rebung. This change not only reflects ecological degradation but also reveals social vulnerability due to reduced access to natural resources. On the other hand, reclamation exacerbates sedimentation and damages coral reef habitats, which are crucial ecosystems for fish reproduction, as also occurred in Benoa Bay, Bali, reported to cause coral polyp extinction and destruction of surrounding reefs (Dewi, 2019).

Meanwhile, from an economic perspective, restricted access to fishing grounds due to reclamation directly impacts fishers' income decline. As many as 93.3% of respondents reported a more than 50% drop in catch volumes, which undoubtedly affects their purchasing power and household economic stability. Many have since taken on side jobs, involving wives/children to help meet daily needs. Additionally, reclamation has caused fishers to travel farther to sea due to damage to traditional fishing areas, leading to a significant increase in fuel needs, particularly diesel, which raises operational costs (Querdiola et al., 2023). Based on a survey by the JICA Survey Team, the average annual income of boat-owning fishers before the Patimban Port development was around Rp31,540,000/year. Fishing laborers averaged at least Rp22,460,000/year. After the port's construction, boat owners average Rp2,000,000–5,000,000/month. This figure does not yet deduct vessel operational costs for fuel and provisions. Moreover, since the port development began, fishers cannot go to sea every day. Sometimes they fish once every three days or even once a week. Research by Ramadhan et al. (2016) shows that fishers affected by Jakarta Bay reclamation must spend up to Rp200,000 per trip, compared to only about Rp100,000 previously. Fuel needs also increased from an average of 10 liters to 15–20 liters per trip. A similar situation occurs in Trungtum , where fishers now require operational costs of around Rp100,000–Rp300,000 per fishing trip, depending on vessel size and crew numbers. Fuel needs, previously 5–10 liters, have risen to 10–30 liters, while catches become increasingly uncertain and tend to decline.

This uncertainty causes some fishers to avoid going to sea for days due to insufficient capital. To meet daily needs, they are forced to seek casual labor or borrow from boat bosses and middlemen. Dependence on these parties places fishers in unequal economic relations, creating exploitative patron-client patterns (Scott, 1972). Within the social structure of coastal communities, such relations reinforce fishers' subordinate positions, where they lose economic independence and struggle to escape the cycle of poverty. Lack of access to formal financial institutions and minimal social protection further worsen their vulnerability. Thus, the economic impacts of reclamation are not only evident in income decline figures but also in changes to the socio-economic structure that hinder social mobility and deepen inequalities in the fishing community.

On the other hand, the socio-cultural aspects of coastal communities also face considerable pressure. The non-functioning of the Village Unit Cooperative (KUD), which previously served as an economic and social binding institution for the fishing community, has contributed to weakening social cohesion in Trungtum. Since 2022, the local fishing community has no longer conducted the Nyadran ceremony, an annual tradition that plays a crucial role in strengthening social solidarity and coastal cultural identity. This tradition functions not only as a religious and cultural expression but also as a collective mechanism that binds values of togetherness, mutual cooperation, and community sustainability. The loss of Nyadran practices reflects social shifts due to infrastructure modernization unaccompanied by strengthening local institutions and preserving community culture. This poses a threat to the continuity of communal values and community identity.

Responses and Adaptation Strategies

Responses are interpreted as direct, reactive actions taken by individuals, households, or communities as an initial reaction to threats or disturbances faced. Responses are typically spontaneous, short-term,

and aimed at survival in crisis situations. In the livelihood framework, responses are often equated with coping responses, which are temporary measures undertaken using existing adaptive capacities (Ellis & Allison, 2001). Meanwhile, adaptation strategies involve more planned, long-term, and structured adjustment processes. Adaptation strategies aim not only to reduce vulnerability but also to build capacity and enhance resilience (Adger, 2006; Folke, 2006).

In the fishing community of Trungtum, responses and adaptation strategies are highly dependent on asset ownership. In this regard, responses and adaptation strategies are explained based on asset ownership categories: boat-owning fishers, crew members (ABK), and fishing laborers.

Table 2. Responses and adaptation strategies of fishermen in Trungtum to the impact of Patimban port development, 2024

Type of Fisherman	Response (short term/coping)	Adaptation strategies (long term)
Ship owners	Changing fishing areas Changing/adjusting fishing gear Adjusting fishing times	Business Diversification Network Strengthening & Program Access Non-Fisheries Training
The crew (ABK)	Changing employers Reducing household consumption Looking for a side job	Improving non-fishing skills Labor migration Non-fishing training
Fishing workers	Reducing household consumption Going into debt Selling productive assets	Social assistance Labor-intensive programs Non-fisheries training

As shown in Table 2 above, ownership of assets (vessels and fishing gear) is the primary factor differentiating responses and adaptation strategies when facing crisis conditions. For boat-owning fishers in Trungtum, when confronted with threats such as disrupted access to fishing grounds, those with vessels of 3-5 GT (2-10 crew members) respond by seeking alternative fishing grounds (Eretan Beach in Indramayu or Karawang Beach), with consequences including longer distances, uncertain catches, and potential conflicts with local fishers. In response to declining catches, boat owners adjust their fishing schedules. They typically fished daily, but after the port development, they sometimes fish only 1-3 times per week. This is done to minimize losses from unbalanced capital investments and catches. Meanwhile, their long-term adaptation strategies involve business diversification, such as renting out vessels for transporting additional port workers and logistics. Additionally, boat-owning fishers participate in training (basic safety training and loading/unloading) as preparation for skills likely needed after the port's completion.

In contrast to boat owners, crew members (ABK) exhibit more limited responses that are highly dependent on decisions by asset owners. Short-term responses for ABK tend to involve switching boat bosses, reducing household consumption, or seeking side jobs outside the fisheries sector, usually in the informal sector (seasonal construction labor and farm labor). Long-term adaptation strategies in this group are not yet structural and are mostly manifested through individual efforts, such as temporary work migration or acquiring non-fishing skills via port-facilitated training. This situation places ABK in a position of structural vulnerability, where adaptive capacity exists but is weak and unsupported by asset control or adequate bargaining power.

Fishing laborers engage in responses that are generally short-term (coping), such as borrowing from family/neighbors, reducing household consumption, selling productive assets, or completely exiting the fisheries sector. Meanwhile, their adaptation strategies have hardly developed independently due to limited assets and access to resources, so fishing laborers mostly rely on external assistance and policy interventions (social aid and empowerment programs).

Differences in asset ownership cause the impacts of Patimban Port reclamation to be felt unequally by fishers in Trungtum. Boat owners still have adaptation opportunities, while ABK and fishing laborers tend to be trapped in short-term survival responses that increase vulnerability. This condition demonstrates that reclamation not only causes ecological degradation but also deepens social inequalities, necessitating policies that favor the most vulnerable fishers to ensure development does not result in unfair resilience.

Factors Contributing to Community Resilience

A community is defined as a group of people occupying the same geographical area (community by place/territory) and having intense and significant social relationships. Additionally, communities are characterized by a sense of ownership and physical closeness among their members (Cobigo et al., 2016). The concept of community resilience explains that for a community to confront and adapt to change, strong resources and high adaptive capacity are required (Norris et al., 2008; Adger, 2000). Strong resources are viewed in terms of "robustness," which is the ability of community resources to continue functioning well despite disturbances; "redundancy," related to the diversity of resources possessed by a community; and "rapidity," concerning the speed at which a community can access and mobilize resources (Norris et al., 2008; Bruneau et al., 2003). In addition to resource strength, resilient communities emerge from networks of adaptive capacities derived from equitable economic development, strong social capital, and good access to communication and information, and community competencies that support resilience (Norris et al., 2008).

Strength of Community Resources

Community resilience refers to the collective capacity of a society to endure, adapt, and recover from social, economic, or ecological pressures, which is largely determined by the strength of the community's own resources. According to Norris et al. (2008), resilience is understood as an adaptive process toward more positive conditions post-disturbance, shaped by primary adaptive capacities including economic development, social capital, information and communication capacity, and community competence; these four interact to build a complex adaptive system through social networks, solidarity, norms of mutual cooperation, and collective participation.

In the context of coastal and fishing communities, resilience depends not only on economic factors but also on institutional support and the sustainability of local knowledge and cultural practices (Adger, 2000). The strength of community resources characterized by robustness, redundancy, and rapidity (Norris et al., 2008) forms a crucial foundation for endurance and recovery, including natural resources, human resources, and economic resources possessed by the fishing community of Trungtum in facing external disturbances such as large-scale development projects.

Table 3. Characteristics of the strength of human resources owned by the fishing community of Trungtum, 2024

Human Resource	Information
Education of family head	Low, the majority of household heads are elementary school graduates.
Skills	Skills in the fisheries sector are excellent, but skills outside the fisheries sector are very limited.
Experiences	Experience in the fisheries sector is excellent, but experience in other sectors is very limited.

The strength of human resources of the Trungtum fishing community is reflected in their level of education, skills, and work experience, but also indicates limitations in their adaptive capacity. The predominance of elementary school-educated heads of households (57.3%) presents a structural barrier to transitioning to the formal sector after port construction, while the success of sending children to high school (45.3%) indicates a long-term strategy for fishing households to break the cycle of intergenerational vulnerability. In terms of skills, limited experience outside the fisheries sector indicates low transferability of skills, although the participation of 41% of families in non-formal training reflects adaptive potential that has not yet been integrated with real job opportunities. This condition places the human resources of fishermen in a position that is adaptive enough to survive in the fisheries sector, but not yet strong enough to support sustainable livelihood transformation amidst structural changes resulting from port construction.

> *"I once participated in BST training with the TKBM from the port and received a certificate. But I couldn't use it to apply for a job at the port because I was old and only graduated from elementary school. To work at the port, you'd need at least a high school or college degree. It's also difficult to get a job there, especially since most fishermen don't even finish elementary school."* (WDT, 16/10/2024).

Table 4. Characteristics of the strength of the economic resources owned by the fishing community of Trungtum, 2024

Economic resources	Information
Ownership of vessels and fishing gear	The majority of boat owners own vessels measuring 2-3 GT, which can be used to reach fishing grounds up to 2 miles away using fishing gear such as anchovy nets, crab nets, and gillnets.
Income	Income from the fisheries sector is insufficient to cover daily needs.
Savings	Savings holdings are very low, indicating a gap between income and expenditure.
Access to credit	Somewhat effectively, there is "Bank Mekar," which provides unsecured credit access to the community, albeit at a relatively high interest rate.
Cooperatives	This is less than optimal due to a shift in business focus and no longer supporting local fishing activities.
Assets outside the fisheries sector	This is very limited, as there is no cash compensation to purchase other assets unaffected by port activities.

Based on Table 4, the strength of economic resources in the Trungtum fishing community is reflected in vessel and fishing gear ownership, income levels, savings, access to capital, cooperative functions, and assets outside the fisheries sector. The Patimban Port LARAP document records 114 boat owners, dominated by small vessels of 3–4 GT using anchovy nets, crab nets, and gill nets (JICA Survey Team, 2017). However, research findings indicate that around 56% of respondents have incomes below the 2024 Subang Regency Minimum Wage (UMK) (Rp3,294,485/month), with primary income sources from catches and salted fish processing.

In terms of socio-economics, off-fishing activities such as processing salted anchovies and lapan serve as crucial survival strategies, particularly for female fishing laborers earning Rp25,000–50,000 per day under a boss-dependent work system. This pattern demonstrates livelihood diversification, yet it remains subsistence-oriented and low-wage, thus insufficient to build savings or accumulate capital. Fishers' involvement in side jobs in the informal sector—such as trading, farm labor, construction labor, transport services, and food stalls—reflects existing economic adaptive capacity, but simultaneously underscores the fragility of the Trungtum fishing community's economic base in facing structural pressures from port development.

> *"Among fishermen, we say we're all in this together. If there's only 30 kg of fish but there are 6 deckhands, like it or not, we divide it into 6 so everyone gets a share, even if it's just a little. Here, let me take this to Mrs. X to get it filleted." (RMN, 20/10/2024).*

Low incomes make it difficult for most fishers in Trungtum to save, as reflected by only 39% of respondents having savings. This condition drives 73% of respondents to rely on "Bank Mekar" or mobile banking credits for urgent needs and business capital due to their easy and flexible procedures, despite high interest rates that potentially trap fishers in ongoing financial vulnerability. This situation is exacerbated by the suboptimal role of the KUD Mina Misaya Guna cooperative, which since 2018 has ceased fish auction functions and shifted to port procurement of goods and services, impacting the weakening of collective economics and halting the Nyadran cultural practice since 2019—demonstrating the close interconnection between ecological, economic, and cultural changes (Meilinda et al., 2025).

From the perspective of natural resources, the livelihoods of Trungtum fishers rely on capture fisheries and small-scale fishponds, which are highly vulnerable to Patimban Port reclamation. Sedimentation, habitat damage, and restricted access to fishing grounds lead to declining catches, while the common property nature of the sea means fishers receive no official compensation for these disruptions. This condition further heightens the fishing community's vulnerability, especially amid additional pressures from climate change.

In the Trungtum fishing community, catch diversity before the port's construction was abundant, ranging from high-value economic species like etong, snapper, and crabs to small fish such as anchovies, *teri*, and rebon. This indicates that Patimban's marine resources were previously robust enough to sustain fishers' livelihoods and enable more flexible livelihood strategies. Flexibility is a crucial factor in the resilience process, providing fishers with room to adjust when one type of resource declines.

Table 5. Characteristics of the strength of natural resources owned by the fishing community of Trungtum, 2024

Natural resources	Information
Ocean	Marine conditions are vulnerable due to the threat of abrasion and environmental pollution from port activities, which impact fish diversity.
Aquaculture (ponds)	It is very limited, individual, and small-scale. Harvests are also limited to only 2-3 harvests per year, depending on the type of fish being farmed.

However, the decline in catch diversity and abundance, perceived by 93.3% of respondents as more than 50%, signals the weakening of natural resources as a buffer for resilience. The loss of "premium" species like etong and squid not only impacts fishers' income but also severs the linkage between natural resources and the local economy, including culinary and coastal tourism sectors. Restaurants' dependence on fish supplies from outside Patimban indicates erosion of local self-reliance, which is an indicator of declining resource-based community resilience.

> *"Since the port was built, it's gotten much harder to catch fish. Back then, I'd head out alone at 3 or 4 a.m. and be back by 10 or 11 a.m., already with 30 kg. Now, I just got back at 3 p.m. and the most I get is 3-5 kg. And the fuel costs how much? Not to mention provisions—it doesn't even cover it. The sea's gotten shallower too, miss, so the nets keep getting snagged." (CSM-13/11/2024).*

The community resources of the Trungtum fishing community include human, economic, and natural resources. Based on three dynamic resource characteristics: robustness, redundancy, and rapidity, it can be said that the Trungtum fishing community has low resource strength.

Adaptive Capacity

In addition to resource strength, adaptive capacity is a key component of the resilience concept, which states that adaptive capacity reflects a community's ability to learn from experience, modify social structures, and utilize resources to respond and adapt to stress or disruption. Within this framework, community resilience depends not only on resource availability but also on flexibility and the collective capacity to continuously adapt to change (Norris et al. 2008).

Economic Development. Adaptive capacity develops as a result of four elements: economic development, social capital, information and communication, and community competence. Based on interviews with 75 respondents, the level of community adaptive capacity derived from these four components was assessed. The evaluation used a Likert scale from 1-5, where 1 = very poor; 2 = poor; 3 = fair; 4 = good; 5 = very good. The total scores were then categorized into low, medium, and high levels.

Table 6. Percentage of respondents based on their perception of economic development experienced in the last 5-10 years, Trungtum, 2024

Level of economic development	Percentage
Low	36.0
Moderate	64.0
High	0

Based on Table 6 above, the economic development component is rated by the majority of respondents as "medium." In assessing the resilience of the Trungtum fishing community, the economic development aspect is evaluated based on several factors: the community has (1) job opportunities, (2) business opportunities, (3) adequate clothing and food, (4) ability to fund education, (5) household health affordability, and (6) relatively equitable resources (Mariyani, 2020).

The Trungtum fishing community has job opportunities both in on-fishing and off-fishing sectors. As many as 60% of respondents rely on primary income from catches, while the other 40% work as farmers, traders, entrepreneurs, laborers, and farm laborers. Boat-owning fishers occasionally rent out vessels for transportation and port logistics via a "boat ojek" system based on contracts with KSOP Patimban, though it is not regular. On the other hand, fishing laborers—mostly women and the elderly—process

fish into salted fish at low wages of about Rp2,500/kg, resulting in daily incomes ranging from Rp25,000–Rp50,000. For basic needs fulfillment, 48% of respondents feel adequately provided for clothing and food, 59% have BPJS Health coverage, and 45.3% can afford to educate their children up to high school. The uniformity of resource access—due to the majority's dependence on fishing—creates relatively egalitarian conditions, yet simultaneously heightens vulnerability when the primary resource is disrupted, as noted by Adger (2000).

From a resilience perspective, economic development through the Patimban Port project is ambivalent. On one hand, the port's presence opens new economic opportunities such as "boat ojek" and off-fishing activities, contributing to adaptation strategies and livelihood diversification. On the other hand, these economic benefits are not yet inclusive and sustainable for the entire fishing community, while their impacts weaken the primary fisheries economic base. This condition indicates that economic development has not fully strengthened community resilience; instead, it tends to promote fragile survival resilience (coping) rather than long-term adaptive resilience.

Social Capital. In Norris et al.'s (2008) concept of community resilience, one aspect that shapes a community's adaptive capacity is social capital. Social capital here encompasses networks of relationships, trust between individuals, and shared norms and values. The strength of social capital plays a crucial role in strengthening a community's ability to respond, adapt, and recover from disruptions or disasters. The presence of strong social capital enables effective information exchange, collective resource mobilization, and increased social solidarity, ultimately supporting the recovery process and long-term community sustainability (Norris et al., 2008).

Table 7. Percentage of respondents based on their perception of the social capital possessed by the fishing community in the last 5-10 years, Trungtum, 2024

Level of Social Capital	Percentage
Low	0
Moderate	26.7
High	73.3

Based on the data in the table, it can be concluded that the level of social capital components in the Trungtum fishing community falls into the high category. This is reflected in the strength of the social networks formed, both internally within the community and externally with institutional actors outside the community. Social capital serves as a key factor in the resilience process of the Trungtum fishing community because it functions as a connecting mechanism between external pressures—such as resource degradation and port development—and the community's ability to respond, adapt, and endure. The networks of trust and relationships built between fishermen, the village government, and port institutions enable the flow of information, access to alternative economic opportunities, and channels for negotiating interests, for example, in demands for compensation and fishermen's involvement in port activities. Within the resilience framework, this social capital strengthens adaptive capacity because the community does not face crises individually, but through coordinated collective action (Adger, 2003).

Internal social support through mutual cooperation (*gotong royong*), solidarity in emergency situations, and voluntary contributions serves as a social buffer that mitigates the impacts of economic and social shocks. When income declines or risks increase, informal assistance mechanisms based on trust and shared norms can substitute for limitations in formal protection. This aligns with Norris et al. (2008), who emphasize that social capital—particularly social support and community cohesion—is a core component of community resilience, as it enables communities to absorb disruptions (absorptive capacity) while adjusting to changes.

Social capital also acts as a capital that can be mobilized for the community's long-term interests. Putnam (2000) stresses that citizen participation in social networks strengthens trust and the effectiveness of collective action, while Bourdieu (1986) views social capital as actual and potential resources embedded in social relationships. In the context of Trungtum, social capital not only supports day-to-day resilience but also forms the foundation for transformative resilience—namely, the community's ability to renegotiate their position within the changing coastal development landscape. Thus, the strength of social capital positions the fishing community not merely to survive, but to adapt and advocate for the sustainability of their livelihoods.

Although the level of social capital in the community is already strong, it is not yet sufficient to generate structural changes in addressing the impacts of Patimban Port development. Social capital in Trungtum plays an important role in maintaining social cohesion and resilience, but it has not fully become an instrument for controlling the port development impacts. Without strengthening social capital toward linking social capital—namely, the community's ability to build equal relations with state actors and power holders—existing joint actions tend to stop at coping efforts, rather than long-term transformative resilience.

Information and communication. In the context of community resilience, information and communication play a key role because they enable communities to understand risks, plan collective action, and effectively respond to and recover from disruptions. Open, participatory, and transparent communication strengthens trust, supports decision-making, and accelerates the exchange of local and external knowledge (Norris et al., 2008). Social resilience depends not only on material resources and social networks, but also on the ability to effectively manage information flows, particularly in crisis situations.

Table 8. Percentage of respondents based on their perceptions of information and communication created among fishermen in the last 5-10 years, Trungtum, 2024

Level of Information and communication	Percentage
Low	0
Moderate	44.0
High	56.0

The primary sources of information for the Trungtum community come from local actors such as the head, neighborhood associations (RT/RW), and loudspeakers at mosques or prayer houses. In addition, islamic groups (pengajian), fishermen's associations (paguyuban nelayan), consultation forums, and RT meetings serve as close and relatively inclusive communication spaces for disseminating community information, ranging from social activities to the distribution of information from the village and stakeholders. Some residents working at the port also act as informal intermediaries for job opportunity information. However, the reach of these channels remains limited and uneven, while the role of fishermen's associations has not been fully felt due to their inability to encompass all fisherman groups and the frequent interventions by external parties that influence fishermen's interests.

In the context of Patimban Port development, access to information regarding job opportunities, public consultations, and development socialization tends to be closed and dominated by personal networks. This condition causes vulnerable groups, particularly women and residents without strategic social connections, to face barriers to information access and economic opportunities, reflecting inequalities in information capital and social exclusion (Bourdieu, 1986; Norris et al., 2008). Although community social communication is relatively strong, the uneven distribution of information hinders inclusive community resilience. Without improvements to more participatory and equitable communication mechanisms, these inequalities will continue to reproduce structural vulnerabilities and weaken the community's overall resilience capacity.

> *"I don't join the fishermen's association (paguyuban), because in my opinion, it's just more about hanging out. For daily fishing, we still go on our own anyway. So for me, the association doesn't really play much of a role. At most, it's just for data collection and stuff like that. Even to find job openings at the port, we still need to have connections there." (SRJ, 13/11/2024)*

In the context of the impacts of port development, the strength of internal community communication is insufficient to generate robust adaptation strategies at the community level. Information isolation, the dominance of personal networks and the community's weak bargaining position with external actors continue to reproduce the impacts of development, particularly for vulnerable groups. Therefore, without the support of transparent, participatory, and pro-fisher information mechanisms, existing communication strengths are unable to offset the power asymmetry and the scale of impacts generated by the Patimban Port development.

Community Competence. Communities facing threats are required to understand risks, choose strategies, and act flexibly and creatively in solving problems (Norris et al., 2008). Community

competence refers to the collective ability to assess needs, organize resources, and make decisions in a participatory and adaptive manner, encompassing community action, collective efficacy, empowerment, and problem-solving skills.

Table 9. Percentage of respondents based on their perception of the competence of the fishing community in the last 5-10 years, Trungtum, 2024

Level of community competence	Percentage
Low	0
Moderate	69.3
High	30.7

In the Trungtum fishing community, the community competence level is moderate, marked by fairly high social participation (57% involved in community activities), solidarity in fishing activities, and adaptive efforts in facing the impacts of reclamation and Patimban Port development. These adaptation forms are evident in participation in skills training facilitated by KSOP, economic diversification by boat owners through renting vessels for port logistics, and initiatives by fishing laborers and women in seafood processing businesses.

However, collective problem-solving abilities and the community's confidence in their future livelihoods have not yet formed optimally. Although there is flexibility and creativity in responding to changes, the empowerment efforts remain partial due to minimal follow-up, institutional support, and weak local leadership. Cooking training expected to open access to port catering businesses, as well as BST and TKBM training aimed at formal port jobs, have yet to yield tangible economic opportunities. This condition indicates a gap between individual capacity building and structural access to the new economic system shaped by port development.

In relation to community resilience, community competence in Trungtum contributes to the formation of adaptive resilience—namely, the ability to endure and adjust in the short term—but has not yet achieved transformational resilience. This differs from, for example, fishing communities in some Central Java coastal areas post-abrasion, which successfully established fishermen's cooperatives and joint business units based on mangroves, where community competence is supported by strong local organizations and sustainable institutional partnerships. This comparison shows that community competence will be more effective in strengthening resilience if supported by high collective efficacy, inclusive local leadership, and institutional mechanisms capable of linking local capacities to real access to resources and economic opportunities (Marfai et al., 2015).

Community Resilience

Resilience as a process related to adaptive capacity toward a positive condition after the occurrence of a disturbance. Adaptive capacity here relates to economic development, social capital, information and communication, as well as community competence. Meanwhile, resources are assessed based on their robustness, redundancy, and rapidity (Norris et al., 2008). The disturbances in question can include natural disasters, climate change, pandemics, socio-political upheavals, and development activities that alter the regional landscape. In facing these disturbances, communities will develop strategies to adapt and maintain existing systems. This process refers to adaptive dynamics that enable individuals or communities to endure, recover, and transform amid pressures, changes, or crises. Based on the scoring results of adaptive capacity components, the level of adaptive capacity of the community is as follows:

Table 10. Level of resilience of members of the Trungtum fishing community after the construction of the port, 2024

Level of community member's resilience	Percentage
Low	0
Moderate	57.3
High	42.7

Based on the Table 10, it is known that in terms of the community's adaptive capacity level, 57.3% of respondents fall into the 'moderate' category. This is caused by not all community members having equal capacity to undergo the resilience process. Limited access to livelihood alternatives, weak local

organization, and information inequalities often make the resilience process elitist and uneven. This study views community resilience as an ongoing process in which the community implements adaptation mechanisms leading to improved socio-economic and ecological living conditions. A resilient community is one that can build strong interconnections among members and work collectively to sustain the system even when resources are limited. Communities with low resource strength can still be resilient to disturbances if they have good adaptive capacity (Maguire & Cartwright, 2008).

Referring to the resilience concept from Norris et al. (2008), resilience is understood not merely as a static condition, but as a dynamic process determined by the community's ability to access and manage adaptive resources such as economic capital, social capital, information, and collective competence. Thus, the focus is not solely on the current condition, but on the trajectory from the time before the port development to after the port development.

In the phase before port development, the Trungtum fishing community was in a relatively stable socio-ecological condition. Traditional fishermen's livelihoods were still aligned with the coastal environment, social networks were tight-knit, and socio-cultural practices such as community solidarity and informal mutual assistance mechanisms operated quite effectively. From the perspective of Norris et al. (2008), this condition reflects the normal functioning of the community system, although not entirely ideal. Structural vulnerabilities such as limited access to clean water, quality health services, and economic diversification were already present but had not manifested as open crises due to the absence of major external pressures disrupting livelihood system balance.

Subsequently, the entry of Patimban Port development marked a significant disturbance phase for the community system. This disturbance was not only ecological (decline in catches, changes in fishing grounds) but also socio-economic and institutional. Norris et al. (2008) describe this phase as the point where external pressures test the community's adaptive capacity. Fishermen's protests in 2019–2020 can be read as the community's initial response to uncertainty and unequal access to development benefits. Although peaceful, these actions signaled potential vertical conflict and heightened insecurity, indicating that the community's social stability functions began to be disrupted.

In the initial response and adaptation phase, the community began showing survival strategies, but they were uneven. Some boat-owning fishermen were able to redirect vessel functions for port logistics needs, while fishing laborers and women engaged in small-scale economic adaptations such as seafood processing. Within the framework of Norris et al. (2008), this reflects selective utilization of economic capital and human capital, where actors with greater initial resources could adapt more quickly. However, low resource equity prevented adaptation from occurring collectively, resulting in partial and exclusive resilience (Cutter et al., 2010). This is evident in response forms that prioritize personal asset utilization (vessel rental) over collective responses involving community members.

Moving into the advanced adaptation phase, the main barriers to community resilience lie in weak social connectedness and collective competence. Top-down dissemination of job opportunity information, non-inclusive fishermen's associations, and failure to consolidate women's training outcomes highlight structural gaps in information capital and community organization. Norris et al. (2008) emphasize that without connectedness and collective efficacy, communities struggle to transform individual responses into shared adaptive capacity. Longstaff et al. (2010) also stress that social connectivity is key for communities to absorb shocks and maintain essential functions in the long term.

Thus, the current trajectory of change in Trungtum is in a transitional phase toward a new stability, but has not yet achieved full community resilience. Stability is beginning to form, but still relies on groups with better access to capital and information. Referring to Norris et al. (2008), true resilience will only be achieved if the adaptation process is inclusive, based on collective capacity, and supported by more equitable resource distribution. Without strengthening collective agency, improving information systems, and increasing resource equity, the Trungtum fishing community risks being trapped in an "unequal endurance" condition, where some actors recover while vulnerable groups remain in long-term vulnerability.

CONCLUSIONS

Based on the explanation above, it can be concluded that the reclamation for Patimban Port development has caused economic, ecological, and socio-cultural impacts on the Trungtum fishing community, such as disruption of fishing grounds, decline in catches, increased fishing costs, changes in KUD functions, and the fading of fishermen's socio-cultural aspects. These impacts not only threaten the community's

livelihood sustainability but also erode the values and identity of the coastal community that have long been intertwined with life in Trungtum fishing village.

The resilience of the Trungtum fishing community is at a moderate level and tends to be adaptive rather than transformational. The community demonstrates strengths in social capital, solidarity, and flexibility in responding to pressures from Patimban Port development, such as through livelihood diversification, utilization of social networks, and participation in community activities. However, collective problem-solving abilities, equitable information access, weak local leadership, and bargaining power against external actors remain limited. Inequalities in access to economic opportunities, minimal meaningful participation in the development process, and weak institutional support cause this adaptive capacity to fail in altering the structural conditions that perpetuate vulnerability. Therefore, without strengthening participatory mechanisms, inclusive information distribution, and sustainable institutional support, the resilience of the Trungtum fishing community will remain at a survival level, rather than empowered for transformation.

BIBLIOGRAPHY

Adger, W. N. (2000). Social and ecological resilience: Are they related? *Progress in Human Geography*, *24*(3), 347–364. https://doi.org/10.1191/030913200701540465

Adger, W. N. (2006). Vulnerability. *Global Environmental Change*, *16*(3), 268–281. https://doi.org/10.1016/j.gloenvcha.2006.02.006

Anugraha, A. S., Karmilaha, M., & Rahmana, dan B. (2022). Potret Krisis Sosio-Ekologi Kawasan Pesisir Dampak Reklamasi. *Journal of Urban and Regional Planning*, *3 (1)*, 9–21. https://doi.org/10.26418/uniplan.v3i1.52818

Bruneau, M., Chang, S. E., Eguchi, R. T., Lee, G. C., O'Rourke, T. D., Reinhorn, A. M., Shinozuka, M., Tierney, K., Wallace, W. A., & Von Winterfeldt, D. (2003). A Framework to Quantitatively Assess and Enhance the Seismic Resilience of Communities. *Earthquake Spectra*, *19*(4), 733–752. https://doi.org/10.1193/1.1623497

Cezalipi, J., Prasetyawan, I. B., & Marwoto, J. (2017). Kajian Karakterisitik Gelombang Laut Akibat Pengaruh Rencana Pembangunan Pelabuhan Patimban, Subang. *Jurnal Oseanografi*, *6*(3), 475–484. Retrieved from https://ejournal3.undip.ac.id/index.php/joce/article/view/20210

Cobigo, V., Martin, L., & Mcheimech, R. (2016). Understanding Community. *Canadian Journal of Disability Studies*, *5*(4), 181. https://doi.org/10.15353/cjds.v5i4.318

Dewi, I. G. (2019). Penolakan Masyarakat Terhadap Reklamasi Teluk Benoa Provinsi Bali. *Diponegoro Private Law Review*, *4*(1), 390–400. Retrieved from https://ejournal2.undip.ac.id/index.php/dplr/article/view/5023

Ellis, F., & Allison, E. H. (2001). The livelihoods approach and management of small-scale fisheries. *Marine Policy*, *25*(5), 377–388.

Ferrol-schulte, D., Gorris, P., Baitoningsih, W., Adhuri, D. S., & Ferse, S. C. A. (2015). Coastal livelihood vulnerability to marine resource degradation : A review of the Indonesian national coastal and marine policy framework. *Marine Policy*, *52*, 163–171. https://doi.org/10.1016/j.marpol.2014.09.026

Folke, C. (2006). *Resilience : The emergence of a perspective for social – ecological systems analyses*. *16*, 253–267. https://doi.org/10.1016/j.gloenvcha.2006.04.002

Iryana, A. B. (2018). Analisis Dampak Pembangunan Pelabuhan Patimban Di Kecamatan Pusakanegara Terhadap Kondisi Sosial Ekonomi Masyarakat Sekitar. *Jurnal Caraka Prabu*, *2*(1), 21–40. https://doi.org/10.36859/jcp.v2i1.398

Jayanti, A. D., Fitriya, W., Setyobudi, E., Budhiyanti, S. A., Suadi, S., & Kune, S. J. (2018). The vulnerability of fishermen's community and livelihood opportunity through drought and seasonal changes in border area of Indonesia-Timor Leste. *IOP Conference Series: Earth and Environmental Science*, *139*(1). https://doi.org/10.1088/1755-1315/139/1/012030

Kamim A.M.B (2020). *Ocean Grabbing di Indonesia dan Malaysia : Catatan Krisis Sosio-Ekologis Dampak Proyek Reklamasi*. *11*(1), 105–120. https://doi.org/10.22212/aspirasi.v11i1.1587

Maguire, B., & Cartwright, S. (2008). Assessing A Community's Capacity to Manage Change: A Resilience Approach to Social Assessment. Bureau of Rural Sciences, Australian Government. Retrieved from https://www.agriculture.gov.au/sites/default/files/abares/documents/dewha-resilience-sa-report-final-4.pdf.

Marfai, M. A., King, L., Singh, L. P. (2015). *Natural hazards in Central Java Province , Indonesia : an overview*. 335–351. https://doi.org/10.1007/s00254-007-1169-9

Nasdian, F. T., Katrina Pandjaitan, N., & Ardinal Barlan, Z. (2020). Community Resilience of Mining Area and Food Vulnerability in South Kalimantan. *Sodality: Jurnal Sosiologi Pedesaan*, *8*(1), 47–63. https://doi.org/10.22500/8202028246

Nissa, Z. N. A., Dharmawan, A. H., & Saharuddin, S. (2019). Vulnerability Analysis of Small Fishermen's Household Livelihoods in Tegal City. *Komunitas: International Journal of Indonesian Society and Culture*, *11*(2). https://doi.org/10.15294/komunitas.v11i2.18583

Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, *41*(1–2), 127–150. https://doi.org/10.1007/s10464-007-9156-6

Novitasari, F., Drestalita, N. C., & Maryati, S. (2020). The impacts of infrastructure development on economic growth (case study: DKI Jakarta, Banten Province and West Java Province). *IOP Conference Series: Earth and Environmental Science*, *592*(1). https://doi.org/10.1088/1755-1315/592/1/012017

Panjaitan N. K, Adriana G, Virianita R, Karlita N, C. (2016). Rawan Pangan Akibat Perubahan Iklim (Kasus Sebuah Komunitas Nelayan Di Jawa Barat). *Journal Sodality. Departemen Sains Komunikasi Dan Pengembangan Masyarakat, Fakultas Ekologi Manusia, Institut Pertanian Bogor*. https://doi.org/10.22500/sodality.v4i3.14736

Ramadhan, M. F. L., Rahmani, U., & Ediyanto. (2019). Pengaruh Reklamasi Terhadap Hasil Tangkapan Nelayan di Daerah Kamal Muara, Jakarta Utara. *Jurnal Ilmiah Satya Minabahari*, *5*(1), 40–49. https://doi.org/10.53676/jism.v5i1.76

Querdiola, C., Kinseng, R. A., & Gandi, R. (2023). Struktur sosial, strategi nafkah, dan tingkat kesejahteraan nelayan pasca reklamasi Teluk Jakarta : Social Structure, Livelihood Strategy, and Fishers' Welfare in the Post-Reclamation of North Jakarta Coast. *Marine Fisheries : Journal of Marine Fisheries Technology and Management*, 14(2), 183-200. https://doi.org/10.29244/jmf.v14i2.46459.

Sanggoro, H. B., Alisjahbana, S. W., & Mohamad, D. (2022). Understanding Social Conflict in Indonesian Infrastructure Projects Based on the Causes and Impacts. *International Journal on Advanced Science, Engineering and Information Technology*, *12*(5), 2089–2095. https://doi.org/10.18517/ijaseit.12.5.15962

Scott, J. C. (1972). The erosion of patron-client bonds and social change in rural southeast asia. *The Journal of Asian Studies*, *32*(1), 5–37. https://doi.org/10.2307/2053176

Yuana, S. T., Wahyudi, B., & Santoso, P. (2019). *Resolusi Konflik Pembangunan Pelabuhan Internasional Di Kabupaten Subang Provinsi Jawa Barat Tahun 2017 – 2019 Conflict Resolution of the International Port Development in Subang Regency , West Java Province 2017 – 2019*. *6*, 206–232.

Yustiana, D., Fadli, M., Kusumaningrum, A., & Solimun. (2021). Analysis Study of Coastal Reclamation Impact To the National Resilience (a Literary, Philosophical, Juridical and Sociological Approach). *STTAL Postgraduate International Conference*, 2443–2415. https://doi.org/10.18551/rjoas.2021-03.06