

# Community Adaptation Strategies to Central Point of Indonesia Beach Reclamation (Mariso Sub-District Case Study)

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## ARTICLE INFO

## ABSTRACT

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Background: CPI reclamation in Mariso sub-district, particularly in Majannang, Mariso and Lette urban villages, has converted water into land, significantly impacting local fishermen. The impacts include narrowing of boat lanes, eviction, lack of fish auctions, water pollution, and abrasion.

Objective: This study aims to assess the social ecological and economic adaptation strategies of affected communities

Methods: This research uses a qualitative approach with a case study design to explore community adaptation strategies to CPI coastal reclamation in Mariso sub-district, through in-depth interviews and thematic analysis to provide empirical contributions to the understanding of community adaptation and effective intervention solutions.

Results: The results show that fishermen affected by reclamation adapt socially by accepting compensation, moving areas, or building illegal shacks, and economically by switching professions to the informal sector, while some continue to go to sea while looking for additional jobs, and fishermen's wives open small businesses to support the family economy.

Conclusion: Reclamation supported by the government and developers in Mariso Sub-district has triggered spatial conflicts with fishermen, forcing most of them to stop fishing due to the loss of boat lanes and parking lots, so they adapt by changing their fishing time or switching professions to become informal workers such as construction laborers, street vendors, or other services to make ends meet.

**Keywords:** CPI reclamation, adaptation strategies, social ecological adaptation, economic adaptation

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## INTRODUCTION

Reclamation projects are chosen because they are cheaper and less conflictual than development on community land, but they have a major impact on the lives of coastal fishermen by distancing or even eliminating fishing areas, so it is important to examine the adaptation strategies of coastal communities to the impacts of reclamation. Classical thinkers such as Darwin emphasized that adaptation is the key to survival; creatures that are unable to adapt will become extinct, while those that can will continue to thrive (1). In human history, the process of adapting to the environment and social conflict has been a major factor in the development of civilization. Hobbes through the concept of *homo homini lupus* highlighted that humans tend to conflict in pursuit of interests (2), and Marx added that human history is the history of class conflict (3). In the modern context, human interventions on nature such as reclamation, logging and mining are often carried out for the economic benefit of a few groups, which triggers conflict and strengthens social inequality (1-4).

In Indonesia, changes to the physical environment due to development projects are common, such as forest conversion, coastal reclamation and property expansion, which have major impacts on the social, cultural and

economic aspects of communities. People's adaptation to these changes varies greatly; those who are able to adjust may gain benefits such as economic improvement and skills, while those who are unable to are victimized, experiencing job loss, social conflict, or even forced migration. In this regard, the CPI reclamation project in Makassar City becomes an important study to see how coastal communities, especially fishermen in Mariso Sub-district, respond to changes in the physical environment with various adaptation strategies.

The Central Point of Indonesia (CPI) reclamation in Makassar City, driven by the Makassar City Government and South Sulawesi Provincial Government with the support of investors such as PT Yasmin and Ciputra, covers an area of 157 hectares, of which 107 hectares are controlled by Ciputra for the commercial center, while the remaining 50 hectares are for public facilities. The project had major social, economic and ecological impacts. A total of 43 families were displaced without compensation (5), fishing boat lanes narrowed, waters in Mariso Sub-district experienced siltation and heavy pollution resulting in loss of catches such as clams and crabs, thus disrupting the economy of fishing families (6). Sand for the reclamation project was taken from the waters of Takalar District by Royal Boskalis with the Fairway vessel capable of transporting up to 175,000 cubic meters of sand in two days and three nights-equivalent to 29,167 6-cubic meter trucks (5). This activity caused severe abrasion on the coast of Galesong sub-district, damaging houses and public facilities as sea water rose into settlements.

The impact of CPI reclamation has encouraged coastal communities to change their livelihood patterns from fishermen to land workers or to look for additional jobs, as a form of adaptation to changes in the physical environment. Some fishermen continue to go to sea but have to reach farther fishing areas. This condition is the basis for the importance of research to examine in depth the adaptation strategies of coastal communities due to CPI reclamation. Different from previous studies that focused more on ecological and economic impacts (6,7), and litigation advocacy (8), this research offers a new contribution by highlighting the forms of social and economic adaptation of fishing communities in facing changes in the coastal environment.

### PARTICIPANTS AND METHODS

This research takes a qualitative approach with a case study design to explore in depth the community's adaptation strategy to the CPI beach reclamation in Mariso sub-district. The qualitative approach was chosen because it allows a holistic and contextual understanding of the process of community adaptation. Research data were obtained through in-depth interviews with reclamation victims as key informants. Data analysis was conducted inductively using thematic analysis techniques to identify themes related to adaptation and coastal reclamation as a determining factor. This research aims to make an empirical contribution to the literature on community adaptation to coastal reclamation and develop a conceptual framework that can be used to design more effective interventions to provide solutions for reclamation victims.

### Findings

#### 1. Socio-Economic Condition of the Community Before and After CPI Reclamation

Prior to the reclamation of Tanjung Bunga Metro and CPI, Mariso Sub-district had three coastal hamlets namely Lette, Mariso, and Majannang, all of which used to be water areas. The majority of the community depended on the sea for their livelihoods as fishermen with fishing areas covering the shoreline to nearby islands such as Lae-Lae. Fishing activities were carried out around the settlement, and most of the community houses were houses on stilts, with boats stored under the house. Catches such as shellfish, fish and crabs are the main source of livelihood, and there are also fish farming activities in the form of ponds. The area that is now filled with modern infrastructure such as the Triple C building, Gammara Hotel, Flats, Gerindra Hotel, Siloam Hospital, and CPI, was once the main fishing area for Mariso fishermen.

Before reclamation, the Mariso coastal area had a healthy marine ecosystem rich in biota, supporting abundant catches and supporting the economy of fishermen. Rajawali's fish auction used to be bustling with large boats bringing in their catches. There are about nine traditional fishing methods of Mariso fishermen in Makassar language such as panambe, pacumi-cumi, papekang, pakuka, buyang, patappe, and pajala. However, after reclamation, only two methods are still used, namely panambe (diving) and trawl (net), as environmental conditions no longer allow other fishing practices. In addition to fishermen, non-fishermen also utilize the wealth of the sea by catching shellfish,

crabs, shrimps and fish as a source of food. Now, environmental changes due to reclamation have eliminated these natural resources and have a major impact on the socio-economic life of coastal communities.

Reclamation in Mariso sub-district, particularly the CPI and Metro Road projects, has encouraged infrastructure growth and triggered a wave of urbanization. Before reclamation, the population was still small, but after reclamation many migrants arrived with various motives such as work and business. Unfortunately, the city's progress is not directly proportional to the welfare of local residents. The Tanjung Bunga reclamation project benefited large developers such as PT GMTD (Lippo Group) and PT Mariso Indoland, while the community had to face land disputes and poverty. Settlements in Lette, Mariso and Majannang villages are now rundown, flood-prone and surrounded by grand buildings such as Gammara Hotel and Siloam Hospital. Reclamation development has caused crime to increase due to unemployment and economic inequality, what Marx called a "relative surplus of population". The CPI reclamation since 2012 has also closed fishermen's sea access, forcing them to go further out to sea and incur greater costs. As a result, many fishermen stopped fishing and sought other jobs, adapting to environmental changes that forced them to leave their traditional livelihoods for uncertain city jobs.

## 2. Community Social Ecological Adaptation Strategy

Reclamation causes a struggle for space between fishermen and the government and developers, then reclamation causes the eviction of the Tanah Tumbuh fishing village, in addition to social impacts, ecological impacts such as narrower ship lanes and siltation of sea water, making it difficult for fishermen to go out to sea, fishermen's fishing areas are getting further away. The impact caused by reclamation forces the community to be able to adapt to changes in the physical environment and the following community adaptation strategies.

### a. Adaptation in the Struggle for Space

Before the CPI reclamation, there was a fishing village in Tanah Tumbuh that was opened by Dg Anto and his wife, Dg Bollo. The fishermen who lived there were required to sell their crab catches to Dg Anto, even though the land was not certified. Dg Anto opened the village for fishermen members from Maros Regency who worked in Mariso waters. When the construction of the CPI began, the 99 Kuba mosque was built on the land that previously housed the fishermen's village. When the reclamation process began, Dg Bollo refused the compensation offered by the government and chose to stay on the land. He was assisted by an alliance of Non-Governmental Organizations (NGOs) to defend his land, but was eventually evicted. The field research only managed to meet Dg Anto, as Dg Bollo had passed away from a stroke. Dg Anto claimed that he did not want to get involved in the conflict and left the matter entirely to his wife and the NGOs, although he did not agree with his wife's overzealous defense of the land.



**Figure 1: Dg Bollo Crying during the forced demolition of his house by Satpol PP, 43 families were evicted for the construction of .**

Source Tribun Timur 2014

After the completion of the Metro Road construction, many property businesses began to develop in Mariso Sub-district, including large projects such as Gammara Hotel, Triple C, and Siloam Hospital. These projects led to the closure of coastal communities' access, especially fishermen, to marine resources that they had previously utilized.

In response to the fishermen's protests, the company and the government attempted to ease tensions by offering compensation in the form of boat engines and promises of jobs for residents. However, this compensation has raised tensions among the community. Most residents, including fishermen, accepted the compensation, despite disagreeing with the reclamation. Only a small number initially rejected the compensation, but eventually they were forced to accept it due to coercion. In this situation, compensation becomes an adaptation strategy for fishermen who face conflicts due to environmental changes caused by reclamation. Although the compensation provided is not fully satisfactory, it is used by the government and developers to reduce tensions and reach an agreement between the parties involved, namely local communities, developers and the government.

**b. Adaptation Due to Eviction**

Coastal reclamation in Makassar resulted in the eviction of fishing villages, including the one opened by Dg Bollo. After being evicted, Dg Bollo received no compensation and lost his livelihood as a crab dealer. Many fishermen who previously lived in the village returned to their home villages. Dg Bollo was forced to live in the abandoned Triple C building and once even lived under the CPI bridge. Several other fishermen also built illegal huts under the CPI bridge as a way to survive after losing their homes due to reclamation. As a form of adaptation to environmental changes, displaced fishermen try to find a place to live in abandoned buildings or build shacks under the columns of the CPI bridge. Even so, they face worse living conditions than before reclamation. The worsening sea conditions force them to find side jobs, such as scavenging, when sea catches decline. In addition, they often face intimidation from the CPI authorities, who evict and burn down the huts they build, forcing them to keep moving.



**Figure 2. Dg Gassing age 52 and Pendos age 68, he lives in the column of the CPI bridge, they are victims of land eviction, in the bridge area**

Source Account @Asdar Nuntung

During the research, the author did not find Dg Gassing, but obtained information from his family, Dg Akbar, who was selling crabs and shellfish on the edge of Jln Metro Tanjung. These conditions illustrate the hardships experienced by those who are unable to adapt to the changes brought about by urban development. Coastal reclamation ignores the plight of displaced locals, with landlords and developers prioritizing capital despite causing social exclusion. As a result, fishermen like Dg Gassing had to face intimidation and physical violence, such as having their hands cut off by thugs for resisting, given that the event resembled the land evictions that occurred during the industrial revolution in Britain described by Marx, where capitalists took over people's land by force.

**c. Adaptation Due to Water Siltation**

The CPI reclamation project has changed the geographical space in Mariso Sub-district, particularly in the three urban villages of Lette, Mariso and Majannang, which used to be water and has now become land. Prior to reclamation, coastal communities relied heavily on marine resources for food and income, with small and medium-sized fishers and non-fishing communities utilizing marine products such as shellfish and crabs. However, reclamation has removed their access to the sea and damaged the ecosystems that support their livelihoods. As a result of reclamation, many fishermen have stopped going to sea due to increasingly difficult access to the sea and

the increased risk of boat engine theft. For example, Dg Sikki, a former fisherman and fish mogul, stopped going to sea for fear of losing the engine and propeller of his boat parked far from home.

Mariso ward has seen many residents move away from fishing as a livelihood, while some fishermen in Lette ward have survived because of the auction, although it has become increasingly quiet. Reclamation has removed fishing boat lanes and damaged their access, even after protests and the construction of wider boat lanes by the government and developers, difficulties remain. Muddy waters due to siltation prevent fishing boats from getting in and out, and in the dry season, fishermen often get trapped or have accidents. Before reclamation, Mariso fishermen could go to sea all year round, even during the west season, which has now become difficult or impossible.



**Figure 3. fishing boats with ketinting type while parked and visible also the path for the entry and exit of fishing boats.**

The CPI reclamation has changed the fishing patterns of fishermen in Mariso Sub-district. Previously, fishermen often went to sea in the west season due to favorable sea weather conditions, and abundant marine products. They could go to sea all year round, even though the west season brought bad weather and minimal catches. However, after reclamation, the once-free boat lanes have now silted up, and fishermen's access to go out to sea has become increasingly difficult. The tides also affect the movement of fishermen, who now have to adjust their fishing time to get out before low tide, like Dg Lira who has to leave at night and return before high tide.

As a result, many fishermen have stopped fishing due to increasingly difficult environmental conditions. Reclamation has deprived them of access to marine resources, which were previously their source of livelihood. A number of fishermen have lost their means of production, and they feel marginalized by development interests that prioritize business. This phenomenon reflects how fishermen in Mariso, who used to rely on marine products for a living, are now forced to adapt to new conditions that make it difficult for them.

**Table 1. Community Social Ecological Adaptation Strategy**

<b>Impact of Reclamation</b>	<b>Description of Adaptation</b>	<b>Form of Adaptation</b>
Conflict over space	Reclamation continues as majority of residents receive compensation	Residents who refused were eventually forced to accept because they were outnumbered. There was social tension between the groups that accepted and rejected the compensation.
Loss of residence	Evicted residents look for temporary housing after the eviction.	-Utilizing abandoned buildings such as the Triple C Building -Refuge to family home or to another area

Intimidation and Violence	Experiencing threats like Dg Gassing from thugs regarding housing	Moving around to avoid eviction and violence
Sedimentation	Fishermen adjust their fishing time according to the tides	Having to leave early or wait for the tide, increasing the risk of accidents
Increased fuel operating costs	Use of Alternative Route	Fishermen look for other routes to go out to sea even though it is farther.

**3. Community Economic Adaptation Strategy**

The CPI reclamation has made many Mariso people who initially worked as fishermen have stopped and are looking for new jobs in accordance with changes in the geographical environment after coastal reclamation. Reclamation has turned Mariso's waters into a land filled with urban infrastructure and urban populations, so surviving as a fisherman is no longer possible, so many fishermen switch professions by working on land.

**a. Leaving the Fisherman's Job for Another Job**

The CPI reclamation has caused major changes for fishermen in Mariso sub-district. Although the government and the company promised jobs as a form of compensation, only a small portion of the community managed to get jobs, especially in the security and cleaning sectors at the CPI. Most fishermen who are not absorbed in these sectors are forced to seek other jobs in the urban informal sector. The CPI has encouraged urban growth, creating employment opportunities in the informal sector, such as street vendors selling food and drinks around the CPI and Metro Road. However, competition in the area is fierce, with only a small number of street vendors allowed to sell near the CPI. Most street vendors use carts, and often work in other sectors as construction laborers or groundskeepers to supplement their income. Jobs in the informal sector have uncertain incomes, in contrast to jobs in the formal sector which have fixed salaries. Many families share jobs to make ends meet

Informal sector workers, such as Dg Bollo's family, who were previously crab collectors, have now turned to street vendors after losing their jobs due to reclamation. Dg Bollo's family now sells drinks using a three-wheeled motorized cart. Those who don't have a strategic selling location struggle to attract buyers, and many have to go into debt for business capital, as experienced by Dg Ase, who in his old age cares for three grandchildren by selling mineral water on the Metro roadside. This situation reflects the fall of many families into worse economic and social conditions following reclamation. The poverty of Dg Ase and other reclamation victims is a form of deliberate impoverishment by the government and business developers called structural poverty, because the government consciously passes reclamation interests through project plan policies, without thinking about fair solutions for reclamation victims to provide decent and sustainable life protection.

The government has neglected reclamation-affected communities, with minimal employment of those affected. The real estate sector, which was supposed to provide employment opportunities, has instead taken away people's living space, making it difficult for them to adapt to change, especially due to low levels of education and skills. In response to their loss of livelihoods, many reclamation victims have turned to street vendors or service workers, such as construction laborers and groundskeepers. However, they often face eviction by Satpol PP, as their presence is undesirable to the government, which is more focused on having neat and orderly urban areas.

Street vendors selling around the CPI area are often forced to relocate due to evictions and bans by Satpol PP. Although some of them try to protest to the government, there is no adequate solution to the ban on selling in the CPI area. They look for alternative places to sell, such as along Jalan Metro, because the CPI area, which is more crowded and the destination of many visitors, is a strategic location. Although there is a temporary permit to sell around the CPI roundabout, only 15 street vendors are allowed to sell at that location, and they can be forced to move at any time.

The coastal reclamation carried out for the CPI project has excluded fishermen from accessing the marine resources that are their main livelihood. Many fishermen have stopped fishing and turned to street vendors, who are now part of the urban informal sector. However, the formal corporate sector is unable to absorb the reclamation victims' labor, leaving them trapped in social and economic inequality. This phenomenon creates a sharp contrast between the

luxurious skyscrapers and the shabby houses inhabited by street vendors, illustrating a reality where the rich get richer, while the poor get worse off.

**b. Maintaining Fishing Jobs and Engaging in Other Economic Activities**

Reclamation in Mariso Sub-district has forced many fishermen to do double work to make ends meet. This phenomenon, according to Habibi, can be seen as a social class dynamic, where a person who owns the means of production (such as a boat) but also works as a wage laborer to increase income (9). Various factors, such as the inability to live on one job or urgent needs such as education or health costs, force many people to look for additional work. In Mariso sub-district, the impact of reclamation has made it difficult for fishermen because catches are reduced, production costs increase, and boat lanes are increasingly limited. As a result, many fishermen turn to other jobs, such as becoming street vendors (PKL), to make up for the shortfall in income. Data obtained from three urban villages in Mariso sub-district shows that in Lette urban village there are still many active fishermen, because there is a boat ramp and Rajawali fish auction. Meanwhile, in Mariso and Majannang villages, most of the fishermen have switched professions because the ship channel was closed due to reclamation and urban infrastructure development. In Kelurahan Lette, many young people aged 16-30 are active fishermen, replacing their elderly parents who are no longer able to go to sea. In addition to fishing, they also often work as construction laborers or parking lot guards during events on Metro road, especially during the west season when fish catches are reduced. These additional jobs are a source of extra income for fishing families, who are forced to seek additional income due to the damage to coastal ecosystems caused by reclamation. Before reclamation, many fishermen's families felt prosperous just relying on sea products, but after reclamation, the catch has decreased. For example, Dg Tayang's family, where the husband continues to work as a fisherman, while his wife and children look for additional jobs such as being drivers or food stall waiters.

Mr. Haris' family is also in a similar situation, where he continues to work as a fisherman despite declining income, and sometimes sells his labor as a construction worker. His wife runs a small business selling grilled fish. Previously, Mr. Haris was a successful fisherman with a large boat, but after a bad habit of spending money on alcohol and women, he fell into poverty and was forced to sell his large boat to make ends meet. Additional work besides fishing, is also done by many fishermen's wives such as being a food server at Lego-Lego in the Cpi area, because some Rajawali people were given a sales stand at Lego-Lego, from there so that many neighbors of fishermen's wives were called to work as food servers. for those who have a sales stand at Lego-lego they deposit 30% of the sales proceeds to the manager. The workload for fishermen's wives is increasing, in addition to taking care of the domestic sphere, they also have to look for other sources of income by working. Women's dual roles are increasingly visible as a result of reclamation (10).

Furthermore, other jobs are used as side jobs by fishermen, some fishermen become land guards, from the GNTD Company, they are used as shields to protect GNTD land from claims or hoarding from outside parties. GNTD as the company that initiated the reclamation of Metro Road, until the time of field research, there are still many abandoned GNTD lands that have not been built, they employ several fishermen as land guards. GNTD's strategy to minimize the occurrence of land dispute conflicts, as discussed earlier, the conflict between landlord Dg Sikki and GNTD, each involving local residents, led to horizontal conflict among residents, resulting in the burning of a number of motorcycles. This is part of the company's strategy to protect its assets, by organizing thugs as shields (11).

Maintaining the work of fishermen and carrying out other economic activities outside of fishing is done by many fishermen in Lette village, they maintain their work as fishermen because there are still boat lanes and Rajawali fish auction. The condition of the waters for boat lanes is very concerning, during the dry season the waters will silt up, making it difficult for fishermen to go out to sea. The problem of silting water for boat lanes affects productivity to go out to sea, such conditions that many fishermen look for additional jobs as previously explained in the discussion above.

**Table 2: Community Economic Adaptation Strategies**

Category	Description of Adaptation
Changes in Fishermen's Profession	Many Mariso fishermen turned to the informal sector after reclamation. They lost their marine resources and the new jobs promised by the government were only partially fulfilled.

Informal Sector	Many reclamation victims are forced to work as construction laborers, street vendors, parking attendants, or other service workers. Their income is uncertain and depends on the economic conditions of the city.
Street vendors in CPI and Metro Road	Many reclamation victims become street vendors around CPI and Jln Metro, but they have limited space to sell and are often pressured by Satpol PP.
Maintaining Fishing Jobs and Engaging in Other Economic Activities	<ol style="list-style-type: none"> <li>1. Working as a construction worker during non-fishing season</li> <li>2. Trade in grilled fish or become a small trader.</li> <li>3. Become a parking guard, public transportation driver, or food stall waiter</li> <li>4. Serving at food stands in tourist areas such as Lego-Lego</li> <li>5. Work as a GNTD company land guard to secure property assets.</li> </ol>

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