Causal Factors in Resilience of Old Tambak Lorok Fishing Port in Semarang

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Abstract. Fishermen settlement of Tambak Lorok Semarang provides various facilities, including fishing port to support marine capture fisheries. An interesting phenomenon occurred in the fishing port of Tambak Lorok. Despite its poor condition with semi-permanent docks, fishermen still used it to auction off their catch down to date. In contrast, the new fishing port, which was inaugurated in 2007, was abandoned and collapsed right now. Looking at the phenomenon, it is necessary to conduct research to investigate causal factors in resilience of Tambak Lorok Semarang. The research employed descriptive qualitative method by analysing the existing condition in the field and interviewing local people and stakeholders. Results revealed two factors causing resilience of old fishing port: the community perception and the role of the fishing port as center of activity in fishing settlement.

Keywords: Resilience, Fishing Port, Tambak Lorok Settlement

1. Introduction

Tambak Lorok Semarang is a fisherman settlement that provides marine capture fisheries in the area of Semarang City. In order to support fishermen’s activities in the settlement, there are special facilities, including fishing port of Tambak Lorok. In a fisherman’s settlement, fishing port with its supporting facilities is crucial for carrying out auction of sea catches. Fishermen who want to auction their catch must dock at the fishing port, and then weigh their catch for auction at the fish auction place. An interesting phenomenon that occurs in the fishing port Tambak Lorok is the poor condition of the fishing port, with semi-permanent docks, but fishermen still continue to use it to auction off their catch. In comparison, the new fishing port was inaugurated in 2007, but only used 3 times after the inauguration [1]. Although the new fishing port was built with a complete and permanent facility located east of Tambak Lorok, it is abandoned and the building is collapsed right now.

Looking at the phenomenon, it is necessary to conduct continuous research to investigate the condition of fisherman settlement of Tambak Lorok so that it can provide guidance for its future development. In previous research, the usefulness of new fishing port Tambak Lorok was investigated, and results showed that the new fishing port was not efficient because of various reasons, including unsuitable location, large waves, the absence of post-construction infrastructure maintenance, as well as the orientation of the building that was directly facing the sea [1].
2. Methods
The purpose of this study is to determine the factors causing the new fishing port’s resilience in Tambak Lorok Semarang. Based on that objective, this research employed descriptive qualitative paradigm that is by qualitatively analysing existing condition in field from existing variables and taking primary data result from interview with informants. Interviewees included stakeholders at auction and residents in Tambak Lorok.

In formulating the research problem, a research question emerged [2]. The research problem is represented in the following question: “What are factors that cause old fishing port to be resilient and functioning?” That research question leads to the purpose and method that will be used in this research.

In collecting data regarding the resilience of a building, there are several contributing factors, including synergy, loyalty, activity, policy, and location[3]. In another opinion, resilience is an ability and capacity of society to withstand stress, survive, so people take action of adaptation, and rise again from crisis or disaster. Also some characteristics of resilience can be known if the identity persists in facing external and internal factors[4]. External factors here can be interpreted as pull factors, such as the environment, social life, and nature. On the other hand, the internal factors can be interpreted as driving factors, such as facilities and functions owned by a work of architecture[5]. This is consistent with the theory that a settlement will be strongly influenced by several factors, including: human, community, shelter, environment, and network[6]. This is also supported by the theory that the natural environment is the main capital in the development of infrastructure systems, which in turn the existence of infrastructure will sustain the economic system, and the economic system will sustain the social system[7]. Therefore, environmental conditions may affect the resilience of a building.

Figure 1. The condition of old fishing port

Figure 2. The new fishing port building was collapsed
3. Discussion
In this section, the data of variables that may affect the old PPI resistance will be discussed. The discussion begins with the presentation of data that will be directly analyzed.

3.1 Research Locus
Tambak Lorok settlement is located in Tanjung Mas Village, North Semarang Subdistrict. Tambak Lorok has been known as fisherman’s settlement since 1950 because of its location adjacent to the sea and the culture is passed down from generation to generation to date. The old fishing port Tambak Lorok that is located in the middle of the settlement can be accessed through the neighborhood and also through the river. The location of the old fishing port Tambak Lorok reviewed from the city of Semarang can be seen in Figure 3. The position of the fishing port is in the middle of the road in the fishermen neighborhood Tambak Lorok. In its surrounding, there is a traditional market and fish market. Here are the borders:

- North: Houses of Residents
- South: Houses of Residents
- East: Pier
- West: Road in the Neighbourhood

![Figure 3. Location of Fishing Port](image)

3.2 Fishing Port Building Condition
The physical condition of the PPI building is made of semi-permanent material that has been operating for decades. These materials include:
The physical condition of fishing port building can be seen in figure 4. Based on the observation and interview, the semi-permanent condition of the building at the fishing port Tambak Lorok is not an obstacle in conducting the auction. It is revealed that people remained enthusiastic waiting, followed the auction process and willingly stood or sit on the walls of the partition. However, some auctioneers wanted the fishing port to be expanded and built with permanent and good quality. This opinion could not be fully referenced, because the new PPI was built in Tambak Lorok with good building specification, but it was still not used. Based on this analysis, it can be seen that the current physical condition of fishing port building is not the cause of its resilience. Based on the analysis above, the culture and attitude of the user could be expressed as the local identity and social space of the settlement[8,9].

![Figure 4. Physical condition of fishing port](image)

### 3.3 Infrastructure

#### a. Access/Road

Access/road to the old fishing port can be seen in figure 5. From the picture, it appears that the access is less accessible, with pavement in the form of paving block, but the condition is often worsen by coastal flooding, which exacerbates road condition. Infrastructure towards and around the fishing port is inadequate, especially on road access to port environments that is not fully finished. The road surface condition is also uneven because the road is often submerged in coastal flooding and passed by transporting vehicles. In addition to the quality of the road, the width of the road is also inadequate, with a width of ± 5 meters plus fish market activities on the sidewalk, so that it is not possible for vehicles to pass the road. In addition to road access, the infrastructure that has a role in fish auction is fishing port, electricity flow, and water supply. In this case, the flow of electricity and water supply are adequate. However, the fishing port has a poor condition, because only in the semi-permanent material made of bamboo and wood. The condition of the fishing port can be seen in Figure 6.
b. Electricity network

The electricity network in Tambak Lorok has been sufficient. All houses and buildings have been powered by electricity. The installation of electricity network is not only in every house or building, but in street lighting. However, street lighting has little role in fishing port’s resilience, because the auction is in the morning and evening.

c. Water Installation

Tambak Lorok is at the outermost zone in North Semarang area, so it is directly adjacent to the sea. Therefore, the installation of clean water is from the state water company because ground water of Tambak Lorok has a less good quality coupled with the land subsidence that reaches >8 cm per year.

3.4 Accessibility

The location of fishing port is in the middle of Tambak Lorok fishermen settlement. This location facilitates the journey of the fishermen from their home and from the fishing boat docks. Despite the inadequate road conditions, the location of fishing port is considered strategic as it allows people to trade fish directly around the fishing port. The general market around the fishing port also supports this activity. The location of fishing port is at the center of activity that has a market, fish market, and fishing port itself, so that the facilities are mutually supportive of each other. The fishing port as the center of activity can be seen in figure 7.
3.5. Perception of local people or users

Participation is defined as a tool that is interpreted as an active community involvements in the whole process of activities as a growth cohesiveness [10]. Regarding the much participation of the users that the fishing port could be still functioned, the perception of the local people/users is a dominant factor in determining whether space can function properly or not. In qualitative research, the data in the form of direct interviews with informants in the field as the primary data that must gathered. In this study, the interviewees were the parties directly related to the activities in the fishing port, among others:

a. Fishermen
b. Traders/whole salers
c. Market traders
d. Local people

Some open questions were used to gather information from various sources. Questions directly lead to built-in background knowledge.

The functioning of a space depend on two factors, namely the pull factor is a factor of the physical environment that is happening and attracting people to conduct activities there. Another factor is the driving factor, which is the factor that pushes from within human to conduct activity in a certain space. The driving factor is commonly called the perception/perspective of a person or society in assessing environment and activities.

In the case of old fishing port in Tambak Lorok, it is known that it has inadequate physical condition and infrastructure, but the auction activity is still conducted there and even it is chosen over the new port, which is now abandoned despite its better building and infrastructure. Therefore, the data on the perception of society needs to be analyzed based on the results of interviews that have been gathered.

Based on the results of the interview, it is revealed that:

a. Public perception of the condition of the fishing port

Based on public opinion, the fishing port condition cannot be developed anymore. This can be indicated from the interview answer: “This has happened since long time ago.” Therefore, people actually realized that the condition of fishing port was not adequate and not ideal, but it could not be developed for certain reasons. The old fishing port cannot be developed due to illegal land tenure [1]. This forced people to conduct activities with the existing facilities in order to continue running the fisherman’s settlement system in Tambak Lorok.

b. Public perceptions of the abandonment of the new fishing port and the resilience of old fishing port.

The new fishing port was built and inaugurated by the Central Java Provincial Government in 2007, but it operated in just two days and then it did not operate again. This situation certainly raises a question on why it could happen. In terms of physical architecture, it is revealed that the location factors, such as its direct proximity to the sea, the waves, and shallow mooring contribute to the non-functioning of the new fishing port.

c. Public perception of the supporting infrastructure of the fishing port.

Based on the results of interviews, the public perception of supporting infrastructure of the old fishing port is that supporting infrastructure and facilities, such as road, lighting, drainage, and clean water are less adequate and less ideal. This is known because the residents and users of old fishing port deplore the bumpy road conditions that have to be elevated periodically. This shows the poor quality of infrastructure, especially the road as the main access to the fishing port. Despite such inadequate conditions, residents and stakeholders of auctions in the fishing port remain interested and participate in auctions routinely. In fact, there are some people who were not bothered by the road condition that was muddy and bumpy by walking down the road on foot.
4. Conclusion

4.1. Conclusion

The analysis showed the dominant causal factors of resilience of old fishing port in Tambak Lorok, among others:

a. Public perception
   Public perception showed that the community of auctioneers (fishermen, traders, middlemen, managers) were accustomed to facing the situation that occurred in the old fishing port in Tambak Lorok. Programs and systems that had been established in the fishing port had worked for decades and involved various parties that continue to exist every day. This perception can be influenced by several factors, such as revenue (financial gain) and education level. This is a strong cause of the longstanding function of the old fishing port in Tambak Lorok.

b. The fishing port as the center of activity in fisherman's settlement
   The location of old fishing port is a contributing factor to its resilience. This is because the old fishing port is a powerful magnet that has been formed since the beginning of Tambak Lorok fishermen settlement. This is proven by the fishing port, fish merchants surrounding, and also growing market that provides basic needs for people around the old fishing port.
   The fishing port is also accessible from the homes of the majority of fishermen, making it easier for them to rest when landing after auctioning their catch. One of the fishing port facilities that support its survival is the quiet dock that is far from large waves, thus the fishing boats do not crash into each other when anchored. This is important because the dock in the new fishing port becomes one of the reasons why the fishermen do not want to dock there as the waves were too large.

4.2 Recommendation

Based on the results of the study, the author proposes some recommendations, among others:

a. In designing the fish auction place of Tambak Lorok, it is necessary to take into account the public perception and the role of the fishing port as center of activity.

b. Further research is necessary in order to investigate influencing factors of public perceptions in Tambak Lorok with quantitative method to support previous research.

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