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Social and ecological impacts after normalization of the Banjir Kanal Barat River for communities around North Semarang

Dampak sosial dan ekologi pasca normalisasi Sungai Banjir Kanal Barat bagi masyarakat sekitar Semarang Utara

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Abstract
In 2010, the Semarang government normalized the Banjir Kanal Barat River by dredging and widening the river and managing spatial planning by adding a waterfront. The purpose of normalization is to increase the water discharge capacity so that it can accommodate water flow from three rivers (the Kreo River, the Kripik River, and the Garang River). The focus of this study is to identify social and ecological impacts after the normalization of the BKB River. This study uses qualitative methods with data collection techniques carried out through observation, in-depth interviews, and documentation. The informants in this study numbered seven people, consisting of officers (managers of the BKB Weir and cleaning officers), RW heads, the community, and visitors. The results showed the impact on social aspects, namely that the community has new public spaces, brings economic opportunities, strengthens social solidarity through river mutual aid activities, and, after normalization, the BKB River area becomes prone to crime because the streets are quiet plus there is poor lighting. The ecological impact is the use of land on the banks of the BKB River for fish farming and agriculture. People's behavior in seeing rivers is formed from the interactions they carry out at the individual level, so people have various perceptions in looking at the river, as mentioned above.

Keywords: social and ecological impacts; post-normalization; Banjir Kanal Barat River; community life

Abstrak
Pada tahun 2010 pemerintah Semarang melakukan normalisasi kembali Sungai Banjir Kanal Barat dengan cara pengerukan dan pelebaran sungai serta mengelola tata ruang dengan menambah Waterfront. Tujuan dari normalisasi yaitu meningkatkan kapasitas debit air sehingga memiliki kemampuan menampung aliran air dari tiga sungai (Kali Kreo, Kali Kripik dan Kali Garang). Fokus dari penelitian ini yaitu mengidentifikasi dampak sosial dan ekologi pasca normalisasi Sungai BKB. Penelitian ini menggunakan metode kualitatif dengan teknik pengumpulan data yang dilakukan melalui observasi, wawancara mendalam, dan dokumentasi. Informan dari penelitian ini berjumlah tujuh orang yang terdiri dari petugas (pengelola Bendung BKB dan petugas kebersian), ketua RW, masyarakat, dan pengunjung. Hasil penelitian menunjukan dampak pada aspek sosial yaitu masyarakat memiliki ruang publik baru, mendatangkan peluang ekonomi, memperkuat solidaritas sosial melalui kegiatan gotong royong sungai, dan setelah normalisasi area Sungai BKB menjadi rawan kriminalitas karena jalanan sepi ditambah penerangan yang kurang. Adapun dampak ekologis yaitu pemanfaatan lahan tepian Sungai BKB untuk budidaya ikan dan pertanian. Perilaku masyarakat dalam melihat sungai terbentuk dari interaksi yang dilakukannya dalam tingkat individu, sehingga masyarakat memiliki beragam persepsi dalam memandang sungai seperti yang disebutkan di atas.

Kata kunci: *dampak sosial dan ekologi; pasca normalisasi; Sungai Banjir Kanal Barat; kehidupan masyarakat*

Introduction

Semarang is one of the many cities in Indonesia that has problems with flooding. Especially the lower part of Semarang, which is often affected by floods, whether it's during the rainy season with seasonal floods or in the dry season due to sea tides plus a ground level that is lower than sea level, better known as Rob (Kusumaning & Feronika 2014). Semarang has experienced floods for a long time, in its history, major floods in Semarang occurred in 1973, 988, 1990, and 1993 when the Garang River was overcrowded with water capacity so the surrounding area was affected by major floods. The result was that hundreds of houses sank with water levels reaching two meters and claiming the lives of up to about 47 people (Widyanti et al. 2014).

Since the time of the Dutch rule, flood mitigation efforts have been carried out, at that time the Dutch built two large canals on the west and east of the city of Semarang (Hakam 2018). The Western part (Banjir Kanal Barat) was established based on flood anticipation in North Semarang which at that time became the center of trade activities. Meanwhile, the Eastern side (Banjir Kanal Timur) was built to anticipate the East Semarang area from flood sweeps. However, initially the Dutch built the Banjir Kanal Barat and Banjir Kanal Timur to drain water from the upper Semarang area (Ungaran foothills) to the sea (Suliyati 2014).

Massive population growth coupled with urbanization makes the city of Semarang a densely populated city that requires the expansion of residential areas (Prayojana et al. 2020). The expansion of settlements in the city area resulted in a reduced green area that is a source of water infiltration so there was a large overflow of water (Pratiwi et al. 2020). The Banjir Kanal Barat River is used to accommodate the rise of water from the upper Semarang area as well as drainages in the city of Semarang. The river is the meeting point of the river flow, namely the Kreo River, Garang River, and Kripik River. When the rainy season arrives, the river is unable to hold the entire water, causing flooding. Based on this case, the Semarang city government then made efforts to normalize the Banjir Kanal Barat River. The method carried out is dredging and widening the river to increase the water discharge capacity of the Banjir Kanal Barat River. This is done so that the Banjir Kanal Barat River (BKB) can accommodate the flow of water from the three rivers so that it does not overflow into the land area (Widyanti et al. 2014).

Normalization of the river is carried out by installing concrete on the left and right sides of the river so that water can be directly emptied into the sea. The river bank, which was originally used by the community as a selling area, is now after the development project to become a more organized Waterfront area. During the process of building the riverside area, the government relocated traders to tidy up the riverside layout a result of which around 500 street vendors were displaced. Ironically, the traders did not receive any compensation or anything like that from the relevant parties for the development activities, and the relevant parties were less responsible (Budoyo et al. 2014).

River normalization is an old technique that is often applied by the Indonesian government to overcome flood problems. This is done in a way so that water can be directly emptied into the sea. The normalization carried out by the Government does not only aim to overcome the problem of flooding. Instead, the government is also trying to build a new tourist destination for the community and make the new face of the Banjir Kanal Barat River bank an attractive area. The est Canal Flood River then became a public space with the addition of a green area, a jogging track to a dancing fountain on the Semarang Bridge Fountain bridge so that it further beautifies the Banjir Kanal Barat River (BKB) which is a street to the Semarang City area (Widiantara et al. 2020).

It is undeniable that river normalization activities certainly give rise to various kinds of changes, whether they occur in people's lives or the physical environment of the river. Changes that occur in the realm of people's lives can be seen in economic, social, ecological, and cultural aspects. However, it should be noted that the implementation of river normalization policies does not always cause positive changes. Normalization can also cause structural problems such as normalization that still does not have a mature policy that does not consider the interests of the lower society and environmental sustainability. Just as normalization is carried out right in the middle of densely populated settlements.

To support this research article, the researcher attached several previous studies to provide an overview of the theme of this study and to avoid similarities in previous research studies. First, research conducted by Irvan Nurawaludin and Adi Susetyaningsih (Nurawaludin & Susetyaningsih 2021) in the journal explained that the Citarum river normalization project had a positive impact in the form of business opportunities for the surrounding community such as grocery stalls, tire patches, and workshops. Meanwhile, the negative impacts include decreased air quality, concerns about heavy equipment that threaten the safety of residents, traffic disruptions, and noise caused by development projects. The study discusses the impact of the ongoing river normalization project, while this study discusses the post-normalization of the river.

Second, research conducted by Siti Murniningsih and Alfisalam Ghifari Mustaf (Murniningsih & Mustafa 2019) a explained that normalizing the river using twin reservoir techniques by installing traps, solidifying cliffs on both banks of the river, cutting meander turns and straightening river grooves will affect the ability to transport sediment in the downstream area. So that in the future there will be a buildup of sediment transportation. Trimming the meander groove results in a reduced river length and will increase the slope of the river and the speed of the river will decrease and result in erosion. The research discusses the ecological impact of rivers after normalization, while this study examines social and ecological impacts on the community so that the differences in research can be seen in the aspects that are the focus of the study, namely the community.

Third, the thesis of Arief Subangkit explains social changes in the structural dimensions after the normalization of the Ciliwung river including changes in livelihoods, changes in roles in the community environment, changes in daily activities, and changes in the use of social institutions. Fourth, research by Rizkya Ayu Puspitasari (Puspitasari et al. 2015) The research explains the development of normalization with the concept of spatial planning (Semarang New Waterfront) creating public spaces that bring changes in various sectors ranging from cultural, economic, and social. However, besides that, there are still some shortcomings, namely the lack of supporting facilities such as parking areas, public bathrooms, and merchant areas.

Based on the previous studies above, there has been no specific research discussing the relationship of community behavior with rivers, especially using the theory of symbolic interactionism. This research seeks to analyze the sociological aspects regarding the relationship of rivers as a physical environment that is closely related to the community around the BKB River. So, the research focuses on the behavior patterns of people. The social impact is seen from the pattern of community behavior towards the river area (post-normalization) using the analysis of symbolic interactionism theory. This study emphasizes more on the symbolic meaning of society in seeing nature, especially rivers that are the object of the community itself. The purpose of this study is to analyze people's behavior toward rivers on the symbolic meaning of individuals. The ecological impact is seen in terms of the physical environment of the river and its benefits for the surrounding community.

Research Method

The location of this study is the North Semarang area on the Banjir Kanal Barat River, precisely the normalized part, namely in the Simongan Weir downstream. In the Banjir Kanal Barat River, channel four bridges serve as highway links and one bridge for the railway line.

The type of this study is qualitative, where the data and results of the study produce descriptive data in the form of written words instead of numbers. The data source used is obtained from primary data and secondary data. The primary data comes from the object under study while in the field. While secondary data is data that is not directly related to this study, namely in the form of journals or literature regarding the object of study. Secondary data is used as a complement to primary data so that it can be a reinforcement for this research.

Data collection techniques through observation, interviews, and documentation. Observations were carried out by observing the condition of the BKB River starting from the Simongan Weir to the downstream area. The number of informants in this study was seven people including officers, the head

of RW (Hamlet), the public, and visitors. Interviews were conducted with the BKB River management and head of RW using in-depth interviews so that the resulting data illustrates clear and complete information. The position of the BKB River management and the head of RW is as a key informant, chosen as a key informant because they know information related to actual field conditions.

Furthermore, in-depth interviews were also conducted with the surrounding community and visitors to the BKB River to obtain information related to experiences experienced by individuals. The surrounding community (two people) and visitors (two people) interviewed were chosen deliberately by considering the experiences he had so that he could see the reality from the side of society. Meanwhile, documentation data is taken to strengthen data from the results of observations and interviews that researchers have conducted. Furthermore, the data were analyzed using the Miles and Huberman model (Abdussamad 2021) that is, data reduction, data presentation, and finally conclusion. Data reduction is sorting data related to the research theme and simplifying the data. Next is the presentation of data by systematically compiling data, and presenting data in the form of coherent information so that it is easy to understand. The final stage is to conclude all these processes.

Results and Discussion

Banjir Kanal Barat River overview

Normalization of the Banjir Kanal Barat River is one of the national strategic development programs that has been restored along approximately 9.2 KM by making the river a new tourist attraction for the community (DP & Martini 2014). The BKB River is included in the national development mega project initiated by the Ministry of PUPR together with the Semarang City Government. Policy implementers in the management of BKB River normalization include BBWS Pemali Juana and contractors from the private sector, namely Waskita Karya, Brantas Abipraya Wijaya join operations, CTIE supervisory consultants and associated and supported by the PSDA and ESDM Office of Semarang City. Development funds came from the State Revenue and Expenditure (APBN), the Regional Revenue and Expenditure Budget (APBD) of Central Java Province, the Regional Revenue and Expenditure Budget (APBD) of Semarang City, and assistance from the Japan International Corporation (JICA) amounting to 288.8 billion (Widyanti et al. 2014).

The BKB River has the main function of the city's central drainage channel as flood control. However, the river does not function properly due to sedimentation which causes the volume of spool water to decrease. As a result, some time ago there was a flash flood that hit the surrounding area. Therefore, in 2010 the government normalized to restore the function of the origin of the BKB River. In addition to the main reason for the normalization, the area around the normalization is also used as a community entertainment center area. This is appropriate in Semarang City Regional Regulation No. 14 of 2011 (Kismartini et al. 2018) About the Semarang City Regional Spatial Plan for 2011-2031, which states that the development and improvement of marine tourism in North Semarang District, Genuk District, District, West Semarang District, and Tugu District. This means that the BKB River is classified as a water tourism preference area that favors nature. The development will have an impact afterward, including the normalization of the BKB River. The following is the impact on people's lives after the normalization of the Banjir Kanal Barat River on social and ecological aspects.

Post-normalization social impact

Waterfront development in the BKB River area can present a new space for the public, especially as a space for communication and community interaction. The area can provide aspects of comfort, cleanliness, and health for the community (Ramadhan et al. 2020). The results of the research data show that the comfort aspect can be seen from the availability of supporting facilities such as chairs and a large area. This was conveyed by the following informant "I am happy that there is this place, where people can enjoy or see the water by sitting casually while drinking or snacking. It's also a wide place here so kids can be free to play." (Informant YAN). Almost along the road waterfront area can find street vendors that sell a variety of food and drinks. In the Simongan Weir area, visitors can sit and enjoy the beautiful scenery in the form of a river flow with a green atmosphere from the trees.

From the aspect of cleanliness, the Simongan Weir section is quite clean with the availability of a decent landfill. Unlike the case with those in the body and downstream of the river. The results of the observations showed that along Kokrosono Street, there were several points of scattered garbage mounds. This is due to the lack of trash cans there so garbage is scattered and there are piles of garbage in some areas. However, if you look carefully, the types of waste in the area are classified as home waste including baby diapers, clothes, bottles, plastic soap products, etc. Such cases show that the waste comes from the people of the area itself not just garbage from visitors. The lack of awareness from the community is an important point why the pattern of garbage disposal behavior still occurs.

Littering behavior can be studied according to the view of Blumer's Theory of Symbolic Interactionism. Blumer posits that meaning is formed from the interaction of the individual with others and in the process, the most influential interaction comes from the people closest to the individual (Chadijah 2017). In this case, people's behavior is formed because, before normalization, the community had a habit of littering on the banks of the river. This also sticks until after normalization. The experience experienced by the individual then becomes the knowledge he believes in, as stated by the BKB informant as a weir manager "in the past, yes, there were people who threw garbage around the river, now there are still people but it has begun to decrease. Try it later it can be seen by yourself there." (Informant BKB).

Blumer's analysis does not just stop at individuals, it continues interactions between individuals (Nurmala & Taher 2018). Individual social behavior can affect ecological sustainability, because according to Blumer in his concept "significant others" suggests that individuals will act like other individuals' behavior on something, in this case, littering behavior. The ecological sustainability of the river at the initial level depends on the individual, especially on the scale of the group, namely the community. If society continues to behave in this way, then it will be like waiting for a time bomb to suffer natural damage that will become a boomerang for the community itself. In line with the behavior of people littering, the Ministry of Environment once measured the behavior of people's concern for the environment, the results showed indications that the Indonesian people do not yet have a behavior of caring for the natural environment (Musthofa et al. 2017).

As explained above, there are still a handful of people who are less concerned about the river environment. However, many people still care about and preserve the river environment. This was conveyed by the local RW chairman, as follows "after the construction of the place is good and organized, the community here has a gotong royong (mutual cooperation) activity to clean the river with trees. Yes, that's how it's six months." (Informant REN).

According to the head of RW after normalizing the river, there are new activities that arise from a sense of concern for the environment from the community, namely routine activities of mutual cooperation to clean the river (gotong royong sungai) and plant trees which are carried out almost every 6 (six) months. Gotong royong carried out in preserving nature becomes so interesting because various aspects in it are integrated. Starting from the way the community preserves nature based on culture (gotong royong) by involving social aspects, namely community social solidarity. The basic idea of social solidarity according to Durkheim is realized because of the similarity of values (Kumalasari 2017). The value shared by the community in this context is to clean up the river environment. When viewed from the period of river mutual aid activities carried out by the community, it is still less than optimal. Because the distance between the activities is felt to be too long because they see the condition of the people who are still littering.

In the health aspect, it is seen from the side of the usefulness of the Waterfront for sports activities. Sports that are often done include jogging, gymnastics, and football. As one of the visitors put it, as follows "I'm usually here for running anyway, sports are so good. The place is good, delicious, comfortable if you make sports. Moreover, running around beside it, there is a river, the atmosphere is cool." (Informant NAD). The making of the BKB River Waterfront also brings business opportunities for the surrounding community, because the community uses the place to trade food or goods. In addition to trading, people also get other jobs such as becoming janitors at BKB.

In addition to having a positive impact, there is a negative impact after the construction of the Waterfront in the BKB River area. According to the observations, spatial use has not been fully optimal, such as the activities carried out by the community are not diverse due to the lack of management and support from the city government in the form of consistent procurement of activities or events. One of the informants explained as follows "in my opinion, the shortcomings of the BKB are that the parking lot is not organized even the parking lot is on the side of the road just right, and the decoration has begun to be damaged. Maybe that's it." (Informant ZUL). Another problem related to land use is the unavailability of proper parking spaces and the absence of street vendors-related arrangements around the BKB River area such as the provision of stalls for traders. In addition, some facilities have begun to break down such as decorations around the Waterfront.

According to Nicholas Falk (Zain 2022), there are three basic rules in the arrangement of the Waterfront, namely the charm offered, easy access, and space that can trigger various community activities. In connection with this principle, the BKB River is enough to offer attractive public spaces for the community and has easy access. The charm offered is in the form of a dancing water show with an entrance fee waiver. However, on the other hand, the value of space use is still not good, the government should be able to develop the BKB Waterfront area as an area densely packed with community activities. For example, holding regular events in the form of festivals, bazaars, exhibitions, and cultural studios or also adding facilities such as micro libraries, camping zones, and water sports or water transportation facilities.

Another problem that arises after normalization is successfully resolved, is the BKB River area, especially north of the railway bridge, namely the BKB Waterfront area around Jalan Kokrosono at night is quiet from community activities, causing criminal problems. Waterfront conditions that tend to be dark coupled with inadequate street light lighting make the area prone to crime. According to (Nanda et al. 2019). Location also has an effect in triggering crime, for example in poorly lit places at night. The community regrets the condition of the BKB River which tends to be dark at night. According to people's narratives, sometimes when they come to see a dancing water show, there is a sense of worry. Because of the dark place in the Waterfront BKB, there are often drunk, homeless people and young people dating.

> "I am just happy that there is this dancing water, I can see the free water attractions, and there is a colorful light effect. But here the conditions of the place e rada are dark (conditions at night), I whose house is not far from here am sometimes worried if I come here when watching the water dancing. Yes, because there are usually people who are drunk and there are vagrants." (Informant SAN).

BKB River as the new face of cheap tourist destinations in the urban area of Semarang proves that after normalization there is a good development when assessed from the aspects of comfort, cleanliness, and health. Despite its success, some issues need to be considered by the government regarding the functioning of spatial governance, community activities related to useful activities, adequate facilities, and security that need to be considered so that people's enthusiasm continues to grow. Tourism also influences economic opportunities, especially for the surrounding community which is especially able to make good use of existing economic opportunities.

In line with Spillan's statement (Rahmah 2017) that tourist activities can provide a variety of advantages as well as disadvantages. The perceived economic benefits are in the form of strategic places for traders and available jobs. Losses can arise when people are too late in profits to forget to maintain the integrity of the river environment. After the normalization of the BKB River, a sense of social solidarity in the community began to form, as evidenced by the gotong royong river activities they carried out to keep the river clean and sustainable. The value of solidarity embedded in the gotong royong river activity is that the community has a common taste which then makes the community move to distribute their energy assistance for the sustainability of nature.

Post-normalization ecological impact

In addition to having an impact on social aspects, after the normalization of rivers, it also has an impact on ecological aspects for its people. Especially in communities located in the lower reaches of the BKB River. In supporting human life, water is something very important considering that all activities carried out by humans are always related to water (Sidqi 2016) Such as food production, tourism, daily activities, and much more. Of all the water on earth only fresh water is most often used such as surface water in rivers, lakes, or swamps (Haddade 2016). Water optimization by communities around the BKB River is carried out by utilizing river water for fish farming and agriculture.

Types of fish that are farmed include tilapia, catfish, carp, and gourami. The results of these cultivations are used by the residents themselves for family consumption and some are sold. However, behind its use as a fish farming location, there are quite concerns. The observation results show that the water in the BKB River area experiences turbidity and sedimentation that is quite high. Sedimentation is at a certain point of the river including near the Simongan Weir and the lower reaches of the BKB River.

According to a 2014 study conducted by Destia Ayu Kusuma Wardani (Wardani et al. 2014) that the results of the analysis of heavy metal Pb found in aquatic sediments in the BKB estuary are quite high. If humans consume organisms in polluted waters, it will harm the body (Purnamasari et al. 2014). A similar study was also conducted in 2016 (Sari et al. 2016) by Devi Asmiyatna Sari et al that the water quality index value in the BKB river is considered in category 1-5 which means that the waters are very clean to be heavily polluted. From this figure, it can be concluded that the water in the BKB river is not good if it is used as a fishery.

In 2018 also conducted research by Rizka Ummi Arofah (Arofah et al. 2018) shows that the BKB river part of station 6 (six) is classified as "moderate" polluted than at stations 1 (one), 2 (two), and 3 (three) including "heavy" polluted. From the results of the description of some of these studies, it is hoped that stakeholders will make efforts to improve water quality so that the community can avoid the dangers caused. Or at least there are socialization efforts regarding the dangers of water pollution in the BKB river.

The BKB River is one of the rivers that have the potential to be an intermediary for waste carriers classified as heavy metals. According to Bappeda, this comes from industrial activities in the Kimia Farma and Paphros industries, PT. Daimatex, Sinar Panca Jaya and Panca Tunggal (textile industry), PT. Raja Besi (metal and machinery industry), and PT. Queen Kramik and Alam Daya Sakti (ceramic industry). In line with Arne Naess's deep ecology view that humans are the cause of the destruction of nature. Most humans have an exploitative and separate perspective on nature from human entities so they tend to be destructive.

Not only limited to fish farming, but people in the downstream area also carry out other activities, namely farming around the Watershed. Plants cultivated by the community include cassava, papaya, banana, and chili. Furthermore, the community uses the results from agriculture, for example, cassava which is processed into chips and then sold to increase income.

The use of rivers for fisheries and agriculture indicates that the community interprets rivers as objects of orientation towards a value. According to Mead in his concept of "self" the individual can internalize experiences so that they have an effect on their actions as well as put themselves the same as objects. Thus, the individual can also calculate the benefits for himself (Azizi et al. 2022). Almost in line with Blumer's thinking (Niadi et al. 2023) The theory of symbolic interactionism emphasizes behavioristic where the interaction carried out by the individual affects the meaning and behavior of a person. It should be noted that the interaction that occurs is not only communication between people as usual, but also in aspects such as expression, body movements, and sounds. Utilization is the activity of using something that is then able to bring value afterward. Here the use of rivers carried out by the community is a symbol that has meaning or meaning.

Based on Blummer's assumptions in the theory of symbolic interactionism how individuals have meaning over interactions and then behave based on the understanding that other individuals usher in (Arni 2021). The findings of the data show that the use of rivers carried out by the surrounding community is an activity that has been carried out before the normalization of the river. So that the people below him follow what his previous people did. The activities of utilizing rivers for agriculture and fisheries were practiced by their predecessors so that they were later agreed to become commonplace and mutually agreed upon by the surrounding community.

Rivers are strategic natural resources because they have various benefits (Mokodongan et al. 2014). Not only limited to rivers, but also to the riverbank area, especially for people living around the river area described above. However, the existence of rivers is not always beneficial if it is not balanced with control, management, and supervision from both the community and those who have responsibilities such as the government. Rivers contribute to economic development and at the same time can pose a significant threat to the sustainability of nature. Economists have long been attracted by the complexities that exist in aquatic ecosystems, such complexity comes from individual characteristics. Man cannot deprive himself of the pleasure of the benefits produced by nature. The benefits produced by nature are related to the use value produced by environmental goods. The existing values can be directly related to ecosystem services provided by natural resources and in the context of this study is the BKB River (Koundouri et al. 2016).

Complex problems can arise when there are social and physical interactions (nature) such as environmental damage due to human behavior such as utilization that is not balanced with preservation, excessive pollution, and river engineering development (normalization). Integrating social aspects with ecology and consideration of cultural aspects of the surrounding community may play a key role in an ecosystem (Ching & Mukherjee 2015).

Conclusion

After data mining, it can be concluded that there are social and ecological impacts after the normalization of the Banjir Kanal Barat River for the surrounding community. Social impact is a means of strengthening community social solidarity through river mutual aid activities, public spaces for community activities, and recreational areas, becoming a place that brings business opportunities such as selling activities and being able to provide jobs such as being a BKB janitor. There are also negative impacts after normalization, namely the vulnerability of criminality arising from deserted streets plus poor lighting on the waterfront of the BKB River. The ecological impact is the use of BKB riverside land for fish farming and agriculture. However, behind the use of fish farming by the community, there is one thing that needs to be seen, namely that river water in the BKB area is alleged to be polluted so that when used for fisheries it will endanger the people who consume the fish.

The behavior of throwing garbage is analyzed using the theory of symbolic interactionism that the meaning is formed from the interaction of the individual towards others and in the process, the most influential interactions come from the people closest to the individual. People's behavior was formed because, before normalization, the community had a habit of littering on the banks of the river. This also sticks until after normalization. The experience experienced by the individual then becomes the knowledge he believes in. Blummer's assumption in the concept of significant others is that individuals will act like other individuals' behavior over something, in this case, it is littering behavior. The sustainability of nature depends on the behavior patterns of society in treating nature, at the initial level it depends on the individual level, especially on the scale of the group, namely society.

Researchers have recommendations to overcome the Semarang flood problem, namely first, protection by developing better drainage. Second, the government and the private sector jointly manage the water pump system at the village or sub-district level. As researchers know that water pumps in the village area near the BKB River are managed independently by the private sector with funds from the community itself. Third, for tidal flooding, the solution is to plan the spatial layout of coastal areas based on the environment and reforestation (mangroves) in coastal areas with a note that they must monitor and

monitor their growth so that the results obtained are appropriate. Fourth, groundwater intake is firmly managed by the government, so it is hoped that the speed of land subsidence can slow down.

The analogy is that the government can buy time by preparing solutions and anticipating them so that they will not be repeated in the future. Furthermore, for water pollution problems, the recommendation given by researchers is to filter wastewater from industry until it is feasible to then forward it to the river. Regarding the optimization of public space for the BKB River Waterfront, the government together with local communities or organizations can work together to increase activities so that it is expected to be a trigger for the community to carry out useful activities.

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