

## **Social Relations and Community Response to River Water Pollution in Batang Arau Village, Padang Selatan Subdistrict, Padang City, West Sumatra Province**

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### **ABSTRACT**

*The Batang Arau River System is one of the rivers in Padang City that is experiencing pollution. The Batang Arau River was used as a source of clean water for the community that was used for bathing and washing, but currently, the river can no longer be used by the community because the river water is polluted. This is because of the lack of public awareness of the importance of maintaining the cleanliness of river water. In fact, the river is a source of water that is greatly needed by the community, and its cleanliness must be maintained. This study aims to analyze social relations and community responses to river water pollution in Batang Arau Village, Padang Selatan District, Padang City, West Sumatra Province. This study uses Berger's and Lukman social construction theory, namely that reality is formed socially and socially reality as a process through human actions and interactions. Social reality is not objective or independent, but the result of construction through social interaction. This study used a qualitative approach with descriptive statistics. Data collection methods included document studies, non-participant observations, and in-depth interviews. Data analysis was performed using the Milles and Huberman (1992) model, which is carried out in several stages: data collection, data reduction, data presentation, and drawing conclusions. Based on the results of the study, it can be concluded that in social relations of the community due to water pollution of the Batang Arau River, there is a conflict between communities living around the river where people who are less concerned about the cleanliness of the river water throw garbage carelessly into the river so that other people feel disturbed because of the impacts caused, such as garbage scattered on the banks of the river and even causing flooding when it rains. Then, there is a change in the pattern of community interaction, which is used to perform activities such as bathing and cleaning in the river, and it is no longer done because of river water pollution. The community's response to the water pollution of the Batang Arau River is the first to remind each other not to throw garbage into the river. Second, the community adapts or adjusts to river water pollution, which is used to use river water for bathing and washing, then switches to using drilled wells, rainwater that is collected to perform activities such as bathing or washing. Third, the community strongly supports the efforts of the government to deal with the problem of water pollution in the Batang Arau River, such as participating in river cleaning activities, supporting government efforts related to dredging mud and sediment so that the river looks clean, and participating in socialization related to the prohibition of throwing garbage into the river. Therefore, we must raise awareness about the importance of maintaining the cleanliness of river water, so that it can be maintained, and the importance of cooperation between all parties, both the community and the government, to create clean river water.*

**Keywords:** Social Relations, Community Response, River Water Pollution

## INTRODUCTION

Environmental pollution is a problem that attracts the attention of the world, including Indonesia. Environmental pollution is a condition in which the entry or inclusion of living things, energy substances, or other elements into the environment or changes in environmental order caused by human activities or by natural processes result in environmental quality decreasing to a certain level, which causes the environment to become less or no longer useful (Alek, 2021).

Translated with DeepL.com (free version): One of the problems related to environmental pollution is water pollution. Water is one of the most important requirement of living organism, including humans. This is because water is useful for the survival of living organisms and must be of good quality and quantity (Yayu Sriwartini & Gita Safitri, 2022). Thus, if there is no water, living organisms cannot survive. Water sources can come from groundwater and surface waters, such as seas, rivers, and lakes (Nakray, 2021). However, many water sources on earth are polluted, one of which is rivers.

Translated with DeepL.com (free version) According to (American, Nov, & Granovetter, 2019) rivers are large and long waterways that flow continuously from upstream (source) to downstream (estuary). Rivers are among the largest suppliers of water for living things: however, there are still many polluted rivers (Ganiem & Agustina, 2023). Rivers are one of the most important aspects of human life. Water is one of the basic human needs that cannot be replaced, both domestic and non-domestic, so that without water, humans cannot survive. According to (Waymer & Logan, 2021) rivers have benefits as a means of transportation, power generation, irrigation facilities, drinking water supply, industrial needs, tourism, fisheries development, and sewers to accommodate sewer water and waste-water from agricultural areas. Therefore, the community must maintain the cleanliness of river water so that it is not polluted and can continue to be utilized for various purposes. Unfortunately this expectation does not match the reality in the field. There are still many polluted rivers in Indonesia that are polluted (Siska & Irwan, 2020).

Based on data from the Ministry of Environment and Forestry, it was noted that of the 564 river points in Indonesia experiencing water pollution, including 59% heavily polluted, 26% moderately polluted, and 8.9% lightly polluted, the majority of river water pollution comes from industrial waste and domestic or household waste. Industrial waste originates from industrial production activities (Irwan, Mobo, et al., 2022). Meanwhile, domestic waste or household waste comes from daily household activities, such as food waste, plastic packaging, used paper, used bottles and cans, and household chemicals that are no longer used. River water pollution is often caused by human activities that are carried out without consideration of the conditions and situations, such as throwing garbage in the river and washing clothes using chemicals. In addition, the high population coupled with the large amount of packaged food that encourages the generation of garbage and household waste forces people to make the river the final disposal site for waste (Gesualdi, 2019).

One of the provinces in Indonesia that experiences environmental problems such as river water pollution is West Sumatra, especially in the city of Padang. Based on data from Bappeda Padang City, there are no less than 23 rivers with a total length of 155.40 km (10 large rivers and 13 small rivers) and 6 (six) watersheds, namely, the Air Dingin, Air Timbalun, Batang Arau, Batang Kandis, Batang Kuranji, and Banana River watersheds (Irwan, Zuzmelia, Virginia, Amelia, & Siahaan, 2022).

One of the most polluted rivers in the city of Padang is the Batang Arau River. Based on data from WALHI West Sumatra, the Batang Arau River is one of the largest rivers in the city of Padang, precisely located in Batang Arau village, Padang Selatan sub-district, Padang City, West Sumatra Province. The Batang Arau River has a length of  $\pm 29.72$  km and watershed area of  $\pm 172$  km<sup>2</sup>.

Based on the results of observations and interviews, the majority of Batang Arau River water pollution comes from garbage or household waste. In the river, a lot of plastic waste is thrown into the river. Plastics are one of the most widely used materials for various consumer products such as food packaging and household appliances (Swann, 2019). This is also in accordance with the Nusantara River Expedition Team Research with WALHI West Sumatra, who found that microplastic waste polluted the Batang Arau River in Padang City. The results of the water quality testing in the Batang Arau River prove that this discovery is related to the geographical location of the river, which crosses various residential, industrial, mining, and plantation areas. Based on the interviews, waste disposal in the Batang Arau River reaches half a ton per day. So it is not surprising that the Batang Arau river has become polluted and people can no longer utilize the river water for their needs (Irwan, Zuzmelia, Siska, Melia, & Faita, 2023).

Based on the results of interviews, the use of Batang Arau River water for the surrounding community is that this river water used to be used by the community for bathing and washing, but because this river water has been polluted so that the surrounding community can no longer use the river for bathing or washing. This is in accordance with the Government Regulation of the Republic of Indonesia number 32 of 2001 concerning

Water Quality Management and Water Pollution Control, which means that water pollution is the entry of living things, substances, energy, or other components into water by human activities so that water quality has decreased to a certain level, which results in water not being able to function according to its designation (Arief & Saputra, 2019). Poor water quality will affect the living environment, which will also become bad, thus affecting the health and safety of humans and the lives of other organisms (Rahawarin, 2018). Declining water quality will also reduce the use value, use results, productivity, and carrying capacity of water resources, which will damage the wealth of natural resources (Sugierster S et al., 2021). industrial, domestic, and other activities that can have a negative impact on rivers (Mitchell et al., 2021).

In addition, based on the results of the interviews, Batang Arau River water pollution also causes flooding when it rains. Where the Batang Arau river water will overflow which carries waste material to the land with a height of about 0.5-1 m. Flooding is an event where there is excessive inundation of water on land with a low surface (Rauhaus, Sibila, & Johnson, 2020).

Based on the results of interviews, Batang Arau River water pollution is caused by a lack of public awareness to protect the environment; in this case, there was a lack of awareness not to litter the river. Environmental awareness is a public concern or concern for the environment as a result of the emergence of various causes of various environmental problems, which are one of the most important things in human life, where a clean and healthy environment will provide benefits not only to humans but also to life on earth. Clean water on Earth is decreasing because of various factors that arise from irresponsible human activities, where people do not consider the impact that will result from their actions that litter the river. Even though the river is a very large water source, it must be kept clean (Turner, 2022)

Social construction theory (Peter L. Berger and Thomas Luckman) states that reality is socially formed and that social reality is a process through human action and interaction. This theory emphasizes that social reality is not objective or independent but is the result of construction through social interaction. In this case, social relations and community responses to river water pollution are needed to address river water pollution problems (Vanclay & Hanna, 2019).

Based on the problems described above, researchers are interested in conducting research on social relations and community responses to Batang Arau River water pollution in Batang Arau village, Padang Selatan sub-district, Padang City, West Sumatra Province.

## **METHODOLOGY:**

This research was conducted in Batang Arau Urban Village, Padang Selatan Sub-District, Padang City, West Sumatra Province. This study used a qualitative approach with a descriptive research design. This research is a constructivistic paradigm (Panahi & Moayerian, 2025). The data collection methods were a document study, non-participant observation, and in-depth interviews. The unit of analysis in this research is the people living in Batang Arau urban village, Padang Selatan sub-district, Padang City, West Sumatra Province. Data analysis used the Millis and Huberman model (Bezbaruah, Wallace, Zakoji, Padmini Perera, & Kato, 2021) which was conducted in several stages: data collection, data reduction, data presentation, and conclusion drawing (Irwan, Shahreza, et al., 2022).

## **RESEARCH RESULTS AND DISCUSSION:**

### **1. Community Social Relations due to River Water Pollution**

Social relations are social relationships that originate from interactions between two or more individuals that occur systematically. According to Astuti (Oladipo, Adeniyi, & Anifowoshe, 2020) social relations are also social relationships that result from interactions between two or more people. Social relationships are very important in people's lives. According to (Rezagama, Sutrisno, & Handayani, 2020) building good social relations is something to improve perceptions and attitudes, as well as one's behavior in community life (Septyawati et al., 2023). In this case, it is the perception and attitude as well as the behavior of the community due to river water pollution. Knowing the perceptions and behaviors of people who live around rivers is very important for the success of preserving natural resources.

Environmental construction theory (Berger and Luckman) states that reality is socially constructed and social reality is a process through human action and interaction. This theory emphasizes that social reality is not objective or independent but is the result of construction through social interaction.

Likewise, community social relations related to environmental issues are a matter of concern; in this case, the problem of river water pollution. The social relations built in the community around the Batang Arau River due to river water pollution have different perceptions, attitudes, and behaviors related to river water pollution.

Based on the results of the interviews, it is known that conflicts arise between fellow communities around the river in the social relations of the community due to the pollution of Batang Arau River water. Based on the results of the interviews, the majority of the garbage in the Batang Arau River comes from household garbage disposed of by people who do not care about the cleanliness of river water. Thus, there is disagreement between the community around the Batang Arau River, namely people who care about the cleanliness of river water and people who do not care about the cleanliness of river water. People who care about the cleanliness of river water feel upset because of the act of throwing garbage into the river carried out by the irresponsible people. The garbage thrown into the river can make the view of the river unpleasant to see because of a lot of garbage. In particular, when the water recedes, there is a lot of garbage scattered around it, which can even cause flooding when it rains. This is in accordance with the opinion (Nggilu et al., 2022) that the habit of littering, especially into the river, can cause harm to other communities and will disturb the comfort around the community's residence (Edi Minarno, Suprpto, & Harsono, 2022).

People who are aware of the importance of river water cleanliness have reminded each other that they should not throw garbage into rivers (Suriadikusumah et al., 2021). This can cause various impacts, such as river water, which can no longer be used for community needs, such as bathing and washing, because the river water is polluted and can even cause flooding. Those who are aware of the warning apply it in their lives, not to throw garbage into the river. They consider the river a natural resource that is very important for life, such as bathing and washing, so it needs to be kept clean, one of which is by not littering the river. In the past, the river was used by the surrounding community for bathing and washing. This is in accordance with the opinion of (Kospa, 2018) that the river is a place where people perform bathing and washing activities. However, it can no longer be used for these purposes because the river is polluted and causes flooding when it rains (Juwana & Nugroho, 2019).

However, some people are still unable to heed the warning. They continued to pollute the river by throwing garbage into the river. This often leads to conflict, where there is an unfavorable response from people who do not care about the cleanliness of the river water. They think that throwing garbage into the river is normal, where the river becomes a dumping ground for garbage. This view comes from the habits of people who litter in the river. Habits are behaviors that are repeated either intentionally or unintentionally and these behaviors or habits have been carried out from childhood to adulthood (Susilowati, Kumoro, & Nur, 2020). Therefore, they did not consider the impact of throwing garbage into the river.

This is in accordance with the opinion (Juwana & Nugroho, 2019) that a person's perception affects individual behavior, where if someone has a good or positive perception, that person will also bring up positive behavior. However, there are also conditions in which there is a mismatch between perception and behavior. This is caused by a lack of awareness and a sense of responsibility possessed by a person, so that someone who is forced to take behavior or actions that are not in accordance with their attitude will result in a person not having a sense of responsibility (Wiyanarti, 2018).

Second, the patterns of community interactions changed. Based on the interview results, the river was used for bathing and washing purposes. People used to perform activities in the river together or often meet and interact in the river while doing activities in the river, such as bathing and washing. However, because river water can no longer be used for bathing or washing, interactions between communities are rarely carried out because, in general, activities usually carried out in the river are now carried out at home.

Before the Batang Arau River was polluted, the surrounding community considered the river an important place for their lives, which could support community activities such as bathing and washing. However, after the river was polluted, the community considered that the river was no longer a place for them to carry out these activities, and even for people who did not care about the cleanliness of the river water made the river a place for them to throw garbage.

## **2. Community Response to River Water Pollution**

A response is a response given by someone to the stimulus they receive (Suriadikusumah et al., 2021). A response in language refers to the result, impression, or description of observations made by someone consciously. In this case, the community's response or response is due to Batang Arau River water pollution (Uswah & Wang, 2021).

The community response to river pollution differs between communities. This is based on the social construction theory of Berger and Luckman, which states that reality is socially formed and social reality is a process through human action and interaction. This theory emphasizes that social reality is not objective or independent but is the result of construction through social interaction. In this case, re bah (Malalina, Putri, Zulkardi, & Hartono, 2022).



Based on the results of the interview, it is known that the community's response to the Batang Arau River water pollution is *First*, reminding each other not to throw garbage into the river (Press, 2024). People who care about the cleanliness of the river claim to be very concerned about river water pollution and are disappointed with the actions taken by irresponsible people by throwing garbage into the river (Mansor et al., 2022). This is because they realize that the river is one of the sources of water for them that they can use for bathing or washing. In addition, the condition of a river that is polluted by garbage thrown into the river is very disturbing to the community and can even cause flooding when it rains. This is in accordance with the opinion that many people litter rivers, drainage channels or swamps so that waterways will be clogged and cause flooding during the rainy season (Purwono, Ristiawan, Ulya, Matin, & Ramadhan, 2019). Thus, people remind each other not to throw garbage into the river (Sendrós, Himi, Lovera, Rivero, Garcia-Artigas, et al., 2020). This is one way for the community to foster an understanding of the importance of keeping river water clean and the impacts of river water pollution (Fan et al., 2021). Thus, it is hoped that people who like to throw garbage into the river will no longer increase their awareness to throw garbage into the river (Surya et al., 2020).

*Second*, the community adapts to or adjusts for river water pollution. The community is trying to adapt or adjust to the pollution of the Batang Arau River water that has occurred. Initially, river water was used for bathing and cleaning, but now it has switched to using drilled wells, and rainwater is collected to carry out activities such as bathing or cleaning. This is one way for communities to adapt to the conditions of polluted river water. Thus, the community has begun to understand the conditions of pollution that occur, especially the impact caused by the act of throwing garbage into the river, resulting in polluted river water, and then began to adapt by looking for other alternatives to carry out activities such as bathing and washing (Syafri et al., 2020a).

*Third*, the community strongly supports the government in its efforts to help deal with river water pollution. Based on the results of the interviews, the community expects efforts to be made by the government to deal with the problem of Batang Arau River water pollution. The community strongly supports the government's efforts to help deal with this problem. Based on the results of interviews, the government has made various efforts to deal with the problem of Batang Arau River water pollution by dredging mud and river sediment so that the river can flow smoothly and prevent flooding. In addition, the government conducted socialization regarding the prohibition of throwing garbage into the river. Forms of support from the community to the government participate in mutual cooperative activities to clean the river and participate in socialization related to river pollution (Das, Karmaker, & Khan, 2021). Creating a community with an awareness of the environment that can be used to the behavior of not littering requires cooperation between the government and the community (Syafri et al., 2020b). Thus, it is hoped that this cooperation between the government and the community will be an important step for handling river water pollution problems (Sendrós, Himi, Lovera, Rivero, Garcia-Artigas, et al., 2020). This is one step toward increasing public awareness of the importance of keeping river water clean.

## CONCLUSIONS

In the social relations of the community due to pollution of Batang Arau River water, it causes conflict between communities living around the river where people who are less concerned about the cleanliness of river water litter the river so that other communities feel disturbed because of the impacts caused such as garbage scattered on the banks of the river and even flooding when it rains, changes in community interaction patterns, which are used to carry out activities such as bathing and cleaning in the river are now no longer done because of river water pollution. Then, the community response due to Batang Arau River water pollution is first, reminding each other not to throw garbage into the river. Second, the community adapts or adjusts to river water pollution, which is used to utilize river water for bathing and washing, and then switches to using boreholes and rainwater collected to carry out activities such as bathing or washing. Third, the community strongly supports the efforts made by the government to deal with the problem of Batang Arau River water pollution, such as participating in river cleaning activities, supporting government efforts related to dredging mud and sediment so that the river looks clean, and participating in socialization related to the prohibition of throwing garbage into the river. Therefore, we must raise awareness about the importance of maintaining the cleanliness of river water, so that it can be maintained, and the importance of cooperation between all parties, both the community and the government, to create clean river water.

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