

Semarang Flash Flood 1990

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Abstract. This article entitled "Semarang Flash Flood 1990" is a historical study of the environment. This research using historical method. This approach uses environmental history that refers to the impact of floods that are natural events that occur in an area that cause the impact of both casualties. From the research shows that the cause of flash flood disasters in Semarang is the environmental damaged in the Kaligarang River flow and the reduction of the recharge areas resulting from the development. Floods will have social impacts in the community that cause loss and loss of life. On January 27 the death toll was 47 deaths and on January 29, 1990 the number of victims increased by 76 people. The government launched a strategy to quickly help flood victims to disaster preparedness posts. The government's response set a relocation resettlement area in Sadeng Village, Gunungpati District, and the location will be used as a reforestation area for the surrounding community.

Keywords: Flash Floods; Semarang; Environmental History; Degradation.

1 Introduction

A disaster is an event or series of events that threatens and disrupts people's lives and livelihoods due to natural factors or human factors, resulting in human casualties, environmental damage, losses of facilities, and so on. Natural disasters originating from nature are volcanic eruptions and tsunamis, while natural disasters caused by human intervention are floods and fire. Natural disasters caused by humans destroy the ecology of nature, which can lead to various events, one of which is flooding [1]. A flood is when water inundates an area that is usually not flooded within a specific time. Sometimes the flood occurred fast with a short inundation time, but sometimes with a slow time with a long inundation time. In historical records, Semarang has never been free from the threat of floods, major floods in the city of Semarang in 1973, 1988, and the worst in 1990. Floods in 1990, Kaligarang (West Flood Canal) overflowed into the surrounding area was swept away by devastating flash floods. The areas are often flooded in Semarang are North Semarang, East Semarang, South Semarang, Central Semarang, Ngaliyan, Gayamsari and Pedurungan. Floods in these areas reach water levels of between 0.5 until 1.3 meters [2]. Perumnas Tlogosari is one of the large-scale housing in the city of Semarang, which is affected by the city's ecological problem, namely flooding [3]

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Kaligarang upstream from Mount Ungaran, which has two tributaries, namely Kali Kripik and Kali Kreo. The catchment area of Kaligarang reaches 204 square kilometers, the catchment area of Kali Kripik is 93.4 square kilometers, and Kali Kreo is 70 square kilometers. In contrast, the area of the inundation area of Kaligarang is around 145 hectares. The flood incident in Semarang occurred on January 26, 1990, at 03.30 Western Indonesian Time in the morning. Various natural factors and human factors cause this event.

This article discusses the floods in Semarang in 1990 and the government's efforts to deal with them. These issues will be guided through the following questions. First, what factors caused the occurrence of flash floods in Semarang in 1990; second, how did the efforts made by the city government of Semarang in overcoming the flash floods?

2 Method

This research uses the historical method with an environmental history approach. Natural factors and human factors cause floods. Environmental historians applied the lessons of their hybrid histories to this significant story, and with some urgency [4]. It appears that at present historical ecology is at a crossroads. With rapidly growing interest in historical ecological research, it may move towards institutionalization or remain an umbrella term. Human activities in meeting the needs of a place to live as the shelter has reduced the land area that previously served as an absorption area. The narrower of the catchment area and the hardening of the topsoil with cement causes the water not to soak quickly into the soil. When it rains, all the water immediately flows into the river, simultaneously causing flooding, identify and analyze community responses and their relationship to their knowledge, preparedness, and activity level.

3 Results and Discussion

Geographically, Semarang City is an area that has a shallow seabed result of sedimentation. Semarang City's geology and its surroundings are divided into three, namely volcanic rocks, sedimentary rocks originating from the sea, and alluvial deposits.

Semarang City is geographically located between 6°50'-7°10' South Latitude and 109° 35'-110°50' East Longitude. The total area of Semarang City is recorded at 373.70 square kilometers of the total land area of Central Java Province. Administratively, Semarang City is divided into nine subdistricts and 177 sub-districts with 373.7 square kilometers. The city of Semarang has three types of areas, namely beaches, lowlands, and hills. In hilly areas with an altitude of 90-359 meters below sea level, lowland areas have an altitude of 0.75 to 3.5 meters below sea level. These conditions have the terms Upper City and Lower City.

The lower town is generally a coastal area; besides being used for port activities, it is also used for aquaculture and rice fields. Land in lowland areas is generally building a land area (build area) used for government, trade, industrial, residential, and open space activities. At the same time, the upper city shows that in the city of Semarang, the part that leads south is a highland area (hilly area). Most of the land is also a built area used for trade, education, and settlement activities, but some are in the form of land that is not built (unbuild area), which is used for agriculture, plantations.

The existing topographical conditions of Semarang City have shown various slopes and protrusions in the coastal area. 65.22% of its area is flat areas with a slope of 25% and 37.78% or hills with a slope of 15-40%. The condition of the land slopes in Semarang is divided into four types of slopes, namely slope I (0-2%) covering Genuk, East Semarang, North Semarang, and Tugu Subdistricts, as well as some areas, and Mijen. Slope II (2-5%) covers West Semarang, South Semarang Subdistricts, and slope III (15-40%) covers areas around

Kaligarang, Kali Kreo and Kali Kripik (Gunungpati District), parts of Mijen District (Wonopluombon area), then the last slope IV (> 50%) covers part of Gunungpati District, especially around Kaligarang and Kali Kripik. In contrast to hilly areas or upper cities whose geological structures are mainly composed of igneous rock. Semarang City area is at an altitude between 0 and 348 masl. The lowland or lowland city has a slope of between 0% to 5%, while in the southern part, it is an upland area with a slope of between 5%-40% [5].

It is recorded that the population from 1988 was different in population until 1990. In 1988 it had a population of 1,119,036, while in 1989 it was 1,126,265 and in 1990 it had a total population of 1,146,991. With the increasing population of Semarang City, more activities that occur will take advantage of public space.

Kaligarang River in the upper reaches is not a big river because it has a width of 4 m. When viewed from its function, it has a vital role because it is a water catchment area in the ungaran mountain area. Meanwhile, the downstream of the Kaligarang river is utilized by the City of Semarang as a source of raw water for the Regional Drinking Water Company (PDAM) and as a canal that functions to accommodate drainage channels or the primary raw material for the supply of drinking water.

The socio-economic characteristics of the population usually include employment status, place of work, income, and so on. Socially and economically, the people of Semarang City make them aware of their lives from various sectors, diversity in reflecting their characteristics as an urban community. In line with the rate of development and population growth, economic activities in Semarang include several factors, including trade centers, industry, education, public facilities, and so on.

3.1 Flood factors

By number and economic losses, Flood disasters account for about a third of all-natural catastrophes worldwide. As a waterfront city, Semarang has been suffering from floods since the historic time [6]. In historical records, Semarang has never been free from the threat of flooding. In 1980, the flood disaster was a threat that disturbed the peace of Semarang residents. Among the floods, the largest was the flood that occurred in Semarang in 1990.

The flood in Semarang City on January 26, 1990, was an unforgettable experience for the people of Semarang. Flash floods occurred in the city of Semarang when Soetrisno Suharto replaced Iman Soeparto [7]. Semarang City with the slogan ATLAS (Safe, Orderly, Smooth, Beautiful and Healthy) turned out to be spilled due to the flood disaster in 1990. Sampangan, Bongsari, Simongan, Gumuksari is an area known as an area prone to flooding and has claimed many lives (see Figure 1).

Two factors cause flooding. Namely, the first factor is the physical characteristics of the Kaligarang River Watershed (DAS), which are naturally influenced by factors such as soil, rainfall, dense settlements, and reduced water infiltration and river flow patterns. The second factor can be known with more certainty if continuous monitoring is carried out on the embankments that have fortified the city of Semarang from the west.



Figure.1 Condition after the flash floods in Semarang on 25 January 1990 which killed hundreds of people and destroyed residential areas in West Semarang and South Semarang Districts.

The following is an explanation of natural factors that can cause flash floods in Semarang. Illegal or careless felling of trees will trigger flooding. Deforestation in Central Java is recorded at 71,000 hectares and is spread across 21 Forest Management Units (KPH). As a result of environmental damage from the direction of Gunungpati and the destruction of protected forests that have turned into production forests and established development. This happens that the vegetation system is unable to absorb when rainwater comes.

Moreover, the construction near the Kaligarang flow in Semarang, established before the incident, includes six factories. This triggered flash floods in Semarang. The Kaligarang area should be more suitable for green lane areas or green open spaces for the safety of Semarang City.

Urban land conventions cause floods. Productive lands (rice fields) and others functioned as water receptacles, like forests in the mountains, and converted into residential lands, malls or cities, hotels, and tourist attractions. Urban land conventions cause floods. Productive lands (rice fields) and others functioned as water receptacles, like forests in the mountains, and converted into residential lands, malls or cities, hotels, and tourist attractions.

Community settlements were also one of the factors that led to flooding, which resulted in many casualties, namely being near the edge of the Kaligarang River embankment. The distance between residential areas and the Kaligarang River embankment is only around zero meters.

According to one of the informants, Suhartono comes from Bongsari and is close to the PT Phapros area. At that time, many houses were hit by floods and destroyed residential areas due to residential areas adjacent to the Kaligarang River. (Interview with Suhartono, Jl. Kumudasmoro Raya Bongsari, Bongsari Village, West Semarang District, on June 17, 2017)

Natural factors are also one of the factors that can cause flooding, namely high rainfall. For 21 days in January, the rainfall reaches the range of 300-700 mm in the Ungaran Mountains area. The rainfall category is very high. Before the occurrence of flash floods that lasted all night, it had caused flash floods in several corners of the city of Semarang [8].

The rain from the Gunungpati and Ungaran areas, which had continued for a long time, increasingly flowed into several tributaries of Kali Kripik and Kreo. The water was increasingly spilling over so that the river discharge soared into community settlements near the Kaligarang River embankment and the levees were also not strong the onslaught of the Kaligarang current at that time had broken down.

3.2 Community Impacts

January 27 has claimed many lives. The number of victims at that time was 47 people whose identities were neither known nor known. On January 29, 1990, the number of victims increased from day to day to 76 people. On January 30, 1990, there were still victims who were still missing and had not been identified. Even the flash flood disaster in Semarang also had an impact in terms of material losses, namely livelihoods and property losses, as well as damaged parts of public facilities and infrastructure (see Figure 2) [8].



Figure 2 Condition after the flash floods in Semarang on January 25, 1990, the car was carried away by the flood [9]

3.3 Government Efforts in Overcoming Floods 1991-1994

The magnitude of the impact caused to the community has prompted responses from various groups, both government and various communities. The response also came not only from the Semarang government bureaucracy but from outside the city of Semarang. The Coordinating Minister for the Economic of People's Welfare, formerly known as the Governor of Central Java, the Coordinating Minister for People's Welfare Soepardjo Roestam, and H.M Ismail, have come directly to the field. The locations reviewed include Bongsari, Sampangan, Dam, and Simongan villages.

The first response given by the government was to provide temporary shelter or to a safer place and give the command to the disaster management implementation unit to control field conditions. Fortunately, the government at that time had a disaster preparedness post. The response of the two governments to rehabilitate the place and victims of flash floods is by dredging in the area along the Kaligarang River, which is in Gumuksari Village [10]. Residents affected by flash floods were also immediately relocated to the area of Sadeng Gunungpati Village (see Figure 3).



Figure 3 Post-flood conditions in Semarang on January 25, 1990, an overview of the flood locations [9]

The suffering experienced by Semarang flash flood victims has made much public sympathy by other people. Several people from social organizations and assistance from other organizations volunteered to help and distribute aid. The Indonesian National Armed Forces (ABRI) and other teams donated and helped clean bridges and repair damaged roads. The Social Welfare Fund Foundation was delivered to its treasurer, namely Hedyanto, assistance in the form of money amounting to Rp. 100,000,000. Head of the Semarang City Health Office (DKK), doctor Iman Soebekti, mobilized several doctors from the Indonesian Doctors Association (IDI) and assisted by mobilizing as many as 50 *sinses*. The Semarang and Jakarta Astra Group also donated 100 million rupiahs in cash and a 1300cc Daihatsu Zebra. Moreover, more than 500 members of the Lampar Tengah Semarang youth organization participated by doing cooperation (see Figure 4) [11].

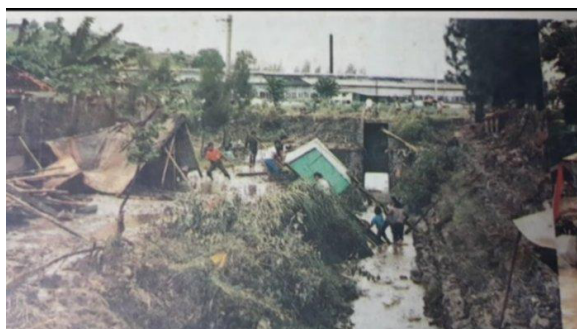


Figure 4 Documentary photo recording post-flood conditions in Semarang on January 25, 1990, clearing trenches [9]

The association of the organization, namely, DPD Golkar, has provided nine essential ingredients. The DPD Golkar also provided several tons of rice. The Golkar Central Java DPD Association, Arhanudri, the National Sar Agency (Basarnas) Sar Team, Polda, Health Service, Brimob, civil defense (Hansip) have deployed five vehicles for the deployment of Service forces. The Suara Merdeka Group family assisted in the form of bread, mineral water, rice, and money for the families of the victims who died as mourning money of Rp. 50,000. ("Suara Merdeka Group Family Donating Victims of Death", Suara Merdeka, January 27, 1990). The Regional Executive Board (DPD) and the Indonesian Youth National Committee

(KNPI) Central Java Kodia Semarang have assisted with notebooks, school supplies, and suitable clothes.

3.4 Relocation of Replacement Settlements in Sadeng

The first stage carried out by the government was to move the people of the Sampangan area and its surroundings affected by the flood to be evacuated temporarily to a safer place. Semarang Mayor Soetrisno and his staff have assigned ABRI duties and consist of Ahanud, Brimob, the police and security guards, and others to participate in community service operations. Construction of relocation houses in hamlets or Sadeng Village, Gunungpati District, Semarang.

After the houses are finished, and the people are relocated, the government conveys that the houses they live in are not for sale. At the end of February 1990, the relocation was immediately occupied by 250 refugees. In June 1990, the number of refugees to proving areas increased, namely 328 families. On June 29, with joy, hundreds of families of victims of flash floods in Semarang City began to occupy a replacement house in the hamlet of Sadeng Village, Gunungpati District. The night before, at the Sadeng relocation site, there was a celebration event and reciting tasyakuran prayers.

The Sadeng people who moved by renting trucks with a one-time rental rate of 15,000 to transport the goods they carry such as kitchen utensils and household appliances in the form of tables, chairs, cabinets, mattresses, clothes, and other equipment [12]

Activities were also carried out at that time, cleaning the environment by several residents. The house occupied in the form of a coupling or attached house with mixed walls, namely the bottom, is given a brick, and the top is given a board restriction. However, the house is not fully ready occupied, but there are already dozens of potential residents who have moved. The residents at that time were doing voluntary mass work in the relocation complex.

As a result of the actual normalization in 1993, some residents living in the bankment area were reluctant to move to the Sadeng relocation settlement location. Because the compensation money given by the project is not enough to build a house on the land that has been provided, on the other hand, they choose to move to another place of residence because of economic factors or work [13].

The economic condition of the Sadeng region, it is known that most areas have a rural or straightforward life pattern. The residents of Sadeng Village have various livelihoods and have sufficient livelihoods. One of them has a change in the function of agricultural land, which is one of the livelihood sectors of the community. Among them, the livelihoods in Sadeng Village are farmers, agricultural laborers, construction workers, and traders. Some of the people of Sadeng Village are not working, and some are construction workers. (Interview with Sagimin, September 29, 2017).

3.5 Regional Arrangement

Gunungpati District is located in the southern part of Semarang City, directly adjacent to Ungaran. Gunungpati subdistrict is a city development area which has an area of 5,146,000 hectares. The total population reaches 46,807 people, which are gathered from 64 RW and 296 RT. Gunungpati Subdistrict consists of dividing each regional boundary and consists of 15 Kelurahan, namely Gunungpati, Plalangan, Mangusari, Ngijo, Sekaran, Petompon, Pakintelan, Sukorejo, Jatirejo, Sadeng, Cepoko, Nongkosawit, Pongangan, Sumur Gunung, Sumur Jurang.

Sanding sub-district / village is one of the sub-districts / villages located in the Gunungpati district of the Madya city of Semarang. From the corner of the wind, this village is bordered by other villages. Kali Pancur Village borders the northern boundary. The southern boundary is bordered by Pongangan Village, or called Kuwasenrejo. Kandri Village borders the western border. Sukorejo Village borders the eastern border. Sadeng Village, Gunungpati District, is divided into 34 RT 6 RW with 5,721 people.

In 1993, a zoning arrangement in the Gunungpati District of Semarang resulted in the Pemukti area in Sadeng Village being distributed to Pongangan Village. Part of the Proven area in Sadeng Village was distributed partly to Pongangan Village because, at that time, Sadeng turned out to be more than the capacity of the population. In addition, Nongkosawit Village is an area that is included in the Pongangan Village. This Nongkosawit Village causes Pongangan Village to be minimally populated but has a reasonably large area. After several Sadeng communities had been distributed to the Kuwasenrejo area because the population area was still tiny, the people of the Sadeng area finally agreed that it was decided to carry out a new regional arrangement to become Kuwasenrejo Village, Pongangan Village.

Kelurahan Kuwasen is a village in Pongangan Village, Gunungpati District, Semarang City. The area of this area is 343,946 hectares, of which the Kuwasen Village consists of 175.56 hectares of rice fields, 203.78 hectares of dry land, 1.24 hectares of land for public facilities, 1065 hectares of land for social facilities. Pongangan Village consists of 3 villages, 5 RW and 27 RT.

In 1994 Kelurahan kuwasenrejo RT 2 RW 4 was a sub-district where most of its people came from Sampangan, Bongsari, Bendungan and Gumuksari villages. Most of the people living in Kelurahan Kuwasenrejo are people who have experienced flash floods in the 1990s. After the community became the people of Kelurahan Kuwasenrejo, their lives were classified as safe communities, and they had never experienced flash floods again after settling in Gunungpati District, Kuwasenrejo Village. (Interview with Antonius, 30 October 2017).

4 Conclusions

The factors that cause flash floods in Semarang are the first factor, human actions in the use of natural resources (SDA) that are not wise so that they are detrimental and cause disruption of the water cycle. One of them is illegal logging. Establishing a development area in the upstream area and the expansion of residential areas will affect the occurrence of flooding. The second factor from nature is high rainfall. In December 1989, the rainfall reached 200 mm, while at the beginning of January 1990 the rainfall in the upstream part for 21 days had reached 300 mm. Second, the natural factor is the shallowness of the river because the embankment is damaged due to the discharge of river water that cannot accommodate the continuous rainy season.

Flash floods in the city of Semarang have caused various impacts on the lives of the people of Semarang. Flash floods cause material losses as well as a large number of flood victims' deaths. On the economic impact, flash floods cause damage to various livelihoods, public facilities and infrastructure, bridges, access education, and waterways belonging to the PDAM, which disrupt the flow of clean water for residents of Semarang. On January 29, 1990, the total number of investigations was 76 people, the number of deaths. The victims came from the Bongsari, Gumuksari, Sampangan, Dam, and employees of PT Damaitex.

The government's response is to move the flood victims to a safer place or a disaster preparedness post. The large number of casualties incurred to the community can encourage the Semarang City government and the Semarang community, and people outside the city of

Semarang. They have responded well to the victims of the flood disaster. The mayor of Semarang also asked for assistance from medical team personnel ranging from doctors to medical students to help provide the community with care for survivors. The head of the Health Office directly provides the dangers of disease, namely in cold medicine, diarrhea, etc.

The government is rehabilitating the flood sites located on the Kaligarang banks in the Gumuksari area. The response to government assistance has also relocated the flood victims to Sadeng Village, Gunungpati District.

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