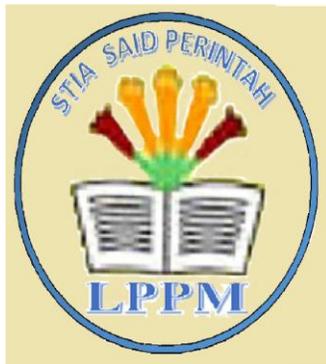

**Public Policy:
Jurnal Aplikasi
Kebijakan Publik dan Bisnis**

**Implementation of Flood
Management Program Policy
by The Public Works Spatial
Planning Housing and
Residential Areas Agency**

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Abstract

Malang City is one of the cities in East Java that has experienced a total of 700 flood events since 2019 (BPBD's data) and has made floods a routine problem for the local government. This phenomenon is the basis for the emergence of a flood management program and this research aims to determine the implementation of flood management program policy by the Public Works, Spatial Planning, Housing, and Residential Areas Agency in Malang City. This research uses a descriptive qualitative research design to collect written data through interviews, documentation, and observation. The results show that the flood management program policy has been implemented quite well in Malang City. Efforts by the Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office to provide understanding to the public regarding the urgency of handling floods through this program need to be carried out.

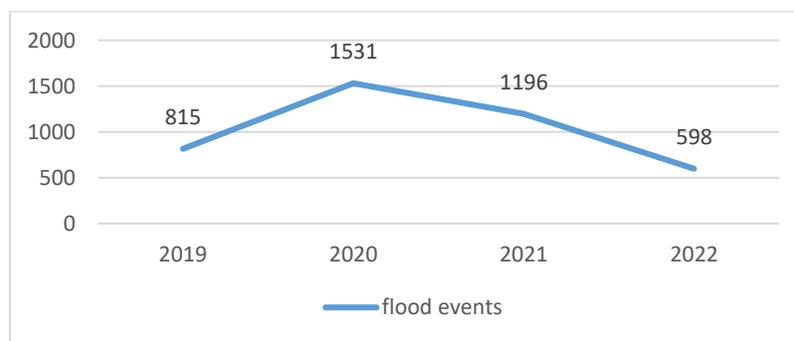
Keywords : Program Implementation, Flood, Public Policy.

Introduction

Natural phenomena that occur in Indonesia are indeed not spared from the actions of people who underestimate and do not have an awareness of protecting the surrounding environment. Floods is one of the natural phenomena caused by several factors, natural and human factors. As revealed by Suripin (2004), the areas affected by the flood are when the puddle exceeds 40 cm accompanied by the overflow of water bodies (rivers, lakes, and drainage). According to Good Statistic's data, floods in Indonesia have increased significantly in 2019-2020. The most severe flood occurred in 2020 with total losses of 42.000 people's houses damaged and economic losses reaching almost 1 trillion rupiahs (Badan Pusat Statistik Kota Malang, 2023).

The flood disaster in Indonesia has an impact on almost all sectors. Floods in rice fields will certainly cause crop failure. Floods can damage infrastructure, especially food, causing supply to be disrupted. In this condition, when demand is greater than supply it can cause an increase in the prices of various commodities which in the end contribute to the inflation rate. Also, floods that occur in large cities will disrupt industrial activities, automatically causing production processes to be hampered or even decreased (Pusat Krisis Kesehatan Kementerian Kesehatan RI, 2016).

Indonesia's Flood Data Starting from 2019-2023



Source; Good Statics, (2023)

Malang City is one of the areas that need to be highlighted about floods, characterized by highland areas and is surrounded by mountains, dense settlements found on river banks, and garbage piles in Malang City (Nusantara, 2022). In this case, the Malang

City Public Works, Spatial Planning, Housing, and Settlement Areas Office is handling before and after floods and managing flood-prone areas through drainage and infiltration wells.

Malang City's Flood Data 2020-2022

Sub-Districts	Total Floods		
	2020	2021	2022
Kedungkandang	7	7	14
Sukun	3	16	13
Klojen	3	32	15
Blimbing	10	17	32
Lowokwaru	11	20	24

Source; Regional Disaster Mitigation Agency of Malang City, (2023)

Based on the Regional Disaster Mitigation Agency of Malang City quoted by Riantiningsih, (2023) the total loss of flood disasters in 2021 was 3.811.715.000 rupiahs with a total of 2.623 people affected. In this case, Malang City Public Works, Spatial Planning, Housing, and Settlement Areas Office (PUPR-PKP) as one of the agencies that participate in handling floods also plays an important role in managing and developing drainage and organizing residential infrastructure, namely infiltration wells that listed in their 2023 Work Plan.

According to research conducted by Pramudita (2022), floods in Malang City occur due to drainage conditions that are not functioning properly, increasing population due to growth and urbanization, and urban infrastructure development. The same thing was also found by Pramudita (2022) that floods in Malang City were caused by dense settlements on the banks of the river which had an impact on decreasing the river's capacity to accommodate water discharge so that floods were prone to occur during heavy rainfall. Water catchment areas are also not able to function properly: Green Open Space is limited, and less public awareness of environmental cleanliness. Landfills are found in several drainages as if they were landfills by the community (Muhibbin et al., 2018).

Changes in Land Conditions in Malang City

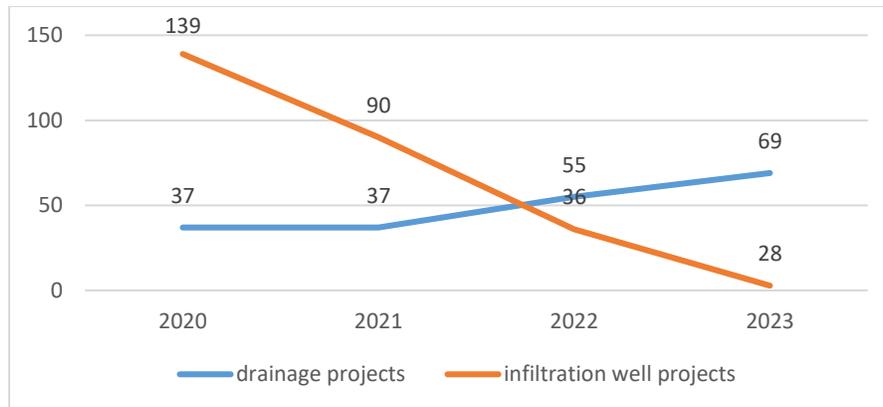


Source; Malang City Public Works, Spatial Planning, Housing and Residential Areas Office, (2024)

In dealing with these conditions, Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office implemented a flood mitigation program consisting of two programs (Regional Medium Term Development Plan 2018-2023). Water resources management program in the form of making infiltration wells and drainage management program in the form of making, widening, and rehabilitating drainage. Both programs have also been confirmed by the Head of the General and Civil Service Subdivision, Ir. Mahfuzi, ST. DIT. IPM. ASEAN Eng. Both have continuity so their implementation must be maximized.

Reporting from dpuprpkp.malangkota.go.id, the infiltration well was first made on January 29, 2020, in the Office of Public Works, Spatial Planning, Housing and Residential Areas of Malang City, precisely on Jalan Bingkil 01 Ciptomulyo, Sukun District, Malang City. The depth of the well ranges from 4 to 10 meters, depending on the environmental conditions. The manufacture of infiltration wells is also focused on the areas where there are many puddles and have the potential of flooding. Not only making infiltration wells, Malang City Public Works, Spatial Planning, Housing and Residential Areas Office also carries out activities in the form of normalization of waterways, community service, and the Garbage and Sediment Lifting Movement which is routinely carried out in 2021, especially in flood-prone points.

Total Flood Management Program Projects 2020-2023



Source; Malang City Public Works, Spatial Planning, Housing and Residential Areas Office, (2024)

However, drainage conditions in one of the sub-districts, Lowokwaru, were found to be inadequate in draining and collecting water, even potentially flooding. According to Wulandari, et al. (2022) of the 56 channels, 14 of them are no longer able to hold and drain water properly due to the sediment build up causing a decrease in the quality of some drainages. It is different from the conditions that occur in Kedungkandang Sub-district. According to data from the Regional Disaster Mitigation Agency of Malang City, Kedungkandang Sub-district is one of the areas located at the confluence of three rivers, as well as being an area prone to hydrological disasters. Thus, it is advisable not to live in riverside areas (Hisyam & Sabila, 2020). This statement is also in line with research by Amien, (2022) which concluded that settlements in Kedungkandang Sub-district are getting denser and have an impact on the slope in the area.

Also, the existence of dense buildings on the banks of the river is still a problem in Malang City until 2023. Reporting from Liputan 6, the Malang City Government believes that the flood in De Cluster Nirwana Pandanwangi Housing, Blimbing, Malang City that occurred on February 2, 2023 was caused by the presence of buildings on the banks of the river and the narrowing of the river. In response to this flood, the Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office is trying to carry out sediment dredging, even some buildings will even be demolished because there has been a narrowing of the river as well as normalization. Floods occurred again at several points on November 10,

2023, one of which was at the Ciliwung intersection, Purwanto Village, Blimbing, Malang City because drainage channels in the area were no longer able to accommodate rainwater discharge (detik.com news).

In dealing with problems related to flood, the Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office implements a flood management program written in the 2018-2023 Malang City Regional Medium-Term Development Plan which states that drainage and absorption wells as infrastructure include basic needs in the development of spatial structure systems and become a form of flood management. It was also explained that infrastructure development is a priority for the mayor of Malang City through the revitalization of the drainage system to achieve zero floods in Malang City.

An article by Pramudita, (2022) entitled Policy Implementation in Flood Management and Waterlogging in Malang City explained that the flood in Malang City was caused by garbage factors and spatial planning that had not been maximized. Limited drainage conditions and the agency's efforts to increase the amount of drainage are also constrained because community land ownership rights make implementation unable to run optimally. In addition, an article by Muhibbin entitled Participation of the Malang City's Residents in Flood Disaster Prevention draws conclusions on the less awareness of people in throwing garbage into the river which clogs waterways and misuses land functions.

From several research journals that have been mentioned, it is known that no one has discussed specifically the flood management program policy carried out by The Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office. Thus, it can be concluded that the research carried out is relatively new and has not been widely studied by previous researchers. The aim of this research is to find out whether a program can be implemented well, several indicators are needed. To analyze this situation, the author relies on the theory developed by David C. Korten and put forward by Bahri et al., (2020) which consists of three indicators for evaluating a program.

Theoretical Framework

Public Policy

Chandler and Plano theorize that public policy involves a planned approach to utilizing available resources to solve community issues or those related to government. It was also

explained that public policy is a form of sustainable government contribution aimed at disadvantaged communities so that they can stay alive while participating in wider development (Tangkilisan, 2003). According to Muljanto, (2021), The big challenge for the developing Indonesian states is to be able to produce development policies that are oriented towards the public interest.

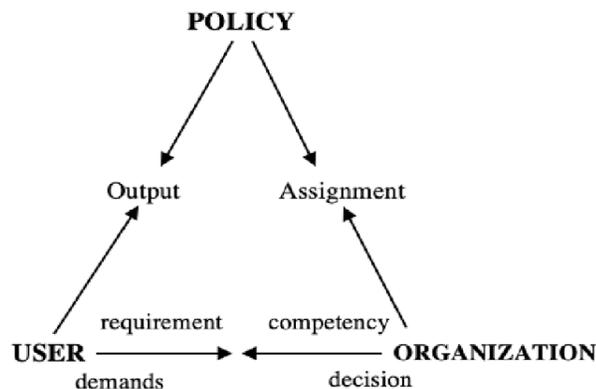
Implementation

According to Bahri et al., (2020), this model is known as the program implementation suitability model. David C. Korten identified three key indicators that are crucial for effective program implementation: the program itself, the implementing organization, and the target user groups. Elaboration on the Three Indicators:

1. Program, that the program and the users must be compatible. This means that what the program offers must be in accordance with what the user group needs.
2. Organization, that the program and the implementing organization must be compatible. This means that the tasks set in the program must be in accordance with the organization's capabilities
3. User, that the beneficiary groups and implementing organizations must be compatible. This means that what the user group does must be in accordance with the terms and conditions set by the organization in order to obtain the output of the program itself.

The three indicators above serve as a guide in assessing whether something the program was successful as expected or not.

David C. Korten's Implementation Model Framework



Source; Implementation Program (Bahri et al., 2020)

Program

According to Jones quoted by Andani et al., (2019), the program is one part of the policy. Programs are a form of effort to achieve goals and are also the first element in implementing a policy. The second element is the program target. In this element, the community is involved and determines what results from the implementation of the program. This is where the program brings change in people's lives. One of the policy implementation models is the David C. Korten implementation model which is used as the main theory in this research.

Flood

According to Suripin, (2004), a flood occurs when waterways are no longer able to hold water, so they overflow and inundate the surrounding area. Floods are caused by natural factors and human actions. One natural factor is high rainfall during the rainy season which can cause flood in rivers, especially if it exceeds the capacity of river banks and causes waterlogging. Another factor causing floods is seawater. When the tide is high, the flow of the river into the sea becomes slow and flooding occurs. Inundation or flooding will increase when there is backwater. Human factors that can cause floods involve changes in watershed conditions, such as cutting down trees that cause deforestation, agriculture of plants that cannot bind water in the soil, urban expansion, and changes in land use that can worsen flood situations by reducing water catchment areas.

Research Methods

The research method used by the author is a descriptive research method with a qualitative approach. This study aims to determine the extent of the Implementation of the Flood Management Program Policy by the Public Works, Spatial Planning, Housing, and Residential Areas in Malang City. From this concept, the author wants information in the form of a description. The results of this study will be in the form of data on words and images. The data collection techniques used by the authors are interviews, observations, and documentation. As for data analysis, the author uses Miles and Huberman's method, (2014) which is divided into four steps, Data Collection, Data Condensation, Data Display, and Conclusion Drawing. In determining the informant of this study, the author uses purposive sampling because not all samples can provide appropriate information so the

author determines the key informants from Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office namely Mr. Nevy Ardianto, ST as First Expert Mapping Surveyor of Bina Marga Drainage Subfield and Mr. Anang Widiyanto as Analysis of Facilities and Infrastructure Development of The Water Resources Subfield of Cipta Karya.

Discussion of Research Results

Policy

The policy indicator according to David C. Korten, (1988) has a role in compatibility between the program and the beneficiaries, namely the compatibility between what is offered by the policy and what is needed by the group of beneficiaries. The policy process must be carried out precisely, accurately, and consistently in the implementation of the flood management program as a program issued by the Malang City Government.

a. Planning

The planning of this flood program is contained in the Work Plan of the Malang City Public Works, Spatial Planning, Housing and Residential Areas Office, and the Regional Medium-Term Development Plan for 2018-2023 of Malang City. The planning that occurs in this program is not only from the Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office, but there are also external parties who play a role in the planning process. Planning here serves to determine the mechanism and stages of work because this flood management program is carried out by two different fields, namely the field of Bina Marga and Cipta Karya. This is in line with Law Number 23 of 2014 concerning Regional Government which explains that Regional governments, both Provincial and City in order to carry out the main duties and functions of government need to prepare development planning in the long, medium, and short term that the substance must be interrelated.

b. Budgeting

Based on the results of the study, the budget for this flood management program comes from the Regional Budget in the previous year and refers to the Budget Implementation Document submitted to the Development Planning Regional Agency of Malang City including the Regional Finance and Asset Management Agency. This

budgeting process was carried out in the previous year so that there were no obstacles in implementing the flood management program in the current year. In relation to the planning and budgeting contained in the flood management program, the Malang City Government through Circular Number 02 of 2021 requires the community to contribute to reducing flood potential by providing infiltration wells in residential areas.

This is in line with the opinion according to Edwards quoted by Anggara et al., (2019) that implementation consists of planning, funding, organizing, appointing, and dismissing employees, negotiations, etc. In line with what was conveyed by Jones, quoted by Andani et al., (2019) the program is a component of a policy and has certain goals to be achieved. The above statement is supported by Government Regulation Number 12 of 2019 concerning Regional Financial Management which explains that the Regional Financial Management Officer is tasked with ratifying DPA-SPKD and controlling the implementation of the Regional Budget. In Malang City, this function is carried out by the Regional Finance and Asset Management Agency so that in determining the amount of budget expenditure for flood management programs, the Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office refers to the Budget Implementation Document. Based on the two achievement indicators contained in the program variables, it can be concluded that the program must have an important role and function to determine the success of a program implementation. The process of this program must be accompanied by proper planning before the flood management program is implemented.

Organization

In the implementation of the flood management program, of course, there is an organization that implements the policies, and there is compatibility between the flood management program and the implementer, namely the compatibility between the tasks required by the program and the capabilities of the organization. There is an implementation team and procedures.

a. The Existence of an Implementation Team

The implementation team has its own role, but still achieves the same goal. In the implementation of the flood management program, there are two carrying fields,

namely Bina Marga and Cipta Karya of the Malang City Public Works, Spatial Planning, Housing and Residential Areas Office. The division of tasks is certainly different. Bina Marga plays a role in making drainage, increasing drainage dimensions, and rehabilitation. The division of tasks has been stated in the Decree of the Head of the Malang City Public Works, Spatial Planning, Housing and Residential Areas Office Number 188.47/22/35.73.403/2023 which explains that in the implementation of drainage constructions, there are clear objectives. The planning process also involves external parties, namely planning consultations that play a role in determining the construction mechanism, the amount of budget needed, and preparing planning documents. During the implementation process, the supervision team also came from outside parties. Its function is to control raw materials and ensure the implementation of the Bina Marga. Similarly, Cipta Karya in carrying out infiltration well projects also involves outside participants. The difference is the planning process does not involve outside participants.

b. The Presence of an Implementation Procedure

Although there is no written procedure, the Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office implements the flood management program through the process of planning, implementation, and supervision. However, it is found that the community still does not know the division of labor and procedures for implementing this program.

Based on the two indicators above contained in the implementing organization variables, it can be concluded that the organization has an important role and function in determining the success of a program. This implementation process consists of an implementation team and procedures. Thus, it can be concluded that the implementation of the flood management program in the organization variables has been implemented.

User

In the implementation of the flood management program, of course, it is important to pay attention to the achievement of the program, namely program targets, program accuracy, implementation accuracy, and target accuracy.

a. Proper Program

The program contains troubleshooting in it. The Malang City Government through the Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office has provided a change in flood management in the form of drainage construction and infiltration well projects. Seeing the high number of floods in Malang City that hampers access to economy, tourism, education, and health, the existence of this flood management program provides many benefits for Malang City's residents. This flood management program aims to reduce floods in Malang City.

This is in accordance with the opinion of Jones quoted by Andani et al., (2019) that a program is a component of a policy. A program is an authorized effort to achieve a goal. According to Andani et al., (2019) without providing benefits to the community, the program failed to be implemented. The success or failure of a program depends on the elements of its implementation. The flood management program so far has a definite purpose and has already benefited Malang City's residents.

Malang City's Infiltration Well Projects in 2020-2023

Sub-Districts	Total Infiltration Well			
	2020	2021	2022	2023
Kedungkandang	62	8	10	29
Sukun	27	30	-	24
Klojen	-	22	-	-
Blimbing	14	19	14	22
Lowokwaru	36	11	12	5

Source; Malang City Public Works, Spatial Planning, Housing and Residential Areas Office, (2023)

b. Proper Implementation

The Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office has implemented the flood management program well and targeted where as many as 36 points in Malang City as the focus of this program. Those points have been implemented and there are no inconsistencies or misconduct of execution. All programs listed are appropriate with Government Regulation Number 12 of 2019 on Regional Financial Management which explains that the Rural Financial Management Officer is tasked with approving the Execution Document of the Budget of the Regional Development Unit and carrying out control of the implementation of the Regional

Budget. The Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office receives the budget for planning, implementation, and supervision of the Regional Budget through the Regional Finance and Asset Management Agency.

c. Right on Target

Locations that are still frequently exposed to flooding are targeted by drainage construction procurement, normalization of drainages, and infiltration well projects through flood management programs. It is in line with Findayani, (2015) that floods cannot be prevented, but can be controlled and minimize the impact of losses caused. Also, in accordance with Law Number 24 of 2007 on Disaster Management which states that the City Government has the authority to make development planning related to disaster management policy.

Malang City is a flood subscription city, seen from the data every year which is still quite high. So from that, this flood management program was formed to reduce the potential flooding in Malang City. Evidently, the number of floods in the Klojen and Sukun sub-districts decreased by 2022. However, in some other areas, there are still frequent floods. Natural factors and public behavior that still lack concern for the environment must be out of control and rather hamper the success of the flood management program by The Malang City Public Works, Spatial Planning, Housing, and Residential Areas Office.

Conclusion

Based on the results of the study, it can be said that the Implementation of the Flood Management Program Policy by The Public Works, Spatial Planning, Housing, and Residential Areas Agency in Malang City seen from three focuses of David C. Korten's implementation theory (Bahri et al., 2020), namely programs, implementing organizations, and user groups, has been carried out quite well. Bottom-up planning and budgeting mean that the resident's proposals are important here because the implementation of flood management programs cannot run optimally without their reports. The role of external consultants in planning and supervision, as well as the implementation of drainage construction and infiltration well projects that support the course of this program, is not overlooked.

Suggestion

Based on the research results, discussions, and conclusions, there are several suggestions that are necessary. One of them is to hold socialization in the form of a forum that presents several residents as well as the heads of Neighbourhood and Hamlet to be informed about this flood management program which at the same time can increase public awareness to contribute. Also, there are no more obstacles in the form of residents' objections and discomfort if drainage and infiltration well projects are carried out in their area. It would definitely be more efficient and effective.

The research was conducted using qualitative methods and using primary data obtained through in-depth interviews. Limitations in this study include subjectivity that exists in researchers. This research depends heavily on the researcher's interpretation of the meaning implied in the interview, so the tendency for bias still exists. To reduce bias, a triangulation process is carried out, namely triangulation of sources and methods. Source triangulation is done by cross-checking data with facts from different informants and from other research results. While, the triangulation method is carried out by using several methods in data collection, namely in-depth interview and observation methods.

This section offers recommendations for future research endeavors. It emphasizes the importance of clearly defining research objectives and maintaining a focused approach. Future researchers are encouraged to delve deeper into the existing literature surrounding their chosen topic to ensure a strong foundation for their study. Additionally, the text underscores the need for meticulous data collection, ensuring both completeness and accuracy in interview and observational data.

References

- Amien, B. P. A. Al. (2022). *Analisis Perkembangan Kawasan Permukiman Kecamatan Kedungkandang Kota Malang tahun 2011–2021*. Universitas Negeri Malang. <https://repository.um.ac.id/262696/>
- Andani, A. T. V., Setyowati, E., & Amin, F. (2019). Implementasi Program Pelayanan One Day Service dalam Meningkatkan Kualitas Pelayanan Badan Pertanahan Nasional Kota. *Jurnal Ilmiah Administrasi Publik*, 5(3), 328–336. <https://jiap.ub.ac.id/index.php/jiap/article/view/919/1368>

- Anggara, B., Idris, A., & Hasanah, N. (2019). Penanganan Banjir oleh Badan Penanggulangan Bencana Daerah (BPBD) di Kabupaten Berau. *Jurnal Ilmu Pemerintah*, 7(2), 879–890. <https://rb.gy/l0knmx>
- Badan Pusat Statistik Kota Malang. (2023). *Jumlah Bencana Menurut Jenis Bencana dan Kecamatan di Kota Malang 2021-2023*, Retrieved October 12, 2023, from <https://malangkota.bps.go.id/indicator/152/464/1/jumlah-bencana-menurut-jenis-bencana-dan-kecamatan-di-kota-malang.html>
- Bahri, S., Sujanto, B., & Madhakomala, R. (2020). *Model Implementasi Program Lembaga Penjaminan Mutu*. Bandung, Widina Bhakti Persada Bandung, <https://repository.penerbitwidina.com/media/publications/322991-model-implementasi-program-lembaga-penja-c9c94352.pdf>
- Suripin. (2004). *Sistem Drainase Perkotaan yang Berkelanjutan*. Yogyakarta, Indonesia: ANDI Offset
- Findayani, A. (2015). Kesiapsiagaan Masyarakat dalam Penanggulangan Banjir di Kota Semarang. *Jurnal Geografi: Media Informasi Pengembangan Dan Profesi Kegeografian*, 12(1), 102–114. <https://journal.unnes.ac.id/nju/index.php/JG/article/view/8019/5561>
- Hisyam, F., & Sabila, W. I. (2020). Kajian Toponimi Kampung di Sepanjang Sungai Brantas, Kota Malang: Suatu Upaya Mitigasi Bencana Hidrologi. *Jurnal Dialog Penanggulangan Bencana*, 11(2), 155–166. <https://jdpb.bnpb.go.id/index.php/jurnal/article/view/171/161>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook*. 3rd. Thousand Oaks, CA: Sage
- Muhibbin, M., Sugiharto, U. S., & Parmono, B. (2018). Partisipasi Masyarakat Kota Malang dalam Pencegahan Bencana Banjir. *Negara Dan Keadilan*, 7(1), 218–238. <https://doi.org/10.33474/hukum.v9i2.9284>
- Muljanto, M. A. (2021). Analisis Sektor Unggulan dalam Pembangunan Daerah di Kabupaten Sidoarjo. *Jurnal Manajemen Keuangan Publik*, 5(2), 169–181. <https://jurnal.pknstan.ac.id/index.php/JMKP/article/view/1386/759>
- Nusantara, E. S. (2022). *Sungai Indonesia Banjir Mikroplastik*. National Geographic Indonesia. <https://nationalgeographic.grid.id/amp/133635744/ekspedisi-sungai-nusantara-2022-sungai-indonesia-banjir-mikroplastik>

- Pramudita, T. E. (2022). *Implementasi Kebijakan dalam Penanggulangan Banjir dan Genangan Air di Kota Malang (Studi pada Dinas Pekerja Umum, Penataan Ruang, Perumahan dan Kawasan Permukiman "DPUPRPKP" Kota Malang)*. Universitas Islam Malang, <http://repository.unisma.ac.id/handle/123456789/3532>
- Riantiningsih, T. D. (2023). *Optimalisasi Pergerakan Masyarakat Dalam Mitigasi Bencana Banjir Di Kota Malang Provinsi Jawa Timur*. IPDN. <https://shorturl.at/xyGNP>
- Pramono Joko. (2020). *Implementasi dan Evaluasi Kebijakan Publik*. Surakarta, Unisri Press.
- Pusat Krisis Kesehatan Kementerian Kesehatan RI. (2016). *Apa saja Dampak Banjir Terhadap Lingkungan*, Retrieved October 5, 2023, from <https://pusatkrisis.kemkes.go.id/apa-saja-dampak-banjir-terhadap-lingkungan>
- Tangkilisan, H. N. (2003). *Implementasi Kebijakan Publik*. Yogyakarta: Lukman Offset YPAPI.
- Winarno, B. (2007). *Kebijakan Publik: Teori dan Proses*. Yogyakarta, Media Pressindo.
- Wulandari, E., Suprpto, B., & Rokhmawati, A. (2022). Evaluasi Saluran Drainase Perkotaan pada Kecamatan Lowokwaru Kota Malang. *Jurnal Rekayasa Sipil*, 12(2), 80-89. <https://core.ac.uk/reader/539345220>