

Conference Paper

Water Conflict Prevention Model in Indonesia

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This study aims to formulate a model of water conflict prevention involving various groups of interest actors that spread after the era of decentralization was implemented in Indonesia. This research uses a qualitative approach with a narrative research strategy. Three cases of water conflicts that occurred in Batu (East Java), Klaten (Central Java), and Sleman (Yogyakarta) were used as the basis for formulating a water conflict prevention model. The data in this study were collected through in-depth interviews, participatory observations, documentation, and literature research. Research informants consisted: each research location selected three informants who had been involved in water conflict cases, activists of Yogyakarta environmental forums, one of Walhi East Java, an activist of Yogyakarta Legal Aid Institute, Surabaya Legal Aid Institute. The literature search was used to collect data from books, articles, research reports, theses, dissertations, and online mass media reports. Data analysis uses cyclical models through data collection, condensation, display, verification, and conclusions. The results showed that the formulation of the model needed for water conflict prevention in Indonesia includes: the participation of affected communities in policy planning of regional heads, monitoring systems for licensing information that is transparent, credible, accountable, and easily accessible to the public, firm and consistent enforcement of laws and regulations, providing a balance of finding aspirations and water rights from all stakeholders, prioritizing the sustainability of water resources, without criminalization of environmental warriors.

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1. Introduction

One of the negative impacts of the implementation of the decentralization system since 2001 is the increase in water conflicts in various regions in Indonesia [1–3]. Various triggers for water conflicts include: infrastructure development which poses a risk of water scarcity for local communities [4–9]; sectoral and regional egos in water management [10], and competition between various groups of actors in the utilization of water resources [11].

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One of the researches that have been developed by various researchers is the development of water conflict prevention models. The models that have been formulated include: graph model [12–15], stochastic conflict resolution model [16], market model [17], Model Based on Qualitative Simulation of Behavior [18], agent-based conflict resolution model [19], hybrid game theory and mathematical programming model [20]. All of the models are formulated for various cases of water conflicts that occurred outside Indonesia.

In contrast, this study formulates a model for preventing water conflicts in Indonesia after the decentralization era. Specifically, the model formulated through this research is used to anticipate water conflicts that are triggered by infrastructure development that is felt to pose a threat to the risk of water shortages for the local communities. This model is based on a combination of political-ecological theory perspectives [21–23] and the risk community [24].

2. Theoretical Perspective

2.1. Political Ecology

The perspective of political ecology interprets water resources as an arena where various social actors with unequal political power are involved in competition in controlling natural resources [21]. In this perspective, the problem of social conflict related to control of water resources and the environment is a socio-political problem [22]. Social and political conditions are assumed to be closely related to the complexity of causes, experiences and management of environmental problems [23].

The theory of political ecology is also based on the assumption that environmental change is not apart from power relations [25] but rather a form of politicized environment that involves many interested actors at various levels [26]. The conversion of agricultural or residential land to hotels and bottled water companies has become a competition for environmental control by various institutions and social actors. The construction of a hotel or the establishment of a bottled drinking water is a form of politicized environment [22] in the sense that the policy is a political decision to utilize water resources for corporations without considering social and environmental risks. Thus the utilization of water resources among social actors does not occur in a political vacuum.

Competition to access to and control of natural resources involves various social actors. In the perspective of political ecology, social actors consist of [27]: a. country b. corporation, c. multilateral institutions, d. NGOs and e. community.

2.2. Risk Society

The development of an advanced modern society which is influenced by technological advances and the globalization of the neoliberal economic system according to Anthony Giddens [28] has consequences for a shift in life from an industrial society to a risk society. The definition of risk according to Beck [24] “are defined as the probability of physical harm due to given technological or other processes”. Meanwhile, a risk society is a community that is faced with a new life situation. Risk societies have different characteristics from class-based modern societies [24]. The risk society is not a class society and they see themselves [24]“a grass-roots developmental dynamics that destroys boundaries, through which the people are forced together in the uniform position of civilization’s self-endangering”. (as the dynamics that develop at the grass-roots level where people are forced together into a uniform position from a civilization that harms itself”). The societies control new sources of conflict and consensus. Awareness to “eliminate scarcity” in class society is replaced by awareness to “eliminate risk” in a risk society [24].

The value system in these two types of modern society is also different [24]. In a class society obsessed with ‘equal opportunity’ in a risk-based society based on safety values. The problem of a social value system that is ‘unequal’ in class society is replaced by an unsafe society value system [24]. In a class society, the positive goal of social change from a utopia of equality is substantial prosperity, whereas in a risk utopia society, the value system is negative and defensive. The dream of a class society is that everyone wants and must get their ‘share of the pie’ while the utopia in a risk society is that everyone should avoid poisoning. In a class society, the driving force for life is ‘I’m hungry’, while in a risk society it is driven by the spirit of ‘I’m worried’. Therefore, the social solidarity found in class society based on solidarity of need has shifted to solidarity motivated by anxiety (solidarity of anxiety) [24]. Beck’s idea brings consequences of uncertainty in human life and social relations at risk. The risk community is a society that produces various risks. This life situation gives rise to individualization and reflexive modernization as a way out of society’s risk of facing the complexity of contemporary problems [24]. Individualization is a process in which modern humans in a risk society have a reflexive modernization capacity based on

knowledge and experience in making quick decisions to eliminate various risk issues [24].

3. Method

This research uses a qualitative approach with a narrative research design. The research was conducted for one year by combining field work and intensive literature study. The field work was conducted in Bulukerto village, Batu City, Ponggok village, Klaten and Karangwuni, Yogyakarta. The literature Study was conducted at the Library of Gadjah Mada University, Yogyakarta.

Data collection techniques in this study were carried out through in-depth interviews, participatory observation, documentation and literature studies. In-depth interviews were conducted with informants using an interview guideline instrument to gather narrative data about water conflicts they had experienced. The research informants were selected purposively consisting of: 3 residents of Bulukerto Village, 3 residents of Ponggok Village, 3 residents of Karangwuni, 1 activist from the Yogyakarta Legal Aid Institute, 1 activist from the Yogyakarta Forum for the Environment (WALHI), 1 activist WALHI East Java, 1 Malang Corruption Warch activist. The data from the interviews are classified according to specific codes which include: the main causes of the conflict, various other causes of the conflict, descriptions of the conflict, conflict solutions, risks and impacts due to the conflict. The documentation was carried out by recording the results of interviews with informants, taking pictures and videos of the ecological impacts that are happening at the present time in the three research locations. While the literature studies at the UGM library were used to gather data from dissertations, theses and theses as well as various research reports that examined the three conflict cases. In addition, the researcher also explored various online mass media reports that covered cases of water resource conflicts in the three regions which spanned from 2006 to the present (2023).

Data analysis in this study was carried out cyclically, consisting of: data collection, data reduction, data verification, data display and drawing conclusions. Through an analysis of the historical data on the water resource conflicts and the narratives of various residents affected by the conflicts, this research will formulate a model for preventing water resource conflicts so that the risk of social conflict between various stakeholders and ecological degradation in various regions in Indonesia can be anticipated.

4. Result and Discussion

4.1. Triggers and causes of water conflicts

Based on data from the three water conflict cases, it can be drawn that the trigger for the water conflict is infrastructure development that does not take into account the various risks to the affected communities. In the Batu and Yogyakarta cases, the conflict triggers are the construction of The Rayja hotel [6,7] and the Utara apartment [8,9], while the trigger in Klaten is the establishment of a bottled mineral water factory, AQUA [4,5]. The main cause underlying the water conflicts in the areas is the risk of water shortages for the affected communities due to the construction of these various infrastructures.

In the Batu case, the construction of The Rayja Hotel which is only 150 meters above Gemulo Spring is felt to be a threat [7]. In fact, the spring is the only water resource for agriculture, animal husbandry and daily household needs (bathing, washing, cooking) for around 5,000 residents of several villages living around this spring. The residents of various villages, the majority of whom work as farmers and farm laborers, have an absolute dependence on the Gemulo Spring. Through local community-based organizations, the Association of Drinking Water Users/Himpunan Penduduk Pengguna Air Minum (HIPPAM) and HIPPA (Himpunan Penduduk Pengguna Air/Water User Association), the villagers can obtain healthy, cheap and sustainable water supplies from the spring. Thus, they see the construction of The Rayja hotel as a real threat to their survival, because it will damage the spring.

In addition to these main causes, there are several other causes that have prolonged water conflicts for almost 5 years (end of 2011 to early 2016) in Batu [6,7]. First, the construction of The Rayja Hotel did not go through a thorough outreach to all residents of various villages who use water from the Gemulo Spring. Second, there was maladministration in the issuance of various licensing documents for the construction of The Rayja hotel. Through the local social movement organization, Forum Masyarakat Peduli Mata Air/the Forum for Water Care (FMPMA), the community has succeeded in disclosing various administrative violations contained in a Building Permit (IMB), Environmental Management Efforts (UKL), Environmental Monitoring Efforts (UPL), Environmental Impact Analysis (AMDAL) as well as violations of local regulations and laws. Third, conflict resolution through legal channels at the district court level, high court to the Supreme Court as a result of the conflict between the owner of the corporation and the chairman of the FMPMA. The water conflict

ended after the Supreme Court Cassation decision was issued at the end of 2015. The corporation stopped building hotels even though the hotel's IMB had not been revoked.

The case of water conflict in Klaten was caused by the risk of water shortages experienced by farmers who had so far obtained water supply from Sighedhang and Kapipaler Springs due to the construction of the bottled drinking water (AMDK), AQUA [4,5]. The establishment of the factory by the corporation PT. Tirta Investama near the two springs has had an impact on reduced water supply, thereby reducing the productivity of their agricultural land. The compensation of 1 billion in 2006 only temporarily resolved this conflict [5].

The water conflict case in Klaten are also caused by road damage by trucks carrying the products. The result is a conflict between villagers who were not employees of the factory and residents who were part of the factory in 2013 [29]. Another cause of the conflict is the construction of a second well which worries farmers because more and more water is being sucked up by the factory. The well construction was considered by the local social movement organization, Aliansi Masyarakat Gugat AQUA (AMGA) as violating applicable regulations [30]. In addition, the affected community also does not feel a significant welfare impact from the existence of the factory [30]. As a result, the conflict exploded again in 2023 and is still ongoing today.

The water conflict that occurred in Yogyakarta was triggered by the construction of Utara's apartment. The cause was that Karangwuni residents, especially in RT 1 RW1, felt the threat of a risk of water shortages due to groundwater being extracted to fulfill the operationalization of the Utara apartment [31]. So far, the residents have relied on well water to meet their daily needs. It is feared that the existence of Utara's apartment will cause local residents' wells to dry up.

Apart from being caused by the risk of water drought in the wells of the Karangwuni residents, there are various other causes of the water conflict in the Yogyakarta case [31,32]. First, issuance of establishment permit documents, including: Land Utilization Permits (IPT), Environmental Impact Analysis (AMDAL), Environmental Management Efforts (UKL), Environmental Monitoring Efforts (UPL). Second, during the socialization, it was conveyed that what would be built was an exclusive boarding house, not an apartment. Third, Karangwuni residents felt disturbed by the noise and ground vibrations that were generated during the construction process in 2015. Fourth, traffic jams on Kaliurang road were getting worse due to the presence of the Utara apartment.

Fifth, hedonism lifestyle problems and decency issues that arise from the existence of apartments.

The water conflict in Yogyakarta took place in 2015-2016 [8,9]. As a result of the construction of the Utara apartment, it has sparked conflicts between Karangwuni residents and corporations that build apartments and the Sleman Regency Government which issues various development permit documents [31]. In addition, conflicts also occurred between residents of Karangwuni who were pro of apartment construction and residents who were contra to apartment construction [32]. If residents who are against development form a social movement organization called the Karangwuni Residents Association Rejecting Utara Apartments/ Paguyuban Warga Karangwuni Tolak Apartemen Utara (PWKTAU), then residents who are pro-construction of apartments formed the Association of Karangwuni Residents Concerned for Change/ Paguyuban Warga Karangwuni Peduli Perubahan (PWKPP). Contrary to the reason by the PWKTAU, the PWKPP supports the existence of this apartment because it is considered to be able to improve the economy of local residents and believes that apartment residents will be able to blend in well with the local community. The water conflict ended with the completion of Utara's apartment construction in 2016.

4.2. Water conflict prevention model

Based on the conflict cases above, this study formulates a water prevention model to anticipate various similar cases that might occur in various regions in Indonesia. The model includes elements to overcome conflict triggers, main causes and various other causes of water conflicts, unequal power relations of actors involved in water conflicts [21,22], various risks [24] that exist in water conflicts. The formulation of the model seeks to comprehensively cover the various elements behind the complexity of water conflict issues which have become increasingly escalative after the decentralization era was implemented in Indonesia [1,2,10].

The water conflicts that occur in various regions in Indonesia reflect that environmental sustainability and human life have not become the main ecological ethics in managing natural resources. As a result, development policies (infrastructure) emerged which actually became the trigger for water conflicts in various regions. Therefore, the model formulated here positions ecological ethics as the main foundation in the management of natural resources in Indonesia as an ideological basis for anticipating water conflicts.

The emergence of various development policies that trigger water conflicts in the decentralization era cannot be separated from two things. First is unequal power relations between various groups of actors. The decentralization system creates a wider space for power relations between regional head and corporate actors so that it is more possible for development policies that are more pro-economic for their interests than pro-community and environment. Therefore, this model recommends the active participation of affected communities in planning infrastructure developments in their environment.

Second, political economy power relations in the decentralization era made it possible for regional head actors to grant infrastructure development permits to corporate actors. The power relations often result in maladministration practices in granting infrastructure construction permits [33]. Therefore, the elimination of these maladministrative practices can be carried out by providing an information monitoring system that is transparent, credible, accountable and easily accessible to the public. Through this information system, various permit processes for infrastructure development submitted by corporations can be monitored by the public for the completeness of the licensing documents, the suitability of the sequence of licensing documents that must be fulfilled, the compatibility between the infrastructure to be built and the applicable laws and regulations, the accuracy of the processing time and the official fee incurred for each licensing document. This information system monitoring the process of obtaining permits for building infrastructure is a vital component to anticipate various maladministration practices in issuing licensing documents and violations of applicable laws and regulations.

Third is law enforcement against all parties who violate the water conflict case [23]. Law enforcement against parties involved in issuing licensing documents. In addition, the enforcement must also be carried out against the parties who criminalize environmental warriors who defend the right to obtain water and a clean, healthy and sustainable environment.

The compliance with the various components in this model will reduce the various risks (physical/environmental, psychological, social and economic risks) [24] contained in infrastructure development for the affected local communities. The formulation of the water conflict prevention model can be seen in Figure 1 below.

5. Conclusion

The water conflict prevention model formulated on the basis of three empirical cases in Batu, Klaten and Yogyakarta seeks to anticipate conflict by identifying both the main

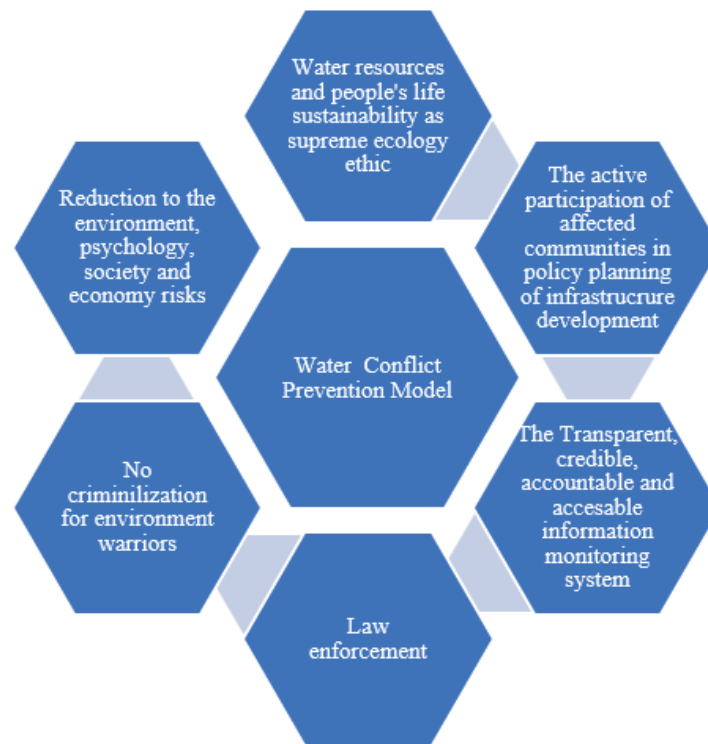


Figure 1: Water Conflict Preservation Model.

causal factors and various other causes. In addition to the threat of water scarcity as the main cause, maladministration practices and violations of applicable laws and regulations are other contributing factors triggered by infrastructure development in these various areas. This fact shows that the decentralization system actually provides more space for the operationalization of power relations between regional heads and corporate actors in maladministration practices and violations of laws and various other regulations in the issuance of various infrastructure establishment documents. Therefore, this water conflict prevention model gives priority to providing an information system for overseeing the issuance of infrastructure establishment documents that is transparent, credible, accountable and easily accessible to the public online.

In addition to the monitoring information system for the issuance of infrastructure construction permits, this model also emphasizes the importance of equality before law for anyone who violates laws and regulations that apply in the field of environment, water resources and Regional Space Order Plan (RTRW). The violation related to the environment, water resources and the RTRW caused by the establishment of an infrastructure. Apart from that, strict legal sanctions must also be applied to parties who criminalize environmental warriors, both local residents and environmental activists who

are fighting to defend their rights to obtain a clean and healthy environment and water in a sustainable manner.

Without an information system for supervising the issuance of various licensing documents are easily accessible to the public and law enforcement, the potential for water conflicts triggered by the construction of infrastructure will continue to spread in various regions in Indonesia. Therefore, the success of implementing this water conflict prevention model depends on the political will of the central and regional governments. The application of this model, which is supported by the good will of various stakeholders, especially the regional and central governments, will be able to prevent conflict escalation in this decentralization era.

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