

Dimensions of Javanese Culture As Social Control in Water Conflict (Story from Indonesia)

以爪哇文化作為控制用水衝突之社會性方法(來自印尼當地事件)

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ABSTRACT

Purpose – This research aim to obtain water management resolution for the occurring conflict between two local governments in Indonesia resulted from the effect of government decentralization autonomy which leads to water management autonomy in Indonesia.

Design/methodology/approach – This research took place in Surakarta and Klaten Regency, Central Java, Indonesia. Interview, Focus Group Discussion (FGD) and document analysis methods are conducted in this research to address the research questions.

Findings – Decentralization opened the local opportunity to be independent in all aspects of government governance. However, decentralization potentially resulted in conflict. The example is a conflict of water source management in Surakarta, and Klaten Regency (Central Java Indonesia). Water resource conflict would affect water resource quantity, quality, continuity, and distribution. Governance and local wisdom concepts could be used to reached a resolution of the areas of conflict.

Practical Implications – This research found the evidence that water resource conflict could be coped with good governance of water resource by considering the supervisory function and the participation of stakeholders involved in the good governance of water resource. Local wisdom concepts of the respective areas provide solutions for the problem in water resources management.

Originality/value – The research on good water governance as a result of inter-area conflict due to the effect of decentralization has been rarely conducted. Moreover, Indonesia is a sample where two local governments are involved in water management conflict. In addition, this paper discussed how the water management during Dutch colonialism in Indonesia, the water management during centralized government era, and the water management during local autonomy era are conducted.

Keywords: Governance, Water Conflict, Decentralization, Indonesia.

摘 要

目的 – 因印尼政權去中心化，區域政府各擁自治權，境內兩方區域政府於用水管理因此產生不同執政方法，時有衝突。本研究期能針對以上提供用水管理之解決方案。

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設計/方法論/手段 – 本研究地點為印尼境內中爪哇省的梭羅(Surakarta)和克拉登攝政(Klaten Regency)。針對研究問題，採用訪問、焦點團體訪談(focus group discussion)和文獻分析。

發現 – 政權去中心化開啟了各地方政府於各層面自主管理之契機，但也因此帶來紛爭和衝突。於本文提出之範例為發生於梭羅(Surakarta)和克拉登攝政(Klaten Regency)之間的水源管理衝突。水資源衝突將影響供水量、水質、供水穩定性和水源分配。適當的管理方法和當地文化概念的採用將可用於解決此類衝突。

實際涉入 – 本研究證明了良好的管理辦法將可用於解決用充紛爭，管理辦法包括了監督人的功能和權益關係人的參與。當地文化概念亦可針對用水衝突提供解決方法。

原創性/價值 – 針對政權去中心化引發之兩地治水衝突研究相當稀少，印尼更可作為兩方地方政府因治水產生衝突之案例。此外，本文亦探討荷蘭殖民時期於印尼的用水管理、政權集中時期之用水管理、以及去中心化後地方政府各擁自治權情勢下之用水管理。

關鍵詞：管理/治理，用水衝突，去中心化，印尼。

1. INTRODUCTION

Water is the source of life for every living creature in the world. The amount and the quality of water availability as a natural resource vary on the space and time. The functions and uses of water also required various attempt of improvement and protection to increase its benefit. According to Bucknall (2006), water has several characteristics: 1) Water has both emotional and spiritual dimension for many of its users, 2) There is a significant uncertainty about the amount and quality of water availability over years, both on the numbers and the streams, 3) Investments in water infrastructure benefits public and privates.

Water is part of the essential natural resources which must be protected and preserved (Hill 2010). Water is considered as natural resources which could be diversified, used as means of transportation, being saved, and recycled (Kumar *et al.* 2005). In Indonesia, the use of water is regulated in the supreme constitution namely Regulation 1945. According to the supreme constitution in Indonesia, water is related to the well-being of the society. Because it is related to the well-being of many people, water should be regulated by the country and used the most optimally for the sake of

the people, the nation, and the country¹. Therefore, water resources should be used to fulfill the various needs of all people and contribute to the prosperity of the society (PC Chan and Effah Ameyaw 2013).

The importance of water resources forces Indonesian government to issue several regulations to ensure good water management. The regulations consist of water resources conservation, water resources use, and control of water destructive power. Aside from establishing the regulations, the government also creates national water planning by considering how to satisfy people's need of water. The regulations and national water planning are two of the steps taken by Indonesian government to achieve water sustainability by considering four perspectives, which are the perspective of farmer, industry, drinking water supply (Bulsink *et al.* 2010), as well as the perspective of consumer and commerce (Hoekstra and Chapagain 2008).

The significance of water resources for life entails potential problems and conflicts (Haglund 2014). The water problem is often related to insufficient water debit and the implementation of regulation from the existing planning (Uhlendahl *et al.* 2011). On the other hand, water conflict is often related to problems arising from several contributing parties (stakeholder), for instance, between private

¹ In the highest constitution of Indonesia, UUD 1945, there are brief explanation and philosophy of the water and resources. The brief philosophy is discussed in verse (3) article 33 Undang Undang Dasar 1945, which stated "The earth and water and the resources of it are regulated by the country and shall be used to benefit for people's prosperity".

sectors and regional government who is responsible for the water resources management. Therefore, good management is needed to project alternatives by the government and aim to inform the people of how they could manage the water properly (Kuzdas and Wiek 2014).

The conflict began to rise between regional governments since the decentralization era². Decentralization mandates the autonomy to the regional government (Halim and Kusufi 2007), allowing the regional government to manage their region independently (Mardiasmo 2009). The responsibility of regional government covers various aspects. One of them is the regional financial and fiscal governance. The mandate of regional financial and fiscal implicate the authority of establishing and creating regional-owned corporations (BUMD³. Regional-owned corporations (BUMD) or regional corporation established to manage the management and supply of water in the region is PDAM (*Perusahaan Daerah Air Minum*/ Drink water regional corporation).

PDAM is responsible for the supply of clean water in the region. As a regional corporation, it is expected to give decent service to the society and produce profit for the region (Wibowo and Mohamed 2010). Since PDAM belongs to the regional government and is expected to serve the society, it is obliged to set affordable price while encourage prosperity of the society. The improvement of the PDAM performances would eventually lead to the increasing contribution to better access to drinking water for the people in the

region.

Many water resources conflicts occurred in various regions are related to regional government and regional-owned corporations in Indonesia. This research took the sample in tow cities in Indonesia, which are Surakarta city and Klaten regency. This research attempts to explain the process which leads to the rise of conflicts between the two regions due to decentralization. Moreover, it attempts to figure out a way to solve the conflicts by using the concept of *governance*. This research also involves local wisdom in the making of solutions to the conflicts.

Problem and Conflict Background

Decentralization applied in Indonesia leads to contrast in various aspects. It allows the region to be more independent (Kloot and Martin 2000), but also raise the probability of conflict occurrence (Haris 2005; Wu and Heerink 2016). Conflicts between regional governments vary based on the condition. This research is limited to the conflicts arising from the cooperation of regions.

Water resources conflicts between Surakarta city and Klaten regency involve the PDAM (*Perusahaan Daerah Air Minum*) of Surakarta city and the regional government of Klaten regency. The conflict arose from the PDAM of Surakarta which collects drinking water supply from Cokro Tulung natural springs located in Klaten regency. The water taken from Cokro Tulung natural springs is provided to 50% users in Surakarta city. The collecting of spring water had been conducted since the time of Dutch colonization before 1945⁴. The exploitation

²The era of decentralization began after the validation of UU RI No. 32/2000 regarding the regional government. The regulation was established after the reformation in 1998 or after 32 years President Soeharto rule the country. Centralization system was used in the time of Soeharto regime.

³BUMD is regional-owned corporation. The purpose of BUMD is to run the development of the area in particular and the development of the nation in general, which in the time of centralized economy was used to fulfill the need of the society by prioritizing industrialization and peace as well as the preference to work in a corporation toward a prosper people and justice (UU RI No. 05/1962 regarding regional-owned corporation).

⁴The supply of water from Klaten to Surakarta has long being practiced. The distribution pipe was installed since 1929 directing to Surakarta. *Air Minum Surakarta (Surakarta Drink Water)* was established in 1929 by Paku Buwono 10th / PB X in 1925, The establishment was entrusted to NV Hoogdruk Water Leiding Hoofplaats Surakarta en Omstreken (PDAM Surakarta, 2015). PB X was the king of Surakarta before the time of independence. In 1945, (when Indonesia is independent from colonialism) Surakarta kingdom joined the country of Indonesia. Surakarta kingdom is left with Keraton Surakarta (Surakarta Palace) which strictly used for the cultural purposes only.

of water enables the city of Surakarta to supply clean water for people in the region. However, the exploitation ignites a conflict between the regional government of Klaten regency and the government of Surakarta city.

The conflict was caused by the lack of communication between the two governments. The government of Surakarta city assumed that Klaten regency government unilaterally increase the fee of water utilization. The government of Surakarta city did not adhere to the policy of increasing the fee because the rise of the fee would burden the budget of Surakarta city. As a result, Surakarta city declines to pay the raise in the bill. On the other hand, Klaten regency has threatened Surakarta city to stop the water supply if the government of Surakarta city refuses to pay the rising bill, especially by the availability of deep well water treatment and water treatment plant in Bengawan Solo Surakarta. Klaten regency, as the only one who has the spring is the party practicing its right to increase the locally-generated revenue (PAD) by raising the tax on water use. To raise locally-generated revenue in the era of decentralization is not prohibited by the regulations.

PDAM of Surakarta city as the representative of Surakarta city government faced a big dilemma, which appeared since the PDAM of Surakarta city is expected to be financially profitable for the local government while exert its social function to fulfill society's need for clean water (Tohari 2012). The problem rose between the two regions would affect the quality of the distributed if remained unsolved. Moreover, the sustainability of the water resources would be disturbed (Hill 2010). Therefore, the problem demands special attention and needs to be examined more deeply to reach a comprehensive understanding which would solve the conflict between the two regions.

LITERATURE REVIEW

The concept of Good Governance

Good governance was firstly introduced by the World Bank in 1994. In the beginning, good governance was introduced to the developing country indebted to the World Bank in order to pay the debt (Mandar *et al.* 2015). After the World Bank, UNDP (United Nations Development Programme) appeared to spread the concept of Good Governance to all developing countries in the world. In the present, good governance concepts are not only applicable in the economic field, but also applied in other fields, such as politics, social, and administration. In this research, it is believed that good governance is capable of explaining conflict resolution model for the water resources conflict. Good governance consists of certain values, such as accountability, transparency, and civil society participation (Parker 1999; Neef 2008; Hill 2010) which could be applied to solve problems and conflicts.

Hill (2010) explained that there are three approaches to water management. The approaches are based on three elements of good governance, including: (1) accountability (the government is responsible for the action, contestable political power); (2) Transparency (the rights to be informed, the availability and clarity of the information); (3) Participation (civil society participation in decision-making). The three concepts of governance is useful for coping with several challenges, including (1) the efficiency of the organization and the process of water management; (2) the building of communication between the local society and water management organization which could develop strong relationship for long term; and (3) comprehensive consideration and adaptability toward climate change in the agenda of the government (Hurlbert *et al.* 2009).

Conflicts in water resource in this research is caused by the decentralization. Decentralization leads to changing mandate from central government to the regional government. It triggers conflicts between regions (Haris 2005; Wu and Heerink

2016). Decentralization also creates a gap between a *conceptual strand of good governance* which is supported by the law and politics regulation in central government level, *regional* and local which contribute to the diversity and the relationship between the organization (Varady *et al.* 2009). It mandates the regional government to rule every aspect of governance (Halim and Kusufi 2007; Mardiasmo 2009). The mandate includes the power to manage water resources management.

Kayser G *et al.* (2015) mentioned that good management leads to better access to clean water. Moreover, according to Kayser G *et al.* (2015), good governance would improve the coordination between organizations dealing with the service of drinking water; surveillance and law enforcement of the water; and sufficient technical capability to improve the administration and the management of technical service for water at the regional level.

Javanese Culture Dimension and Local Wisdom

Local wisdom stems from the culture of people living in the certain region. It is applied in various aspects of life in the society. Ingrained deep into minds of the locals, local wisdom is considered as the values and norms for people to interact with one another, toward God, and nature. Every region has the local wisdom which creates unique and different characteristics.

This research took place in one region in Indonesia. Suryadinata *et al.* (2003) explained that Indonesia consists of many ethnic groups widespread across the country. More than 1.000 ethnic groups scatter on Indonesian soil (Efferin and Hartono 2015). Those ethnic groups all have different local wisdoms and cultures. Among 1.000 different ethnic groups in Indonesia, the country is

dominated by Javanese ethnic which comprise 41,71 percent of the population (Suryadinata *et al.* 2003).

Javanese ethnic group has a special culture commonly known as *Javanese culture*. Javanese⁵ often conduct certain rituals⁶ to maintain the harmony between humans, God, and nature. They believe in “One and Only God”⁷ which motivates them to always being nice, compassionate and encourage strong work ethics. Most of Javanese are Muslim (Beatty 1999), and Islam is acculturated with *kejawen*⁸. Therefore, Javanese are known as people with high tolerance.

According to Efferin and Hopper (2007), Javanese culture contains a set of righteous behaviors as well as rigid rules. However, Efferin and Hopper (2007) also pointed out that Javanese culture possesses social harmony (*rukun*) and spiritualism. On the other hand, Geertz (1961) explained that there are two principles in the interaction of Javanese society, consisting of the principle of social harmony and the principle of dignity. The two principles aim to preserve the harmony in the society.

Harmony and dignity could be viewed as being in the state of balanced co-existence, composure, and peace, without conflicts and opposition, united in cooperation (Mulder 1977). The principles are essential in decision making during the meeting in order to reach consensus (*Musyawaharah*) and cooperate with one another (*Gotong royong*) (Efferin and Hartono 2015). Harmony and dignity are parts of local wisdom which hold many noble values that applicable to solve conflicts. Apart from the two principles, Javanese culture is also rich in other local wisdom, such as social relationship, norm, traditional knowledge, social leadership, trust, reciprocity, loyalty and togetherness, social

⁵Javanese are often called by “Wong Jowo”.

⁶There are many rituals conducted by “Wong Jowo” to maintain the harmony between human, God, and nature. The examples of those rituals are meditation, *ngrowot* fasting, and *bersih desa* (the cleaning of the village). Every ritual conducted by “Wong Jowo” always possess certain meaning and goodness.

⁷“One and Only God” is described as “*Tuhan Yang Maha Esa*”.

⁸A traditional javanese spiritualism.

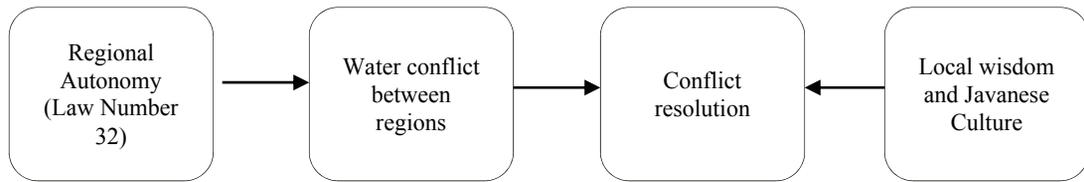


Fig. 1. Theoretical Framework.

responsibility, and participation.

METHOD OF THE RESEARCH

This research uses empirical method with qualitative analysis. The characteristics of this research is descriptive, developmental, providing asystematic explanation for the object of the research. Data collection are carried out by an interview and Focus Group Discussion (FGD). The research uses primary and secondary data, and later being analyzed to figure out the problems. Primary data are gained from a direct data source, which is collected by interview. On the other hand, secondary data are collected from PDAM of Surakarta city. Secondary data are identified and completed by reviewing literature related to the research question. Data analysis are conducted in this research to answer the research questions.

To investigate the details of water resources

problems between the two regions, we have prepared several questions for the respondents. The questions cover some aspects of the management and local wisdom in the two regions being used as the objectives of the research⁹. The interview also aims to collect information regarding the conduct of adaptive strategy in the use of water, water management, regulations, and their perceptions of the regional-owned property. The interview is conducted in local language, which is Javanese (Kromoalus)¹⁰.

The locations where the research is conducted are Surakarta city and Klaten regency. In terms of management, clean water in Surakarta city is provided by PDAM Surakarta city. However, the water is collected from several springs in Klaten regency, for instance, Cokro Tulung spring, Umbul Ponggok spring, and Umbul Gedong spring. Therefore, the interview is conducted in those places. Since the research is conducted in two

Table 1. Summary of interviews

Subject	Subject's Status	Hours	Session
Mr. T (Citizen in the area of Cokro Tulung spring, Klaten)	Public Figure	2,5	2
Mrs. S (Citizen in the area of Cokro Tulung spring, Klaten)	Public Figure	2,5	2
Mr. G (Citizen in the area of Umbul Gedong spring, Klaten)	Public Figure	3	2
Mr. S (Citizen in the area of Umbul Ponggok spring, Klaten)	Public Figure	3	2
Mr. A (Citizen in the area of Cokro Tulung spring, Klaten)	Public Figure	2	1
Mr. P (Citizen in the area of Cokro Tulung spring, Klaten)	Public Figure	2	1
Mr. Pur (Citizen of Surakarta city)	Staff of PDAM Surakarta city	2	1
Mr. Sb (Citizen of Surakarta city)	Staff of PDAM Surakarta city	2	1

⁹See Appendix 1.

¹⁰Javanese language consists of several levels. Every level is used for certain function. *Kromo alus* is used to communicate with older or respected member of the society.

regencies and focused on certain problems, we used single case analysis to analyze data in this research (Bernard and Bernard 2012). Furthermore, a model is created to solve the problem of the research object.

There are several reasons underlying consideration for choosing the setting of the research. First, in the area of Surakarta city and Klaten regency, conflicts of natural resources and environment frequently occur, for instances: (1) conflicts of the water resources utilization between the regency/province; (2) conflicts of water resources utilization between the civil society and local government (PDAM); (3) conflicts of natural resources use (land) between civil society and local government; (4) conflicts of water resources utilization between civil society and corporation and (5) conflicts of natural resources utilization between local and central/province government. Second, the areas actually hold much local wisdom which significantly maintains the harmony between people and nature, even though it is yet utilized.

DISCUSSION

Water Resources Management

In Indonesia, the result of National Resources utilization owned by the regional is considered as the locally-generated revenue/Pendapatan Asli Daerah (Regulation No 25 the year 1999 regarding the financial share between central and local government). Generally, the problems regarding water consist of four main problems, the quantity, quality, continuity and the distribution. Moreover, the regulations trigger problem between the parties involved in the utilization of water source in different areas which lead to more serious problems if it is not handled properly.

Since water is inseparable to any aspect of human life, it is an essential factor of development in all sectors include the agricultural sector, the

plantation sector, and forestry sector. Therefore, the management of water resources should involve the participation of every stakeholder. All public decisions should be made with public interest taken into consideration, which can be put into practice by doing a public consultation. Therefore, all decisions made would be accepted by the society.

Hurlbert *et al.* (2009) conducted a research and concluded that in order to solve the adaptability challenge from climate change in water management organization, local counselor in the banks of the spring is needed to apply any decision regarding the management of water spring. Several challenges to meet is how to increase the effectiveness of the organization and the efficiency of the water management; how to develop communication bridging local society and water utilization organization; comprehensive and long-term consideration in response to the climate change in the agenda of the government.

The lack of knowledge regarding water utilization and related regulations becomes strategically critical when developing water-governing reformation. This also points out that there are three important strategic issues (Mollinga 2008) including 1) Understanding the sustainability and the dynamics of water resources bureaucracy, particularly irrigation/ PLTA (water-generated power plant)/ flood control/drink water need; 2) Investigation of alternative approach for planning and decision-making regarding water resources; 3) Understanding the regulations / interventions by other interest from local groups, bureaucrat, and other stakeholders.

Generally, the utilization of water resources came from one thing, which is finding the way to utilize and earn benefit from the water. However, should be kept in mind that loss is also inevitable. Three aspects of the water resources management which should be kept in mind are the aspect of utilization, the aspect of conservation and the aspect of protection (Samidjo 2014).

1. The aspect of utilization. It is the most urgent and frequently considered aspect when dealing with water. Only after the imbalance of need and the available source appeared, human starts realizing other aspects.
2. The aspect of conservation. To maintain the sustainability, water should be conserved in sufficient amount and with ideal quality. Conserving the area of rain reception in the headwaters or in the land is one of the many steps in management. Therefore, the difference between the water debit in the dry season and the rainy season is not drastic. It also applies in keeping the water off from the waste pollution.
3. The aspect of protection. It is important to note that besides providing benefits, water can also induce disasters with its inherent destructive power, both physically and chemically. The banks (river, channel etc.) are usually used as waste dump sites for both liquid (domestic waste and industrial waste) and solid waste. It could endanger humans, animals, and plants. Therefore, when designing the management of water resources, we should always also consider precautions against natural threats such as flood or pollution.

Governance in water conflict between Surakarta city and Klaten regency

By considering every water-related problem discussed above, governance is needed to project alternative solution by the government aiming to inform the society of better water management (Kuzdas and Wiek 2014). *Governance* is a challenge for every corporation or public service to do capacity building for the sake of public interest (Bucknall 2006). The scope of water management/governance could not be limited. However, the framework of the governance should be adaptive and understood by all member of the organizations (Allan *et al.* 2013). Water management could also be conducted by establishing regulations for the

prolongation of water channel or places affected by the water, for instance, regulations in energy, commerce, and farming fields (Baumgartner and Pahl-Wostl 2013), production and distribution fields (Lele *et al.* 2013).

It is important to trace back to the source of the conflicts, looking into the causes, before creating a model of conflict resolution. As discussed before, the conflicts stem from the decentralization. Decentralization could trigger conflicts after giving out the opportunity to increase their locally-generated revenue/*pendapatanaslidaerah* (PAD). The region has the right to increase their local revenue from various sources, with water resources being one of it. The dependence of region to the revenue from water source could be observed from the case where low revenue obtained from real sectors, water source, in comparison, is relatively more profitable for the regions. Therefore, regulation and supervision of the collection of water with other areas of the region to the water resources should be supervised existence.

The issue of water management has become a global problem at this time (Hill 2010). According to Hill (2010), the approach of water management indicators could adopt the concept of governance, such as: (1) accountability (the government is responsible for the action, contestable political power); (2) transparency (the right to be informed, the availability and clarity of the information); (3) Participation (civil society participation in decision-making.) The researchers attempt to adopt and apply the concepts of governance to create suitable conflict resolutions.

From the Governance principles, it is known that the involvement of the government, private sectors, and society are necessary. This is known as governance concept, focused on the capacity and result-division, also continuous development.

Governance concept presents the idea that where the network appears from different relation between different sectors and different interest of the

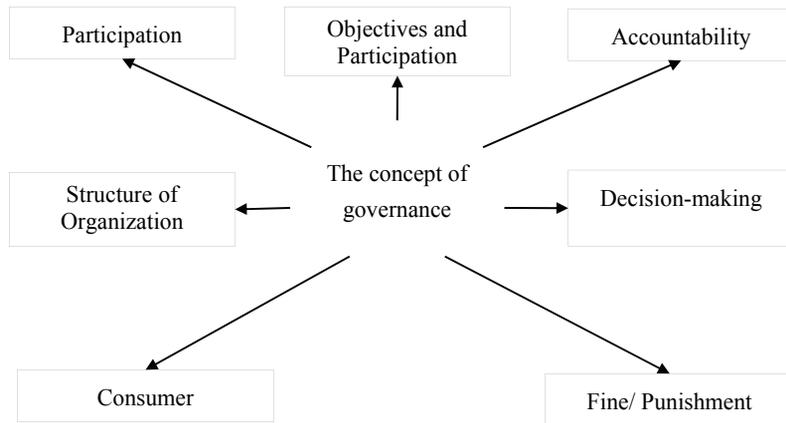


Fig. 2. Principles of Governance. (adapted from UNDP and World Bank cited in Graham *et al.* (2003))

society, making it possible to analyze how network and relation are created by government, public and private sector, civilian, community, and citizen become a good network and relation that provide new solutions to solve society's problems. (Franks and Cleaver 2007).

Table 1 shows management system for each department, including the government and private institution, as well as the participation of the society.

The government is a rich concept that pictures how the society does the business, including various relations between different interest holders (government, public and private sector, NGO and community, and civilian) (Franks and Cleaver 2007). In this research, Surakarta is represented by PDAM Surakarta. It manages directly the supply of clean water in Surakarta city.

From the consumer's perspective, PDAM Surakarta treated consumers from the city, outside the city, and Klaten region with equal fairness. This principle could also be drawn from Mr. P and Mr. Pur's statement:

Klaten PDAM offers the same price to us. They put the same price as the price they charged to areas with PDAM pipe passed through to Surakarta (Mr. P). People whose area with no pipes passed through has their private pipe track built. Furthermore, the water is sold with the same price. Some villages initiate the building of their own pipe track and

have it managed by the village (Mr. Pur).

From the transparency perspective, PDAM of Surakarta has informed all of the carried out activities, as well as plans and policies, through media of information accessible by the society. However, the department does not inform the financial problem to the public. The financial problem being a sensitive matter, its report is often kept away from public attention.

Conceptually, the government should pay attention to the stability of the current amount of resource, and also prioritize the people around the area. The stability of Surakarta PDAM water resource in Klaten regency is supported with the making of deep wells as additional supply for clean water. Moreover, Mr. Pur also said that PDAM of Surakarta city shows a good ethic through the greening program they planned for keeping the water resource stability in Cokro Tulung.

As shown in Table 2, a fluctuation is seen from the water production managed by Surakarta PDAM. From the data, it is shown that the biggest amount of water was produced in 2009 and decreased for the following years. This also influenced the amount of water that is sold. Unfortunately, the amount of water loss is 38% more than the total water produced. From this condition, a better water supply management is needed, so that the loss could be minimized, while the amount of water production

Table 2. Public-Use Water Management System

Governance Concept	Government	Private/Commercial	Society
Organization Structure	Government as Agent	Company	Association, Non-government Organization, GO, Society's Network
Accountability	Governmental rules hierarchy	Cooperation Contract	Society's norm
Decision taking	Official, Expert Administrator	Company, the Experts	Leader and member Non-Government Organization
Purpose and Transparency	- Public Interest Representative - Efficient according to the policy - Policy Information	- Maximum Profit - Efficient Finance Performance - Company information	- Serve the interest of the society - Effective Performance - The need of information
Consumer	- Principal	- Costumer	- People
Punishment	- The country's authority supported by the law and order - Political process - Courting Process	- Financial Loss - Take-over	- The need for job - Social pressure
Participation	Open the chance for society to take part in the arrangement of the law	Take part in arranging the law and order	Take part in arranging the law and order

Source: adapted from (Bakker 2003; Hill 2010).

could be maximized.

Mr. Pur described how local people benefit from Surakarta PDAM's operation in Klaten regency, as they are able to have better lives from the developed tourism sector in Cokro Tulung area. Moreover, Surakarta PDAM also takes part in their activities materially. It would be a different story if it is managed by the government of Klaten regency, the local people cannot see direct benefit except for the tourism sector.

Local Wisdom-based Water Resource Conflict Governance

Local wisdom has applicable noble values in keeping the harmony of living (Koentjaraningrat 1985). People who live near the water resource in Klaten region still believe in myths of the water resource guardian, which is believed to take physical form of a white snake or white fish. They

believe that they need to conduct *bersihdesa*¹¹ event whenever the believed guardian appears. This event is usually held in *ruwah* month (one of the believed months by Javanese). It is a reflection of the local wisdom shared among local people as their form of participation in managing the resource. This reflection teaches the following ideas that are revealed by Mrs. S:

Bersih desa teaches tolerance, cooperation, and trust. These attitudes are upheld by the people with water resource in their area. They are implanted to the children from the last generation by action and also told as fairy tales. Young children live around the pennant has been trained to work together in every event held by the village, for example, forming a committee before wayangan event. The young children are appointed by a discussion lead by the Head of the village and also a figure of the customs people.

¹¹ *Bersih desa* is conducted by creating *wayang* show for the whole night and do the cleaning the water resource together cooperatively. *Bersih desa* event then closed by religious giving presented to the nature as a form of gratitude.

Table 3. Water Production and Distribution

Items	2009	2010	2011	2012	2013
Water production	24,817,000	24,581,453	23,799,386	23,955,926.05	23,582,653.60
Sold-out water	14,892,569	14,802,307	13,868,020	14,070,639.00	14,006,060.00
Water loss	9,924,511	9,779,146	9,584,197	9,499,454.42	9,162,827.19
% Water loss	40.00	39,80	41,03	39,66	39.51

Source : Surakarta PDAM.

Not only *bersihdesa*, some other activities contain the means of water resource management. This is, for example, initiated by the local people to establish a community funding from their people for the water management. It is expressed by Mr. T:

Community Funding for the water resource management is mostly initiated by the local people because we believe that waiting for help from the government needs time, while the local people always need water. This institute is focused on fulfilling clean water demand for household need.

Community Funding is established based on the family and voluntary kinship. The source of the fund is drawn from voluntary material contribution (as known by the local people as “uangjimpitan”). The organization has annual agenda of *bersihdesa* that as been mentioned in the previous paragraph.

Many local wisdom values are influenced by Javanese culture which concentrates on concordance and politeness. These values are summarized into

the following 10 points: (1) Understanding the meaning of social relationship; (2) Understanding the meaning of values; (3) Understanding about honesty; (4) Understanding about traditional knowledge; (5) Society’s understanding about social network or social leadership; (6) Understanding about mutual trust; (7) Understanding about the exchange of goodness; (8) Society’s understanding about loyalty; (9) Understanding about social responsibility or high commitment; (10) Society’s understanding about participation.

These local wisdom could also be guidance to resolve water management conflict. Here is a model for the better picture of the idea. Table 4 describes a model of the local wisdom-based water management.

Conclusion

The ability to model local wisdom within a conflict allows to investigate a more understanding

Table 4. Model of Local Wisdom-Based Water Management

Conflict Resolution Process		Result
Related Party	Role of Related Party	
(1) Community funding becomes Non-Government Organization (2) Individual interpreted as party claim the water directly without permission from the government or the community funding (3) The government interpreted as PDAM located in the heart of the city.	<i>Role of Community Funding</i> Responsible for managing the use of water and supervised directly by the head of the village, figure of society, and government of district, and forming <i>Pamsimas (Program Penyediaan Air Minum dan Sanitasi Berbasis Masyarakat)</i> <i>Individual Role</i> Keeping good relationship between individuals <i>Government</i> Performing counseling on clear water resource, supervising the use of water, performing water resource use equalization for the villagers, and coordinating the community funding.	Understanding the local wisdom meaning has been known by the local people around the conflicted area. However, the application is occasionally difficult.

of the conflict. This study find the usefulness of local wisdom to better understand the perspectives from Klaten regency's and Surakarta city's points of view, thus the cause of conflicts. The observation is important since quantity and quality of the water are major issues in Klaten and Surakarta.

Historically, since the Dutch Era in Indonesia, the importance of water resource has been underestimated, but over the past decades hydrologist have improved society's understanding of the physical realities of groundwater by developing approaches to interpret its process (Philpot, Hipel, & Johnson, 2016). Water resource is important for human life, yet it has not been properly introduced and understood as well as protected compared to other resources. Regional autonomy has great influence over the occurrences of conflicts in water resource governance.

Currently, the quality and quantity of water is degraded as a result of population growth (Famiglietti, *et al.*, 2011), development, climate change, and the number of people turning to groundwater sources to meet their demand (Philpot, Hipel, & Johnson, 2016). A strategic analysis of the ongoing conflicts between Klaten and Surakarta over water allocation at Cokrotulung spring in Klaten, deep well water treatment in Surakarta, and water treatment plant in Bengawan Solo Surakarta is carried out in order to investigate factors causing the conflicts and how to resolve this dispute. Groundwater resource is out of sight and parties that use the water do not realize that they use the same water source until scarcity brings them to conflict. Of the three water sources, Cokrotulung spring in Klaten is the largest groundwater supply. Surakarta used to draw water from the spring in Klaten since the late 1940s until lately conflicts start to arise between Klaten and Surakarta government. The conflict has worsened when government in Klaten threatened to shut down the water flow from the spring to Surakarta. Both the government in Klaten and Surakarta were caught into the conflicts because

of the need to determine who has the right to use more water, affect the water received by the two cities. Water should be distributed equally in the two cities, the Surakarta City and Klaten Regency to avoid conflicts.

Good water governance needs the cooperation between government, private company, and society. Government as the regulation-maker is supposed to process the water resource that has direct influence to public welfare. It is a government duty as written in UUD 1945 as basic rules as the source of the regulations thereafter. Then, the private company as the investor should focus on the stability of the resources of water supply. Yet, it also needs society participation to create the water stability in Indonesia. As for the conflict between PDAM Surakarta, who used the water resource in Klaten and Klaten Regency Government as the owner of the water springs, both of the parties are responsible for conducting and communicating proper and solution-oriented solution to ensure the stability of water supply in each region.

It needs good governance to maintain the stability of water supply in Surakarta. Then, it also needs the society participation to maintain the water supply in Klaten Regency. Those aspects are needed to prevent a failed governance of water supply caused by several things, such as 1) no existence of consumer right of the basic service 2) policy 3) government culture 4) economic disinvite to associate the poor household.

Then, good governance will prevent problems between Surakarta City Government interest and the Klaten Regency's. Each of the governments will obtain benefit without interfering the interest and also the society around the water springs in Klaten Regency.

The society participation in the water resource governance is an effort to gain 1) increasing legitimation, management of water, and positive results of the water governance, 2) optimizing public acceptance, water quality, and water

allocation between the stakeholders 3) the adoption of local wisdom in water resource governance 4) improvement of accountability of institutes involved in the water governance 5) identification the alternative mechanism to solve the conflict, and 6) empowerment the society members who own and live around the water resource.

The society in Klaten and Solo has its own wisdom that creates harmony and manner in their daily life. It also included mutual assistance, and deliberation. Hence, it is a viable solution for interest holder to cope the conflict between the governments. In sum, this study hopes to contribute to a clearer understanding of local wisdom which is promising with regard to answer the question of how to solve the conflict between two groups. This study also reveals that it will be possible to address the conflicts using local wisdom even though it is impossible to satisfy both Klaten and Surakarta.

Implication

This research reveals the evidence that water resource conflict could be coped with by good governance of water resource by considering the supervisory function and the participation of stakeholders involved in the good governance of water resource.

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APPENDIX I

Water Resource Governance in Surakarta and Klaten	
RQ1	Operational Technical Aspect
RQ1-1	How is the procedure/ governance of the water resource?
RQ1-2	How is the technic to maintain the water resource?
RQ1-3	Is there any of local wisdom in the maintenance technic?
RQ2	Institutional Aspects
RQ2-1	How are the institutional aspects involved in the water resource governance?
RQ2-2	How are the economic institutions involved in the water resource governance?
RQ2-3	How are the social-cultural institutions involved in the water resource governance?
RQ2-4	How is the local wisdom in the water resource governance related to the institutional aspects?
RQ3	Financial aspects
RQ3-1	How is the finance from the community funding in the water resource governance?
RQ3-2	How is the finance support from the government in the water resource governance?
RQ3-3	How is the finance out of the source mentioned above in the water resource governance?
RQ3-4	How is the local wisdom in the water resource governance related to the financial aspects?
RQ4	Regulation aspects
RQ4-1	How is the regulation or the agreed rules in the utilization of water resource?
RQ4-2	Are there any unwritten rules yet obeyed in the governance?
RQ4-3	How is the mechanism of the rulemaking?
RQ4-4	How is the local wisdom in the water resource governance related to the water resource governance?
RQ5	Community participation aspects
RQ5-1	How is the community participation in order to create the water resource governance?
RQ5-2	How is the community participation in the implementation of the water resource governance?
RQ5-3	How is the community participation in the monitoring and evaluation of the water resource governance?
RQ5-4	How is the community participation in the utilization of water resource governance result?
RQ5-5	How is the form of the local wisdom in community participation in the water resource governance?