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RESEARCH ARTICLE



Shared water resources in decentralized city regions: mixed governance arrangements in Indonesia

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ABSTRACT

This paper investigates emerging models of governance for shared water resources in decentralized urban regions in Indonesia and draws on a case of inter-local government collaboration for shared water resources in Cirebon region, Indonesia. The paper points to cooperation practice involving a mixed-model of governance for sharing water, by identifying a series of requirements for mixed governance. This model suits well not only because of the regional nature of water resource management in general, but also because such a model is likely to strengthen trust, increase transparency, and provide more equal positions among regions or stakeholders involved. Crucially, this model tends to decrease problematic levels of local autonomy and inter-local rivalry, which currently appears as a major challenge for shared water resource cooperation attempts in the decentralizing contexts of Indonesia and beyond.

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Water resources; governance model; decentralization; Cirebon; Indonesia

Introduction

The practice of distributing and sharing water resources has been under increasing pressure in urban regions worldwide. The use of water for irrigation, for industrial processing, and, crucially, for households and drinking water typically involves inter-local (usually upstream-downstream) coordination, and management at a regional scale (e.g. Carmon and Shamir 2010). In developing countries, these coordination practices are experiencing particularly stark pressures from urban growth, increasing demand, and diminishing natural supply due to climate change. This paper aims to refine our thinking about current governance practice for shared water in a case where these pressures occur simultaneously (e.g. Titisari Danielaini, Maheshwari, and Hagare 2019). The case involves a city region in Indonesia.

Water governance normally features a variety of arrangements for inter-local cooperation. Governance models (e.g. Hamilton 2004; Savitch and Vogel 2000) can be formed by either the need for a supra-local (i.e. regional) response to urban or environmental challenges, or an autonomous local response, or both, including issues such as urban growth and equity between an urban core and rural periphery (see also among others, Bird and Slack 2007; Sancton 2005). The formation of governance models also involves regulatory systems such as fiscal decentralization, local autonomy, the role of provincial government, and coordination between different layers of government. Such variation in governance aspects can result in responses that maintain and even strengthen local autonomy instead of responses that facilitate inter-local, regional cooperation.

The notion of sharing refers to an understanding of water as an essential element to sustain life and to manage the joint use

or benefit of water resources in an area. Water sharing refers to the linkages between local communities upstream (typically rural) and those downstream (typically urban). Governance forms of sharing vary, and may involve negotiations around controlled run-off, water quantities through piped infrastructures, water delivery, user fees, compensation for upstream areas, discussions about efficiencies in the consumption of water, and the human right to water (e.g. Wutich et al. 2018). Sharing can involve conflict-resolution about a reasonable and equitable distribution of water, for example involving upstream and downstream communities in a watershed or river basin (e.g. Menzel and Matovelle 2010). Water scarcity then may be a matter of conflict, with management based on an understanding of needs and interests over water, including issues of access to and control over water, essentially in the process of negotiation (Wolf 2002). Aspects of local autonomy and entitlement are important. Water sharing may also be based on broader cultural norms (e.g. Wutich et al. 2018), for example when water is shared voluntarily or allocated based on arguments around fairness and the idea that water is a human right.

Particularly for Asia, local autonomy can be characterized by political fragmentation and may be subject to the dominance of local elites in local leadership (Laquian 2005; see also Porio 2012). Coordination within metropolitan regions in Asia has so far been characterized by conflict (Firman 2008) among local leadership, but also more generally as these regions are 'the engines of economic growth, the agents for transformation of societal values, the loci of authority and power, and the sources of national leaders' (Laquian 2008). Given that political influence may well undermine efficient public services as a goal for metropolitan governance of the Southern countries, particularly in Asia, this paper investigates what model of governance is suitable for inter-local government cooperation that pertains

to efforts to establish shared water resources in a decentralized context.

The Indonesian context offers a good example for the investigation of current urban and water governance for several reasons. Indonesian decentralization policies since the 1990s have necessitated changes in the regulations, laws and formal arrangements governing intergovernmental relations, from which inter-local government cooperation is established. Municipalities and districts are strongly autonomous in terms of the authority to manage local issues. Decentralization has considerably reduced and made less significant the provincial government's role in contrast to the role of local government. The reality on the ground is that while local governments in Indonesia are still dependent on central government funding (Silver, Azis, and Schroeder 2001), they have been seeking new ways to consolidate their autonomy and strengthen specific inter-local coordination, particularly in the context of urban development and resource scarcities.

Clearly, the power and authority devolved to local governments and the rapid enactment of new regulations under decentralization policies provide opportunities for local actors. New regional networks have been emerging with powerful roles for local actors (see Hadiz 2007). An important implication of these opportunities is that the quality and improvement of public service provision at the local level in Indonesia have shown increased uncertainty (Lewis 2010). Uncertainties may pertain most clearly to cases involving inter-jurisdictional cooperation (see Mishra 2002). Meanwhile, particularly for public services like water supply, which directly impact the basic needs of the community, the pressure to provide such services is high due to their importance for peoples' quality of life. The opportunities provided by new local and regional networks require local areas to be not only more self-reliant but also more collaborative in addressing issues like access to fresh water. Indonesia's current decentralization policy requires cities and their surrounding regions to improve their collaborative capacity. Given the fact that this kind of collaborative governance for public service delivery has not commonly been a priority, our research question is: what may be a suitable governance model for inter-local government cooperation involving shared water resources to provide clean urban water, in a decentralised context?

The paper aims first to identify criteria for suitable governance in the context of regional coordination for urban development and water. Based on these criteria, the paper then proposes a governance model. The analysis focuses on inter-local government cooperation for shared water in a secondary city-region in Java, Indonesia. The case involves a small city of 300 thousand inhabitants, Cirebon, and a district in its peripheral region, Kuningan. The downstream city is undergoing significant urban growth and does not have any freshwater resources to supply clean water for its inhabitants so that it depends solely and increasingly on fresh water from the upstream district. The case represents changing practices and regulations in a decentralized context, and therefore will offer insight for governance models in similar contexts.

The data for this study consist of meeting minutes, policy documents, and in-depth interviews. Respondents were selected using purposive sampling combined with snowball

sampling. The total number of respondents interviewed for this study is 37 respondents. Thirty-four respondents were interviewed back in 2012 and three respondents were interviewed in 2018 and 2019 following the development of water-governance related regulations. The respondents are from local, provincial, and central government, as well as NGOs and local communities. The interviews result is analysed with standard content analysis.

The paper is divided into five sections. Following this introduction is a literature review about different models of governance. The paper then continues with discussing two established cases of inter-local government coordination in Indonesia. The third section analyzes the changing context of inter-local government cooperation under Indonesian decentralization policy, followed by a review of efforts to build inter-local government cooperation between Cirebon City and Kuningan District. The final section offers discussion and conclusions.

Models of governance: the problematic context of coordinating urban and water development

This section discusses models and requirements for water and urban governance following generic insight from the literature. A useful differentiation between models of governance has been to place them along a continuum of stable formal and voluntary or transient informal models with a variation of stakeholders involved, from local to multi-level of government as well as private sectors (Savitch and Vogel 2000). There are also functional differentiations, ranging from single function governance (e.g. water supply management) to multiple function (such as regional government).

A voluntary cooperation model may refer, for example, to deliberate cooperation between local governments within specific temporary institutional arrangements (Laquian 2005). Voluntary cooperation is seen as innovative service sharing which does not require significant additional governance structures (Zeemering 2008). However, one major issue with voluntary is that the interests of one local government can take precedence over those of another because of an unequal distribution of resources and bargaining power (e.g. Vella et al. 2016).

Water issues are coordinated through a wide range of these options, ranging from formal unified government arrangements, through to specialized agencies, contracting and informal coalitions between multiple parties. Water is usually seen as a clear motive for region-wide cooperation, due to its cross-boundary character (Grigg 2011). Water governance has also increasingly been examined as related to urban development (Yasmin, Farrelly, and Rogers 2018; Neto 2016). Key approaches like the Integrated Water Resources Management (IWRM) principles emphasize the regional character of cooperation and the need of linking land use and water (Mitchell 2005). This concept also emphasizes the importance of balancing stakeholders' points of view (Grigg 2008). As a variety of stakeholders are involved, power and the distribution of abilities to act play a crucial role in water resource management (Katz 2021). This characteristic represents an inherent practice of negotiations

affecting any equity in water allocation. It also represents sharing of water resources through inter-local coordination.

For the Asian context, decentralization and local autonomy are typically characterized by political fragmentation (Laquian 2005; Firman 2008) and the dominance of local elites and 'political dynasties' in local leadership (Laquian 2005; Porio 2012). Therefore, issues around sharing water tend to be fragmented and political-cooperation to simply increase the efficiency of public service provision is not necessarily a priority. A highly political context of governance poses more complexity than understanding water as merely a substantive background of cooperation, particularly for the Indonesian case (Rahayu, Wotljer, and Firman 2019). This tendency requires careful consideration about suitable models for cooperation and integration involving multiple sectors and stakeholders.

Typical models of urban and regional governance in the Asian context include two-tier or multi-tier government structures (Laquian 2005). However, so far, also a unified or centralized model is widespread, partly on account of institutional legacies in Asia of (previously) authoritarian regimes in which the central government had a strong role (Laquian 2005). Another model of governance applied in Asia is the mixed model. For the case of water management, controlling river flows running through different jurisdictions is a crucial way of dealing with water problems (see Muller 2007). These kinds of multi-jurisdictional water issues typically feature varied arrangements of multi-level as well as multi-sector engagement, and, therefore, a mixed system of governance. Moreover, the mixed model is also typically formed to undertake coordination of multiple sectors. The model is established based on certain shared responsibilities and roles; therefore, it appears as a mix of public and private actors (Ohemeng and Grant 2014), informal and formal coordination (Delgado et al. 2020), or different levels of policymaking (Franco-Torres, Kvålshaugen, and Ugarelli 2021). The Jakarta Metropolitan Region (JMR), for example, oversees multiple sectors and decision levels in their role as a cooperating agency for Jakarta development, although its mixed governance model has not been marked a success story (Firman 2008)

It can be concluded that models of governance are determined by local, regional, and nation-wide contexts. Based on where the authority for carrying out public functions lies, four possible models are apparent. Voluntary cooperation involves a system in which authority mainly rests locally and typically within a culture of local autonomy and restrained regulation. A mixed system of regional governance is one in which authority is shared selectively among different types of government (national, provincial, and local), and associated stakeholders, over different policy sectors. In a unified regional governance system, authority is held by a single governing institution, which manages public services and functions for the territories under its jurisdiction. This model can encompass a series of smaller fragmented municipalities in a metropolitan region or a larger consolidated municipality. Finally, a tiered model, including a two-tiered or multi-tiered system, is a system in which an additional tier of government is introduced above existing local governments to serve specific area-wide functions, while local authorities are retained.

A final generic point is the preference, as a rule, for lighter forms or urban governance in Asia. A process of amalgamation through structural reform as a means of integrating regional or metropolitan governance has tended to be unpopular in both Northern and Southern countries, and particularly in Asian countries (Patel, Sliuzas, and Georgiadou 2016). This is true also for structural reform achieved by introducing new tiers of metropolitan governance. The latter is seen as potentially creating too many conflicts of interest between metropolitan and local tiers. Instead of these, a new way of integrating regional or metropolitan governance is emerging through lighter or more fluid mechanisms of regional governance. The lighter mechanism of governance is a form of cooperation with neither additional tier of government nor amalgamation processes, but still emphasizing the need for enhancing collaboration among stakeholders (Sancton 2005). Enhancing such collaboration requires factors such as commitment, trust, and willingness to engage voluntarily in regional governance conferences, meetings, and joint authorities to share experience and to reach shared commitments regarding regional-wide problems and goals. Also, the term 'fluid governance' is used in the international literature to denote lighter mechanisms of governance (e.g. Certoma, Chelleri, and Notteboom 2020; Upadhyay 2020). Fluidity represents the idea that coordination usually features temporary arrangements around a specific initiative, project, or area.

To conclude, a movement towards a lighter mechanism of regional governance including for urban and water problems, indicates the importance to consider criteria such as trust, transparency, and equal position. In contexts where political tension in natural resources cooperation, such as water, is high, it is important to not only identifying those criteria, but also to analyze how to include governance arrangements that address allocative and distributive aspects of water resource management.

A crucial aspect for the Indonesian context is that urban development is leading to pressures on water resources, and therefore increasing potential conflict. The agricultural sector is an important user of water resources in Indonesia, but increasingly pressures emerge from urban areas. Inter-local coordination, upstream-downstream and rural-urban, is increasingly important. At the same time, as water is seen essentially as a human right, and guarantees around its accessibility a government responsibility (Astriani 2018), some kind of government control over water resources is constitutionally prescribed.

Indonesian cases: urban and water governance

Following the discussion on models of governance, this section will discuss previous models of urban governance implemented in Indonesia, and the changing regulations affecting governance models, including those related to water management. Previous studies have discussed inter-local government cooperation for middle-sized metropolitan regions in Indonesia and mega urban regions: the Jakarta Metropolitan Region (JMR) (Firman 2008) and the Kartamantul arrangements around the city of Yogyakarta (Firman 2010). Hudalah, Firman, and Woltjer (2014) have shown how the Kartamantul cooperation features

practices of bottom-up policy development. It started voluntarily through local governments dealing with waste management services, and then developed into a multi-local government cooperation supported by a specific emphasis on traditional culture (also see: Legates and Hudalah 2014). Traditional Javanese culture, with a particularly strong role of storytelling and a role-playing tradition through puppets (*wayang*), shows and various court dances, among other factors, were integrated into the governance process of the Kartamantul cooperation, to reveal a willingness of communities to speak up and be involved in the cooperation process. These cultures are combined with the particular character of Kartamantul featuring traditional leaders in simultaneous roles as bureaucratic leaders, following the region's special administrative status. Therefore, the success of such cooperation has depended on particular personal leadership (Firman 2010) and a strong symbolism associated with the Sultanate (Kraton) and Sultan (Hudalah, Firman, and Woltjer 2014).

The case of the JMR, a mega-urban region with a population of approximately 19 million, tells a different story. Its top-down cooperation and mixed-model governance is more complicated than the Kartamantul cooperation. Multiple levels of government are involved: 3 provincial governments and 10 local governments. Currently, the JMR mixed model is based on shared responsibilities among three provinces and several local governments. It is affected by several externalities following the JMR development process, including bottlenecks from traffic congestion in the bordering area, regional flooding, and an increase in slum areas (Cooperating Body of JMR Development/BKSP 2019). Considering the complexity and importance of JMR to national interest, the cooperation involves a significant role of central government (Firman 2008). The mixed model of JMR follows conventional processes of coordination like regular stakeholder meetings and *musrenbang* (a forum of discussion for development plan) (Abdurrahman 2012).

There is a sharp contrast between the two forms of cooperation. For Yogyakarta, traditional culture and strong leadership enabled the transformation of the governance culture into one of collaboration. This case proves that bottom-up cooperation can arise. In a mega-urban region with more complicated issues and more actors involved, stronger regulations to transfer some of development authorities to coordination body are required to make cooperation work. The authority of a regional body of cooperation, as defined in law, is emphasized, along with a major role played by the central government, focusing on regional planning and public infrastructure provision. These arrangements appear as less desirable given the tensions of political fragmentation in the mega-urban region involved (see Laquian 2008).

Both types of cooperation have been established before any regulations for inter-local government cooperation were issued. The question raised is what model of cooperation would be suitable for regions without a particular Javanese traditional cooperative culture like in Kartamantul, and not holding a significant national political role and influence such as for JMR.

To investigate this question, it is important to understand recent regulations under Indonesian decentralization policy.

The government of Indonesia has attempted to support and regulate inter-local government cooperation under decentralization. Seven to nine years after implementing decentralization policies by the enactment of UU No. 22/1999 and UU No. 32/2004, the Indonesian government introduced two main regulatory systems for inter-local government cooperation: government regulation No. 50/2007, 'Procedures for the Implementation of Regional Cooperation', and the Regulation of the Ministry of Home Affairs No. 22/2009, 'Technical Guidelines for Inter-local Government Cooperation'. These two regulations list main principles of cooperation, technical stages of cooperation, and alternatives of cooperation according to the nature of the cooperation. These principles, technical stages, and alternatives of cooperation are important because they are the main guidance acknowledged and provided by the national government for inter-local government cooperation.

The regulations state eleven main principles of inter-local cooperation including equality (the position of the actors involved should be equal, so that no local government has more political power or a higher administrative position within the cooperation) transparency and fairness. For cooperation involving districts, municipalities and provinces, the regulations also allow for a certain degree of variation in the role of the central government. The central government is involved in cooperation involving interprovincial administration and authority. Under Indonesian decentralization, on the one hand, the dependence of most local governments (districts and municipalities) on funding from a higher level of government can support the initiation of voluntary cooperation, especially inter-provincial cooperation. The balancing fund for cooperation may also foster awareness of the benefits of cooperation in terms of reduced public service costs. However, on the other hand, the same advantage may prove problematic in inter-local government collaboration under decentralization. The dependence on balancing funds and the tendency to focus on increasing local income can create stronger vested interests on the part of local actors when they are initiating cooperation. Certain regions that have the benefit of natural resources within their administrative area may hold the upper hand and show an increased propensity to exploit these resources to raise local income through inter-local government collaboration (see Seymour and Turner 2002; Frug 2002).

Government Regulation No. 50/2007 and the Regulation of the Ministry of Internal Affairs No. 22/2009 also explicitly state that for cooperation lasting 5 years or more, a regional body of cooperation should be established to help the head of the region manage the cooperation. According to Ministry of Home Affairs Regulation No. 22/2009, every regional government should form an inter-local government cooperation team, with the task of assisting the governor/mayor/bupati prepares and monitors inter-local government cooperation.

The same regulation suggests that voluntary cooperation lasting less than 5 years is not required to come under a particular regional cooperation body. This would commonly apply to cooperation between working units within the same province with a limited function and territory, such as cooperation for waste collection between sub-districts in border areas of municipalities and districts, carried out by the Sanitation Departments of both the municipalities and districts. Based

on previous studies and the current regulations, there are several models of governance in the Indonesian regulatory system. These models include voluntary cooperation, mixed system, and unified regional government. The determinants of these models include the involvement of provincial and central government authorities, local initiatives, and the presence of an institutional body to manage cooperation. A voluntary cooperation in this context refers to cooperation initiated primarily from below, without a clearly determined role of the provincial and central governments. A mixed system implies a certain degree of involvement on the part of the provincial and central governments. A unified regional government refers to merging smaller municipalities and districts into one larger metropolitan region. A unified model of government and the mechanisms required to establish that model do not appear as the preferred option for decentralized Indonesia, even though it is allowed by law. The power of the provincial government over municipal and district issues is limited. In addition to this, local autonomy following decentralization complicates the situation.

River Basin Management Planning in Indonesia is based on an advanced institutional and legal framework, including the now cancelled Water Law 7/2004 and Ministry of Public Works and Housing Regulations. It features a 'one basin-one plan-and one management' principle for 131 river basin territories (*wilayah sungai*), and an innovative tool such as River Basin Simulation and the Java Spatial Model to integrate IWRM and spatial planning (ADB 2016). However, the challenges of Indonesian WRM primarily relate to political will and strategic action for coordination among various sectors of WRM (water, agriculture, forest, energy) and aspects of WRM (i.e. irrigation, rivers, swamps). These challenges also are about incorporating multi-level governance and multi-actor involvement of IWRM, and a gap in capacity among actors at different levels or locations (ADB 2016). Spatial planning is seen as a field able to cope with such integration problem given its long-standing position in policy coordination (ADB 2016). Planning tools are crucial in managing land use change and issues of accessibility; that is why spatial planning is important. More particularly, land-use management can play a crucial role in addressing water problems. Good spatial planning, for example, can help protect and preserve water resources, and establish infrastructures for accessibility and distribution.

Fresh water resource cooperation between Cirebon City and Kuningan District

This section investigates the attempt to build cooperation between Cirebon City and Kuningan District for fresh water supplied to the city's piped water system particularly in the period from 2004 to 2008. By using policy documents and interviews, the formal arrangement is analyzed to determine how well it complies with the provisions discussed in the previous section. This cooperation was selected because of several reasons: the conflicts between the actors and the shortage of clean water which is a common problem in areas undergoing rapid urbanization. Arrangements for shared clean water resources are very often problem-ridden because of cultural perceptions that water resource is pertain to a particular

community or a region of and conflicting interests over water. The complicated efforts entailed in such arrangements are also typical of other regions in Java (BAPPENAS 2011). In general, cooperation with surrounding regions is crucial for smaller cities dealing with rapid urbanization and decentralization to provide better public services.

Interviews and policy documents reveal that since the colonial period, Cirebon City has sourced clean water from the spring in Kuningan District, located between Cipaniis and Singkup villages (Figure 1). Cirebon City also held building rights since 1950s on the land where the spring is located. Since then, the city, through PDAM Cirebon City, the local water utility, has also managed all of the technical requirements for conveying water from the source to the city. The Cirebon City used to pay a water tax for the use of the spring to the West Java provincial government. The provincial government then distributed this tax, with 70% going to the local government and 30% to the provincial government.

The interviews with the previous Director of PDAM Cirebon indicated that within this previous framework of shared water cooperation, from the time of the previous regime until 2003, Cirebon City used to make incidental financial contributions to Kuningan District in addition to the regular water tax, for example, on the anniversary of Kuningan District. There was no fixed amount that the city was required to pay. Interviews with villagers, NGOs, and an official of PDAM Kuningan also confirm that Cirebon City also made contributions to the communities of Cipaniis and Singkup villages, and the amount of these contribution was also unfixed. It seems from the interviews that there was no legal obligation to make such contributions, and also that no party demanded such contributions. The formal arrangement for the use of the spring water only involved the city and West Java province. The informal arrangements with Kuningan District and its community were based on the principle of 'family ties' between the two regions. This direct and simple arrangement for the use of the Paniis spring water had been in place for years.

However, the situation shifted drastically following decentralization, as substantial authority over local issues was delegated to the local government. This occurred together with the election of a new Mayor of Kuningan District. The interviews with the official representing the Local Planning Agency of Cirebon and the memorandum of understanding that was signed show that after the decentralization policies came into effect in January 2001, the arrangement stayed the same for the next 2 years. The first change took place after the Kuningan mayoral elections in 2003. The new mayor of Kuningan District, in coordination with the district's local councils (DPRD), initiated the 'compensation for conservation fund' in 2004 as an addition to the surface water tax paid by Cirebon City to West Java Province. In the first form of this new cooperation (before the enactment of PP No. 50/2007 on inter-local government cooperation), the money for the compensation fund was paid by PDAM (the local water utility) Cirebon City to PDAM Kuningan District, which then transferred the money in the local treasury office of Kuningan District. Those local officials of interviewed considered this cooperation a 'PDAM to PDAM cooperation', even though it was the heads of the district and city who signed the cooperation agreement.

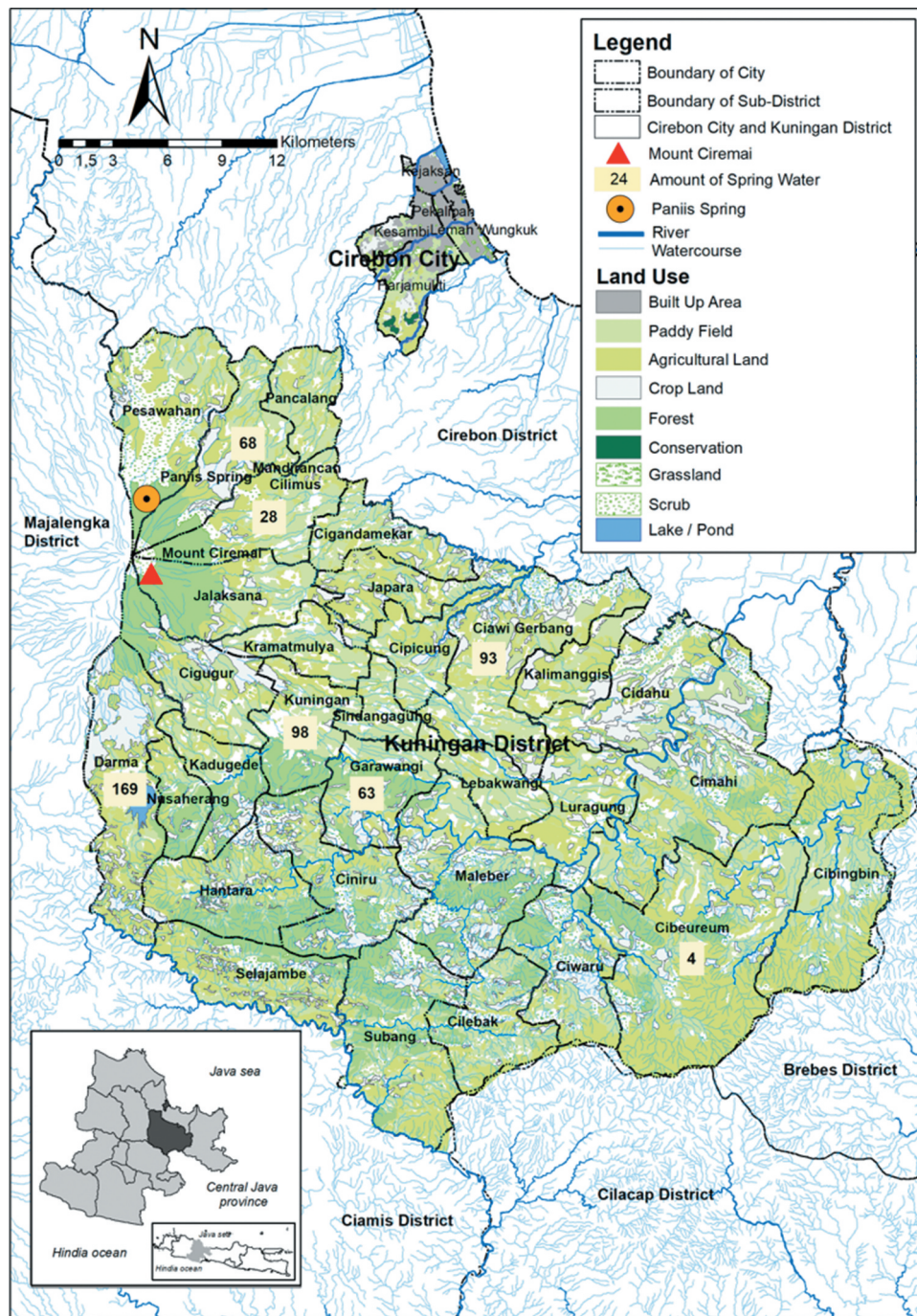


Figure 1. Cirebon City and Kuningan District (is about here).

After the enactment of UU No. 50/2007 concerning inter-local government cooperation, the cooperation scheme changed in 2009 to comply with this regulation, and became an inter-local government cooperation instead of a PDAM to PDAM cooperation. However, the main change, according to both officials in Cirebon and Kuningan, was in the flows of money to the conservation fund. The money was paid by the city directly to the district. In this case, PDAM Cirebon City gave the money to the city, then the city transferred the money to the local treasury of Kuningan District. The official of Regional Secretariat and PDAM of Kuningan pointed out that UU No. 50/2007 provides a clear indication that

a cooperation for freshwater resources like the one between Cirebon and Kuningan is not only supported but also protected by the decentralization policies and increased regional autonomy. Following the initial letter of agreement, the cooperation has been renewed every 5 years, and a new letter of the cooperation agreement has been signed by the two heads of government.

The interviews with several officials from Kuningan and Cirebon as well as with the Regent of Kuningan showed that this cooperation was a purely local initiative triggered by several factors. For Cirebon City, the Panis spring is the only available water source for its piped water system, so it is

essential for the city to guarantee the sustainability of the water supply from that source. For the city, the cooperation was necessary to sustain and improve piped water provision. The water supplies the city population as well as the population of the urban areas surrounding the city, the latter of which come under the administrative authority of Cirebon District. A point of concern for Cirebon City was validity of the legal framework for such cooperation (Interviews to officials of Local Planning Agency and PDAM of Cirebon City, and officials of vertical institutions, 2012).

For Kuningan District, the interview with the Regent reveals that the cooperation was triggered by an awareness that the dynamic institutional changes taking place under decentralization offered 'opportunities' for establishing cooperation among regions (Interviews in 2012). The interviews with officials of the Regional Secretariat of Kuningan District also confirmed that the idea of initiating inter-local government cooperation for water resource management was also based on an awareness of the importance of preserving the region's natural resources. Such resources are strong advantages for Kuningan District to position itself within the new regional networks emerging under the new decentralization policies and increased regional autonomy. Kuningan District has argued that to sustain the water resource they required guaranteed funding. This cooperation is expected to contribute to the future sustainability of the water resource, because it will ensure continuous financial support for preservation programs in the water catchment areas (interview with official of the Regional Secretariat and PDAM of Kuningan in 2012).

In the agreements, the user (Cirebon City and PDAM Cirebon City) is charged a certain amount of money per m³ of water used. As mentioned, this money is transferred to the local treasury of the Kuningan District. This money is then distributed and used for conservation activities in the catchment area of Paniis spring. The local forestry agency of Kuningan District is responsible for carrying out the conservation programs. According to the agreement between the two local governments, the cooperation is to be conducted for 25 years and renewed every 5 years. However, the interviews and the documents of agreement confirmed that only the amount of conservation funding paid by the city will be reviewed every 5 years. This amount has increased to a level about four times higher (MoU Cirebon City and Kuningan District, 2009). However, the city has been questioning the authority of Kuningan District to initiate such a cooperation with the city: 'Who is the legal owner of the water resource? [And consequently,] who has the authority to collect such funding?' (Interview with officials of PDAM Cirebon in 2012).

Several points of concern become evident. Examining these points of concern should lead towards a more suitable model of governance for the cooperation of shared water between Cirebon City and Kuningan District. The first point of concern relates to compliance with the main principles of inter-local government cooperation as given in the government regulations: efficiency, effectiveness, equality, transparency, fairness, the rule of law, synergy, mutual benefit, agreement, good intention, and prioritization of national interests and territorial integrity. The contribution to the conservation fund stipulated by the agreement is directly transferred to and held by the

treasury department of Kuningan District. The money intended specifically for the conservation of water catchment areas is mixed up with all the other financial resources of Kuningan District, which compromises the transparency of how the money is used. In addition to compliance with rules, reduced transparency weakens the trust between the actors in the cooperation. One of the interviewees pointed out this lack of transparency:

They [the city] have asked questions before [about the money from contribution for the conservation fund]. I am not responsible [for giving answers]. Where the money goes, it is our responsibility [Kuningan]. That is an internal matter [Kuningan]. It is not to be questioned by others. (interview with previous official of Regional Secretariat of Kuningan, 2012)

This cooperation demonstrates one of the disadvantages of voluntary cooperation mentioned in section 2 exacerbated by a strong tradition of local autonomy. Voluntary cooperation in this context refers to a cooperation initiated mainly from below, in which the provincial and central governments do not have a clearly determined role. Such cooperation tends to prioritize the interests of one local government at the expense of others because of unequal distribution of resources (Frug 2002; see also Seymour and Turner 2002).

Inequities in cooperation activities are confirmed when water-resource endowments between Kuningan and Cirebon are compared. The District has more than 500 locations of spring water, with debits varying from 8 L/s to over 1400 L/s (spring water discussed in this paper), not to mention the number of lakes and rivers within and passing along the area, while the City has no reliable water resources (see Figure 1). This situation shows the dependence of Cirebon City on water from Kuningan District. Clearly, water resources do not pertain to the administrative area where they are located. Furthermore, there is evidence of inequity between core and periphery in this case. In addition to the voluntary form and the status of water endowment as well as various claims over ownership, a lack of transparency around the conservation fund may well intensify inequity. The unequal positions of the members in this cooperation will be unlikely to match principles of equity and fairness as stated in the regulations for inter-local government cooperation. Because of this inequity, any voluntary form of cooperation is not entirely suitable in this context.

The second point of concern regards the form of cooperation. Until now, the form of this cooperation can be categorized as a 'voluntary cooperation', based on an inter-local agreement. The regulations require a regional body of cooperation for any long-term cooperation. This cooperation is set up for 25 years, to be renewed every 5 years. However, after nearly 10 years, no regional body of cooperation has ever been established. The cooperation is based only on an agreement document signed by the local governments and focusing on shared spring water only. According to Government Regulation No. 50/2007 and the regulation of the Ministry of Home Affairs No. 22/2009, if an inter-local government cooperation is conducted for 5 years or more, the members must establish a regional body to manage the cooperation. With the existing weaknesses regarding transparency, trust, equality and fairness, the absence of a regional body of cooperation could reinforce the negative features of

this cooperation. Moreover, considering the nature of the interconnectedness of different types of water resources and to other sector especially land use, the Regional Body of Cooperation will likely be more effective if it has oversight responsibilities over water uses as well as land uses within the river basin. As discussed, a mixed arrangement of governance commonly incorporates multiple sectors.

The third point of concern regards conflicting and overlapping regulations and the delayed issuance of detailed guidelines for their implementation. To throw more light on this situation, it is important to clarify the location of the Paniis spring. The spring is located at the border between Singkup village and Cipaniis village, in the sub-district Pasawahan in Kuningan District (see [Figure 1](#)). However, three separate authorities claim to share jurisdiction over the area where the spring is located and hence all of water resources within the area.

Paniis spring is located within the 15,500 ha conservation area of The National Conservation Park of Mount Ciremai (see [Figure 1](#)). The Forest of Ciremai Mountain became a conservation forest in 2004, by the Decree of the Ministry of Forestry in 2004. Before this regulation, it was a production forest.¹

As a production forest, Ciremai Mountain Forest was managed by the state-owned enterprise Perum Perhutani, which manages all state forests.² In the provinces of Central Java, East Java, West Java and Banten, except those that are conservation forests. By converting the forest to a national conservation park, the forest, including all the water resources and tourism activities within the area, come under the authority of the Ministry of Forestry. The vertical institution of the Ministry of Forestry, the Technical Implementation Unit or Balai TNGC, has the authority to take care of the area. The complete organizational structure of Balai TNGC was established in 2007. Balai TNGC and its activities are financed by the central government, that is, the Ministry of Forestry, from APBN (National Budget and Expenditure). The interviews to officials of TNGC revealed that, as part of managing the conservation forest, the Ministry of Forestry is currently preparing a government regulation concerning environmental service fees for conservation areas. Any parties that utilize water resources located in conservation areas must pay an environmental service fee. Currently, the authority to collect such environmental management fee for water resources utilization in Indonesia is given to Jasa Tirta, the central government enterprise for water resources management (Interview, 2018).

Paniis spring is in the Cimanuk Cisanggarung River Basin. During the period of the attempts to build this water resource cooperation, in 2004, the Government of Indonesia had just enacted a new Water Law, No. 7/2004, to replace Law No. 11/1974. Even though this regulation is cancelled later on, in 2015, and just recently in October 2019, the new Water Law No. 17/2019 is stipulated, one important consequence of this previous Water Law no. 7/2004 during the attempt of cooperation was that the Ministry of Public Works made an inventory of all available water resources which came under the Comprehensive River Basin Management Plans. This inventorization was intended to ensure that water resource management would maximize the benefit to citizens' quality of life.

These river basins were defined as 'the territorial integrity of water resource management in one or more watersheds and or small islands covering an area of less than or equal to 2000 km², (Article No. 1, paragraph 1, Law No. 7/2004). In accordance with the previous Water Law no. 7/2004, the recently stipulated Water Law (UU No 17/2019) states that the Indonesian Government will be focusing on identifying and utilizing water resources to form a regional water reservoir that should be managed by regional wide cooperation (Interview, 2019).

Moreover, another important point under Water Law 7/2004, which was just implemented during the initiation of this case study, Article No. 14 states that the central government regulates and manages river basins located beyond the boundary of more than one province and those that have national strategic value, including all the water resources situated within such river basins. The authority for managing these resources also involves conserving the catchment areas and raising funds to support conservation programs. The Ministry of Public Works calls this 'conservation funding to support the conservation programs for water resources', or Biaya Jasa Pemanfaatan Sumber Daya Air (BJPSDA) (Interview with Central government officials in 2012). It took 12 years, as mentioned earlier, for Jasa Tirta, to be appointed as institution that collects retribution fee of the utilization of surface water in 2016.

According to the 'Comprehensive River Basin Management Plan' for the Cimanuk and Cisanggarung rivers, drawn up by the Directorate General of Water Resources Management, Ministry of Public Works, Paniis spring is located within the Cimanuk-Cisanggarung River Basin (see [Figure 1](#)). The Cimanuk and Cisanggarung flow through the provinces of West Java and Central Java. Therefore, according to Law No. 7/2004 applied at that time, the central government, that is, Ministry of Public Works, has the authority to manage the utilization of all the water resources in the area, including the Paniis spring. As with the Ministry of Forestry, the Ministry of Public Works has established a vertical institution to manage the Cimanuk-Cisanggarung River Basin, called Balai Besar Wilayah Sungai (BBWS) Cimanuk Cisanggarung.

The Regulations of the Ministry of Home Affairs (Permendagri) No. 22/2009 concerning technical guidelines for inter-local government cooperation made provisions for an agency to collect conservation fees. This agency should be a third party with the capacity to cooperate at the level of inter-local government. The regulation also states that this agency should fulfil strict criteria set by the Ministry of Finance. Overall, there are indications that central government plays an important role for the Regional Body of Cooperation suggested by the Law, together with local government. As for the provincial government, during the conflict it plays a role as a liaison for horizontal communication among local governments located within the river basin area.

Third, Kuningan District also claims that they have the authority to manage and utilize the Paniis spring simply because it is located within their administrative area. The interviews revealed the perception of local government actors that UU No. 50/2007 supported the 'innovation' of Kuningan District in initiating the cooperation with Cirebon City. At the same time, officials from the vertical institutions perceived the current cooperation between Cirebon City and Kuningan District

as 'merely based on negotiation' or 'without any clear regulatory basis' or a 'temporary arrangement due to the ongoing process of regulation making' (interview in 2012).

The ongoing development of regulations and agencies not only points to a potential conflict between this cooperation and higher authorities in the future, but also allows for the possibility of a self-regulating inter-local government cooperation, which further raises several points of concern. These concerns mainly involve the arrangement's compliance with the current or future regulatory system, and the potential for 'overcharging' the city and its PDAM.

According to Water Law No. 7/2004, rivers flowing across more than one province are to be managed by the central government that is, the Ministry of Public Works. The areas around such rivers are managed according to the regional river plan that consists of several watershed regions (Dareah Aliran Sungai/DAS). The management of water resources under the regional river plan includes all the resources located in the region. The regional plan also addresses how to conserve catchment areas and manage conservation programs, and how to apply conservation funding to support these programs. The plan for conserving the catchment area is in line with the Program of Water and Food Security of Indonesia (WSFI), particularly for Java (Bellfield et al. 2017). There is an obvious link to spatial planning as the Ministry of Public Works, in cooperation with the Ministry of Spatial Planning, integrates issues of urban development and thus water demand and the environmental quality of water resources with water-resources management. They do this, for example, by setting regulations for sustainable food-crops and agricultural land protection, in which the land under this category is not allowed for conversion towards urban use. Kuningan District, with more than 80% of its 1,100 km² area agricultural land (see Figure 1), has been designated as a pilot area for delineating sustainable crop-agricultural land under the WSFI Program.

The Ministry of Forestry sees the Paniis spring as their responsibility because the spring is located within a national conservation forest, and they are responsible for managing water resources and tourism activities in the national conservation forest areas. The ministry is also looking into a regulation that allows charging for the utilization of water resources in a conservation area. The fees charged are known as environmental services fee. These regional river basin plans, the WSFI program, and the arrangements for forest conservation reveal not only a potential of overlapping regulations, but they also show evidence of clear national interests over the water resources, conservation, and spatial planning in Kuningan District.

The fourth point of concern is the impact of low local income on self-regulating arrangements. As discussed in the introduction, local governments rely strongly on the central government financially, about 60–80% of local income of the city and district comes from the central government (Regional Financial Statistics of West Java Province 2008–2012). The interviews suggested that generating local income was one initial reason for establishing a self-regulating cooperation. This is especially the perspective of local actors, especially those at the middle level who were mainly concerned with technical issues (see Hudalah, Firman, and Woltjer 2014). They acted on

messages received from higher-level actors, especially the heads of the local government, that is, the regent or mayor. However, for the mayor or regent, local income was not the only motivation. The head of a region may also have sought recognition of his leadership. One interviewee admitted that money was less important in this case, even from the beginning of the cooperation:

I think the whole thing is more dedicated to the regent's idea of making Kuningan District a conservation district. This is not really about bringing money in. As a conservation district, Kuningan will [have its own] distinct character. I think [in the regent's view] this is more about recognition rather than the funding itself (Interview with Regional Secretariat of Kuningan District in 2012).

Discussion and conclusion

This paper has explored inter-local government cooperation involving shared water resources for a decentralized urban region specifically in Indonesia. It also explored questions of water-resource cooperation more broadly in contexts of decentralized governance. Examining various models of governance, it can be concluded that governance in a decentralized context like in Indonesia is associated with efforts to strengthen local autonomy and ownership. Inter-local coordination between local areas therefore tends to be challenging in general, although cultural values of sharing resources facilitate some degree of harmonization.

Description of the Indonesian legal system and general practices for inter-local government collaboration in decentralizing Indonesia indicated that, voluntary cooperation (or bottom-up), mixed system, and unified regional government are feasible in principle. Although a unified regional arrangement would be compatible with the legal framework, it would be exceedingly difficult to establish, considering not only the existing decentralized system but also questionable capacity of regional (and national) levels to centralize such arrangement. Particularly for the mixed system model of governance, Indonesia's regulations provide several alternative formats. These are determined by the involvement of regional and central government authorities and the presence of an institutional body to manage the cooperation.

In the case of Cirebon City and Kuningan District, a lack of transparency (e.g. around the conservation fund in the case) can easily weaken trust between actors. The lack of a regional body to manage the cooperation despite the long-term nature of this cooperation is not in accordance with general rules for adequate inter-local government cooperation. The position of the members involved in the cooperation is not equal, because of the unequal distribution of resources and the need of the city. The absence of a regional body to manage also creates 'ownership' of water resources by certain actors. The tendency to 'own' water, which can be traded among regions, is critical in decentralizing Indonesia. The perspective that water pertains to communities and the independent administrative area where it is located strengthens the tendency to politicize the management of water if they are managed solely by local government. This weakness could be exacerbated by the fiscal dependency of local governments on the central government.

The region in possession of natural resources may use the resources to increase local income. The case study also shows that local governments tend to be more interested in approaching the central and provincial government for funding, by any possible means. This inclination seems to be the main reason impeding innovation and the capacity of local governments to collaborate.

Given the problematic issue of resource dependency, the hesitation to initiate closer relations with other local governments, and the strong fiscal dependency of local on central governments, it is not surprising that a mixed model formal arrangement, with a certain degree of involvement from the central and provincial governments, appears likely to remain the preferred formal arrangement into the near future, for urban infrastructure and service provision in general, and for cooperation for freshwater resources in particular. This case shows that inter-local government cooperation was adversely affected by the sudden change of status of districts and municipalities. The combination of considerable devolved authority and power, the unclear role of monitoring and coordination of provincial governments, combined with a long history of an authoritarian regime created a 'crack' in the system of government. This crack can be seen as providing opportunities for inter-local government collaboration, and may be related to the varieties of inter-local collaboration that emerged in Indonesia following decentralization. However, when such opportunities arise in the middle of an ongoing regulation-making process, cooperation established may take a pseudo-regulatory form, which not complies with relevant regulations as the regulations are still being developed. Consequently, the formal arrangements created may have limited capacity to create, support, or maintain the transformation of governance culture, for collective action. Such limitation then makes it hard to integrate varied substantive problems, which in this case includes water and land use planning, that in fact have the potential to strengthen established governance models.

This case shows that a governance model for water resource cooperation, particularly in a decentralized context, requires specific inter-local arrangements beyond local autonomy. It also requires attention to a series of specific values, which are trust, transparency, a changing perspective on water and land, and equal positions among actors in a regional-wide context of cooperation. This is not only because water management is basically regional in nature, including inherent processes of sharing water resources, are legitimate to decentralized urban regions in Indonesia. Similar conclusions will likely apply to other regions in need of coordinating water in decentralized contexts.

We conclude that water-resource management in decentralized city regions implies a focus on lighter and mixed types of governance, combined with an awareness of rural-urban sharing and coordination of these water resources. Referring to our case study, water resources management in a decentralized system should apply mixed arrangements of governance. Not only the role of central-provincial and local government levels and stakeholders are to be considered, but more importantly, setting up lighter mechanisms through networking among actors. In addition to that, an understanding of the relations between rural and urban areas within the region involved is necessary, so to

develop comprehensive management of water, green and agricultural resources as well as spatial planning.

Notes

1. A production forest is land designated for the production of forest products to meet the needs of society in general, and for the construction, industrial, and export industries in particular.
2. A state forest is a forest area and forest growing on land that is not encumbered property (Government Act No. 5/1967 on Basic Provisions of Forestry)

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