Mapping of the governance problem in the implementation of an unsolicited public-private partnership project (the case of Jatiluhur regional water supply phase I)

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Abstract. Governance instruments and their links to network relations are seen as principal elements of the success of PPP. The PPP implementation also deals with multi-level regulation. Jatiluhur Regional water supply is considered to have a governance complexity and potential to face various obstacles that will affect the smoothness of project implementation compared to others. Jatiluhur Regional water supply was initiated by a business entity (unsolicited), faced a setback in realization and was halted in the preparation of the procurement process so that the project had not yet reached financial close after two years. The research aims at identifying the governance problem of the Jatiluhur Regional water supply project implementation causing the delays. This is qualitative research using content analysis and Social Network Analysis (SNA). The gap on PPP regulations, some risks that have not been well mitigated, slow decision making, weaknesses of local governments and off-takers roles in the network, the problem of determining the Government as the Contracting Agency (GCA), mapping of ownership conflicts and actor distrust of GCA competency are the problems of governance found in the case of Jatiluhur regional water supply implementation. In order to accelerate the project implementation, this study suggests the optimization of multi-level governance by, first, revising the PPP Regulations in terms of further explaining the unsolicited project of PPP and the criteria in the determination of GCA. Further, the optimization requires determination of the new GCA in strengthening the role of actors in coordination and decision making, as well as in risk mitigation and latent conflict management. Jatiluhur regional water supply project is also known as the first regional water supply using the PPP scheme in Indonesia. Therefore, the multi-level governance perspective of the PPP implementation can be seen as a precedent for the next project of water supply infrastructure in Indonesia which uses PPP scheme.

1. Introduction
Indonesian Government is intensively implementing Public-Private Partnership (PPP) as an alternative infrastructure financing. Among the various types of infrastructure that could be cooperated with the PPP scheme, it is known that access to water services is targeted to reach 100% in 2019 based on National Medium-Term Development Plan 2015-2019 which is the highest target. However, the percentage of households that had water access in 2018 only reached 61.29% (National Development Planning Agency, 2019). In order to achieve the target, Indonesia implemented several National Strategic Projects of water supply using the PPP scheme that can be seen on the following table.
Table 1. National Strategic Projects of Water Supply with PPP Scheme (Source: Committee for Acceleration of Priority Infrastructure Delivery, 2019).

| Area                        | Investment          | Construction Year Plan | Operational Year Plan | Progress               |
|-----------------------------|---------------------|------------------------|-----------------------|------------------------|
| Umbulan Water Supply Pasuruan (East Java Province) | IDR 2,06 Trillion | 2017                   | 2020                  | Construction Stage     |
| Lampung Water Supply Bandar Lampung (Lampung Province) | IDR 1,1 Trillion     | 2018                   | 2020                  | Construction Stage     |
| Semarang Water Supply Semarang (Central Java Province) | IDR 1,0 Trillion | 2019                   | 2021                  | Construction Stage     |
| Jatiluhur Regional Water Supply Bekasi City, Bekasi Regency, Karawang Regency (West Java Province) and Special Capital Region of Jakarta | IDR 1,93 Trillion | 2019                   | 2022                  | Early Stage of Transaction (Shortlist of Bidders) |
| Jatigede Regional Water Supply Sumedang Regency, Majalengka Regency, Indramayu Regency, Cirebon City (West Java Province) | IDR 1,05 Trillion | 2021                   | 2023                  | Preparation Stage     |
| Mamminasata Regional Water Supply Makassar City, Maros Regency, Gowa Regency, Takalar Regency (South Sulawesi Province) | IDR 1,15 Trillion | 2019                   | 2021                  | Preparation Stage     |

The implementation of the Regional water supply project was relatively delayed than other water supply projects in the urban area. Based on Table 1, several projects had the same timeline for the construction stage, but the realization was at different stages (the Jatiluhur Regional, Mamminasata Regional and West Semarang water supply). The Jatiluhur regional water supply is also known as the first regional water supply using PPP scheme that covers two provinces (West Java and DKI Jakarta Province) and considered has the more governance complexity compared to others. Thus, the research focuses on the Jatiluhur Regional water supply project.

The implementation of the Jatiluhur Regional water supply project was halted after the announcement of the shortlist of bidders so that the financial close had not been achieved in 2019 [1]. The complexity of the actors involved in the project affects the responsiveness of the decision making, especially when there is a change of policy or organization structure of each institution. One of the concrete problems is the changes of GCA, which was marked by Minister of Public Works Decree No. 1136/ KPTS/M/2019. The unclear criteria for the determination of the GCA in the planning stage also become a regulatory gap that affects the smoothness of project implementation. Besides, the lack of GCA capacity and institution performance are some of the obstacles that are often found in the implementation of PPP projects (National Development Planning Agency, 2015). Thus, this issue supports the argument that governance is a set of institutions and actors involved [2] in the process of regulation, coordination, and control (Pierre, 1999 in Alexander, 2005) [3] and it is an important factor in the implementation of PPP projects. According to Koch and Buser [4], governance instruments (including legal types, incentives, guidelines, and intermediary activities), as well as links to network relations, are seen as elements for realizing Public-Private Partnership (PPP) schemes in infrastructure provision [4].

Thus, this study aims at identifying governance problem of the Jatiluhur Regional water supply project implementation that causes the delays. This paper consists of three objectives. First, this paper identifies the regulatory gap related to PPP of the Jatiluhur Regional water supply. Secondly, this paper analyzes the compliance of the PPP implementation. The last part is about the conflicts, roles and relationships mapping in the implementation of the project.
2. Literature Review

This section discusses multi-level governance, conflict theory, trust theory, social network theory, and the conceptual framework of research.

2.1. Multi-Level Governance

Multi-level governance is explained as the spread of power (power) from central government authority to several levels of government and non-government actors [5]. The multi-level governance approach does not deny the importance of decision making in the national arena but rather emphasizes that policymaking is no longer monopolized by the central government [2]. The main key to multi-level governance is the spread of authority and decision making to various institutions through a negotiation process so that activities that are centred on the state, become a complex mix of hierarchy, networks, and markets [5]. According to Petersen [6], PPP is made in policy games by involving the participation of strategic actors at several levels of government and structured in an institutional framework consisting of formal and informal rules at various levels of government. Decision making of PPP subject to institutional complexity is both in the horizontal and vertical dimensions [6].

2.2. Conflict Theory

There are two types of conflict theories. Firstly, it is the conflict at the micro-level that discusses individual, intrapersonal and interpersonal conflicts (Nye, 1973 in [7]). Secondly, it is the conflict at the macro level relating to groups, departments, divisions and also looking for organizations as units of analysis to overcome conflict dynamics (Pondy, 1967 in [7]). According to Campbell [8], the main source of conflict in urban planning comes from 3 perspectives, which are social / equality, environment, and economy that have the potential to trigger conflict. Some conflicts include:

- Between economic growth and equality, the competition for claims and use of the property (buildings/housing/land/assets) triggers ownership/property conflict.
- Resource conflict as a conflicting point of views between environmental conservation and economic activity.
- Development conflict, in which the conflict arises due to differences in viewpoints between social / equality and the environment.

![Figure 1. The Triangle of Conflict [8].](image)

Conflict is a dynamic process consisting of several stages (Pondy, 1967 in [9]), which consists of latent conflict, perceived conflict, felt conflict, manifest conflict, and conflict aftermath. This study focuses on the latent conflict. When inter-organizational conflict occurs, conflict can be managed through a formal system (such as a contract) or an informal mechanism. Both of these mechanisms generally require a third party.

2.3. Trust Theory

Trust is seen as the basis for an expectation of, or confidence in, future performance, the presence of which is capable of promoting cooperation [10]. Trust is closely related to risk, including risk when
there are actors who abuse their power in a projector or leave cooperation, force other actors to bear the costs [11]. Trust becomes more important when complexity, resulting from dynamics, uncertainty, and risk, is higher in governance networks. Then, the trust has a positive impact on outcomes in governance networks [12]. Thus, trust is an indispensable concept when studying PPP. The trust model can be linked to project management [13], consisting of:

- Integrity trust, in which one party will keep the interests of the other party. This is closely related to the nature of the business/project relationship
- Competence trust, in which another party can do the work assigned. This is related to the technical aspects but not directly related to the nature of the business/project relationship
- Intuitive trust /emotional trust, which believes that one party can trust the intentions and actions of the other party. This can be an indicator that can describe the sustainability of business/project relations.

2.4. Social Network Theory

The social network is a set of relationships consisting of a group of entities or individuals by identifying the relationships between individuals [14]. Centrality measurement of Social Network Analysis [15] consists of:

- Degree centrality, in which it can be used to identify the level of actors involved in the network. The actor with the highest degree of centrality is considered as the main actor in delivering information on the network [14].
- Closeness centrality, which shows how close a node is to another node in social networks (Sabidussi, 1966 in [14]). Closeness centrality refers to how quickly an actor can interact with others, for example by communicating directly or only through intermediaries [15] so that closeness centrality can also describe the degree of independence of an actor in the network because the actor can mobilize network easily [14]
- Betweenness centrality, in which actors are on the geodesic path (the shortest distance) between pairs of actors in a network and this is an important indicator of control over the exchange of information or the flow of resources in a network [15]. In communication networks, betweenness centrality refers to how much an actor has control if the actor is traversed by a large flow of information [14].

The governance problem mapping of PPP project starts with the multi-level governance perspective: the regulation, institution and project implementation which will be reviewed horizontally (between the central government and between the local government) and vertically (from the central government to local government). The conceptual framework for this study can be seen in the following figure.
3. Methods
This study adopts qualitative method. This section explains data collection and data analysis.

3.1. Data Collection
The secondary data focuses on the project profile, supporting documents and regulations. The primary data were taken from semi-structured interviews. Nonprobability sampling, specifically purposive sampling, was used to select the key informants/respondents. The key informant criteria for the study can be seen from the following table.

Table 2. The Key Informant Criteria.

| No. | Criteria                                                                 | Resource Person                                                                 |
|-----|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1   | Stakeholders that direct strategic actions regarding the implementation  | • National Water Supply Development Supporting Agency, Ministry of Public Works  |
|     | of Jatiluhur Regional water supply                                        | • The Directorate of Public-Private Partnership, National Development Planning Agency |
|     |                                                                          | • Indonesian Infrastructure Guarantee Fund.                                     |
| No. | Criteria                                                                 | Resource Person                                                                 |
|-----|--------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 2   | The Government Contracting Agency of the project                         | • Perum Jasa Tirta II (State-Owned Enterprise)                                   |
| 3   | The local governments who influence the implementation of Jatiluhur Regional water supply | • Regional Secretariat of DKI Jakarta Province                                   |
|     |                                                                          | • Regional Development Planning Agency of DKI Jakarta Province                    |
|     |                                                                          | • Regional Secretariat of Bekasi City                                             |
|     |                                                                          | • Development Planning Agency of Bekasi City                                     |
|     |                                                                          | • Public Works Office of Bekasi City                                             |
| 4   | The off-takers of Jatiluhur Regional water supply                        | • Regional water corporation of DKI Jakarta (PAM Jaya)                            |
|     |                                                                          | • Regional water corporation of Bekasi City (PDAM Tirta Patriot)                 |
|     |                                                                          | • Regional water corporation of Bekasi Regency (PDAM Tirta Bhagasasi)            |
|     |                                                                          | • Regional water corporation of Karawang Regency (PDAM Tirta Tarum).             |

3.2. Data Analysis

The qualitative analysis methods applied in this study were content analysis and Social Network Analysis (SNA). The stages are based on the stages of analysis according to Dey [16], including finding a focus, managing data, reading and annotating, creating categories, assigning categories, splitting and splicing, linking data and making connections, and producing an account. The content analysis was used for analyzing the public-private partnership implementation of the Jatiluhur Regional Water Supply, identifying the regulatory gap related to PPP and project, and also mapping the role and conflict in the implementation of the Jatiluhur Regional Water Supply.

Social Network Analysis (SNA) is used regarding the research objectives of the relationship between actors in the stages of implementing the Jatiluhur Regional Water Supply. SNA, Stakeholder Analysis and Dynamic Actor Networks Analysis (DANA) have similar objectives in stakeholder identification. SNA is relevant to see the relationship between actors and describe the patterns of underlying social structures. SNA is also represented as a network with a collection of nodes and relationships that describe the interconnection of actors (Wellman, 1999 in [15]). The SNA researcher can conceptualize and examine social networks from a multi-level approach and show how these levels interact with each other [14]. Therefore, SNA is the fittest method compared to others. The steps in the SNA [17], consists of:

- Identifying network connections in the social structure
- Processing interaction data into a matrix using a binary approach ("1" means that there is a relationship between one actor to another, while "0" indicates that there is no relationship between one actor to another).
- Data selection: using one mode approach (a set of data relating to a set of actors) for this research.
- Displaying actor-network based on graph theory using the NetDraw feature available on the UCINET6 software.
- Choosing a network measurement approach: using the measurement of centrality as explained in the social network theory.

4. Analysis and Discussion

4.1. Regulatory Gap Analysis

This section explains whether the available regulation has sufficiently provided legal basis or guidance on how to implement an unsolicited PPP project, particularly a water supply project. The main
regulations concerning PPP are listed in Presidential Regulation No.38 of 2015 [18] and Regulation of the Minister of National Development Planning No. 4 of 2015 [19]. The Jatiluhur Regional water supply is an unsolicited project (an initiative from a business entity) so that the business entity shall follow the Regulation of the Minister of National Development Planning No. 4 of 2015 for the first stage.

Figure 3. PPP Based on the Initiative from Business Entity (Source: Sub Appendix V, Regulation of the Minister of National Development Planning No. 4 of 2015).

Sub-stages of the PPP project implementation between unsolicited and solicited projects are not explicitly differentiated in the regulation. The explanation on the implementation of the unsolicited project was listed in Chapter VII [18] and Chapter V [19]. Thus, the PPP stages can be seen in the following figure.
Figure 4. PPP Stages (Source: Synthesis from Presidential Regulation No.38 of 2015 and Regulation of the Minister of National Development Planning No. 4 of 2015).

Presidential Regulation No. 78 of 2010 [20]. Regulation of The Head of The National Public Procurement Agency of the Republic of Indonesia No. 19 of 2015 [21] as well as a reference for risk allocation for water supply infrastructure with a BOT scheme issued by IIGF also become the regulation of the PPP. Jatiluhur Regional water supply project implementation shall comply with Government Regulation No. 121 of 2015 [22] and Government Regulation No. 122 of 2015 [23]. The regulatory scheme of the Jatiluhur Regional water supply project can be seen in the following figure.
Figure 5. Regulatory Scheme of the Jatiluhur Regional Water Supply Project.

This regulatory gap analysis is divided into three parts: planning, preparation and transaction stage.

4.1.1. Planning Stage. In the case of the Jatiluhur Regional Water Supply, the selected GCA was Perum Jasa Tirta II (PJII). The basis of its selection is explained in Fig. 5 based on Government Regulation No. 7 of 2010. PJII is a State-Owned Enterprise with the following business scope:

- Raw water services for drinking water, industry, agriculture, flushing, ports, power plants, and other needs
- Provision of the electricity for State Electricity Company (PT. Perusahaan Listrik Negara)
- Power generation, hydroelectricity, drinking water, business consulting services in the field of Water Resources technology and water quality laboratory services
- Development of the drinking water supply system.

The determination of the Government Contracting Agency (GCA) in the PPP project becomes important in the implementation of the PPP. However, there are no regulations that explain the detailed criteria regarding the determination of the GCA. The assessment of the financial capability of GCA is not become a consideration in determining the GCA, especially if the GCA is from State-Owned Enterprise/Regional-Owned Enterprise. That is one of the regulation gaps in PPP implementation of the Jatiluhur Regional water supply.

4.1.2. Preparation Stage. There are sub-stages in the preparation stage, regarding the preparation of a feasibility study, government support and/or government guarantee, and the return of investment mechanism. The preparation of the initial pre-feasibility study, consisting of legal and institutional study, technical study, economic and commercial study, environmental and social study, the study of the cooperation form in the infrastructure provision, risk management study, the study of government support and/or a government guarantee, and study of issues.
This part will be discussed about the risk assessment, considering that the core of the PPP project is about the distribution of risks that may occur to the actors involved (GCA/business entity/joint). The risk allocation for the water supply infrastructure refers to a risk allocation book, published by IIGF. That reference is still general, so it needs a specific study for each PPP project. Pre-study documents on the feasibility of the Jatiluhur Regional water supply (including risk assessment) cannot be obtained for risk allocation analysis. However, the actors’ perception regarding the risk of the project can be seen in the following table.

**Table 3. The Risk Allocation Perception of the Jatiluhur Regional Water Supply Project**

| Risk | Facts | Synthesis |
|------|-------|-----------|
| Project risk | Financial risk (including the risk of default and termination) become the responsibility of the GCA | Financial risk is more charged to the GCA. The default risk has been transferred from the GCA to the business entity |
| | Recourse agreement (Regress) become the responsibility of the GCA | |
| | The default risk becomes the responsibility of the Implementing Business Entity (after the risk was revocated from the GCA) | |
| | Financial risk mostly was charged by the GCA | |
| | Offtakers were considered to have the ability to pay so the risk of default is less likely to occur | The default risk is unlikely to occur. |
| | Offtakers have highlighted operating risks (including the reduced quantity of output, loss of water in the transmission network, loss of water in the distribution network) | Operational risk is very likely to occur and off-takers were concerned about the risk of water loss in the distribution network |

Financial risk (default risk), operational risk, and regress (financial liability of the GCA to the IIGF for the guarantee in infrastructure provision to the implementing business entity) are still unwell mitigated at the preparation stage so there are perceptions about the certain risk related to the actor interests. Based on the reference of risk allocation in drinking water infrastructure published by IIGF, the default risk is not listed explicitly in the matrix. Regarding the operational risk, the quantity of output reduction and loss of water in the transmission network becomes the responsibility of the business entity and the risk of water loss in the distribution network becomes the responsibility of the GCA. Meanwhile, the GCA’s obligation to pay regress (recourse agreement) is regulated in Presidential Regulation No. 78 of 2010.

In the preparation stage regarding the activity of preparing government support and/or a government guarantee, it is known that the government support is not provided for the Jatiluhur Regional water supply project, because the PPP project is unsolicited and deemed financially feasible. However, the government guarantee for this project approved by IIGF based on the GCA proposed by following the procedure [20]. Furthermore, regarding the determination of the mechanism of return on investment, it is known that the return on investment in this project comes from user charge/tariff. The explanation for the return of investment in the form of tariffs is not explained in the PPP regulation. It is different from the return on investment in the form of availability payment which was described in Presidential Regulation No. 38 of 2015 [18], Regulation of the Minister of Finance No. 260/PMK.08/2016 and Regulation of the Minister of Home Affairs No. 96 of 2016.
4.1.3. Transaction Stage. In the transaction stage, it is known that the procurement procedure was clearly explained. Based on the Presidential Regulation No. 8 of 2015 [18] and Minister of PPN Regulation No.4 of 2015, the procurement of implementing business entities can be conducted through bidding or direct appointments. The procurement of the Jatiluhur Regional water supply project was conducted through bidding. Further procedure regarding procurement has already mentioned on the Regulation of the Head of the National Public Procurement Agency No. 19 of 2015 [21]. The regulatory gap on the transaction stage of the PPP implementation is not found.

4.2. The Compliance Evaluation of Public-Private Partnership Implementation of Jatiluhur Regional Water Supply

PPP is implemented in stages, as follows: planning, preparation, and transaction [19]. This section discusses the compliance of the Jatiluhur Regional Water Supply implementation stages with the regulation and the project plan, considering that the project is a national strategic project that needs the acceleration of the implementation.

4.2.1. Planning Stage. The Jatiluhur Regional Water Supply was agreed as a PPP project on March 22, 2017 (Regional Development Planning Agency of DKI Jakarta Province, 2019). Based on Presidential Regulation No. 8 of 2015 [18], it is explained that the Business Entity may submit initiatives to the Minister/Head of Institution/Head of Region. The Jatiluhur Regional Water Supply is categorized as an unsolicited project of PPP (based on the initiative from a business entity). It was known that the initiator of the project was a consortium company consisting of PT. Jaya Konstruksi Manggala, PT. Wijaya Karya and PT. Gemah Ripah.

The Jatiluhur Regional Water Supply project has considered compliance with the National Medium Term Development Plan; Spatial Planning of DKI Jakarta Province, Bekasi City, Bekasi Regency, and Karawang Regency; and the strategic plan of the water supply infrastructure based on the Master Plan of the water supply and the business plan of each regional water corporation of DKI Province, Bekasi City, Bekasi Regency, and Karawang Regency. The list of PPP project plans was determined at the planning stage. Jatiluhur Regional Water Supply was listed in the PPP book of 2019, published by the National Development Planning Agency.

4.2.2. Preparation Stage. PPP preparation comprises at least pre-feasibility study, government support, and government guarantee plan, determination of a mechanism for investment return for the implementing business entity, and identification of the land requirement for the PPP based on the final pre-feasibility study [18]. After the letter to proceed from the GCA to the initiator business entity was issued on August 25, 2017, the GCA shall prepare a feasibility study (consists of PPP form, project financial planning, environmental study documents, and land acquisition planning documents) and the feasibility study shall be submitted on Q3 2017 according to the timeline [24]. Based on National Water Supply Development Supporting Agency [1], the initiating business entity has submitted a feasibility study document (including an environmental assessment document) to the GCA on August 31, 2017, so that the activity was following the timeline.

Perum Jasa Tirta II as the GCA was submitted the government guarantee proposal to the Ministry of Finance through IIGF based on the Presidential Regulation No. 78 of 2010 [20], in July 2019 before the completion of the final pre-feasibility study for the proposal of guaranteeing the provision of infrastructure. The project did not receive government support due to the unsolicited project was considered as a financially viable project. Based on the Presidential Regulation No. 8 of 2015 [18], there are two types of return of investment, such as from the user payment (in the form of tariff) or Availability Payment. The return of investment of the Jatiluhur Regional water supply project is sourced from the user charge. The GCA will set the initial tariff for infrastructure provision on Q4 2017 (Perum Jasa Tirta II, 2017). In its realization, based on National Water Supply Development Supporting Agency [1], the tariff discussion was held on 14-15 November 2017 and 20-22 November 2017 so that the realization is...
following the timeline. After the completion project, the initial tariff will be set for 2021.

The market sounding was targeted on Q4 2017 [23]. In its realization, market sounding was held on October 30, 2017 [1]. All the sub-stages in the preparation stage have been following the timeline of the project plan.

4.2.3. Transaction Cost. The PPP transaction stage comprises the following sub-stages. They include market sounding, PPP location determination, Special Purpose Company (SPC) procurement which includes preparation and implementation of SPC, signing of the PPP agreement, and financial close [19]. Further, provisions on the procedures for the procurement of the implementing business entity through bidding or direct appointment shall be stipulated by the regulations of the institution responsible for government affairs in the field of procurement of government goods/services. The announcement of the pre-qualification shortlisted result was targeted on Q4 2017 [24]. In its realization, the preparation of the procurement of the implementing business entity started in December 2017 to February 2018. Meanwhile, the pre-qualification was announced on March 21, 2017.

The bidding process for implementing business entities was targeted on Q4 2017. However, the realization of the project started from Q2 2018 until Q4 2019. The cooperation agreement was discussed on July 11, 2019, by the Ministry of Public Works, Provincial Government of DKI Jakarta, Provincial Government of West Java, Local Government of Bekasi City, Local Government of Bekasi Regency and Local Government of Karawang Regency. The discussion consists of the changes in the location of offtake points in the Bekasi Regency. Those changes affect neither the CAPEX nor the feasibility study document. Furthermore, regarding water capacity for the Jatiluhur Regional water supply project, it was agreed that the raw water needed was 5,500 l/s. Thus, there are changes in water production capacity in Cibeet WTP (from 550 l/s to 350 l/s) and water production capacity in Bekasi WTP (from 4,450 l/s to 4,650 l/s). These changes shall state in the final cooperation agreement.

Furthermore, the development of the Jatiluhur Regional water supply project has a significant change on November 22, 2019, regarding the changes of GCA which was marked by Minister of Public Works Decree No. 1136/ KPTS/M/2019 [25] concerning Revocation of the Minister of Public Works Decree No.561/KPTS/M/ 2017 concerning the Assignment to the Director of Perum Jasa Tirta II as GCA of Jatiluhur Regional Water Supply Project [26]. Therefore, the Directorate General of Infrastructure Financing, Directorate General of Human Settlements and the National Water Supply Development Supporting Agency within the Ministry of Public Works became the new GCA. The amendment to the GCA regulation does not affect the form of the PPP project which is an unsolicited project but it needs some adjustment on the documents resulting from the preparation stage. In addition, the new GCA needs to cancel the prequalification results and re-confirming the market interest. Thus, Jatiluhur Regional water supply faced a setback in realization and was halted in the preparation of the procurement process so that the project had not yet reached financial close after two years (2017-2019).

In substance, sub-stages of the Jatiluhur Regional water supply project implementation have complied with PPP regulations, as well as other supporting regulations. The implementation of the Jatiluhur Regional Water Supply can be seen in the following table.
### Table 4. The Jatiluhur Regional Water Supply Implementation in the Planning, Preparation and Transaction Stage.

| Stage                  | Sub-stage                                      | Facts                                                                 | Synthesis                                                                 |
|------------------------|-----------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------|
| Planning               | Jatiluhur Regional Water Supply Initiative     | The project is categorized as an unsolicited, initiated by a consortium company consisting of PT. Jaya Konstruksi Manggala, PT. Wijaya Karya and PT. Gemah Ripah. | Jatiluhur Regional Water Supply is an unsolicited project, initiated by a consortium company. |
| PPP                    | Identification of the Jatiluhur Regional Water Supply | The Jatiluhur Regional Water Supply project has considered compliant with the National Medium Term Development Plan; Spatial Planning of DKI Jakarta Province, Bekasi City, Bekasi Regency, and Karawang Regency; and the strategic plan of the water supply infrastructure based on the Master Plan of the water supply and the business plan of each regional water corporation of DKI Province, Bekasi City, Bekasi Regency, and Karawang Regency. | Identification and determination of the Jatiluhur Regional Water Supply was under Presidential Regulation No.38 of 2015 and Regulation of the Minister of National Development Planning No. 4 of 2015 |
| PPP                    | Determination of the Jatiluhur Regional Water Supply | Jatiluhur Regional Water Supply was listed in the PPP book of 2019. |                                                                           |
| Preparation            | Pre-feasibility study of the Jatiluhur Regional water supply | The consortium company (PT.Jaya Konstruksi Manggala, PT. Wijaya Karya dan PT.Gemah Ripah) as an initiator business entity has completed the pre-feasibility study The consortium company has completed environmental study documents | The pre-feasibility study has complied with President Regulation No.38 of 2015 and Regulation of the Minister of National Development Planning No. 4 of 2015 |
|                        | Government support for the Jatiluhur Regional water supply | The project did not receive government support due to the unsolicited project was considered as a financially viable project. | Government guarantee for the Jatiluhur Regional water supply project has complied with President Regulation No.78 of 2010 |
|                        | Government guarantee for the Jatiluhur Regional water supply | Perum Jasa Tirta II as the GCA was submitted the government guarantee proposal to the Ministry of Finance through IIGF in July 2019. |                                                                           |
|                        | The return of investment of the Jatiluhur Regional water supply project | The return of investment of the Jatiluhur Regional water supply project is sourced from the user charge and the initial tariff will be set for 2021 | Determination of a mechanism for investment return complied with President Regulation No.38 of 2015 and Regulation of the Minister of National Development |
The procurement of the implementing business entity for the Jatiluhur Regional water supply was conducted through bidding by prequalification.

The prequalification process has complied with Regulation of the National Public Procurement Agency of the Republic of Indonesia No. 19 of 2015

The cooperation agreement as a part of the PPP agreement was discussed, but the changes of GCA makes the project was halted in the preparation of the procurement process.

In the previous section, the sub-stages of the planning and preparation stage of the Jatiluhur Regional water supply project has been following the timeline of the project plan. However, after the announcement of the shortlist SPC (prequalification), there was a setback in the realization of the project implementation. The implementation of the Jatiluhur Regional water supply was paused at the finalization of the Request for Proposal activity so that the project had not yet reached financial close. The comparison between the project plan and its implementation can be seen in the following figure.
4.3. Conflicts, Roles and Relationships Mapping in the Implementation of the Jatiluhur Regional Water Supply

4.3.1. The Roles of Institution and The Relationships of the Jatiluhur Regional Water Supply Implementation. Jatiluhur Regional water supply project is an initiative from the business entity. Based on the analysis, this project has governance complexity, which can be seen from the actors involved and their roles as the following table.

Figure 6. Realization of Jatiluhur Regional Water Supply Project Implementation.
| No. | Institution                                                                 | Role of the Institution in the Jatiluhur Regional Water Supply Implementation |
|-----|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1   | Initiator/consortium company (Jaya Konstruksi Manggala, Tirta Gemah Ripah, Wijaya Karya) | • As the initiator of the PPP project  
• Prepare and submit the feasibility study documents to the GCA  
• As a candidate for implementing business entity (has been determined as a shortlist of the bidder) |
| 2   | The National Water Supply Development Supporting Agency, Ministry of Public Works | • As a PPP node: ensure coordination and synchronization with stakeholders involved in the PPP project and monitoring the PPP stages  
• Bridging the communication between the GCA and the off-takers |
| 3   | Directorate General of Human Settlements, Ministry of Public Works            | • As a PPP node  
• Drafting and signing the Joint Agreement and Cooperation Agreement with Head of Region (DKI Jakarta, Bekasi City, Bekasi Regency, and Karawang Regency) |
| 4   | Directorate General of Water Resources, Ministry of Public Works              | • As a PPP node  
• Coordinating with the GCA and the off-takers related to the management of water resources (raw water) from Jatiluhur, Purwakarta  
• Drafting and signing the Joint Agreement and Cooperation Agreement with Head of Region (DKI Jakarta, Bekasi City, Bekasi Regency, and Karawang Regency) |
| 5   | Directorate General of Infrastructure Financing, Ministry of Public Works     | • As a PPP node  
• Handle the PPP financing of the public works infrastructure |
| 6   | The Directorate of Public-Private Partnership, National Development Planning Agency | • As a regulator for PPP project (stipulated the Regulation of the Minister of National Development Planning No.4 2015)  
• Review and evaluate the feasibility study of the PPP project  
• Determine the Jatiluhur Regional water supply as a PPP project on the PPP book |
| 7   | Indonesia Infrastructure Guarantee Fund                                       | • Determine the risk allocation guideline  
• Review and approve the government guarantee for the PPP project based on the GCA proposal |
| 8   | Perum Jasa Tirta II                                                          | • As the GCA of the Jatiluhur Regional water supply project  
• Coordinating with the off-takers  
• Conduct market sounding  
• Propose government guarantee to the IIGF  
• Determine the return on investment  
• Prepare the procurement of the business entity |
| 9   | Committee for Acceleration of Priority Infrastructure Delivery               | Encourage the resolution of problems that arise due to the ineffective coordination among the stakeholders involved in the Jatiluhur Regional water supply project |
No. | Institution | Role of the Institution in the Jatiluhur Regional Water Supply Implementation
--- | --- | ---
10 | Financial Supervisory and Development Board | Provide alternative scenarios and recommend asset management of the PPP project after the operational stage
11 | National Public Procurement Agency | As a regulator for the procurement (stipulated the Regulation of the Head of National Public Procurement Agency No.19 of 2015)
12 | Regional Secretariat of DKI Jakarta Province, Bekasi City, Bekasi Regency, Karawang Regency | • Economic Bureau as a supervisor of the Regional Owned Enterprise (Regional water corporation of DKI Jakarta Province, Bekasi City, Bekasi Regency, Karawang Regency)  
• The Government Bureau has prepared the Cooperation Agreement between the regional government and the Ministry of Public Works  
• Monitor the implementation of the Jatiluhur Regional water supply project in each region
13 | Development Planning Agency of DKI Jakarta Province, Bekasi City, Bekasi Regency, Karawang Regency | • Ensuring the alignment of the national and regional spatial planning related to the development of the Jatiluhur Regional water supply project  
Prepare the budget allocation for the water supply infrastructure development in each region
14 | Public Works Office of DKI Jakarta Province, Bekasi City, Bekasi Regency, Karawang Regency | • Involved in the environmental study preparation in each region related to the drinking water treatment plant development  
• Assigned to build a transmission network (for DKI Jakarta Province) with a multi-year scheme
15 | Regional Owned Enterprise (Regional water corporation): PAM Jaya, Tirta Patriot, Tirta Bhagasasi, Tirta Tarum | • As an off-takers in each region: buy the raw water from the Jatiluhur, manage the drinking water treatment plant (Bekasi and Cibeet), provide and develop the drinking water pipeline

Perum Jasa Tirta II as a GCA and the Ministry of Public Works as a PPP node, especially The National Water Supply Development Supporting Agency and the Ministry of Public Works always relate to every institution in the implementation of the Jatiluhur Regional water supply project. The relationship between actors in the Jatiluhur Regional water supply project implementation is analyzed with the SNA. Actors are shown by nodes and their connections are shown by lines or arrows [14]. There are four measures of centrality consists of degree centrality, closeness centrality, and betweenness centrality (Freeman, 1979 in [15]).

- **Degree Centrality**
  The GCA (Perum Jasa Tirta II) and PPP node (The National Water Supply Development Supporting Agency and Directorate General of Human Settlements) have the highest in-degree centrality and outdegree centrality. These actors are very influential in the implementation of the Jatiluhur Regional water supply project. The local governments and off-takers have the same value. Meanwhile, the consortium company is considered as less prominent actors, even if the consortium company is the initiator of the project. The degree of centrality can be seen in the following figure.
Closeness Centrality
The closeness centrality shows how quickly an actor can interact with others, for example, by communicating directly or only through intermediaries [15]. Perum Jasa Tirta II, The National Water Supply Development Supporting Agency and Directorate General of Human Settlements have the lowest out closeness/farness. These actors were very easy to reach out to other actors in the implementation of the Jatiluhur Regional water supply project. It may due to the actor's power on the formal function in the institution. Furthermore, the closeness of centrality was also identified on other central government actors such as IIGF, National Development Planning Agency, Committee for Acceleration of Priority Infrastructure Delivery, Financial Supervisory and Development Board, and the National Public Procurement Agency. The local governments, off-takers and consortium company need intermediaries in communicating on the network and need the direction from the central government in project implementation. The closeness centrality can be seen in the following figure.

**Figure 7.** Social Network Graph Degree Centrality of the Jatiluhur Regional Water Supply Project Implementation.
Figure 8. Social Network Graph Closeness Centrality of the Jatiluhur Regional Water Supply Project Implementation.

- **Betweenness Centrality**
  Betweenness centrality refers to how much an actor has control if the actor is traversed by a large flow of information [14]. The GCA (Perum Jasa Tirta II) and PPP node (The National Water Supply Development Supporting Agency and Directorate General of Human Settlements) have the highest betweenness centrality. These actors have potential control over information in this network. IIGF, National Development Planning Agency, and off-takers also have potential control even the betweenness centrality lower than the three main actors. The betweenness centrality can be seen in the following figure.
4.3.2. The Conflicts in the Jatiluhur Regional Water Supply Implementation

This study focuses on the latent conflict identification in the Jatiluhur Regional water supply implementation before it reaches the construction stage. Latent conflict regarding the asset ownership of the PPP project after the operational stage has been discussed by stakeholders. It has been agreed that asset ownership will return to the government (through the Ministry of Public Works). However, latent conflict related to asset ownership was identified related to land acquisition for Cibeet WTP (Karawang Regency), considering that the Jatiluhur Regional water supply project had not reached the financial close.

The actor's trust also needs to identify, considering that trust is closely related to the risk distribution. There was distrust of the actors related to the competence of the GCA (Perum Jasa Tirta II) in terms of fiscal capacity to support the project. On the other hand, the actors have competence trust in the GCA related to the suitability of the formal duties and functions of Perum Jasa Tirta II following its business scope (Government Regulation No.7 of 2010) and the sector legislation [22] [23].

Table 6. Conflict Mapping in the Jatiluhur Regional Water Supply Project Implementation.

| Conflict                     | Facts                                                                 | Synthesis                                      |
|------------------------------|-----------------------------------------------------------------------|------------------------------------------------|
| The Property Conflict        | There was a discussion about the asset ownership of the PPP project after the operational stage Land acquisition for Cibeet WTP (Karawang Regency) as a part of the water supply infrastructure has not been available due to the changes in the WTP design | The latent conflict was identified related to the property conflict |
| Competence Trust (Fiscal Capacity) | Lack of the fiscal capacity of the GCA to support the PPP project, while the Jatiluhur Regional water supply project requires an acceleration implementation | There is distrust of the actors related to the fiscal capacity of the Perum Jasa Tirta II |
5. Conclusion and Recommendation

The governance problem mapping starts with the multi-level governance perspective, as explained in the previous section. The following table shows the governance problem mapping on the PPP project of the Jatiluhur Regional water supply.

**Table 7. Governance Problem Mapping on the Public-Private Partnership Project of Jatiluhur Regional Water Supply Phase I.**

| Conflict                | Facts                                                                 | Synthesis                                                                                       |
|-------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Competence Trust        | Determination of the Perum Jasa Tirta II as a GCA has               | There is the trust of the actors related to the appropriateness of the GCA determination     |
| (Formal Task and Function) | complied with sector legislation and the business scope of the Perum Jasa Tirta II |                                                                                                 |

Based on the problems of PPP governance identified in Table 7, some recommendations to optimize the implementation of the Jatiluhur Regional water supply as an unsolicited PPP project are as follows:

- Revision of the Presidential Regulation No.38 of 2015 and Regulation of the Minister of
National Development Planning No. 4 of 2015 regarding the explanation of the PPP stage differentiates the details of the solicited and unsolicited project and the criteria for the GCA determination. Additional regulation for the return on investment in the form of user charge/tariff.

- Default risk needs to be allocated on the risk allocation guideline, published by IIGF [27].
- Based on SNA, BPPSPAM has the potential to become a new GCA of the Jatiluhur Regional water supply. However, it probably needs an adjustment of the related regulation.
- Strengthening the role of actors from the Ministry of Public Works (The National Water Supply Development Supporting Agency, Directorate General of Human Settlements, and Directorate General of Infrastructure Financing) in coordination and decision making.
- Increasing the role of local governments and off-takers in the project implementation (distribution of the authority)
- Risk mitigation needs to be mutually agreed by the actors before signing the PPP agreement at the transaction stage
- Provision of the distribution pipeline must be well-planned. The off-takers shall conduct the real demand survey to minimize the default risk and revenue risk.
- Design finalization for Cibeet WTP as an informal mechanism in conflict management between organizations (the scope of the central government) and the land requirement can be identified. Land acquisition for a PPP project will be carried out by the government in accordance to the laws and regulations regarding land acquisition for development in the public interest (Constitution No.2 of 2012, Presidential Regulation No. 71 of 2012 and Presidential Regulation No. 148 of 2015)

Public-Private Partnership implementation of Jatiluhur Regional Water Supply was reviewed based on the sub-stages in the planning, preparation and transaction stages (per December 31, 2019). This study faces several limitations, regarding the limited access to some confidential documents (e.g. pre-feasibility study document, including the risk allocation study) as well as the government guarantee statement. These two things are unidentified for further analysis regarding the assessment of risk and its mitigation for the Jatiluhur Regional water supply project.

This study shows that the multi-level governance perspective of the PPP implementation can be seen as a model for the next PPP project implementation of water supply infrastructure in Indonesia, especially for the regional water supply such as Jatiluhur Regional water supply (second phase) and Karian water supply. As for other infrastructure and in a global context, the multilevel governance perspective of the PPP implementation can also be appropriate considering the characteristics of the infrastructure as well as the governance model of a country.

References
[1] National Water Supply Development Supporting Agency (BPPSPAM) 2019 Jatiluhur Regional Water Supply Profile
[2] Stoker G 1998 Govnc. as Theory : Five Propositions (Oxford: Blackwell Publishers) p 18–9.
[3] Alexander E R 2005 Institutional Transformation and Planning: Fr. Institutionalization Theory to Institutional Design. (London : SAGE Publications) p 218
[4] Koch C and Buser M 2006 Emerging Metagovernance as an Institutional Framework for Public Private Partnership Networks in Denmark (International Journal of Project Management) p 548–56
[5] Cairney P 2012 Understanding Public Policy Theories and Issues. (New York: Palgrave Macmillan)
[6] Petersen O H 2011 Multi-Level Govnc. of Public-Private Partnerships: An Analysis of the Irish
Case (Estonia: Administrative Culture) p 162–88
[7] Lewicki R J Weiss S and Lewin D 1992 Models of Conflict, Negotiation and Third Party Intervention (USA: Journal of Organizational Behavior)
[8] Campbell S 2003 Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradiction of Sust. Dev. (Chicago: American Planning Association) p 296–9
[9] Minnery J R 1985 Conflict Mngmt. in Urban Planning (Hampshire: Gower Publishing Company Limited) p 3–4
[10] Deakin S and Michie J 1997 Contracts and Competition: An Introduction Cambridge Journal of Economics p 121–5
[11] Warsen R, Nederhand J Kijn E.H et al 2018 What Makes Public-Private Partnerships Work? Survey Research into the Outcomes and the Quality of Cooperation in PPPs (UK: Informa UK Limited) ISSN: 1471-9037 (Print) 1471-9045 (Online) Journal
[12] Kijn E H, Edelenbos J and Steijn B 2010 Trust in governance networks: its impacts on outcomes (Rotterdam: Administration and Society Vol.42) p 193–221
[13] Hartman F T, Blakeney D, DeMaere R, Krahn J, Skulmoski G J, Ren L, Sennary M and Zaghoul R 2002 Update on trust: a collection of trust-based research findings (Washington: Project Management Institute)
[14] Prell C 2012 Social Network Analysis: History, Theory, and Methodology (India: SAGE Publications) chapter 4 p 98–110
[15] Knoke D and Yang S 2008 Introduction to Social Network Analysis (SAGE Publications, Ltd) p 17–24.
[16] Dey I 2003 Qualitative data analysis: A user friendly guide for social scientists (London: Routledge) p 57–272
[17] Springer A C and Steiguer J E 2011 Social Network Analysis: A Tool to Improve Understanding of Collaborative Management Groups Journal of Extension 49
[18] -- 2015 Presidential Regulation No. 38 of 2015 concerning Cooperation Between Government and Business Entities in Infrastructure Provision (Jakarta: Presiden Republik Indonesia)
[19] -- 2015 Regulation of the Minister of National Development Planning No. 4 of 2015 concerning Implementation Procedures for the Cooperation Between Government and Business Entities in Infrastructure Provision (Jakarta: Ministry of National Development Planning)
[20] -- 2010 Presidential Regulation No. 78 of 2010 concerning Infrastructure Guarantee of the PPP Infrastructure Provision (Jakarta: Presiden Republik Indonesia)
[21] -- 2015 Regulation of the National Public Procurement Agency No.19 of 2015 concerning procedures of procurement of PPP in providing infrastructure
[22] -- 2015 Government Regulation No. 121 of 2015 concerning Management of Water Resources
[23] -- 2015 Government Regulation No. 122 of 2015 concerning Water Supply and Perum Jasa Tirta II
[24] -- 2017 Perum Jasa Tirta II. Exposed November 1, 2017. Jatiluhur Regional Water Supply Profile.
[25] -- 2019 Minister of Public Works Decree No. 1136 / KPTS/M/2019 concerning Ammandment of the Minister of Public Works Decree No.561/KPTS/M/2017
[26] -- 2017 Minister of Public Works Decree No.561/KPTS/M/2017 concerning the Assignment to the Director of Perum Jasa Tirta II as a GCA of Jatiluhur Regional Water Supply Project
[27] Indonesia Infrastructure Guarantee Fund 2017 Risk Allocation Guideline (Jakarta)
[28] Committee for Acceleration of Priority Infrastructure Delivery 2019 National Strategic Projects of Water Supply [Internet]. kppip.go.id [cited on February 22 and September 23, 2019]. Available from: https://kppip.go.id/proyek-strategis-nasional/m-proyek penyediaan-air-minum/
[29] Pondy L R 1967 Organizational Conflict: Concepts and Models Administrative Sci. Quarterly 12 p 296–320